User's Satisfaction with Library Resources and Services: A Case Study of IIT Libraries in India

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Abstract

This present study is an investigation of user's satisfaction with library resources and services in IIT libraries in India. A survey research method was adopted to address the research questions. 800 questionnaires were distributed among final year graduate students, postgraduate students, research scholars and faculty members of 7 IIT libraries to collect relevant data regarding their satisfaction. 758 filled-in questionnaires were received and analyzed. On the basis of finding, some suggestions have included in this study to increase user's satisfaction from libraries.

Keywords: User Satisfaction, Library Resources & Services, Library Users, IIT Libraries

INTRODUCTION

User satisfaction has been the primary objective of libraries and library professionals. In academic library there are various types of users with different types of expectations. In addition, new technologies, databases, and more innovative systems for accessing information, have made the library more complicated and challenging for library professionals and users alike. The plenty of resources available and the complexity in being able to evaluate these resources also create problems for users. The inability to easily identify the specific use of a library's services because of the new technologies, and the difficulty to access information sources can all contribute to user dissatisfaction among academic library users.[1] Each year, new students come to the Indian institute of technology with different needs and expectations. A library's resources are critical to user satisfaction. However, no library can satisfy all its users all the time. Some

libraries have very limited resources and clearly are unable to satisfy their users, whereas others are large in size, have substantial holdings, and can provide a variety of services. Obviously, those libraries that are able to provide users with whatever they want will achieve higher levels of user satisfaction. Thus, the availability of resources can have a significant influence on user satisfaction[2].

LITERATURE REVIEW

Mohindra & Kumar (2015) have undertaken a research aims to assess library service quality (LSQ) associated with user satisfaction of AC Joshi Library, Panjab University, Chandigarh, India. They have modified SERVQUAL instrument to examine perceived LSQ and level of user satisfaction. Study reveals that library environment and library services significantly predict the user satisfaction. The level of quality of different attributes, i.e., library environment, collection, staff, and services were significantly different across academic discipline of respondents. The study will be helpful for libraries to improve their quality of services and increase user satisfaction.[3]

Saini et. al. (2014) have examined the user satisfaction of engineering colleges of the city of Jaipur. The result of the study provided information about the satisfaction of users with library collection like text books, reference books, periodicals, online resources, thesis and dissertation, newspaper etc. and services. The authors also have tried to find out the reason of not satisfaction of the users.[4]

Sriram & Rajev (2014) have conducted a study entitled "Impact of Academic Library Services on User Satisfaction: Case Study of Sur University College, Sultanate of Oman". The study suggested that academic library has to provide numerous facilities and services that justify more interest to satisfy the needs of the users.[5]

Saikia & Gohain (2013) have investigated the user's satisfaction in library resources, services and information seeking behaviors of the students and research scholars of Tezpur University. It is felt that user guidance is necessary to help library users to meet their information needs and make users aware of the available library resources and services.[6]

Ranganathan & Babu (2012) studied the awareness and use of library resources and services at Osmania University, Hyderabad. They studied the adequacy of library resources, opinion on e-resources or print sources, reasons for using e-resources and satisfaction in sources of information provision.[7]

Sohail et al. (2012) studied the use of library resources by the students of University of Kalyani. Authors found that guidance in the use of library resources and services was necessary to help students to meet their information needs. They also found that journals, text book and lecture notes were the most popular sources of information for the students. They have suggested that the latest edition of text book and reference materials should be added to the library collection and users should be guided to use the resources of the library.[8]

Adeniran (2011) has examined the user satisfaction with academic libraries services: Academic staff and students perspectives. The finding of this study reveals that users" satisfaction is a function of the quality of staff and services of a library. The study also revealed that provision of relevant information materials, access point and conducive environment for learning, teaching and research lead to an increase in the use of library.[9]

Martensen & Gronholdt (2003) reviewed literatures and surveyed focus groups indicating that key determinant for library service quality were: electronic resources, collections of printed publications, other library services, technical facilities, library environment and human side of user service.[10]

Simmonds (2001) stated several factors that can influence user's satisfaction; these factors include responsiveness, competence and assurances, tangibles and resources.[11]

OBJECTIVES OF THE STUDY

- To investigate the purpose of library visit
- To study the use of library resources, facilities and services.
- To determine the level of satisfaction of users towards library resources and services
- To find out the type of information sources used by the students.

