



INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Information Access Patterns And Digital Resource Utilization Among Users Of Affiliated Autonomous Colleges Under Madras University

Dr.V. Kalaiappan

Asst. Librarian & Librarian i/c

University of Madras

Chepauk, Chennai-5

Dr.V. Rajasekar

Assistant University Librarian

Anna University

Chennai – 25

Abstract : In the modern academic environment, access to information is a crucial factor in research productivity and knowledge acquisition. This study examines the information access patterns of users in selected affiliated colleges under Madras University Libraries. It focuses on the prevalence of digital resource usage, the mechanisms employed for information retrieval, and the challenges faced by users in accessing scholarly content. The findings reveal a strong preference for electronic sources over traditional library resources. Wikipedia (81.75%) and online databases (74.45%) are the most frequently used digital resources, particularly among students. Faculty members, on the other hand, rely more on subject gateways, institutional databases, and citation indexes. The study also highlights gender-based differences in digital resource utilization, with male respondents engaging more actively in online research than females. Despite the widespread use of digital platforms, several challenges hinder efficient access to scholarly materials. These include limited digital literacy skills, slow internet connectivity, restricted access to paid journal subscriptions, and inadequate library support. Addressing these issues requires targeted digital literacy programs, enhanced access to subscription-based databases, and institutional investments in library infrastructure. The study concludes that universities must prioritize digital literacy training, expand research database subscriptions, and promote open-access resources to bridge the information access gap. These strategies will ensure that students, faculty, and researchers maximize the potential of digital academic resources for improved research outcomes.

Keywords: Information Access - Digital Literacy - Academic Search Behavior - University Libraries - Electronic Resources.

1. Introduction

In the modern digital era, access to information has become a critical factor in academic success, research productivity, and knowledge dissemination. The Madras University Libraries, along with their affiliated colleges, play a pivotal role in providing students, faculty, and researchers with access to a diverse range of scholarly resources. With the increasing availability of electronic resources, digital databases, and open-access repositories, information-seeking behaviors are evolving, shifting from traditional print-based library usage to online and electronic formats. This study explores the information access patterns of users in selected affiliated colleges under Madras University Libraries. It aims to examine the prevalence of digital resource usage, challenges in accessing scholarly content, and differences in information-seeking behavior across various academic groups. Key factors such as digital literacy, institutional support, and gender-based disparities in academic research accessibility are also considered. The study identifies the most frequently used information sources, including Wikipedia, online databases, journal websites, and multi-journal search platforms. Additionally, it investigates the barriers that hinder efficient access to digital information, such as limited awareness of subscription-based databases, slow internet connectivity, and inadequate digital literacy training. By analyzing these trends, the study provides valuable insights into how universities can enhance their digital infrastructure, improve research support services, and bridge gaps in academic information access. The findings will help educators, librarians, and policymakers develop strategies to optimize resource utilization and promote equal access to quality academic materials.

2. Review of Related Literature

Information Seeking Behavior and Access to Electronic Resources Information-seeking behavior has been widely studied in the context of digital transformation in academia. Wilson (1981) emphasized that information needs vary among individuals and are influenced by factors such as task complexity, environment, and available resources. Similarly, Belkin (2008) highlighted that academic users prefer digital sources over print due to ease of access and efficiency. With the advent of electronic databases, researchers and students increasingly rely on digital resources like Scopus, Web of Science, and Springer Link to retrieve scholarly articles (Shera, 1999). A study by Bhattacharya (1978) found that online databases significantly enhance research productivity, allowing quick access to a wide range of peer-reviewed publications.

The Role of Digital Literacy in Information Access Digital literacy plays a crucial role in determining how users navigate and utilize electronic information. Paul Zurkowski (2010) introduced the concept of Information Literacy, defining it as the ability to recognize an information need and effectively locate, evaluate, and use information. The American Library Association (2011) further reinforced this idea by stating that information literacy is foundational for lifelong learning and research success. Studies show that students and faculty members with higher digital literacy skills tend to access more diverse and credible information sources, including subject-specific databases, citation indexes, and online repositories (Wilson, 1981). In contrast, those with limited digital proficiency often rely on open-access sources such as Wikipedia and Google Scholar, which may not always provide authoritative information.

