

Impact of Technology on Information Seeking Behavior

A Case with Post Graduate Students of Select Universities in Jammu and Kashmir

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Abstract—Advancement in technology has brought drastic changes in the way information is created, accessed, gathered, stored, organized, disseminated, retrieved and consumed. Internet has facilitated its users with a plethora of information resources that provide exhaustive, qualitative and relevant information with round the clock availability. This Paper is an attempt to explore the electronic information seeking behavior of Students studying various courses in select universities of Jammu & Kashmir. Descriptive method of research is employed to carry out the study. The study concentrates on the influence of information technology in the information seeking of post-graduate students along with the major barrier for them to use information technology for their information needs.

Keywords—*Information Seeking Behavior; Information Seeking Models; Information Technology; Electronic Resources; Information Literacy; University of Kashmir; Universities of Jammu & Kashmir*

I. INTRODUCTION

Information Seeking Behavior (ISB), is considered as a human behaviour to search for information in purposeful way to find the gap [1]. ISB encompasses the rationale for searching information, the means and sources through which the desired information is obtained and the methods adopted while seeking the needed information. It is one of the highly researched topics in Library and Information Science. A lot has been published regarding the ISB of students with an aim to bring forth the course of change that they face while seeking information in the tech savvy environment. Most times student's information seeking behavior involves purposeful information seeking as a result of the need to complete course assignments, prepare for class discussions, seminars, workshops, conferences, write research papers etc. Information seeking behavior provides an insight towards the impact on students in academic intuitions due to advancement in technology, availability of nascent information sources and channels providing access to these sources. The paper is an attempt to explore the ISB of Post Graduate students pursuing different courses in various faculties of select universities of J&K state. It includes various facets of ISB like purpose of

seeking information, extent of usage of various information sources (print and electronic) as well as the impact of electronic resources on their information seeking patterns. Besides, the study also barriers commonly faced by the Post Graduate students while searching desired information.

II. REVIEW OF LITERATURE

Students in university setups access different information sources to satisfy various information needs related to a number of purposes including Course completion, Research work, General awareness, writing assignments/research etc. Thanuskodi while studying the Information needs and seeking behavior of the Tamil Nadu Dr. Ambedkar Law University Faculty Members found that most of the respondents (76.66%) access information for writing papers while as 51.66% use them these for research work [2]. Moly found in his study regarding Information Need and Information Seeking Behavior of Information Science Students in Haramaya University, Ethiopia that the main purpose of students to visit library is writing assignments/research and study [3]. Students search information from print as well as electronic sources and while browsing desired information, they come across a number of problems. According to Baro, Endouware and Ubogu the problems that students face while searching information in Niger Delta University include inadequate information literacy, lack of time, and poor searching skills [4].

George et al. while analyzing the information seeking behavior of graduate students representing all faculties and departments from Carnegie Mellon University found that students heavily depend upon on Internet and on various sources like books, journals and research papers [5]. ICT nationally and internationally has changed information-seeking behavior of students [1]. Again, one of the Online Computer Library Center report highlights the findings of an international survey of students that majority of students typically use search engine especially Google, a good number of them use library web site to access e-zenes, online data bases and e-journals [6].

Medeiros reported that the adoption of Information Technology in higher academic institutions has led to the creation of electronic sources and services. Students make use of these sources besides the traditional or print sources [7]. Ganaie and Khazer while studying the Information Seeking Behavior among PG Students of University of Kashmir conclude that students are inclined towards the use of print sources of information rather than electronic ones [8]. Catalano finds in his study about the information seeking behavior among the graduate students in Hofstra University, Hempstead, New York, USA that they prefer to use electronic sources while seeking information related to their research [9]. Sheeja divulges that Social Science and Science researchers prefer to access electronic resources like e-journals and e-databases more than the print forms of these resources [10].

III. OBJECTIVES

The study comprises of the following objectives:

- To know the purpose of searching information
- To analyse the use of print as well as electronic sources of information.
- To explore the preference of formats of information sources
- To identify the barriers faced while accessing information

IV. SCOPE

The scope of the study is limited to Research Scholars belonging to the following four select universities of Jammu & Kashmir state:

- University of Kashmir
- University of Jammu
- Islamic University of Science and Technology
- Mata Vaishno Devi University

V. METHODOLOGY

To explore the impact of technology, a total of 300 scholars were selected from four universities of Jammu & Kashmir using stratified random sampling technique. Sample was distributed in accordance to the population ratio of each university under study. A well-drafted questionnaire was used as a data gathering tool and was personally distributed among the scholars. Data was analysed and statistical tests were carried out using SPSS software.