LIMITATION OF THE STUDY

This study is limited to the seven old Indian Institutes of Technology Libraries only. At present there are 16 IITs in India. Because of their proper establishment and infrastructure they were not included in this study. Four core engineering branches were included in this study viz. Civil, Chemical, Electrical and electronic and Mechanical engineering. Users taken from final year graduate students, postgraduate students, research scholars and faculty members of 7 IIT libraries.

METHODOLOGY

Methodology plays a crucial part in every social science research. The target population in this study was final year graduate students, postgraduate students, research scholars and faculty members of seven old IIT libraries. A survey research method was adopted to address the research questions. A total of 800 questionnaires distributed and 758 filled-in questionnaires were returned by the users.

FINDINGS AND ANALYSIS

Table 1: Number and percentages of users in different IITs

Name of IIT	Number	Percentage
IIT Guwahati	121	16.0
IIT Khargpur	108	14.2
IIT Kanpur	100	13.2
IIT Roorkee	106	14.0
IIT Delhi	103	13.6
IIT Bombay	109	14.4
IIT Madras	111	14.6
Total	758	100

In this research study, as already mentioned total 758 samples were included from seven IITs of India. In table 1 clearly depicts how many samples were taken from each IIT. The respective numbers and percentages of samples taken from different IITs are as follows. Maximum users are from IIT Guwahati 121(16%) and minimum users are from IIT Kanpur 100(13.2%).

Table 2: Sex wise distribution of library users

Gender	Frequency	Percentage
Male	588	77.6
Female	170	22.4
Total	758	100.0

Out of total sample of 758 users included in this research study, as per the sex wise distribution of library users, it is found that majority users 588(77.6%) are male and rest 170(22.4%) are female.

Table 3: Age wise distribution of library users

Age Group	Frequency	Percentage
Below 20	174	22.9
20-29	470	62.1
30-39	77	10.2
40-49	13	1.7
50-59	7	.9
60-69	4	.5
Above 70	0	0.00
Missing	13	1.7
Total	758	100.0

Library users are from different age groups. Table 3 states the age wise distribution of library users included in this sample. It is found that the maximum numbers 470(62.1%) belongs to 20-29 age group, followed by 174(22.9%) below 20 years age group and 77(10.2%) belongs to age group of 30-39. Similarly, 13 (1.7%) are age group of 40- 49, whereas, 7(0.9%) belongs to age group 50-59, and the 4(.5%) are of age group 60-69 and above 70 none of the sample found in this study. However, 13(1.7%) have not responded.

Table 4: Age and sex wise distribution of library users

Age Group	Male	Percentage	Female	Percentage	Total	Percentage
Below 20	134	22.78	39	23.07	173	22.9
Age 20-29	373	63.43	97	57.39	470	62.21
Age 30-39	53	9.01	24	14.20	77	10.17
Age 40-49	10	1.70	3	1.77	13	1.7
Age 50-59	5	.85	2	1.18	7	.9
Age 60-69	3	.5	1	.59	4	.5
Above 70	0	0	0	0	0	0.00
Missing	10	1.7	3	1.77	13	1.7
Total	588	77.67	169	22.33	758	100

Table 4 shows that the age and sex wise distribution of library users. The maximum age group of male users 373(63.43%) belongs to age group of 20-29, followed by 134(22.78%) below 20 years age group and in the category of female users in the maximum 97(57.39%) in age groups 20-29, followed by age group 30-39 years age group 53(9.01%) and the age group of 30-39 is 24(14.20%) of male and female. Whereas, 10(1.70%) and the age group of 40-49 is 3(1.77%) of male and female is 5(.8%), the age group of 50-59 is 2(1.18%) of male and no female in this age group.

