CHAPTER- II

REVIEW OF LITERATURE

2.1 PREAMBLE:

This chapter deals with the relevant Review of Literature. This analysis of the review of literature is the key focus of any research. It enables to be aware of the past and current trends in any particular branch of research. It is an objective analysis and interpretation of contributions of authors, researchers, scientists, experts etc. It present in chronological growth of literature in the field for that period. This literature review in such manner which is subject fields have grown in various way or contents that is added the value of the subject. The purpose of the literature review is to understand, various techniques and performances of phenomenon and its procedures. For the researcher it is guided to identifying and formulating the objectives, hypothesis, and methods for collection of data and for analysis of data.

Review of literature defines to the researcher for the refining the topics for restructure, recognize and reset the presentation on various ways. It also helps the researcher to study the different aspects of the problem. It enables the researcher to identify the unexplored areas, in order to create new grounds for research. Therefore it is an integral part of research studies.

Present study review of literature is grouped on following ways:

- Introduction
- ICT facilities available in Libraries
- ICT Skills Among the Library Staff
- ICT Related Library Services
- Networking of the Libraries
- Resource Sharing among the Libraries
- Conclusions

2.1.1 INTRODUCTION:

While conducting literature review, the following secondary information resources and reference books were consulted. These include Library and Information
The core periodicals in the area include Networking & Resource Sharing of the Libraries, International Journal of Library Automation, Networking & Consortia, Pakistan Library & Information Science Journal, Library Consortium Management an International Journal, etc by organizations like WIPO, CAS etc was also referred. The resources enabled to the researcher for getting the information published in different manners or types are assisted in looking at the problems. A literature search, for validating topic of research study and tracking developments made in it, must be conducted. Literature search helps in finding gaps in research. It is a detailed and organized step by step search for all materials, documents, and information available on a topic.

The purpose of a literature search of a research article is to identify existing information sources (including books, journal articles, doctoral dissertations and Web documents) most relevant to the research in question. The various resources collected and categorized with detail study about Networking & Resource Sharing i.e. a brief coverage is listed below:

**2.1.2 ICT FACILITIES AVAILABLE IN LIBRARIES:**

The lot of researchers are conducted a study on ICT facilities/Infrastructure available in libraries.

**Real & et...al (2014)** have studied the status of the ICT Facilities available in Rural public libraries & its challenges. The researchers found that lot of the public rural libraries are adopted ICT infrastructure like they have access internet facility with bandwidth, lot of the libraries have computer terminals etc.

However, **Prakash, Ramanna& Rajkumar (2014)** in their study entitled “Library Collection, Facilities and Services of the Central University of Karnataka: A
Survey” demonstrate the varies aspects of use of collection & services, availability of the ICT infrastructure, print & electronic resources, databases.

While, **Okeke, Oghenetega & Umeji (2014)** in their paper they discovered that the most of the students in the faculty of social sciences are aware of the ITC tools like computer & etc also they explored students used GSM & social media commonly in Madonna University Okija Campus.

**Nazi & et...al (2014).** Surveyed that the mobile facility implementation in national library at Iran & they stated that the 68% respondents supported to the adopt this facility for the all events, overdue date intimation, OPAC facility etc. in short the users recommended to increase the ICT infrastructure for the library services through cell phone.

**Mondal & Bandyopadhyay (2014)** have studied the status of ICT infrastructure in the university libraries of west Bengal, India. It is concluded that the most of the libraries are in different stages of the development also they have faced lot of problems for the development of the ICT infrastructure in the libraries.

While, **Kruse (2014)** conduct a survey on Research libraries’ new role in research data management, current trends and visions in Denmark. They it is fond that no any library used common ICT Infrastructure to manage the all resources it may be e-resources as well print resources.

**Tiwari & Sahoo (2013)** investigated the Infrastructure & Use of ICT in University Libraries in Rajasthan state. It was found that all the university libraries are in developing stage. Also ICT infrastructure was the need of the present era for the change the status & to give the quick services to the users. The researchers stated that the library staffs have needed to get the ICT training as well as practices.

**Siddiqui & Walia (2013)** in their study highlighted Comparatively in India & UK regarding the ICT Papers in LIS Syllabus & they it is found that in UK LIS curriculum more weight age is given to ICT papers while in Indian LIS curriculum more traditional type papers are still part of the curriculum.
Mohd, Esmail & Nagrajan (2013) have studied the attitude of the users regarding e-resources & services in engineering colleges affiliated to north Maharashtra University & then it is stated that the lack of ICT infrastructure in engineering college libraries for the access of e-resources. The library users suggested that to develop the current & adequate ICT facilities in the knowledge resource centers/ Libraries.

Malik & Mahmood (2013) identified the current status of ICT infrastructure needed for the delivering the digital reference service in university libraries. The researchers reveal that the ICT infrastructure needed for designing and implementing an effective DRS in libraries is better than before but it needs further improvement. Many libraries also own general and reference collection in electronic format. Only a few libraries have started DRS while most of them are still using face to face channel for reference transactions.

While, Bello, Emmanuel & Busari (2013) revealed that computer; television, printer, scanners and internet facilities were readily available to the librarians while apart from computer aided instruction Software that was scarcely available, other facilities were moderately available in their respective libraries.

Aravinthan & Venkatesh (2013) in their paper discussed that the ICT infrastructure were used for the creating, sharing & dissemination of the knowledge in the field of nursing in his study the author studied the lacuna of the ICT infrastructure adopted & used in the nursing college libraries in the state of karnataka also they stated the state government help to them for avoiding the same.

