RESEARCH SCHOLAR'S INFORMATION SEEKING BEHAVIOR IN BHARATHIDASAN UNIVERSITY, TIRUCHIRAPPALLI, INDIA – A STUDY

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Abstract

The study investigated the information needs and seeking behavior of research scholars in Bharathidasan University. A cross sectional survey was carried out, with samples of respondents from all the departments. The sample consists of 104 research scholars selected from all the departments. The chi-square statistic was used to test the stated hypotheses. The results provide an insight into the factors that influence research scholar's information seeking behavior and the information sources used. The study makes recommendations that could lead to the improvement of research scholar's information seeking behavior and use of information resources.

Keywords: Information Needs, Information Seeking Behaviour, Information Sources and Services, Bharathidasan University.

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Introduction

Information is the basic material for the decision making process. The library is the most widely used source of information available to literate societies. Library plays a vital role in the process of information seeking. Due to resources sharing between the libraries with electronic consortia, the expectation and behavior of library users is also changing day by day. Information behavior is a broad term encompassing, the ways individuals articulate their information needs, seek, evaluate, select and use information. Information is considered as an important resource that contributes towards the development of a nation. Users of the library, access to networked information resources, rather than physical access, is the preferred method of use in this present scenario. Thus the information seeking behavior is used here to include all activities comparing information seeking, information gathering, retrieving and communication activities performed in the library.

Background of the Study

Information is most important for teaching, research and development. The rapid increase in the amount of published information and the effects of this abundance of data leads to rapid growth for information. As the amount of available data grows, the problem of managing the information becomes more difficult, which can lead to information overload. Most of the individuals gain information by means of observation experience and experiments. Studies on information need perhaps one of the most effective methods of understanding the user information requirements.

Information is the basic material for the decision making process. In the present day, information is considered to be a resource, a product, and thereby a need. But, today everybody is facing a great problem due to information explosion. Due to this information explosion or information pollution the people are confused about the information need, information access and information sources. Again information access varies from person to person according to their needs. Library plays a vital role in the process of information seeking. Due to resources sharing

between the libraries with electronic consortia, the expectation and behavior of library users is also changing day by day.

Purpose and Objectives of the Study

Library information resources are expensive. The librarians needed to manage these resources and make them accessible are also costly in terms of recruitment, and retention. To attain cost effectiveness in the university library services and promote the use of library information resources, this study sought to establish ways of improving the information seeking behavior of research scholars. Elli's six generic information seeking activities were used as a basis of establishing how research scholars seek information. To attain that goal, the study stipulated the following objectives:

1. To establish the research scholar's information needs;
2. To determine the research scholar's information seeking behaviors;
3. To establish the problems that research scholar's encounter in information seeking;
4. To suggest strategies of improving research scholar's information seeking behavior.
5. To study the information gathering activities of research scholars;

Information Seeking behavior

Information-seeking behaviour involves personal reasons for seeking information, the kinds of information which are being sought, and the way sand sources with which needed information is being sought. Marchionini describes as Information Seeking Behavior as "Information-seeking is a special case of problem solving. It includes recognizing and interpreting the information problem, establishing a plan of search, conducting the search, evaluating the results, and if necessary, iterating through the process again." At present there are various Information-seeking behaviour models exists, which are Wilson's (1981) model of information·-seeking behaviour; Dervin's (1983) sense-making theory; Ellis's (1989 and 1993) behavioural model of information seeking strategies; Kuhlthau's (1991) model of the stages of information-seeking behaviour; and Wilson's (1996) model, which expands his 1981 model through an analysis of the literature in fields other than information science.

Review of Literature

In order to know the information needs and information seeking behaviour of different categories of users, efforts were made to find out the researches completed are related to the present study. A number of works of a reviewing, methodological or theoretical nature on user studies has appeared which are given below:

Information seeking is undertaken to identify a message that satisfies a perceived need (Wright and Guy, 1997). This activity may be actively or passively done when taking steps to satisfy a felt need (Ikoja–Odongo, 2002). On the other hand, Andersen (2000) noted that research on information seeking has looked at how individuals go about finding the materials that they need in order to satisfy information needs. It was therefore noted on this basis that a number of models had been developed in this respect like Ellis' 1993 model, Eisenberg and Berkowitz's 1992 model, and Kuhlthau's 1992 model. These models have been applied in a number of instances to follow up the patterns used in seeking information or to explain how information could be sought systematically.