Table 5: Academic rank wise distribution of faculty members

Academic Rank	Number	Percentage
Professor	10	13.0
Associate Professor	21	27.3
Assistant Professor	46	59.7
Total	77	100

Table 5 which shows the distribution of academic rank of faculty members, such as 46(59%) of users are Assistant Professor, 21(27.3%) of users are Associate Professor and 10(13.0%) are Professors. So, majority of the users in the faculty category are Assistant Professors.

Table 6: Academic rank wise distribution of students

Academic Rank	Number	Percentage
Research Scholar	100	14.7
Post Graduate	442	64.9
Under Graduate	139	20.4
Total	681	100

Table 6 shows the distribution of academic rank of students, which demonstrate that the 442(64.9%) of users are Under Graduate, 139(20.4%) of users are post Graduate and 100(14.7%) are Research Scholar. So, majority of the library users belong to Under Graduate category.

Table 7: Department wise distribution of library users

Department	Total	Percentage
Mechanical Engineering	179	23.6
Chemical Engineering	160	21.1
Civil Engineering	172	22.7
Electrical & Electronics Engineering	247	32.6
Total	758	100

Table 6.7 and figure 7 depicts the department wise distribution of library users. It is found that out of 758 samples, the maximum 247(32.6%) from the Electrical & Electronics Engineering followed by 179(23.6%), Mechanical Engineering then Civil Engineering 172(22.7%) followed by Chemical Engineering 160(21.1%).

Table 8: User's satisfaction on Library's services

Satisfaction on library services	Not Satisfied		Satisfied		CR
	N	%	N	%	
Loan of books	96	12.6	662	87.6	0.77
Journals/Periodicals Circulations	137	18.1	621	81.9	0.16
CD-ROM Loan and print –outs	171	22.6	587	77.4	0.78
Reference Service	119	15.7	639	84.3	0.80
Reservation Service	151	19.9	607	80.6	0.80
Inter Library Loan	186	24.5	572	75.8	.032
Reprography Service	164	21.6	594	78.4	0.12
Internet Service	102	13.4	656	86.7	0.20
E-journals and on-line database services	147	19.3	611	80.9	0.14

Table-8 shows that the number and percentages of responses received from the samples regarding the satisfaction of library users on various library services. It is found that, 662(87.6%) users are satisfied with lending of books. However, 656(86.7%) are satisfied with internet service, on the other hand 639(84.3%) are satisfied with reference service. Similarly, 621(81.9%) are satisfied with Journals/Periodicals circulations. 611(80.9%) are satisfied with E-journals and on-line database services and 607(80.6%) are satisfied with reservation service etc.

So, it is inferred that all users of different IITs are satisfied on diverse library services. The obtained critical ratio are less than the table value that means there is no significant difference in the satisfaction level of users regarding the library's Services provided by IITs libraries.

Table 9: Users' satisfaction on Library's services in different IIT libraries

Satisfaction of library services		Sum of Squares	df	Mean Square	F	Sig.
	Between Groups	51.746	6	8.624	1.606	.143
	Within Groups	4033.791	751	5.371		
	Total	4085.537	757			

Table 9 shows that the mean score of the user's satisfaction on library's services in different IITs. The obtained F value 1.60 is less than the table value at 0.05 levels of significance. That means there exists no significant difference in the user's satisfaction on library's services in the different IITs.

Table 10: Users' satisfaction on total sample based on their gender

Satisfaction on Library Services	Sex	N	Mean	Std. Deviation	t	Level of significance
	Male	588	16.33	2.402	.475	P:>0.5
	Female	170	16.43	2.032		

Table 10 shows that the obtained t value .475 is less than the table value at 0.05 levels of significance. That means there exist no significant difference in the User's Satisfaction on Library's Services between male and female users in the different IITs.

Table 11: Satisfaction of faculty members on their academic rank

		Sum of Squares	df	Mean Square	F	Sig.
Satisfaction on Library Services	Between Groups	15.038	2	7.519	1.401	.253
	Within Groups	397.092	74	5.366		
	Total	412.130	76			

Table 11 shows that the mean score of the user's satisfaction on library's services in different IITs. The obtained F value 1.40 is less than the table value at 0.05 levels of significance. That means there exist no significant difference in the user's satisfaction on library's services in the different IITs based on the academic rank of faculty members.

