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Akhtar Hussain
akhtar.a47@gmail.com

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The ICT based library and Information services: a case study of B-Schools in Delhi and NCR region

Dr. Akhtar Hussain* Mohd Asif Khan Dr. Nishat Fatima Zaidi*****

*Web Librarian, Civil Engineering Department-College of Engineering, King Saud University, Riyadh, Kingdom of Saudi Arabia, Post Box 800, PIN 11421,

**Library In Charge, NIIT University Campus, Neemrana, Rajasthan, India

***Associate Prof., Department of Library and Information Science, Aligarh Muslim University, Aligarh, India.

ABSTRACT

The study investigated the ICT based library and Information services: a case study of B-schools in Delhi and NCR region. The present study demonstrates and elaborates the primary way to learn about ICTs, the purpose of using ICT enabled library services, to assess to what extent users are utilized ICT based library services and facilities, various aspects of Internet usage, favorite search engines, and problems faced by the users in using the ICT in libraries. The papers also determine the satisfaction level of users regarding research work, online database services and infrastructure facilities. Suggestions have been given to make the service more beneficial in the library users of B-schools in Delhi and NCR region.

Keyword: ICT, B-schools, User studies, Delhi/NCR region, India.

1. Introduction

Information has emerged as the prime in the 21st century. ICT has exerted a profound influence on traditional academic libraries. They have no option but adapt themselves to new developments, especially due to cuts in budget allocation. Hence, networking of information centres is inevitable. The prime objectives of the library is pooling information resources and information related infrastructure and sharing them. In this process, many library have re-examined their traditional methods and services to overcome inadequacies through automation and computerization.

The use of computers for library operation avoids respectively jobs and saves considerable amount of time, resources and labour. It also speeds up technical processing and information services. ICT has been a means to bring quality services. Systematic planning of its introduction and application will assure that the technology based information services are sustainable, and enhances the ability of library. In the present scenario, the library and information centers at global level are able to provide access to;

- Online databases across the country and worldwide
- Comprehensive statistical databases and content page services
- Full text information sources with key word searching

The academic libraries in Indian setup have been preparing themselves on a corporate basis; a platform for ICT based information services. Internet has transformed the ways and means of information service. Breaking the distance barrier, internet has emerged as a boon to the information seekers as well as libraries. It has become popular, easy to use and inexpensive teaching and research tool.

Internet, in fact is changing the way the librarian view information sources. Professional associations, research organizations publisher is treated as the speedy, accurate and effective way of communication among academic, research, executives and business communities. Hence, internet for information service/ current awareness service in the library is gaining momentum and becoming popular too. It is also true that internet has become a part of library environment today.

The National Capital Region (NCR) in India is a name for the conurbation or metropolitan area which includes the entire National Capital Territory of Delhi as well as urban areas ringing it in neighboring states of Uttar Pradesh, Haryana, Uttarakhand and Rajasthan. With a total area of about 33,578 km² (12,965 sq mi), it is the world's second largest urban agglomeration by population and the largest by area. The origin of NCR is traced to the recommendation of first ever Master Plan of Delhi, way back in the year 1962. The prime aim was to reduce the burden of increasing population in Delhi and the growing demand for more space owing to large scale industrialization (Wikipedia, 2013).

This study pursued to examine the study of ICT based library and Information services in B-schools in Delhi and NCR region. It is not feasible to collect large of number data of each and every library user in their study; therefore samples were selected by using stratified random sampling method. Hence Investigator has selected 39 management colleges on the basis of All India Management Association (AIMA) rating at Delhi and NCR region.

2. Review of Literature

In brief this article reviews a few studies conducted abroad as well as in India on use and awareness of The ICT based library and Information services: a case study of B-Schools in Delhi and NCR region in chronological order.

Sun, Hao-Chang, Chen, Kuan-nien, Tseng, Chishu and Tsai, Wen-Hui (2010) in his study shows how implementing new information technology has expanded the role of librarians as educators and how this role has evolution of new technology. It was found that collaboration with faculty member was to be an essential feature of the most successful stories. Teaching students and faculty to use new ICT may have become one of the important roles of librarians and information managers.

Ghosh and Ghosh (2009) conducted a study to examine the progress India has made in its move towards a knowledge-based economy. The Indian Government has demonstrated its commitment to the development of fundamental pillars of knowledge sharing infrastructure, knowledge workers and a knowledge innovation system. Libraries are identified as key players in building an inclusive knowledge economy (KE) for a country. The important findings of the study were: the practice-based examples of how information and communication technology (ICT) projects are influencing contemporary Indian society and an account of government policies in regard to ICT implementation and development towards a KE are presented. The impediments in the process of KE in India are identified and recommendations are made.

Antherjanam & Sheeja (2008) carried out a study to find out the impact of ICT on LIS and its major shifts and practices in university library of CUSAT. The major findings of the study were:(a) Users are making very good use of the available ICT facilities.(b) With the help of telephone, e-mail, Fax etc. reference queries are answered faster than before.(c) SDI, CAS etc. are also done faster than before.(d) Issue & return of books, renewals are done faster than

before.(e) Book selection, price checking are also done very efficiently using ICT.(f) About 90% of the users of the library search OPAC for getting information about the where about of books.

The main an objective of the study was to investigate and determine the levels of information technology (IT) in Pakistani libraries. This article also focuses on the status of computers and other commonly used hardware, e-mail, internet, library software, automated user services expenditure on ICT and online resources available in academic libraries of Pakistan and particularly developing countries. The questionnaire methods were used of data collections. In this paper was found that a low level of IT infrastructure facilities availability, particularly the absence of computers, email and internet in libraries. It was found that libraries need to be fully automated using standard library software packages. Hence, access to online information resources through the Higher Education Commission (HEC) was found extensive and comprehensive. The finding can be utilized to evaluate the status of different ICT tools and applications. The collections of data were useful and authentic source for planning to improve the libraries ICT infrastructure, library automation and reducing the gap in the use of IT in different kind of libraries (Ramzan and Singh, 2008).

Raza and Amar Nath (2007) point out that the use of Information Technology (IT) in the university libraries of Punjab, Himachal Pradesh and Chandigarh with an clandestine objective to establish some co-relation between quality in libraries and use of IT. The paper highlights the use of hardware and software facilities in university libraries. It also highlights the access of networks, information services and barriers in IT applications. Questionnaires, interview and observation methods were used for data collection. A survey conducted on four university libraries, namely Panjab University library, Chandigarh; Himachal Pradesh University, Shimla; Punjabi university Library, Patiala; and Guru Nanak Dev University Library, Amritsar found that only Panjab University Library, Chandigarh and GND university library, Amritsar have provided computerized access to in-house databases. Library literature reveals that quality depends on merging print culture with digital culture but the result of this survey confirm that print culture is still dominating in university libraries of this region.

The study of Cholin (2005) is an attempt to give an overview of Information Technology implementation in different university libraries in India that provides effective access to resources available within universities and elsewhere. Also discussed is the role of the INFLIBNET Centre in the overall development of university libraries across the country with special emphasis on efforts through UGC-Infonet E-Journals Consortium.

The purpose of the study conducted by Obioha (2005) was (1)to ascertain if ICT has played any roles in helping research officers in their information seeking and use, (2) to know what these roles are (if any), (3) to find out if there are constraints in the use of ICT tools by research officers, and (4) to find out what these constraints are (if any) and extend useful suggestions that will aid in the researchers' information seeking and use. The important findings of the study were: (1) The researchers of the NIOMR, Lagos have considerable awareness and exposure to ICT and its tools,(2) ICT tools aid researchers in their seeking and use of information speedily and with ease. ICT helps in acquisition of more knowledge. This is learning. It is found that aid from international and local agencies supports research activities including provision of ICT tools, training and retraining in ICT, and (3) Lack of adequate, stable power supply and infrastructure are hindrances to ICT use as responded by these researchers. Insufficient ICT tools and centers slow down research work.

This paper deals with the development of public libraries in Bangladesh, their present situation, and some recommendations for improving their services and implementing

Information and communication technology (ICT). It plays a vital role in bringing about changes in society. This age of ICT the role of the public library has changed drastically in developed countries. They are providing more cultured and user friendly information services to their patrons. In this view, public libraries in developing countries are using these facilities very slowly due to shortage of funds, skilled manpower and other support. As a result the users of public libraries in developing countries are not fully satisfied (Shuva, 2005).

Yapa (2003) revealed the overall scenario use of ICT in Sri Lanka and particularly in libraries. Author argues that, National Information Policy and National Information Infrastructure are essential, if a country would like to exploit the IT to its advantage. The major finding of the study is that the progress of library automation in Sri Lanka is a result of the effort few professionals who worked collectively. One good feature in the Sri Lankan scenario is the commitment and obligation of library professional for library cooperation. Library consortia in Sri Lanka function with the initiative of the library professionals with minimal administrative and financial support from the authorities. Hussain and Abalkhail (2013) The study clearly revealed that the majority of users of the library used the circulation service. The study found that a majority of research scholars consult the reference books for research work followed by undergraduate students who used the library circulation service.

3. Objectives of the Study

The purpose of this study was to investigate the use of Information and Communication Technology products and services by the users of management libraries in colleges/institutes libraries in Delhi/NCR. It specifically focused on the following objectives:

1. To study the present ICT products and services provided by B-Schools libraries in Delhi and NCR region.
2. To find out the different purposes of using ICT product and services.
3. To assess to what extent users are utilized ICT based library services and facilities.
4. To know the favourite search engines used by users.
5. To identify the type of problems faced by users when using ICT product and services in libraries under study.
6. To find out the user satisfaction with the ICT based products and services provided by the libraries under study.
7. To suggest measures for improvement of existing resources and services and implementation of ICT.

4. Research Methodology

The questionnaire method was used for the present study to collect the necessary primary data for evaluation and assessment. The questionnaire method has some limitation to collect the data, hence the investigator adopted interview and observation methods were used to collect required information to supplement to the questionnaire method and to bring more clarity to the data. It is not feasible to collect large of number data of each and every library user in their study; therefore samples were selected by using stratified random sampling method. Hence Investigator has selected 39 management colleges on the basis of All India Management Association (AIMA) rating at Delhi/NCR region. The questionnaires were distributed personally among librarians and user. A list of the management institutes are found in *Appendix1 &2*.

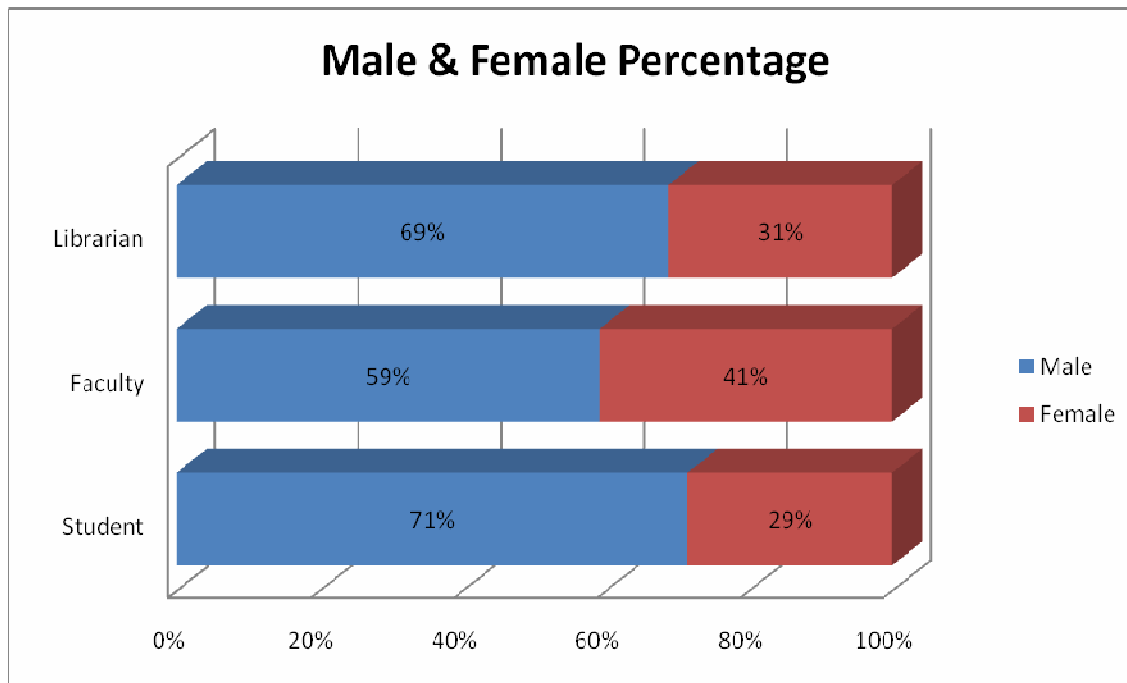
5. Data Analysis

The paper deals with the analysis and Interpretation of data which were collected through Questionnaire. The data analysis means systematic gathering, recoding, manipulating and summarizing of data to obtain answer to the research problems.

The collected data has been organized and tabulated by using tables, pie chat, histogram etc. The purpose of this analysis is to shape data to intelligible and interpretable forms, so that the relation of research problems can studied and tested.

