Impact of Information Technology on Information-Seeking Behaviour among CMRIT Engineering Students in Karnataka

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Abstract

Information is a vital resource in the modern digital age, serving as a foundation for research, innovation, and academic advancement. This study explores the influence of Information Technology (IT) on the information-seeking behavior of engineering students at CMR Institute of Technology (CMRIT), Bengaluru. A descriptive survey method was employed, and data were collected from 180 valid respondents using a structured questionnaire. The findings reveal that IT tools are extensively utilised by students for academic and research purposes, with laptops and smartphones being the primary devices. The majority of students reported that IT enhances accessibility, collaboration, and efficiency in research activities. Overall, 79.4% of respondents expressed satisfaction with IT-based library services, reflecting a positive perception of digital learning environments. The study concludes with recommendations to strengthen IT infrastructure, enhance digital literacy, and improve user support systems for optimal use of technology in academic information-seeking.

1. Introduction

Information is the most precious commodity in today's information age. Information is the fourth human necessity after food, apparel, and housing. Information is crucial to higher education research. Individuals are more likely to take action in order to fulfill a need as soon as they become aware of a need for something. A variety of tactics and methods are employed. The same is true for the fulfilment of informational requirements. A person recognises the need for knowledge and understands that it is unlikely to come to him autonomously; hence, he must actively pursue it (Jadhav, 2017). Thus, learning and offering information resources and services to students and researchers requires a deeper understanding of their information demands and information-seeking behaviours. So, they can do R&D smoothly. Information-seeking behaviour is user perception research. Information science defines "information seeking behaviour" as the conduct of library users in seeking information to meet their needs. Librarians and other information service workers may better tailor their services and resources to consumers' information-seeking habits (Agosto & Hughes, 2005). Thus, library staff should foster a good link between user behaviour and need. User studies are crucial in this regard. In today's technologically advanced world, ICT is crucial for providing consumers with timely information. Usually shortened IT or ICT. ICT has transformed the library's organisation, functions, housekeeping, resources and services. ICT is now integrated into every aspect of the library, enhancing user services.

T.D. Wilson defines what he calls 'information behaviour' as, "those activities a person may engage in when identifying his or her own needs for information, searching for such information in any way, and using or transferring that information.

2. About CMR Institute of Technology (CMRIT) Library

With its Study Spaces, Research Assistance, and Reading, Learning, and Instructional Resources, CMRIT Central Library in the centre of campus fosters intellectual curiosity. The state-of-the-art ICT facilities promote excellence in teaching, learning, research, and extension. To acquire and develop new knowledge, user-focused facilities and services enable seamless access to resources and assess scholarly content. The 2400-square-meter CMRIT Central library occupies the second floor and two

wings. Its design gives natural light all day and a comfortable learning environment. Providing amenities, reading and learning tools, and seating for 200 users at once. WiFi, Internet, plug-ins, etc. VTU Consortia and Developing Library Network provide online access to key E-Journals and E-Books on Science and Technology, Management.

The CMR Group of Institute Libraries uses KOHA, an Integrated Library Management Software, for operations and resource sharing. CMRIT Central Library Faculty publications, homogenous data/reports, and non-traditional reading material are available via the Institutional Repository (IR). Centrally secure Fire alarms, CCTV, and RFID Gates offer much-needed security. Library staff are well-trained and qualified to assist users in finding academic and research materials.

3. Review of Literature

Dayananda (2021) examined the information needs and conduct of undergraduate students at the Wayamba University Library Network. The majority of users (59%) sought information for research. Most respondents felt the Internet is better for research. 70% of users said e-journals are the greatest source of knowledge, while 89% said electronic resources are more handy than print ones. 59% of consumers like library services. Khan & Khan (2020) examined the information-seeking behaviour of University of Peshawar research students. The research identifies information requirements, sources, resources, and impediments. It also shows that research students seek information on their subject, research challenge, research plan, publications, dissertations, theses, and current information. Research students have highlighted low internet access, inadequate ICT facilities, and insufficient library study space as impediments to accessing information.

