

IMPACT OF INFORMATION LITERACY ON E-RESOURCE ACCESSIBILITY AND USAGE AMONG STUDENTS: A STUDY OF ACADEMIC LIBRARIES IN INDORE DIVISION

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Abstract

The paper will discuss how information literacy will enhance awareness and access to e-resources of undergraduate and postgraduate students in the academic institutions of the Indore Division. Electronic resources have helped academic learning and research but still their use is very low because of issues of lack of awareness, insufficient training and infrastructural constraints. A structured questionnaire was sent out to 130 students through convenience sampling with stratification and 95 valid responses were sent back to the researcher and analyzed (response rate: 73.1%). The results suggest that students (information literate) who underwent information literacy training showed distinguished high usage of e-resources. There was also a high variation in awareness between undergraduate and post graduate students. The paper indicates that it is necessary to incorporate structured information literacy programmes in the academic support system and also enhance digital infrastructure to improve effective use of library e-resources.

Keywords: Information Literacy, E-Resources, Academic Libraries, Student Awareness, Usage Patterns, Chi-Square Test.

1. INTRODUCTION

The technological revolution has transformed the traditional print collections in the academic libraries into information services technology-based centers. The increase in the electronic resources (e-resources) (e-books, academic databases, and digital learning platforms etc.) has dramatically transformed the libraries in terms of accessibility, research production and sharing of knowledge. This new method, as presented by Talikoti (2023), is an indication of change in the manner students engage and manipulate information in learning institutions. E-resources are becoming an essential part of contemporary education in the digital era since it offers 24 hours access to real time

resources which are cost effective and help create global networked community and highly valued by the distance learners especially Research scholars teachers. Kumari, (2020) points out their important role in increasing the knowledge base of the universities and so do Pakdaman et al. (2021) and Glazunova et al. (2023) point to their cost-efficiency and efficacy, particularly regarding the rapidly adopted model of virtual or blended learning transformed by COVID-19. Nevertheless, in spite of all these advantages, there are wide challenges of the adequate usage of reads in rural and semi-urban areas. Such issues as a low level of digital literacy, inadequate infrastructure, insufficient awareness and disproportionate access are still being felt (Singh 2020; Wagay and Glazunova 2020; Rudraksha et al.). The organizations that subscribe to the well-known databases like IEEE and EBSCO access are too not utilized to their full potential and simply because there is no proper sensitization or user training programmed in place. Under such a condition, Information Literacy (IL) would play a great facilitating role in appropriate e-resources use. IL equips students to both identify, locate, evaluate, and utilize information proficiently in higher education; it is suggested that more IL competent students typically have a further opportunity to access the digital environment with ease and extract meaning on scholarly materials (Ruzegea, 2021). Therefore, it would be crucial to incorporate IL training - particularly at a PG level - to bridge the gaps in usage and enhance the interest of the student in e-resources (Ruzegea, 2021; Vijayakumar, 2021).

2. STATEMENT OF THE PROBLEM

Today, in the digital age, many academic libraries provide a virtually unlimited array of resources to support and aid students with their studies. But at several universities have students not yet been fully informed and are unable to make proper use of these facilities. Just having access to e-resources won't cut it students must have the skills and knowledge necessary to search, evaluate and use digital information. But, sadly there is lack of and very little consideration to the training on information literacy in most of our colleges. This gap prevents students from harnessing the full power of digital resources. The study analyses the causes why this potential remains under utilised and how information literacy can be used to facilitate more confident and effective use by students of e-resources.

3. OBJECTIVES OF THE STUDY

To reach the objective of this research, it is crucial to set clear and focused goals that help structure everything. These objectives facilitate the systematic examination of students access to e-resources and information literacy contributing towards enhancing their usage. The study aims at the followings:

- To explore the influence of information literacy towards effective utilization of e-resources by students belonging to Indore Division.

- To determine awareness and accessibility knowledge base of e-resource by undergraduate & postgraduate students.

4. HYPOTHESIS OF THE STUDY

The following hypotheses have been developed for statistical testing of the associations between important elements which are essentially involved in this study:

- There is no significant impact of information literacy on the effective usage of electronic resources by students.
- There is no significant difference in the awareness and accessibility of e-resources between undergraduate and postgraduate students.

