



Use and impact of electronic journals in the Indian Institute of Technology, Delhi, India

Use and impact
of electronic
journals

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Abstract

Purpose – This paper aims to describe the use of electronic resources and services provided at the central library of Indian Institute of Technology, Delhi. The paper is focused to know who these electronic information services users are, how often they use the services and the place where the information is accessed. Also, the users are asked to give their preferences between an electronic and print journal format.

Design/methodology/approach – The questionnaire method is used for collecting the data from the users (i.e. undergraduate, postgraduate, research scholar and faculty), categories-wise.

Findings – It has been found that usage of e-journals is increasing; this is due to awareness among the users about the library e-resources and services. Owing to an easy access available at various places in the institute, users are accessing these resources at hostels and departments more as compared to the library. The users coming to library have decreased.

Originality/value – The present paper will help other institutes understand the need for library electronic resources, and motivate them to update their resources in the larger interest of the students, faculty and research scholars. The paper also indicates how a suitably designed survey can show the awareness and use of types of information services, in this case e-journals. There is a dearth of such studies in India and the methodology and findings can be applied to other libraries to reveal similar trends as well as comparisons.

Keywords Electronic journals, Electronic media, Library users, Information services, India

Paper type Case study

Introduction

Owing to the emergence of information technology and its application in libraries, traditional print journals are being replaced by electronic journals with benefits for libraries and users apparent in many ways. Users can access, download and print out papers quite easily. The problems of missing issues, binding, subscription and damage of papers have also been solved. Electronic journals consortiums are a boon to the libraries, as with this cooperation the cost of basic journals can be shared; and library budgets can be utilized in the right positive way.



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In the early 1990s, publishers and universities explored ways of creating electronic journals that could be retrieved on the users' desktop. There was a significant growth in the number of electronic journals in these days. The 7th edition (1997) of *The ARL Directory of Electronic Journals Newsletters and Academic Discussion Lists* shows that the number increased from 110 in 1991 to 675 in 1995 and to a further 3,414 in 1997 (Mogge, 1998). It is estimated that today there are about 250,000 periodicals available in all, including 25,000 in science technology and medicine. Of these, 14,246 are refereed scholarly journals and above 1,200 of these are available online (Manalan *et al.*, 2007). Owing to a rapid expansion of networked information and the addition of electronic resources in academic libraries, it has become necessary to study the usage of electronic information resources and to know what impact has been seen in the academic libraries. Doraswamy (2006) studied the use of digital resources by MTech students and found that about 30 per cent of them use the digital resources daily, while 8.75 per cent merely use it occasionally. The time spent by the majority of the students (52.50 per cent) was half an hour on an average in using the digital resources. Heneefa and Sreelatha (2006) studied the use of e-journals by doctoral students of Calicut University and found that 93.40 per cent of them had access to e-journals from the INFONET and they spent two to four hours per day searching and accessing e-journals. Features like easy and speedy access to back volumes and hyperlinks attracted the researchers towards accessing e-journals as well as access to full text browsing e-journals. Mallik *et al.* (2007) found that users have been quick in starting to download full text papers from the journals that have been subscribed to in recent months. The use of resources is varied among the user groups and user groups differ in the method of access and in the frequency of online resources. Ray and Day (1998) found that students are increasingly interested to use electronic resources while at university. Some 90 per cent of respondents acknowledged access to a networked computer via the university, i.e. more internet access is from work place than from home. The most popular electronic resources were compact disc-read-only-memory (CD-ROM) and the internet, 37.5 per cent of the sample population used electronic journals as an information retrieving tool.

Siebenberg *et al.* (2004) reports that the print journals were being used more than they were prior to the advent of electronic journals. Generally, electronic journals were used heavily and the availability of electronic formats greatly enhances the total use of most titles. However, some electronic journals were used little or not at all, and there was a substantial increase in the use of some print titles. The study conducted by Liew *et al.* (2000) indicates significantly high acceptance of electronic journals by graduate students. There was strong acceptance, high expectation and enthusiasm for future electronic journals, although certain reservations remained. A survey was done at the Maryland University College to examine trends in distant students' use of library resources, services, usage patterns, needs and preferences. The results show that part time students usage pattern has changed and they favor the use of electronic resources like internet (Kelly and Orr, 2003). The low-level technical problems are still faced by users in using electronic journals and they prefer not to read at length on screen (Woodward *et al.*, 1998). Since the library has started subscribing to e-journals there is increase in the use of e-journals and a decrease in the use of print journals by faculty and graduate students. The number of e-journals in the library has increased from two hundred to more than three thousand (Rogers, 2001). The results of the study shows that 68.8 per cent of the respondents prefer to use online journals as compared to 31.2 per cent

who prefer to use print journals, while 71.8 per cent of the respondents prefer to use printed books as compared to 28.27 per cent who prefer to use electronics books.