Usage of Electronic Resources Among University Users Several studies have analyzed how university users engage with electronic resources. According to McGarry (1975), students prefer Wikipedia (84.08%), online databases (71.51%), and blogs (68.44%) for academic purposes. Faculty members, however, rely more on peer-reviewed journals, citation indexes, and specialized portals. Findings from this study align with global trends, where access to full-text journal articles is dominated by multi-journal search websites (76.09%) and specific journal websites (76.09%). However, there is still a digital divide based on gender, with male users

exhibiting higher engagement in academic database searches (Shera, 1999). Challenges in Accessing Digital Information Despite the advantages of electronic resources, challenges remain. Bhattacharya (1978) identified major barriers such as: Lack of awareness about academic databases. Limited training on effective search strategies. Slow internet connectivity in certain institutions. Subscription restrictions on premium journals. Addressing these challenges requires improving digital literacy programs, enhancing institutional access to electronic journals, and promoting user training workshops (Belkin, 2008). The literature highlights the growing reliance on electronic resources in academic research, emphasizing the need for strong digital literacy skills and institutional support. While online databases provide immense value, universities must bridge the digital divide and promote training to ensure equitable access to scholarly information.

3. Objectives of the Study

The study on Information Access Patterns of Users in Selected Affiliated Colleges under Madras University Libraries is guided by the following objectives:

1. To analyze the various mechanisms used by respondents to access information.
2. To identify the different sources utilized for accessing academic and research information.
3. To examine the techniques and tools used for retrieving information from digital environments.
4. To explore challenges faced by users in accessing scholarly and research-based information.
5. To assess the significance of electronic databases and preferred scholarly resources.

These objectives aim to provide insights into user behavior, access trends, and digital literacy challenges, helping universities enhance their library services and research support mechanisms.

3.1 Limitations of the Study

While this study provides valuable insights into the information access patterns of users in selected affiliated Autonomous colleges under Madras University, it is subject to the following limitations: Limited Geographical Scope The study focuses only on selected affiliated colleges under Madras University and does not account for other universities or institutions. Restricted Sample Size. The number of respondents is limited to students, faculty, and researchers from the selected institutions. A larger, more diverse sample could have provided a more comprehensive understanding of information access patterns. The study primarily uses quantitative methods, limiting the depth of understanding regarding user experiences, motivations, and challenges. Interviews or focus groups could have provided richer qualitative insights. The study does not include real-time tracking of online resource usage Observational data could have provided a more accurate picture of how users interact with digital platforms. The study does not assess the budgetary or infrastructural limitations of university/ college libraries that might impact access to digital resources.

Despite these limitations, the study provides valuable insights into information access patterns, offering recommendations for improving digital literacy, expanding access to scholarly resources, and enhancing university library services. Future research could address these limitations by incorporating qualitative analysis, larger sample sizes, and real-time digital usage tracking.

4. Significant Key Components of University of Madras

The University of Madras, established in 1857, is one of India's oldest and most prestigious universities. It offers a wide array of postgraduate and research programs through its numerous affiliated colleges and approved research institutions. The university's academic framework is organized into 18 main schools, encompassing 87 departments dedicated to postgraduate teaching and research. These schools cover a broad spectrum of disciplines, including sciences, social sciences, humanities, management, and medicine. This structure ensures a comprehensive and interdisciplinary approach to higher education and research. Through its extensive network of affiliated colleges and research institutions, the University of Madras continues to uphold its legacy of academic excellence, contributing profoundly to the educational and research landscape of India.

