

User's Attitude towards Electronic Resources in IIT Libraries: An Evaluative Study

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Abstract

Information Communication Technologies (ICT) have thrown forth new challenges before the library professionals. The technology has a great impact on the services of the libraries. In the present survey, an attempt has been made to explore usefulness of electronic resources and users skills in using various search methods and techniques to access and utilize e-resources in Indian Institutes of Technology Delhi, Kanpur and Roorkee, India. The study also aims to identify the level of satisfaction with the information accessed by users through the available e-resources. The study reveals that the majority of users are satisfied with availability of electronic resources that facilitates to support their academic, research and developmental activities. It has been observed that undergraduates in all the three institutes use blogs, social networking sites more than e-mail, whereas the post graduates prefer library websites and current e-journals over blogs, social sites and e-mail. Similarly research scholars prefer back volumes and current issued of e-journals, e-thesis. Majority of respondents use e-resources and access resources mainly through simple search techniques and methods such as title, author, subject classification and keywords.

Keywords: E-Resources, IITS, ICT, Users Attitude, Academia

1. Introduction

The advancement of Information and Communication Technology (ICT) has made a tremendous improvement and change almost in all walks of life, especially the magnetic word information technology has been changed in all corners of the world. Gilbert and Green (1995) lamented that "over the past decade, and in particular within the past five years, information technology has become common with the academic enterprise including libraries".

Today, the advent of information technology has resulted in reducing the size of libraries. In fact, these smaller modern libraries are rich potential of information. It has been possible due to the digitization

of information. The digital and electronic information is based on digitized data/information, which has gradually replaced paper-based records.

2. Electronic Resources

E-Resources originated from the concept of E-publishing. Since 1985, significant developments have taken place in electronic publishing. It solves storage problems and controls the flood of information. Due to various features of E-Resources, now a days, print sources are being digitized. In the recent past, the Information Technology revolution has changed the face of many institutions. Today, we are living in a digital world. The production and usage of e-documents is enormous and warrant serious consideration, especially in libraries and information centers. 'The electronic resources are helpful because



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of their easy portability and its feature of incorporating more than one book in a single hand held device. The published material is also available on open access platform. (Singh and Khan, 2012).

2.1 Definitions

IFLA (2012) defines Electronic Resources as "to those material that requires computer access, whether through a personal computer, mainframe, or handheld mobile device. They may either be accessed remotely via the Internet or locally". Some of the most frequently encountered types are: E-journals, E-books, Full-text (aggregated) databases, Indexing and abstracting databases, Reference databases (biographies, dictionaries, directories, encyclopaedias, etc.), Numeric and statistical databases, E-images, E-audio/ visual resources.

According to AACR2 (2005) updates, an electronic resource is: "Material (data and/or program(s)) encoded for manipulation by a computerized device. This material may require the use of a peripheral directly connected to a computerized device (e.g. CD-ROM drive) or a connection to a computer network (e.g., the Internet)".

3. Review of Related Literature

Review of literature is one of the important aspects of any research study. The investigator required to scrutinize the research findings of similar studies that act as a platform to his present research work. Therefore, some of the studies conducted on use of electronic resources by various scholars are worthy of examination.

In this context, Miler (2000) in their study "Electronic Resources and Academic Libraries, 1980-2000: Historical Perspective" described that how collection has to be developed in an electronic environment.