In India the Ministry of Human Resource Development, has set-up the Indian National Digital Library in Engineering of Sciences and Technology (INDEST) Consortium. The INDEST Consortium commenced its operation from December 2002 through its headquarters at the Indian Institute of Technology (IIT) in Delhi. Access to resources is now considered more important than collection building, especially if the access is perpetual in nature. The consortium will, directly or indirectly, benefit most of the engineering and technical institutions in India. Already access to e-resources for the beneficiary institutions under the INDEST Consortium has increased from the present level of access to e-journals from 100 to 500 to more than 4,000 journals in the case of the Indian Institutes of Technology and the Indian Institute of Science which is comparable to world class institutions like MIT (Massachusetts Institute of Technology) (Arora and Agarwal, 2003).

A previous study conducted at IIT Delhi a few years ago reveals that Boolean operators, truncation and wild cards are the mostly used among the users. The electronic information services are used mainly for research and study. Some 57 per cent of users are satisfied with the available electronic service, while 33 per cent are not. The factors that discouraged them most from accessing electronic information services were that lack of printing facilities (41 per cent) and trained staff (34 per cent), while 22 per cent indicated that an inadequate telecommunication infrastructure was also one of the reason for not showing interest in using electronic information (Ali, 2005).

Profile of the IIT, Delhi

The institute is one of the seven Institutes of Technology for research and development in science, engineering and technology in India. The institute was first established in 1961, as a college of Engineering and Technology in collaboration with the government of UK and British Industries. In 1963, it was renamed the IIT, Delhi and has the status of a university with powers to decide its own academic policy, to conduct its own examinations, and to award its own degrees (www.iitd.ac.in/).

The library of IIT, Delhi includes a central library and 18 departmental libraries. The total collection of the library covers three lakh (300,000) documents comprising of books, theses, journals (print and electronic) video cassettes and CDs in the fields of science, engineering, humanities, literature and management. The library is fully computerized using the Libsys software package which provides web-based access to its online catalogue. The library also houses the headquarters of the INDEST Consortium that provides access to electronic resources to its member institutions. The Central Library has a fairly well-developed computer and network infrastructure to facilitate use of its computer and web-based services. The library also has its own sub-local area network (LAN), which in turn, is connected to the campus LAN. The library has seven servers and more than 55 internet-enabled PCs, 20 of which are exclusively earmarked for users including ten PCs for On-line Public access Catalogue (OPAC) searches.

The library provides a number of electronic resources and services to its users, including the following.

Electronic reference library services

The library uses silver platters electronic reference library services (ERL) technology to enable simultaneous and integrated web-based access to ERL-complaint reference

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databases available on CD-ROM or other magnetic media to multiple users across the Institute Campus LAN. Bibliographic records in the database are directly linked to the full-text papers on the publisher's site using Silver Linker. The databases available on the ERL include: World Textiles (1970) and Biotechnology Abstracts (1980-).

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A network-based CD-ROM search services

The Library has complete collection of Indian Standards, American Society for Testing and Materials (ASTM) Standards and Library and Information Science Abstracts on CD-ROM that is available on the campus network. The resources can be accessed on the intranet/internet.

Print journals and access to their electronic versions

The library subscribes to 615 current journals; several of them are also accessible online from the publisher's web site. Links to full text electronic journals are available through the Library web site as well through the Libsys Web OPAC.

Electronic resources through the INDEST Consortium

The IIT Delhi gets access to over 6,500 full-text electronic journals and six bibliographic databases from a number of publishers and aggregators through the INDEST Consortium. Tutorials on resources are also accessible through the INDEST Consortium on the INDEST web site.

Objectives and methodology

There has been a glaring lack of studies to know the use of electronic information resources by users in technical institute libraries in India. This study was carried out in the IIT, Delhi, India and its main objectives were thus to find out the following:

- the use and awareness about library electronic resources by the users;
- the impact of e-resources on usage and collection;
- from where users access electronic information; and
- the frequency of use of e-journals.