Thompson (2012) examined the California state university San Marcos library provide the computer facility in a traditional age but most of the users used it but in suggestions the users need is to provide the desktop services via cell phones. The researcher explored that the users are used more & more ICT tools for getting the information.

Showers (2012) the researcher it is found that now a day’s Data driven library infrastructure are very important for to give quality services to the end user as well as
it is important not only for the libraries but also publishes, system vendors & third parties.

**Nwohiri & Emezie (2012)** investigation in their study the factors affecting the adaptation of IT in libraries, also they investigate the rate of the adopt the ICT tools in day to day work was very high, most of the academic libraries in Imo State are initial stage for the automation but the ICT tools like computers, Internet connectivity, Telecommunication tools, software’s used rate was very high.

**Issa & et.al (2012)** discussed the varies standers & practices for developing the IT Infrastructure in libraries such as ITIL & CMMI, ITIL & CobiT, ITIL & eTOM etc & its benefits as well as circumstances for the adopt in the libraries with the suitable examples.

However, **Bedart & et.al (2012)** in his study “Library Information Technology Collaboration at the university of New Mexico” studied that the There are several principal providers of information technology services and support on the University of New Mexico (UNM) campus. These include a central set of services provided by the campus Information Technologies (IT) group, University Libraries (UL) Library Information Technology (LIT), Center for Academic Research Computing (CAR-C), New Media and Extended Learning (NMEL), and the Health Science Library and Informatics Center (HSLIC). These IT organizations articulate with each other in different ways. Campus IT services are described through their catalog and have a focus on infrastructure such as networking, business enterprise computing (Banner), security, communication devices and software, computer and classroom labs, purchase and licensing for PC hardware and software and support for the Web content management system.

**Aguolu (2012)** reported that the Nigerian Libraries changed traditional to hybrid library with the ICT infrastructure also the researchers conclude that the most of the libraries facing problems like financial, technical, ICT skills among the staff etc as well as she stated that the Nigerian university libraries changed very fast as a electronic libraries they have adopt the ICT tools, Hardware & software for providing the library services to the end users.
Olaniyi & et.al (2012) illustrated the importance of ICT applications in library management they have discussed in details regarding the role of ICT in library services, application of biometric technology in library services, barcode technology in libraries & its impact on charging & discharging of books for home lending service.

Shivkumaren, Geetha & Jayaprakash (2011) in their study entitled “ICT Facilities in University Libraries: A Case Study” stated that the comparative analysis of the ICT Infrastructure vs. University Libraries, ICT based technology vs. university libraries in this the researchers found the 100% deemed university libraries having barcode technology in the state of Tamilnadu.

Rasul & Sahu (2011) in their study entitled “Use of It & its impact on service quality in academic library” explained that the IIMT library have only three databases, such as PROQUEST, INDIA STAT, & CAPITALINE database. As per user perceptions, need to be purchase more online databases for IIMT Library. And also to be providing latest computer facilities, increase the bandwidth of internet in the library, remote access of the library, E-Security system, online renewal, reservation facility & networking of the library. While, Kumar & Dominic (2011) in their paper entitle “A Study on information Communication Technology among Engineering College Libraries in Coimbatore, Tamil Nadu” studied 32 engineering college libraries & explained which of the library have top level using total number of computers with & without internet facility, in library collection it may be print of electronic, development of institutional repository, digital library & its software, & challenges for the developing ICT infrastructure in libraries. However, Issa & et.al (2011) in their study entitled “Application of information Technology to Library Services at the Federal University of Technology, Kure Library, Ondo State, Nigeria” evaluated that the which IT devices are available in university library, how many fund provide to adopt the such tools as well as impact of the these tools on the services of the libraries.

Dhanvandanvan (2011) highlighted that the digital library infrastructure in self financing engineering college libraries in Tamilnadu state the researcher concluded that most of the libraries used DSpace digital library software followed by
greenstone. While, **Dhanvandan, Esmail & Nagranjan (2011)** studied that the 140 sample engineering colleges from the Tamilnadu state & it is stated that the which of the ICT Infrastructure available for ex. Computers, printers, e-resources, amplifier, projector, CD ROM Databases, Library management software, library portals, library webpage, webopac etc. also the researcher found that the acriditated colleges have good stage in developing regarding the ICT tools.

**Srinivasa Rao & Choudhari (2010)** discussed the computer infrastructure facilities & services in NIT libraries in India they have studied these libraries zone wise like, EAST, WEST, SOUTH & NORTH & the researchers concluded that South zone libraries are richer than the other zone libraries with respect to CI facilities. While, **Ejedafiru (2010)** in his research paper in title “Lack of ICT Infrastructure as a Barrier to Resource Sharing in Nigerian Libraries” stated that the none of the library are used fully ICT infrastructure for the resource sharing also the researcher found that the library staff agreed that the reasons for the failure of resource sharing in their libraries were poor communication infrastructure.

**Stewart & Cervone (2003)** explored in their study that Northwestern University Library has developed a rich infrastructure to support text and media digitization. However, **Veer, D.K. (2002)** studied the College of Education Libraries in Maharashtra: A Survey. And the researchers stated that a Good ICT Infrastructure and effective services marks a good library. It has been said that a library is incomplete without proper ICT Infrastructure.