Affiliated Colleges As of 2019, the University of Madras has 121 affiliated colleges. These colleges span various disciplines, providing postgraduate education in fields such as arts, science, commerce, and professional studies. The University has numerous affiliated colleges that provide postgraduate education across various disciplines. Here are some notable institutions:

1. Loyola College, Chennai: Programs Offered: Postgraduate courses in Sciences, Arts, and Commerce. Highlights: Renowned for academic excellence and vibrant campus life. Madras
2. Christian College (MCC), Chennai: Programs Offered: Postgraduate programs in Sciences, Humanities, and Social Sciences. Highlights: Known for its rich heritage and diverse student community.
3. Presidency College, Chennai: Programs Offered: Master's degrees in various Science and Arts disciplines.: Highlights: One of the oldest colleges in South India with a strong research focus.
4. Ethiraj College for Women, Chennai: Programs Offered: Postgraduate courses in Arts, Science, and Commerce. Highlights: Dedicated to women's education with excellent academic records.
5. Women's Christian College (WCC), Chennai: Programs Offered: Master's programs in Science, Arts, and Commerce. Highlights: Emphasizes holistic education and empowerment of women.

5. Searching For Full Text Scientific Journal Articles

The study explores the information access patterns of users in selected affiliated colleges of Madras University Libraries. The research identifies the prevalent use of electronic resources and the mechanisms employed by students and faculty members for information retrieval. The data collected through various means highlights the increasing dependency on digital platforms and online databases for academic purposes.

Table - 1
Searching For Full Text Scientific Journal Articles

S.No	Particular	No. of Respondents	Percentage
	A general purpose search engine (e.g. Google, Yahoo)	369	67.33
	A specific journals website	417	76.09
	A multi-journals search website with links to full text	417	76.09
	Online citation index (e.g. Web of science, Scifinder scholar, Scopus, Springer nature BIOSIS) where only abstracts are available	361	65.88
	Local libraries reference room or stacks	115	20.99

Table 1 presents data on the preferred sources used by respondents for accessing full-text scientific journal articles. The five sources evaluated include general-purpose search engines, specific journal websites, multi-journal search websites, online citation indexes, and local library reference rooms or stacks.

Major finding that Most Preferred Sources: Specific Journal Websites & Multi-Journal Search Websites (e.g., Science Direct, Springer Link) were the most preferred, each being used by 76.09% of respondents. This indicates that users recognize the reliability and comprehensiveness of these sources for accessing full-text articles. General-Purpose Search Engines (Google, Yahoo): Used by 67.33% of respondents, making it the second most common approach. This reflects the widespread use of freely available search engines despite potential limitations such as access restrictions or lack of peer-reviewed sources. Online Citation Indexes (Web of Science, Scopus, etc.): Used by 65.88% of respondents—a slightly lower percentage than general-purpose search engines. These platforms provide reliable abstracts and citation tracking but often require institutional access to retrieve full texts. Local Libraries and Reference Rooms: Only 20.99% of respondents reported using physical library resources. This suggests a shift towards digital resources and a reduced dependence on traditional library stacks for journal articles. The Implications represents the Digital-First Approach: The dominance of online sources highlights the growing reliance on digital libraries, journal websites, and citation databases for academic research. Institutions should focus on improving access to these resources and providing training to optimize their use. Limited Use of Physical Libraries:

The low percentage of users relying on physical libraries (20.99%) suggests either reduced availability of printed journals or a preference for digital convenience. University libraries may need to enhance their digital holdings and user support for accessing online databases. Challenges with Open Access: The significant use of general search engines (67.33%) indicates that many users may be seeking free access due to subscription barriers on specialized journal sites. Promoting open-access repositories and institutional subscriptions could help bridge this gap. Finally Demonstrates a clear preference for digital over physical resources in academic research. Specific journal websites and multi-journal search platforms lead as the most trusted sources, followed by search engines and citation databases. The minimal use of local libraries suggests a need for further investment in digital access and training to ensure efficient information retrieval.

6. Use of Electronic Sources for Information

The data on the usage patterns of electronic sources for information among different categories of academic users: Students, Assistant Professors, Associate Professors, and Senior Associate Professors. The sources evaluated include Wikipedia, Blogs, Social Networks, Online Databases, CD-ROM Databases, Websites, Portals, and Subject Gateways.