Table 12: Satisfaction of students on their academic rank

		Sum of Squares	Df	Mean Square	F	Sig.
Satisfaction on Library Services	Between Groups	18.743	2	9.371	1.740	.176
	Within Groups	3651.269	678	5.385		
	Total	3670.012	680			

Table 12 shows that the mean score of the User's Satisfaction on Library's Services in different IITs .The obtained F value 1.74 is less than the table value at 0.05 levels of significance. That means there exist no significant difference in the User's Satisfaction on Library's Services in the different IITs based on the academic qualification of students.

Table 13: Satisfaction on the department wise users

		Sum of Squares	df	Mean Square	F	Sig.
Satisfaction on Library Services	Between Groups	9.505	3	3.168	.586	.625
	Within Groups	4074.194	754	5.411		
	Total	4083.699	757			

Table 13 shows that the mean score of the User's Satisfaction on Library's Services in different IITs .The obtained F value 1.74 is less than the table value at 0.05 levels of significance. That means there exist no significant difference in the User's Satisfaction on Library's Services in the different IITs based on the academic qualification of students.

Table 14: User's satisfaction level on computers and software availability

Satisfaction levels	Not Satisfied		Satisfied		CR	
	N	%	N	%		Missing
Adequacy of Computers	127	16.8	629	83.2	0.807	2
Configuration of Computers	148	19.5	610	80.5	0.154	
Queries search / OPAC	116	15.3	642	84.7	0.802	
LAN	107	14.1	651	85.9	0.794	
WAN	138	18.2	619	81.8	0.809	1
Adequacy of band width	113	14.9	643	85.1	0.031	2

Table 14 shows that the number and percentages of responses regarding the satisfaction on computers and software availability in the library. It is clear that 651(85.9%) are satisfied with LAN facilities, 643(85.1%) are satisfied with adequacy of band width, 642(84.7%) are satisfied with queries search/OPAC. However, 629(83.2%) are satisfied with adequacy of computers, 619(81.8%) are satisfied WAN and 610(80.5%) are satisfied with configuration of computers.

The obtained Critical Ratio are less than the table value that means there is no significant difference in the satisfaction level of users regarding the on computers and software availability in different IITs libraries.

Table 15: User's Satisfaction level on Digital Sources/Services

Digital sources/services	Not Satisfied		Satisfied		CR	
	N	%	N	%		Missing
CD-ROM	147	19.5	608	80.5	0.804	3
Internet	89	11.7	669	88.3	0.193	
E- Mail	93	12.3	665	87.7	0.772	
Online Database	119	15.7	639	84.3	0.804	
E-Journals	115	15.2	643	84.8	0.801	
Online public Access Catalogue (OPAC)	138	18.2	620	81.8	0.032	
Institute website	109	14.4	649	85.6	0.187	

Table 15 shows that the number and percentages of responses regarding the satisfaction on digital sources/services in the library. It is found that 669(88.3%) are satisfied with Internet facilities, 665(87.7%) are satisfied with e-mail service. Similarly 649(85.6%) are satisfied with Institute website, 643(84.8%) are satisfied with 639(84.3%) are satisfied online database and 620(81.8%) are satisfied with online public access catalogue (OPAC).

The obtained critical ratio are less than the table value that means there is no significant difference in the satisfaction level of users regarding on digital sources/services in the libraries of IITs.

Table 16: Satisfaction level of Digital Sources/Services in different IITs

Name of IIT	N	Subset for alpha = 0.05
		1
IIT Roorkee	106	12.75
IIT Madras	111	12.86
IIT Khargpur	108	12.87
IIT Delhi	103	12.97
IIT Kanpur	100	13.02
IIT Guwahati	121	13.06
IIT Bombay	109	13.42

Table 16 the users from IIT Bombay has high scores comparatively other IITs regarding the user's satisfaction on digital sources/services.