VI. RESULTS AND DISCUSSION

A. Faculty Wise Comparison

An attempt is made to make faculty wise comparison of various aspects of ISB of respondents in the universities of J&K under the scope of the study. Comparative analysis of the user responses collected in this regard is carried out under the following headings:

1) Faculty wise Purpose of Searching Information

This sub-section is an effort to compare the faculty wise purpose of respondents to visit the libraries in the select universities. Data collected in this regard is presented in Table I.

TABLE I. FACULTY WISE PURPOSE OF VISITING LIBRARY (N=300)

S. No	Purpose	Faculty		
		Arts (N=100)	Social Science (N=100)	Science (N=100)
1	Research Work	45** (45)*	34 (34)	38 (38)
2	Course Completion	75 (75)	77 (77)	78 (78)
3	Entertainment	26 (26)	33 (33)	38 (38)
4	Discussion	14 (14)	17 (17)	23 (23)
5	Personal interest for reading	19 (19)	16 (16)	26 (26)
6	General awareness	41 (41)	44 (44)	38 (38)
7	To keep updated with the latest information	24 (24)	29 (29)	30 (30)
		$\chi^2 = 24.88$; $df=12$; $P\text{-value}<0.05$		

*Figures within parentheses indicate percentage

**Total no. of respondents exceeds the actual no. since multiple options were allowed

It is obvious from Table 1 that majority of respondents who prefer to search information for research purpose are from Faculty of Arts (45%) followed by respondents from Faculty of Science (38%) and least from Faculty of Social Science (34%). Course completion is the motive of majority of respondents (around 75-78%) from all the three faculties in the select universities. Respondents from Faculty of Science (38% & 23%) access information for entertainment and discussion purpose more than those from Faculty of Social Science (33% & 17%) and Faculty of Arts (26% & 14%) respectively. Again, more respondents from Faculty of Science (26%) search information because of their personal interest than those from Faculty of Arts (19%) and Faculty of Social Science (16%). Moreover, respondents from Faculty of Social Science (30%) take a lead over the respondents from Faculty of Arts (29%) and Faculty of Social Science (29%) to keep themselves updated with the latest information. Statistically, it is highlighted that the 'Purpose of searching information' has no significant association with 'Faculty wise distribution of respondents' in universities as $p<0.05$ which reflects that the purpose of searching information among the respondents vary from faculty to faculty. Faculty wise Use of Device(s)/ Gadget(s)

In order to assess the relationship between 'Device(s)/ Gadget(s) used to access Information' and 'Faculty wise use', the responses of users have been compared and are displayed in Table II.

TABLE II. FACULTY WISE USE OF DEVICE(S)/ GADGET(S)

S. No	Gadget	Faculty		
		Arts (N=100)	Social Science (N=100)	Science (N=100)
1	Laptop	43** (43)*	47 (47)	48 (48)
2	Desktop	11 (11)	8 (8)	9 (9)
3	Mobile	47 (47)	49 (49)	46 (46)
4	All the three	30 (30)	29 (29)	25 (25)
$\chi^2 = 4.1581$; $df=6$; $P\text{-value} > 0.05$				

*Figures within parentheses indicate percentage

**Total no. of respondents exceeds the actual no. since multiple options were allowed

It is apparent from Table II that there is a trend of using laptops among the respondents from all the faculties rather than other devices. These are used mostly by the respondents from Faculty of Science (48%) and Faculty of Social Science (47%) as compared those from Faculty of Arts (43%). Desktop is being used by meager portion of respondents from all the faculties with majority of respondents (11%) from Faculty of Arts and least (8%) from Faculty of Social Science. However, information is being accessed through Mobile by a good portion of respondents from all the faculties with majority from Faculty of Social Science (49%) followed by Faculty of Arts (49%). Some of them access information by using all the three devices with majority of respondents who use these devices are from Faculty of Arts (30%) and least are from Faculty of Science (25%). Statistically, it is revealed that the 'Use of Gadget' has no significant association with 'Faculty wise distribution of respondents' as $p > 0.05$.

2) Faculty wise Comparison of Print Sources

Print form of information sources are used extensively in all the universities. Respondents among all the three faculties were asked to mark out their responses regarding the source of information that they prefer to use. The data in this regard is presented in Table III.

Table 3 reveals that Books are being used by majority of respondents from Faculty of Arts (81%) followed by the respondents from Faculty of Science (79%). From Faculty of Social Science also a good percentage of respondents (75%) are using books. Journals are almost being equally used by the respondents from all the faculties with almost equal proportion of respondents (around 35%) from Faculty of Science and Faculty of Social Science. This is in contradiction with the findings of Sheeja who found that there is significant difference in the use of journals among various faculties in Dublin University [10]. Conference Proceedings, Magazines and Repositories are also being accessed by almost equal proportion of respondents from all the three faculties. Furthermore, it is noticed that Newspapers are used by majority of respondents from Faculty of Science (49%) followed by Faculty of Social Science (47%) and the least

TABLE III. FACULTY WISE USE OF PRINT SOURCES (N=300)

S. No	Print Sources	Faculty		
		Arts (N=100)	Social Science (N=100)	Science (N=100)
1	Books	81** (81)*	75 (75)	79 (79)
2	Journals	32 (32)	36 (36)	35 (35)
3	Reference Source	39 (39)	33 (33)	35 (35)
4	Conference Proceeding	7 (7)	7 (7)	9 (9)
5	Magazines	24 (24)	26 (26)	25 (25)
6	Repository	4 (4)	3 (3)	4 (4)
7	Newspapers	37 (37)	47 (47)	49 (49)
$\chi^2 = 8.6105$; $df=12$; $P\text{-value} > 0.05$				

*Figures within parentheses indicate percentage

**Total no. of respondents exceeds the actual no. since multiple options were allowed

are from Faculty of Arts (37%). The statistical observation corroborates that 'use of print sources' and 'Faculty wise distribution of respondents' has no significant relation as $p > 0.05$.

3) Faculty wise Comparison of Use of Electronic Information Sources

In today's ICT dominated world, students are accessing different information sources in electronic format. Data presented in table IV shows faculty wise use of electronic information sources.

TABLE IV. FACULTY WISE USE OF ELECTRONIC SOURCES (N=300)

S. No	Electronic Sources	Faculty		
		Arts (N=100)	Social Science (N=100)	Science (N=100)
1	e-Books	65** (65)*	64 (64)	64 (64)
2	e-Journals	36 (36)	37 (37)	34 (34)
3	ETD's	26 (26)	25 (25)	23 (23)
4	e-Newspaper	38 (38)	46 (46)	38 (38)
5	e-Magazines	16 (16)	15 (15)	11 (11)
6	e-Conference Proceedings	10 (10)	11 (11)	10 (10)
7	Not Aware	11 (11)	10 (10)	14 (14)
$\chi^2 = 8.4799$; $df=12$; $P\text{-value} > 0.05$				

*Figures within parentheses indicate percentage

**Total no. of respondents exceeds the actual no. since multiple options were allowed

Table 4 reveals that there is a good use of electronic source by the respondents from all the three faculties in the universities. E-books, e-Journals, ETD's and e-Conference Proceedings are used by a good number of respondents from all the faculties. Majority of respondents who use e-books are from Faculty of Arts (65%) and least from Faculty of Science (64%). Regarding the use of e-Journals, respondents from Faculty of Social Science (37%) takes the lead followed by Faculty of Arts (36%). Moreover, Faculty of Arts (26%) takes the lead in the use of ETD's; while as Faculty of Science (23%) is lagging. Again, majority of the respondents from Faculty of Social Science (46%) use e-Newspapers than from Faculty of Arts (38%) and Faculty of Science (38%). E-Magazines are also being meagerly used by the respondents from all the faculties with majority from Faculty of Arts (16%) and Faculty of Social Science (15%) each. Some of the respondents are not familiar with these resources including majority of them from Faculty of Science (14%) followed by Faculty of Arts (11%) and least from Faculty of Social Science (10%). This is in support with the findings of Fizardi who states that the students in different faculties at the University of Botswana are not aware with electronic resources and need to be trained [11]. The statistical observation substantiates that the 'use of electronic sources' has no significant association with 'Faculty wise distribution of respondents' as ($P>0.05$).

4) Faculty wise Comparison of Preference of Formats

This sub-section is intended to compare the faculties of the select universities on the basis of use of different formats of information sources. Data collected in this regard is given in Fig 1

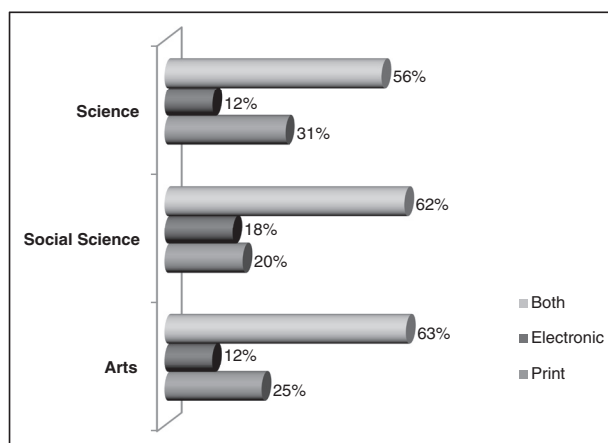


Fig. 1. Faculty wise use of Format

It is clearly depicted from Fig 1 that there is a difference of moderate nature between three faculties in the usage of print format, as a good portion of respondents from Faculty of Science (31%) prefer to access information in print format followed by the respondents from Faculty of Arts (25%) and least from Faculty of Social Science (20%). On the other hand, electronic sources are preferred by the respondents from Faculty of Social Science (18%) than those from

Faculty of Science (12%) and Faculty of Arts (12%). Further, it is evident that majority of the respondents prefer to access information in both the formats with a majority from Faculty of Arts (63%) and Social Science (62%) than those from the Faculty of Science (56%). Statistical data reveals the fact that 'Format of information sources' have no significant association with 'Faculty wise use' as $p>0$.

5) Faculty wise Comparison of Barriers Faced while seeking information

This sub section is an effort to compare different faculties on the basis of the barriers faced by the respondents while accessing the needed information. Data collected in this regard is presented in Table V.

TABLE V. FACULTY WISE COMPARISON OF BARRIERS FACED (N=300)

S. No	Barrier	Faculty		
		Arts (N=100)	Social Science (N=100)	Science (N=100)
1	Electricity Disruption	46** (46)*	38 (38)	47 (47)
2	Inadequate e-resources	21 (21)	28 (28)	32 (32)
3	Limited Internet access time	35 (35)	41 (41)	41 (41)
4	Slow internet connection	58 (58)	63 (63)	63 (63)
5	Limited No. of PC's	26 (26)	28 (28)	32 (32)
6	Poor information search skills	10 (10)	9 (9)	12 (12)
$\chi^2 = 9.9039$; $df = 10$; $P > 0.05$				

*Figures within parentheses indicate percentage

**Total no. of respondents exceeds the actual no. since multiple options were allowed

Table 5 shows that respondents from all the three faculties of the select universities come across a number of barriers while searching information. It is observed that respondents from Faculty of Science (47%) and Faculty of Arts (46%) are almost equal proponents of the fact that they face electricity disruption, however the percentage of Faculty of Social Science (38%) is slightly lesser. A good fraction of respondents from Faculty of Science (47%) state that there are inadequate e-resources available in the universities followed by respondents from Faculty of Social Science (28%) and Faculty of Arts (21%). Nevertheless, it is quite clear that slow internet connectivity, limited number of PC's available in the universities and poor information searching skills are faced by almost equal proportion of respondents (*with a difference of $\leq 5\%$*) from all the three faculties in the select universities. The statistical observation regarding the barriers faced by respondents while browsing desired information does not have significant association with the 'Faculty wise distribution of respondents' as $p>0.05$.

VII. FINDINGS

Information seeking behavior of students pursuing various courses in select universities of Jammu & Kashmir has influenced by the introduction of information technology. There is trend of accessing information in both the formats viz Print as well as Electronic. Among the print sources Books, Journals and Reference Sources are being used more than other sources. Books are mostly used by the students from Faculty of Arts and Faculty of Science while as Journals from Faculty of Social Science. References Sources are used by the students from Faculty of Arts. Mobile Phones and Laptops are being predominantly used by the students under study. Findings reveal that there is a trend of accessing information in both the formats among the students from all the faculties of select universities. Electronic information sources are being used to a good extent and the most prominent reasons for accessing these sources is found to be their Easy accessibility and online availability. Students keep themselves updated with the latest information by means of Internet and Newspapers mostly. The awareness and assistance regarding the use of electronic sources of information is mostly provided by Friends and Teachers. Among all the electronic sources students mostly use e-journals, e- books and e- newspapers. It is observed that students come across a number of barriers while accessing electronic information. The major barriers that they face are electricity disruption and slow internet connectivity. Less internet access time provided by their universities, limited number of PC's available in the universities and poor information searching skills are the other barriers faced by the students from all the faculties of the select universities of Jammu and Kashmir.

VIII. CONCLUSION AND SUGGESTIONS

Increase in availability of information channels has influenced the Information seeking behavior of users especially in higher academic institutions. The use of electronic resources in the university set-ups is increasing as a result of advancement in technology and the same is witnessed among the students pursuing various courses in different faculties in the universities of Jammu and Kashmir. Students use on a number of information sources to seek their desired information and to fulfill their information needs timely and systematically. Books, Journals and Newspapers in both the formats are used at most among all the information sources in the select universities. The library administration needs to take adequate steps to launch awareness as well as assistance programs to ensure the use of other sources

of information to a greater extent. The use of Laptops and Mobile Phones for accessing electronic information is increasing and that of Desktops is diminishing. More and more Laptops need to be purchased by the authorities for the students which will work for hours even at the time when there is no electricity in universities. As students face a number of problems and barriers while accessing electronic information including electricity disruption, slow internet connectivity, poor information searching skills etc. so there is a call for administration in the select universities of Jammu and Kashmir state to sought out the reasons for such barriers and take adequate steps to overcome these so to ensure timely, qualitative and systematic access to information.

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