It is anticipated that the present study will help other institutes to understand the need of library electronic resources, and motivate them to update their resources in the larger interest of the students, faculty and research scholars.

The survey method was selected, as this is the most appropriate design tool to obtain a large sample. It relies on a questionnaire instrument and is the most common method used in social science research, including library and information science – being effective when a group of people is assemble in one location. Data collection were made by directly administering questionnaires to undergraduate/postgraduates students, research scholars and faculty in the institute during the academic year 2006-2007 in order to know from the users to which extent they are using their libraries' electronic library resources and services. The questionnaire was distributed and collected personally from the users at various places within the institute including class room, libraries, hostels, departments, computer centers, administration buildings and other campus settings.

The total population of the survey was 4,985, which includes 2,192 undergraduates, 1,530 postgraduates, 916 research scholars and 347 faculty members. However, a sample of about 20 per cent of the population of the institute was used for the survey. Thus, the questionnaire was given to 997 users, of which there were 439 undergraduates, 306, postgraduates, 183 research scholars and 69 faculty members. Overall, 825 (82.7 per cent) of the sampled users returned their questionnaires, namely 379 undergraduates, 255 postgraduates, 133 research scholars and 58 faculty members. (Table I).

Data analysis and results

The data were analyzed by percentage; qualitative variables were found by χ^2 -test and contingency Coefficient for statistically significant among the users. It has been found that results were statistically significant at 0.01 per cent level, i.e. ($p \leq 0.01$).

The central library of IIT, Delhi provides access to various e-resources like network based CD-ROM search, print journals and access to electronic journals, electronic books, electronic resources through INDEST Consortium and services from DELNET. The users were asked whether they are aware about e-resources of their library. Table II indicates that most of the users were aware about these e-resources and services. The response of 322 (84.49 per cent) undergraduates, 218 (85.99 per cent) postgraduates, 128 (96.24 per cent) research scholars, and all the faculty members was 100 per cent positive in this regards. The χ^2 -test for 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 about library e-resources and services provided to them is concerned.

The library of IIT, Delhi subscribes to various e-journals/portals for its users under INDEST Consortium. An attempt was made to know whether the users had heard the name of INDEST and had awareness about the e-resources being provided to them.

Respondents	Population of IIT	Questionnaires distributed	Response received
Undergraduates	2,192	439	379
Postgraduates	1,530	306	255
Research scholars	916	183	133
Faculty	347	69	58
Total	4,985	997	825

Table I.
Distribution of
questionnaire for survey

Respondents	Response				Total	χ^2 (df; C)
	Yes	No. (%)	No	No. (%)		
Undergraduates	322	(84.96)	57	(15.04)	379	21.299*
Postgraduates	218	(85.49)	37	(14.51)	255	(3; 0.159)
Research scholars	128	(96.24)	5	(3.76)	133	
Faculty	58	(100.00)	—	—	58	
Total	726	(88.00)	99	(12.00)	825	

Table II.
Do you know about your
library electronic
resources/services?

Note: *Significant at: 0.01 level

Table III shows that 218 (57.52 per cent) undergraduates responded in the positive and 161 (42.48 per cent) in the negative. The response of 184 (72.16 per cent) postgraduates, 129 (96.99 per cent) research scholars and all the faculty members was positive in this regard. The data reveals that research scholars and faculty were more aware as compared to undergraduates and postgraduates, whereas more than half of undergraduates and postgraduates were aware about the INDEST Consortium. Out of the total 825 respondents, 589 (71.39 per cent) users were aware about INDEST Consortium and the remaining 236 (28.61 per cent) lacked such awareness. There is a significant variation among the users as far as the awareness about INDEST is concerned. The value of χ^2 is 101.708 and the degree of freedom (df) is 3. The value of p is statistically significant at 0.01 level.

The users were asked if they were aware about the INDEST Consortium and if so were they using it or not. Table IV reveals that 100 per cent faculty members, 98.45 per cent research scholars, 80.43 per cent postgraduates, and only 33.03 per cent undergraduates were using these e-resources. It has been found that the main users of e-journals were faculty members, research scholars and postgraduates. The total number of users having awareness about INDEST Consortium were 589, of which 405 (68.76 per cent) were using these resources, whereas the remaining 184 (31.24 per cent) were not using such resources. However, 236 respondents out of total 825 did not reply to the question. The χ^2 -test 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 use of INDEST Consortium is concerned.