Chartron (2001) pointed out that associative or affiliated library structure currently not involved in coordinated purchasing of printed and electronic resources. Ali (2005) in their research "The use of electronic resources at IIT Delhi Library: a study of search behaviour" highlights the use of electronic information services (EIS) among the users of IIT Delhi, India. Data was collected from three hundred IIT library users. Results reveal that 95 percent of users have awareness about EIS provided by the library. Ekwelem et al. (2007) described Electronic Information Sources have increasingly become an invaluable asset in education, research, teaching and learning. Kumar et al. (2008) discussed under the title "Users attitude measurement towards e-resources in Madras University library" the use of electronic resource by scholars and identified their acceptance toward e-learning. The e-publishing will continue to evolve, mutate and change as technology and society evolve. Ansari and Zuberi (2010) in their study "Use of Electronic Resources among Academics at the University of Karachi" shown that a high level of satisfaction with the emergence and use of electronic resources. Moghaddaszadeh and Khaiser (2011) in their study "Use of e-resources by the University Library Users of Iran and India: A Comparative Study" found that between Iran and Indian respondents a significant difference is observed in their use of e-resources ($F= 1.06$; $P < 0.001$). Habiba and Chowdhary (2012) in their article "Use of electronic Resources and its impact: a study of Dhaka University library users" discussed the purpose of using e-resources, benefits, subject coverage status, overall user satisfactions, problems that are faced by DUL users while accessing e-resources and perceived impact of e-resources on users. Sivathaasan and Velnampy (2013) in their work "Use

of Electronic Information Resources and Academic Performance of University Teachers: A case study" to identify the impact of usage of e-resources on academic performance of the university teachers. Multiple regression analysis showed that the usage of e-resources has an impact on academic performance at the rate of 38.8 % ($R^2 = 0.388$), which is statistically significant at the levels of 0.01 ($p < 0.01$).

4. Objective of the study

The objectives of the study are:

- ▶▶ Quality of services cannot be improved by high investment of information resources and IT alone, quality comes from people; quality is the result of attitude and values; and organizational culture decides the quality of services. This study aims to create such working culture.
- ▶▶ To find out the frequency of usage of the electronic resources,
- ▶▶ To study the use of different types of electronic resources by the users,
- ▶▶ To find out the major electronic resources accessed by the users,
- ▶▶ To identify the purpose of use of different e-resources,
- ▶▶ To ascertain the training needs of users in accessing electronic resources,
- ▶▶ To know the search strategies used by users and while searching e-information,
- ▶▶ To suggest the ways and means for improvement in effective use of e-resources.

5. Research Methodology

Research Methodology is a way to systematically solve the research problem. It is necessary for researcher to know not only the research methods or

techniques but also the methodology (Kothari, 2004). The entire work in present study is based on survey and analysis of data. For collection of data two well structured questionnaires have been prepared and used during the study. The questionnaires are designed in a way to extract maximum information regarding attitude of users for the use of electronic resources. Questionnaire covers all aspects of the use of electronic resources by users. The data has been cross checked by the data obtained by personal interviews and direct observations.

5.1 Scope and Limitations of the Study

While studying the attitude of users towards e-resources in IIT libraries, the researcher remains confined to the three IITs i.e., Delhi, Kanpur and Roorkee. The reasons behind this limitations being the oldest IITS in the country and also the convenience of the researcher.

6. Analysis and Interpretation of Data

On the basis of the responses received the data collected by researcher is organised, analyzed and tabulated by using statistical measures such as figures, tables and percentages in the following sections:

Table 1: Institution wise Distribution of Questionnaires

Categories	Number of Respondents											
	IIT Delhi				IIT Kanpur				IIT Roorkee			
	UG N=10 0	PG N=10 0	RS N=50 1000	FM N=50 514	UG N=10 0	PG N=10 0	RS N=50 1047	FM N=50 448	UG N=10 0	PG N=10 0	RS N=50 1034	FM N=50 384
Total Strength	4600	4950	1000	514	3200	2600	1047	448	3930	2150	1034	384
Questionnaires distributed	150	150	75	75	150	150	75	75	150	150	75	75
Responses received	118 (78.6)	113 (75.3)	59 (78.6)	54 (72)	121 (80.6)	117 (78)	61 (81.3)	57 (76)	117 (78)	119 (79.3)	56 (74.6)	55 (73.3)
Total response rate	76.4%				79.1%				77.1%			
Questionnaires analyzed (selected)	100 (84.7)	100 (88.4)	50 (84.7)	50 (92.5)	100 (82.6)	100 (85.4)	50 (81.9)	50 (87.7)	100 (85.4)	100 (84.0)	50 (89.2)	50 (90.9)