5. SCOPE AND SIGNIFICANCE OF THE STUDY

The present study is based on the students studying in undergraduate and postgraduate classes of universities of Indore division, exploring their access to electronic resources, use etc. It also examines the impact of information literacy on how it can enhance this use. The results can be used by libraries and organizations for developing more effective programs to create awareness, develop digital skills as well proper utilization of e-resources on institutions outcomes.

6. REVIEW OF LITERATURE

Academic libraries are integrating electronic resources (e-resources) amazingly, thereby transforming the scenario of accessing information and the patterns of research.

- 6.1. Talikoti (2023) also highlights the beneficial impacts of e-resources in enhancing research efficacy, accessibility and publicity yet mentions that things have been going wrong in using e-resources i.e. digital illiteracy and insufficiency of infrastructure etc., as well. This change in screens instead of pages has changed the way libraries are conducted all over the world.
- 6.2. Stressing the necessity of e-resources in academic libraries, Kumari (2020) notes their role in the extension of information base and international coverage. To supplement this, Rudraksha, et al. (2021) commented on the university libraries in Andhra Pradesh where database functions were not equally used and demanded sensitisation program to address the usage of the same.
- 6.3. The level of undergraduate and postgraduate testing comparing the findings on the user level shows that undergraduates tend to use the e-resources more than their information literate counterparts with the information literacy being a major principle in the practical use (ructogene, 2021). Wagay et al (2024) also underline the infrastructural challenges including powercuts and band width

problems that restrict the access of e-resources by the students of the Kashmir University.

- 6.4. E-learning technologies have been used rapidly due to the COVID-19 crisis; Glazunova et al. (2023) The Moodle analytics: As to the assessing of the effectiveness of e-course and looking for a way to intervene factors that influence the engagement of the student. Their research suggests the importance of data oriented strategies in increasing the e-resource utilization.
- 6.5. Studies that focus on student consciousness; such as Executive Report by Singh (2020) denote satisfaction with e-resources, but also portray the enhancement of internet connectivity and resources.
- 6.6. That has also been supported by Vijayakumar (2021), who stated that schoolchildren and research scholars actively use e-books and that e- journals reveal an increase in the significance of the digital media in academic libraries.
- 6.7. On the topic of education model systematic review, Pakdaman et al. (2021) identify as conclusives that e-resources virtual/blended learning are relatively inexpensive to use and that learners are fond of using such learning methods, since they can be flexible/accessible.

The literature review found out that e-resources have fundamentally turned the way academic research and education are conducted but there are issues with infrastructure development, acquisition of user skills becomes an issue or in control of resources still exist. These need to be handled by referring to specific training, policy reinforcement and enhancement of technology.

7. RESEARCH METHODOLOGY

The research design applied in this investigation was descriptive survey design in order to explore the influence of information literacy on the students accessibility and utilization of e-resources in academic libraries of the Indore Division in terms of their awareness, frequency and training effectiveness.

7.1 Research Design

The research design employed was descriptive survey research and it sought to establish the accessibility and usage of e-resources amongst the students as was the study into information literacy skills on the capacity to utilize the resources. To collect and analyze both quantitative and qualitative data related to the application of e-resources in the academic environment currently, the descriptive approach was appropriate.

7.2 Study Area

The research was conducted in Indore universities of the state of Madhya Pradesh. The biggest Educational centre in the area thus witness different Public and Private Universities and conjoined colleges. They were selected primarily as these institutions are diverse in terms of course designs, and services offered by the electronic library, which underconditions ideal conditions to focus on the impact of e-resources and information literacy.

7.3 Population and Sample

The sample population was the undergraduate and postgraduate students of various faculties at various universities in Indore. The students surveyed participated in the 130 questionnaire instruments which were structured questionnaires. Ninety-five out of them gave complete responds (response rate: 73.1% was considered to be sufficient to conduct data analyses).

7.4 Sampling Technique

Stratified convenience sampling was used. This was based on exposure by sex and academic level (UG/PG) and course of study, and the respondents were recruited based on their availability. By so doing, this method increased the chances of seeking representative sample across field of study and level of programs.