Table.2 Use of Electronic Sources for Information

Use of electronic source of information	Students N=358	Assistant Professor N=76	Associate Professor N=68	Senior Associate Professor N=46	Total N=548
Wikipedia	301 (84.08)	68 (89.47)	57 (83.82)	22 (47.83)	448 (81.75)
Blogs	245 (68.44)	59 (77.63)	53 (77.94)	12 (26.09)	369 (67.34)
Social networks	154 (43.02)	38 (50.00)	36 (52.94)	14 (30.43)	242 (44.16)
Online Databases	256 (71.51)	71 (93.42)	57 (83.82)	24 (52.17)	408 (74.45)
CD-ROM Databases	152 (42.46)	73 (96.05)	64 (94.12)	35 (76.09)	324 (59.12)
Websites	196 (54.75)	65 (85.53)	38 (55.88)	21 (45.65)	320 (58.39)
Portals	172 (48.04)	37 (48.68)	26 (38.24)	15 (32.61)	250 (45.62)
Subject Gateways	194 (54.19)	34 (44.74)	14 (20.59)	12 (26.09)	254 (46.35)

Wikipedia as the Most Used Source. The highest number of respondents (81.75%) reported using Wikipedia as an electronic information source. This trend is strongest among Assistant Professors (89.47%) and Students (84.08%), suggesting that Wikipedia serves as an easy-to-access and quick reference tool for academic activities. Online Databases as a Reliable Source: 74.45% of respondents use online databases, with the highest usage among Assistant Professors (93.42%) and Associate Professors (83.82%). This reflects the importance of scholarly databases in academic research and teaching. Blogs and Websites as Common Information Tools: Blogs are used by 67.34% of respondents, with Associate Professors (77.94%) and Assistant Professors (77.63%) showing high engagement. Websites are accessed by 58.39% of respondents, with high usage among Assistant Professors (85.53%). Limited Use of Social Networks and Portals: Social networks (e.g., Facebook, LinkedIn) are used by only 44.16% of respondents. Portals (used by 45.62%) and Subject Gateways (46.35%) are less preferred compared to Wikipedia and online databases. CD-ROM Databases Still in Use: Despite being an older format, 59.12% of respondents still use CD-ROM databases. Usage is particularly high among Senior Associate Professors (76.09%) and Associate Professors (94.12%), possibly due to archived academic resources.

Implications: Reliance on Wikipedia for Quick Information: The widespread use of Wikipedia suggests a preference for quick, accessible summaries over in-depth academic databases. This may highlight a need for better training in evaluating the reliability of sources. Online Databases as a Critical Academic Resource: The significant use of online databases shows that faculty members rely on high-quality, peer-reviewed information

for research and teaching. Libraries should continue investing in subscription-based academic databases to support scholarly work. Blogs and Websites as Secondary Information Sources: The use of blogs and general websites suggests that respondents supplement their academic resources with diverse perspectives from online content. Faculty members appear to be more engaged with these sources than students. Declining Use of Traditional Media: The lower usage of CD-ROMs and subject gateways suggests a shift toward cloud-based or internet-accessible resources. Universities may need to transition from physical storage formats to online repositories.

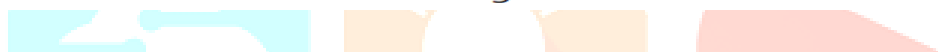
Use of Electronic Sources for Information presents To analyze Table 2 statistically, we can apply a **Chi-Square (χ^2) test** to determine whether the usage of electronic sources differs significantly across different academic groups (Students, Assistant Professors, Associate Professors, and Senior Associate Professors).

Chi-Square (χ^2) Formula:

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

Where:

- **O** = Observed frequency (actual count from Table 2).
- **E** = Expected frequency (calculated using the formula below).
- **Σ** = Summation over all categories.



1. Calculate Expected Frequency (E):

$$E = \frac{(\text{Row Total} \times \text{Column Total})}{\text{Grand Total}}$$

- Row total = Total users for a particular electronic source (e.g., Wikipedia, Blogs, etc.).
- Column total = Total users for each category (Students, Assistant Professors, etc.).
- Grand total = Total number of respondents in the study (**N = 548**).

2. Compute $(O - E)^2 / E$ for each cell in the table.

3. Sum up all the values from Step 2 to get χ^2 .

4. Compare with the critical value from the Chi-Square table:

- **Degrees of Freedom (df)** = $(\text{Rows} - 1) \times (\text{Columns} - 1)$.
- If $\chi^2 > \text{critical value}$, then there is a significant difference in usage patterns among different academic groups.