### 2.1.3 ICT SKILLS AMONG THE LISC PROFESSIONALS

**Khan & Idrees (2014)** in their paper they have discussed the importance of professionals training for LIS professionals Conducted by Pakistan Academy for rural Development (PARD). Also they have elaborate the PARD play a vital role through training programme to developed the library automation skills, Information/Computer literacy skills, Knowledge Management skills, Communication Skills, Leadership Skills, etc in the LIS professionals in Pakistan Country. while, **Bhatti, Chohan & Naeem (2014)** discussed the Factors Affecting Library Usage Frequency by Students in University Libraries of Developing Countries including Pakistan. In this study it is investigated the lack of Information Literacy skills, lack of reading skills, lack of
training, Lack of awareness of ICT tools etc these factors are affect the library usage in developing countries.

**Sinha & Bhattacharjee (2013)** discussed the ICT & Internet Literacy skills for using the N-LIST programme, as per their results it is found that most of the students not aware about the N-LIST facility also they have need the training regarding development of the ICT skills as well as Internet facility. However, **Sahu (2013)** surveyed the traditional and technical skill. Traditional skill involves in Collection & Development, Preparing budget, Classification & Cataloguing, Indexing Service, Reference Service, Library Supervision while Technical skill emphasized on Digital projects/initiatives, Website Designing, Library Automation, Open Source Software Development, and Networking.

**Ramaiah & Pillai (2013)** identified the importance of IT Skills, Net Skills, reading, Information seeking skills, teaching & learning, Management; media resources use skills etc particularly in school libraries in India. Also the researcher discussed the importance of the training in development of the skills among the students as well as school teachers. However, **Popoola & Olalude (2013)** discussed the Symptoms of techno stress being manifested by the Library personnel & through this symptoms they have get the level of the ICT skills as well as computer literacy skills among the library professionals from the automated university libraries in Nigeria.

**Ejedafiru & Oghenetega (2013)** identified the level of professional librarians in ICT skills hence 85% of respondents claimed that they can operate computer effectively, while 80% and 75% said they use online information for research and are capable of using www search engines respectively.

**Kumar (2013)** investigate in his study entitled “Knowledge on ICT Skills among LIS Professionals of Engineering Institutions of Andhra Pradesh State: A Survey” in his study he shown the skills regarding operating system, operating/programming language, library management software, web design tools, technical skills, managerial skills, subject skills & lack of ICT related skills, constraints on ICT practice by Library & Information Professionals.
Ganesan & Kaliyaperumal (2013) discussed the ICT skills among the students of Ragas Dental college library, in this study researchers carried out most of the students have knowledge about the word processing, Social Networking sites, E-Mail facility & e-resources available in the library.

Chukwu (2013) explored the ICT skills for using the ICT resources among the students from the Owerri library as per his results most of the users aware about ICT Resources & they have sufficient skills for using them fluently also 85% new users want arrange the training for using ICT tools & resources for the fulfillment of the information need. While, Chisita (2013) investigate the role of libraries for development of the skills regarding to search the information regarding social issues, globalization, democracy, HIV/AIDS, Importance of the Education etc in the area of Zimbabwe. It will also examine the role of school libraries in promoting interpersonal skills development amongst students to promote responsible behavior or citizenship. However, Ajayi, Shorunke & Akinola (2013) examined the skills of LISC professionals regarding use of the ICT in day to day work. As per the their results it is found that 84% LISC professionals have excellent skills to use of computers, followed by Internet, Telephone, Scanner, printer, projector using skill level.

Chima-James (2012) assessed the Computer literacy skills among the university librarians from the Nigeria & he found the 84.4 % staffs are computer literate also most of the staff aware regarding computer skills through practical self teaching & training programmes.

While, Dzandu & Dadzie (2012) identified the level of regarding ICT skills among the scientist in Ghana & it is found that the majority of respondents In response to the question on level of skills acquired, 36.4 % indicated it was very high; 43.9 % said it was high; 16.7 % said it was medium; whilst 1.5 % respondent each said it was low, and very low. However, Faga (2012) assessed the problems and solutions to the acquisition of computer literacy skills of academic staff of NSUK and UNIJOS- Nijeria & he were found most of the problems faced in Computer literacy skills it may be lack of training workshop, lack of funds, inadequate power supply, Government responsibility etc. Tan, Gorman & Singh (2012) in their paper studied
the Information Literacy skills among the school librarians in Malaysia. In this paper investigators explained the IL Skills Mean scores of self-assessed IL skills by length of experience, Length of Educational Qualification, & self assessed IL Skills respectively.

Quadri (2012) reported the related literature regarding Impact of the ICT skills on the use of e-resources by information professionals in his paper in detailed he noted the some studies regarding ICT skills for information professionals, Impact of ICT on their, Use of e-resources by professionals, challenges for achieving the ICT skills etc…

Fatima, Shafique & Firdous (2012) in their paper entitle “ICT skills of LIS students: A survey of two library schools of the Punjab” The study not only identifies the situation of ICT skills of LIS products, but also highlights demands of LIS market in Pakistan. also in this study investigator stated the criteria of identifying the ICT skills among the LIS students in Pakistan country.

While, Eze (2012) noted that the need of the training to acquire the Acquire more skills and exposure in work, Computer training for more information skills, better communication skill, etc. However, Bello & Mansor (2012) explored the skills considered to contribute and enhanced job performance of the respondents were: ability to communicate effectively (96%), ability to plan, organize, and supervise cataloguing activities in the library (91%), ability to establish and maintain effective work relationship with colleagues and other library staff (91%) and ability to research into new techniques for cataloguing (96%). From the result above, practically almost all the skills were of management enhancing factors. This perhaps is evidences of the importance of managerial skill requirement for effective performances. With over ninety percent of the respondents either agreed or strongly agreed with these views, it underscored the significance of managerial skill for the smooth running of cataloguing industry.