7.5 Tools for Data Collection

The data collection was primarily done using a structured questionnaire.

- Demographic information
- Existence and availability of e-resources.
- E-resource frequency and the purpose.
- Membership in information literacy training.
- Perception of barriers to access e-resources.

It was an amalgamation of closed ended questions, and 5 point Likert scale items. The study would also conduct informal interviews with university librarians to complement the information literacy programs and institutional support (as above).

7.6 Method of Data Collection

The data collection was in offline mode as well as online mode. The hard copy questionnaires were filled during the class and library sessions where possible and electronic survey tools (Google Forms) were distributed among the university emails and posted on the social media where possible in order to gain responses related to a larger student population.

7.7 Data Analysis Techniques

The comments gathered were structured content, coded according to an analysis classification. Tools such as simple descriptive statistics (frequencies, percentages and means) were used to summarize the data. The relationships between variables, including use and exposure of e-resources and information literacy, were investigated using the inferential statistical methodologies such as the Chi-square test. All the statistical tests were performed with Microsoft Excel and SPSS.

8. DATA ANALYSIS AND INTERPRETATION

The data, gathered from 95 students through a structured survey has been analysed and interpreted in an organized manner above to determine the extent of their awareness, patterns of usage as well as impact of information literacy on e-resource utilisation.

Table 1: Gender Distribution of Respondents

Gender	No. of Students	Percentage (%)
Male	50	52.63
Female	43	45.26
Other	2	2.11

Figure 1: Gender Distribution of Respondents

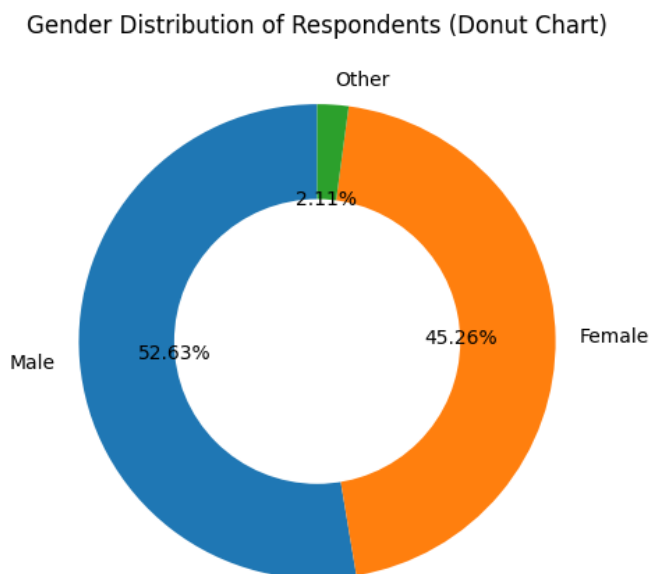


Table 1 shows the gender of the respondents. The distribution of the gender of respondents shows a moderately equal representation of both males and females among the respondents. The survey of 95 students included 50 male students, which is 52.63 of the total number of students surveyed, and 43 female students, which is 45.26. Furthermore, 2 respondents considered themselves as the representatives of some other

gender, which comprised 2.11 percent of the sample. This distribution implies that the data obtained is the reflection of the views of a wide range of students, which contributes credibility and inclusion to the study results.

Table 2: Academic Level Distribution of Respondents

Academic Level	No. of Students	Percentage (%)
Undergraduate	55	57.89
Postgraduate	40	42.11