Kumar (2018) examines how ICT technologies affect the information-seeking behaviour of users at the Tirunelveli District Central Library. This research also examines the ICT use patterns, demands, and future expectations of public library customers regarding ICT-based services. The questionnaire was provided to 125 library users of different types. Shanmugam & Shanmugamoorthy (2016) examined the information needs and seeking behaviour of faculty, research scholars, and students at 10 colleges by year of founding. The researcher used a well-structured questionnaire to gather data from postgraduate students, Research Scholars, and faculty members of Bharathiar University. This study

surveys PG students and research scientists. ICT-based resources and services store and access information electronically.

4. Objectives of the Study

i. To examine the role of Information Technology in shaping the information-seeking behavior of engineering students.
ii. To identify the preferred IT tools and online resources used for academic and research information.
iii. To analyze the digital literacy and information competency levels among engineering students.
iv. To explore the challenges faced by students in accessing and utilizing IT-based information sources.
v. To assess the overall impact of IT adoption on students' academic performance and research efficiency.

5. Methodology

The present research used a descriptive survey research approach to examine the influence of Information Technology (IT) on the information-seeking behaviour of engineering students at CMR Institute of Technology (CMRIT), Bengaluru, Karnataka. The study's population comprises undergraduate and postgraduate students from various engineering disciplines at CMRIT. We utilized a random sample procedure and sent out 200 surveys. We got 180 valid replies back and used them for analysis. Data were collected via a structured questionnaire. We used Microsoft Excel and SPSS software to analyze the data we obtained using descriptive and inferential statistical methods.

6. Data Analysis and Interpretation

The data collected from 180 valid responses out of 200 students at CMR Institute of Technology (CMRIT), Bengaluru, were analyzed using descriptive and inferential statistical methods. The findings revealed that Information Technology plays a vital role in shaping the information-seeking behavior of students.

6.1 Demographic Profile

A total of 180 valid responses were collected from engineering students of CMR Institute of Technology

(CMRIT), Karnataka. The demographic details of the respondents are presented below.

Table 1 : Demographic Profile of Respondents

Demographic Variable	Category	No. of Respondents	Percentage
Gender	Male	108	60%
	Female	72	40%
Age Group	Below 20	25	13.9%
	21–25	135	75%
	Above 25	20	11.1%
Year of Study	I Year	35	19.4%
	II Year	50	27.8%
	III Year	55	30.6%
	IV Year	40	22.2%
Branch	CSE	63	35%
	ECE	45	25%
	IT	36	20%
	MBA & MCA	36	20%

Out of 180 respondents, 60% were male and 40% were female, indicating a moderate gender gap among engineering students at CMRIT. The majority (75%) of respondents belong to the 21–25 years age group, suggesting that most participants are undergraduate students in their prime academic years. Regarding the year of study, the largest group was III-year students (30.6%), followed by II-year (27.8%), IV-year (22.2%), and I-year (19.4%) students. This reflects balanced participation across all academic levels, with slightly higher engagement from senior students.

In terms of academic discipline, Computer Science Engineering (35%) had the highest representation, followed by Electronics and Communication Engineering (25%), and both Information Technology and MBA/MCA programs contributed 20% each.

6.2 Usage of Information Technology Tools
6.3

The study reveals that most students actively use Information Technology tools for academic purposes, indicating strong digital adoption that supports effective learning, research, and information-seeking behavior in engineering education.

Table 2 : Usage of Information Technology Tools

Aspect	Category	Respondents	Percentage
Use of IT Tools for Academic Work	Yes	171	95%
	No	9	5%
Devices Used	Laptop	126	70%
	Smartphone	45	25%
	Tablet/Desktop	9	5%
Frequency of Internet Use (Academic)	Daily	144	80%
	Weekly	24	13.3%
	Occasionally	12	6.7%
Common Online Resources Used	Google Scholar	126	70%
	YouTube	108	60%
	E-Journals	99	55%
	MOOCs / Online Courses	72	40%

The data reveals that a vast majority of students (95%) actively use Information Technology (IT) tools for academic purposes, highlighting the deep integration of technology in learning environments at CMRIT. Only a minimal 5% of respondents reported not using IT tools, indicating near-universal adoption. Among the devices used, laptops are the most preferred (70%), signifying students' reliance on portable, versatile devices for research, assignments, and online learning. Smartphones (25%) are the secondary choice, primarily for quick searches or on-the-go access, while tablet/desktop usage (5%) remains limited. In terms of internet usage for academic purposes, a significant 80% of students use the internet daily, reflecting consistent engagement with digital resources. The weekly (13.3%) and occasional (6.7%) users form a smaller segment, likely due to course-specific demands or personal habits.

