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Use of Electronic Information Resources: A Case Study of Thapar University

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ABSTRACT

This paper is an attempt to study the issues like use of electronic information resources, its impact on the collection of print and electronic journals its awareness among the users, and the places where the users are accessing these resources. A survey was conducted in the academic year 2006-07 at the Thapar University, Patiala. A total number of 504 users from the undergraduate, postgraduate, research scholar and faculty members were selected and their response was obtained with the help of questionnaire. The findings show that users from all these categories were using e-resources; the awareness about e-resources encourages users to use such resources to the maximum; and the users are using computer centre and hostels more for accessing the information. The impact of e-resources was visible from the decrease in number of printed journals in comparison to the increase in number of electronic journals. The use of e-journals has increased manifold. The printed material is being quickly replaced by the electronic resources.

Keywords: Case study, electronic journals, electronic information resources, usage of e-resources, printed journals

1. INTRODUCTION

Information technology has thrown a new challenge to the libraries. The technology has shown a great impact on the services of the libraries. The access to information through Internet has changed the role of libraries. Libraries now have both printed document as well as electronic information resources in their collection. The electronic documents can be stored, accessed, and delivered as and when required, therefore the services of the libraries are not confined within the four walls but are integrated into local, regional, national, and international networks. Academic libraries too are now becoming hybrid libraries.

2. REVIEW OF THE LITERATURE

The survey regarding use of electronic resources has been carried out in many studies. The e-mail, web browsing, and word processing are still the main activities. Information searching is about 15 per cent only of all the usage of electronic resources. Students feel more at ease using online (web- based) resources than CD-ROM databases. According to Cramford and Daye[1], students find CD-ROMs less user friendly with a less intuitive interface; only 18 per cent used CD ROMs and 13 per cent used online databases. Since the libraries have started subscribing to e-journals there is an increase in the use of e-journals and decrease in the use of print journals by faculty and graduate students. The numbers of e-journals in the libraries have increased from two hundred to more than three thousand[2]. The radical changes in information seeking behaviour and use of information resources are taking place as the scholars and researchers have become more comfortable and familiar with the resources available through web[3]. A major survey of literature was carried out by Tenopir[4] (2003). He analysed the results of over 200 studies of the use of electronic resources in libraries published between 1995 and 2003. Major finding of these studies indicate that electronic resources have been rapidly adopted in academic areas but the behaviour of users varies according to their discipline. Key study in this field is by Bar-Ilan and Fink[5] (2005). Some of the findings of their study are that the usage of electronic journals increases

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with time and the variables such as age and/or academic position is inversely related to the use of electronic format and journals. There is a decrease in the use of printed journals as users prefer to use the electronic format more. As the time passes many users access the electronic format more frequently. Dadzie[6] found that the use of computer for searching information was high. The usage of some Internet resources was also found to be very high, while the use of scholarly database resources was quite low due to inadequate information about the existence of these library resources.

The results of the study show that 68.8 per cent of the respondents preferred to use journals online compared to 31.2 per cent who preferred to use print journals and 71.8 per cent who preferred to use printed books as compared to 28.27 per cent who preferred to use electronics books. Razaand, M-Masoom and Upadhay carried out a survey at Aligarh Muslim University to study the usage of e-journals by researchers. They found that many research scholars are consulting e-journals from their departmental labs and computer centres use e-journals not only for research purposes but also to update their own knowledge.

These days due to increase of subscription of e-journals, every institute is reducing subscription of printed journals. To know the awareness and usage of e-journals among the students and faculty a survey was conducted by Verma, Rama and Baljinder[8] in the year 2005-06 in four prestigious institutes of Engineering and Technology of India. Questionnaire method was used to study the usage and awareness. The result demonstrates that an academic library can become user centered in the electronic environment. The information provided on consortia will expand access to electronic databases. It was found that users are accepting electronic information resources. The problems faced by them are lack of training and slow downloading.