Sridhar (1995) conducted a study on the user characteristics ranging from internal or external to individual, sociological, demographic, with their various role and status. In this study he also described user productivity, creativity, motivation, interested subject area. Herman (2001) examines the transition to the electronic information era in academia and seeks to establish from the published literature, as to what extent university researchers have accepted, and adapted to the changes wrought in information activity by seemingly endless technological developments. Foster (2004) offers a new, nonlinear model of information-seeking behaviour, which contrasts with earlier stage models of information behavior and represents a potential cornerstone for a shift toward a new perspective for understanding user information behavior.

Information seeking behavior refers to the way people search for and utilize information (Fairer–Wessels, 1990:361). Most times scholar's information seeking behavior involves active or purposeful information seeking as a result of the need to complete course work, workshops, conferences, or write research papers.

Sinha (2012) conducted a study to know the extent of Internet Literacy among the University Library Users in Assam University library. The results show that the younger generation has accepted the Internet as a means for accessing to the relevant information for academic and research works, whereas the elderly people are still comfortable with traditional resources who are using printed resources available in library, but the volume of frequent usage of e-resources among the users have been found to be at optimum level.

Lau (2001) observed that although librarians had assumed the role of user information educators, their work tended to occur in isolation. Teamwork was needed to make library instruction part of the learning process. The publicity services provided in an information institution play a big role in influencing how its resources are utilized and how the users seek for information.

Abels (2004) mentioned that the frequency of use of the Internet in 1998- 2000 had greatly increased. At the same time, expenditures on monographs showed steady increase. The information need is different from one person to another which means that it will not be the same though it might be similar (Kumar 1990).

Methodology

This study was largely quantitative, because of the need to test Ellis' model of the six characteristic information–seeking activities. The chi–square statistic was selected to test the study hypotheses as the most appropriate measure of association between the variables. The study was conducted at Bharathidasan University Campus where the majority of research scholars attend courses. The study was confined to establishing the research scholar's information needs, their information seeking behaviour and the problems they encounter in seeking information. With a research scholar population of 950, a sample of 115 research scholars selected and was used. The number in each stratum (i.e. each quota) was derived using Walpole's formula for proportions (Walpole 1982):

i.e. $n_i = (N_i / N) n$

Where: n_i represents Quota size required,

N_i represents Number of scholars in each stratum

N represents Total study population,

n represents Total sample size used.

Table 1: Scholars by their nativity

	Research scholars		
	Male	Female	Total
Research scholars from same state (Population)	529	369	898
Research scholars from same state (Sample)	(529/560)x73=69	(369/390)x42=40	109
Research scholars from other state (Population)	29	20	49
Research scholars from other state (Sample)	(29/560)x73=4	(20/390)x42=2	6
Overseas Research scholars (Population)	2	1	3
Overseas Research scholars (Sample)	(2/560)x73=0.2	(1/390)x42=0.1	0.3
Total Population	560	390	950
Total Sample	(560/950)x115=68	(390/950)x115=47	115

Methods

Sampling techniques were applied to select the research scholar respondents. The questionnaire, interview and observation methods were used in this study, with self–administered and hand delivered questionnaires distributed to the research scholar respondents. Semi structured in depth face to face interviews were used to collect data from the key informants purposively selected from staff members who interact with research scholars in their information seeking endeavors. A total of six publications who publish in the three years of research in each of the selected departments were purposively selected and interviewed.

Direct observation of the research scholars, yielding careful identification and accurate description of the research scholar's information seeking processes was done in the University library. Observation focused at particular points in the University library where research scholars interact with the library system and staff. Mann (1990:50) notes that any library is a social setting where people's behaviour is, for the most part, reasonably open to view. Therefore sampling a few entrants, it was possible to record systematically what the research scholars did first when they got to the library, noting "... whether they seem purposive in their book selection or whether they appear to be browsing rather aimlessly..." as quoted by (Mann, 1990:50). The

specified locations where observation was done include the catalogue area, the issue/reference section, the information desk, the open shelves areas, and the service windows.