Figure 2: Academic Level Distribution of Respondents

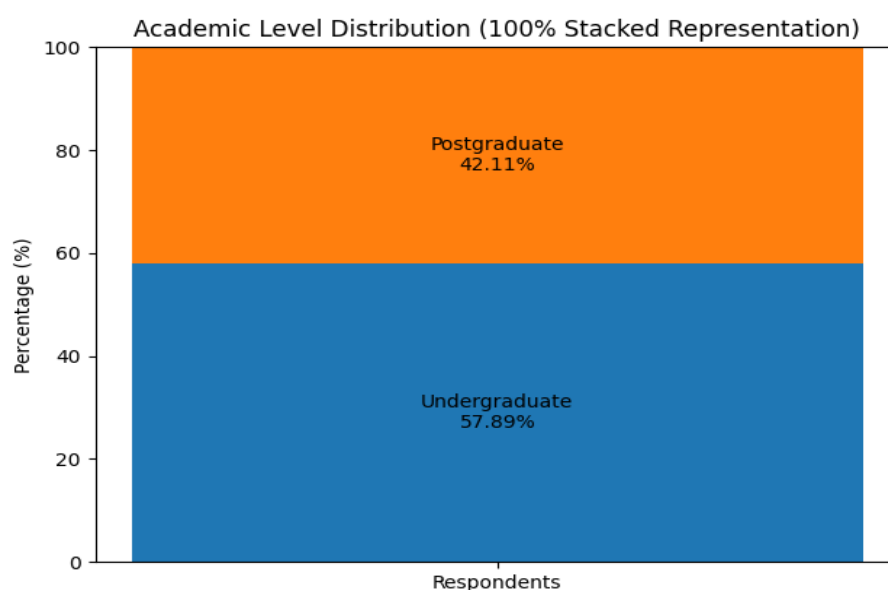


Table 2 demonstrates the level of academic of the students who participated in the survey. Out of the 95 respondents, 55 (57.89) of them were undergraduates and 40 (42.11) were postgraduates. This depicts a relatively even proportion of both academic level participants. This is probably due to the fact that the slightly higher number of respondents with undergraduate level was related to their higher representation within university enrolment. Such distribution has become an excellent background on which learners at different levels of learning can utilize electronic resources and enjoy the privilege of information literacy.

Table 3: Awareness of E-Resources

Awareness	No. of Students	Percentage (%)
Yes	82	86.32
No	13	13.68

Figure 3: Awareness of E-Resources

Awareness of E-Resources among Respondents

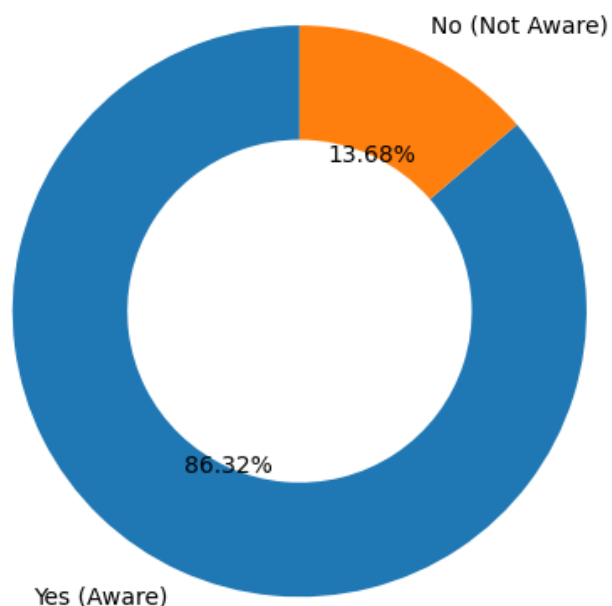
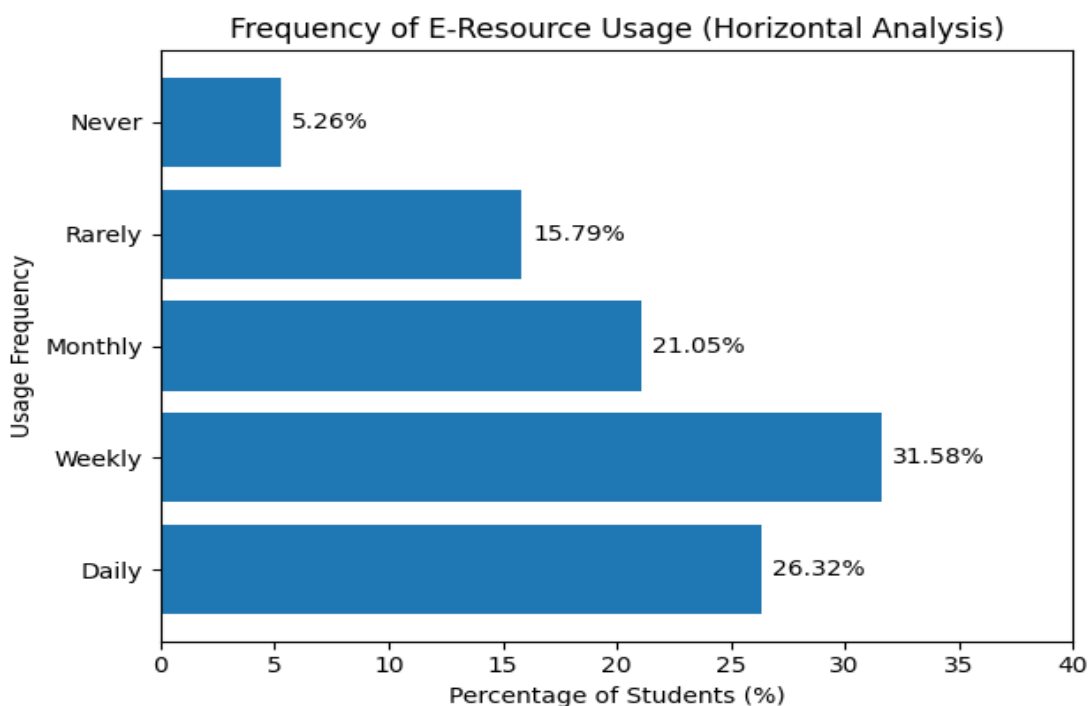


