



Original Article

Digital Information Technology and Information Communication Technology Based Information Search Patterns of Students and Research Scholars: A Study of Science, Engineering and Pharmacy Colleges Affiliated to Sant Gadge Baba Amravati University, Maharashtra

Dr. Chetan V. Shirbhate

Research Scholar, Department of Library & Information Science,
Sant Gadge Baba Amravati University, Amravati, Maharashtra

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Corresponding Author:
Dr. Chetan V. Shirbhate

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Abstract:

Digital Information Technology (DIT) and Information Communication Technology (ICT) have transformed information access, retrieval and use in academic libraries. This study examines the DIT- and ICT-based information search patterns of students and research scholars in Science, Engineering and Pharmacy colleges affiliated to Sant Gadge Baba Amravati University, Maharashtra. The study covered 161 colleges across Amravati, Akola, Buldhana, Washim and Yavatmal districts. A total of 6,000 questionnaires were distributed, and 3,989 usable responses were received, yielding a response rate of 66.48%. Data were collected through a structured questionnaire, supported by literature review and informal interactions with librarians, and analysed using MS Excel and IBM SPSS with Chi-square and Kruskal-Wallis tests. Findings indicate high familiarity with Internet and SMS technologies. DIT and ICT were widely used for examinations, assignments, academic projects and research activities. Mobile phones were the dominant access point (99.5%), while PDF was the preferred reading format (82%). The study recommends systematic information-literacy and ICT training.

Keywords: Digital Information Technology, Information Communication Technology, Information Search Behaviour, Academic Libraries, Information Literacy, Electronic Resources, Research Scholars, Students, Sant Gadge Baba Amravati University.

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Introduction:

Information and Communication Technology has significantly transformed academic libraries from traditionally print-oriented institutions into technology-enabled information centres. Library automation, Web-OPACs, electronic databases, e-books, e-journals, institutional repositories, digital libraries and remote information services have changed how users discover and access information.

The uploaded thesis identifies the contemporary librarian's role as extending beyond conventional library skills to include ICT-related competencies and technological capabilities. DIT and ICT facilitate the acquisition, organisation, storage, retrieval and dissemination of information and support a variety of modern library services.

The growth of digital resources has also changed users' expectations. Students and research scholars increasingly expect information to be available through mobile phones, laptops, email and other digital platforms. Consequently, understanding users' information-search behaviour is essential for designing effective academic library services.

The present research therefore focuses on the information search patterns of students and research scholars in Science, Engineering and Pharmacy colleges affiliated with Sant Gadge Baba Amravati University.

Research Problem:

The study investigates how students and research scholars use DIT and ICT tools and services for academic and research information requirements.

The principal research questions were:

- What is the level of knowledge of DIT and ICT tools among students and research scholars?
- For what purposes are DIT and ICT used?
- What are the attitudes of students and research scholars towards DIT and ICT?
- What training methods are preferred for accessing DIT- and ICT-based resources and services?
- What barriers are experienced while using DIT- and ICT-based resources and services?

Objectives of the Study:

The study aimed to:

1. Identify the level of knowledge of DIT and ICT tools among students and research scholars.
2. Examine awareness of DIT- and ICT-based resources and services.
3. Examine users' attitudes towards DIT and ICT.
4. Identify the purposes for which DIT and ICT resources and services are used.
5. Determine preferred DIT and ICT training methods.
6. Identify barriers to using DIT- and ICT-based information resources and services.
7. Assess satisfaction with DIT and ICT facilities.
8. Examine awareness of DIT and ICT tools among the respondents.

Scope of The Study:

The study covered Science, Engineering and Pharmacy colleges affiliated with Sant Gadge Baba Amravati University across five districts—Amravati, Akola, Buldhana, Washim and Yavatmal. The study included 161 colleges and UG, PG students and research scholars.



Research Methodology:

The study adopted an exploratory-cum-descriptive research design. A census sampling approach was used, and 6,000 questionnaires were distributed, of which 3,989 responses were received, resulting in a 66.48% response rate. Primary data were collected through structured questionnaires, while secondary data were gathered from books, journals, websites and databases. The collected data were analysed using MS Excel and IBM SPSS, employing statistical techniques such as Chi-square and Kruskal-Wallis tests, with findings presented through tables, graphs and charts.