Table 17: Satisfaction based on the department wise users

Department	N	Subset for alpha = 0.05	
		1	2
Mechanical Engineering	179	24.08	
Electrical & Electronic Engineering	246	25.02	25.02
Chemical Engineering	160	25.46	25.46
Civil Engineering	172		25.85

Table 17 shows that the difference in the level of satisfaction based on users qualification. It is clear that the obtained mean score 25.85 of Civil Engineering is greater than the mean score of Mechanical Engineering and Chemical Engineering, Electrical & Electronic Engineering students, but the mean difference between the Chemical Engineering and Electrical & Electronic Engineering are not differed significantly. So it can be concluded that research scholars and Civil Engineering, Chemical Engineering and Electrical & Electronic Engineering have more satisfaction than the Mechanical Engineering in their library users.

Table 18: How these items are helpful to the users in IIT Library

Sl. No	Statements	Not Important		Important		Most Important		Missing
		N	%	N	%	N	%	
1	Visually appealing facilities	48	6.3	255	33.7	454	60.0	1
2	Neat, professionally appearing	37	4.9	326	43.2	392	51.9	3
3	Visually appealing documentation	47	6.2	310	40.9	401	52.9	
4	Providing service at the promised time	29	3.8	290	38.3	438	57.9	1
5	Keeping users informed	24	3.2	322	42.5	412	54.4	
6	Prompt service to the users	38	5.0	326	43.0	394	52.0	
7	Willingness to help users	38	5.0	342	45.1	378	49.9	
8	Readiness to respond to users requests	42	5.6	346	45.9	366	48.5	4
9	Courteous staff	71	9.4	372	49.1	314	41.5	1
10	Staff who instil confidence in users	94	12.4	371	48.9	292	38.5	1

11	Making users feel secure about transactions	93	12.3	353	46.7	310	41.0	2
12	Staff who are knowledgeable about questions	75	9.9	383	50.6	299	39.5	1
13	Giving users individual attention	122	16.1	342	45.2	291	38.5	3
14	Dealing with users in a caring fashion	99	13.1	318	42.1	339	44.8	2
15	Understanding the needs of users	37	4.9	255	33.7	465	61.4	1
16	Reliability of information received	23	3.0	245	32.3	490	64.6	
17	Completeness of information received	32	4.2	226	29.8	500	66.0	
18	Relevance of information received	20	2.6	245	32.3	493	65.0	
19	An online catalogue that is easy to use	43	5.7	234	30.9	481	63.5	
20	An online catalogue that you can interact with in a clear and understandable way	47	6.2	257	33.9	453	59.8	1
21	An online catalog that is easy to become skilful at using	46	6.1	267	35.2	445	58.7	
22	Reliability of information received	57	7.5	262	34.6	439	57.9	
23	Completeness of information received	66	8.7	254	33.5	438	57.8	

Table 18 shows that the number and percentages of the response on important these items are to the helpful to the users in IIT library. From the observation it can be generalized the ranking of the item according to the most importance. So it is clear that the first rank is Completeness of information received 500(66%) Relevance of information received 493(65%), Reliability of information received 490(64.6%), Understanding the needs of users 465(61.4%) Visually appealing facilities 454(60%), an online catalogue that you can interact with in a clear and understandable way 453(59.8%), An online catalog that is easy to become skilful at using 445(58.7%), Reliability of information received 439(57.9%), Completeness of information received 438(57.8%) and giving users individual attention is least important according to the percentages of users.

Table 19: Response on the Information Technology in IIT Libraries(5 point Likert Scale)

	Users Opinions	Strongly Agree		Disagree		Uncertain		Agree		Strongly Agree		
		N	%	N	%	N	%	N	%	N	%	Missing
1	Creation of library records in machine readable form is prerequisite for library automation	5	.7	3	.4	33	4.4	311	41.3	400	53.1	6
2	Library should have required infrastructure for IT applications	6	.8	2	.3	67	8.8	387	51.1	296	39.1	
3	Library should have trainned manpower for all IT applications	10	1.3	11	1.5	78	10.3	366	48.3	293	38.7	
4	Library should automate all its Library house Keeping functions	10	1.3	20	2.6	76	10.0	340	44.9	312	41.2	