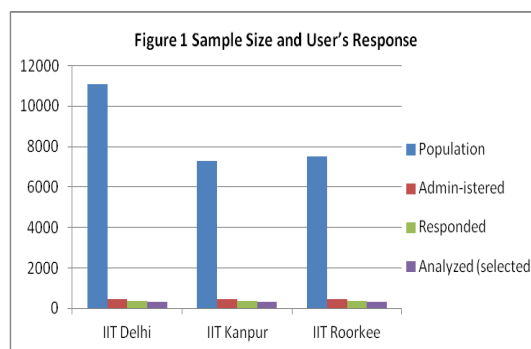
*UG = Undergraduates, PG = Postgraduates, RS = Research Scholars, FM = Faculty Members

*N= Number

(Figures within the parenthesis represent %age)

Sample Population: A total of 450 questionnaires for each library were distributed among the users of IIT Delhi, IIT Kanpur and IIT Roorkee. Out of the total distributed questionnaires, 344 filled-in questionnaires were received from IIT Delhi, 356 from IIT Kanpur and 347 from IIT Roorkee. Of the total received questionnaires, 106 questionnaires from IIT Delhi, 94 questionnaires from IIT Kanpur and 103 questionnaires from IIT Roorkee were rejected due to incomplete responses. Finally, 300 filled-in questionnaires from IIT Delhi, 300 from IIT Kanpur and

300 questionnaires from IIT Roorkee were considered and used for data analysis. The population included both male and female respondents. The total response rate of users respectively in IIT Delhi, IIT Kanpur and IIT Roorkee as depicted in table 1 is found as 76.4%, 79.1% and 77.1% respectively.

**Table 2 Users visiting library's website**

Response	Respondents											
	IIT Delhi				IIT Kanpur				IIT Roorkee			
	UG N=100	PG N=100	RS N=50	FM N=50	UG N=100	PG N=100	RS N=50	FM N=50	UG N=100	PG N=100	RS N=50	FM N=50
Yes (%)	45 (45)	84 (84)	44 (88)	39 (78)	50 (50)	88 (88)	41 (82)	37 (74)	61 (61)	89 (89)	46 (92)	40 (80)

(Figures within the parenthesis represent %age)

From the table it is clear that 45% undergraduates, 84% postgraduates, 88% research scholars, 78% faculty members in IIT Delhi use library website. In comparison to it, 50% undergraduates, 88% postgraduates, 82% research scholars, 74% faculty mem-

bers in IIT Kanpur responded that they use library website. In contrast to IIT Delhi and Kanpur, 61% undergraduates, 89% postgraduates, 92% research scholars and 80% faculty members from IIT Roorkee stated that they use institute library website for many purposes.

Table 3: Preference of format for getting information

Purpose	IIT Delhi				IIT Kanpur				IIT Roorkee			
	UG N=100	PG N=100	RS N=50	FM N=50	UG N=100	PG N=100	RS N=50	FM N=50	UG N=100	PG N=100	RS N=50	FM N=50
Print	34 (34)	21 (21)	12 (24)	16 (32)	31 (31)	16 (32)	10 (20)	12 (24)	33 (33)	17 (34)	9 (18)	12 (24)
Electronic	55 (55)	63 (63)	25 (50)	22 (44)	59 (59)	66 (66)	29 (48)	21 (42)	59 (59)	66 (66)	29 (58)	23 (46)
Both	11 (11)	16 (16)	13 (26)	14 (28)	10 (10)	18 (36)	11 (22)	17 (34)	8 (16)	17 (34)	12 (24)	15 (30)

(Figures within the parenthesis represent %age)

The data in table that the undergraduates, post graduates and research scholars in all the three institutes prefer electronic format as compared to

print, whereas 44% faculty members in IIT Delhi, 42% in IIT Kanpur and 46% in IIT Roorkee prefer electronic format.