Anunobi, Ukwoma & Ukachi (2012) illustrated the enormous challenges faced by female academic LIPs in Nigeria, these challenges include the need to acquire new digital skills needed for the changing library operations/services, and
acquire digital competencies as well as meet societal expectation. While, Adeniji, Babalola & Adeniji (2012) in their document discussed the importance of the Training programme for development of the ICT skills as well as professionals skills & they have found most the respondents agreed for the trainings are most helpful to developed the library daily work skills, library automation skills, use of varies ICT tools etc with practically.

Satpathy & Maharana (2011) surveyed the ICT skills of LIS professionals in engineering institutions of Orissa state. In this study the researchers illustrated the level of ICT skills of Library Staff comparatively his/her experience, educational qualifications, also they have discussed in details knowledge of Web based services, Methods of acquiring ICT skills, & Constraints in acquiring ICT skills & it is found the tight work schedule, poor infrastructure & lack of the training is the major constraints.

However, Lai (2011) in his study entitle “Information Literacy Training in Public Libraries: A Case from Canada” investigated the current state of IL training and the strategies and methods used by certain Canadian public libraries in improving IL skills for their staff and patrons. Anyira (2011) explained the librarian-based factors that hinders the 21st century library are those that have to do with acts of corruption such as inflation of costs of items, embezzlement, bribery, misappropriation etc. other challenges are lack of relevant or compliant skills, fear, bias, dogmatism, and ageism.

Jiyane & Onyancha (2010) surveyed the Information literacy education & Instruction in academic Libraries & LIS Schools in institutions of Higher education in South Africa. In this survey researchers highlighted that the need of the IL, Information Literacy Skills, Information skills, Technological skills for the fulfillment of the information need.

Haneefa & Shukkoor (2010) in their paper entitle “Information and Communication Technology Literacy among Library Professionals in Calicut University, Kerala” studied the skills regarding skills of operating system, use of Automation software, use of digital library/ Institutional repository software, also they
explored the way of getting confidence regarding use of ICT tools & it is found that most of the library professionals open a file & play a game etc…

Eisenberg, Johnson, & Berkowitz (2010) identified the Information, Communication & Technology skills & its importance for information problem solving, they have discussed in detailed like ICT skills useful for the to get the right information to the right user at the right time by the library staff as well as by self to the end user of the library as well as society.

Ramesh Babu, Vinayagamoorthy & Gopalkrishanan (2007) in their study “ICT skills among librarians in Engineering Educational institutions in Tamil Nadu” in this survey they have considered 171 librarians & studied their level of knowledge about the use of operating system & 48 & librarians fully known DOS as well as Windows OS, also they have studied level of knowledge in software packages & Programming languages & it is found that 45% fully known MS –Word followed by MS-Excel etc, & finally they have studied the constraints to acquiring the ICT skills & found that work over load of the librarians is the major constraint in acquiring ICT skills.

Larsen (2007) in his document discussed the requirement of the skills in hybrid library staff for provide the reference & information services to the users. Larsen said in a present era librarians of LISc professionals required Web 2.0/Library 2.0 skills, core reference skills, Marketing skills, communication skills etc.

Watane (2005) studied the computer literacy and use of IT in college libraries of Amravati city covering IT awareness of the library professionals and IT application in libraries.

2.1.4 ICT RELATED LIBRARY SERVICES

Saini (2014) in his document elaborate the importance of Document delivery service, methods of providing the DDS, advantages & disadvantages of his service & role of the INFLIBNET as well as central library of Babasaheb Bhimrao Ambedkar University to provide the DDS to the users & its impact on information access as well as users satisfaction about the document delivery services.
Rodrigues (2014) in web based library Service: Challenges & Opportunities focused n use of web bases library services, Need of the web based library services, different types of web based library services like Web OPAC, Subject Gateway, Portals, Virtual Library Tool, Ask A Librarian, Library Website etc & its impact on Library Services as well as users satisfaction.

While, Pawar (2014) illustrated the historical development of the web based services adopted in libraries also varies types of the web based library services i.e. Access of database, Bibliographic & Cataloguing Services, CAS/SDI, E-Mail, News Clipping Service, News Letter service & need of this services in ICT Era.

Pawar & Rangdal (2014) in their paper discussed the use of the Web 2.0 in libraries for providing the web base effective & quick services to the end users. In web 2.0 they have elaborate the Blog Service, Wikis, Messaging, Tagging, RSS, Podcast & Social Networking tools for the providing the information.

However, Nazi, Ghasempour, Asgari (2014) reported the most of the users in Nigeria country used the mobile phones now a day’s & libraries used this phone to the providing library services like CAS/SDI, Bulletin Board, Events etc. on the basis of investigation 55% of respondents, mobile based Reference service s were a suitable and inevitable service. Analysis of agree respondents showed that: reference services via SMS with 55% and reference services through library website.

Mugridge (2014) surveyed Pennsylvania’s academic libraries for the purpose of the evaluation of the technical services its use & impact on the libraries for providing the library services to the end users & it is found that the Improve or streamline processes 68.3 % librarians said this is the main purpose of the technical services.

Kern (2014) reported the importance of the user services, services for information search, collect & evaluate, & Inter library loan services to the users.

Deng (2014) examines the origins and evolution of general and specialized reference services in American libraries between 1876 and the early 1920s. The study
concludes that a further examination of the development of reference services in American libraries beyond their earliest history is needed to enhance the understanding of the current trends and issues in the field.