Demographic Profile:

The demographic profile of the study provides a broad representation of students and research scholars from Science, Engineering and Pharmacy colleges affiliated with Sant Gadge Baba Amravati University. A total of 3,989 respondents participated in the study, representing different types of colleges and academic levels. Based on the type of institution, 35% of respondents belonged to self-financed colleges, followed by 34% from government colleges and 31% from government-aided colleges. The academic category of respondents indicates that 38% were undergraduate students, 37% were postgraduate students, and 25% were research scholars, showing a balanced representation of different levels of higher education. In terms of gender, 54% of the respondents were male and 46% were female, indicating relatively balanced participation. The inclusion of respondents from government, government-aided and self-financed institutions provides a diverse perspective on the use of Digital Information Technology (DIT) and Information

Communication Technology (ICT). Similarly, the participation of undergraduate and postgraduate students along with research scholars enables the study to examine information search behaviour across different academic requirements and research needs. Overall, the demographic distribution demonstrates that the study incorporated a diverse cross-section of users and provides a comprehensive basis for understanding their information search patterns, awareness, use and expectations related to DIT and ICT-based resources and services in academic libraries.

Attitude Towards DIT and ICT:

The respondents showed a generally positive attitude towards the use of DIT and ICT for academic and research activities. About 58% agreed or strongly agreed that DIT and ICT help in collecting academic and research information, while 54% recognised their usefulness in providing remote access to information resources. Further, 59% agreed or strongly agreed that these technologies help users find relevant information, and 56% felt that they help them remain updated with the latest developments in their respective subjects. Overall, the findings indicate that respondents consider DIT and ICT important tools for effective information access, retrieval and academic work. However, the study also highlights that infrastructural limitations remain a significant concern, indicating the need for improved digital facilities and support services in academic libraries.

Frequency and Place of Access:

The study found that DIT and ICT had become an integral part of users' academic information behaviour. 52% of respondents



accessed DIT and ICT resources daily, while 34% accessed them fortnightly. The mobile phone was the dominant access device, used by 99.5% of respondents, followed by access from home (54%), browsing centres/cyber cafés (40%), libraries (37%), and departments/computer centres (6%). These findings indicate the growing importance of mobile-based access to digital information resources in academic and research activities.

Preferred Information Format:

The study revealed that PDF was the most preferred information format, selected by 82% of respondents. Other preferred formats included Word (50%), HTML (42%), printed materials (36%), and ePUB (18%). The strong preference for PDF indicates the need for academic libraries to provide digital resources in mobile-friendly and easily accessible formats.

Satisfaction With DIT and ICT Facilities:

Respondents expressed a moderate level of satisfaction with DIT and ICT facilities. Regarding library infrastructure, 33% were satisfied, 25% highly satisfied, 26% neutral, and 16% not satisfied. For electronic and digital resources, 30% were satisfied, 28% highly satisfied, 28% neutral, and 14% not satisfied. The findings highlight the need for continued improvement in digital infrastructure, electronic resources, staff competencies and user support services.

Major Findings:

The study received 3,989 valid responses from students and research scholars. Internet and SMS were the most familiar DIT/ICT tools, and these technologies were

widely used for academic, research, examination, project and personal purposes. Awareness of digital library resources varied, with relatively higher awareness of bibliographic, full-text, indexing and abstracting databases. Respondents showed a generally positive attitude towards DIT and ICT and accessed digital information regularly, with mobile phones being the dominant access channel and PDF the most preferred format. The study also identified the need for information-literacy training, improved infrastructure and better user support. Statistical analysis revealed significant differences in several aspects of DIT/ICT use and training, while search-engine and search-technique usage did not show significant differences. Overall satisfaction was largely non-significant, although library staff knowledge and searching skills showed a significant difference.

Recommendations:

The study recommends strengthening access to e-books, e-journals, databases and other digital resources, along with regular information-literacy programmes on database searching, advanced search techniques, source evaluation and citation management. Libraries should develop mobile-friendly services, improve librarians' ICT competencies and provide discipline-specific training for Science, Engineering and Pharmacy users. Promotion of open-access resources, adoption of emerging technologies such as AI and machine learning, and collaboration with the IT industry are also recommended.



Conclusion:

The study concludes that DIT and ICT have become essential components of academic information behaviour among students and research scholars. Although digital technologies, Internet services and mobile devices are widely used, gaps remain in specialised resource awareness, information-literacy skills, infrastructure and user training. Therefore, academic libraries need to focus not only on providing digital resources but also on developing users' ability to search, evaluate, retrieve and effectively use scholarly information. Regular training, mobile-oriented services, improved digital collections and continuous professional development of librarians can strengthen the academic information environment.

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