Table 4: Reasons to Prefer Electronic Resources

Reasons (%)	Respondents											
	IIT Delhi				IIT Kanpur				IIT Roorkee			
	UG N=100	PG N=100	RS N=50	FM N=50	UG N=100	PG N=100	RS N=50	FM N=50	UG N=100	PG N=100	RS N=50	FM N=50
Saves the time	33 (33)	52 (52)	21 (42)	20 (40)	50 (50)	58 (58)	26 (52)	20 (40)	55 (55)	61 (61)	28 (56)	23 (46)
Latest & updated information is available	21 (21)	45 (45)	18 (36)	15 (30)	35 (35)	49 (49)	21 (42)	15 (30)	49 (49)	53 (53)	24 (48)	21 (42)
Easy access	45 (45)	37 (37)	19 (38)	21 (42)	49 (49)	55 (55)	35 (70)	20 (40)	47 (47)	47 (47)	24 (48)	22 (44)
Wide scope of information	32 (32)	40 (40)	21 (42)	20 (40)	39 (39)	61 (61)	29 (48)	18 (36)	35 (35)	52 (52)	25 (50)	18 (36)
More relevant information (of which we are unaware) can be accessed	49 (49)	59 (59)	23 (46)	19 (38)	55 (55)	65 (65)	27 (54)	14 (28)	54 (54)	62 (62)	29 (58)	19 (38)

(Figures within the parenthesis represent %age)

Note: Because of multiple choice options the percentage exceeds 100.

The table reveals various reasons for preferring the electronic resources by the users. The undergraduates, post graduates and research scholars in all the three institutes access electronic resources mostly due to ease in access, for saving the time, wide scope of information and more relevant information can be accessed of which they are unaware, whereas the

faculty members in the IIT Delhi prefer electronic resources mostly due to saves the times, wide scope of information and can be for accessing more relevant information, of which we are unaware. The faculty members of IIT Kanpur have reasons to prefer e-resources due to easy access and for saving the time, whereas the IIT Roorkee faculties admitted to prefer electronic resources for availability of latest & updated information, easy access and for saving the time.

Table 5 Purpose of using Electronic Resources

Purpose (%)	Respondents											
	IIT Kanpur				IIT Kanpur				IIT Kanpur			
	UG N=100	PG N=100	RS N=100	FM N=100	UG N=100	PG N=100	RS N=100	FM N=100	UG N=100	PG N=100	RS N=50	FM N=50
Writing Papers	26 (26)	33 (33)	24 (48)	10 (20)	22 (22)	32 (32)	25 (50)	12 (24)	25 (50)	31 (31)	24 (24)	13 (26)
Relevant information to relevant fields	35 (35)	43 (43)	38 (76)	23 (46)	42 (42)	44 (44)	40 (80)	24 (48)	39 (78)	43 (43)	36 (36)	22 (44)
Projects	39 (39)	44 (44)	17 (34)	5 (10)	38 (38)	46 (46)	26 (52)	4 (8)	37 (74)	45 (45)	29 (29)	4 (8)
Preparing notes	38 (38)	54 (54)	19 (38)	18 (38)	39 (39)	50 (50)	22 (44)	15 (30)	38 (76)	52 (52)	21 (21)	16 (32)
To support academic work	45 (45)	77 (77)	31 (62)	22 (44)	42 (42)	59 (59)	29 (58)	23 (46)	43 (86)	63 (63)	30 (30)	22 (44)
Research Work	19 (19)	31 (31)	39 (78)	27 (54)	15 (15)	23 (23)	37 (74)	29 (58)	17 (34)	28 (28)	36 (36)	26 (52)
Conferences	6 (6)	18 (18)	29 (58)	24 (48)	6 (6)	14 (14)	27 (54)	26 (52)	8 (16)	15 (15)	29 (29)	27 (54)
Professional development	20 (20)	31 (31)	22 (44)	17 (34)	18 (18)	25 (25)	21 (42)	19 (38)	19 (38)	27 (27)	21 (21)	20 (40)
Other, if any	8 (8)	15 (15)	5 (10)	4 (8)	7 (7)	11 (11)	4 (8)	6 (12)	8 (16)	16 (16)	7 (14)	7 (14)

(Figures within the parenthesis represent %age)

Note: Because of multiple choice options the percentage exceeds more than 100.