Brown (2014) in his research paper entitled “Outsourcing Law Firm Libraries to Commercial Law Library and Legal Research Services. The UK Experience” reported that how to law libraries provide the legal library services as well as procedure in UK.

Xu Yan (2013) explained the model for the personalized services in the digital era in libraries in this study researcher discussed the procedure of personalized service system in digital library, & plan of the Agent model for the acquisition personalized services as well as analysis process.

While, Bagudu & Sadiq (2013) surveyed the user’s perception regarding the digital library services in the international Islamic University, Malaysia. The researchers it is found that most of the users used this service daily & purpose of the to search the information, to search the references, & internet speed, lack of the training these are the problems faced by the users.

Sosa & Ramirez (2012) introduced the file storage service that is implemented on a private/hybrid cloud computing environment and is based on open source software. The authors evaluated performance and resource consumption using several levels of data availability and fault tolerance. This service can be taken as a reference guide for IT staff wanting to build a modest cloud storage infrastructure.

However, Shinde & Deshpande (2012) assessed the application of Mobile Technology for providing Library Services. In this paper concluded that Royal Roads University library used Mobile Library Site, Brock University Library Provide Catalogue Search facility on Mobile, Lakehead University Library provide FAQs service through mobile & JSTOR Database also available on Mobile users can access these facilities through mobile in a practically.
Panday (2012) in this study discussed the blog, its history, how to start a blog & use of blog in the libraries also he stated in the age of Internet, Social Media blog is very powerful tool to interact with others. Libraries are using more & more web 2.0 technology to interact with users and also using these tools convert non users to users.

Kumar, Kumar & Jyoti (2012) explained ICT Applications in library services that are Circulation, Cataloguing, CD ROM Searching, On-Line Networking, Photocopying, Audio Video Service, Internet Access Service etc.

Brock & Rancking (2012) in their book entitled “Library services for children’s & young adults: Challenges & opportunities in the digital age” discussed about the library services in 21 century as well as challenges for providing them to the users in Information technological Era.

Tyckoson (2011) in his document noted that the management of the reference services in present era. For providing the reference service to the users in ICT era the need of the trained staff, Modes of communication like email, messages, blog, SNS, etc, Training, Information sources & collections. With the help of above sources & Instruments Reference service easy to provide for the users.

While, Xu (2010) describes the wider utilization of information technology; the requirement for ICT services becomes more diverse and differentiated. In order to manage ICT services and meet requirements of users effectively, an ICT service catalogue model is structured, which can make service providers and users obtain accurate and consistent service information.

Xia (2010) illustrated the Living Human Digital Library (LHDL) project presented web services to build a biomedical digital library infrastructure that allows clinicians and researchers not only to preserve, trace and share data resources, but also to collaborate at the data-processing level.

Vila (2010) explained the mobile services developed by the Rector Gabriel Ferraté Library (BRGF) of the Technical University of Catalonia (UPC), in Barcelona, Spain.
Srinivasa (2010) explained the provision of providing networked services (NSs) among National Institute of Technology (NIT) libraries in India. The survey findings indicate that the majority of libraries prefer to provide communication network services (telephone, Internet, e-mail, facsimile etc), online journals (90%), automated catalog system (85%), multimedia databases (85%) and support (70%) services rather than the other services.

Chun (2010) describes the cloud computing services focuses on users and affords powerful data storage and web service e functions in the resource construction and service of libraries. Based on the recent research achievements and practice abroad, the construction and service of libraries should be deeply studied about the information resource sharing, librarian ranks, and information facilities.

Wang (2009) describes the impact of IT in university libraries and the findings revealed that most of the library users were satisfied with their library information services on the IT impact; they still need professional assistance in their using IT for information search in the increase of e-resources.

Thibodeau (2009) describes the greatest change in library services between 1989 and 2005/06 was in the area of access to information, with 40% more of the respondents providing access to commercial online services, 100% more providing access to Internet resources, and 28% more providing training in database searching and use of information resources.

Maitrayee (2009) surveyed forty-nine libraries to get an idea about the current status and explored the possibilities of forming regional consortia with a mission to enhance access to information and knowledge through cooperation for benefit of the engineering communities. The focus is on librarians' perceptions/opinion on the formation of state level consortia; ICT infrastructure; users' needs; collection development policies and the services provided by engineering libraries to the community.

Malcolm (2008) indicated the evolving presence of institutional repositories in UK higher education and argues for the inclusion in institutional repositories of all
information that an institution wishes to make publicly accessible, including open educational content; recognition of the skills that librarians have to bring to the creation and management of repositories; and continuing national and international collaboration to make repositories more easily accessible and useful to researchers and others. While, Borang (2008) reported the status of ICT based services in libraries of academic institutions in Arunachal Pradesh. The libraries under the study were providing access to Internet, e-resources and consortium activities and OPAC of their own libraries.

**Tung (2007)** describes that the libraries always rely on Information Technology (IT) to systematically manage their huge books and journals (e.g. Digital Library (DL) and Web-Based Online Public Access Catalogue (Web-OPAC).

**Odero-Musakali (2007)** discussed the internet adoption and assimilation among university libraries in Kenya. The ubiquitous presence of ICTs in academic libraries, especially the internet and its potential impact on learning, teaching, and research, implies that any effort that would shed light on this technology is laudable.

**Silva (2005)** discussed the impact of Internet services and resources on medical research and teaching at McGill University Libraries. Dee (2005) reported that 36 (21%) of the academic health science libraries examined provide digital chat reference services; this was an approximately 6% increase over the 25 libraries (21%) located in 2002.