Table 3 gives the awareness of the respondents concerning the electronic resources. Out of the total 95 students studied, 82 (86.32) students who were surveyed said that they knew the existence of the e-resources in their academic libraries and 13 students (13.68) said that they were not aware. The situation of high awareness level means that the library activities including notices and orientation programmes are being run successfully to some level. Non-awareness group, however, is an indication to conduct regular awareness campaigns and planned information literacy training, especially during admission.

Table 4: Frequency of E-Resource Usage

Usage Frequency	No. of Students	Percentage (%)
Daily	25	26.32
Weekly	30	31.58
Monthly	20	21.05
Rarely	15	15.79
Never	5	5.26

Figure: 4: Frequency of E-Resource Usage



The frequency of utilizing electronic resources by students is presented in the table 4. The data show that 25 students (26.32) read e-resources on a daily basis and 30 students (31.58) read e-resources on a weekly basis, this is, the respondent group is over a half of all people who read e-resources in a regular manner. The remaining 20 students (21.05) reported that they use them on a monthly basis and 15 students (15.79) rarely made the use of these. It is also necessary to mention that 5 students (5.26) indicated that they never use e-resources. This kind of distribution suggests that the feedback of all positive involvement is present, however, it also means that there is a need to foster certain efforts to stimulate more frequent or non-user using it possibly by augmenting training, motivation, and availability.

Table 5: Impact of Information Literacy Training

Training Status	Effective Usage	Ineffective Usage	Total
Received Training	35	5	40
No Training	20	35	55
Total	55	40	95