The table shows that the users have various purposes while using electronic resources. It shows that the majority of undergraduates in these institutes use e-resources to support their academic work, in preparing notes and projects. Similarly, in all three

IITs postgraduates use e-resources for getting relevant information and to support their academic work, in preparing notes and projects. Whereas the research scholars and faculty members use them for their research purpose and for accessing relevant information in their respective fields.

Table 6 Preferred mode of e-resources for seeking information

Response (%)	Respondents											
	IIT Delhi				IIT Kanpur				IIT Roorkee			
	UG N=100	PG N=100	RS N=50	FM N=50	UG N=100	PG N=100	RS N=50	FM N=50	UG N=100	PG N=100	RS N=50	FM N=50
Current electronic journals	9 (9)	12 (12)	11 (22)	10 (20)	9 (9)	10 (10)	8 (16)	9 (18)	9 (9)	11 (11)	8 (16)	8 (16)
Back volumes of e-journals	6 (6)	11 (11)	9 (18)	8 (16)	8 (8)	10 (10)	10 (20)	7 (14)	8 (8)	10 (10)	9 (18)	6 (12)
On-line databases	5 (5)	6 (6)	6 (12)	6 (12)	5 (5)	5 (5)	4 (8)	5 (10)	7 (7)	8 (8)	3 (6)	5 (10)
Electronic Books	7 (7)	9 (9)	6 (12)	5 (10)	5 (5)	8 (8)	4 (8)	5 (10)	9 (9)	8 (8)	7 (14)	4 (8)
E- Thesis	3 (3)	5 (5)	8 (16)	5 (10)	4 (4)	6 (6)	7 (14)	7 (14)	3 (3)	5 (5)	7 (14)	6 (12)
Video Cassettes	8 (8)	6 (6)	2 (4)	3 (6)	9 (9)	5 (5)	2 (4)	2 (4)	5 (5)	5 (5)	2 (4)	4 (8)
On-line catalogue (OPAC)	7 (7)	8 (8)	1 (2)	3 (6)	8 (8)	5 (5)	4 (8)	3 (6)	7 (7)	11 (11)	3 (6)	4 (8)
Library websites	11 (11)	15 (15)	4 (8)	4 (8)	7 (7)	14 (14)	4 (8)	4 (8)	13 (13)	9 (9)	6 (12)	5 (10)
E-Mail	14 (14)	11 (11)	1 (2)	3 (6)	15 (15)	14 (14)	4 (8)	3 (6)	11 (11)	10 (10)	2 (4)	3 (6)
CDROMs/DVDs	12 (12)	6 (6)	1 (2)	2 (4)	14 (14)	8 (8)	1 (2)	1 (2)	13 (13)	9 (9)	1 (2)	1 (2)
Blogs, Social Networking sites	17 (17)	14 (14)	1 (2)	1 (2)	16 (16)	15 (15)	2 (4)	4 (8)	15 (15)	14 (14)	2 (4)	4 (8)

(Figures within the parenthesis represent %age)

Table shows that the undergraduates in all the three institutes, under study, are using blogs, social networking sites mostly than e-mail, whereas the post graduates prefer library websites and current e-journals than blogs, social sites and e-mail. Similarly research scholars prefer back volume of e-journals, e-thesis and current e-journals as most using e-resources in all the three institutes. Faculty members

of these institutes also prefer current e-journals, back volumes and e-thesis as compared to other electronic resources.