**Moyo (2004)** explored new services and delivery modes incorporating: electronic collections, such as e-books, e-journals and databases; virtual reference services, and other online services. Innovation of new services that are peculiar to the online/Web environment is the trend in modern electronic libraries.

**Naik (2003)** assessed the application of information technology components for library and information services in the selected university libraries of Karnataka during a period IT was making its inroads to the university libraries particularly with the support of INFLIBNET center.
Han & Goulding (2003) highlighted the three levels in the information & reference services, role of the reference librarians & user expectation, needs, some factors like cost, time, importance of the information in the digital era & useful tools for the providing the instance reference service to the library customers in the digital era.

Dee (2003) highlights the school libraries offer chat service to provide immediate, high quality information at the time and point of need to students, faculty, staff, and health care professionals.

Halub (1999) describes the librarians have found the provision of Web-based services to be a very worthwhile endeavor. Library users value the services that they access from their desktops because the services save time.

### 2.1.5 NETWORKING OF THE LIBRARIES

There is little in the library literature on networking, particularly among librarians at multi-campus institutions. Therefore, this literature review includes articles written by librarians as well as LISc professionals.

Nicholas & Sterling (2014) discussed about the Jamaica Libraries Information Network (JAMLIN), College Library Information Network (COLINET), The Social and Economic Information Network (SECIN), Online Computer Library Centre (OCLC) software. Also they stated OCLC and The UWI Mona Library agreed to allow LIAJA to use the Question Point base management environment of the Library for six months to provide the support that was needed for librarians in Jamaica to practice and develop their competencies.

Kumbhar (2014) in “Library Networking & Resource Sharing” define the concept of Networking, Objectives of the Library Network like to Improve resources utilization & services level, to enhance resource sharing to avoid duplication of the publication etc, also researcher highlighted the various international networks like UNESCO, IFLA,ARPANET, National Level Networks like INFLIBNET, INSDOC, IISC, DELNET, CALIBNET, BONET etc its services & role in Resource sharing.
Oliveira & Cianconi (2013) identify and analyze the actions in the Network of Libraries and Information Centers on Art in the State of Rio de Janeiro (REDARTE/RJ), in order to promote the production of new knowledge and implementation of new ideas, minimizing the difficulties met by information professionals.

Mizutani (2013) in his document highlighted the historical development of networks between museums, libraries and archives, and on the opening in 2004 of the Art Libraries’ Consortium (ALC), a union catalogue of art libraries based in the Tokyo metropolitan area which has been steadily expanding.

Islam (2012) discussed about varies networks in the country of Bangladesh like Bangladesh-INASP-PERI Consortium (BIPC), Library Consortium of Bangladesh (LiCOB), National Agricultural Information System (NAIS), Social Science Research Network (SSRN), Heath Literature, Library and Information Science Network (HELLIS), Development Information Network on South Asia (DEVINSA), National Science and Technology Information Policy (NASTIP), Bangladesh University Libraries Network (BULN), Bangladesh National Scientific and Library Information Network (BANSLINK) &Population Information Network (POPIN) in detailed & its role for the joint acquisition, digitization, for development of search engine, for establishment of e-journal center, & the development of digital resources jointly.

Siddike (2011) in his study stated that most of the respondents were unaware about library networking and resource sharing. Whenever they were explained about the merits of networking and resource sharing they were totally amazed and expected the library to take necessary initiatives regarding networking and resource sharing. Among the users, 20 % have given emphasis on establishing library networking and resource sharing system.

Mohammed (2010) in his research paper discussed the concept of networking, ways for the networking among the Islamic Sharia Court (LAW) Libraries in Nigeria, & Areas of Networking in the areas the researcher stated
cooperative acquisition, Inter library loan, reference & information services, technical services, exchange of staff, funding etc.

**Prasad Rao & Laxminarsaiah (2009)** introduced the SPACENET ISRO Libraries Network Developed by ISRO Libraries Branches spared over the India. Also in this paper stated that work flow of SPACENET, Infrastructure used for SPACENET, SPACENET Services etc. while, **Khalil & Khan (2009)** describe the importance of Library Networks in present era in Pakistan with special reference to the Medical field. In Pakistan the MELAP (Medical Library Association of Pakistan) play a vital role for fulfillment of information need also the researcher stated that no any library are eligible to purchase the all documents published in the world in this situation library networks are most important to connect the libraries each other for the resources sharing. However, **Kargbo (2009)** in his research document entitle “The Need for Networks among Public, Academic, and School Libraries in Metropolitan Sierra Leone” discussed the about library networks & its role in academic, public school libraries.

However, **Bordelon (2008)** highlighted the varies library networks in the field of business & economics. In this field the researchers discussed the role of following Networks for getting the information to the researchers, students & teachers those networks are Business Reference and Services Section (BRASS), Reference and User Services Association (RUSA), American Library Association (ALA) and The Business and Finance Division of the Special Libraries Association (SLA).while, **Bottorf & et.al (2008)** stated that Networking as an activity to enhance one's career is not discussed. Also the researcher said the library networks are vital aspects in 21st century for the librarians specially branch & regional libraries.

**Malviya & Kumar (2007)** in their study entitled “Networking and Consortia Management Techniques” stated the role of OCLC in networking of the libraries also they have elaborate the functions of the library network in different stages like initial stage, intermediate stage & advanced stage with characteristics.