#	Statement											
5	Enhance the staff skills in using the IT	10	1.3	6	.8	59	7.8	369	48.7	314	41.4	
6	Training of end users in the use of IT tools	13	1.7	17	2.2	92	12.1	370	48.8	266	35.1	
7	Use uniform standards for database creation	18	2.4	15	2.0	62	8.2	343	45.3	320	42.2	
8	Use of library software for its automated functions	19	2.5	16	2.1	69	9.1	331	43.7	322	42.5	
9	Provide online OPAC access to Library users	10	1.3	9	1.2	59	7.8	328	43.3	351	46.4	
10	Provide access to other library catalogues (National & International)	15	2.0	11	1.5	81	10.7	296	39.1	355	46.8	
11	Provide access to CD-ROM database through campus network	9	1.2	32	4.2	97	12.8	314	41.5	304	40.2	2
12	Provide document Delivery service	10	1.3	31	4.1	101	13.3	301	39.8	314	41.5	1
13	Provide Access to learned journals in digital form.	9	1.2	24	3.2	55	7.3	351	46.3	319	42.1	
14	Create and provide access to library web (Home)page.	16	2.1	7	.9	59	7.8	335	44.2	341	45.0	1
15	Create demand for online access to other databases	14	1.8	11	1.5	71	9.4	355	46.8	307	40.5	
16	Provide electronics bulletin board service.	25	3.3	20	2.6	54	7.1	342	45.2	314	41.5	3
17	In a changing role, Library staff should help users to identify, Locate, acquire, or, access and Learn how to use online databases themselves	19	2.5	21	2.8	63	8.3	296	39.1	359	47.4	
18	Scan journal articles and provide article indexing	15	2.0	25	3.3	52	6.9	317	41.8	349	46.0	
19	Required to purchase more and more resources in electronic format	16	2.1	22	2.9	80	10.6	301	39.7	339	44.7	
20	Campus networking required for connecting all the department to library	12	1.6	17	2.2	36	4.7	270	35.6	422	55.7	1
21	Library must participate in national and regional cooperative effort for sharing resources,expertise and experience	13	1.7	19	2.5	97	12.8	295	38.9	334	44.1	
22	Library should have high speed data network connectivity	24	3.2	33	4.4	55	7.3	220	29.1	425	56.1	1

Table 19 shows that the number and percentages of the response on the information technology in IIT libraries. So, it can be concluded that creation of library records in machine readable form is prerequisite for library automation 400(53.1%) are strongly agreed this. Campus networking

required for connecting all the department to library 442(55.7%) strongly agreed library should have high speed data network connectivity 425(56.1%) strongly agreed.

SUGGESTIONS

Basing upon the findings of the study and responses received from the respondents the following suggestions are included in this study to bring improvement in the existing infrastructure and service provision of IIT libraries in India to meet users' satisfaction.

- IIT library should develop an intranet search facility, which will assist in the discovery of intranet based information. Moreover, a system should be implemented to alert users of new content.
- Training of personnel is essential because effectiveness of the library depends on the performance of the staff. There should be a special training to the users of the library to teach them how to use intranet in IIT.
- Library should enhance the e-book collection as e-books are also useful source of information and Library should enhance other e-resources collection to fulfill the information needs of the users.
- 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.
- The library should conduct user study programs to know more about electronic information needs of the users. The library should also take the initiative to develop online gateways to engineering resources on reciprocal agreements.
- It is always good to take regular feedback from the students, research scholars and faculties for the improvement of existing library facilities and services..
- Library timings should be extended. In this way users can make better use of books for study as well as research. Library should be opened for 24 hours. Better arrangement of books is required, OPAC search should be improved.

CONCLUSION

The development and delivery of high-quality users service is an important goal for any libraries in technical education. The libraries are changing from print to electronic12.[12] In an IIT library, the user needs the library services on a wide range of areas and anytime. The delay in giving the right information in right time may lead to delay in their research activity. Interruption of even a fraction of second may cause the whole process go waste. Hence, the library and information science professionals should always be a step ahead of their users. It can be concluded that the IIT libraries need to provide more web-based library services to the users under intranet and Internet environment and also use more web 2.0 technologies for better delivery of services. There must be a constrictive plan which will integrate training

programme for library users as well as staff for effective utilization of resources and services. A regular feedback from the faculty and students will also go a long way in improving the library services and their satisfaction can be met effectively.

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