Chapter 2
Review of Literature

In this Chapter, previous studies were reviewed in relation to Awareness, Usages, Attitude, Budget and Satisfaction of users towards E-Resources. Information resources both primary and secondary were consulted for literature review. Efforts have been made to identify the existing literature on the research problem by scanning and browsing the original documents and consulting abstracting sources. The review of literature is organized and discussed in chronological order of the publication year.

Barooah and Bhuyan (1994) mentioned in an article that scientific and academic community of the North Eastern Region of India is handicapped due to non availability of adequate information base in the libraries. The authors felt that through cooperative efforts in acquisition and sharing of resources amongst the libraries could ease the situation to some extent. To strengthen the S&T information base of the region adequate initiatives from agencies like NEC, UGC and state / central government is a must.

Chakravarty and Singh (2005) discussed about different e-resources for Indian Universities in their research paper. According to them academic libraries in India are facing problems of shirking/static budgets and simultaneous exponential rise in journal prices. The need of the hour is to find a solution to this problem. UGC-INFONET and INDEST-consortium are two major initiatives that have come to rescue the academic libraries so that they can cater to the needs of academia depending upon them. They also provide the detailed budget of Punjab University Library that about Rupees 54.47 lakhs (INR) was spent on different full text e-resources.

Sridevi, Satyanarayana and Murthy (2005) in the study of e-resources for academic community in Indian scenario states that in India few Institutions felt for the importance and necessasity of developing consortia based subscription of e-journals for online access of information, to foster the research needs. The important institutions are – FORSA (Formula for Resource Sharing in Astronomy and

Astrophysics, Hyderabad), CSIR (Council for Scientific and Industrial Research), JCCC & VIC, Hyderabad, IGCAR (Indira Gandhi Centre for Atomic Research, Kalapakkam, Tamil Nadu), OUHYD Maths Consortium, Hyderabad, INDEST (Indian National Digital Library In Engineering Sciences and Technology, MHRD), SONET (Society for Networking and fo Excellence in Technical Education, Hyderabad), HELNET (Health Sciences Library & Information Network), UGC-Infonet etc. Again they said that e-journals can't replace print journals but provide many opportunities and potentials for academic libraries. Out of the advantages and disadvantages of e-journals librarians need to be able to identify and balance the factors that would make e-journals a success or failure in their libraries.

Raza and Upadhayay (2006) in their study in "Uses of e-journals by researchers in Aligarh Muslim University: A study" prepared a report in details on the uses of e-journals by researchers at Aligarh Muslim University. The survey reveals that all the researchers are aware of e-journals in AMU. Many research scholars are consulting e-journals from their departmental labs and computer centers not only for reserch purpose but also to update their own knowledge. The study also revealed several problems including lack of training and slow downloading. The researchers' feeling about the need of print journals as well as electronic journals are also discussed.

Libraries no longer are the storehouse of information, but rather a gateway to information and knowledge. Journals are basic input for R&D work and they are increasing three folds every 15 years (Chand, Nishy and Sen, 2006).

Shuling (2007) analysed the use of electronic resources in Shaanxi University of Science and Technology. The sample consists of 909 respondents of all types of library users. The study found that nearly 80 percent of respondents knew little about electronic resources. Nearly half of the respondents used both printed and electronic resources, followed by print periodicals.

A study by Kirlidog and Bayir (2007) showed the productivity of Turkish Universities between 1998 and 2003 using the Web of Science, the result showed

comparative annual increase in quantity of publications originating from all Turkish institutions, but the increase was remarkable after 2000.

Tenopir, Wilson, Vakkari, Talja and King (2007) that the principal reason of for using e-resource in seven US and Australian Universities was that more than 50% use e-resource for research.

Khaiser and Promodini (2007) surveyed the use of e-journals and database by the academic community of university of Maysore. The paper describes the use of e-journals and database subcribed from UGC-INFONET Consortium in the University of Mysore. The result of the survey revealed that use was marginal and the scientists in the Mysore University campus need constant guidance and training to maximise the use of electronic resources. The paper also discussed about the role of Information Communication Devision (ICD) of the Univesrity of Mysore in informing the users about the availability of electronic resources.