**Odifuwa (2006)** sees network as “A network consist of two or more computers that are linked in order to share resources (such as printers and CD-
ROMs,) exchange files, or allow electronic communication. The computers on a
network may be linked through cables, telephone lines, radio waves or infrared light
beams”. While, McClure, Feldman, Ryan (2006) in their document discussed the
characteristics of successfully Networked public libraries & impact of the technology
on networking in the political system. However, Laxman Rao (2006) highlighted the
Role of NISSAT promoted and tried to provide some financial assistance for
developing these networks. They are ADINET (Ahmadabad Library Network),
BALINET (Bangalore Library Network), BONET (Mumbai Library Network),
CALIBNET (Calcutta Library Network), MALIBNET (Madras Library Network),
MYLIBNET (Mysore Library Network), and DELNET (Developing Library
Network).

Mirza (2005) defined the importance of the Library Network in Pakistan. In
this study particularly noted that the Objective, aims, Functions, vision, mission &
historical development of LABELNET (Lahore Libraries Network). Also it is
investigated that the role of LABELNET in resource sharing, future plans of this
library network etc. while, Khan (2005) elaborate the Pakistan Education and
Research Network (PERN) to connect all the public and private universities of
Pakistan via a high-speed network allowing real time transfer of audio and video,
multimedia-enabled lectures and remote research partnership through this scheme the
universities connection with PERN would get two megabyte (MB) of bandwidth. Also
the researcher stated the other library networks for build the libraries in a single
window these are Online Computer Library Center (OCLC), The Research Libraries
Information Network (RLIN), and The Western Library Network (WLN).while, Ani,
& Edem, (2005) discussed in their study about Nigerian university library network
(NULINET), academic libraries network in Nigeria (ACALIBNET), which will
eventually integrate all academic libraries in the country. ACALIBNET will then
provide a national link of all academic resources to the internet.

Dulle (1998) discussed the networking of agricultural libraries in Tanaza in
his result found that the most of the libraries suggested to developed the electronic
library network based on the low cost communication technology. Also he stated the
problems for establishing the library network among the agricultural libraries that is
budgetary provision, ICT infrastructure, Government help etc.
Brody & Nolan (1993) in their paper noted that the Pittsburg University developed CD Network for access the millions of e-resources in campus as well as out of campus branches. & this network is very popular in users, & in the future plan of this network is developed a software foe getting tactical information for the use of CD Network among the member libraries.

Lee (1991) in his report Identified the varies library networks in the papua New Guinea country. These are the Papua New Guinea Library and Information Network (PNGUNET) & its branches i.e Government & public Library Network, Research Library & Information Network, Engineering & technology Library Information Network, Medical & Health Library Information Network, Management Library & Information Network, Education & Information Library Network & its role of development in Union Catalogue as well as resource sharing in concern colleges as well as researchers.

2.1.6 RESOURCE SHARING AMONG THE LIBRARIES

Islam (2013) studied the 29 research, university libraries from the Bangladesh & concluded that most of the libraries are participated in the resource sharing network as well he found the librarians have positive attitude towards the resource sharing.

Breeding (2013) in his document entitle “Introduction to resource sharing” highlighted the conceptual framework, procedure of the Inter Library loan services, consortial resource sharing, & work flow of the ILS in detailed with example as well as its importance in the present era because none of the library able to purchase the all documents published in the world due to fund, space, maintenance etc. however, Akparoabore (2013) surveyed the 202 library processionals regarding to find out the motivational factors to knowledge sharing & it found that those librarians have 1-10 years experience used more technology for knowledge sharing.

While, Thakur & Gupta (2012) in their paper entitle “Knowledge Sharing: A tool for Networking” desried the Importance of the Knowldge Sharing in Short “ The more you share the more knowledge you gain”. Randor & Shrauger (2012) explained the three models for providing access to e-books include borrowing, buying, and renting. Also some barriers faced by librarians for e-book resource
sharing include reviewing local license agreements for e-books, gathering information on customer preferences, providing feedback to vendors and licensing librarians on customer needs. However, Islam (2012) discussed the status of the academic & research libraries regarding Networking & Resource Sharing in the present era from the Bangladesh & he highlighted that most of the research libraries having fully automated libraries comparatively academic libraries the same position found in the participation in the resource sharing system via consortia based as well as personally.

Hales (2012) reported the impact of electronic resources on resource sharing. In this document author explored the historical development of Inter Library Loan, Legal Barriers of Inter Library Loan, Future of the ILL & resource sharing with the help of electronic resources in the present era its impact & usefulness, need of the resource sharing. Crowe (2012) in his paper identified the historical development of the OCLC regarding implementation of Inter Library Loan system for resource sharing among the new countries. While, Ahamad & Ahamad (2012) examined the Knowledge Resource Sharing Among the Users special reference to Edward College, Peshawar & it is concluded that Books, Personal Collection, Journals, Photos etc agree for the these resources share to the each other’s respectively, main purpose of the resource sharing is class preparation, homework & keep up to date,76.66% users preferred e-resources to share.

Siddike (2011) studied the user’s perception regarding networking & resource sharing. In this study researchers studied the 6 university libraries from the Dhaka, Bangladesh. Out of the respondents it is found that 53% users satisfied with the fulfillment of their information need through Interlibrary Loan/Resource sharing, only 20% uses want to some development in resource sharing that means the university libraries from the Bangladesh having satisfaction level in the networking & resource sharing. While, Owolabi, Bamigboye & Agboola (2011) surveyed the 65 university libraries form the Nigeria country & it is found that 100% librarians are agree with share of resources through resource sharing system, the present status found that 92.3% libraries involved in this system for sharing the resources to each other, most of the libraries 83.07% used exchange of Publication method followed by Donation/Gift methods, & lack of fund, lack of cooperation & lack of the security
majors are the barriers faced by the university librarian in the resource sharing among each other.