Table V indicates that out of 825 respondents, 232 (28.12 per cent) did not answer to the question. The table also reveals that 11 undergraduates (5.64 per cent) use

Table III.
Are you aware about the name INDEST consortium and its resources?

Respondents	Response			Total	χ^2 (df; C)	
	Yes	No. (%)	No			
Undergraduates	218	(57.52)	161	(42.48)	379	101.708*
Postgraduates	184	(72.16)	71	(27.84)	255	(3; 0.331)
Research scholars	129	(96.99)	4	(3.01)	133	
Faculty	58	(100.00)	–	–	58	
Total	589	(71.39)	236	(28.61)	825	

Note: *Significant at: 0.01 level

Table IV.
If you are aware about INDEST consortium, do you use it?

Respondents	Response			Total	χ^2 (df; C)	
	Yes	No. (%)	No			
Undergraduates	72	(33.03)	146	(66.97)	218	220.544*
Postgraduates	148	(80.43)	36	(19.57)	184	(3; 0.522)
Research scholars	127	(98.45)	2	(1.55)	129	NR: 236
Faculty	58	(100.0)	–	–	58	
Total	405	(68.76)	184	(31.24)	589	

Notes: *Significant at: 0.01 level; NR, not responded

e-journals daily, 30 (15.38 per cent) 2/3 times a week, 28 (14.36 per cent) once a week, and 126 (64.62 per cent) occasionally. Thus, the maximum number of undergraduates used electronic journals occasionally. Similarly, 41 (19.34 per cent) postgraduates used electronic journals daily, 83 (39.15 per cent) 2/3 times a week 31 (14.62 per cent) once a week and 57 (26.89 per cent) occasionally. The results show that maximum number of postgraduates used electronic journals 2/3 times a week. Further, as many as 41 (31.78 per cent) research scholars used e-journals daily 38 (29.46 per cent) 2/3 times a week, 15 (11.63 per cent) once a week and 35 (27.13 per cent) occasionally. Lastly, as many as 4 (7.02 per cent) faculty members used e-journals daily, 46 (80.70 per cent) 2/3 times a week, and 7 (12.18 per cent) once a week. The χ^2 -test for independence is significant at 1 per cent level of significance. This implies that there is a significant variation among the users, as it has been found that maximum number of users used electronic journals occasionally, i.e. 218 (36.76 per cent) followed by 197 (33.22 per cent) 2/3 times a week, 97 (16.36 per cent) daily and 81 (13.66 per cent) once a week. It has been found that from total user 593 who answered this questions 97 (16.36 per cent) use e-journals daily 197 (33.22 per cent) two times a week 81 (13.66 per cent) once a week and 218 (36.76 per cent) occasionally. Thus, maximum numbers of users use e-journals occasionally as compared to other time.

The availability of electronic information services along with print document is an extra advantage for the users as they have a choice to use both as per their convenience. The users were asked to give their preference for the format of the document which they liked to use. Table VI reveals that the users instead of using either a print or electronic format of any document preferred to use both the formats as a source for getting information. In this regard, the response of 111 (83.46 per cent) respondents was found to be the highest followed by that of 48 (82.76 per cent),

Using e-journals	Undergraduate	Postgraduate	Research scholars	Faculty	Total No. (%)	χ^2 (df; C)
Daily	11 (5.64)	41 (19.34)	41 (31.78)	4 (7.02)	97 (16.36)	168.464*
2/3 times a week	30 (15.38)	83 (39.15)	38 (29.46)	46 (80.70)	197 (33.22)	(9; 0.470)
Once a week	28 (14.36)	31 (14.62)	15 (11.63)	7 (12.28)	81 (13.66)	NR: 232
Occasionally	126 (64.62)	57 (26.89)	35 (27.13)	–	218 (36.76)	(28.12%)
Total	197	212	129	57	593	

Notes: *Significant at: 0.01 level; NR, not responded

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

Format of document	Undergraduate no. (%)	Postgraduate no. (%)	Research scholars no. (%)	Faculty no. (%)	Total no. (%)	χ^2 (df; C)
Print	50 (13.19)	23 (9.02)	18 (13.53)	4 (6.90)	95 (11.52)	35.800*
Electronic	88 (23.22)	46 (18.04)	4 (3.01)	6 (10.34)	144 (17.45)	(6;0.204)
Both	241 (63.59)	186 (72.94)	111 (83.46)	48 (82.76)	586 (71.03)	
Total	379 (100)	255 (100)	133 (100)	58 (100)	825 (100)	

Note: *Significant at: 0.01 level

Table VI.
Which format of the document do you prefer for getting information?