Figure 5: Impact of Information Literacy Training

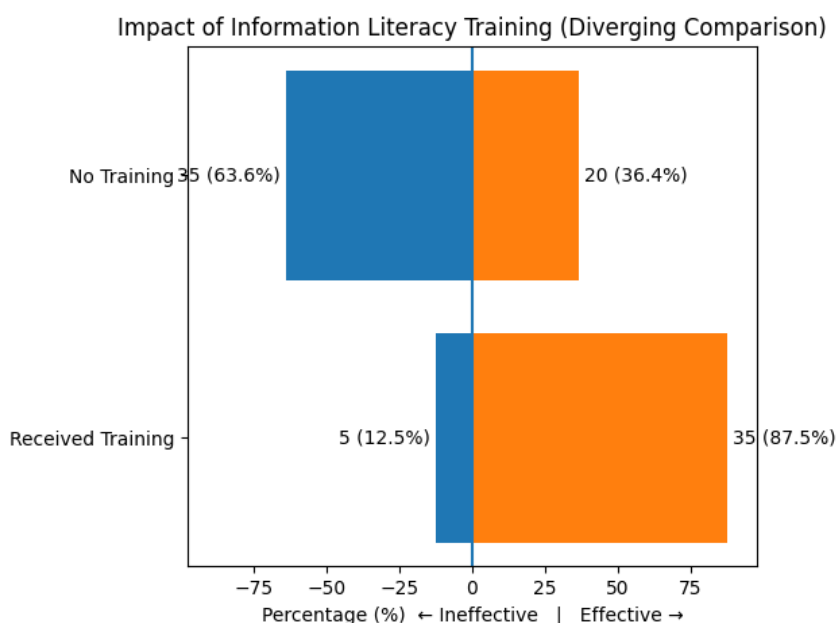
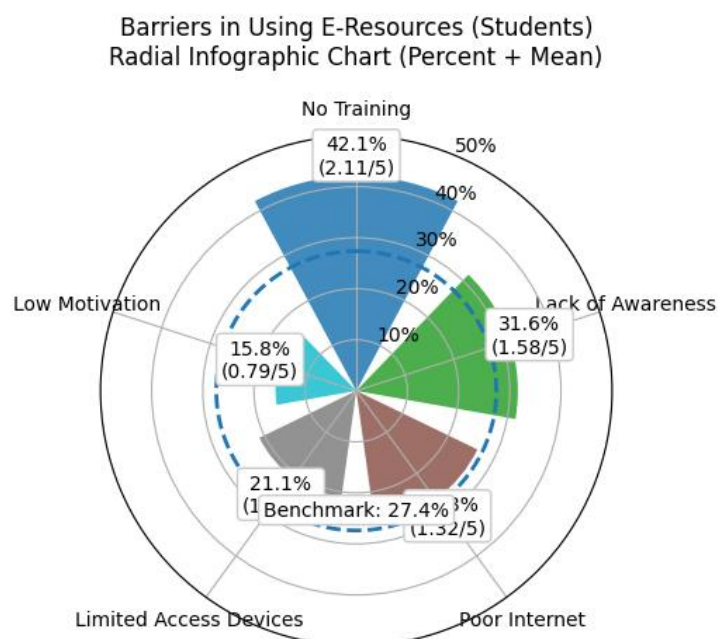


Table 5 indicates obvious picture in the use of e-resources by students who were trained on information literacy and the ones who did not get this information literacy training. Out of the trained students (n = 40), 35 (87.5) have been able to say that they used it effectively, and only 5 (12.5) have been able to say that they used it ineffectively. Conversely, within the students who received no training (n = 55), there was only 20 (36.36) who responded to having used it effectively and 35 (63.64) who responded to having used it ineffectively. This distribution means that there is a close correlation between the information literacy training and competent use of e-resources. The Chi-square outcome proves that the correlation is not only statistically significant but the relationship ($r = 30.48$, $df = 1$, $p < 0.05$) is also statistically significant. Thus, the null hypothesis is not accepted, which states that training on information literacy positively influences the competent use of e-resources.

Table 6: Barriers in Using E-Resources

Barrier	No. of Responses	Percentage (%)
Lack of Awareness	30	31.58
Poor Internet	25	26.32
Limited Access Devices	20	21.05
No Training	40	42.11
Low Motivation	15	15.79

Figure 6: Barriers in Using E-Resources



Tables 6 and 7 indicate the prevailing barriers that impede the use and accessibility of electronic resources amongst students. The highest percentage response was the lack of training reported by 40 students (42.11%). This shows the necessity of systematic training of how to use digital materials. Poor internet connectivity (26.32) and a lack of awareness (31.58) was also a major barrier and indicates instructions and infrastructures constraints. This has been faced by limited access to electronic equipment (21.05) and low motivation (15.79) by fewer students but still determinants of optimum use. These results indicate that the training-related and infrastructure-related issues should be overcome in order to enhance the effective use of e-resources.

The results also restate the fact that, informational and technical problems are also contributing factors affecting usage of e-resources by students. These barriers could be overcome by creating awareness through the promotional campaigns, infrastructure development and periodic information literacy seminars that could ensure moving the masses of people access the e-resources available in the libraries.

8.1 Test of Hypothesis

8.1.1. Hypothesis 1:

H⁰: There is no significant association between information literacy training and effective use of e-resources among students.