However, Ossai (2010) stated the mission & vision of the consortia in Africa & Nigerian Country. The main mission of the Consortia is to promote resource sharing of the resources. Taha (2010) studied the three libraries & their sub campuses in the UAE. These libraries are High Colleges of Technology (HCT) United Arab Emirates University (UAEU) and Zayed University for Women (ZU). In this study it is elaborate that the importance of the building of library consortia based network. Igwe (2010) explained the resource sharing in the Information & Communication Technological Era, challenges facing Nigerian University Libraries with respect to ICT application and utilization for resource sharing, as well as to areas of library operations to which information and communication technology can be applied and utilized for resource sharing. While, Ali & et..al (2010) in their document explained the importance of the resource sharing for the institution, user, library, library staff in Nigerian country. Also they have discussed the steps of the resource sharing, barriers of the resource sharing, categories of the resource sharing & ways of the resource sharing used in the present era special reference to the Nigeria.

Rabinowitz (2009) evaluated the resource sharing performance in a academic health science library for the utilizing the Inter Library Loan System its impact on users satisfaction, it frequency for used etc.

While, Lawal, Bassey & Ani (2008) investigates the state of the art in resource sharing among law libraries in Nigerian universities. The study revealed that: every law library acknowledged the need for resource sharing with attendant benefit to the participating libraries; majority of the libraries often shared resources, while (49.15%) of the libraries shared resources rarely. Admittance was ranked first by (88.89%), on forms of resource sharing, followed by donation/gift (74.07%), while cooperative classification (3.70%) was ranked least. Only 6 libraries (22.22%) agreed that they had written policy on resource sharing. However, Beaubien & Stevens (2008) in their document explored the need of the rethinking regarding resource sharing. In this document authors highlighted the RRS Need; users need, Delivery Issue, Rethinking Resource Sharing Manifesto. Ameen (2008) in his document
surveyed 20 libraries from the top cities in Pakistan country & found the barriers of collection sharing in Pakistan & concluded technical, procedural, and psychological barriers in developing formal collection sharing.

Zou & Dong (2007) discussed historical development of resource sharing in the U.S. and China, particularly in the areas of print union catalogs and union lists, online bibliographic utilities, and interlibrary loan. The researchers also illustrated three models for Library Resource Sharing that is Centralized Model, Consortium Model & Gateway Model & its Impact in China on Library Resource Sharing. While, Bennett (2007) elaborate the importance of Online Public Access Catalogue in Resource Sharing among the Consortium partners Libraries & it is found that the Circulation statistics goes higher tremendously compare with without OPAC facility available period.

Rotich & Munge (2007) elaborate some of the reasons for failure have been: insufficient information resources for sharing, inadequate budget allocation to cater for the high costs of information resources, and the lack of appropriate communication infrastructure and enabling technologies to support any meaningful venture considering that most libraries in Kenya have been operating on manual systems.

While, Laxman Rao (2006) in his paper entitle “Knowledge-Sharing Activities in India” reported that the knowledge resource sharing group & its stated that in four group like NISSAT, NIC, Library Consortia in this INDEST, CSIR, UGC Infonet, Document Delivery Services & Centers & Interlibrary Cooperation among them.

Mirza (2005) identified the resource sharing scenario in libraries of Lahore & it is concluded that Lahore is the Hurt of Pakistan their having lot of Educational Institutions but the till there is no any good network developed as well as not done the any plan for the future development only in past 1990 one network started named LABELNET but current status not known in short at present there is no any formal resource sharing library network among the libraries in Lahore.
Graham (2000) surveyed The Western North Carolina Library Network (WNCLN) is a consortium of three libraries within the University of North Carolina system: Appalachian State University in Boone (ASU); the University of North Carolina at Asheville (UNC-A) and Western Carolina University (WCU) regarding ABC courier service for the document delivery & it is found that most of the teachers & Student not aware about the resource sharing concept as well as Inter Library Loan System Facility.

Mannan & Bose (1998) in their case study research paper analyzed the 25 Academic, Special & Public Libraries from the country of Bangladesh & it concluded that special libraries have good collection compare to academic & public library collections also special libraries promoted to the users regarding resource sharing finally in the attitudes regarding resource sharing is positive among the all types of libraries staff.


While, Sloan (1986) in resource sharing among academic libraries: The LCS Experience assessed the development of Library computer system in last five years in United States & it is highlighted that LCS the largest circulation system in the US with the largest resource sharing pool of currently held library material of any state in the US. also in this paper researcher stated the contribution of OCLC in the Resource Sharing, Interlibrary loan resource sharing in LCS.
2.1.7 CONCLUSION

As discussed above, the researcher has made a comprehensive review of the existing literature i.e. from the research works (Ph. D theses), the research papers presented in the Seminars/Conferences and the research articles published in the journals. Besides these research contributions as reviewed above, the researcher further has also attempted to take a review of existing literature published in some of the basic books pertaining to the components related the present research.

The review of literature it can be interpreted that no attempts have been made by the researchers so far to contribute on the present research topic undertaken by the researcher. So, the investigation presents the first attempt and it would be an original and significant contribution to the literature on the concerned subject. It is revealed through review literature that the area of present study is unexplored and no study related to this topic has been done.

2.1.8 REFERENCES:


