RESEARCH ARTICLE

A study on technological challenges in the web information seeking strategies of management, Chennai city

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Abstract

This study attempts to analyze the management faculty members ' search strategies, age, gender, profession, and frequency of library visits, search materials, time spent, online databases, and measures of user satisfaction, etc. 240 respondents were selected randomly, and the response rate is 240/300*100=80 percent. The study delves into different forms of information-seeking behaviour, spanning reading printed materials to research and experimentation. Scholars and faculty members partake in activities that entail seeking up-to-date information from various media found in libraries, including encyclopedias, journals, and electronic resources. Technological progress has brought about a shift in users' information-seeking behaviour. The current landscape showcases a dynamic mix of traditional and digital sources where faculty members source information for their scholarly pursuits. Embracing the digital age, individuals now navigate online repositories and databases, augmenting their research methodologies. This evolution in information-seeking behavior highlights a pivotal juncture, where the fusion of conventional practices with contemporary tools shapes the academic domain. As such, understanding these nuanced paradigms is vital for institutions aiming to cater effectively to the diverse information needs of their scholarly community.

Introduction

Based on the conceptual analysis view, studying information use and seeking behaviour is inevitable. The researcher attempted this title very crucial why because the information is now overloaded in the network era, the user needs and demands the right words to search get the right information and basic search strategy, online techniques, apply the best practices in full-text electronic journals, in various search tools such as Boolean search, parenthesis, phrase search, word truncation, etc. Information knowledge resources are very essential and the backbone for innovative thinking, analytical thinking, empirical thinking, and life-oriented thinking, moreover, for every success of the project in the present digital knowledge resource society. In this digital age, individuals must be equipped with the skills to effectively navigate the vast sea of information available online. According to (Kellar and Shepherd, 2006) highlight that web-based information seeking is a new area of study that differs from traditional library-based methods due to the complexity of resources and tools involved. Access to web information is crucial for academic staff and students to excel in their studies. This includes not only being able to access information but also critically evaluate it for reliability and relevance. Information literacy is a key

component of success in today's knowledge-based society, and individuals who possess strong information seeking and utilization skills are better positioned to excel in both their personal and professional lives. It is therefore imperative for researchers to continue exploring the various aspects of information behaviour to better understand how individuals interact with information and how these interactions impact their decision-making processes. According to (Afzal, 2009) Information Seeking (IS) is a vital human activity that involves gathering, storing, interpreting, and using information for various purposes. While theorists like Ellis (1989), Kuhlthau (1993), and Wilson (1999) have explored various aspects of information use, studies on information behavior reveal the complexity of users' actions, including social, cognitive, and affective factors. Users employ metacognitive strategies in their information searches for planning, differentiation, monitoring, and evaluation. However, challenges such as difficulties in articulating problems to librarians and systems, along with feelings of uncertainty, hinder information-seeking efforts. Authors suggest enhancements like identifying user stages, providing support, and improving information system design. Notably, none advocate for metacognitive strategies to enhance information searching, despite the importance of the information-seeking process and support (Kuhlthau,2004).

A Change to Focusing on People and Their Behaviors

According to Mahapatra (2014), a library is a service institution that primarily offers information to its users. A significant change in information behaviour (IB) research took place in the 1980s. Whereas early user studies concentrated on a specific system or service and its users, the newer studies positioned the information seeker/user at the forefront without assuming the utilization of a specific resource or group of resources.

Dynamic processes information behaviours

Information Behavior (IB) in the research study focused on individuals and their diverse information uses, rather than specific sources and services. The literature review highlights a crucial aspect of information behaviours: their evolution over time. An instance of information seeking could be brief, but it typically unfolds gradually (Wildemuth & Donald, 2010). Research on information-seeking behaviour aims to improve library services by understanding users' motivations and the types of information they seek. This understanding directly impacts collection development, reference services, program offerings, and budget allocation (Agosto and Hughes-Hassell, 2005).

Concept of information

According to Uttor (1999), information is widely recognized through various mediums such as books, journals, magazines, and documents from both the public and private sectors, regardless of whether it is intended for a broad audience, kept unpublished, or classified as confidential. This information typically includes research findings shared with colleagues in the form of reports, books, articles, and other non-printed materials.

Information seeking: A definitional analysis

The idea of information seeking generally refers to what happens when a user feels the need for information and then requests formal and informal information sources or services to meet the need. In today's digital age, information-seeking has become an integral part of our everyday lives. With an abundance of information available at our fingertips, users rely on various platforms and technologies to access the information they seek.

From search engines to social media, the options are endless when it comes to satisfying our curiosity and expanding our knowledge. As the world continues to evolve, how we seek information will also adapt and change, but the fundamental desire to learn and discover will always remain at the core of information seeking. The following author focused on this study based on information sources and needs (Boadi and Letsolo, 2004; Kingrey, 2002; Backlund, 2003; Uhegbu, 2007; Ajiboye and Tella, 2007; Ikoja-Odongo and Ocholla, 2004).