Table 7: Awareness about INDEST Consortium

Response	Respondents											
	IIT Delhi				IIT Kanpur				IIT Roorkee			
	UG N=100	PG N=100	RS N=50	FM N=50	UG N=100	PG N=100	RS N=50	FM N=50	UG N=100	PG N=100	RS N=50	FM N=50
Yes (%)	59 (59)	79 (79)	47 (94)	50 (100)	61 (61)	74 (74)	50 (100)	50 (100)	67 (67)	83 (83)	49 (98)	50 (100)
Using (%)	52 (52)	78 (78)	47 (94)	50 (100)	54 (54)	70 (70)	50 (100)	50 (100)	59 (59)	78 (78)	49 (98)	50 (100)

(Figures within the parenthesis represent %age)

The table shows that 59% undergraduates, 79% postgraduates, 94% research scholars are aware of, while 52% undergraduates, 78% postgraduates and 94% research scholars are using its services in IIT Delhi. Whereas, in IIT Kanpur 61% undergraduates, 74% postgraduates and all research scholars are aware of INDEST and 54% undergraduates, 70% postgraduates and all research scholars are using ser-

vices. In contrast to IIT Delhi and Kanpur, 67% undergraduates, 83% postgraduates and 98% research scholars are aware of and 59% undergraduates, 78% postgraduates, and 98% research scholars are using the services for their study purposes. It all clear from the table that faculty members of all three institutes are very much aware about INDEST and are using its services as per their requirement.

Table 8: Preference of Reading Electronic Resources

Response (%)	Respondents											
	IIT Kanpur				IIT Kanpur				IIT Kanpur			
	UG N=100	PG N=100	RS N=100	FM N=100	UG N=100	PG N=100	RS N=100	FM N=100	UG N=100	PG N=100	RS N=50	FM N=50
To download the information	55 (55)	39 (39)	18 (36)	11 (22)	45 (45)	44 (44)	16 (32)	12 (24)	49 (49)	42 (42)	15 (30)	15 (30)
To take print out	12 (12)	16 (16)	6 (12)	17 (34)	16 (16)	11 (11)	5 (10)	10 (20)	12 (12)	15 (15)	6 (12)	13 (26)
To read only	9 (9)	19 (19)	8 (16)	12 (24)	21 (21)	23 (23)	10 (20)	10 (20)	11 (11)	20 (20)	8 (16)	8 (16)
Bookmarking	24 (24)	26 (26)	18 (36)	10 (20)	18 (18)	22 (22)	19 (38)	18 (36)	28 (28)	23 (23)	21 (42)	14 (28)

(Figures within the parenthesis represent %age)

From the table it is visible that the undergraduates, post graduates and research scholars in all the three institutes give preference mostly to download the

information and bookmarking, whereas the faculty members of IIT Delhi prefer to take print outs, while in IIT Kanpur faculty members prefer bookmarking. Faculty members of IIT Roorkee prefer to download the information.

Table 9: Searching Methods of Electronic Resources

Response (%)	Respondents											
	IIT Delhi				IIT Kanpur				IIT Roorkee			
	UG N-100	PG N-100	RS N-50	FM N-50	UG N-100	PG N-100	RS N-50	FM N-50	UG N-100	PG N-100	RS N-50	FM N-50
Through search engine	59 (59)	60 (60)	29 (58)	26 (52)	64 (64)	69 (69)	26 (52)	23 (46)	56 (56)	66 (66)	26 (52)	25 (50)
Through websites	49 (49)	42 (42)	31 (62)	21 (42)	51 (51)	55 (55)	30 (60)	20 (40)	45 (45)	49 (49)	34 (68)	19 (38)
Through library portals	54 (54)	65 (65)	39 (78)	33 (66)	52 (52)	67 (67)	35 (70)	29 (58)	48 (48)	66 (66)	37 (74)	37 (74)

(Figures within the parenthesis represent %age)

Note: Because of multiple choice options the percentage exceeds more than 100.

It is observed from the table that 59% undergraduates in IIT Delhi and 68% in IIT Kanpur are using

search engines to access e-resources. On the other hand, 56% undergraduates in IIT Roorkee, and post-graduates, research scholars and faculty members of all three institutes prefer library portals to use e-resources.