Research procedure

A total of 120 questionnaires were distributed to the research scholars, 108 were returned. Four, (4) of the respondent questionnaires were rejected because they were not satisfactorily filled. Only 104 questionnaires (90.4%) were used for analysis.

Table 2: Planned and obtained number of scholar respondents

		Research scholars				Total	
		Male		Female			
		Planned	Actual	Planned	Actual	Planned	Actual
Research scholars	Same State	63	64	31	23	94	87
	Other State	08	06	10	09	18	15
	Overseas	02	01	01	01	03	02
Total		73	71	42	33	115	104

Research scholars Information Needs

The findings revealed that the main information demands that led research scholars into seeking for information include: course works general reading, dissertation research and searching e resources. (e journals, e books and e articles)

Information sources

To establish what information the research scholars preferred using most and how much they valued them, they were asked to select and rank each information source. The findings show that old dissertation works were the most preferred and used followed by using Books and e resources. Consulting and photocopying from colleagues also took main position.

Library usage

Research scholars visit the University Library with different objectives, were asked to identify and rank the activities that occupied them most while using the library. The findings revealed

that the majority of the respondents (65) ranked utilizing library books first, followed by those who use it as a quiet study space to read their books, then those who borrow library materials and those who seek assistance and do photocopying where necessary.

Research Scholar's Information Seeking Behavior

To determine the research scholars information seeking behavior, a hypothesis was stated and tested using Ellis' model as follows: The First Research Hypothesis (H1) and the Null Hypothesis (H01) stated that: H1: "Bharathidasan University research scholar's search strategies are not the same as Ellis' six characteristic information seeking activities" H01: "It is statistically significant that Bharathidasan University research scholars search strategies are the same as Ellis' six characteristic information seeking activities" In the null hypothesis, it was assumed that research scholars follow Ellis' six characteristic information–seeking behaviours as their information search strategies.

The variables identified in this hypothesis were:

1. The "Search strategies", which defined how research scholars approach their information needs.
2. "Elli's six characteristic information seeking activities", identified as starting, chaining, browsing, differentiating, monitoring, and extracting.

The purpose of this hypothesis was to establish how research scholars seek information. Ellis' six characteristic information–seeking activities, established on academic researchers, were the independent variables on which the research scholars search strategies (the dependent variable, measured by the research scholars 'yes' or 'no' response) were observed in this study. The essence of the relationship was to establish whether the research scholars follow Ellis' activities when seeking information. If yes, the null hypothesis was accepted, otherwise it was rejected. Each of the six characteristic activities: starting, chaining, browsing, monitoring, differentiating, and extracting were tested individually using the chi–square statistic. A number of questions were set to collect data on these variables; which were tested for majority use ('yes' response) or non–use ('no' response) of each technique. The findings and chi–square computations were summarized, tabulated and discussed as follows:

Testing the Research scholar's browsing and chaining techniques

Table: 3 Chi-Square values for Browsing and Chaining techniques

Browsing and Chaining Techniques							
	Frequencies				Chi–square test statistics		
	Yes		No		X^2_{ob}	df	X^2cvat 0.05 level
	Observed	Expected	Observed	Expected			
Browsing	60	45.0	30	45.0	10.000	1	3.84
Chaining	84	49.0	14	49.0	50.000	1	3.84

Note: X^2_{ob} represents the obtained/calculated chi–square value

X^2cv represents the critical chi–square value obtained from chi–square tables

df. represent the degrees of freedom calculated as:

(n — 1) in an n X 1 contingence table [n = rows or columns]

(R — 1) (C — 1) in an n X m contingence table [n = rows (R), m = columns (M)]

$\chi 2$ ob is calculated as follows:

$$\chi^2_{ob} = \sum_{i=1}^{n} \frac{(o_i - e_i)^2}{e_i}$$

Where: i = 1, 2, ... n

oi is the obtained frequency

ei is the expected frequency calculated as:

ei = (Total items observed/number of items) *E.g.* (Total for 'yes' and 'no' observed/2)

In the above table, an obtained chi–square value is statistically significant if it is greater than or equal to 3.84, at a significance level of 0.05, with 1 degree of freedom. The obtained chi–square statistic for browsing (10.000), and chaining (50.000) both indicated a high significance level,

with the null hypothesis accepted. Thus, browsing and chaining were concluded to be among the research scholar's information seeking search strategies.