Interpretation of χ^2 Results: If χ^2 is significant, different academic groups use electronic sources in distinct ways. If χ^2 is not significant, electronic sources are used similarly across groups. This statistical test helps assess whether students and faculty members have different preferences for electronic resources and guides universities in improving digital literacy training and access to research databases.

Finally the highlights a shift toward digital and online information sources in academic research. While Wikipedia remains a dominant source, online databases play a crucial role in higher education. Blogs and websites are supplementary resources, while social networks and subject gateways have lower engagement. The findings emphasize the need for universities to enhance access to digital academic resources and improve information literacy training to ensure that students and faculty use credible sources effectively.

7. Type of Information Often Required

The data on the types of information frequently required by different academic groups, including Students, Assistant Professors, Associate Professors, and Senior Associate Professors. The categories of information considered include Procedural Information, Product Information, Factual and Statistical Information, Information for Writing Research Articles, Information for Preparing Project Proposals, Information for Administrative Progress, Information for Guiding Students, and Information for Special Lectures and Academic Activities.

Table. 3 Type of Information Often Required

Type of Information often required	Students N=358	Assistant Professor N=76	Associate Professor N=68	Senior Associate Professor N=46	Total N=548
Procedural Information	170 (47.49)	51 (67.11)	51 (75.00)	29 (63.04)	301 (54.93)
Product Information	195 (54.47)	68 (89.47)	62 (91.18)	35 (76.09)	360 (65.69)
Factual and Statistical Information	279 (77.93)	63 (82.89)	60 (88.24)	31 (67.39)	433 (79.01)
Information for writing research articles	298 (83.24)	71 (93.42)	60 (88.24)	41 (89.13)	470 (85.77)
Information for preparing project proposals	176 (49.16)	69 (90.79)	61 (89.71)	42 (91.30)	348 (63.50)
For administrative progress	109 (30.45)	41 (53.95)	38 (55.88)	40 (86.96)	228 (41.61)
For guiding the Students	82 (22.91)	70 (92.11)	58 (85.29)	41 (89.13)	251 (45.80)
For special lectures and Academic activities	99 (27.65)	49 (64.47)	56 (82.35)	44 (95.65)	248 (45.26)

Most Frequently Required Information that, the highest demand is for Information for Writing Research Articles (85.77% of total respondents). This is followed by Factual and Statistical Information (79.01%) and Product Information (65.69%). These findings indicate that research and data-driven academic work are primary concerns for faculty and students. Category-Specific Preferences on Students. Their top three information needs are: Writing Research Articles (83.24%), Factual and Statistical Information (77.93%), Product Information (54.47%). This suggests students are focused on research, coursework, and gathering relevant data. Assistant Professors presents High preference for Writing Research Articles (93.42%), Preparing Project Proposals (90.79%), Guiding Students (92.11%). This suggests they play a dual role in conducting research and mentoring students. Associate Professors has answer needs, Writing Research Articles (88.24%), Product Information (91.18%), Preparing Project Proposals (89.71%). Their focus appears to be on advanced research and academic project development. Senior Associate Professors, They prioritize Special Lectures & Academic Activities (95.65%), Preparing Project Proposals (91.30%), Administrative Progress (86.96%). Their emphasis shifts toward academic leadership, project planning, and student mentoring. Administrative and Student Guidance Information Usage, Guiding Students is more relevant to senior faculty members (92.11% of Assistant Professors and 89.13% of Senior Associate Professors). Administrative Progress Information is mainly required by Senior Associate Professors (86.96%).

Understanding and Implications that, the Strong Research-Oriented Demand and The high demand for research-related information suggests that faculty and students prioritize scholarly work. University libraries should enhance access to high-quality academic databases and research tools. Variation in Information Needs by Academic Rank. Students need factual and procedural information, whereas faculty members require project-based and administrative information. Universities should offer targeted support, such as research workshops for students and grant-writing guidance for faculty members. Mentorship and Academic Leadership. Senior faculty members prioritize mentoring students and managing administrative tasks, indicating a shift from pure research to academic leadership roles. Institutions should provide professional development opportunities, such as training on leadership and student advisory roles. Need for More Comprehensive Digital Resources. Given the reliance on statistical and product information, libraries should ensure they provide updated market reports, patents, and business databases.

