

## **Information Seeking Behavior and User Satisfaction of University Instructors: A Case Study**

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### **Introduction**

Information-seeking behavior remains an important research area. Libraries and other information providers strive to understand users' information needs and how they try to fulfill these needs. This understanding helps design and offer appropriate user-centered information systems/services. Bruce (2005) states that, "information plays a significant role in our daily professional and personal lives and we are constantly challenged to take charge of the information that we need for work, fun and everyday decisions and tasks." In the digital era, research on information-seeking behavior has taken on even more importance worldwide. Most of the literature on information-seeking behavior comes from developed countries, while conditions in developing countries vary significantly. The scarcity of studies on information-seeking behavior in Pakistan is revealed in a recent article by Anwar (2007), who establishes the need of such studies in a Pakistani context.

This study investigates information-seeking behavior and satisfaction level of teachers at the National Textile University, Pakistan. The literature has many definitions of information-seeking behavior. For the purpose of this study the following definition by Wilson (2000) has been adopted:

The purposive seeking for information as a consequence of a need to satisfy some goal. In the course of seeking, the individual may interact with manual information systems (such as a newspaper or a library), or with computer-based systems (such as World Wide Web).

The study explores the information seeking behavior of a community that is engaged in research and development in the field of textiles, which is the backbone of Pakistan's commerce and industry. It is hoped that the findings and suggestions will be valuable for other countries generally and for developing countries specifically.

### **Literature Review**

Royal Society Conference in 1948 was the real beginning of an interest in information-seeking behavior, especially in science and technology. It was followed ten years later by the International Conference on Scientific Information in Washington, DC. Wilson (2000) says that the studies from this era focused on the

use of information systems and documents. He continues that the document-focused studies of 1948-1965 were followed by attempts to explore information needs and that, "since the 1980s there has been a shift towards a "person centered" approach, rather than a "system-centered" approach".

Wilson (1981) began his article by saying that "apart from information retrieval there is virtually no other area of information science that has occasioned as much research effort and writing as 'user studies.'" Majid and Kassim (2000) note that, "information needs and seeking behavior of academicians have also been a popular area of research." Sethi (1990) surveyed 256 social science faculty members in Indian universities. The study found that respondents preferred journals, books, government documents and reference services to fulfill their information needs as opposed to indexing and abstracting sources, book reviews, conference proceedings, dissertations and theses, newspaper clippings and other non-book sources that are in lesser use.

In addition to formal information sources, academics also rely heavily on informal communication channels (Majid and Kassim, 2000). Sethi (1990) reveals that academic staff consider seminars and conferences as the third important source of information after journals and books. Al-Shanabri and Meadows (1995) observe that scholars in developing countries prefer informal sources because of the inadequacy of library collections and information infrastructure, ineffective library services, and lack of trained and cooperative library staff. Majid and Kassim (2000) studied the law faculty of the International Islamic University Malaysia (IIUM), and found that they ranked books as the most important information source for teaching and research followed by law reports and statutes. Ansari (2007), Maqsood (2008), and Tahira (2008) reveal that the focus of researchers has been shifting to this important area of research. The present study is an attempt to fill some gap in literature on information-seeking behavior in the local context.

### **National Textile University (NTU)**

NTU dates to 1954, when the Government of Punjab and leading textile industrialists joined hands to form an Institute of Textile Technology in Faisalabad (formerly Layallpur). Funds were donated by major industrialist and 63 acres of state land were provided by the Government of Punjab (National Textile University, 2008). The British Government provided the needed equipment and machinery along with expertise. The University students, almost 700, are multiethnic and come from all parts of the country including Federally Administered Tribal Areas (FATA) and Azad Jammu and Kashmir (AJK). The university has five academic departments: Fiber Manufacturing, Yarn Manufacturing, Textile Chemistry, Garments Manufacturing, and Applied Sciences. Currently the University offers a four-year undergraduate degree program in textile engineering with four specializations: Yarn Manufacturing, Fabric Manufacturing, Textile Chemistry, and Garments Manufacturing. NTU graduates are the main strength of the textile industry in the country.