When analyzing the online resources preferred, Google Scholar (70%) emerges as the most frequently used academic search platform, followed by YouTube (60%), indicating the importance of audio-visual content for learning. E-journals (55%) show substantial academic engagement with scholarly material, while MOOCs/online courses (40%) highlight growing participation in self-paced, skill-based digital learning.

6.4 Perception toward IT and Information-Seeking Behavior

The study shows that students have a positive perception toward the use of Information Technology in information-seeking. Most respondents agree that IT enhances accessibility, efficiency, and collaboration, making academic and research activities easier and more effective. However, a few 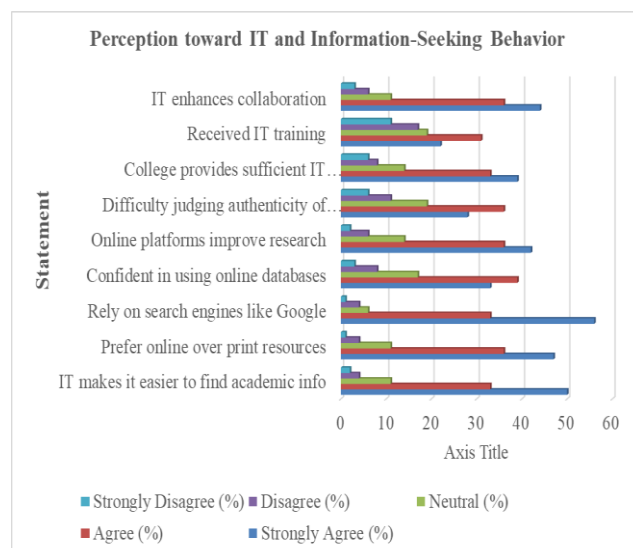face challenges in evaluating the authenticity of online information and require additional training to improve their digital literacy and confidence in using advanced databases.

Table 3 : Perception toward IT and Information-Seeking Behavior

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
IT makes it easier to find academic info	90 (50%)	60 (33%)	20 (11%)	7 (4%)	03 (2%)
Prefer online over print resources	85 (47%)	65 (36%)	20 (11%)	8 (4%)	02 (1%)
Rely on search engines like Google	100 (56%)	60 (33%)	10 (6%)	8 (4%)	02 (1%)
Confident in using online databases	60 (33%)	70 (39%)	30 (17%)	15 (8%)	05 (3%)
Online platforms improve research	75 (42%)	65 (36%)	25 (14%)	10 (6%)	05 (2%)
Difficulty judging the authenticity of online info	50 (28%)	65 (36%)	35 (19%)	20 (11%)	10 (6%)
The college provides sufficient IT infrastructure	70 (39%)	60 (33%)	25 (14%)	15 (8%)	10 (6%)
Received IT training	40 (22%)	55 (31%)	35 (19%)	30 (17%)	20 (11%)
IT enhances collaboration	80 (44%)	65 (36%)	20 (11%)	10 (6%)	05 (3%)

The table reveals an overall positive perception toward Information Technology (IT) in academic work among students at CMRIT.A strong majority (83%) agree that IT makes it easier to find academic information, confirming that digital tools are essential for efficient information retrieval. Similarly, 83% of respondents prefer online resources over print, reflecting a generational shift toward digital learning habits.A notable 89% rely on search engines like Google, indicating dependence on quick-access online platforms for academic information. However, slightly fewer students (72%) expressed confidence in using online databases, showing that while they are comfortable with general searches, some may need additional training in specialized academic tools.

