CHAPTER-6

Findings and Discussions
This chapter presents the findings of the analyzed data (chapters 4 and 5) concerning the impact of Information communication technologies on the degree college libraries affiliated to Delhi University. The study sample is distributed in two categories such as libraries (40) and users (400). The college librarians and undergraduate and postgraduate students have been treated as the respondents. The findings on specific issue is given in two parts 6A and 6B and followed by brief discussion.

6A.1 General Background of Sample: The study based on analyses of 40 college libraries as the sample reveals that maximum (62.50%) of sample population support the study, learning and teaching, it is followed by 12.5% study, learning and research, 15% study and learning and 10% teaching and research (Table 4.1). The study also indicates that complete population sample support to library automation. It shows that maximum (93%) libraries are partially automated, while only 07% are fully automated (Table 4.2 and 4.3). The analysis shows that 47.50 % of sample population has more than 2000 users; it is followed by 15% libraries having 501-2000 users (Table 4.4). It is found that maximum (82%) of libraries have sufficient staff and 18% not have (Table 4.5).

The above trends satisfy the features of college library. The college library functions basically to assist and support the study and teaching in the respective college. The college libraries are established to support learning, teaching and research activities.

6A.2 Financial Resources and Budget of Sample: The financial resources shows that highest (45%) of sample population are related with grant received from U.G.C., state government and miscellaneous (it includes Overdue charges, sale of old newspapers, Xerox charges, membership charges, etc) (Table 4.6). The comparative analysis of three budget year shows that the budget (in lakh) has been increased in range group of 11-20, 21-30 and 31-40. (Table 4.7). The distribution of the sample
opinion about budget spend on ICT based LIS indicates that 63% of sample population are agree that the budget spend is appropriate, it is followed by 30% not sufficient and 7% excess budget spend. (Table 4.8)

It is experienced that the allotment of fund for library increases proportionately year-wise and few of the college libraries (30%) in Delhi are passing in the time of financial constraints. This financial crisis resists the development of modern ICT based library services. At this stage, college librarians have to face the challenges to provide library services with limited amount of fund. Technological advances are creating a number of problems and challenges with respect of resources collection and library services. New types of services have been created making older ones obsolete. Slowly and steadily library moves from print resources to e-resources, as a result, library required more and more fund to provide the new emergent ICT based library services.

6A.3 Technical Infrastructure Availability of Sample: The technical infrastructure availability of shows that the hardware type of server, computer terminals, printers, modem, and scanners are available in all libraries, but CD towers and RFID have six libraries. Sixteen number of sample have other types of hardware as barcode reader, web camera etc. The study shows that sample population of 62.50% prefer LINUX, it is followed by 25% UNIX, 12.50% windows. (Table 4.10)

Linux is a cross-platform operating system, a software program that controls the computer. Linux is one of popular version of UNIX operating System. It is open source as its source code is freely available. It is free to use. Linux was designed considering UNIX compatibility. Its functionality list is quite similar to that of UNIX. Linux is free, in two senses. First, we may pay nothing to obtain and use Linux. On the other hand, we may choose to purchase Linux from a vendor who
bundles Linux with special documentation or applications, or who provides technical
support. Second, and more important, Linux and many Linux applications are
distributed in source form. This makes it possible for you and others to modify or
improve them. We’re not free to do this with most operating systems, which are
distributed in binary form. For example, we can’t make changes to Microsoft
Windows or Microsoft Word - only Microsoft can do that. Because of this freedom,
Linux is being constantly improved and updated, far outpacing the rate of progress of
any other operating system.

The library management software availability status of sample shows that LIBSYS
is highest (45%) preferred, it is followed by 22.5% other type of software, 17.5%
NETLIB, 5% SOUL, 2% Alice for windows and KOHA each (Table 4.11). The
networking software availability shows that sample population of 64 % prefer
LINUX, it is followed by 22% LINUX/Window-NT, 14% other. The distribution of
the sample opinion about working efficiency of computer and other equipments for
daily routine purpose indicates that 70% of sample population considers the working
efficiency as good; it is followed by 17% average efficiency, and 13% consider it as
poor efficiency. (Table. 4.13. The sample opinion about ICT infrastructure to use ICT
based information service shows that 80% of sample population have ICT infrastructure
and 20 % not have. (Table 4.14)