Information seeking as a strategic process

According to (Marchionini et al. 2000), it was noted that search involves a combination of analytical and interactive problem-solving approaches. Strategy-oriented models aim to mimic the planning behaviour of experienced searchers. It has (Maria De Marsico and Stefano Levialdi, 2004) the study proposes a goal-oriented approach to assess web site usability, focusing on customer expectations. It introduces a three-dimensional taxonomy of site categories inspired by Aristotle's rhetorical triangle, identifying multiple sites within the same category and conducting a comparative analysis. The analysis forms a two-phase evaluation form, with users completing a generic form and completing specific tasks based on their expectations. The methodology has shown promise for evaluating other site categories, particularly those offering specialized services. The study employs automatic textual analysis of internet documents to organize content. The multilayered neural network clustering algorithm utilizes the Kohonen self-organizing feature map to categorize homepages, enhancing keyword searching and browsing capabilities by dividing services into subject-specific categories and databases. (Wingyan Chung, 2010) The chapter discusses the rapid growth of internet usage, particularly in non-English-speaking regions, and the gap between demand for non-English content and resources. It introduces a framework for web searching and browsing in a multilingual world, based on three web portals developed for Chinese, Spanish, and Arabic business intelligence. The findings contribute to fields like web analysis, text mining, and human-computer interaction. The application enables users to create hyperlinks within the Web environment, facilitating exploratory information use. However, the application faces challenges in usability and usage limitations. A preliminary evaluation of the application's usability and user behavior revealed a strong habituation towards document-centric processing and storage of information. The authors suggest additional features to reduce complexity and a longer testing period to overcome habitual patterns and improve the application's effectiveness. (Eidloth, Robner and, Atzenbeck, 2022)

Concept of Information Seeking Behaviour

According to Taylor, information behaviour as the product of certain elements of the information user environment, (1991).
The assumptions, whether formally learned or not, are held by a defined group of individuals regarding the nature of their work.
ii. The types and structure of problems considered important and typical by this group of individuals.
iii. The constraints and opportunities present in the typical environments where any group or subgroup within this set operates and performs their work.
iv. The conscious, and possibly unconscious, assumptions about what constitutes a solution, or more accurately, a resolution of problems, and what makes information useful and valuable within their specific contexts.
According to (Wilson, 1999), "Information Behaviour" as "those activities a person may engage in that identify his / her / own needs for information, search for such information in any way, and use or transfer that information." (Asemi, 2005) The increasing significance of ICTs, particularly e-resources, is significantly transforming reading

habits. The digitization of the world and the rapid growth of the internet have significantly impacted the way people access and engage with library resources.
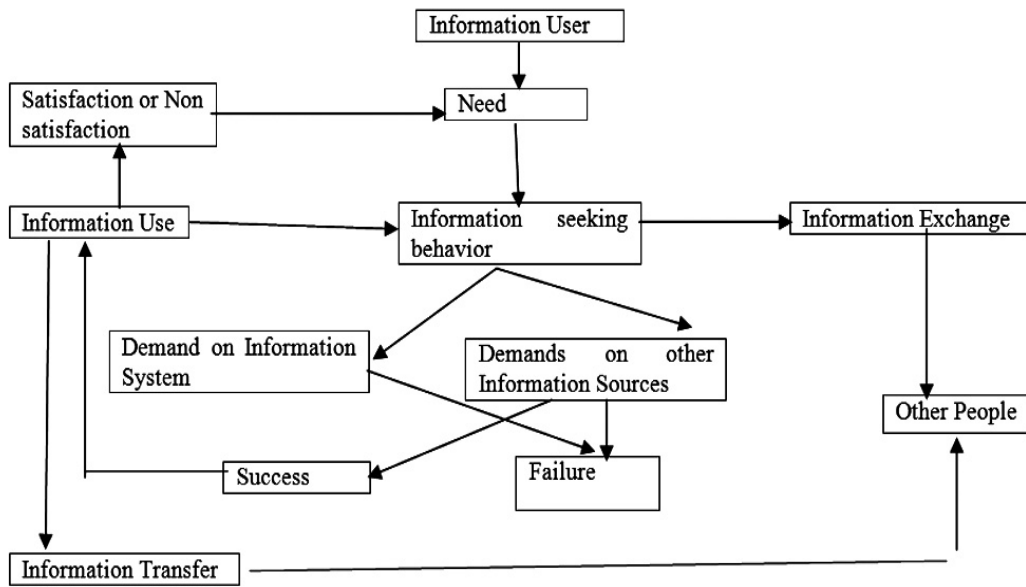