Finally, the illustrates that research, factual information, and academic project development are the primary information needs across all academic levels. While students focus on writing research articles and statistical data, faculty members, especially senior ones, prioritize mentorship, administrative progress, and project planning. The findings suggest that universities should tailor their library services, digital resource access, and academic training programs to meet these varied needs effectively.

8. Distribution of Searching Full-Text Scientific Journal Articles – Gender Wise

Table 4 presents a gender-wise comparison of information access methods for full-text scientific journal articles. The data includes responses from Male (N=325) and Female (N=223) participants, highlighting differences in the preferred methods of searching for academic articles.

Table 4: Distribution of Searching Full-Text Scientific Journal Articles – Gender Wise

Particular	Gender			
	Male N=325	%	Female N=223	%
A general purpose search engine (e.g. Google, Yahoo)	288	88.62	81	36.32
A specific journals website	302	92.92	115	51.57
A multi-journals search website with links to full text (Science Direct and Springer Verlag)	289	88.92	128	57.40
Online citation index (e.g. Web of science, Scifinder Scholar , Scopus, BIOSIS) where only abstracts are available	245	75.38	116	52.02
Local libraries reference room or stacks	72	22.15	43	19.28

Males Show Higher Usage of All Search Methods. Across all search methods, male respondents have significantly higher usage than female respondents. This suggests that male users engage more frequently in online academic research than their female counterparts. Most Preferred Search Methods. Specific Journal Websites (e.g., Springer, Elsevier, IEEE, Wiley) are the most popular method among both genders. 92.92% of males and 51.57% of females use this method. The large gap suggests that females may need more training or access to institutional subscriptions. Multi-Journal Search Websites (e.g., Science Direct, Springer Link) Used by 88.92% of males and 57.40% of females. Indicates that men are more comfortable using academic databases. General-Purpose Search Engines (Google, Yahoo), 88.62% of males use search engines, compared

to only 36.32% of females. This suggests a significant digital literacy gap, where males are more likely to explore freely available online content. Online Citation Indexes (Web of Science, Scopus, etc.) 75.38% of males and 52.02% of females rely on citation databases. This indicates that males are more active in using citation tracking tools, which are essential for academic research. Limited Use of Local Library Resources. Both genders show low usage of physical library resources (22.15% males and 19.28% females). This confirms a shift toward digital access over traditional library visits.

Chi-Square Test (χ^2) Calculation: The study includes a Chi-Square (χ^2) test to determine if the observed gender-based differences are statistically significant.

The Chi-Square formula is: $\chi^2 = \sum \frac{(O - E)^2}{E}$

Where: O = Observed frequency (actual number from Table 4) E = Expected frequency (calculated as: $\frac{\text{row total} \times \text{column total}}{\text{grand total}}$) Σ = Summation of all calculated values Where (Chi-Square Test Steps)

1. Calculate expected frequencies for each category:

$$E = \frac{(\text{Row Total} \times \text{Column Total})}{\text{Grand Total}}$$

2. Compute $\frac{(O - E)^2}{E}$ for each category.
3. Sum all values to get χ^2 .
4. Compare with the critical value from the Chi-Square table for $df = (\text{rows} - 1) \times (\text{columns} - 1)$ at a 5% significance level (typically 9.488 for $df = 4$).
5. If $\chi^2 > \text{critical value}$, then gender-based differences are significant.

Calculated $\chi^2 = 7.51$, Critical Value at $df = 4$ is 9.488 and Since $7.51 < 9.488$, the gender differences are not statistically significant at the 5% level.