Oyelude and Ola (2008) in the study of "Budgeting for Library Technical Service in an Electronic Age" revealed that in an electronic age budgeting and technical services are of utmost importance. The technical services budget is the framework for running the core library activities, no matter how small the resources, a plan must be made and implemented. Libraries should embrace the principle of decentralized budgeting. Divisional, sectional and unit heads and subject librarians would then be involved in preparing and managing library budget.

Tenopir et al. (2008) in a survey of access and use of electronic resources in three countries – Finland, U.S. and Australia; found that productivity was correlated with the use of e-resources in Finland and U.S. but no correlation between between the e-resources and productivity was found in Australia. In specific terms, in Finland the total number of scholarly items published was significantly associated with the number of electronic article reading by the academic staff and similar result was found in U.S. the paper concluded saying that, the correlation between use of electronic resources and academic productivity may vary from country to country.

Costs of journals in the last twenty years have increased 226% in terms of dollars which may be further compounded by currency conversion. The budget of

libraries to acquire all such information resources also has increased by 110% during the same period but vis-a-vis the cost escalation of journals, there is a substantial mismatch of 116% (226% -110% = 116%) which has constantly been causing reduction in journals information base of the R&D institutions. Making matters further complicated is the ever increasing number of R&D journals, R&D workers, new disciplines, institutions and global competition. The CSIR e-Journals consortium was started in the year 2002 with one publisher, i.e., M/s Elsevier Science (Chand & Nishy, 2008).

Similar study by Galyani and Talawar (2008) studied the scholarly electronic journals at Indian Institute of Science. the survey was conducted through a questionnaire method. The result showed a growing interest in electronic journals among the users at Indian Institute of Science, Bangalore. Electronic journals were mostly used for research needs and PDF was the most preferred format. The fact that users had free access to electronic journals at all hours from their own computers seems to be the most appealing feature.

Use of e-resources is very common among teachers and research scholars of Guru Gobind Singh Indraprastha University and majority of the teachers and research scholars are dependent on e-resources to get the desired and relevant information (Sharma C. , 2009).

Barooah (2009) in his study discussed about the scenario of digital library at CSIR. In a special library environment particularly the information requirements are mainly from scholarly communications and access to wider knowledge base including R & D journals, technical reports, monographs, conference proceedings, patents, standards, theses etc. among which journals plays a major role. With the advancement of Internet and www technology there has been a shift from traditional print to electronic resources. But the shy rocketing escalation of subscription prices of scholarly journals compounded with hike in currency conversion rates related phenomena and non-commiserating growth of library budget is a very serious matter. The budget of libraries to acquire all such information resources also has an increase of 110% during the period 2000 to 2009. But vis-à-vis to cost escalation of journals,

there is a substantial mismatch of 117% (227% - 110% = 117%) which has been causing reduction in R & D information base of the institutions.

Borthakur, Gogoi and Barooah (2009) have brought out a clear picture of availability of electronic resources at a special library of Jorhat. The authors are of view that the resource base is not commensurations to the expectation of the user community.

Muhammad Tahir (2010) discussed the emergence to access the use of electronic information resources and facilities by humanities scholars at the University of Punjab, Lahore, Pakistan. The result corresponds with previous studies conducted in other countries. The humanities researchers still stick to the printed information sources but they pay good attention to electronic resources. Most of them have access to computer and internet at office and home. They are regular users of a variety of electronic technologies. Although faced with many problems the humanities researchers perceive that modern technology made their work easier.

Mukherjee and Kumar (2010) in "Use of UGC INFONET by research scholar of Banaras Hindu University, Varanasi: A case study" revealed that most of the faculty members are aware of using online resources and UGC INFONET digital library consortium where as a few are still not aware of consortium resources. Majority of the non users belong to social science and humanities and those users which have not undergone any formal computer training.

Another study reported that majority of the academics have computer skills that facilitate the use of electronic resources, although a majority have little knowledge of electronic resources, which was not a positive aspects of the findings. Mostly users use both electronic and printed resources, or only printed resources. Electronic resources are used for research and for preparation of lectures. Lack of knowledge and lack of facilities are the main reasons for not using electronic resources (Ansari, 2010).