H¹: There is a significant association between information literacy training and effective use of e-resources among students.

Test Applied: Chi-square (χ^2) test

Data Source: Table 5 – Impact of Information Literacy Training

Training Status	Effective Usage	Ineffective Usage	Total
Received Training	35	5	40
No Training	20	35	55
Total	55	40	95

Calculated χ^2 value: 30.48

Degrees of freedom (df): 1

Significance level (α): 0.05

Critical value (χ^2 at $df=1$, $\alpha=0.05$): 3.841

Interpretation:

The calculated chi-square value, $\chi^2 (1, N = 95) = 30.48$, is greater than the critical value of 3.841 at $\alpha = 0.05$. Therefore, the null hypothesis (H_0) is rejected. This indicates that there is a statistically significant association between information literacy training and effective use of e-resources among students.

Conclusion: Training in information literacy is statistically significant in influencing the ability of the students to make good use of electronic resources.

8.1.2. Hypothesis 2:

H^0 (Null Hypothesis):

There is no significant difference in the awareness and accessibility of e-resources between undergraduate and postgraduate students.

Test Applied: Chi-square (χ^2) test

The follow-up on Table data will be based on Table 2 of academic level totals and Table 3 of overall awareness:

Academic Level	Aware of E-Resources	Not Aware	Total
Undergraduate	50	5	55
Postgraduate	32	8	40
Total	82	13	95

Calculated χ^2 value: 4.06

Degrees of freedom (df): 1

Significance level (α): 0.05

Critical value (χ^2 at $df=1$, $\alpha=0.05$): 3.841

Interpretation:

The calculated chi-square value, $\chi^2 (1, N = 95) = 4.06$, exceeds the critical value of 3.841 at $\alpha = 0.05$. Therefore, the null hypothesis (H_0) is rejected. This indicates that there is a statistically significant difference in awareness of e-resources between undergraduate and postgraduate students.

Conclusion: There is a statistically significant difference in the awareness of e-resources between undergraduate and postgraduate students.

9. FINDINGS OF THE STUDY

This paper analyzes access of electronic resources among the students and how information literacy can enhance them to use them effectively and particularly undergraduates and postgraduate learners in Indore Division. The key conclusions are as follows:

- The awareness regarding the e-resources in their library is high because 82 students (86.32) out of 95 respondents expressed having the knowledge of their availability in their libraries, and 13 students (13.68) expressed being not aware of the availability of such resources.
- Over a half of the students said that they used e-resources regularly: 25 students (26.32) used it on a daily basis and 30 students (31.58) used it on a weekly basis. Nevertheless, 15 (15.79) and 5 (5.26) students rarely used and never used e-resources, respectively indicating that there is still a section of the consumers who are inactive or low users.
- Information literacy training was strongly related with effective usage. Out of the trained students, 87.5% made good use of e-resources but out of untrained students, only 36.36% made good use of e-resources. The statistical significance of this difference was found ($\chi^2 = 30.48, p < 0.05$).
- As well, there was statistically significant difference between the awareness of e-resources of both undergraduate and postgraduate in terms of e-resource awareness ($\chi^2 = 4.06, p < 0.05$) where the undergraduates were more aware of e-resource awareness.
- The major obstacles that were reported included; lack of training (42.11), lack of awareness (31.58), and lack of internet connectivity (26.32), which implied an instructional as well as infrastructural restraint.
- Inter-academic level comparisons indicated mixed use patterns, in that there was no significant difference in overall use but there was a slightly higher tendency towards frequent use with undergraduates.

All in all, the results can be summarized as a positive correlation between information literacy and effective usage of e-resources, which implies that the higher the information literacy level, the more likely the students of a specific institution will use the digital resources in their studies effectively.