### **NTU Library**

NTU library is housed in a two-story building and holds a unique collection of almost 14,000 information resources in textile engineering and allied disciplines. The library subscribes to 26 international and national textile journals in print format and have bound archives of core textile journals, some of them starting from 1918 to date. Electronic access to more than 20,000 peer reviewed titles is also available through HEC Digital Library Program. The library acquires a variety of resources in print, audiovisual, and electronic formats to support study and research in the university and has a wide range of services, including borrowing, reference, user advisory, OPAC, photocopying, indexing, TOC alert, etc.

The library is one of only a few in the country that has implemented standardized integrated software for library automation. Library World, Version 3.02. developed by Casper Inc., is currently in use at NTU Library. The library provides electronic services through an electronic services lab that has seven computers, one scanner, and a printer. The library web pages provide information about its staff, rules

and regulations, information services, collection, NTU students' projects, virtual library links, etc. The Virtual Library contains categorized links to websites of textile and general media, product sourcing and trade associations, research centers and institutes, universities and colleges, trade directories, computers and technology for textiles, electronic resources and databases, and open access journals and resources. Campus-wide access to a large number of electronic information resources (EBSCOHOST, Blackwell, SpringerLink, Royal Society of Chemistry, AJOL, etc.) is available through HEC Digital Library. Library.

## **Objectives**

To explore the information seeking behavior of the teachers at NTU.

To determine teachers' level of satisfaction with NTU Library facilities and services.

The findings of the study will be useful to NTU Library management for planning as well as for other libraries in developing countries with a common environment. Furthermore, this study will help to overcome the dearth of such studies in developing countries especially in Pakistan.

## **Methodology**

The study used a structured questionnaire to collect data. The instrument of Zawawi and Majid (2001) was partially used to design the questionnaire, which is consisted of 15 questions. The first six questions dealt with demographic and educational characteristics.

The population of the study consisted of 38 teachers of NTU. Three of 38 were abroad for higher studies. A total of 35 questionnaires were personally distributed to the population in April 2007 and 34 were returned with an overall 97 percent response rate.

## **Data Analysis**

The data were analyzed and interpreted using SPSS release 10.1.

## **Demographics**

Of 34 respondents, 31 (91.2%) were male and 3 (8.8%) female. While four (11.8%) were Associate Professors, six (17.6%) Assistant Professors, 22 (64.7%) Lecturers, one (2.9%) a Network Administrator who was also teaching Computer Science courses, and one (2.9%) was Sports Officer.

Frequency Distribution of Respondents' age showed that 16 (47.1%) 31-40. Nine (26.5%) were 30 or younger and 9 (26.5%) were over 40.

Half the respondents have a Masters degree, 11 (32.4%) have a Bachelors degree, three (8.8%) a PhD, and three (8.8%) with other degrees.

Frequency Distribution of Respondents' ( $N=30$ ) Experience shows that 11 (36.7%) respondents have "up to 5 years experience," 9 (30%) have "6-10 years' experience," and 10 (33.3%) have "more than 10 years' experience."

NTU faculty includes teachers with different subject specializations (Table 1). The major group was textile engineers that contributed 15 respondents (44.1%).

	Frequency	Percent	Valid Percent	Cumulative Percent
Missing	1	2.9	2.9	2.9
Business Studies	3	8.8	8.8	11.8
Chemistry	3	8.8	8.8	20.6
Computer Sc.	1	2.9	2.9	23.5
Electrical Engineering	1	2.9	2.9	26.5
Islamiyat (Islamic Studies)	1	2.9	2.9	29.4
Textile Chemistry	2	5.9	5.9	35.3
Management	1	2.9	2.9	38.2
Mathematics	1	2.9	2.9	41.2
Physical Education	1	2.9	2.9	44.1
Physics	3	8.8	8.8	52.9
Statistics	1	2.9	2.9	55.9
Textile Engineering	15	44.1	44.1	100.0
Total	34	100.0	100.0	