Figure 1: Wilson's Information Behaviour Model

Model of the information seeking by professionals

According to Leckie et al. (1996), the researchers chose to group the model with task performance and task-based models.
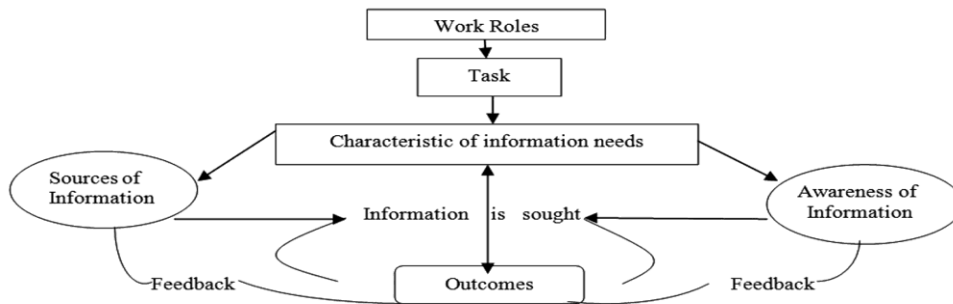

Fig 6: *Leckie et al's (1996) model*

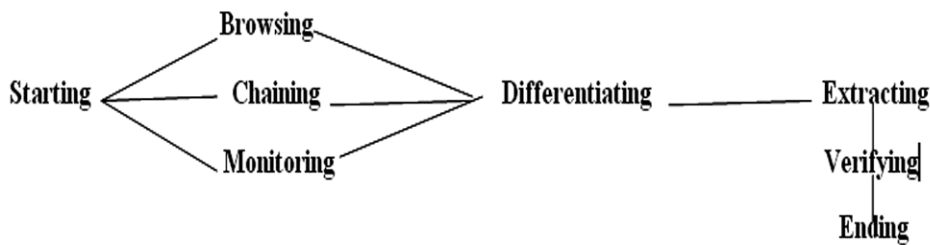**Figure 2**: Leckie et al's (1996) Model

Figure 3: Ellis's Model of the Information-Seeking Process

According to Ellis (1989), the stages of starting, chaining, browsing, differentiating, monitoring, extracting, verifying, and ending referred to as "tying up loose ends" through a final search are also identified.

I. Information-seeking behaviour is primarily concerned with who needs what kind of information.
II. It is an activity undertaken by an individual in pursuit of information.
III. It is closely related to the personal characteristics and traits of the user.

According to Wilson (2000) and Rajawat (2019), information-seeking behavior is a broad term that encompasses the actions individuals take to express their information needs and search for information.

User and User Studies

Nowadays, it is recognized that ICT (Dhiman, 2003); (Dhiman and Rani, 2012) has fundamentally revolutionized the scenario, with a primary focus on 24-hour access to online information. Therefore, user studies are essential in the contemporary electronic landscape, presenting libraries with novel challenges stemming from the digital revolution and rapidly evolving information technologies. (Karunanayakea, 2008) highlights the significance of user surveys as a valid method for conducting such studies in library settings.
However, (Prabha, 2013) has classified them into four types.

First Category: Studies examining the overall interaction patterns of users with communication systems, without focusing on specific information receiving events.
Second Category: The studies are conducted to determine the usage of communication mediums like primary periodicals.
Third Category: This refers to studies that examine the overall pattern of information flow within the science communication system.
Fourth Category: Library or information center surveys aim to improve services and facilities by assessing usage within the limited context of the center.

Categories of Users Studies

User studies, conducted by (Banwell and Coulson, 2004), aim to evaluate a system's strengths and weaknesses, dividing them into four main groups based on their focus.

First Group: User research studies aim to investigate user desires, requirements, environments, incentives, expectations, and activities.

Second Group: The study aims to investigate the specific information sources being used and identify any obstacles to their access and utilization.

Third Group: Information system studies investigate the technology, design, and evaluation of a specific information system or service.

Fourth Group: Organizational research studies explore the influence of internal and external factors on management procedures, strategies, and the overall organizational environment.

The term "User" is defined by objective criteria such as socio-professional category, field of expertise, nature of activity, and reasons for using an information system, as well as by social and psychological factors, including the user's attitudes and values towards information and their relationship with information units (Prabha, 2013).