3. PROFILE OF THE THAPAR UNIVERSITY

The university, known as Thapar Technology Campus (TTC), is spread over an area of 250 acres with its campus in the historic city of Patiala. The Thapar Institute of Engineering and Technology was established in 1956 through an imaginative collaboration between the then state of Patiala and East Punjab States Union (PEPSU), the Central Government and the Patiala Technical Education Trust (PTET) founded by the great man of Indian industry, the Late Lala Karam Chand Thapar. Thapar University was granted full autonomy and the status of a Deemed University in 1985. It now enjoys the status of a full-fledged University. Various undergraduate (BE, BTech), postgraduate (ME, MSc, MTech, MBA) and Doctor of Philosophy programmes are being run by the university.

3.1 Central Library

The library was set up at the time of establishment of the institute. It has good collection of printed and electronic documents. Its collection includes 50,000 printed volumes including books, text books, standards, theses, and dissertations. Open access system is followed for shelving of the collections. Library is fully computerised. The users can access a large number of online and CD-ROM-based electronic resources like bibliographic databases and electronic journals. Theses and dissertations submitted to the institute in electronic format since 2003 are also available for use. Users can access the databases at the Thapar University Library home page (http://cl.thapar.edu/).

Central Library is also a member of Information and Library Network (INFLIBNET), a UGC Inter-University Centre. The Centre is involved in library automation, database development, resource sharing, and networking of libraries. It subscribes to several bibliographic databases which can be used by the member Libraries free of charge. INFLIBNET provides access to Online Computer Library Centre Inc. (OCLC). Bibliographic databases available in this service include: Applied Science and Technology Abstracts, Environmental Sciences and Pollution Management with abstracts, and INSPEC (Physics, Electrical, Electronics and Communication Engineering). Also, UGC-Infonet provides online access to scholarly e-journals. The library became member of INDEST consortium in 2005 and subscribes to e-journals such as American Society of Civil Engineers (ASCE) and IEEE/IEE Publications (IEL online).

4. OBJECTIVES OF THE STUDY

The specific objectives of the proposed study were:

(i) To know the use and awareness of electronic information resources among the users.

(ii) To know how frequently the users are using electronic resources provided by their library.

(iii) Which place is used more for accessing the electronic information?

(iv) To know the impact of usage on the collection of print journals as well as electronic journal.

5. SCOPE OF THE STUDY

The proposed study will help other technical institute to see how electronic journals are being used and to understand the need of electronic resources in the larger interest of the faculty members and research scholars. The study covers the undergraduates, postgraduates, research scholars and faculty of the Thapar University

Patiala. The present study will be beneficial for other institutes and motivate them to implement these resources in their libraries also.

6. METHODOLOGY AND DATA COLLECTION

There are various methods of data collection for profiling data including questionnaire, interview, transaction log, and citation study. Each method is having its strengths and weakness. In this survey questionnaire method was used for collecting the primary data. For the purpose of this study, secondary data and information have been collected from the library records, annual reports, and downloaded usage data of electronic resources from the INDEST Headquarter at IIT, Delhi. The survey was conducted during the academic year 2006-07. For this purpose a questionnaire was distributed personally to undergraduate, postgraduate, research scholars and faculty members of the Thapar University. Table 1 shows the total strength (2506) at the time of survey. The 20 per cent strength (504) has been considered for the survey. The strength includes 1741 undergraduates, 505 postgraduates, 141 research scholars, and 119 faculty members. The questionnaires were given to the users at the library, departments, hostels and computer centre. Three hundred and forty eight questionnaires were distributed to undergraduate and their feedbacks were 100 per cent. Ninety out of 101 postgraduate students, and 20 research scholars out of 28 responded. The response from the faculty was 100 per cent.

7. ANALYSIS AND INTERPRETATION

The collected data was analysed by percentage; qualities variables were found by Chi-square test and contingency coefficient for statistically significant among the users. The statistical package for social sciences (SPSS) was used. The results were statistically significant at 0.01 percent level, i.e., P< 0.01.

In response to the question, “Are you aware of electronic information resources/services provided by your library?” Sixty-seven (19.25 per cent) undergraduates, 63 (70 per cent) postgraduates, 26 (96.30 per cent) faculty members, and 20(100 per cent) research scholars answered this question in positive (Table 2). In other words faculty members and research scholars are more aware of their library e-resources than undergraduates and postgraduates. From 485 respondents, only 176 (36.29 per cent) were having awareness about this service. The value of ρ^2 is 165.088 and the degree of freedom (df) is 3. The value of ρ^2 is statistically significant at 0.01 levels. There is a significant variation among the users as far as the awareness about library e-resources/services is concerned.