Table 5.1.1 Male and Female percentage in different management colleges

Users	Male	Female	Total
Student	95	38	133
	71%	29%	
Faculty	94	65	159
	59%	41%	
Librarian	22	10	32
	69%	31%	
Total	211	113	324



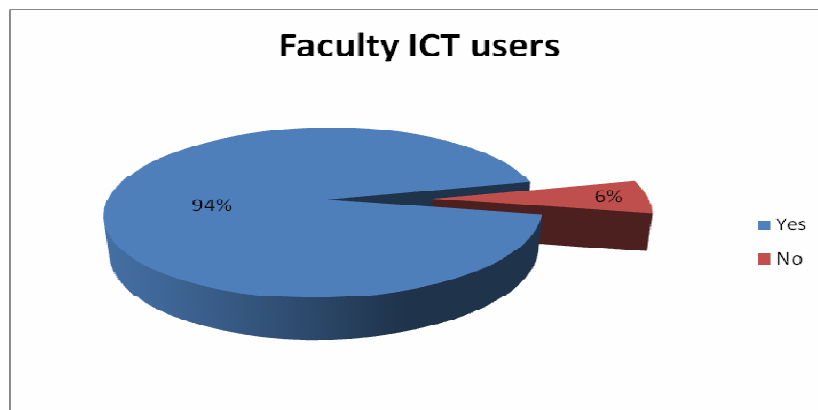
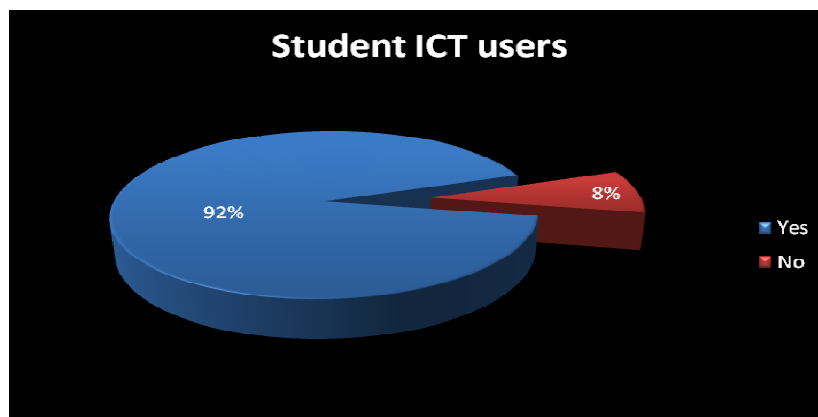
We have got 32 colleges' library data which is recorded in the table 5.1.1, and then it is categorized into three parts like student, faculty and librarian. After that we have divided these three sections into male female percentage. Now if we see the bar graph we can understand 71% male whereas 29% are female student in a college. Similarly if we considered the faculties then

we can see 59% are male and remaining 41% are female. Last but not the least if we consider the librarian we can see it is 61% male whereas 39% comes under the female categories.

Table 5.1.2 Student and Faculty ICT users

Yes	No	Total
122	11	133
92%	8%	100%

Yes	No	Total
149	10	159
94%	6%	100%



If compare two diagram we can observed that most of the faculties (94%) as well as students (92%) uses ICT in a college. It means that in a management college application of ICT is very much essential but some colleges are their where faculty and student do not use ICT i.e.6%. The reason could be either they do not know about this or it is not available in their college (Table 5.1.2).

Respondents	Teacher/ supervisor	Colleagues/ classmates	Friends abroad	Library homepage	Library training	Subject librarian	Others
Student	48	53	14	7	4	4	3
Faculty	55	61	10	14	1	10	8

Table 5.1.3 Primary way to learn about ICT

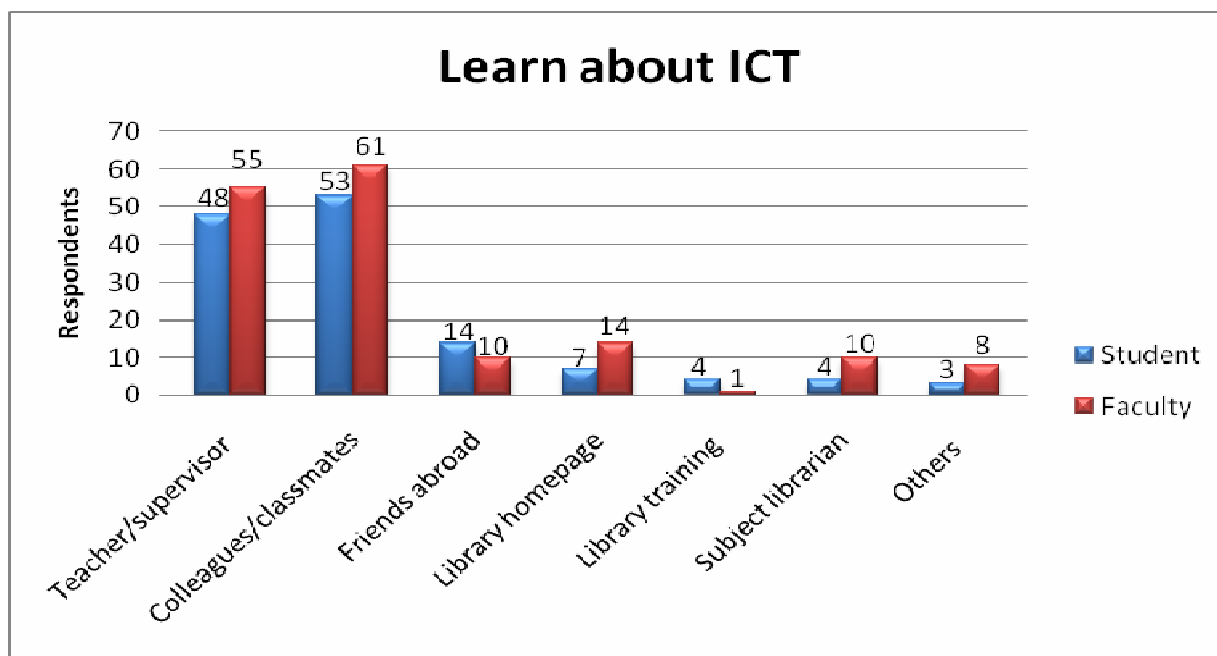


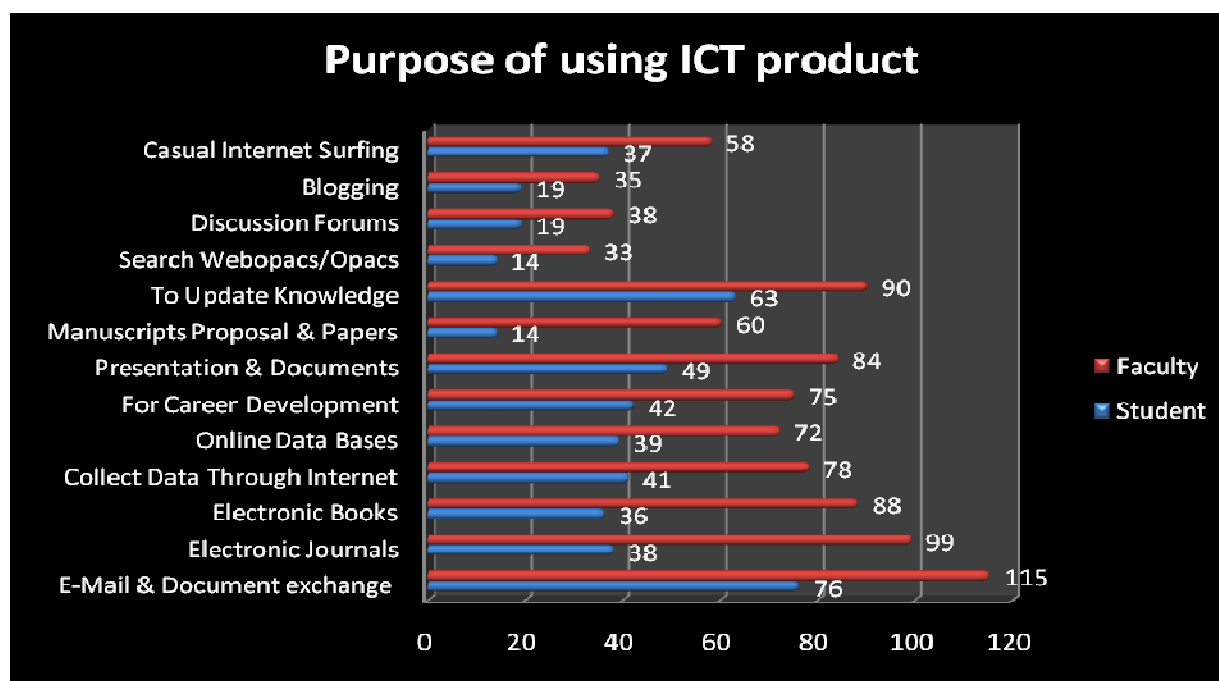
Table 5.1.3 examined that the researcher asked some students as well faculties that how they learn about ICT, so student and faculty give similar kind of response. Now if we see the column chart carefully we can understand that maximum respondent said they learn it through colleagues/classmates i.e. 53 students and 61 faculties. After that maximum people said they learn it through their teacher/supervisor whereas small number of respondent said they learn it by friends, library home pages and library training.

Table 5.1.4 Purpose of using ICT product

- SI.1** E-Mail & Document exchange
- SI.2** Electronic Journals
- SI.3** Electronic Books
- SI.4** Collect Data through Internet
- SI.5** Online Data Bases
- SI.6** For Career Development

SI.7 Presentation & Documents
SI.8 Manuscripts Proposal & Papers
SI.9 To Update Knowledge
SI.10 Search Webopacs/Opacs
SI.11 Discussion Forums
SI.12 Blogging
SI.13 Casual Internet Surfing

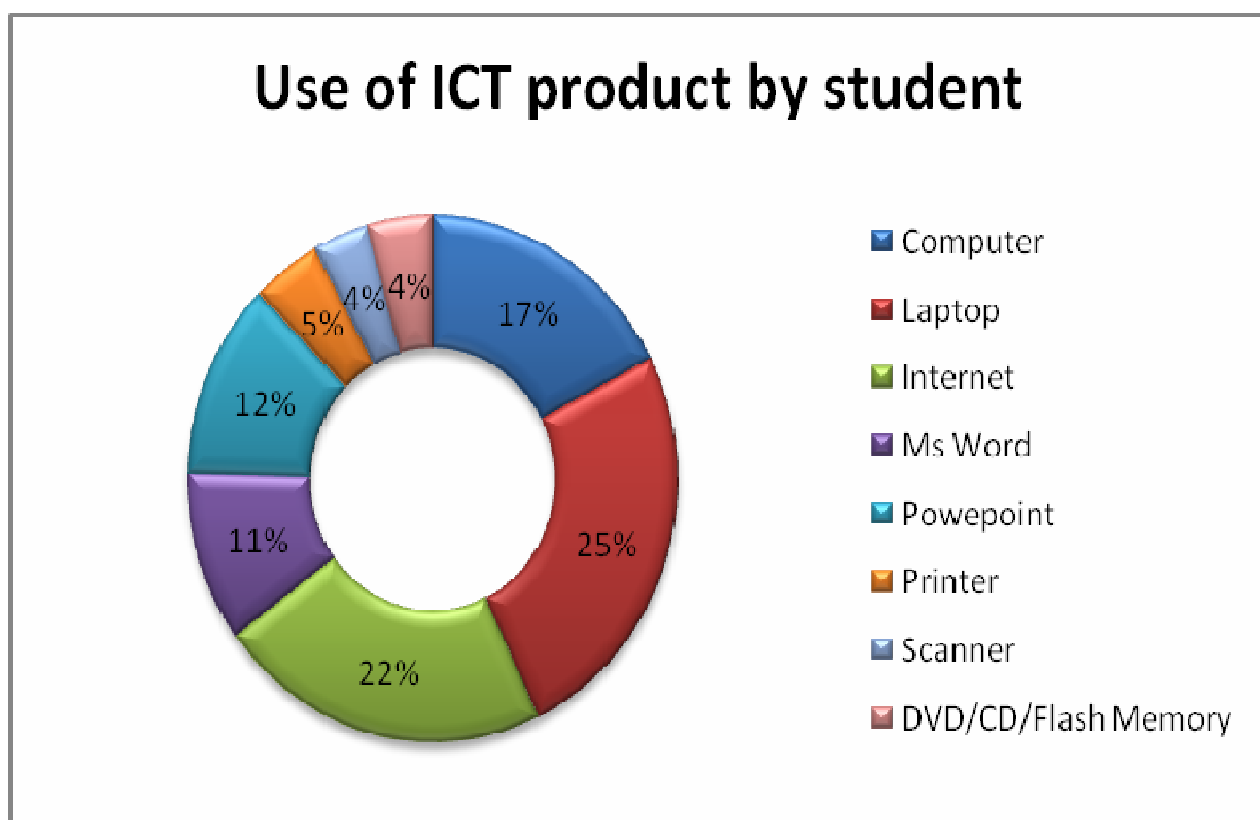
Users	SI.1	SI.2	SI.3	SI.4	SI.5	SI.6	SI.7	SI.8	SI.9	SI.10	SI.11	SI.12	SI.13
Student	76	38	36	41	39	42	49	14	63	14	19	19	37
Faculty	115	99	88	78	72	75	84	60	90	33	38	35	58



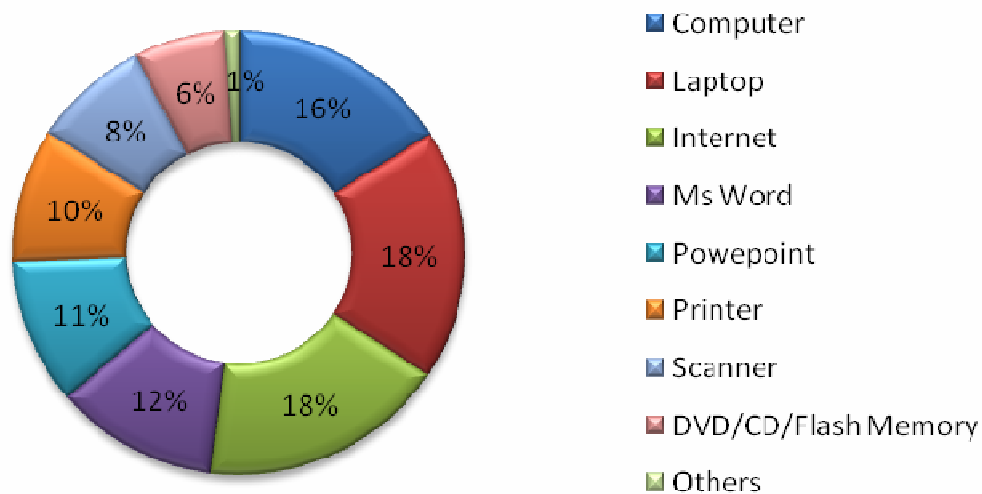
The above table shows that maximum response on email and document exchange (i.e. 76 students & 115 faculties) then 63 students and 90 faculties mentioned it also helps to update their knowledge as per today's world is concerned. There are others aspect of using ICT product like electronic journals (38 students, 99 faculties), electronic books (36 student, 88 faculties), collect data through internet (41 students, 78 faculties), online database (39 student, 72 faculties), for career development (42 students, 75 faculties) and so on.