Testing the research scholars starting techniques

Starting techniques signify where the initial search for the relevant documents is first done after identifying an information need. The various options suggested to the research scholars for selection according to what they used are as explained below and shown in the Table namely; using recommended reading lists; searching through the subject catalogue; inquiring from colleagues; searching directly on the shelves; searching through e–resources; and searching through the journal contents to identify relevant articles, and browsing the internet.

Table: 4 Chi-square value for starting techniques

Starting Techniques							
	Frequencies				Chi–square test statistics		
	Yes		No		X^2_{ob}	df	X^2cvat 0.05 level
	Observed	Expected	Observed	Expected			
Reading lists	59	51.5	44	51.5	2.184	1	3.84
subject catalogue	53	51.5	50	51.5	0.087	1	3.84
Colleagues	58	51.5	45	51.5	1.647	1	3.84
Shelves	41	51.5	62	51.5	4.282	1	3.84
E–resources	7	51.5	96	51.5	76.903	1	3.84
Journal contents	3	51.0	99	51.0	90.353	1	3.84
Browse Internet	16	51.5	87	51.5	48.942	1	3.84

From the above table, the chi–square values that were statistically significant at the 0.05 level, with 1 degree of freedom for starting techniques were: shelves with 4.282 > 3.84; E–resources with 76.903 > 3.84; journal contents with 90.353 > 3.84; and browsing the Internet with 48.942 > 3.84. These implied that the deviations between the observed and expected frequencies were high though not on the same side of the 'yes' or 'no' response. It was noted that, shelves, e–resources, journal contents and browsing the Internet were significantly not used by the students as starting points.

Examining those that were not statistically significant, (*i.e.* Reading lists with 2.184 < 3.84, Colleagues: 1.641 < 3.84, Subject catalogue: 0.087 < 3.84) revealed that the deviations between the observed and the expected frequencies were quite small; and using the eyeball test (visual inspection), the 'yes' response was higher. To some extent therefore, reading lists, colleagues and the subject catalogue were used as starting techniques but not at probabilities high enough to accept the null hypothesis.

Testing the research scholar's differentiating techniques

To differentiate between the many documents identified by a user and select what is appropriate for use to satisfy an identified need; three options were suggested for the respondents to select what they used. These are described in the statements below:

1. Comparing the **titles** of documents related to a need and selecting.
2. Critically looking at **contents** of each document before deciding on which one to use.
3. Critically searching the **index** of each document to identify whether what is required is actually in a particular document before it is selected for use.

These were all subjected to a chi–square test, with a probability level of 0.05, and 1 degree of freedom to establish whether the majority of the students used them or not. The findings are as shown in the table.

Table: 5 Chi-square values for differentiating techniques

Differentiating techniques							
	Frequencies				Chi–square test statistics		
	Yes		No		X^2_{ob}	df	X^2cvat 0.05 level
	Observed	Expected	Observed	Expected			
Titles	42	49.5	57	49.5	2.273	1	3.84
Contents	68	49.5	31	49.5	13.828	1	3.84
Book Index	46	49.5	53	49.5	0.495	1	3.84

From the above table, an obtained chi–square value is statistically significant if it is greater than or equal to the chi–square critical value of 3.84. It was therefore found that inspecting through the contents of information materials is the only statistically significant differentiating technique used by research scholars. On a general note, however, the differentiating technique is not practically accepted as an information searching technique because most times research scholars do not find the actual documents that they would have preferred using and end up with any alternative available, provided it is relevant for the specified information need. Secondly, because the most used documents are in the closed access sections, the opportunity of using more than one document to compare the contents is limited. These differentiating techniques are therefore not so dictating for what a research scholar actually uses in the end. On most occasions research scholars concentrate on using particular materials recommended by either their guides or colleagues who have used them before; other than searching to find the most appropriate document to use. On this basis, the null hypothesis was therefore rejected that differentiating is not one of the major searching strategies used by research scholars.