Table 10: Impact of e-resources on Academic Efficiency

Response (%)	Respondents											
	IIT Delhi				IIT Kanpur				IIT Roorkee			
	UG N-100	PG N-100	RS N-50	FM N-50	UG N-100	PG N-100	RS N-50	FM N-50	UG N-100	PG N-100	RS N-50	FM N-50
Use of Conventional documents has increased	39 (39)	35 (35)	15 (30)	13 (26)	34 (34)	31 (31)	17 (34)	15 (30)	36 (36)	33 (33)	13 (26)	14 (28)
Dependency on the e-Resources has increased	77 (77)	82 (82)	44 (88)	41 (82)	79 (79)	81 (81)	47 (94)	46 (92)	80 (80)	88 (88)	45 (90)	43 (86)
Expedited the research process	28 (28)	47 (47)	37 (74)	33 (66)	29 (29)	46 (46)	41 (82)	42 (84)	30 (60)	44 (44)	39 (78)	36 (72)
Improved professional competence	82 (82)	85 (85)	45 (90)	45 (90)	84 (84)	88 (88)	47 (94)	44 (88)	88 (88)	88 (88)	46 (92)	44 (88)

(Figures within the parenthesis represent %age)

Note: Because of multiple choice options the percentage exceeds more than 100.

The data in table shows that 77% undergraduates, 82% postgraduates, 88% research scholars and 82% faculty members from IIT Delhi agree that the us-

age of electronic resources have raised their academic efficiency. Whereas in IIT Kanpur 79% undergraduates, 81% postgraduates, 94% research scholars, 92% faculty members agree that electronic resources have raised their level of academic efficiency. In case of IIT Roorkee, 80% undergraduates,

88% postgraduates, 90% research scholars and 86% faculty members accept that their dependency on electronic resources has a telling impact on their aca-

demical development. The data also shows that the respondents agree that electronic resources has improved their professional and research competence

Table 11 Challenges and issues faced

Barriers (%)	Respondents											
	IIT Delhi				IIT Kanpur				IIT Roorkee			
	UG N=100	PG N=100	RS N=50	FM N=50	UG N=100	PG N=100	RS N=50	FM N=50	UG N=100	PG N=100	RS N=50	FM N=50
Paucity of time	33 (33)	43 (43)	4 (8)	24 (48)	29 (29)	39 (39)	5 (10)	26 (52)	38 (38)	42 (42)	7 (14)	22 (44)
Uncomfortable with ICT	9 (9)	6 (6)	4 (8)	0 (00)	11 (11)	3 (3)	3 (6)	0 (00)	4 (8)	2 (2)	3 (6)	0 (00)
Low speed of access	19 (19)	17 (17)	18 (36)	13 (26)	32 (32)	29 (29)	15 (30)	19 (38)	23 (23)	17 (17)	15 (30)	11 (22)
Library timings	6 (6)	10 (10)	3 (6)	3 (6)	9 (9)	5 (5)	3 (6)	4 (8)	8 (8)	7 (7)	3 (6)	2 (4)
Limited access	16 (16)	15 (15)	7 (14)	6 (12)	15 (15)	18 (18)	7 (14)	5 (10)	18 (18)	21 (21)	7 (14)	5 (10)
Facility not available in the hostel/home	7 (7)	5 (5)	2 (4)	0 (00)	3 (3)	4 (4)	4 (8)	0 (00)	4 (4)	3 (3)	2 (4)	0 (00)
Advanced Searching Techniques	14 (14)	13 (13)	4 (8)	6 (12)	15 (15)	18 (18)	11 (22)	10 (20)	12 (12)	13 (13)	8 (16)	11 (22)
In-sufficiente-resources	11 (11)	23 (23)	11 (22)	14 (28)	10 (10)	8 (8)	12 (24)	13 (26)	19 (19)	18 (18)	9 (18)	16 (32)
No challenges	11 (11)	19 (19)	24 (48)	19 (38)	22 (22)	28 (28)	22 (44)	17 (34)	21 (21)	17 (17)	15 (30)	14 (28)

(Figures within the parenthesis represent %age)

Note: Because of multiple choice options the percentage exceeds more than 100.

With respect to the challenges and issues faced in using e-resources, the data collected in table 17 reveals that the time consumed due to the low speed is the major problem faced by the respondents of all the three institutes.