10. CONCLUSION

The paper evaluated how information literacy enhances awareness and adequate utilization of electronic resources in academic libraries within the Indore Division. The findings demonstrate that most students have heard about e-resources, but the frequent and successful use cannot be achieved without orderly information literacy instruction. The Chi-square test affirmed the statistically significant relationship between training and effective e-resource usage wherein it was identified that, the trained student are better confident and capable of accessing, searching, and utilising digital resources compared to the untrained students. Comparable dissimilarity in the awareness of the undergraduate and postgraduate students, as may be encountered in the study also casts doubt of an unequal exposure and participation in the scholastic levels. Moreover, other significant barriers like a deficiency of training, insufficient awareness, bad internet connectivity and insufficient access of devices are also limiting the best use. In general, the results indicate that the availability of e-resources is not enough, but incorporating information literacy into the academic support systems and enhancing the research and academic outcomes of students is the key to the maximum academic usefulness of the e-resources and the encouragement of the autonomous learning.

11. RECOMMENDATIONS

- Based on the findings of the study, the specified practical recommendations can be provided to achieve better access and efficient utilization of e-resources by learners.
- Learning institutions should make structured information literacy training to undergraduate and postgraduate students in the school curriculum.
- They should also conduct repeated orientation and awareness activities to enlighten the students on the availability, accessibility, as well as, benefits of the e-resources.
- Digital infrastructure involves proper internet connectivity and adequate access terminals should be improved in institutions.
- Accessibility to e-resources: The e-resources must be made accessible to the user as in the form of easy to use portals, remote-logins, multi-lingual/subject specific navigation aids.
- Libraries should install feedback mechanisms and usage analytics to follow the utilization of e-resources such as an endless loop and introduce adjustments to the services in case of the need.
- In the case of the postgraduate students, they should be given special support aid in specialized workshop and refresher courses to improve on their digital literacy skills.
- Employees working in the faculty would need to make certain that they promote the use of e-resources in classroom and homework to foster academic interests.

- The barriers described in the lack of training, lack of awareness, and poor connectivity are critical points that should be addressed through the concerted efforts of the coordination between the library, IT, and the academic departments.

REFERENCES

- Glazunova, O., Mokriev, M., Kuzminska, O., Korolchuk, V., Morze, N., Varchenko-Trotsenko, L., & Zolotukha, R. (2023). Moodle tools for educational analytics of the use of electronic resources of the university's portal. *In Proceedings of the 1st Symposium on Advances in Educational Technology – Volume 2: AET* (pp. 444–451). SciTePress. <https://doi.org/10.5220/0010932700003364>
- Kumari, S. (2020). *Effectiveness of the concept of e-library in India*. <https://api.semanticscholar.org/CorpusID:213972153>
- Pakdaman, M., Moghadam, M. N., Dehghan, H. R., Dehghani, A., & Namayandeh, M. (2021). *Evaluation of the cost-effectiveness of virtual and traditional education models in higher education: A systematic review*. <https://api.semanticscholar.org/CorpusID:222015865>
- Rudraksha, G., Kona, R., & Chagari, S. (2021). *Use of electronic resources in selected university libraries in Andhra Pradesh: A study*. <https://api.semanticscholar.org/CorpusID:236128408>
- Ruzegea, M., & Msonde, S. (2021). University students' e-resource usage: Predictors, problems and practical implications. *International Journal of Education and Development using Information and Communication Technology (IJEDICT)*, 17(2), 104–119. <https://files.eric.ed.gov/fulltext/EJ1298155.pdf>
- Singh, K. (2020). *Awareness and use of e-resources among students of Punjabi University Patiala: A case study*. <https://api.semanticscholar.org/CorpusID:214573669>
- Talikoti, S. C. (2023). How to impact with electronic resources in academic libraries. *ShodhKosh: Journal of Visual and Performing Arts*, 4(2), 972–979. <https://doi.org/10.29121/shodhkosh.v4.i2.2023.1976>
- Vijayakumar, K. (2021). An analytical study on the use of electronic resources by the students and research scholars of Annamalai University, Tamil Nadu. *Asian Journal of Information Science and Technology (AJIST)*, 7(2), 62–64. <https://www.trp.org.in/wp-content/uploads/2018/01/AJIST-Vol.7-No.2-July-December-2017-pp.62-64.pdf>
- Wagay, J. A., & Dutta, S. (2020). Utilization of electronic resources: An analysis of awareness and perception of users of Kashmir University. *Information Discovery and Delivery*, 52(2), 138–148. <https://doi.org/10.1108/IDD-08-2022-0083>