6A.4 Information Communication Technology and Resource Sharing:

The network participation status of sample indicates that sample population of
77.5% participates with library or information network for the purpose of resource
sharing and 22.5% have not participation (Table 4.15). It is found that highest (32%)
of sample population participate in INFLIBNET; it is followed by 29% INLIBNET
and DELNNET, 19% DELNET, 10% INFLIBNET, DELNET and other networks
(Table. 4.16).
Information and Library Network (INFLIBNET) Centre is an autonomous Inter-University Centre of the University Grants Commission (UGC) of India. INFLIBNET is set out to be a major player in enhancing scholarly communication among academicians and researchers in India. The main objective of INFIBNET is to establish a computer communication network for linking libraries and information centres in universities, deemed universities, colleges, UGC information centres, institutions of national importance and R & D institutions, etc. INFLIBNET is involved in modernizing university libraries in India and connecting them as well as information centres in the country through a nation-wide high speed data network using the state-of-art technologies for the optimum utilization of information.

The **consortium membership** status of sample shows that highest (70%) of sample population have consortium membership and 30% not have consortium membership. (Table 4.17) It is found that highest (42.85%) of sample population have been participated in UGC INFONET, it is followed by 28.57% N-list. (Table 4.18) The study shows that sample population of 90% consider it as economical and only 10% have opinion that consortium membership is costly. The sample opinion about consortium membership and space management shows that total sample population has supportive opinion in favor of that consortia help in Space management (Table 4.20). The sample opinion about consortium role in qualitative collection development shows that total sample population has supported opinion in favor of that consortium has positive role qualitative collection development (Table 4.21). The distribution of the sample opinion about consortium advantages shows that sample population of 92.50% have positive opinion that library consortia are able to use better resource sharing, 90% are agree that consortia will reduce the cost spent on e-journals by individual libraries and 92.50% are in favour of that through consortia
approach, each library will get online access to more number of journals for lesser amount of money.

UGC-Infonet was an ambitious programme of UGC to interlink all the Universities in the country with state-of-art technology. University Grants Commission (UGC), with its responsibility to coordinate and maintain high standards in university education, has launched an ambitious programme to bring about a qualitative change in the academic infrastructure, especially for higher education. Under this initiative, the UGC facilitates modernization of university campuses with state-of-the-art campus wide networks and has set up its own nationwide communication network named UGC-INFONET with INFLIBNET as its executing and coordinating agency.

The access to e-journal consortia was started in October 1, 2003 when the users started getting access to these resources on trial basis for three months. Access to various e-journals formally began on January 1, 2004. The programme was set up by the Chairman, UGC and it was the result of an understanding and co-operation between UGC, ERNET, the inter university centre, INFLIBNET, national and international publisher, etc. The programme is wholly funded by UGC and monitored by INFLIBNET centre, Ahmedabad. The Network is being switched to BSNL backbone w.e.f. 1st April 2010 and renamed as UGC Infonet 2.0.

Resource sharing activities among libraries brings about cooperative efforts and ensures that materials not available in a library are obtained or requested from another library. In the digital age, resource sharing activities are practised with the application of information and communication technology (ICT).

6A.5 Status of Internet Service in Libraries: The study shows that complete sample population have the internet connectivity (Table 4.23). It is found that highest (42.5%) of sample population have below five computer terminals with internet connectivity, it is followed by 30% ranging from five to ten (Table 4.24). The nature
of internet connectivity of libraries shows that sample population of 47.5% have analog (dial-up internet access) internet connectivity, it is followed by 30% ISDN, 7.5% B-ISDN and cable connectivity each, 5% VSDL and 2.5% wireless internet connection (Table 4.25). The purpose of using internet by sample shows that maximum (70%) of sample population use the internet for the purpose of communication, collection development, library services and management. (Table 4.26)

6A.6 Learning Resources of Sample: The total library collection of sample shows that 30% of sample population fall under the range of 50,000-1, 00,000 and below 50,000 each category, it is followed by 20% range of 1, 00,001-1, 50,000 category (Table. 4.27). The types and quality criteria of library collection shows that sample population of 80% have very good books, 61.76% have good journals, 60% have good reports, 66.66 % have very good thesis. In non book material 48.27% have very good audio-visual materials, 63.63% have good CD-ROM database, 51.6% have good ON-LINE database, 56.25 % very good electronic journals, 53.33% have good e-books, 66.66% have very good ETD, 60% have good microfilm or microfiche, and 66.66% have very good other type of collection (Table 4.28).The availability of database holdings shows that 80% of sample population has the database and 20% not have (Table 4.29). The number of records in library database shows that highest (31.25%) of sample population belong to range of below fifty thousand records, it is followed by 31.25% range of 50,000-1, 00,000 records, 3.12% belong to range of more than 2, 50,000 category (Table 4.30). The distribution of the sample opinion about comparing advantages of electronic resources over conventional print version shows that 90% of sample population have opinion that It is not necessary to retain journal bound volumes even after the Library has all the back volumes in CD ROM Form or has access to them from a digital repository, 90% have opinion that It is easy
& convenient to conduct a search on electronic resources, 70% have opinion that electronic resources are not very expensive compared to their print versions, total size of sample population have opinion that We can save lot of storage space by having resources like Journal back volumes, dissertations, reports in electronic form. It saves substantial amount of money being spent on maintenance (binding, cleaning, etc) of books, bound volumes by having them in electronic form, In this networked environment, electronic resources achieve the objectives of resource sharing in a far better way than print versions, electronic resources require expensive infrastructure to disseminate information contained in them, despite being user friendly, it requires certain degree of computer knowledge to get the maximum benefit of these electronic resources, user education programs to create awareness among users about proper utilization of electronic resources, electronic resources can be updated easily and immediately in case of online sources (Table 4.31).

6A.7 ICT implications for Housekeeping Activities: The tools adopted for the document selection shows that maximum (78%) of sample population use print and electronic both tool for the purpose of document selection, it is followed by 17% print and 5% electronic tools (Table 4.32). The mode of placing order for supply of documents in libraries shows that highest (47.50%) of sample population prefer e-mail, it is followed by 27.50% by post, 15% by telephone, 7.50% online ordering and 2.50% through fax (Table 4.33). The tools adopted for the classification of document by the sample. It shows that maximum (60%) of sample population use print and electronic both tool for the purpose of classification of document, it is followed by 30% print and 10% electronic tools (Table 4.34). The tools adopted for the cataloguing of documents shows that maximum (85%) of sample population use print tools for the purpose of cataloguing of documents, it is followed by 15% print and electronic tools (Table 4.35). The circulation mode sample libraries. It shows that
computerized circulation is preferred by 66% of sample population, it is followed by 20% manually and 15% both manually and computerized (Table 4.36). The mode of serial control status in sample libraries shows that 85% of sample population has been adopted the serial control in their libraries (Table 4.32). The mode of serial control in sample libraries shows that computerized serial control is preferred by 82.35% of sample population, it is followed by 17.64% manually procedure (Table 4.38). The Stock verification tools adopted by sample shows that highest of sample population 55% has been preferred automatic stock verification tools (40% barcode and 15% RFID) and 45% preferred manual procedure (Table 4.39).

The housekeeping activities are the backbone for providing information services for users. The library housekeeping jobs are performed mainly for controlling the stock of the library and the circulation of materials. Basically housekeeping activities of a library include all operations such as acquisition, technical processing i.e. classification and cataloguing, circulation control, serials control and stock verification. The housekeeping activities have been carried through ICT.

6A.8 ICT and Conventional Library and Information Services: It is found in study that sample population of 45% provide both computerized and manual catalogue, it is followed by 42.50% manual catalogue, 57.5% provide manually reference service, it followed by 42.5% both computerized and manually procedure, 47.5% provide the inter library loan service through both pattern and 20% provide manually, 35% provide education / orientation in both pattern, it is followed by 27.5% through both computerized and manually procedure each, 100% provide reprography by computerized or automatic methods, 27.5% bibliographical service is not provided to the sample, it is followed by 25% manually and computerized method, 30% of sample population not provide CAS, 30% provide computerized CAS, it is followed
by 25% CAS through manually method, 52.50% not provide SDI, while 47.50% provide computerized SDI.

Information services one of the most important tasks of a library is to make information available and encourage users to use it, by offering a range of information services. It is clear through study that ICT have been implemented for providing conventional Library and Information services.

6A.9 ICT and Modern Library and Information Services: The table 4.41 presents the ICT based modern LIS provided by sample, shows that 87.50% of sample population provide OPAC (LAN based), it is followed by 12.50% not provided, 80% not provide Web OPAC, it is followed by 8% provided, 67.50% provide the databases search service, it followed by 32.50% not provided, 92.50% provide internet access it is followed by 7.50% not provided, 72.50% provide access the web resources and it is followed by 27.50 % not provided, 57.50% have library website or link with college website, while 42.50% not have . (Table 4.41)

The Internet access, OPAC (LAN based), access the web resources, databases search service and Web OPAC is the decreasing hierarchical order of modern ICT based LIS provided by sample libraries.

The sample opinion about the quality of ICT based modern LIS. It shows that 80% of sample population consider the OPAC (LAN based) quality as very good, it is followed by 20% good, 75% have opinion that the quality of Web OPAC is very good , it is followed by 25% good scale, 51.85% have opinion that databases search service quality is very good , it followed by 37.03% good scale, 59.45% have opinion that internet access service is very good scale, it is followed by 37.83% good scale, 51.72% of sample population measure the web resources accessibility as very good scale, it is followed by 41.37 % good scale, 82.50% have very good link with college
website or library website and 17.89% have good scale for website provision. (Table 4.42)

6A.10 Problems and Aspects of ICT based LIS: The problems encountered for providing ICT based LIS shows that sample population of 55% face the computer hardware related problem, 45% computer software, 45% network infrastructure, 32% computer and network security, 37.5% physical infrastructure, 52.5% e-resources availability, 35% multiple format of e-resources for access, 70% technical skilled staff, 35% staff co-operation, 62.50% financial problems, 67.57% user awareness, 70% user knowledge and technical skill, 32.50% language problem of user, and 70% administrative co-operation related problems. (Table 4.43)

The distribution of the sample opinion about aspects related with providing ICT based LIS shows that sample population of 70% have supportive opinion in favour of that existing library staff is well trained in ICT applications in libraries, 95% feel that ICT based information services are better than manual services, 55% consider that users prefer to search electronic resources before they do a manual search of print versions, total size of sample population is agree that users require orientation to make the maximum use of ICT based LIS, ICT based LIS have a positive effect and thus have improved the image of library and Library professionals is required of training courses to make optimum use of ICT applications in managing Library and Information centre. (Table 4.44)

The distribution of the sample opinion about most suitable method of keeping library professionals updated with ICT shows that highest (75%) have supported opinion in favour of that training programme and workshop method is most suitable method, it is followed 10% conferences & seminars and continued education programmes each, 5% refresher courses. (Table 4.45)
The total size of sample population has opinion that computerization of library services are important for satisfying user’s information need. (Table 4.46)

The sample population of 87% has shared experiences about the influence of ICT on library services. It is related with ICT implementation in libraries, its benifits and barriers etc (Table 4.47). The sample’s experiences shows that due to ICT implementation in libraries the quality controls and improvement have become possible in library management, numbers of regular users have been increased and potential users will have been increased, library extension service have been highly facilitated, time, manpower and money have been utilized in a better and effective way, library could be managed with less manpower also, library professionals have increased their ICT skill by self practices, duplication of work and activities could be avoided, the growth of physical documents have been fall down than before. The major barrier is changing technology and up-gradation with it and time lag in implementation ICT based tools and services.

The ICT have highly influenced the sphere of college library. The ICT is applied in libraries, cause of many problems and barriers also. The ICT handling skill for professionals is highly required for its better implementation. The library professionals have to learn new knowledge and ICT skills in order to meet user needs.
6B.1 General Background of Sample

- The study based on analyses of 400 students as the sample reveals that 50% of each P.G. and U.G. students has been selected as a population sample. (Table 5.1). The ICT knowledge level of sample shows that maximum sample (39%) have very good knowledge of ICT. It has been followed by 22% good, 21% average, 14% less knowledge and 4% have no knowledge of ICT (Table 5.2). It is clear that the 82% users have ICT knowledge to take library benefits.

- The awareness of sample about library automation shows that maximum sample (86%) have supported opinion about partial library automation, it is followed by 7% fully automated library, while 7% are not aware with library automation (Table 5.3).

- The library visiting frequency of sample shows that maximum (47%) of sample population usually visit the library, it is followed by 34% sometime and 19% rarely (Table 5.4).

- The primary purpose of visiting library by sample shows that maximum (67.50%) of sample population visit the library for study and learning purpose, it is followed by 18.50% internet access, 2% research work, 3.75% other purpose, 2% research work, 1.75% reading news paper and magazines, 1.50% entertainment. Since the population sample belong to U.G. and P.G. students so study and learning is highly preferred than others. (Table 5.5)

6B 2 ICT Based Conventional Library and Information Services:

The pattern of using conventional LIS shows that sample population of 45% use both computerized and manual catalogue, it is followed by 42.50% manually catalogue, 62.5% use computerized circulation, it is followed by 20% manually procedure, 52.5%
get manually reference service, it followed by 29.25% both computerized and manually procedure, 48% don’t use the inter library loan service and 12% use through computerized method, 33.75% user education / orientation is provided to sample through both computerized and manually procedure, it is followed by 23.75% manually, 86.25% computerized photocopying is used by the sample, 27.5% bibliographical service is not provided to the sample, it is followed by 20.5% manually, 18.25% of sample population use computerized indexing/abstracting service, while 60 % could not get its availability, 30% not get CAS by their libraries, 27% use computerized CAS, it is followed by 21.75 % CAS through manually method, 65% not get SDI by their libraries, 28% use computerized SDI. (Table 5.6)

The developments in ICT have changed the users’ needs in different ways. The ways to build collection and services to the users vary from the recent past practices. To meet the user’s information need in an effective and efficient manner, the college libraries need to identify and adopt good practices with ICT in the changing environment. It is found in study that computerized traditional library and information services is mostly preferred by the users except bibliographical and reference service, because these services have requirement of specific technical infrastructure and less demanded in degree college libraries.

6B.3 ICT based Modern Library and Information Services:

In the present study, the modern library and information services includes LAN based OPAC, Web OPAC, Database Search Services, Internet Access, Web-Resources Access, Library and Website or Link to College Website. The related findings are as follows:
6B.31 LAN based OPAC:

- The pattern of using ICT based LIS shows that 78% of sample population use OPAC (LAN based), it is followed by 6.5% don’t use, 12.5% have no OPAC (LAN based) accessibility (Table 5.7).

- The LAN based OPAC accessibility-wise distribution of shows that 87.50% sample have OPAC accessibility while 12.50% do not have OPAC accessibility. (Table 5.9)

- The frequency of using LAN based OPAC shows that maximum (80%) of sample population usually use the OPAC, while 9.14% use sometime, 7.34% don’t use and 3.42% don’t know the OPAC use. (Table 5.10)

- The sample opinion about efficiency of retrieving information of LAN based OPAC shows that 93.14% of sample population have supported opinion about efficient retrieving capacity of LAN based OPAC, while only 5.14% are in against of it, and 1.71% have no idea about it. (Table 5.11)

- The nature of instruction provided by library for using LAN based OPAC. It shows that maximum (90.38%) of sample population express that the instructions provided by the library for using the LAN based OPAC are very easy, while 6.41% consider it easy, while only 3.20% consider it as difficult. (Table 5.12)

- The sample opinion about efficiency of retrieving information of LAN based OPAC shows that highest of population sample (91.98%) LAN based OPAC is efficient, 5.12% not efficient and 2.88% are unaware about it. (Table 5.13)

- The sample satisfaction with the use of OPAC to find out relevant information; it shows that 94.87% of sample population are satisfied, while only 5.12% are not satisfied with it. (Table 5.14)
6B.32 Web OPAC:

- It is found in study that 16.25% use Web OPAC, it is followed by 2.25% have no knowledge of Web OPAC, 80% have no Web OPAC accessibility (Table 5.7).

- The web OPAC accessibility of sample from other libraries show that 80% of sample population have no web OPAC accessibility, while 20% have web OPAC accessibility. (Table 5.15)

- The frequency of using Web OPAC shows that maximum (68.75%) of sample population usually use the web OPAC, while 12.50% use sometime, 11.25% don’t know the Web OPAC use and 7.5% don’t use the Web OPAC. (Table 5.16)

- The sample opinion about efficiency of retrieving information of web OPAC shows that highest of population sample (80%) web OPAC is efficient, 13.84% not efficient and 6.15% are unaware about it. (Table 5.17)

- The accuracy and convenience use of catalogue while searching for document shows that maximum (45%) of sample population use both type of catalogue, 45% manual catalogue and 13% use OPAC. (Table 5.18)