Testing the research scholar's extracting techniques

To extract material of interest for specified information needs, research scholars either approach the information resource directly on the shelves or they first use the various retrieval tools before selecting what is relevant. Table shows the chi–square values on how research scholars utilize the information retrieval tools to extract information. Considering the obtained chi–square statistics in table, all of them were highly statistically significant except for bibliographies where the computed chi–square value was less than the critical chi–square value (*i.e.* 1.222 < 3.84). For the card catalogue, periodical indexes, journal contents, CD–ROM indexes, e–resources and the internet, the computed chi–square values were all greater than the critical chi–square value of 3.84 at a significant level of 0.05 with 1 degree of freedom. This implied that the deviations between the observed and the expected frequencies were high but with only the card catalogue being significant on the use side ('yes' response). The rest fall on the non–use side ('no' response). The null hypothesis was therefore only accepted for the card catalogue, as an extracting technique used by research scholars.

Table: 6 Chi-square values for extracting techniques

Extracting techniques							
	Frequencies				Chi–square test statistics		
	Yes		No		X^2_{ob}	df	X^2cvat 0.05 level
	Observed	Expected	Observed	Expected			
Card catalogue	83	49.5	16	49.5	45.343	1	3.84
Bibliographies	44	49.5	55	49.5	1.222	1	3.84
Periodical index	24	49.0	74	49.0	25.510	1	3.84
Journal contents	15	49.5	84	49.5	48.091	1	3.84
CD indexes	5	49.5	94	49.5	80.101	1	3.84
E-journals	9	49.5	90	49.5	66.273	1	3.84
Internet	20	49.5	79	49.5	35.162	1	3.84

Testing the research scholars monitoring techniques

Monitoring as an information seeking procedure was subjected to a ranking scale of 1 to 7, with 1 as the highest rank and 7 as the lowest rank for each of the options set for the scholars to select from. The results showed very high variations in the scholar's choice for what they used most and what they used least. The chi–square test statistics showed very high significance levels for all the options, with either rank 1 or rank 7 taking the highest figure for each option, implying that the deviations were inclined at both rank 1 and rank 7. However, because of the scattered distribution of the frequencies, the results were re–grouped with the ranks combined to arrive at three groups classed as the highly used (ranks 1–2), moderately used (ranks 3–5), and the least used (ranks 6–7) as shown in Table.

Table: 7 Chi-square values for monitoring techniques

Monitoring techniques		
	Rank Frequencies	Chi–square test statistics

Ranks	Ranks 1–2	Ranks 3–5	Ranks 6–7	df	$\chi 2$ ob	$\chi 2$ cv at 0.05 level
Catalogue (Observed)	53	15	18	2	31.103	5.99
(Expected)	28.7	28.7	28.7			
Lists (Observed)	41	11	27	2	17.136	5.99
(Expected)	26.3	26.3	26.3			
Displays (Observed)	27	21	32	2	2.272	5.99
(Expected)	26.7	26.7	26.7			
Library staff (Observed)	30	23	29	2	1.050	5.99
(Expected)	27.3	27.3	27.3			
Guides (Observed)	34	28	21	2	3.057	5.99
(Expected)	27.7	27.7	27.7			
Colleagues (Observed)	43	29	12	2	17.214	5.99
(Expected)	28.0	28.0	28.0			
Workshops (Observed)	4	10	62	2	80.422	5.99
(Expected)	25.3	25.3	25.3			

From the above table, it is noted that at 0.05 significance level, with 2 degrees of freedom, the computed chi–square values for displays, library staff, and lecturers were less than the critical chi–square value and therefore not statistically significant. The null hypothesis was therefore rejected and the research hypothesis accepted that displays, library staff and guides are not the monitoring technique options used by research scholars. The table also portrays the highly significant monitoring technique options (i.e. those with the computed chi–square value greater than the critical chi–square value) as: Catalogues (31.103 > 5.99); Lists (17.136 > 5.99); Colleagues (17.214 > 5.99) and Workshops (80.422 > 5.99). However, they all do not significantly fall on the highly used side (rank 1–2), to be accepted as monitoring techniques. Only the catalogue, lists and colleagues are significant with inclinations towards ranks 1–2. Therefore, the null hypothesis was only accepted for catalogues, lists, and colleagues as the monitoring technique options used by research scholars.

In general, the null hypothesis was therefore accepted that Bharathidasan University research scholars follow only five of Ellis' six generic information–seeking activities. These are Starting

(using lecturers and to some extent reading lists, colleagues and the card catalogue); Browsing (especially on the open shelves); Chaining (using references at the back of consulted books); Monitoring (using the card catalogues, lists on library notice boards, and colleagues); and, Extracting (using the card catalogue).

Research scholar's information seeking problems

"To establish the problems that research scholars encountered in information seeking", a hypothesis was stated and analyzed as follows: The Second Research hypothesis (H2) and Null Hypothesis (H02) stated that:

H2: "Bharathidasan University research scholar's information seeking problems are not as a result of the procedural set up of the information institution — the library"

H02: "It is statistically significant that Bharathidasan University research scholar's information seeking problems are as a result of the procedures of use in the Library"

It was therefore assumed in the null hypothesis that research scholar's information seeking problems are inclined to the library's procedures of use other than as a result of the scholars own difficulties of not knowing what to do or any other factors. The variables identified in this hypothesis were:

1. The "Library's procedures of use"
2. The "Information seeking difficulties" encountered by scholars

The purpose of this hypothesis was to establish the major problems that research scholars encountered while seeking information and on which side (the library or individual ignorance) they fell most in order to lay strategies on how they could be addressed. A number of questions were set to collect data on the two identified sides — the "Library" and "Individual ignorance" (here after referred to as "Institutional" and "Personal").

On the "Institutional side", the findings and Chi–square computations revealed the following: Lending information materials to scholars for use outside the University library is an institutional service rendered to those in need of borrowing. In Bharathidasan University library, the

information materials lent out are those that are on the open shelves. Analyzing the respondents' trend of responses to borrowing library materials using the chi–square test revealed no significant difference between those who borrow and those who do not borrow. That is, the obtained chi–square value was less than the critical chi–square value at the 0.05 significance level with 1 degree of freedom (0.038 < 3.84). By visual inspection, it was found that those who borrow are almost equal to those who do not borrow. Thus, having a high rate of none borrowers implied there are some problems with the institutional procedures of operation.

To investigate further on the factors that were assumed to be limiting the scholar's maximum utilization of the University Library, research scholars were also asked to comment on how current the information resources they often used in the university library were. It was established that the information resources that the students used were either current (with 37.5 percent) or old (with 52.4 percent). Very few scholars acknowledge using the very current information resources probably because they are too few; or the users were not aware of their existence; or guides have not referred them to those sources; or the scholars are just not adventurous in discovering what could be new in the library. The very old information resources were also less utilized (probably because they are not relevant; or they are over shadowed by the current information resources). Since the majority of the scholars acknowledged having access to mainly old information resources, this was also considered a substantial problem hindering the scholars from utilizing the library resources, thinking that the resources that are available are only old materials that may not be helpful.

There are instances where the library has played its part to ensure that library users are knowledgeable and capable of utilizing its resources independently. Some of the endeavors include conducting user education, ensuring that library staff is available for consultation and that the access tools are available for use. It also conducts some computer workshops to ensure that the students know how to access the e–resources though at a very low coverage. On the "Personal side", a number of questions were put forward to the research scholars to assess whether they utilized the training opportunities availed by the University Library to be able to optimally use the library resources, or whether there were any other factors that hindered them from attending these sessions. Research scholars were therefore asked whether they attended the

user education workshops conducted in the library. 54.4 percent of the respondents said they had never attended any of these workshops. The dominating reasons being that the notification of these workshops was not adequately done. Sometimes workshops are conducted concurrently with other programs. One of the respondents said the workshops were not clear to them. But considering the scholar's response to whether user education was sufficient, 74.7 percent of them said it was sufficient enough. For the few who had ever attended the user education sessions (45.6 percent), and felt it needed some improvement, the following were recommended:

1. More frequent and short–term training workshops should be organized with few students so that all understand;
2. User knowledge provision should be changed from being general to being particular and practical;
3. The training sessions should be broken into sections so that not everything is taught at once; and,
4. Other delivery methods should be used such that those who miss can obtain handouts and brochures or pocket books.

The research scholars were also asked whether they do consult library staff when stranded with any information problem in the library. All the scholar's (104) responded to this question with 78 respondents acknowledging seeking assistance from library staff, while 26 respondents said they do not consult librarians at all. Inquiring on how often they sought help from library staff, the majority (41.4 percent) said they seek help only 'sometimes', followed by those who seek help 'most times' (20.2 percent), then 14.1 percent who 'rarely' seek help, and just a few who 'always' seek help. The rest of the students (18.2 percent) do not seek any help at all. Seeking help is an initiative that originates from the information user though to some extent, the environment that the user encounters has an effect on whether the user takes the courage to ask or not. Assessing the case of those who did not seek help at all was therefore not so conclusive because there was need to establish why they did not consider seeking help at all; or it would be concluded that they are always sure and confident whenever seeking information.

Discussions of the findings

It is established from the findings that scholar's have information needs that relate to their studies. This study investigates that IT based library services are being less utilized compared with print sources by the research scholars. Researchers use a variety of information sources for their research. Books and e-journals are considered mostly. Researchers perceived the Bharathidasan University Central Library play an effective role in meeting their research needs, they also prefer to consult research guide and library first. It was also noted that there was little awareness of e-resources available in library, less use of document delivery service. Research scholars were asked to indicate the type of information source which they used to seek information. For seeking information, journals were the popular type of information source for all research scholars

It was found that respondents used a variety of information sources for research. Books, thesis and journals were considered more important. It is interesting to note that, although respondents perceived the Bharathidasan university library as effective in meeting their information needs, they prefer to first consult their personal collections. It might be due to easy and convenient access to the personal collection and unawareness about library collection, services and facilities. It is understandable that no one library can acquire all materials produced in a particular discipline. However, in view of the fact that a considerable number of respondents visited other libraries, it is possible that they might not be aware of the interlibrary loan service provided by the Bharathidasan university library.

The study revealed that the respondents used IT based library sources and facilities less frequency compared with printed sources. It might be due to the lack of awareness about their availability, improper selection of materials or unfamiliarity with these products. Similarly, it is also noted that e-mail is the most popular internet application, whereas other internet based services and applications are only used by a limited number of respondents. This is a matter of concern, as presently, electronic information sources and the internet are considered extremely important tools for effective research. Therefore, the Bharathidasan university library might like to review its electronic information resources, while at the same time embark on an extensive library promotion and user education programme.

Recommendations

The University Library faces a number of challenges in its user instruction programs, yet it is through user education that the librarian's work is made easy and the student's efforts quickened while retrieving and utilizing the library's information resources. In this respect, the current library user instruction program should be enhanced to empower students with the benefit of using information resources in all formats, and be proficient in library use. It is recommended that for information resources to have a direct impact on the students learning processes, the library needs to embark on two broad tasks, namely liaising with the teaching faculties to develop the appropriate collections, and providing a number of new digital information services that can be accessed by many users at a time. The speed of internet shohld be increased so that the respondents can speedily access the information and utilize the information.

Conclusions

Understanding the actual needs of information users and taking steps to satisfy them is the first step towards effective service provision. This can best be achieved through formal in–depth studies. Librarians, especially those involved in bibliographic instruction should be interested in ways individuals approach the library and the methods they use to search for needed information. Librarians could redesign strategies intended to improve the provision of library services especially towards information skills development and information resource awareness.

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