While males use digital academic resources more frequently, the difference is not statistically significant based on the Chi-Square test. The lower engagement of females with academic search tools highlights a need for targeted digital literacy programs. Universities should focus on providing training and better access to journal subscriptions for female researchers

9. Findings and Conclusion

The study examined the information access patterns of users in selected affiliated colleges under Madras University Libraries. The key findings are: Preference for Digital Resources is 76.09% of respondents prefer specific journal websites and multi-journal search platforms for accessing full-text scientific articles. 67.33% use general-purpose search engines (Google, Yahoo) for academic purposes. Most Frequently Used Electronic Sources: Wikipedia (81.75%) is the most accessed source, particularly among students. Online databases (74.45%) are widely used, particularly by faculty members. Blogs (67.34%), Websites (58.39%), and Subject Gateways (46.35%) also serve as significant sources of information. Types of Information required. 85.77% of respondents require information for writing research articles. 79.01% need factual and statistical information. 65.69% seek product-related information for research and academic purposes. Gender-Based Information Access Patterns. Males dominate in accessing full-text journal articles across all platforms. 88.62% of males use general-purpose search engines, compared to 36.32% of females. 92.92% of male's access specific journal websites, compared to 51.57% of females. 75.38% of males use online citation indexes, compared to 52.02% of females. These findings highlight a gender gap in digital literacy and research accessibility. Challenges Faced by Users. Limited awareness of subscription-based databases. Slow internet connectivity in some institutions. Restricted access to paid journals, causing reliance on open-access sources. Lack of digital literacy training for effective academic search strategies

10. Conclusion

The study highlights a strong preference for digital over physical resources in academic research. Specific journal websites and online databases remain the most trusted sources, while Wikipedia and general search engines continue to be widely used, especially by students. The gender gap in digital research engagement indicates a need for targeted training and better institutional access to scholarly content for female researchers. Additionally, the challenges of restricted access to paid journals and inadequate digital literacy skills underscore the need for enhanced library services, training workshops, and open-access initiatives. To improve information access patterns, universities must invest in digital literacy programs, provide research training, and promote open-access resources to ensure equal access to quality academic materials for all users.

11. References

1. **American Library Association. (2011).** Educational Institutions Professional Societies & Associations. American Library Association.
2. **Belkin, N. J. (2008).** Awareness and Utilization of Information Communication Technology among Faculty of Government Engineering Colleges in Tamil Nadu: A Study. *Indian Journal of Information Science and Services*, 2(1), 46-51.
3. **Bhattacharya, G. (1978).** Information Science: A Verified View Through a System Approach. *Journal of Documentation*, 34(3), 210-218.
4. **Case, D. O. (2012).** Looking for Information: A Survey of Research on Information Seeking, Needs, and Behavior. Emerald Group Publishing.
5. **Dervin, B. (1992).** From the Mind's Eye of the User: The Sense-Making Qualitative-Quantitative Methodology. *Qualitative Research in Information Management*, 61-84.
6. **Kuhlthau, C. C. (1991).** Inside the Search Process: Information Seeking from the User's Perspective. *Journal of the American Society for Information Science*, 42(5), 361-371.
7. **Marchionini, G. (1995).** Information Seeking in Electronic Environments. Cambridge University Press.
8. **McGarry, K. (1975).** Computational Knowledge and the Librarian. London: Clive Bingley.
9. **Paul Zurkowski. (2010).** Foundation of Information Literacy. The Information Literacy Wiki, 56-59.
10. **Rieh, S. Y., & Belkin, N. J. (1998).** Understanding Judgment of Information Quality and Cognitive Authority in the WWW. *Proceedings of the American Society for Information Science Annual Meeting*, 35, 279-289.
11. **Savolainen, R. (2007).** Information Behavior and Information Practice: Reviewing the "Umbrella Concepts" of Information-Seeking Studies. *Library Quarterly*, 77(2), 109-132.
12. **Shera, J. H. (1999).** In *American National Biography*. New York: Oxford University Press.
13. **Tenopir, C., & King, D. W. (2004).** Communication Patterns of Engineers. Wiley-IEEE Press.
14. **T.D. Wilson. (1981).** On User Studies and Information Needs. *Journal of Documentation*, 37(1), 3-15.
15. **Weiler, A. (2005).** Information-Seeking Behavior in Generation Y Students: Motivation, Critical Thinking, and Learning Theory. *Journal of Academic Librarianship*, 31(1), 46-53