Review of Literature In a study of 34 knowledge workers from seven companies, it was found that they use the Web to seek external information. Using a custom WebTracker software application, researchers recorded their Web activities, including menu choices, button selections, and keystrokes. Participants also shared important incidents when they used information from the Web. (Wei Choo, Brian Detlor and Don Turnbull,2000). The 21st century has seen a significant shift in higher education, with students increasingly relying on the internet for academic and personal activities. This study examines Web Information Seeking Behavior of Undergraduate Students of Library and Information Studies at the University of Zululand, aiming to inform curriculum designers and academic libraries about the challenges faced by students using web services. The study found that the web is the primary source of information, with Google being the most commonly used tool. (Mnguni and Kekana 2022). Information-seeking behaviour starts when an individual identifies a gap or dissatisfaction and ends when clarity is achieved. It explores formal and informal sources, leading to satisfaction or dissatisfaction. (Michael, 2015). In the digital age, the ability to efficiently search and locate information on the web is crucial due to the vast array of sources available online. Strong search skills are essential for discerning and finding relevant information, as highlighted by (Almarabeh et al. 2016). Navigating these sources enhances knowledge gathering and ensures accurate filtering through the vast options available on the web. Limited electricity supply and inadequate information literacy training hinder undergraduate students' effective online search, according to a study by (Azadeh and Ghasemi, 2015). The study uses the (Urquhart and Rowley, 2007) to analyze student information seeking behavior. It identifies macro and micro factors influencing student behavior, including search strategy, information literacy, pedagogy, discipline, and organizational knowledge. The model is relevant to this study as it examines issues such as information resource design, literacy, search strategy, support, training, and pedagogy. Study revealed that undergraduate students at both private and state universities perceive blogs as relevant, current, accessible, accurate, and authoritative. However, issues like awareness, usage, relevance, access, preference, training, and evaluation persist. (Okocha & Owolabi's,2020). Discovered that undergraduates frequently use popular search engines like Google and neglect advanced search options, hindering their ability to effectively seek necessary academic information. (Weber et al. 2018). According to (Jadhav 2017) study on Pune state universities, it was found that 73.95% of respondents prefer print and electronic resources, with research scholars and faculty showing higher preferences. Training programs for accessing scientific information were found useful by 90% of scholars. The internet, digitalization, and telecommunication significantly influenced users' information-seeking habits, with 100% acknowledging its impact on library visits. Torunsky et al. (2025) found that undergraduate students (n=191) sought COVID-19 information mainly to reduce uncertainty, with information-seeking positively correlated with trust in science and adherence to preventive measures. Intolerance of uncertainty was also linked to higher perceived information utility. These results underscore the need for effective scientific communication to manage public uncertainty during crises. Reisoğlu et al. (2020) found that argumentation and metacognitive skills enhance online information searching strategies. Data were collected through screen recordings, interviews, and an inventory of search strategies. Results indicated that argumentation activities strengthen the link between searching strategies and metacognitive skills. Students with stronger metacognitive skills exhibited more effective information-seeking behaviors, highlighting the need for digital literacy training to improve research competencies.

Objectives of the Study

To investigate frequent visits to the library by the faculty members
To examine the time spent in the library by the faculty members
To evaluate the services of the management college libraries
To survey the encounter problems faced by the faculty members
To assess satisfaction levels with ICT and online database services, such as E-journals, offered by libraries

Hypotheses

H_{01}: There is no relationship between frequent visits to the library by the faculty members.
Ha1: There is a relationship between frequent visits to the library by the faculty members.
H_{02}: There is no relationship between the time spent in the library by the faculty members.
Ha_2: There is a relationship between the time spent in the library by the faculty members.
H_{03}: There is no relationship between level of satisfaction with ICT and e-journals and online database services provided by libraries.
Ha_3: There is a relationship between the level of satisfaction with ICT, E-journals online database services provided by libraries

Methodology

The study participants are referred to as management faculty members. A survey of 240 participants analysed their demographics including gender, age, qualifications, and professional backgrounds. Current indications suggest that information professionals are crucial for facilitating information access in libraries to cater to the needs of users/faculty members.
The review and study were conducted to facilitate the construction of the questionnaire. The development of a questionnaire was the research design for the study. The questionnaire method was utilized to collect information from the faculty members in management, encompassing assistant professors, associate professors, and professors.

The researcher employed a cross-sectional study design, combining quantitative and qualitative methods, to gain a comprehensive understanding of the web information seeking behavior of management faculty members.

Scope and Limitations of the Study

The study investigates technological challenges in web information-seeking strategies of management faculty members in Chennai city, focusing on academic staff in management colleges. The research aims to streamline analysis and provide a more comprehensive understanding of the college environment's core dynamics.

Need for User Study

User studies are crucial for understanding user needs, behaviours, and patterns, which are essential for the efficiency of library and information services. They help libraries tailor their collections and services to better serve their community, gather valuable insights into patron interactions, inform decision-making processes, and

improve the overall user experience. Prioritizing user studies allows libraries to adapt to changing trends and evolving user needs, leading to more effective and efficient services. The study (Singh,2013) asserts that user requirements are crucial for the efficient design and operation of information systems, services, and products, necessitating the importance of conducting user studies.

Results

The study analyzed quantitative data using SPSS, presented qualitative data through narratives, and documented technological challenges faced by management faculty in web information-seeking strategies using frequency tables, percentages, and means. Statistical hypothesis tests were used to detect significant differences.