6B.33 Database Search Services:

- It is found in study that 57.5% use the databases search service, it followed by 8% who don’t use, 32.50% have no databases search service (Table 5.7)

- The type of database accessibility of sample shows that maximum (93.47%) of sample population access both type CD-ROM and ON-LINE database, it is followed by 3.91% ON-LINE database and 2.60% CD-ROM database. (Table 5.19)

- The content based database accessibility of sample shows that maximum (62%) of sample population access both type full text database, it is followed by 32% full Text database and 6% bibliographic database. (Table 5.20)
• The sample opinion about the information content of database shows that maximum (67.82%) of sample population have supported opinion that information content of database is better than print, it is followed by 25.21% same as print, 4.34 % Not better than print versions and 2.60% not replied. (Table 5.21)

• The sample opinion about comparison between ON-LINE and CD-ROM database It shows that ON-LINE database provide easier and convenient search and access facilities than CD-ROM database, Search output of database is always consistent in CD-ROM than ON-LINE, Search time is very less in CD-ROM database, CD-ROM database is Timely updated, Security problem is higher than ON-LINE database, by getting an updated database within a short time we get access to latest data in CD-ROM database, Users needed assistance comparison with CD-ROM database while searching the ON-LINE database (Table 5.22).

6B.34 Internet Access:

• It is found in study that 88.75% access the internet it is followed by 3.75% don’t access the internet ,7.5% have not internet accessibility (Table 5.7).

• The frequency of using internet shows that highest (89%) of sample population usually use the internt.It is followed by 7% sometime use, and 4% rarely use the internet. (Table 5.23)

• The primary purpose of sample for using internet shows that maximum (83.38%) of sample population use the internet for the purpose of study and learning, it is followed by 6.47% social networking, 4.50% other purpose, 3.38% entertainment, 2.25% research purpose. (Table 5.24)

• The sample opinion about quality of retrieved information from internet shows that maximum (79%) of sample population have opinion that internet does not retrieved relevant information, while 21% have supported opinion. (Table 5.25)
• The sample opinion about quantity of retrieved information from internet shows that 66.76% have opinion that the quantity of retrieved information from internet is very high; it is followed by 21.97% sufficient, 6.47% less, and 4.78% very less. (Table 5.26)

• The sample satisfaction with internet for fulfillment of all type of academic information need It shows that maximum (90%) of sample population are satisfied with internet services for the fulfillment of all type of academic information need, while only 10% are not satisfied. (Table 5.27)

• The sample satisfaction with the facility of internet access at library indicates that 80% sample population is satisfied with the internet access facility provided by the library and 20% are not satisfied. (Table 5.28)

6B.35 Web-Resources Access:

• It is found in study that 68% access the web resources and 3.75% don’t access, 0.75% don’t know and 27.50% have no web resources accessibility (Table 5.7)

• The type of web-resources accessibility of sample shows that the 77.94% access e-journal, it is followed by 14.33% e-books, 2.20% e-zine, 2% knowledge or library portals, and 1.83% e-thesis. (Table 5.29)

• The sample opinion about the information content of web-resources shows that maximum (86.39%) of sample population have supported opinion that information content of web-resources is better than print, it is followed by 8.82% same as print, 2.20% Not better than print versions and 2.57% not replied. (Table 5.30)

• The sample opinion about the comparison of e-journals with print journals shows that 76.41% of sample population have opinion that It is easy & convenient to search for information in e-journals, 85.84% have supported opinion that search
time taken to search an article on e-journals is far lesser than the time taken on print version, 98.58% have opinion that e-journals are made available by publishers immediately where as it takes at least 8 weeks for print versions to reach libraries, 100% are in favour of that e-journals can be accessed by users from their desktops at workplace, hostels, etc., 95.28% are in favour of that e-journals provide links for other related articles/references in the field, 72.64% have supported opinion in favour that users have requirement of assistance while accessing e-journals. (Table 5.31)

6B.36 Library Website or Link to College Website:

The sample population of 89.56% accesses the library website or link to college website homepage, and only 10.43% don’t access (Table 5.32).

The impact of ICT characterized on information services by changes in format, contents and method of production and delivery of information products. In ICT based modern library and information services the library website or link to college website homepage, internet access, OPAC (LAN based), web resources access, databases search service, Web OPAC access is the order of preference of ICT based modern library and information services.