Most respondents (78%) agreed that online platforms improve research quality, as they provide access to a wide range of scholarly and multimedia materials. However, 64% also reported difficulty in judging the authenticity of online information, revealing a critical gap in information literacy and evaluation skills.Regarding institutional support, 72% of students believe their college provides adequate IT infrastructure, but only 53% reported receiving IT training, indicating a need for more structured digital literacy programs. Lastly, 80% agreed that IT enhances collaboration, showing that students recognise the value of digital platforms for teamwork, communication, and shared learning experiences.

Perception toward IT and Information-Seeking Behavior

6.4 Challenges Faced by Students

The data shows that a significant portion of students face multiple challenges in using IT for information-seeking.

Table 4 : Challenges in Using Information Technology for Information-Seeking

Challenges	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Lack of updated materials	70 (27.5%)	95 (37.3%)	50 (19.6%)	25 (9.8%)	15 (5.9%)
Limited access to e-resources	60 (23.5%)	85 (33.3%)	60 (23.5%)	30 (11.8%)	20 (7.9%)
Difficulty judging authenticity of online information	55 (21.6%)	90 (35.3%)	45 (17.6%)	40 (15.7%)	25 (9.8%)
Lack of IT training or guidance	65 (25.5%)	80 (31.4%)	45 (17.6%)	35 (13.7%)	25 (9.8%)
Poor internet connectivity or technical issues	50 (19.6%)	70 (27.5%)	40 (15.7%)	55 (21.6%)	35 (13.7%)

Lack of updated materials (64.8%) and limited access to e-resources (56.8%) are the most common concerns, indicating a need to improve digital collections and subscriptions. Around 57% of respondents agreed that judging the authenticity of online information is difficult, highlighting the importance of developing digital literacy skills. Lack of IT training (56.9%) further suggests that students require more structured guidance to navigate online databases effectively. Technical problems, including poor connectivity (47.1%), remain another key obstacle.

6.5 *Information Technology in Information-Seeking*

The study indicates that Information Technology plays a vital role in shaping students' information-seeking behavior.
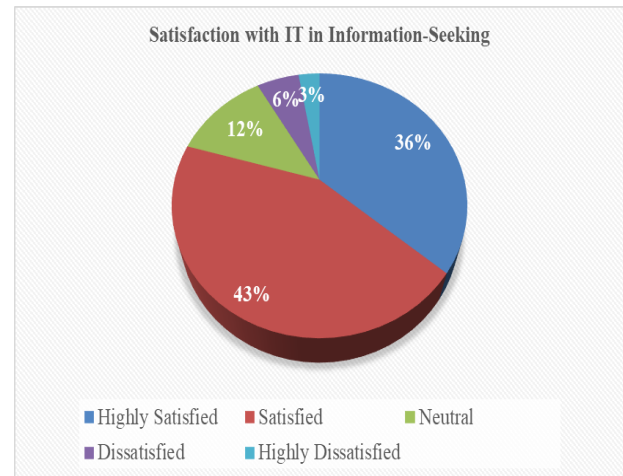
Table 5 : Overall Satisfaction with Information Technology in Information-Seeking

Satisfaction Level	No. of Respondents	Percentage
Highly Satisfied	65	36.1%
Satisfied	78	43.3%
Neutral	22	12.2%
Dissatisfied	10	5.6%
Highly Dissatisfied	5	2.8%
Total	**180**	**100%**

The data indicates that the majority of respondents (79.4%) are satisfied or highly satisfied with IT-based resources and services provided for academic use. Specifically, 43.3% of students expressed satisfaction, while 36.1% reported being highly satisfied, suggesting a generally positive perception

of the technological facilities and online resources available.

A smaller portion (12.2%) maintained a neutral stance, possibly reflecting moderate or inconsistent experiences with IT support or accessibility. Only 8.4% (combining dissatisfied and highly dissatisfied) expressed negative views, which might be due to occasional technical issues, lack of training, or connectivity challenges.

Overall, the findings suggest that the integration of Information Technology into academic practices has been well received by most students, though there remains scope for improvement in training, infrastructure, and resource awareness to convert neutral and dissatisfied users into fully satisfied ones.