Table 1. Demographic Detail of Respondents (N=240)

Designation	Frequency	Per cent	Valid Percent
Assistant Professor	69	28.8	28.8
Associate Professor	114	47.5	47.5
Professor	57	23.8	23.8
Total	240	100	100
Gender			
Male	155	64.6	64.6
Female	85	35.4	35.4
Total	240	100	100
Age			
Below 30	53	22.1	22.1
30 to 40	71	29.6	29.6
40 to 50	70	29.2	29.2
50 and above	46	19.2	19.2
Total	240	100	100
Qualification			
Post graduate	68	28.3	28.3
M.Phil.	84	35.0	35
Ph.D.	88	36.7	36.7
Total	240	100	100
Professional services			
Below 5 years	61	25.4	25.4
5 to 10 years	61	25.4	25.4
10 to 15years	63	26.2	26.2
15 to 20years	21	8.8	8.8
above 20 Years	34	14.2	14.2
Total	240	100	100

Table 1 displays information about the respondent's demographic characteristics. The table illustrates that respondents' titles are separated into three categories: assistant professor, associate professor, and professor. These categories make up 28.8, 47.5, and 23.8 per cent of the samples, respectively, with males 64.6 per cent and females 35.4 per cent, and four age groups with 29.6 per cent of respondents aged 30 to 40. There are three educational backgrounds, with 36.7 per cent having a Ph.D. Finally, the respondent's professional services were separated into five categories, with the majority 26.2 per cent having 10 to 15 years of experience.

Table 2. Frequently visit the library and designation

Frequency	Assistant Professor	Associate Professor	Professor	Total
Occasionally	9 (3.8)	25 (10.4)	1 (0.4)	35 (14.6)
Once in a month	12 (5.0)	28 (11.7)	5 (2.1)	45 (18.8)
Three times in a week	12 (5.0)	16 (6.7)	5 (2.1)	33 (13.8)
Twice a week	12 (5.0)	14 (5.8)	8 (3.3)	34 (14.2)
Once in a week	11 (4.6)	21 (8.8)	11 (4.6)	43 (17.9)
Daily	13 (5.4)	10 (4.2)	27 (11.2)	50 (20.8)
Total	69 (28.8)	114 (47.5)	57 (23.8)	240 (100.0)
Pearson Chi-Square	Value	Df	Asymp.Sig (2 sided)	
	45.988	10	0.000	

According to Table 2 of this study, the majority of respondents 50 (20.8%) visit the library daily, followed by 45 (18.8) who visit once a month, 43 (17.9) who visit once a week, 35 (14.6) who visit occasionally, 34 (14.2) who visit twice a week, and the remaining 33 (13.8) who visit three times a week, respectively.

The chi-square technique is applied to see the association between the frequently visited library and designation. The calculated value is 18.307 with 10 degrees of freedom at a 5 per cent significant level, and the table value 45.988. The chi-square proved the significant association between frequent visits to the library and designation.

Table 3. Time Spent and Designation

Time Spent	Assistant Professor	Associate Professor	Professor	Total
Below one hour	20(8.3)	19(7.9)	19(7.9)	58(24.2)
Two hours	28(11.7)	41(17.1)	2(0.8)	71(29.6)
Three hours	13(5.4)	41(17.1)	14(5.8)	68(28.3)
Above 5 hours	8(3.3)	13(5.4)	22(9.2)	43(17.9)
Total	69(28.8)	114(47.5)	57(23.8)	240(100)
Pearson Chi-Square	Value	Df	Asymp.Sig (2 sided)	
	45.456	6	0.000	

Table 3 shows that respondents spent 58 (24.2%) minutes or less in the library, followed by 71 (29.6%) minutes or more in the two hours, 68 (28.3%) minutes or more in the three hours, and 43 (17.9%) minutes or more in the five hours.

The chi-square test applied the association between time spent and designation, the calculated chi-square value of 45.456, with 6 degrees of freedom and the table value of 12.592. So null hypotheses are rejected, chi-square value proved the significant association between the variables the time spent and designation.

Table 4. Agencies Used for Gathering Information

Gathering Information	N	Mean	Std. Deviation	Variance
Searching Journals/ Magazine	240	3.0625	0.86799	0.753
Searching for Books	240	3.3458	0.75517	0.57
Browsing E-Journals on Internet	240	3.1667	0.79046	0.625
Searching online databases	240	3.0542	0.84412	0.713
E-mail alerts, Correspondence	240	3.2042	0.80009	0.64
Accessing e-books	240	3.2292	0.8394	0.705
Photocopying	240	3.6417	0.67589	0.457

The above table indicates that the most utilized agency for gathering information is photocopying, with the highest mean value of 3.6417. This is followed by searching for books, which has a mean value of 3.3458. Accessing e-books ranks next with a mean value of 3.2292. Other frequently used agencies include e-mail alerts and correspondence (mean value 3.2042), browsing e-journals on the internet (mean value 3.1667), and searching e-journals/magazines (mean value 3.0625). Finally, searching online databases shows the lowest mean value at 3.0242.

Table 5. Time Spent Information Gathering Activities

Time Spent Information Gathering Activities	N Valid	Mean	Std. Deviation	Variance
Teaching/Guiding researches/students	240	4.4	0.67718	0.459
Support research	240	4.275	0.74275	0.552
Writing a book or article	240	4.125	0.80856	0.654
workshop and seminar presentations	240	3.883	0.76736	0.589
Reading purposes only	240	3.704	0.88217	0.778
Using online database	240	3.516	1.00612	1.012

Teaching/guiding research students has the highest mean value of the five activities in the above table, followed by support research with a mean value of 4.275, writing a book or article with a mean value of 4.125, workshop and seminar presentations with a mean value of 3.8833, reading purpose with a mean value of 3.7042, and using online databases with a mean value of 3.5137, respectively.

According to Table 6 purposes of online information-seeking behavior, training /workshop/conference seminars have the highest with a mean value of 4.125, followed by bibliographical information with a mean value of 4.0458, journal/ magazines subscription with a mean value of 3.9292, access online databases with a mean value 3.7875, research abstracts & project 3.7083 and finally professional developments with mean value 3.6583 correspondingly.

The data shows the association between the designation and services of information sources. The data analyzed reveals that 32 (13.3%) of respondents are for circulation (issue/return), followed by 20 (8.3%) of respondents for an accessible e-mail alert, 23 (9.6%) of respondents are for access multimedia (DVD, CD), 31 (12.9%) of respondents are for accessing the internet, 21(8.8%) of respondents both are for accessing newspapers and

accessing photocopy, 30 (12.5%) of respondents are for users of library OPAC/Web OPAC, 16 (6.7%) of respondents are for access the online database, 21 (8.8%) of respondents are for the display of new arrivals, and remaining 25 (10.4%) of respondents respectively. Based on the gathered data, it is evident that there is a clear preference among respondents for various services related to information sources. The diversity in choices, ranging from traditional circulation services to modern digital resources like online databases, signifies the evolving needs of users in today's information landscape.

Table 6. Purposes of Online Information-Seeking Behavior

Purpose seeking information	N Valid	Mean	Std. Deviation	Variance
Bibliographical information	240	4.0458	0.93848	0.881
Training /Workshops /Conferences	240	4.125	0.84895	0.721
Journal / Magazines subscription	240	3.9292	0.86734	0.752
Access online databases	240	3.7875	0.86823	0.754
Professional developments	240	3.6583	0.91016	0.828
Research abstracts& Project	240	3.7083	0.95414	0.91

Table 7. Libraries Services and Designation

Services	Assistant Professor	Associate Professor	Professor	Total
Circulation- Issue/ return	7(2.9)	19(7.9)	6(2.5)	32(13.3)
E-mail alert	4 1.7)	7(2.9)	9(3.8)	20(8.3)
Multimedia (DVD,CD)	7(2.9)	16(6.7)	0(0.0)	23(9.6)
Internet	1(0.4)	18(7.5)	12(5.0)	31(12.9)
Newspaper Services	11(4.6)	10(4.2)	0(0.0)	21(8.8)
Photocopy (Reprography)	12(5.0)	7(2.9)	2(0.8)	21(8.8)
Library OPAC / Web OPAC	22(9.2)	8(3.3)	0(0.0)	30(12.5)
Online Database	0(0.0)	4(1.7)	12(5.0)	16(6.7)
Display of New Arrivals	3(1.2)	2(0.8)	16(6.7)	21(8.8)
Reference Service	2(0.8)	23(9.6)	0(0.0)	25(10.4)
Total	69(28.8)	114(47.5)	57(23.8)	240(100.0)
Pearson Chi-Square	Value	Df	Asymp.Sig (2 sided)	
	149.88	18	0.000	

These findings emphasize the importance of libraries and information centers in catering to various user preferences and requirements. By understanding and adapting to these preferences, institutions can better serve their patrons and ensure continued relevance in an increasingly digital age. The chi-square value calculated at 149.88 exceeds the Table value of 28.869 with 18 degrees of freedom at a 5% significance level. This implies unequal distribution of information services among faculty members, confirming the hypothesis. Further inquiry is advised to uncover the reasons behind this disparity. Exploring factors causing this imbalance and devising strategies to rectify issues could be beneficial. Continuous monitoring and evaluation of information services provision are essential to guarantee fair access and support for all faculty members.

Table 8. Accessibility Business Information

Accessibility Business Information	N Valid	Mean	Std. Deviation	Variance
Financial Information	240	3.4875	0.72598	0.527
Marketing Information	240	3.15	0.80946	0.655
Technical Information	240	2.4667	0.89099	0.794
Political Information	240	1.9417	0.79534	0.633
Economic Information	240	2.1292	0.82583	0.682
Agricultural Information	240	2.0958	0.9166	0.84

Table 9 shows that the respondents' preferred search engines were Google.com first highest mean value of 3.7375, Google Scholar.com second highest mean value of 3.55, Yahoo.com, third highest mean value of 2.5833, and other search engines very least liked. Furthermore, the data also revealed that the respondents expressed a strong preference for the user-friendly interface of Google.com, citing its efficient search algorithms and comprehensive search results as key factors in their choice. In contrast, Yahoo.com was noted for its lack of customization options and relatively limited search capabilities, leading to its lower mean value rating. Overall, the findings emphasize the dominant position of Google.com in the search engine market, highlighting its popularity and user satisfaction among the surveyed individuals.

Table 9. Preferred the Search Engine

Search engine	N Valid	Mean	Std. Deviation	Variance
Google.com.	240	3.7375	0.58023	0.337
Scholar.google.co.in	240	3.55	0.69487	0.483
Bing.com.	240	2.3542	0.9829	0.966
Yahoo.com.	240	2.5833	1.10217	1.215
Ask.com.	240	1.6375	0.81683	0.667
Alvista.com.	240	1.5125	0.75424	0.569

Table 10. Important Management Databases Access

Databases	N Valid	Mean	Std. Deviation	Variance
ISI Emerging Markets	240	4.1667	0.96667	0.934
India stat	240	4.0708	0.92794	0.861
EBSCO	240	4.0958	0.78371	0.614
Pro Quest ABI/INFORM	240	3.9125	0.82625	0.683
Emerald Management	240	3.7083	1.05017	1.103
Science Direct	240	1.875	1.09056	1.189

The study reveals that Google.com is the most preferred search engine among respondents, with a mean value of 3.7375. The respondents also favored Google.com due to its user-friendly interface, efficient search algorithms,

and comprehensive search results. Yahoo.com was rated lower due to its lack of customization options and limited search capabilities. The results underscore Google.com's dominance in the search engine market, highlighting its popularity and user satisfaction among the surveyed individuals.

Table 10 lists the major management databases accessed by faculty members. ISI Emerging Markets had the highest mean value of 4.1667, followed by EBSCO with a mean value of 4.0958, IndiaStat with a mean value of 4.0708, ProQuest ABI/INFORM with a mean value of 3.9125, Emerald Management with a mean value of 3.7083, and SciDirect with a mean value of 1.875, respectively. Faculty members rely on various databases for research, as each platform offers unique strengths and insights. These databases are highly valued within the academic community, providing up-to-date information, comprehensive literature reviews, and effective support for scholarly endeavors.

Table 11. Problem Faced by the Faculty Members

Problem faced	Assistant Professor	Associate Professor	Professor	Total
Unavailability of Resources	8(3.3)	21(8.8)	6(2.5)	35(14.6)
lack of awareness about the library resources	4(1.7)	8(3.3)	9(3.8)	21(8.8)
Technical difficulties like power failure, internet connection, etc.	9(3.8)	17(7.1)	1(0.4)	27(11.2)
Not taking proper assistance from the library staffs	0(0.0)	21(8.8)	8(3.3)	29(12.1)
Do not know how to use online	16(6.7)	13(5.4)	0(0.0)	29(12.1)
Lack of facilities	10(4.2)	10(4.2)	2(0.8)	22(9.2)
Time duration during the search	12(5.0)	10(4.2)	3(1.2)	25(10.4)
Lack of knowledge in using the library system	5(2.1)	6(2.5)	12(5.0)	23(9.6)
Some information materials are too old	5(2.1)	8(3.3)	16(6.7)	29(12.1)
Total	69(28.8)	114(47.5)	57(23.8)	240(100.0)
Pearson Chi-Square	Value	Df	Asymp.Sig (2 sided)	
	74.297	16	0.000	

Table 11 illustrates the challenges encountered by faculty members. Among the respondents, 35 (14.6%) cited a lack of resources, 21 (8.8%) mentioned insufficient knowledge of library resources, 27 (11.2%) reported technical issues such as power outages or poor internet connectivity, and 29 (12.1%) indicated inadequate support from library staff and a lack of understanding in using online resources. Additionally, 23 (9.6%) reported a lack of comprehension of the library system, 22 (9.2%) faced limited access to search facilities, 25 (10.4%) experienced delays in search completion, and 29 (12.1%) found some information to be outdated.

The calculated chi-square value of 74.297 exceeds the table value of 26.296 with 16 degrees of freedom at a 5% significance level, indicating significant disparities in the challenges faced by faculty members. Therefore, the null hypothesis is rejected.

The results indicate a significant variation in the use of ICT resources among respondents, with internet usage being the most prevalent at 42 (17.5%), followed by engagement in workshops, seminars, and conferences at 40 (16.7%). The use of professional journals was also notable, with 39 (16.2%) respondents utilizing them for academic and research purposes. Additionally, 36 (15.0%) respondents accessed the World Wide Web, while 35 (14.6%) respondents engaged in social media platforms, highlighting the increasing role of social networks in academic interactions.

Furthermore, 32 (13.3%) respondents accessed digital libraries, reflecting a shift toward electronic resources for research and learning. The use of online collaboration tools was reported by 21 (8.8%) respondents, indicating a relatively lower adoption of these platforms compared to other ICT resources. Similarly, 28 (11.7%) respondents participated in online forums and discussion groups, showcasing their role in academic discourse. The utilization of newsletters (12.1%) and research journals (10.0%) underscores the continued relevance of traditional academic sources in an increasingly digital environment.

Table 12. ICT Developments -Internet

ICT	Assistant Professor	Associate Professor	Professor	Total
Internet	13(5.4)	24(10.0)	5(2.1)	42(17.5)
E-Mail	5(2.1)	14(5.8)	11(4.6)	30(12.5)
Workshops, Seminars	11(4.6)	15(6.2)	14(5.8)	40(16.7)
Professional Books / Journals	7(2.9)	20(8.3)	12(5.0)	39(16.2)
News Letters	15(6.2)	8(3.3)	6(2.5)	29(12.1)
Research Journals	9(3.8)	8(3.3)	7(2.9)	24(10.0)
World Wide Web	9(3.8)	25(10.4)	2(0.8)	36(15.0)
Total	69(28.8)	114(47.5)	57(23.8)	240(100.0)
Pearson Chi-Square	Value	Df	Asymp.Sig (2 sided)	
	31.167	12	0.002	

Table 13. Satisfied E-Journals Online Databases

Online Databases	N	Mean	Std. Deviation	Variance
ISI Emerging Markets	240	4.3917	0.72948	0.532
India stat	240	4.2208	0.72405	0.524
EBSCO	240	4.2125	0.69113	0.478
Pro Quest ABI/INFORM	240	4.000	0.81307	0.661
Emerald Management	240	3.6458	1.12576	1.267
Science Direct	240	2.2625	0.99046	0.981

The chi-square test result of 31.167, which exceeds the critical value of 21.026 at a 5% significance level with 12 degrees of freedom, confirms a statistically significant association between ICT developments and internet usage among faculty members. This implies that the adoption of ICT-based resources is not random but follows a pattern, reinforcing the importance of digital technologies in academic and research activities. Therefore, the null hypothesis is rejected, affirming that ICT developments significantly influence the professional engagement of faculty members with digital resources.

The results indicate a notable variation in user satisfaction across different online databases, with ISI Emerging Markets achieving the highest mean satisfaction score of 4.3917. This suggests that users found this database highly effective, particularly in terms of ease of navigation and search functionality, which likely contributed to its widespread preference. India Stat, with a mean score of 4.208, ranked second, signifying a strong level of user satisfaction, particularly for its comprehensive data coverage and responsive customer support. ProQuest ABI/INFORM secured a mean satisfaction score of 4.000, indicating that users valued its search relevance and the availability of full-text articles, highlighting the importance of both content accessibility and search efficiency.

Emerald Management, with a mean value of 3.6458, received positive feedback for its user-friendly design and customizable features; however, this score suggests that while the database offers beneficial features, there may be areas for improvement to enhance user experience further. ScienceDirect, with the lowest mean score of 2.2625, indicated relatively lower satisfaction levels among users, with concerns raised about usability issues, particularly in terms of content organization and accessibility of key features, suggesting that improvements in interface design and search functionality could enhance its overall user experience. Overall, the findings highlight that user satisfaction with online databases is primarily driven by ease of use, content accessibility, relevance of search results, and customer support, with ISI Emerging Markets and India Stat performing exceptionally well, while databases like ScienceDirect may need to refine their interface and improve content organization to better meet user expectations.

Conclusion

The study explores various forms of information-seeking behaviour, ranging from reading printed materials to conducting research and experimentation. Scholars and faculty members engage in activities that involve seeking up-to-date information from a variety of media available in libraries, such as encyclopedias, journals, and electronic resources. Technological advancements have led to a paradigm shift in users' information-seeking behaviour. The primary goal of information systems is to offer efficient library and information services. Library professionals encounter numerous challenges, yet it is crucial to provide accurate and comprehensive information services to meet the user community's requirements. Remaining current with the latest technologies and trends in the information field is essential for library professionals. Continuous learning and professional development play a vital role in addressing the varied needs of library users and delivering high-quality services. Effective communication and collaboration with colleagues and stakeholders are essential for overcoming challenges and achieving success in the constantly evolving library environment.

Declaration

Dr. A. Kumar holds qualifications in M.A. (Economics), B.Ed., MLIS., M.Phil., UGC-NET, and Ph.D. in Library and Information Science. He has 22 years of experience in the field, including 13 years at the Great Lakes Institute of Management, where he is currently working.

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Ethics Approval/Declaration: Not applicable / This study was conducted in accordance with ethical guidelines.

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Consent for Publication: Yes, the author consents to the publication of this work.

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