6. Major Findings of the Study

On the basis of the analysis and Interpretation of the collected data, the major findings are laid down

- ▶ Most of the users in all the three institutes visit library websites and use library resources and services.
- ▶ Majority of users in these institutes prefer electronic format of resources as compared to print format. In comparison to undergraduates, students of postgraduate studies, research scholars and faculty members are more interested in using e-resources.
- ▶ Most of the users in these institutes prefer e-resources due to more relevant information, easy access, less time consumed and wide scope of information.

- ▶▶ The Undergraduates and the Postgraduates prefer to use blogs, social networking sites, e-mail, library websites and current e-journals while research scholars and faculty members prefer back volumes and current issues of e-journals and e-thesis in all three institutes.
- ▶▶ Nearly half of the respondents use e-resources to seek required information.
- ▶▶ A major portion of respondents use e-resources to download the required information and for bookmarking.
- ▶▶ It is observed that respondents of UG and PG studies use e-resources mainly to support their academic needs and preparation of projects. On the other hand, the research scholars and faculty members of these institutes use e-resources for their academic and research purpose.
- ▶▶ Majority of respondents use search engines and library portals as the most reliable searching tools.
- ▶▶ Low speed of access to the information and thus consuming more time in the process is the prime problem faced by respondents while using electronic resources.

7. Conclusion

The issue of quality in higher education has become more paramount now and to achieve this goal for a library to develop itself with a rich information collection and build a best collection of electronic resources and information services for its users. We are living in a digital world. The evidence is everywhere. Some of these outstanding and valuable resources are freely available on internet' (Singh, 2003)15. Libraries should develop their own data archives, subject gateways to offer access to back

volumes to identify the past research work completed and to hub on present days study trends in order to shift towards a dazzling future. By the optimistic role of electronic resources, the libraries cannot only boost their efficiency in providing electronic services but also gain the trust of their patrons in doing so.

The emergence of electronic resources has opened new vistas. The academia has been exploring the electronic resources and information services to its maximum for the developments of its academic and research needs. The study of the three institutes reveals that the electronic resources about classed the traditional once due to its various features and this electronic format of information resources has become inevitable for the academic world

8. Suggestions

On the basis of the findings and conclusion of the study, the following suggestions are submitted:-

- ▶▶ More terminals having good bandwidths should be installed by the library so as to provide faster access. It will save much of the users time resulting into more and more usage electronic resources.
- ▶▶ Library should develop an online visual user guide/manual for helping the users as well as more training programmes should be conducted especially for undergraduates and postgraduates.
- ▶▶ Electronic resources should be publicized by the librarians and faculty members as many of the undergraduates and postgraduates are unaware of these e-resources. Library should encourage the users to use open access resources. It is a fact that the value of these resources increases as they are used.

- ▶▶ It is suggested that the facility of printout in the library should be provided at nominal charges.
- ▶▶ Libraries should be provided with adequate finance and other facilities to support the library's mission towards electronic resources and services.
- ▶▶ Performance of the library in context of user satisfaction with regard to the use of electronic resources and services should be reviewed at regularly through various surveys at regular intervals to ensure maximum use of these resources and necessary improvements in the system. Records of survey and their results should be maintained properly.
- ▶▶ An awareness about the use of open access sources like e-books, NPTEL (wherein the lectures delivered in various IIT's and IIM's are accessed), DOAJ (Directory of open access journals) Open J Gate, archives, Shodhganga program (Theses and dissertations submitted to various Indian Universities are accessed online), Vidyanidhi etc should be developed among the users (students and faculty members) and library staff.
- ▶▶ Institutional membership on a nominal fees with consortia like UGC Infonet, INDEST (Indian National Digital Library in Engineering, Science and Technology), J- Gate may facilitate an access to scholarly and peer reviewed International / National Journals.
- ▶▶ Developing an IR (Institutional Repository) for the University to share and showcase the research output, registrations of Patents and Publications etc by the faculty members, is a must.

- ▶▶ An IL(Information Literacy) Module / program for students and faculty members be designed on how to make the best use of resources and services of library

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