6.6 *Students' Perception of Library Professionals' Support*
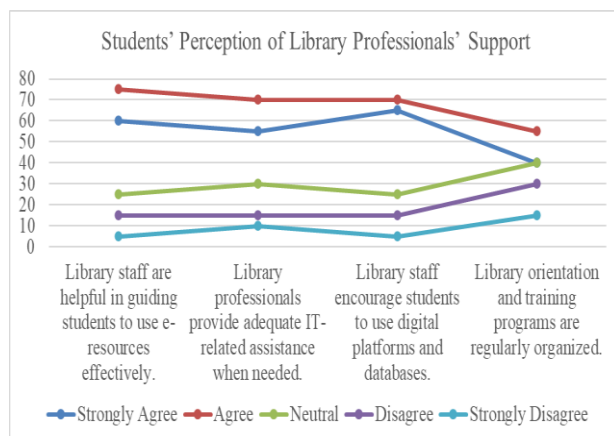
The interpretation reveals that most students hold a favorable perception of library professionals' support in using IT-based resources. Respondents appreciated

the guidance and encouragement provided by library staff in accessing e-resources and digital databases.

Table 6 : Students' Perception of Library Professionals' Support

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Library staff are helpful in guiding students to use e-resources effectively.	60 (33.3%)	75 (41.7%)	25 (13.9%)	15 (8.3%)	05 (2.8%)
Library professionals provide adequate IT-related assistance when needed.	55 (30.6%)	70 (38.9%)	30 (16.7%)	15 (8.3%)	10 (5.5%)
Library staff encourage students to use digital platforms and databases.	65 (36.1%)	70 (38.9%)	25 (13.9%)	15 (8.3%)	05 (2.8%)
Library orientation and training programs are regularly organized.	40 (22.2%)	55 (30.6%)	40 (22.2%)	30 (16.7%)	15 (8.3%)

A majority (75%) of respondents agreed that library professionals are helpful and approachable when students need assistance with e-resources and databases. Around 70% felt encouraged by staff to use online resources, indicating proactive involvement from library professionals. However, only 52.8% agreed that formal IT training or orientation programs are conducted regularly, suggesting an area for improvement in systematic skill development. About 11% of students disagreed or strongly disagreed on all counts, pointing to inconsistency in service delivery or lack of awareness among some users.

Students' Perception of Library Professionals' Support

Overall, the findings suggest that library professionals play a crucial and positive role in assisting students, but there is scope to strengthen regular IT training and user awareness initiatives.

Suggestions

- Improve IT Infrastructure: Strengthen internet connectivity, upgrade digital equipment, and ensure uninterrupted access to online resources in the library and campus.
- Conduct Regular Training Programs: Organize workshops on using e-resources, databases, and information evaluation to improve students' digital literacy and research skills.
- Enhance Library Staff Support: Encourage library professionals to provide continuous guidance, IT assistance, and personalized help through user orientation and helpdesk services.
- Increase Awareness of E-Resources: Promote available online journals, e-books, and databases through library orientations, posters, and digital campaigns to increase usage.
- Collect User Feedback Periodically: Conduct regular surveys to assess satisfaction levels and make necessary improvements in IT-based library services.

Conclusion

The study concludes that Information Technology has become an integral part of students' academic and research activities, significantly shaping their information-seeking behavior. The findings show that most engineering students at CMRIT actively use IT tools to locate, evaluate, and utilize academic information, indicating a strong adaptation to digital learning ecosystems. Students perceive IT as a facilitator of efficiency, accessibility, and collaboration in information-seeking, underscoring its role in enhancing academic performance and research quality.

Despite the positive outcomes, certain barriers persist, including insufficient IT training, limited access to updated digital resources, and occasional technical constraints. Library professionals play a key role in supporting users through guidance and motivation, though more structured orientation and training programs are necessary to strengthen digital competencies.

Overall, the integration of IT in academic libraries has proven beneficial for students' information-seeking practices. By addressing existing challenges through improved infrastructure, training, and awareness initiatives, institutions like CMRIT can further enhance students' engagement with technology-driven information environments and foster a culture of independent, informed, and innovative learning.

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