Respondents	Computer	Laptop	Internet	Ms Word	PowerPoint	Printer	Scanner	DVD/CD/Flash Memory	Others
Student	61	89	77	37	42	16	13	15	0
	17%	25%	22%	11%	12%	5%	4%	4%	0%
Faculty	96	109	106	70	64	58	50	39	6
	16%	18%	18%	12%	11%	10%	8%	7%	1%

Table 5.1.5 Use of ICT product by student & faculty



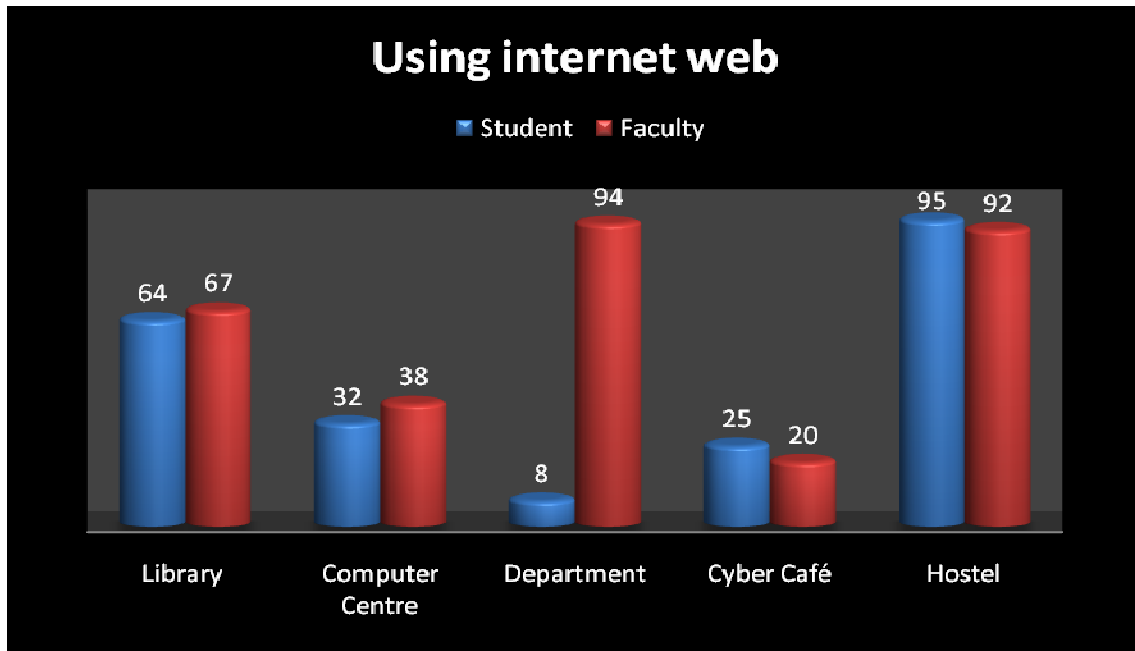
Use of ICT product by faculty



The above table focused about the faculty and student that where they use the ICT product in that case students as well as faculties give same kind of feedback. 25% student and 18% faculties said it is maximum use in their laptop, after that they said it can be also used in internet (22% students, 18% faculties), computer (17% students, 16% faculties), MS word (11% students, 12% faculties), PowerPoint (12% students, 11% faculties), Printer (5% students, 10% faculties) and so on.

Table 5.1.6 Using internet web

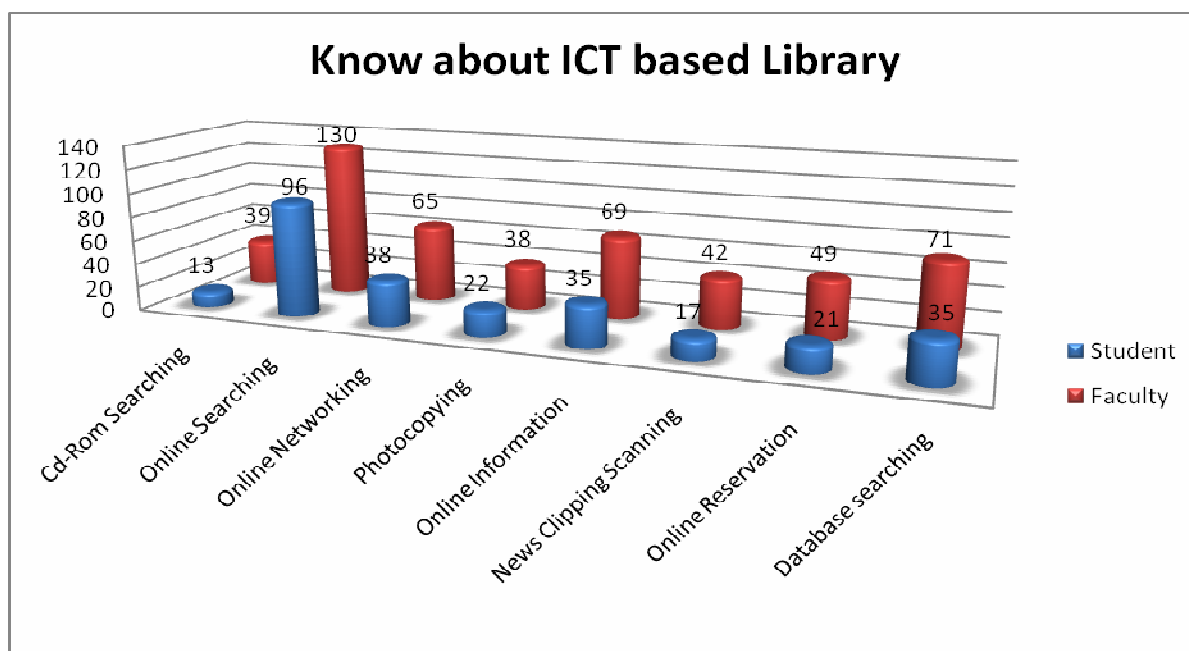
Respondents	Library	Computer Centre	Department	Cyber Café	Hostel
Students	64	32	8	25	95
Faculties	67	38	94	20	92



While we are doing survey it is very important that how we using internet web so for that we ask some students and faculties. If we see the chart it is clear that many student and faculties think that the usage of internet web is more at hostel campus (95 students, 92 faculties) then library (64 students, 67 faculties) and the computer centre (32 students, 38 faculties) but if we see the department section there is a contradict between students and faculties feedback. Maximum faculty belief that it is more important for the various departments whereas students belief it least important.

Table 5.1.7 Know about ICT based library

	CD-ROM Searching	Online Searching	Online Networking	Photocopying	Online Information	News Clipping Scanning	Online Reservation	Database searching
Student	13	96	38	22	35	17	21	35
Faculty	39	130	65	38	69	42	49	71

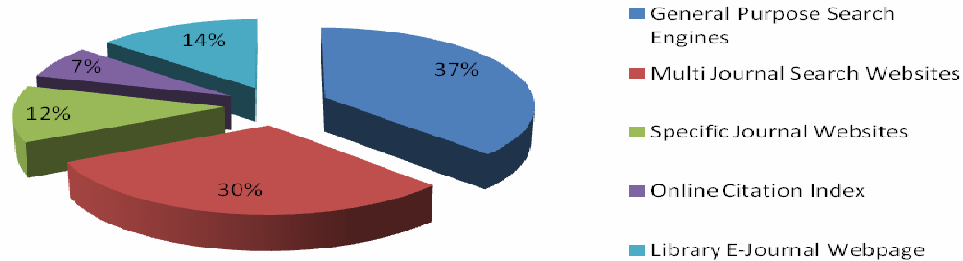


On the basis of students and faculties opinion (Table 5.1.7) we have collected some data that shows maximum people know about ICT based library through online searching (96 students, 130 faculties), data base searching (35 students, 35 faculties), online information (35 students, 69 faculties), and online networking (38 students, 65 faculties). There are also others ways like online reservation, news clipping searching, photocopying etc but it is not much effective as compare to above sources.

Table 5.1.8 Access point for searching ICT

	General Purpose Search Engines	Multi Journal Search Websites	Specific Journal Websites	Online Citation Index	Library E-Journal Webpage	Total
Student	67	55	21	12	25	180
	37%	31%	12%	7%	14%	100%
Faculty	103	77	69	35	69	353
	29%	22%	20%	10%	20%	100%

Access point for searching ICT by student



Access point for searching ICT by faculty

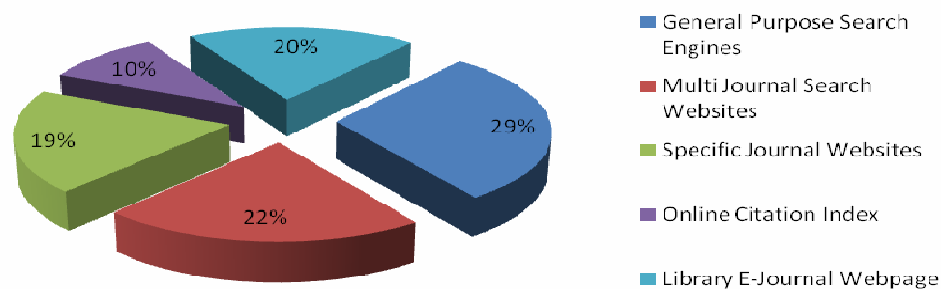
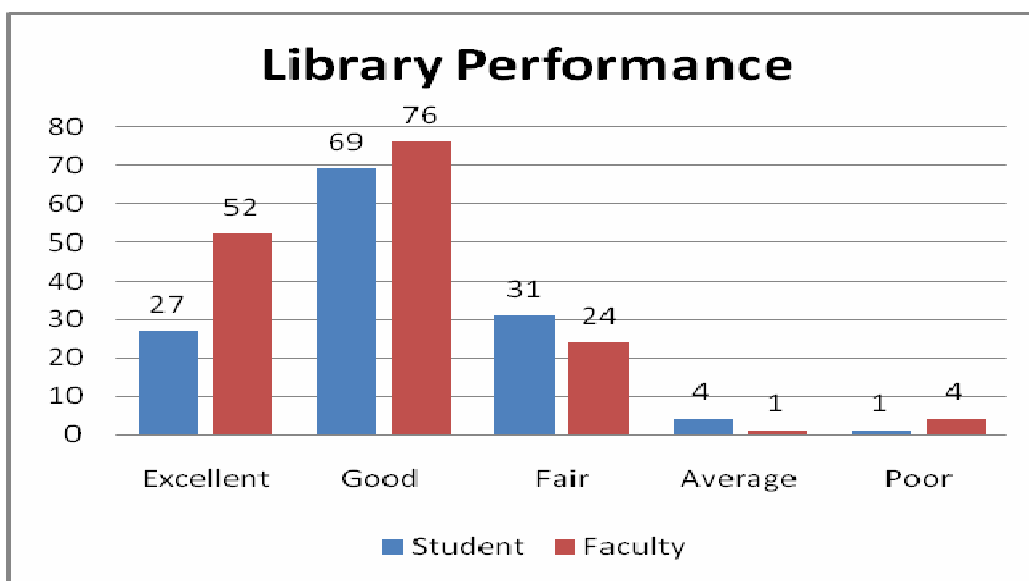
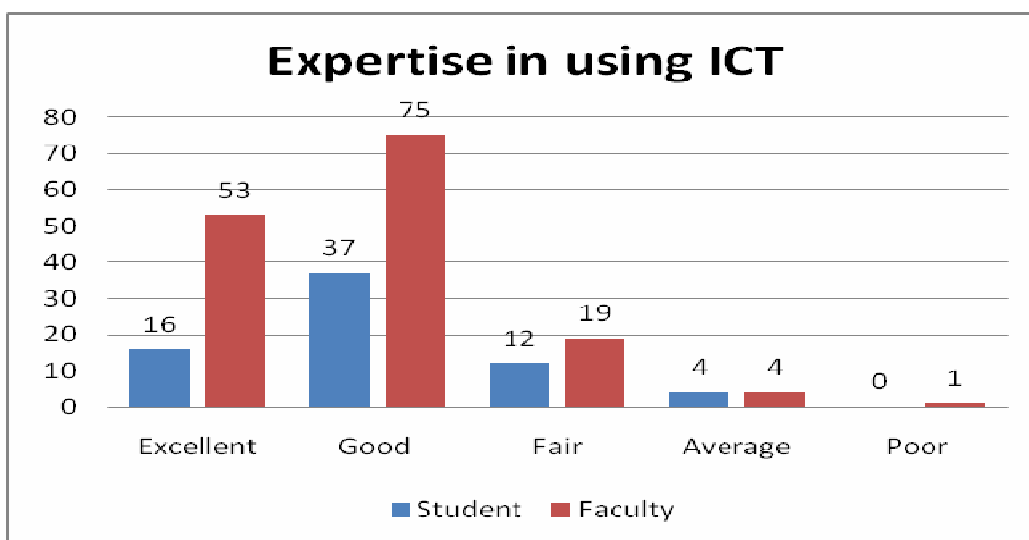


Table 5.1.7 described the access point for searching ICT product. So that we took opinion from student as well as teachers for that we have drawn two pie chart for student as well as faculties. If we consider the student first we can see 37% said for general purpose search website which is huge in number after that maximum students told by multi journal search website (30%), library E-Journal WebPages (14%), and specific journal websites (12%).

While investigator asked same question to faculties, they give more similar kind of answer like 29% said for general purpose search engines, 22% said multi journal search websites, 20% said library e- journal web pages and so on.

Table 5.1.9 Expertise in using ICT and the Library performance

	Expertise in using ICT				
	Excellent	Good	Fair	Average	Poor
Student	16	37	12	4	0
Faculty	53	75	19	4	1
	Library performance				
	Excellent	Good	Fair	Average	Poor
Student	27	69	31	4	1
Faculty	52	76	24	1	4



The analysis shows that the feedback about accessing point then we asked about the expertise in using library product. In that case 37 students and 75 faculties mentioned as a good while 16 students and 53 faculties mention it is excellent.

After that researcher put another question about the library performance by using ICT product and they give their views which can understand by this chart. 69 students and 76 faculties mentioned that the performance is good whereas 27 students and 52 faculties said it is excellent. It means using ICT product increase the performance of a library.

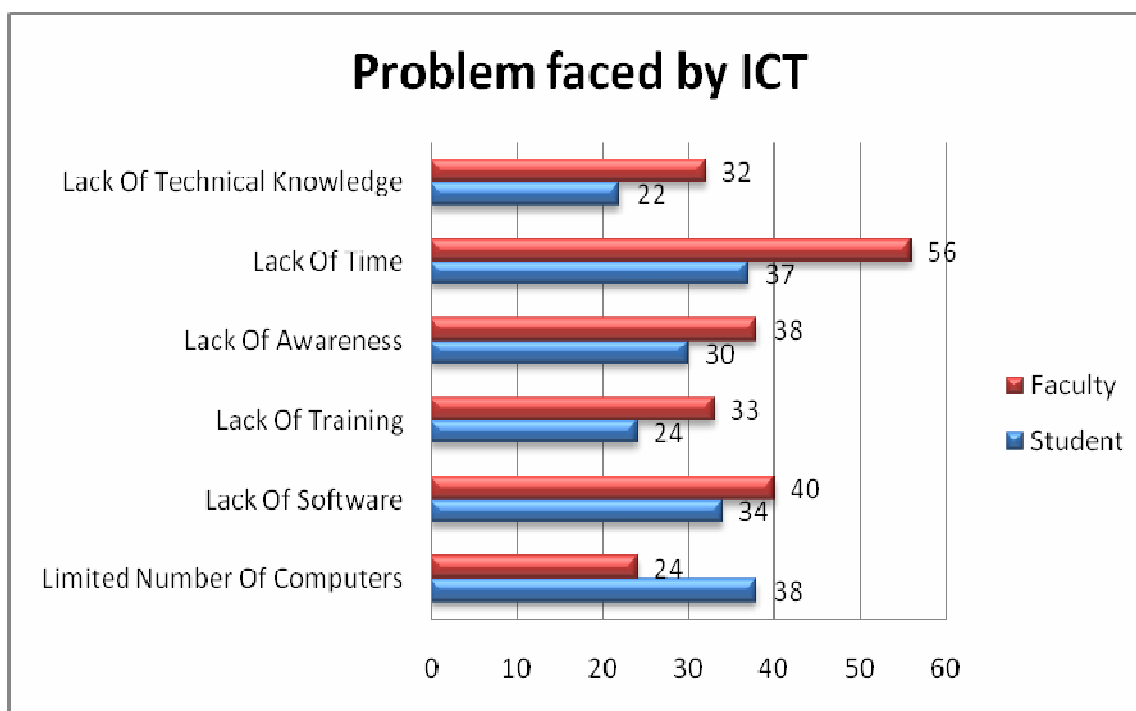
Table 5.1.10 Favourite search engines

Search Engines	Students	Faculty
Google	128	151
MSN	4	15
Yahoo	29	37
AltaVista	1	10
Rediff	13	21
Hotbot	1	0
Khoj	1	6
Lycos	0	2
Excite	0	0
Others	0	0

The table 5.1.10 indicates that the favourite search engine different people have different kind of opinion which is being recorded into a tabular form. Now if we see the table we can say 128 students and 151 faculties give maximum weighted to the google search engine, then it is yahoo (29 students, 37 faculties) and rediff (13 students, 21 faculties). There are some other search engine like msn, khoj, and lycos but it is not much effective compare to the others.

Table 5.1.11 Problem faced by ICT

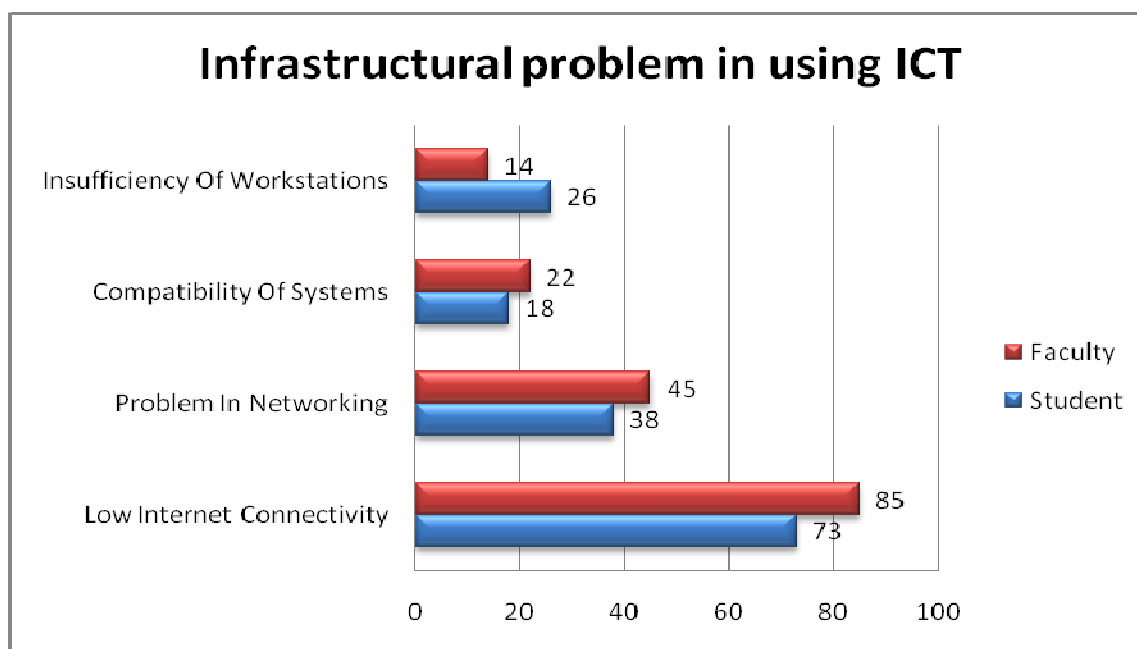
	Limited Number Of Computers	Lack Of Software	Lack Of Training	Lack Of Awareness	Lack Of Time	Lack Of Technical Knowledge
Student	38	34	24	30	37	22
Faculty	24	40	33	38	56	32



In every application there are some advantages as well as disadvantages. So when we asked about the problem related to the ICT, people have different opinion majority of student as well as faculties said that the problem is generated as because of lack of time (37 students, 56 faculties), lack of software (34 students, 40 faculties), lack of awareness (30 students, 38 faculties), limited number of computers (38 students, 24 faculties), lack of training (24 students, 33 faculties) and lack of technical knowledge (22 students, 32 faculties).

Table 5.1.12 Infrastructural problem in using ICT

	Low Internet Connectivity	Problem In Networking	Compatibility Of Systems	Insufficiency Of Workstations
Student	73	38	18	26
Faculty	85	45	22	14

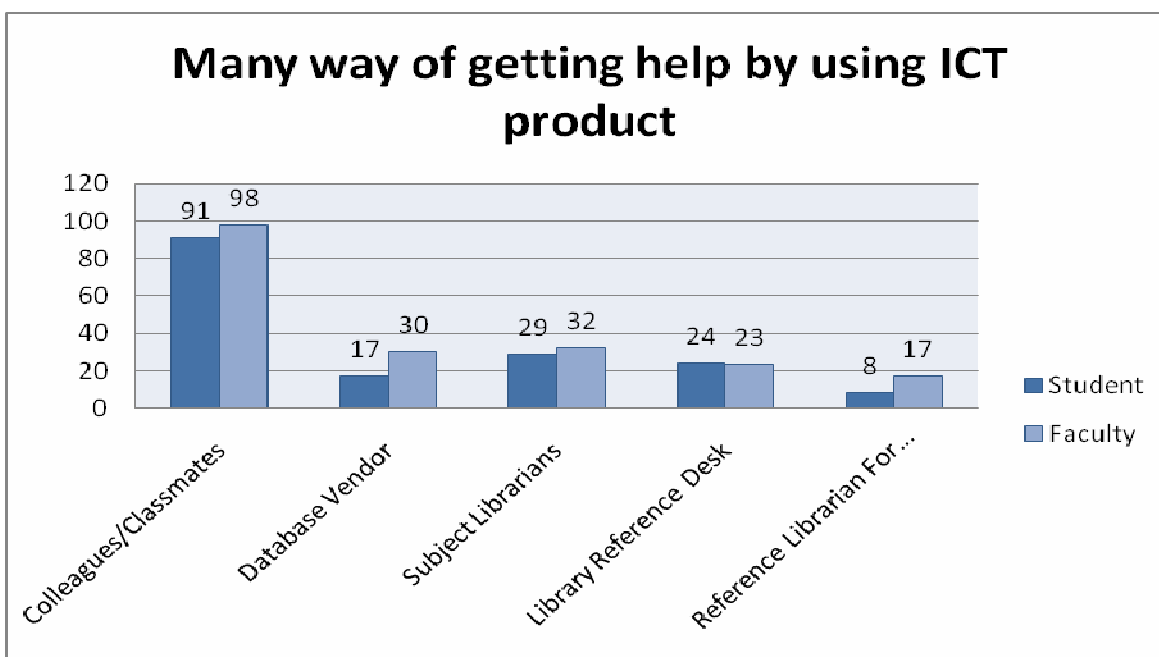


The above table discussed about infrastructural problem about using ICT many students and faculties mentioned it was because of low internet connectivity (73 students, 85 faculties), problem in networking (38 students, 45 faculties). It means when we use ICT the internet connection should be fast there should not be any problem in networking otherwise it will not work properly.

It should be kept in the mind that if you are using ICT product in that case college should have proper Wi-Fi connection especially in the library section.

Table 5.1.13 Various way of getting help while using ICT product

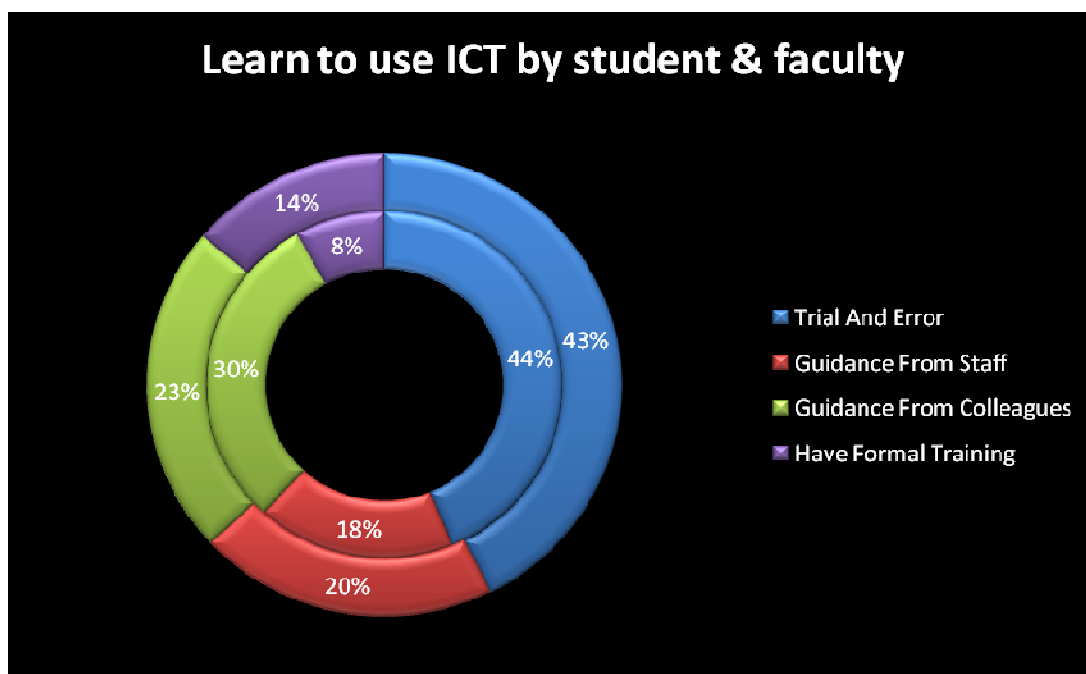
	Colleagues/Classmates	Database Vendor	Subject Librarians	Library Reference Desk	Reference Librarian For Specific Database
Student	91	17	29	24	8
Faculty	98	30	32	23	17



The table indicates that they are different way of getting help by using ICT product are as follows: maximum people responded that it helps by colleagues and classmates (91 students, 98 faculties), subject librarian (29 students, 32 faculties), database vendor (17 students, 30 faculties), Library reference desk (24students, 23 faculties). From the graph it can be understood that most of the people learn about ICT product with the help of their friends.

Table 5.1.14 Learn to use ICT

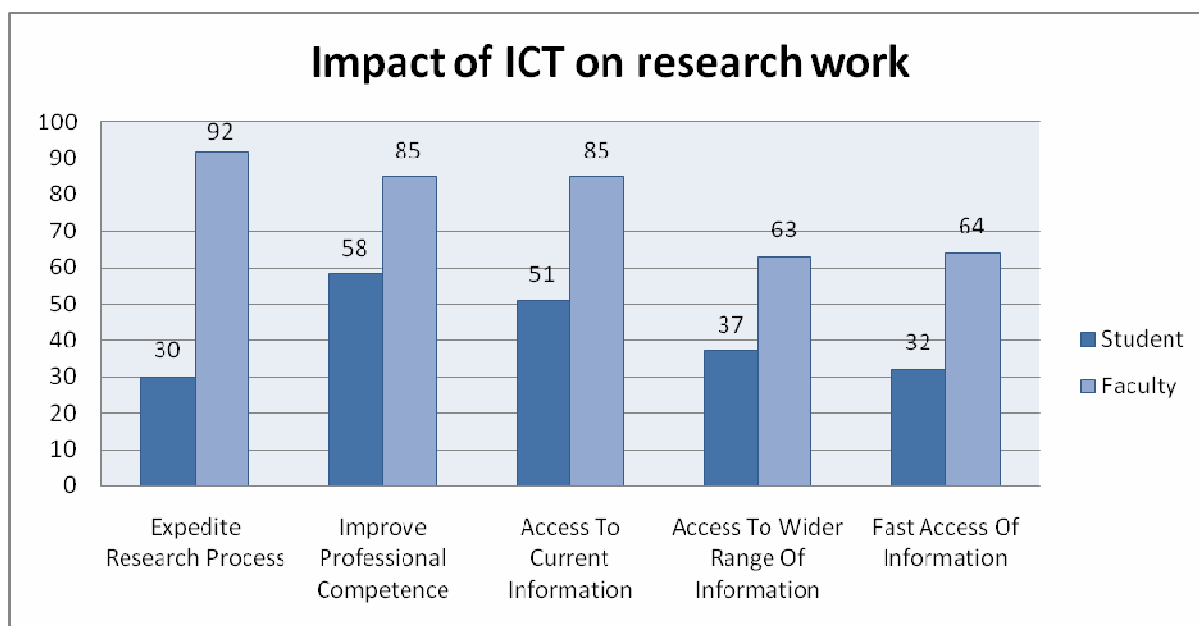
	Trial And Error	Guidance From Staff	Guidance From Colleagues	Formal Training
Student	70	29	48	13
Faculty	83	40	45	27



Again we asked the same question but taking in different parameters. If you see the graph carefully there are two circles, the inner circle representing the student feedback whereas outer circle represents the faculty's feedback. 44% students and 43% faculties said they learn about ICT by trial and error method whereas 30% students and 23% faculties said that they know it by the guidance of their colleagues there are also 14% students and 20% faculties who beliefs that they learn it by the guidance from the staff.

Table 5.1.15 Impact of ICTs on research work

	Expedite Research Process	Improve Professional Competence	Access To Current Information	Access To Wider Range of Information	Fast Access of Information
Student	30	58	51	37	32
Faculty	92	85	85	63	64



While you are using ICT product in research work it is important to know where is the application of this product? For that we have conducted a survey and get various feedbacks from students as well as faculties which can be represented by this graph. There are 92 faculties said it expedite the research process but if we consider the students there are only 30 respondents who said the same things. After that 92 faculties and 52 students mentioned that it improve professional competence some majority of people said it helps to access the current information.

Table 5.1.16 Essential of online database and problem of using ICT

Essential of online database				
	Student		Faculty	
Rank	Yes	No	Yes	No
A1	18	1	20	0
A2	20	0	18	1
A3	15	0	23	0
A4	20	0	21	0
A5	14	0	20	2
A6	15	0	16	0
A7	5	0	17	0
A8	10	0	10	0
SL1	5	0	5	0
SL2	10	0	6	0
Total	132	1	156	3

Problem faced by using ICT				
	Student		Faculty	
Rank	Yes	No	Yes	No
A1	8	11	10	13
A2	5	13	5	14
A3	6	9	13	10
A4	11	9	10	11
A5	6	10	9	12
A6	6	9	7	10
A7	1	4	6	8
A8	5	5	3	7
SL1	0	5	5	0
SL2	2	8	2	4
Total	50	83	70	89

Here, there are two tables one is for essential of online database and other is for problem faced by using ICT product. If we consider the first table it can be categorized in different rank wise and then we have got the responses by students and faculties. If we carefully observe the table we can see total 132 students and 152 faculties said it is essential for online database whereas only 1 student and 3 faculties said it not so helpful. It can be said that maximum good rank colleges accept that it is very essential for online database (Table 5.1.16)

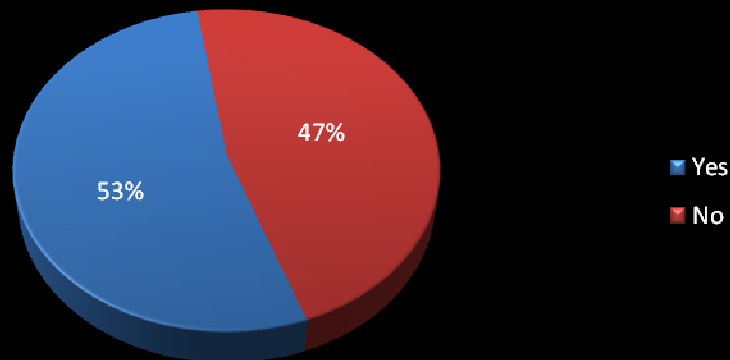
Similarly, if researcher take the second table into consideration we have got the maximum respondents that they beliefs there is no problem in using ICT product (83 students, 89 faculties) whereas 50 students and 70 faculties said sometime it create problem.

Data Analysis for Librarians

Table 5.2.1 Are the functions and objectives of the library specially laid down?

Librarian	Yes	No	Total
	17	15	32
	53%	47%	100%

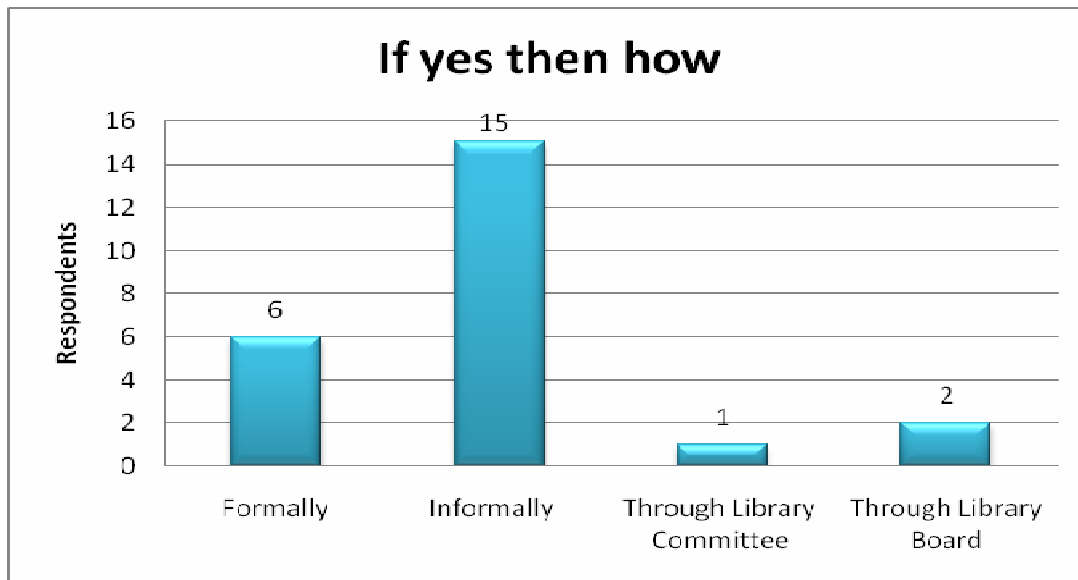
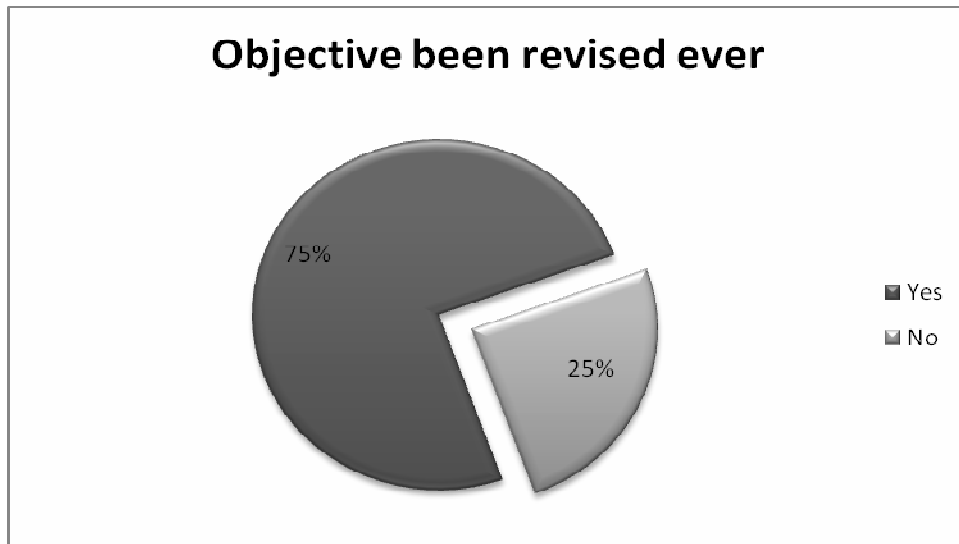
Are the functions of library laid down



To understand whether the functions and objectives of the library laid down or not for that we asked this question to the librarians of 32 colleges and 53% librarians said it has been laid down whereas 47% librarians said it not being laid down. Here it is very difficult to get exact conclusion because the variation of data is quite close in nature.

Table 5.2.2 Has the objectives been revised ever?

	Formally	Informally	Through Library Committee	Through Library Board	Total
Yes	6	15	1	2	28
No					8



When scholar asked the librarian whether the objective has been revised or not, for that 75% people said yes and 25% people replied as a no. The person who said yes again we asked them that how they know about this. 15 respondents said they know it informally, 6 people mentioned they know it formally; where only 2 respondent said they know it through library board.

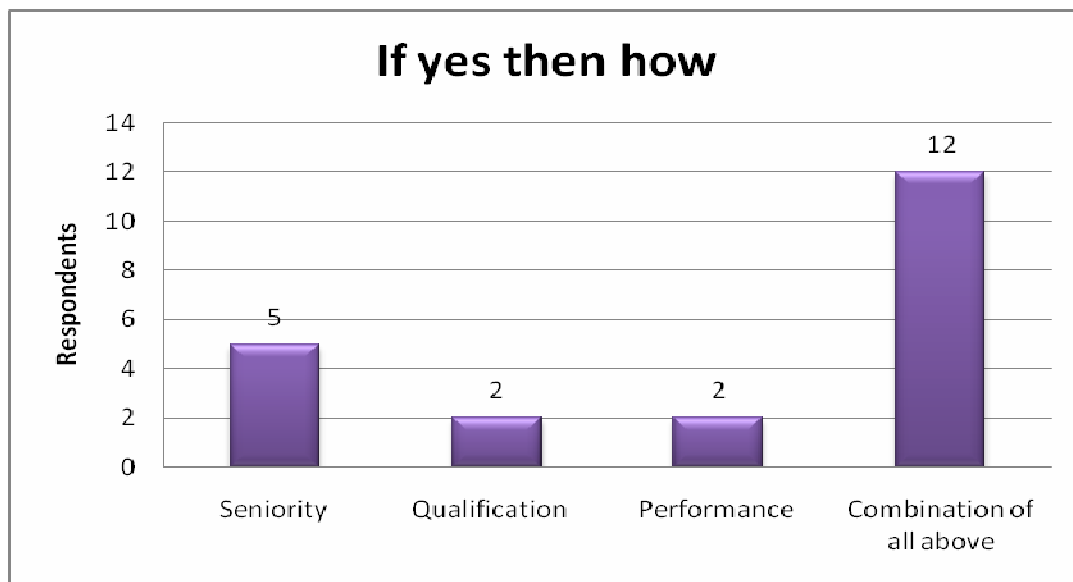
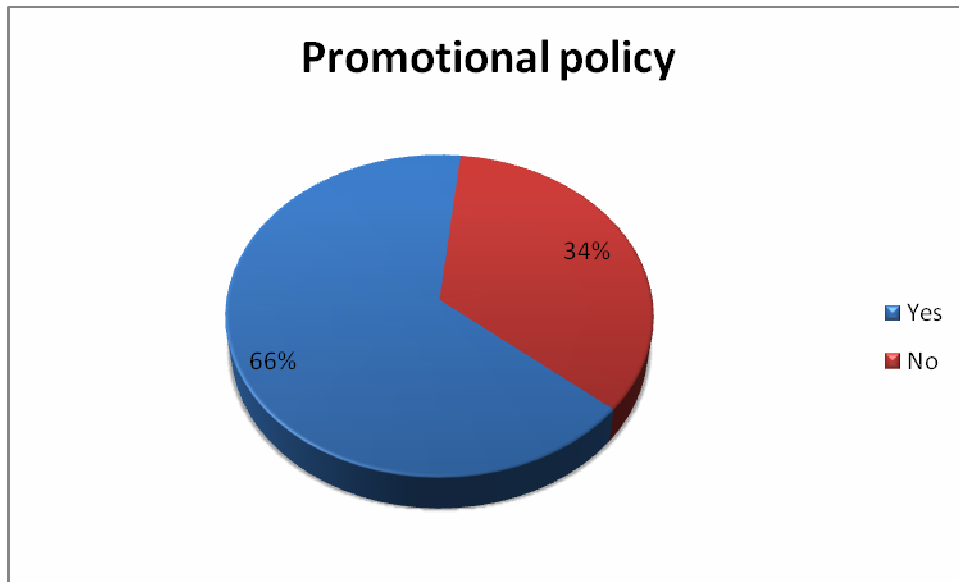
Table 5.2.3 Staff details working in the library

Designation/Category	Qualification	Pay-scales of the posts	Number of posts
Chief librarian	Ph.D, M.Phil, M.Lis	39000-18000	1 or 2
Librarian	Ph.D, M.Phil, M.Lis	35000-15000	1 or 2
Professional staff	M.Lis, M.Phil, B.Lis	25000-12000	1 or 3
Semi-Professional staff	M.Lis, M.Phil, B.Lis	15000-10000	1 or 4
Technical	M.Lis, B.Lis	12000-8000	1 or 2
Clerical	B.Lis, 12th	10000-5000	1 or 3
Supporting (unskilled total number of staff)	B.Lis, 12th, 10th	8000-3000	1 or 4

While researcher is doing survey it is important to know the staff details working in the library. The Table 5.2.3 it is mentioned that there are four sections i.e. Designation, Qualification, Pay-scale and number of post. If we talking about the Chief librarian the qualification required Ph.D/M.Phil/M.Lis and the pay-scales of this post would be 39000-18000 whereas librarian needs similar kind of qualification but the difference lie in their pay- scale and the post for this job is 1 or 2. Similarly if we talk about professional staff and semi- professional staff the qualification is moral less same but they differ in pay scale. The post for professional is 1 or 3, whereas semi- professional is 1 or 4 depending on the size of the library. Clerical and supporting members are mostly B.L&ISC or 12th passed and their pay-scale lies between 10000-5000.

Table 5.2.4 Promotional policy for the library staff

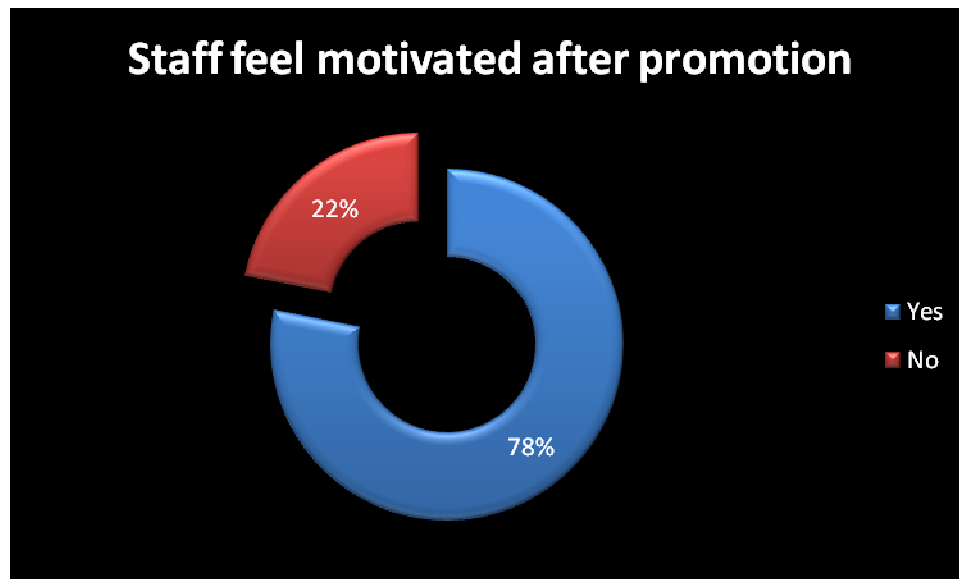
	Seniority	Qualification	Performance	Combination of all above	Total
Yes	5	2	2	12	21
No					11



When researcher asked the librarian about the promotional policy to their staff members, so in that case 66% people said yes they provide, whereas 34% librarian said that they don't provide. Those who said yes again we asked that how they give promotion to their staff. If we see the column chart we can say 12 respondents said that they give on the basis of seniority, qualification and performance all together.

Table 5.2.5 Does the staff feel motivated after getting promotion

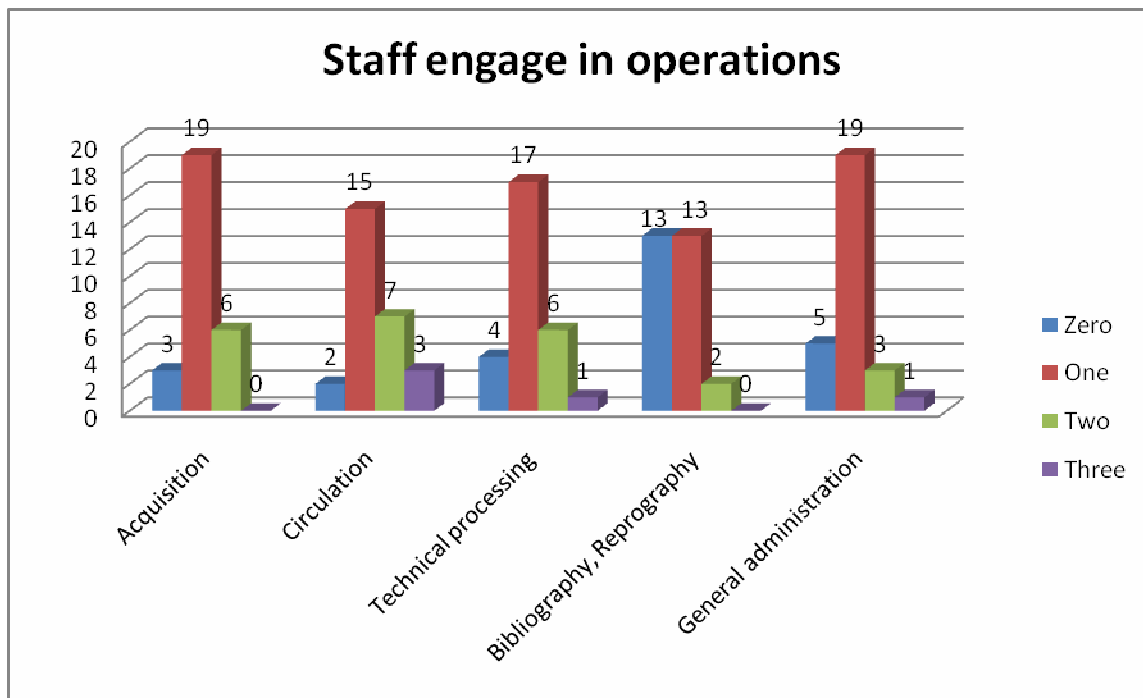
Yes	No	Total
25	7	32
78%	22%	100%



For a librarian it is important to know that how staff gets motivated for that we asked the respondents from different colleges regarding promotional scheme. The pie chart shows that 78% people feels motivated after getting promotion whereas 22% people are there who beliefs people not only motivated by promotion there may be some others factors associated with that.

Table 5.2.6 The number of staff engage in various library operations

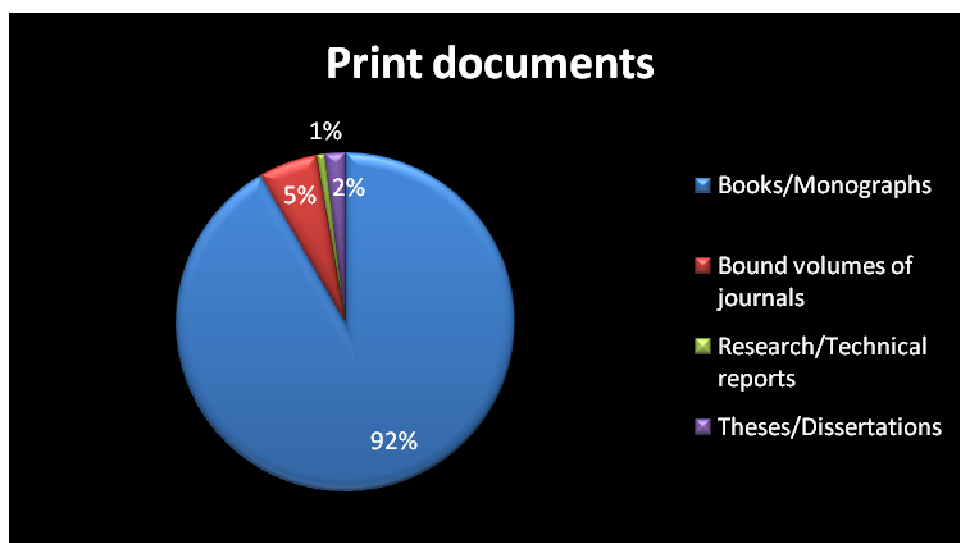
	Acquisition	Circulation	Technical processing	Bibliography, Reprography etc	General administration
Zero	3	2	4	13	5
One	19	15	17	13	19
Two	6	7	6	2	3
Three	0	3	1	0	1



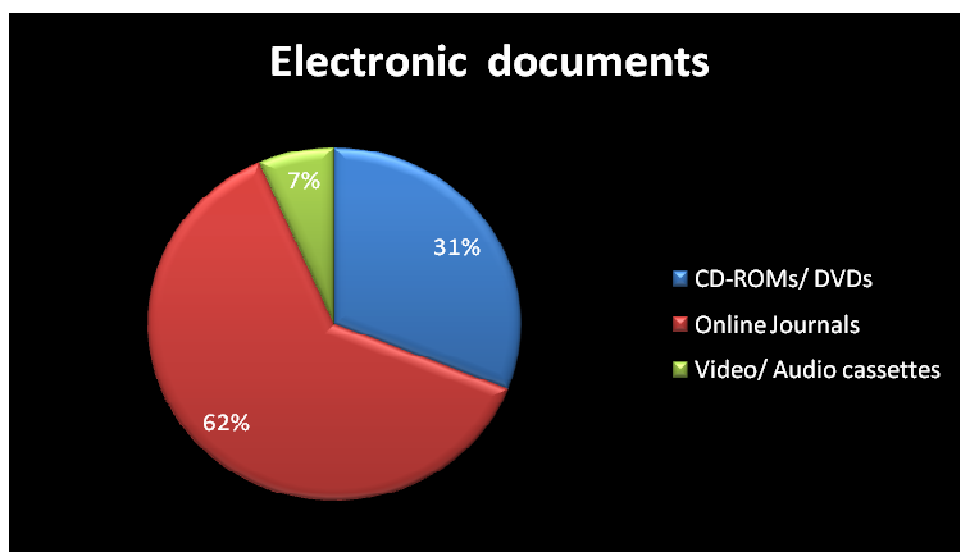
When researcher asked some librarian that how staffs are engage in various operations they said most of the cases like acquisition, circulation, technical processing, bibliography, reprography and general administration 1 or 2 staffs are sufficient for that operation. There are some other colleges who prefer more than 2 staffs are required for the operations. It is clearly mentioned in the diagram that 19 respondents said one staff is sufficient for acquisition, 15 said for circulation, whereas 17 said for technical processing and 13 said for bibliography purpose.

Table 5.2.7 Approximate size of library collections

Books/ Monographs	Current journals	Bound volumes of journals	Research/ Technical reports	Reference documents	Theses/ Dissertations
543748	8845	32982	4792	26793	11375



CD-ROMs/DVDs	Online Journals	Video/Audio cassettes
17393	34991	3697



After done the survey about the library collections from different colleges. We have got the response that is 92% books/monographs are available in the library, 5% is for different kind of journals, 2% is for thesis/dissertation and 1% is for research/technical reports in print documents.

Similarly, if investigator talked about the electronic documents 62% collection is for online journals, 31% is for CD-ROM/DVD, whereas 7% is for Video/Audio cassette.

Table 5.2.8 Breakup of primary and secondary journals

		Indian Journals	Foreign Journals
Primary	Print	2126	749
	Online/Electronic	5737	5768
Secondary	Print	8569	201
	Online/Electronic	546	304
Total		16978	7022

If researcher see table 5.6.8 it is clearly mentioned that Indian journals are 16978; whereas foreign journals are 7022 that means most of the colleges prefer Indian journals. The following journals are divided into two categories primary and secondary, if we take total primary Indian journal it is 7863 and foreign journal is 6517. Similarly if we take the example of secondary journal it is 9115 and the foreign journal is 505. If we see the table carefully we can observe that primary online electronic in foreign journals usage is high.

Table 5.2.9 Growth wise collections of various documents in the library

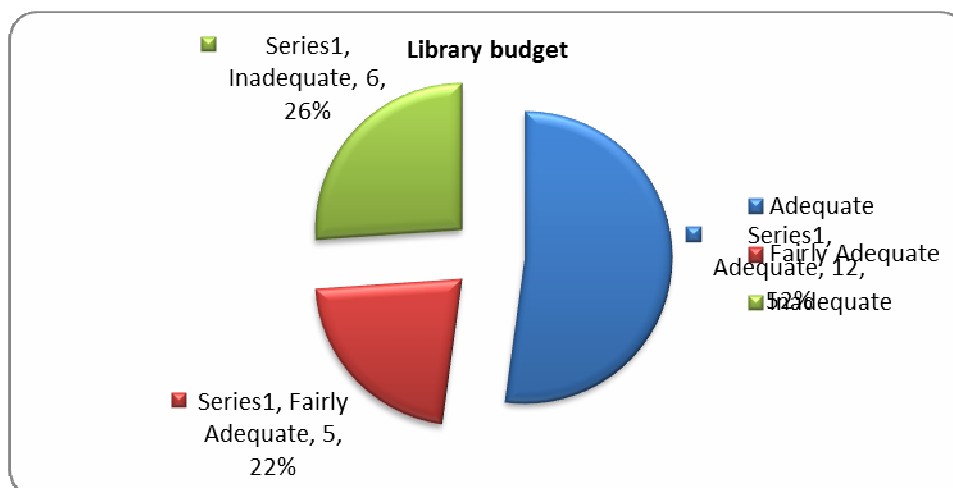
Print documents	2007/2008	2008/2009	2009/20010
Books/Monographs	205719	244065	334675
Journals/periodical/ magazines	1902	2406	3219
Manuscripts	265	520	795
Research/Technical reports	4485	1448	5366
Reference documents	10749	15128	30364
Theses/ Dissertations	2007	2193	3018
Seminar/ conf. Papers	116	174	401
Maps/charts/diagrams	34	75	190
Patents/Standards	100	115	130
Total	225377	266124	378158

Electronic documents	2007/2008	2008/2009	2009/20010
CD/DVD-ROMs	4494	5631	8045
Online Databases	3556	3572	3627
Online Journals	25063	30200	49423
Video/ Audio cassettes	864	956	1994
Microforms	65	75	100
Total	34042	40434	63189

The growth wise collections of various documents in the library researcher can see from 2007 to 2009 the volumes of print documents as well as electronic documents are continuously increasing. The total print document in 2007 it was 225377 and 2010 it becomes 378158, similarly in 2007 the electronic documents was 34042 but now it is 63189.

Table 5.2.10 About the library budget

Adequate	Fairly Adequate	Inadequate	Total
12	5	6	23
52%	22%	26%	100%



Talking about the library budget most of the colleges i.e. 52% respondents said it is adequate, whereas 26% respondents said it is fairly adequate and rest 22% colleges think it not adequate enough. Most of the good rank colleges have adequate budget compare to the others. The development of the library basically depended upon the budget they have.

Table 5.2.11 Some information about library

Questions	Yes	No
Does the library have written acquisition policy?	16	15
Whether the librarian is kept informed about the current policy?	25	5
Is existing classification scheme found helpful?	27	2
Does the library maintain any special catalogue?	11	20
Reading and stacks are combined?	21	11
Exclusive space provided for the Reading-Room?	21	10
Has there been any expansion in accommodation in past ten years?	12	17
Do you have a separate periodical section?	23	8
Do you circulate loose issues of Periodicals?	12	18
Does the library participate in any international information network/agency?	5	25

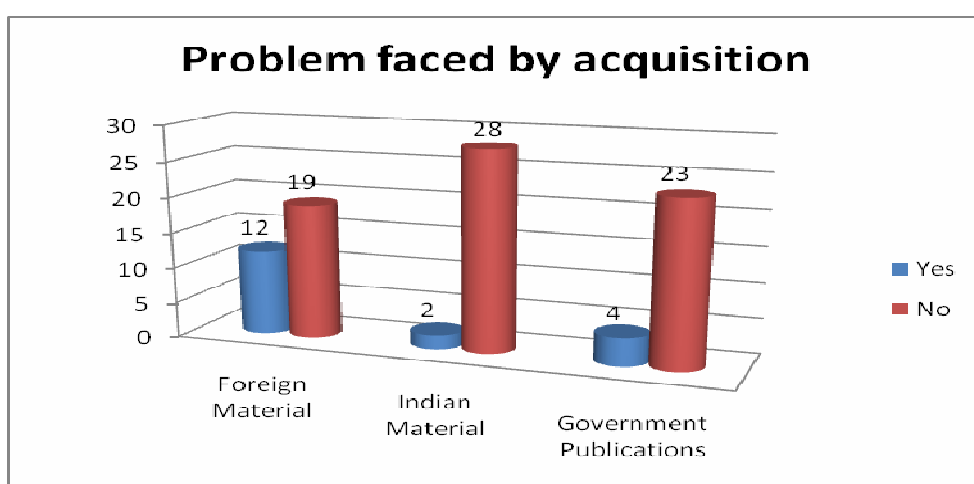
There are some questions we asked to the librarian like does the library have written acquisition policy? So in that case 16 respondents said yes whereas 15 respondents said no then again we asked whether the librarian is kept informed about the current policy, for that 25 said yes and only 5 respondents said no. After that we asked is existing classification scheme found helpful, for that 27 responded said yes and 2 said no.

There are some other questions like does the library maintain any special catalogue? So in that case 11 respondents said yes and 20 said no then we asked are reading and stacks

combined? 21 responded as yes and 11 as a no. After that we asked is there any exclusive space provided for the Reading-Room? Here 21 said yes and 10 said no. Similarly we asked do you have a separate periodical section. For that 23 said and 8 respondents said no and so on.

Table 5.2.12 Does the library face problem in acquisition of the following?

Category	Yes	No
Foreign Material	12	19
Indian Material	2	28
Government Publications	4	23



It is important to know whether library faced any problem related to acquisition or not. For that researcher capture the data into a table and plot a graph. Now we can see for Indian material 28 respondents said there is no problem in acquisition where only 2 respondents said they faced the problem, similarly when we talked about the foreign material 19 respondents said they did not face any problem to acquisition and 12 respondents said it is difficult to acquire. Lastly if we see the government materials for that case 23 people said it is easy to acquire whereas 4 people said it is quite tough.

Table 5.2.13(1) The classification scheme used in the library

	Respondents
Classified Catalogue Code (CCC)	0
Universal Decimal Classification	3
Dewey Decimal Classification	23

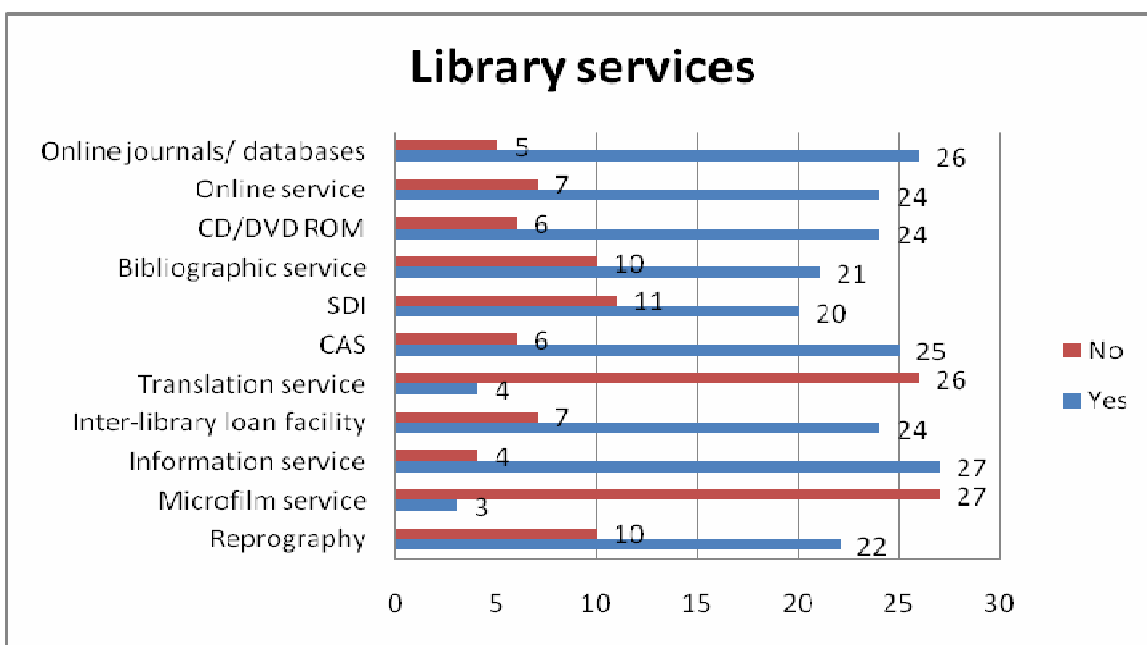
Table 5.2.13(2) The cataloguing code used in the library

	Respondents
Classified Catalogue Code (CCC)	1
Anglo-American Catalogue Rules (AACR)	27
Other	1

Table 5.2.13(1) mentioned the classification scheme used in the library whereas Table 5.2.13(2) explain the cataloguing code used in the library. From table 1 we can see that 23 people mentioned they used Dewey decimal classification scheme whereas only 3 people used Universal decimal classification scheme and table 2 shows 27 respondents used AACR code in the library which is huge in numbers.

Table 5.2.14 Services offered by the Librarian

Services	Yes	No
Reprography	22	10
Microfilm service	3	27
Information service	27	4
Inter-library loan facility	24	7
Translation service	4	26
CAS	25	6
SDI	20	11
Bibliographic service	21	10
CD/DVD ROM	24	6
Online service	24	7
Online journals/ databases	26	5



The various services that is offered in the library are as follows: 26 respondents said that the maximum service used in library is online journals/database after that 27 respondent said information services and 25 people said for CAS whereas 24 said online services, CD/DVD-ROM, and Inter-library loan facility now if we talked about the least used service then maximum respondent said about translation and microphone services.

Table 5.2.15 Do you provide online access to your collections

	On library Intranet for users within the library	On campus Intranet, for Institute	On Internet for library users only	On Internet for global access	Total
Yes	7	10	4	1	22
	Lack of Online Journals/Databases	Lack of infrastructure to support access	Copyright problems	Other	
No	3	1	0	1	5

Table 5.2.16 Services undertaken by using computer

Services	Yes	No
Accession list	29	3
Book order list	22	6
Current awareness services	22	6
Circulation	23	5
Cataloguing	23	6
Document delivery	16	12
Respective literature search	16	13
Serial control	16	11



Now if we consider the Table 5.2.16 is all about services undertaken by using computer. From the column chart it is cleared that 29 respondent said for Accession list, 23 respondents said it is Circulation & Cataloguing whereas 22 respondents said Book order list, & Current awareness services. Rest 16 said it is for Document delivery, Respective literature search and Serial control.

Table 5.2.17 Does computerization of library has impact

H₀: Computerization of library has no impact with the variable (Reject)

H₁: Computerization of library has great impact with the variable

Alpha = 0.05 (P-Value)

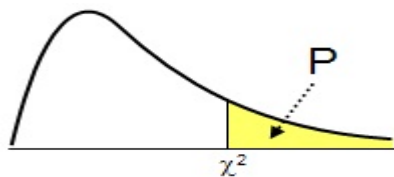
Degree of freedom = $(3-1)*(2-1) = 2$

Chi square critical value = 5.991

Chi square calculated value = 40.104

	Better utilization of the library	Reducing the pressure	Nothing definite	Total
Yes (Fo)	28	18	2	48
Fe	17.103	16.552	14.345	
No (Fo)	3	12	24	39
Fe	13.897	13.448	11.655	
Total	31	30	26	87

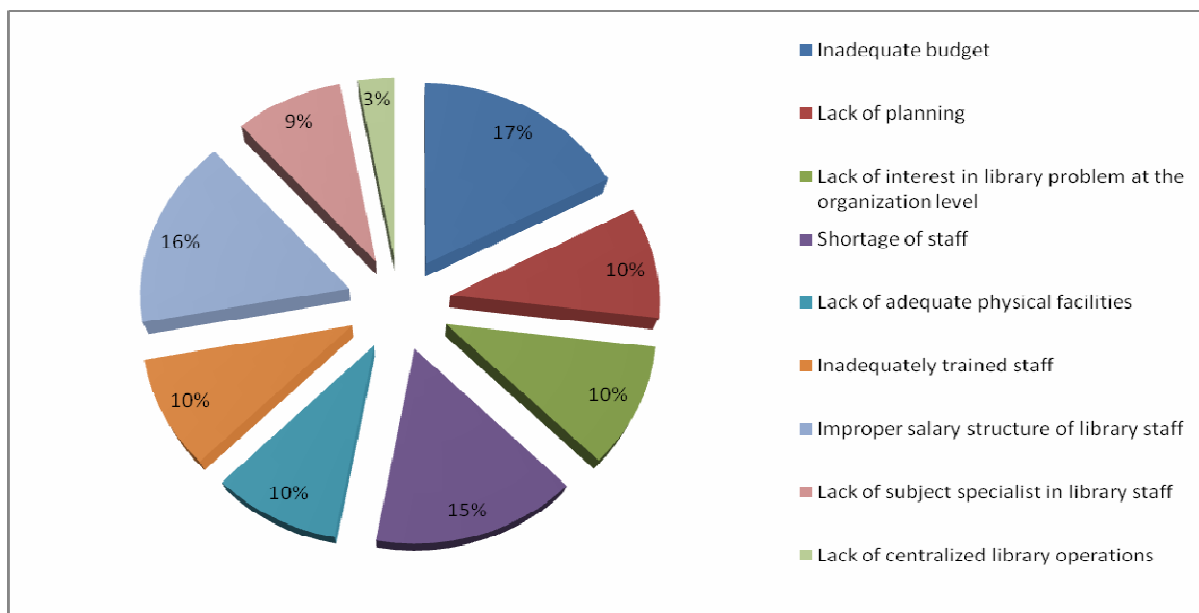
Fo	Fe	Fo-Fe	(Fo-Fe)^2	(Fo-Fe)^2/Fe
28	17.103	11.684	136.5159	8.367
3	13.897	-11.684	136.5159	9.297
18	16.552	2.211	4.888521	0.31
12	13.448	-2.211	4.888521	0.344
2	14.345	-11.684	136.5159	9.976
24	11.655	11.684	136.5159	11.084
Total				39.378



As Chi square calculated value is more than the Chi square critical value so we will reject the null hypothesis and accept the alternative hypothesis that means computerization of library has a great impact with the variable like better utilization of the library, reducing pressure and so on.

Table 5.2.18 Following problems affecting the development of the library?

Problems Affecting to the Library	Total
Inadequate budget	18
Lack of planning	10
Lack of interest in library problem at the organization level	11
Shortage of staff	16
Lack of adequate physical facilities	10
Inadequately trained staff	10
Improper salary structure of library staff	17
Lack of subject specialist in library staff	9
Lack of centralized library operations	3



The majors' problems which is affecting in the development of the library are as follows: 17% librarian said it for in adequate budget, whereas 16% of respondent said it is improper salary structure of library staff then 15% mentioned it is for shortage of staff members after that 10% said it is for Lack of planning, Lack of adequate physical facilities, Inadequately trained staff. If we talked about the least affecting factor for the development of the library are Lack of subject specialist in library staff and Lack of centralized library operations.

Findings, Suggestions & Conclusion

The findings of this study can be summarised as follows:

- For any management colleges the percentage of male is more compare to the female whether it is faculties, librarians or students. From the Table 5.1.1 it is clearly mentioned that 59% male and 41% female are the faculty members, whereas 69% male and 31% female comes under librarian and for the students it is 71% are male and 29% are female. So we can say that women in India are not far behind they are also involve in various profession.

Impact of ICT on learning

- As we have mentioned earlier that the use of ICT has exerted a profound influence on traditional academic libraries. Table 5.1.2 shows that now day in Delhi/NCR 92% students are ICT user whereas faculties are 94%. Therefore we can say that the application of ICT is very useful for management colleges. So the academic libraries in Indian setup have been preparing themselves on a corporate basis a platform for ICT based information services.
- There is considerable impact of ICT on teachers and teaching. Good training programmes results in positive attitudes towards ICT in teachers. Using ICT with their own laptop

computer increases positive attitudes towards their work. Teachers use ICT to plan lessons more efficiently and more effectively. ICT increases efficiency in planning and preparation of work due to more collaborative approach between teachers.

- The application of ICT helps to increase the library performance. One of the implications of use of ICT is that Libraries can reach out globally to provide their services 24-hours a day in very cost effective manner. ICT has enabled users to avail many services without any human intervention. IT largely used in operations, like acquisition, cataloguing, circulation control, serials control etc.

Information about ICT

- We asked 32 different colleges about the primary way to learn ICT, most of the students and faculties give similar kind of responses which is captured in Table 5.1.3. The maximum people said they learn it by teacher/supervisor or colleagues/classmates. The application of ICT product in a management college is basically for e-mail and document exchange, to update the knowledge, making presentation and documentation causal internet surfing and for career development.
- On the basis of students and faculties opinion we have collected some data in the Table 5.1.7. From the graph it is clearly mentioned that the people know about ICT based library through online searching, online networking, online information and the database searching. When we asked about the expertise in using ICT most of the respondents said they are good at handle.

Specific Usage of ICT

- We found from the Table 5.1.5 that most of the colleges, where faculty and student use ICT product either in computer, laptop or internet depending upon their choice. Now talking about the usage of internet web, maximum people said it is used in campus hostel or in the college library because students and faculties spend most of the time there. So we should give fore focus on the access point of ICT on the following area where its usage is more.
- In Table 5.1.10 students and faculties give their response about their favourite search engine most of them give maximum response to Google, Yahoo and Rediff. There are some other search engine like MSN, Khoj and Lycos but it is not so popular compare to these. For searching any documents, company, institution the search engine has a great impact in our life. It gives results in better and organized way so that we can save our time.

Barriers

- Research has also identified barriers to ICT in management colleges. Teachers' poor ICT competence, low motivation and lack of confidence in using new technologies in teaching are significant determinants of their levels of engagement in ICT. These are directly related to the quality of teachers in training programmes. The educational system itself and its rigid assessment structure that impede the integration of ICT on every day learning activity.
- Sometime ICT cannot run properly due to lack of time, lack of software, lack of awareness or the lack of computers. So before installing ICT everything should be properly checked

otherwise it may create problem. Sometime Infrastructure create problem while using ICT application like low internet connectivity, problem in networking or insufficient of workstation.

Suggestions

- The study shows that internet surfing is most important for user in computer centre. So that the lab should be well equipped with enough numbers of computer.
- Staff of the computer centre should be well trained. Time duration of using ICT activity should be increased.
- Staff should be more responsive and helpful. Printing facility should be available in the library to get print out of the articles of e journals and databases.
- As the survey has shown, In addition to access infrastructure and content having requisite skills, teachers' motivation is a critical factor in ICT adoption.
- The content, Journals and Research paper should be specific as per the topic while searching topics of computer science it should be included.
- Proper ICT training should be given to the library professionals of the library to improve the ICT skill of the professionals.
- More attention is required towards the female respondents regarding the ICT usage. Respondents can improve their ICT skill by owning computer at their home.
- Seminar and conferences on ICT should be held at least once in a year to create awareness among the people.
- Job of the library professionals should be rotated and every professional should be given the chance to work with ICT in library.
- In digital era library should be well equipped that all the functions can run smoothly and user can get used all enriched resources of the library.
- More online journals should be incorporated. Training and knowledge must include to spreading of awareness of students as well as faculties.
- Library should be the part of NKN through VPN ICT can help in this process. Library should install much faster machines for faster access.
- In some colleges' management can motivate their staffs by providing proper salary structure.

Conclusion

This study sought to examine the use and awareness of The ICT based library and Information services: a case study of B-schools in Delhi and NCR region. Most of the objectives are met within the results. It is clear from the study that most of the respondents are aware and use ICT application in computer, internet surfing, laptop etc.

Majority of the respondents are experienced user frequently use ICT applications in computer centre. Most common ICT activities of the respondents are surfing internet, email, chat and preparing presentations etc, main purpose of using ICT applications is to look up information, electronic communication and prepare presentation. ICT help them to better informed and stay ahead.

Importance of ICT in library can be realized from ICT application catalogues and audio visual services. ICT has a great importance in each and every sphere of life; now libraries are not left apart from the impact of ICT it dependence upon the attitude of librarian and the library professional. Thus attitude of library professional have very much importance in the context of ICT application in the library.

The attitude and skill of library professional can be developed positively by providing training them and conducting seminars and conference on the ICT application in the library. Trained professionals with ICT having positive attitude will ensure the development of libraries and information centre.

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APPENDICES

Appendix1: Addresses of Management Institutes in Delhi/NCR region

Institute of Management Studies C- 238 - Lal Quam, Bulandshahar Road, Ghaziabad-201009, NCR .

ITS Management and IT Institute, I.T.S Mgt college and technology Mohan Nagar . G.T.Road, Ghaziabad 201007.

Institute of Advanced Management and Research, 9th mile stone, Delhi - Meerut Road, Duhai, Ghaziabad (U.P.)-201206, House No -C, 457, Mahenderpuri Near Small Dispensory Modinagar. Dist Ghaziabad.

BLS Institute of management, B-8, Loni Road, Opp. Mohan Meakin Factory, Mohan Nagar-201007, Ghaziabad, (U.P) India.

Shiva Institute of Management Studies, 364,365, P.a.ndev Nagar, Ind Area, Bulandshahr Rd. NH- 24, Ghaziabad, UP- 201002.

Indian institute of finance, BD,10 - C, DDA, FLAT, Munirka 67, New Delhi.

IILM Graduate School of Management, 16, Knowledge Park - II, Greater Noida - 201 306.

NIILM Centre for Management Studies , Plot No. 53, Knowledge Park-V, Greater Noida - 201310.

Army Institute of Management and Technology, Greater Noida, Plot No M-1, Pocket P-5, Greater Noida - 201306 (U.P.).

Sriram Institute of management and Technology Greater Noida, 48 B, Knowledge Park-III, Greater Noida, NCR.

J K Padampat Singhania Inst. Of Mgt & tech. Damdama Lake Road, Bhondsi, Gurgaon (Haryana) -122102.

IBS Gurgaon, DPL Complex, Old Delhi-Gurgaon Road, Dundaheera Gurgaon - 122 016.

Management Development Institute MDI, Mehrauli Road, Sukhrali, Gurgaon - 122 007.

Jagannath International Management school, New Delhi, MOR, Pocket 105, Terminal Near Opposite Nehru Place Bus Kalkaji Police Station, New Delhi.

Fore School of Management, B-18, Qutab Institutional Area, New Delhi.

Lal Bhahadur Shastri Institute of Management, Plot No. 11/7, Sector 11(Near Metro Station) Dwarka, New Delhi - 110 075.

New Delhi Institute of Management, 60 & 50(B&C), Behind Batra Hospital, Tughlakabad Institutional Area, New Delhi-110062.

Apeejay school of management, Sector VIII, Institutional Area, Near CRPF Camp, Dwarka, New Delhi, Delhi 110075.

Bharti Vidhyapeeth University Institute of Management, A-4, Paschim Vihar, Rohtak Road, New Delhi – 110063.

Delhi school of professional Studies and research, 9, Institutional Area, Sector 25 Rohini Phase III, Rohini Extension, New Delhi-110085.

Jagan Institute of Management Studies, 3, Institutional Area, Sector-5,-10085, Rohini, New Delhi.

Asia pacific institute of management, 3 & 4 Institutional Area, Jasola, Opp. Sarita Vihar, New Delhi - 110025.

Tecnia Institute of Advanced Studies, New Delhi, 3, Madhuban Chowk, Rohini, New Delhi 110085.

Fortune Institute of International Business, New Delhi, Plot 5, Rao Tula Ram Marg, Vasant Vihar, New Delhi-110057.

Department of Management Studies IIT Delhi, IV Floor, Vishwakarma Bhavan, IIT Delhi., Hauz Khas, New Delhi - 110016.

Indian institute of Foreign Trade, IIFT Bhawan, B-21, Qutab Institutional Area, New Delhi 110016.

Jaipuria Institute of Management, Noida, A-32A, Sector 62, Noida 201309.

MR DAV Institute of Management Studies, MR DAV Institute Of Management Studies, 5th KM Stone, Sonapat Road, Rohtak-124023.

J K Business School, Damdama Lake Road, Bhondsi, Gurgaon(Haryana) -122102.

Accurate Institute of Management & Technology, Accurate Institute of Management & Technology 49, Knowledge Park-III Greater Noida, (U.P.) 201308.

Galgotias business School, Greater Noida, 1, Knowledge Park, Phase II, Greater Noida-201306.

Appendix 2: A list of Management Institutes in Delhi/NCR reason

INSTITUTES	RATING	OVER.PER.	PLACE
Institute of Management Studies	A1	70	Ghaziabad
Integrated Academy of Management And Technology	A1	70	Ghaziabad
ITS Management and IT Institute	A2	65	Ghaziabad
Institute of Advanced Management and Research	A3	65	Ghaziabad
BLS Institute of management	A4	65	Ghaziabad
Shiva Institute of Management Studies	A6	65	Ghaziabad
Indian institute of finance	A4	65	Greater Noida
IIMT College of Management	A6	60	Greater Noida
IILM Graduate School of Management	A1	70	Greater Noida
NIILM Centre for Management Studies	A1	70	Greater Noida
Mangalmay institute of management and technology	A3	65	Greater Noida
Ishan institute of Management and Technology	A5	65	Greater Noida
Galgotias business School	A7	60	Greater Noida
Accurate Institute of Management & Technology	A7	60	Greater Noida
Army Institute of Management and Technology	A8	60	Greater Noida
Sriram Institute of management and Technology	A8	60	Greater Noida
J K Padampat Singhanian Inst. Of Mgt & tech.	A2	65	Gurgaon
IBS Gurgaon	A5	65	Gurgaon
J K Business School	A6	60	Gurgaon
Management Development Institute MDI	SL1	95	Gurgoan

Jagannath International Management school	A5	65	New Delhi
Fore School of management	A1	75	New Delhi
Lal Bhahadur Shastri Institute of Management	A2	65	New Delhi
New Delhi Institute of Management	A2	65	New Delhi
Apeejay school of management	A3	65	New Delhi
Bharti Vidhyapeeth University Institute of Management	A3	65	New Delhi
Delhi school of professional Studies and research	A4	65	New Delhi
Jagan Institute of Mnagement Studies	A4	65	New Delhi
Asia pacific institute of management	A5	65	New Delhi
International Management centre	A5	65	New Delhi
Tecnia Institute of Advanced Studies	A6	60	New Delhi
Fortune Institute of International Business	A7	60	New Delhi
Department of Management Studies IIT Delhi	SL2	80	New Delhi
Faculty of Management Studies-Delhi university	SL2	80	New Delhi
Indian institute of Foreign Trade	SL2	80	New Delhi
International management Institute	SL2	80	New Delhi
Institute of management studies	A3	65	Noida
Jaipuria Institute of Management	A5	65	Noida

Dr. Akhtar Hussain* is working as a Web Librarian, King Saud University, Riyadh, Kingdom of Saudi Arabia. He has awarded PhD from Department of Library & Information Science, Aligarh Muslim University, Aligarh, India. He has contributed numbers of articles in esteemed national as well as international journals. He has also presented papers at various national as well as international conferences and symposium.

*Corresponding Author: Intl. +966-593572750

Email ID: ahusain.c@ksu.edu.sa