186 (72.94 per cent) and 241 (63.11 per cent) respondents from the categories of faculty members, postgraduates and undergraduates, respectively. It has been found that out of a total number of 825 users, 95 (11.52 per cent) preferred print format only, 144 (17.45 per cent) electronic only, while 586 (71.03 per cent) preferred both the formats, i.e. print and electronic. It shows that instead of using a single format only (i.e. print or electronic) most of the users preferred both the formats for collecting information. The value of χ^2 is 35.800 and the df is 6. The value of p is statistically significant at 0.01 level ($p \leq 0.01$). This implies that there is a significant variation among the users in preference for using the format of the document.

The e-resources and services are provided by the library through the internet and intranet, which can be accessed from various places within the institute. The data given in Table VII evidently shows that the highest proportion of research scholars, i.e. 96.24 per cent, use their department for accessing the information, whereas this proportion in the case of faculty members, postgraduates and undergraduates is 94.83 per cent, 67.84 per cent and 13.19 per cent, respectively. A very small portion of faculty members, i.e. 3.45 per cent access the library resources from the library itself. However, the highest proportions of research scholar, i.e. 38.35 per cent use the library for accessing the information, whereas this proportion in the case of postgraduates and undergraduates is 28.24 and 18.75 per cent, respectively. Furthermore, as many as 58.31 per cent of the undergraduates assess library e-resources from the hostel, whereas this proportion is less in the case of postgraduates (33.33 per cent) and research scholars (15.04 per cent). However, none of the faculty members accesses these resources from the hostels. Similarly, 42.33 per cent of the undergraduates assess library e-resources from the computer centre, whereas this proportion is less in the case of postgraduates (30.71 per cent) and research scholars (12.07 per cent). However, none of the faculty members access these resources from the computer centre. The table shows that e-resources are accessed mostly by the users from their respective departments. The total response of the users indicates that 49.21 per cent accessed the library e-resources from the department followed by the 39.52, 33.71 and 23.76 per cent from the hostels, computer centre and library, respectively. The results depict that the library is used less for accessing the e-resources as compared to other places.

Tables VIII and IX reflect how much of these e-resources are used by these main users. The data given in Table VIII shows the download statistics of various full text e-resources, The collection of e-journals with full text was having IEEE/IEL online, American Society of Mechanical Engineers (ASME) journals online, ASCE (American Society of Civil Engineers) journals online, ABI/Inform complete, Capitaline, EBSCO Databases, Emerald full-text. The users had started using these e-resources as shown by download usage data in the same year 2004. The new collection was added in the year 2005 with Association for Computing Machinery (ACM) Digital library, Springer Verlag's Link, Nature, ProQuest Science and Elsevier's Science Direct. The download usage data shows that there was increase in the usage of e-resources from the previous year and a decrease in three of the e-resources only and this probably is due to the additions of new resources. From the total download of usage data of full text e-resources, it has been found that the usage has increased from 710,699 to 2,893,848 numbers.

The usage of bibliographic e-resources for a period of three years has been shown in Table IX. In the year 2003, the library was having Compedex & INSPESC and Science Finder Scholar was added in the year 2004. In the same way the new collection in the

Place of accessing	UG = 379 no. (%)		PG = 255 no. (%)		RS = 133 no. (%)		Faculty = 58 no. (%)		Total = 825 no. (%)	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Department	50 (13.19)	329 (86.81)	173 (67.84)	82 (32.16)	128 (96.24)	5 (3.76)	55 (94.83)	3 (5.17)	406 (49.21)	419 (50.79)
Library	71 (18.73)	308 (81.27)	72 (28.24)	183 (71.76)	51 (38.35)	82 (61.65)	2 (3.45)	56 (96.55)	196 (23.76)	629 (76.24)
Hostel	221 (58.31)	158 (41.69)	85 (33.33)	170 (66.67)	20 (15.04)	113 (84.96)	-	58 (100.00)	326 (39.52)	499 (60.48)
Computer center	160 (42.33)	218 (57.67)	43 (30.71)	97 (69.29)	7 (12.07)	51 (87.93)	-	47 (100.00)	210 (33.71)	413 (66.29)

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

Table VIII.
Download usage
statistics of full text
electronic resources for
the year 2004 and 2005

S. No	Title	Year/usage		Usage status
		2004	2005	
1	IEEE/IEL online	107,425	113,013	Increased
2	ASME journals online	11,951	12,400	Increased
3	ASCE journals online	13,189	10,692	Decreased
4	ACM Digital Library	–	52,016	New addition
5	Springer Verlag's link	–	2,914	New addition
6	Nature	–	26,691	New addition
7	ProQuest Science	–	2,393	New addition
8	Elsevier's Science Direct	–	317,635	New addition
9	ABI/Inform complete	6,405	8,005	Increased
10	Capitaline	553,154	2,332,390	Increased
11	EBSCO databases	10,807	8,389	Decreased
12	Emerald full-text	7,768	7,310	Decreased
Total download usage		710,699	2,893,848	Increased

Table IX.
Download usage
statistics of bibliographic
electronic resources for
the year 2003-2005

S. No.	Title	Year/usage			Usage status
		2003	2004	2005	
1	JCCC	–	–	1,131	New addition
2	Math Science Net	–	–	17,651	New addition
3	Compedex & INSPEC	5,952	12,598	477,054	Increased
4	Science Finder Scholar	–	26,483	45,787	Increased
5	Web of Science	–	–	149,345	New addition
Total download usage		5,952	39,081	690,968	Increased

year 2005 included web of Science, Math Science and JCCC. From the collection and usage statistics it is evident that the use of such resources has increased year after year. But some of the e-resources have also shown a decrease in their usage. From total downloads of usage data of bibliographic e-resources, it has been found that the usage has increased from 5,952 to 39,081 numbers in the year 2004 and 690,968 in the year 2005. The new addition in the collection of e-resources has also increased every year.

Findings and recommendations:

The study shows that most users (88 per cent) were aware about their library e-resources and services, whereas the remaining 12 per cent had no knowledge about such e-resources. The users have started using these resources as per their need. The undergraduates, who are not the main users, are also trying their hand to find out whether the information in these e-resources is useful to them or not. The main users of these e-resources are postgraduates, research scholars and faculty. The results indicate that 71.39 per cent of users are aware and have knowledge about the INDEST Consortium and the rest (28.61 per cent) had not heard about it. Among the users who were aware about INDEST Consortium only 68.76 per cent were using these services while the remaining 31.24 per cent were not. Thus, there is a need to motivate the users to make maximum use of such services. The information about their required journals must be provided. The frequency of using the e-journals is also not satisfactory. Only 36.76 per cent of users are using the library e-resources occasionally and 33.22 per cent use 2/3 times a week.

Most of the users (71 per cent) prefer to use both print and electronic format, 17.45 per cent electronic only, and 11.52 per cent print only. Thus, the library should continue to provide e-resources along with printed journals also. The users are accessing electronic information on internet and intranet made available at various places in the institute. It has been found that departments, hostels and computer centre are used more for accessing the information as compared to the library. The usage of these resources can be increased if users are motivated to use these services in the library by providing them help in searching and downloading the information. The library has good collection of e-resources as per the courses run by the institute. The impact on collection development and usage indicates that every year there is an increase in the collection and thus its usage. The usage of IEL online, ASME, Science Direct, ABI/Inform and Capitalize has increased but usage of ASCE, EBSCO and Emerald has decreased. The librarians must check out the reasons for this decrease in usage and find out the users who use them, so that they can be guided for using such e-resources. It has been noted that in the technical institutes e-resources related to non-technical subjects are less in use and there has been a wide variation in their usage.

Conclusion

This paper reports on a survey of users at the IIT, Delhi as to their awareness and use of electronic resources, notably e-journals. It has been found that awareness among the users motivates them to use e-resources and services of the library. The main users of library e-resources are postgraduates, research scholars and faculty. The maximum numbers of users prefer to use both the formats of the documents, i.e. print as well as electronic for seeking information. The e-journals are generally used regularly used 2/3 times a week by those who responded to the survey. They access the information more from their respective department, hostel and computer centre than they do the library. Thus, the number of users coming to the library has decreased. There is constant increase in the collection and usages of these e-resources. The usage of these resources is not more than 68.76 per cent as compare to the awareness which is 88 per cent. Therefore, the situation demands that necessary steps should be taken by the library authorities to increase the usage of present library e-resources.

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