Table 1. Distribution of questionnaire for survey

Respondents	Total Strength	Questionnaires distributed	Response received
Undergraduates	1741	348	348
Postgraduates	505	101	90
Research Scholars	141	28	20
Faculty	119	27	27
Total	2506	504	485

Table 2. Response of the questionnaire on awareness of Electronic resources/services provided by Thapar University Library

Respondent	Response		Total N (%)	Chi^2 (df;C)
	Yes N (%)	No N (%)		
Under graduates	67 (19.25)	281 (80.75)	348 (100)	165.088** (3 ;0.504)
Postgraduates	63 (70.00)	27 (30.00)	90 (100)	
Research scholars	20 (100.0)	-	20 (100)	
Faculty	26 (96.30)	1 (3.70)	27 (100)	
Total	176 (36.29)	309 (63.71)	485 (100)	

** *Significant at the 0.01 level*

The Thapar University library subscribes to various e-journals/portals for their users under UGC-Infonet consortium. Table 3 shows that 82 (91.11 per cent) postgraduates were aware of UGC Infonet followed by 21 (77.78 per cent) faculty and 12 (3.45 per cent) undergraduates while none of the research scholars was aware of such a consortium. Out of total of 485 respondents 115 (23.71 per cent) were aware of UGC-Infonet. The Chi-square test of independence is significant at 1 per cent level of significance. This implies that there is a significant variation among the users as far as the awareness of UGC-Infonet consortium is concerned. Table 4 highlights the response of the respondents whether they were aware about the electronic resources in library and were using them. Table 4 indicates that only one undergraduate (8.33 per cent) was using e-journals and a major proportion of respondents, i.e., 11 (91.67 per cent) were not using them. Similarly, from the postgraduate category the response of 43 (52.44 per cent) respondents was yes and that of 39 (47.56 per cent) was no. However, research scholars did not use such e-resources, while among the faculty most of the respondents, i.e., 20 (95.24 per cent) were using e-journals from UGC Infonet. It has been found that the postgraduates and faculty members were using e-journals to the maximum as compared to undergraduates and research scholars. One hundred and fifteen respondents gave their response to the question, where as 370 (76.29 per cent) gave no response to the question. Sixty four (55.65 per cent) users were using e-journals. The Chi-square test implies that there is a significant variation among the users so far as the use of library e-resources/services is concerned.

The users were asked how frequently they used the electronic journals. Table 5 shows that very few users used e-journals daily and once in a week. The e-journals were used maximum by users occasionally, or two to three times a week. Undergraduate and postgraduate students were the least users of e-journals compared to research scholars and faculty. Out of 485 respondents 372 (76.70 per cent) did not answer to this question,

Table 3. Are you aware of the name and working of the UGC-Infonet consortium?

Respondent	Response		Total (%)	Chi^2 (df;C)
	Yes N (%)	No N (%)		
Undergraduates	12 (3.45)	336 (96.55)	348 (100)	
Postgraduates	82 91.11	8 (8.89)	90 (100)	354.856**
Research scholars	-	20 (100.0)	20 (100)	(3 ;0.650)
Faculty	21 (77.78)	6 (22.22)	27 (100)	
Total	115 (23.71)	370 (76.29)	485 (100)	

Table 4. If you are aware about UGC-Infonet Consortium do you use it?

Respondent	Response		Total	Chi^2 (df; C)
	Yes N (%)	No N (%)		
Under graduates	1 (8.33)	11 (91.67)	12	
Postgraduates	43 (52.44)	39 (47.56)	82	24.563** (3 ;0.420)
Research Scholars	-	-	-	
Faculty	20 (95.24)	1 (4.76)	21	NR:370(76.29)
Total	64 (55.65)	51 (44.35)	115	

Table 5. How frequently do you use electronic-journals?

Using e-journals	Under graduate	Post-graduate	Research scholars	Faculty	Total N (%)	Chi^2 (df;C)
Daily	3 (37.50)	2 (3.33)	3 (15.00)	-	8 (7.08)	
2/3 Week	2 (25.00)	3 (5.00)	15 (75.00)	14(56.00)	34 (30.09)	
Once a week	-	3 (5.00)	-	7 (28.00)	10 (8.85)	86.762** (9;0.659)
Occasionally	3 (37.50)	52(86.67)	2 (10.00)	4 (16.00)	61 (53.98)	
Total	348	90	20	27	485(100)	

whereas 8 (7.08 per cent) used e-journals daily, 10 (8.85 per cent) once a week, 34 (30.09 per cent) two to three times a week, and 61 (53.98 per cent) occasionally. Thus, maximum number of users used e-journals occasionally. The data reveals that 3 (37.50 per cent) undergraduates each used e-journals daily and occasionally, 52 (86.67 per cent) postgraduates used e-journals occasionally which was more as compared to 15 (75 per cent) research scholars who used it two to three times a week, and 14 (56 per cent) faculty members used e-journals two to three times a week. The value of ρ^2 is 86.762 and the degree of freedom (df) is 3. The value of p shows statistically significant ($P \leq 9.01$). The variation among the users has been found as far as the frequency of using e-resources is concerned. The e-resources and services provided by the library can be accessed at various places within the institute. The users can access the services from their respective departments, library, hostel and computer centre.

Table 6 shows that all the research scholars and faculty members accessed e-resources from their respective departments, where as in the case of postgraduates and undergraduates this proportion was quite lesser, i.e., 30 per cent and 1.15 per cent, respectively. The library is used very less as compared to other places for accessing e-resources. The faculty members do not use library at all for accessing e-resources, whereas most of the research scholars (95.56 per cent) use the library for accessing e-resources which is maximum as compared to undergraduates (0.57 per cent) and postgraduates (4.44 per cent). The computer centre is used more by 308 (88.51 per cent) undergraduate, 81 (90 per cent) postgraduates, 4 (20 per cent) research scholars, and 5 (18.52 per cent) faculty members. The whole data, when taken up comparatively, provide that computer centre and hostels were being used maximum by users for accessing e-resources.

Table 7 shows that during the years 2001 to 2007 there is a decrease in the number of print journals and increase in e-journals at the Thapar Institute of Engineering and Technology. In year 2001-02 there were 157 print journals. By then e-journals were not introduced in the library. The data shows that in the year 2002-03, 82 free electronic journals were available whereas the number of print journals came down from 157 in 2001-02 to 150 in 2002-03. A similar trend can be seen in the year 2003-04 when the number of free e-journals increased to 580 and that of print journals decreased to 138. Similarly, in the year 2004-05, 134 print journals and 3602 electronic journals were made available in the library including both free and paid journals. In 2005-06, the number of print journals further reduced to 111 and that of e-journals further increased to 3843. However, there was no change in the number of print as well as e-journals during the year 2006-07, establishing the fact that demand of e-journals has substantially increased during the years 2001-07.

The library of the Thapar University introduced electronic resources and services in 2002 with 82 (free) e-resources. The number increased to 580 (free) in the year 2003. It shows that users started using these resources. Table 8 shows the download usage statistics for the two years, i.e., 2004 and 2005. The status of usage indicates that there were some e-resources which were not used in the year 2004 but the same were used in 2005. On comparing the usage for two years, the total usage of the e-resources shows that there was increase in the usage from the previous year, i.e., the overall total download usage in 2004 was 8062 and 8711 in the year 2005. The e-journals and bibliographic databases whose usage has decreased are Institute of Physics Publishing (IOPP), American Chemical society (ACS), Biological Abstract database, Cambridge University Press (CUP), Science, and Kluwer and Springer journals. Many new e-resources were added to the collection in the year 2005, this may be one of the reasons for decrease in the usage of already subscribed e-journals.

The e-resources whose usage has been increased are American Physical Society, American Physical Institute of Physics, Oxford University Press (OUP), Science Direct, and Blackwell Publishing.

Table 6. From which place do you access e-resources

Place of Accessing	UG=379 N (%)		PG=255 N (%)		RS=133 N (%)		Faculty=58 N (%)		Total=825 N (%)	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Department	4 (1.15)	344 (98.85)	27 (30.00)	63 (70.00)	20 (100.0)	-	27 (100.0)	-	78 (16.08)	407 (83.92)
Library	2 (0.57)	346 (99.43)	4 (4.44)	86 (95.56)	17 (85.00)	3 (15.00)	-	27 (100.0)	23 (4.74)	462 (95.26)
Hostel	249 (71.55)	99 (28.45)	49 (54.44)	41 (45.56)	16 (80.00)	4 (20.00)	-	27 (100.0)	314 (64.74)	171 (35.26)
Computer Centre	308 (88.51)	40 (11.49)	81 (90.00)	9 (10.00)	4 (20.00)	16 (80.00)	5 (18.52)	22 (81.48)	398 (82.06)	87 (70.94)

Table 7. Collection of print and of e-resources

Year	No. of Printed Journals	No. of e-Journals
2001-02	157	0
2002-03	150	82(free)
2003-04	138	580(free)
2004-05	134	3602
2005-06	111	3843
2006-07	111	3843

8. FINDINGS AND RECOMMENDATIONS

The response of respondents with regard to awareness about e-resources and services of library shows that only 36.29 per cent were not aware of it. Users-wise, faculty, research scholars and postgraduates were more aware of their library e-resources and services as compared to undergraduates. The library should provide orientation workshop and ongoing seminars for students to guide them how to use electronic resources in order to extract maximum value from these resources.

In response to the question whether they have heard the name UGC-Infonet consortium, it was found that only 23.71 per cent respondents knew about UGC-Infonet. Users-wise results show that faculty and postgraduates were more aware of it as compared to the others. Among the users who were aware of UGC-Infonet consortium, only 55.65 per cent were using these e-resources. The maximum users (53.98 per cent) were using e-journals occasionally. The library should involve university academic departments in the selection of resources so that the required journals can be identified.

Most of the users use hostel and computer centre as place for accessing electronic information than library and departments. The e-journals were used by faculty and

Table 8. Download usage statistics of e-journals and bibliographic databases

Titles of e-Resources	2004	2005	Status of Usage
Institute of Physics Publishing (IOPP)	935	697	Decreased
American Institute of Physics (AIP) & American Physical Society (APS)	861	1151	Increased
American Chemical Society (ACS)	2494	1722	Decreased
Royal Society of Chemistry (RCS)	-	115	Added New
American Society of Civil Engineers (ASCE)	-	823	Added New
IEEE/IEE Publications (IEL online)	-	6750	Added New
Science Direct from Elsevier Science	131	479	Increased
Blackwell Publishing	-	426	Increased
Portland Press	0	27	Increased
BIOSIS-biological Abstract (BA) Database	495	27	Decreased
Annual Review	492	489	Decreased
Cambridge University Press (CUP)	296	123	Decreased
Nature Journal Access	-	34	Added New
Science Magazine	61	50	Decreased
Project MUSE	104	-	Decreased
Taylor & Fancies (T&F)	-	1331	Added New
Kluwer Journals	1355	890	Decreased
Springer Journals	838	732	Decreased
Oxford University Press(OUP)	0	427	Increased
Britanica (Encyclopedia)	-	18	Added New
Total downloads of usages of all the E-resources	**8062**	**8711**	**Increased**

research scholars more in the departments. Further, it has been found that the awareness about e-resources has encouraged the users to use these to maximum. The impact of e-journals shows that there is an increase in the collection and usage of e-journals. The librarian must find out the reasons for those e-journals whose usage has decreased. Feedback can be taken from faculty and research scholars and from their respective departments so that their need can be find out.

9. CONCLUSION

The findings show that a large number of users have started using electronic journals. The impact of e-resources is visible the way the there is a decrease in the collection of print journals. The users access e-resources more from the hostels and computer centre as compared to the library. The use of library has decreased because information is easily available to the users through Internet and Intranet connectivity provided in the institute. The use of e-journals though increased, but the users still use these occasionally. The decrease in the collection of print journals and increase in the e-journals indicates that the Thapar University library is making all its efforts to provide the benefits of e-resources and services to its users.

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