### Information Sources for Teaching and Research

Respondents were asked about information sources for teaching and research. Table 2 shows that books, communication with colleagues and friends within NTU, journal articles, and communication with colleagues and friends in industry were the most preferred information sources. Reference material, theses and projects and technical reports, conference papers, review articles, and communication with Colleagues and friends in local institutions and universities were also preferred information sources. Newspapers, indexes and abstracts and bibliographies were somewhat preferred.

a Multiple modes exist. The smallest value is shown

Table 2: Descriptive Statistics of respondents' preference of information sources for Teaching and Research (N=34)

	Mean	Median	Mode	Std. Deviation	Min.	Max.
Journal articles	4.15	4.00	5	.89	2	5
Books	4.53	5.00	5	.66	2	5
Indexing & Abstracting	3.18	3.00	3	1.22	1	5
Reference Material	4.03	4.00	4	.94	1	5
Review Articles	3.68	4.00	3	1.01	2	5
Communication with Colleagues and friends within NTU	4.35	5.00	5	.77	3	5
Communication with Colleagues and friends in local institutions and universities	3.56	4.00	3 a	1.26	1	5
Communication with Colleagues and friends in Industry	3.97	4.00	5	1.22	1	5
Conference and Seminar paper	3.74	4.00	4	.96	1	5
Bibliographies	3.12	3.00	3 a	1.15	1	5
Theses and Projects and Technical Reports	3.82	4.00	4	1.03	1	5
Newspapers	3.44	3.00	3	1.02	1	5

Note: 5= Most preferred, 4= Preferred, 3= Somewhat preferred, 2= Less preferred, 1= Least preferred

### Other preferred information sources

In response to an open-ended question aimed to find out other preferred information sources, four participants considered the Internet the most preferred or preferred information source, three respondents considered case studies or group discussions the most preferred source, and one respondent preferred refresher courses in the industry and teachers training courses arranged by Higher Education Commission of Pakistan (HEC).

### Preferred Information Formats

Table 3 shows that respondents considered both electronic and digital and print formats equally preferred, while audiovisual material was a "preferred format."

	Mean	Median	Mode	Std. Deviation	Minimum	Maximum
Printed material	4.50	5.00	5	.62	3	5
Electronic and Digital material	4.53	5.00	5	.61	3	5
Audio-Visual material	3.94	4.00	4	1.15	1	5

Note: 5= Most Preferred, 4= Preferred, 3= Somewhat preferred, 2= Less preferred, 1= Least preferred

### Use of Electronic Resources

Respondents were asked about their use of different electronic information resources (Table 4). Internet and email were in regular use, while CD-ROMs and E-journals were used "frequently." Multimedia was used occasionally. It is interesting to note that the website and OPAC of NTU, and e-

bulletin boards and discussion groups were used “rarely.” Websites and OPACs of other libraries and e-shopping were “never” used electronic resources.

**Table 4: Descriptive Statistics of Respondents' Use of Electronic Resources.**

	N	Mean	Median	Mode	Std. Deviation	Min.	Max.
Internet	34	4.47	5.00	5	.75	2	5
Email	34	4.15	4.00	5	.93	2	5
CD-Rom	33	3.70	4.00	4	.81	2	5
E-Journals	33	3.09	3.00	4	1.10	1	5
E-Bulletin Boards & Discussion Groups	31	2.61	2.00	2	1.31	1	5
Web site and OPACs of NTU library	32	2.91	3.00	2	1.30	1	5
Web site and OPACs of other libraries	30	2.47	2.50	1	1.22	1	5
Multimedia	32	3.19	3.00	3	1.15	1	5
E-shopping	31	1.74	1.00	1	1.21	1	5

5 = Always, 4 = Frequently, 3 = Occasionally, 2 = Rarely, 1 = Never

### Use of Web Search Engines and Email servers

Table 5 shows google as the most preferred web search engine.

**Table 5: Descriptive Statistics of Respondents' Preferences of use of Web Search Engines**

	N	Mean	Median	Mode	Std. Deviation	Minimum	Maximum
Google	34	4.85	5.00	5	.70	1	5
Yahoo	31	3.71	4.00	4	1.24	1	5
MSN	32	3.22	3.50	4	1.36	1	5
Other	3	1.00	1.00	1	.00	1	1

5= Most preferred, 4= Preferred, 3= Somewhat preferred, 2= Less preferred, 1= Least preferred

Table 6 shows respondents' preferences for email. Hotmail, Yahoo Mail and Gmail were “preferred.” NTU Webmail was “least preferred.”

**Table 6: Descriptive Statistics of Respondents' Use of Email**

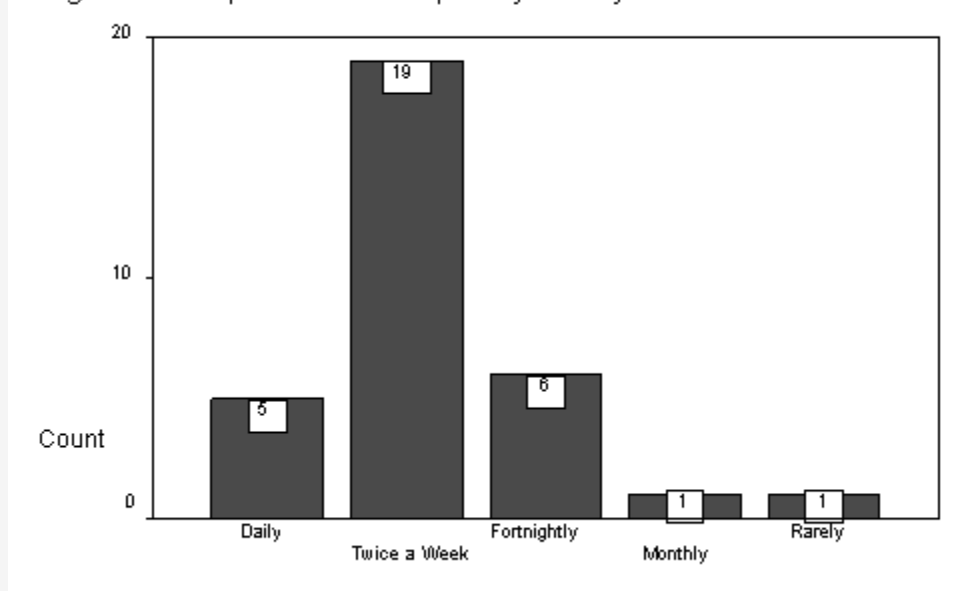
	N	Mean	Median	Mode	Std. Deviation	Min.	Max.
Gmail	25	3.08	3	5	1.68	1	5
Yahoo mail	32	4.16	5	5	1.27	1	5
Hotmail	34	4.26	5	5	1.26	1	5
NTU Web Mail	29	2.41	1	1	1.62	1	5
Other	3	1.67	1	1	1.15	1	3

5= Most preferred, 4= Preferred, 3= Somewhat preferred, 2= Less preferred, 1= Least preferred

### Visits to NTU Library

Figure 1 (bar chart) shows that a simple majority of the respondents (19; 55.9%) visited NTU Library twice a week, while 6 (17.6%) visited fortnightly, and 5 (14.7%) daily.

Figure 1: Respondents' Frequency of Physical Visits to NTU Library



### Methods of Getting Information from the Library

Table 11 shows that a majority of respondents “always” went to library themselves to get information. Respondents rarely called the library or sent support staff or a student. Moreover, writing or emailing to get the required information from the library was “never” used.

Table 11: Descriptive Statistics of Respondents' Method Used to Get the Required Information from NTU Library

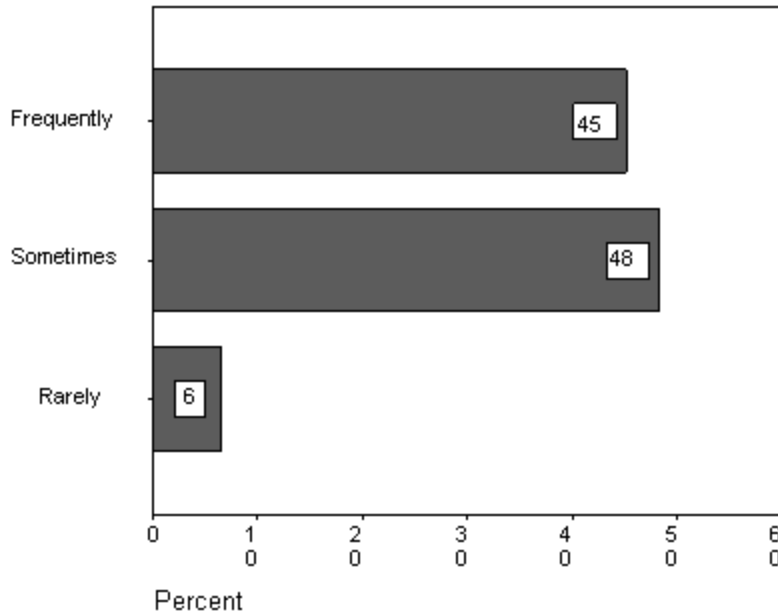
	N	Mean	Median	Mode	Std. Deviation	Min.	Max.
Go to library yourself	34	4.50	5.00	5	.83	2	5
Send an assistant and support staff and student to library	33	2.55	2.00	2	1.20	1	5
Call the library	32	3.16	3.00	2	1.32	1	5
Write and e-mail to library	32	1.31	1.00	1	.90	1	5

5= Always, 4= Frequently, 3= Occasionally, 2= Rarely, 1= Never

### Consulting the Librarian

Figure 2 (bar chart) shows that nearly half the respondents (48%) “sometimes” consulted the librarian, and 45 percent “frequently” did so.

**Figure 2: Frequency to Consult a Librarian to Fulfill Information Needs**



### User Satisfaction

Respondents were, by and large, satisfied with the quality of NTU library services. Respondents showed highest level of agreement with the statements of “Library staff is respectful and helpful” (Mean = 4.64) and “Library membership procedure is convenient” (Mean = 4.58) and lowest level of agreement with the statement of “Library collection is adequate for my needs” (Mean = 3.03).

Min. = Minimum; Max. = Maximum

Attributes	N	Mean	Median	Mode	Std. Deviation	Min.	Max.
Adequacy of resources	34	3.03	3.00	4	1.06	1	5
Organization of library's collection	33	4.00	4.00	4	.75	2	5
Adequacy of journals collection	34	3.24	3.50	4	1.07	1	5
Adequacy of reference material	34	3.21	3.00	4	.88	2	5
Adequacy of popular books and magazines	33	3.42	4.00	4	.94	2	5
Competency of library staff	34	4.18	4.00	4	.90	2	5
Attitude of library staff	33	4.64	5.00	5	.65	2	5
Ease of electronic catalogue	34	3.56	3.00	3	.93	1	5
Comprehensiveness of library web site	33	3.33	3.00	3	.65	2	5
Library's internet facility	33	3.70	4.00	3	.81	2	5
Library's environment	34	3.56	4.00	4	1.13	1	5
Process of borrowing	34	4.38	4.00	4	.60	3	5
Convenience in membership procedure	33	4.58	5.00	5	.50	4	5
Adequacy of photocopy facility	34	3.97	4.00	4	.87	1	5
Adequacy of opening hours	33	4.39	4.00	4	.50	4	5
satisfaction with overall quality of library services	33	4.09	4.00	4	.58	2	5

5= Strongly agree, 4= Agree, 3= No opinion, 2= Disagree, 1= Strongly disagree;

### Additional Comments or Suggestions

The open ended question regarding additional comments or suggestions got 22 responses out of 34 respondents (Table 13). The most frequent suggestion was to increase the number of information resources including books, reference resources, electronic resources, and increase subscriptions to journals with back volumes.

Responses	Frequency
Library need to: add new books and reference resources on textiles and general and recreational (novel, poetry, fiction, general knowledge, fitness, etc.) topics; increase the number of subscribed journals as well as acquire back issues of the journals; and add more electronic resources.	14
There is a need to provide access to other online libraries as well as interlibrary loan facility.	3
Supply fresh arrival list along with a detailed subject bibliographies of available resources with NTU Library	3
Campus wide OPAC access should be available	1
Library needs to enhance its physical environment by controlling noise in the library premises	5
Benchmarking: "Library may compare with the libraries at Agriculture University Faisalabad and Punjab University Lahore"	1

## Findings and Discussion

NTU has faculty in a number of disciplines, but the largest group (44.1%) is textile engineers. The study shows that respondents used a variety of both print and digital information sources to satisfy their information needs. Books are still the most preferred information source for teaching and research followed by communication with colleagues and journal articles.

The use of electronic or digital resources is well-established and respondents urged NTU Library to enhance access opportunities to e-resources to meet users' academic and research needs. Internet and email are highly used electronic services. The rare use of the [library website](#) and OPAC is alarming and needs further exploration. Although NTU Library has a standard and well-maintained automation system, there is a need to increase the use of the OPAC.

Respondents heavily rely on google, yahoo, and MSN, while hotmail and yahoo are preferred email servers, followed by gmail. NTU webmail is less preferred. On this issue, the NTU Webmaster commented, in an interview with the principal researcher that, "people do not prefer to use official emails because of privacy threats and network problems." He also said that "one of the other reasons is that people change jobs and they feel a threat that their data will not be accessible after quitting the organization."

A majority of the respondents visits NTU Library twice a week and they prefer to go to the library rather than send someone. A good number of respondents phone the library, but virtually never write or email. This may be because of the convenient access to the library, which is adjacent to teaching blocks and very near to teachers' offices and academic departments.

Respondents mentioned their overall satisfaction with the quality of NTU library services; however, they had "no opinion" about the adequacy of the library collection (popular books and magazines, journal collection, and reference resources) and comprehensiveness of NTU Library web pages. This reveals that NTU Library collection is not meeting the information needs of the teaching community.

## Suggestions

In the light of the findings of the study, the following suggestions are made to improve the efficiency, effectiveness, and quality of NTU Library to address the information needs and improve the user satisfaction level of the teachers:

The development of a user-friendly website with enhanced accessibility must be made along with the strategy to promote the use of OPAC. As the respondents equally prefer electronic formats, NTU Library needs to promote awareness and use of electronic information resources by a comprehensive information literacy program and marketing strategy. The library needs to increase general and reference collections and acquire journal back issues to fill the research needs of the users. The study revealed that respondents prefer to communicate with friends and colleagues in person or through the Internet. It will be significant to introduce some kind of social networking such as Wikis, email discussion groups, blogs, etc. The library may initiate establishing an institutional digital repository of indigenous information sources (theses, projects, and technical reports) and link with the website. This will ultimately increase the use of information and research resources.

## Conclusion

Future libraries must be more user-centered rather than system-centered. Research in information-seeking behavior and user satisfaction enable the library to evaluate and realign resources and services according to users' requirements. This study answered some necessary questions for the NTU library. The survey results supplied the librarians with current data on their targeted user population,

which should be used to make important management decisions about collections, services, information formats, use of resources, web search engines and email servers, and the library's physical environment.

The library should conduct information-seeking behavior studies at regular intervals to develop effective user-centered library and information services.

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