6B.4 Quality of ICT based Modern Library and Information Services:

The sample opinion about the quality of ICT based LIS shows that 77.14 % of sample population consider the OPAC (LAN based) quality as very good, it is followed by17.14 % good, 70% have opinion that the quality of Web OPAC is very good , it is followed by15 % good scale, 46.29% have opinion that databases search service quality is very good , it followed by 30.37% good scale, 52.97% have opinion that internet access service is very good scale, it is followed by 34.59% good scale, 45.51% of sample population measure the web resources accessibility as very good
scale, it is followed by 33.10 % good scale, sample population of 44.78% have opinion that library website or link to college website is good, it is followed by 41.30% good scale. (Table 5.8)

It is found in study that the ICT based modern library and information services have very good or good quality scale.

6B.5  Impact of ICT Based Library and Information Services on Users:
In the present information age, users can have multiple- simultaneous access to a variety of libraries resources without geographical barriers. The library users prefer the ICT based services and resources for fast efficient comprehensive search for information, processing. It also helps to users to access, manage, integrate, evaluate, create, and communicate with other users and library professionals more easily than ever. The significant developments in ICT have forever changed the need and the way of information gathering and seeking. The ICT based LIS have positive as well as negative impact on users as follows:

6B.51 Positive Impact of ICT Based Library and Information Services on Users:
The sample opinion about the positive impact of ICT shows that sample population of 94.50% have positive opinion that ICT helps in Qualitative improvement of the of library services, 96.25% are in favour of that ICT has been enabled direct and effective access to the services and resources, 91.25% have opinion that ICT provide easy search and access to the services and resources, 100% have opinion that ICT made possibility to access the new range of services, not possible before, 98% are in favour that ICT provides more flexible and comprehensive retrieval of information, 98.75% have opinion that ICT provides up-to-date information for academic growth, 99% consider that ICT enormously save time and effort, 96 % have
supported opinion that ICT provides economical access to the services and resources.
(Table 5.33)

6B.52 Negative Impact of ICT Based Library and Information Services on Users:
The sample opinion about the negative impact of ICT shows that sample population of 91.25% are agree that their dependency on internet for academic activities has been increased due to ICT, 94.50% have opinion that ICT has been reduced their habits of reading eroded originality in writing enabled, 88.25% have opinion that ICT has increased their habit of finding ready-made material, 84.25% have opinion that ICT has been reduced verbal face to face communication and interaction, and only 11.50% have opinion that ICT has been reduced the quality of research work, so it is clear that ICT has no negative impact on research work quality. (Table 5.34)

6B.6 ICT Related Problems and Suggestions:
- The problems encountered for providing ICT based LIS shows that sample population of 26% face the problem of lack of technical knowledge, 61.25% lack of Awareness, 37% Poor infrastructure of ICT, 33.75% poor maintenance of ICT, 34% non cooperative staff, and only 11.50% face lack of time related problems. (Table 5.35)

Interaction between librarian and users will require the ICT skill in the modern academic library. The unskilled library user will not even be able to ask the library professionals for guidance without the use of ICT. Unskilled users will not be able to use the services and resources of the library because of lack of ICT skills. The basic ICT skill is essential to be able to access and apply information.
• The library staff support taking by sample for using the ICT based LIS shows that maximum (74%) of sample population take support sometimes, it is followed by 18% usually, and 8% never need of help for using the ICT based LIS. (Table 5.36)

• The sample satisfaction with the library staff support provided for ICT based LIS shows that 67% of sample population are satisfied, while 33% are not satisfied. (Table 5.37)

• The overall satisfaction of sample with the ICT based LIS provided by their college Library shows that 59% of sample population is satisfied, 35% are highly satisfied, while 33% are not satisfied. (Table 5.38)

• The sample suggestions for improving the quality of ICT based LIS shows that 83.75 % of sample population have supported opinion in favour of increasing the internet speed, 100% want the computers and related tools with higher configuration, 93.4% to increase the number of internet terminals, 98% have opinion about security tools and software, and 65.50% expressed their opinion about availability of technical skilled staff. (Table 5.39)

The college libraries should be enriched by latest ICT infrastructure and librarians have to learn new knowledge and skills in order to meet user needs for ICT based library and information services using ICT and e-resources.