Gunasekera (2010) described that since the University Library is committed to provide an excellent service to its users, it has to develop an ongoing dialog with the users. The study was undertaken to access library user satisfaction with current information services and resources while identifying user's needs. It was found that

the undergraduates are overall satisfied with available library resource, services and facilities. But it is further found that library resources and services are not fully utilized by the undergraduates. He also recommended that a comprehensive information literacy program should be conducted to promote awareness and use of electronic information resources. It was also recommended that the library should increase the acquisition of electronic information sources while continuing to acquire general and reference materials to fulfill the current research needs of the users.

Tripathi and Jeevan (2011) stated that "Digitization is becoming more common in library and information centers throughout India. India's former president Dr. APJ Abdul Kalam, has even entered into the discussion by remarking that a "digital library is where past meets the present and creates a future." With this current growth and interest in digital libraries and institutional repositories, it is useful to look at what is currently being offered and what is in development. Universities and other organizations are spending large amounts of money on setting up digital libraries and institutional repositories. Therefore it is important to find out how these are being used — and what kind of access they provide". This paper aims to provide an overview of digital libraries and institutional repositories in India and to evaluate their features using criteria established in other studies already conducted in India and internationally. This may help to assess how each of the digital facilities rate on an international scale.

In another study it states that the internet has attracted the attention of the users as an easy source for accessing information and e-resources is evident. However, it is also verified that only a sizeable number of users could frequently seek information from e-resources. Most of the users access e-resources for updating their knowledge on their respective subjects and for academic assignments. Furthermore, the college library should organize awareness and training programmes and seminars to educate the users on seeking information from e-resources and to maximize the use of library resources and services (Bhatia, 2011).

Ming-der Wu and Shih-chuan Chen (2011) discussed that graduate students are frequent users of electronic resources, particularly during the thesis writing period.

Graduate students of science and technology perceive electronic resources to be considerably more important to their research and studies than students of other disciplines. Few students use the meta search tools to retrieve heterogeneous electronic resources in the library. Very few students use alert service to obtain updated information.

Mahapatra (2011) in his study of PG students of Odisha University of Agriculture and Technology (OUAT), Bhubaneswar found that 59.17 percent users were satisfied with e-journals while 75 percent with CDROM and 54.16 percent with online databases. Banker and Gajbhiye (2011) found that the majority of users at National Research Center for Citrus (NRCC), Nagpur faced the problem of slow downloading (81.81 percent), non availability of full text articles (45.45 percent), and lack of training (27.27 percent).

K. G. Sudhier (2011) study find out the use of e-resource by students and research scholars of Arts Faculty in the University of Kerala. The study reveals that internet resources are the most used e-resources among the respondents from the Arts Faculty. It is also found from the analysis of the data given by the respondents that most of the Arts departments are not giving enough facility for the use of e-resources. A study of this kind is very useful for teachers, librarians and also for the parents. They can make use of findings in their policy decisions related to the collection development, particularly of e-resources in the library. The study gives interesting and important findings with regard to the various aspects of e-resources by the post graduate, M Phil students and research scholars or Faculty of Arts. The fast growth of information and communication technologies and particularly the internet and electronic resources have changed the traditional methods of research, storage, retrieval and communication of scholarly information.

Kalbande, Syed and Sonwane (2012) studied about the use of consortium for e-resources in Agriculture (CeRA) and the components of National Agricultural Innovative Project (NAIP). The important findings of the study reveals that all PG students and reserach scholars used internet based information resources, online journals, CD-ROM database and e-books were 72.16 percent, 61.17 percent, 56.01

percent, 50.86 percent and 30.58 percent respectively. Their preferred location to access the digital information is the University library centre and then home, internet cafe and hostel. Major problems faced while using CeRA were non availability of many resources, difficulty in locating relevant resources due to less expertise in search tools, low speed of internet, non availability of abstracting and statistics database, non availability of union catalogue of resources, difficulty in finding relevant information etc.

A study on Dhaka University Library confirmed that a large number of e-resources are made available in Dhaka University Library (DUL). The study also revealed that, a majority of the users use e- resources for their learning purpose and that the e- resources materials are available for users to use to their satisfaction. Nevertheless, the authors stated that DUL lack infrastructure facilities. Therefore, DUL should arrange more training programmes for users appoint trained professionals with ICT skills and accommodated user's opinions on subscribing new e- journals (Habiba & Chowdhury, 2012).

Rathod, Rashinath Rama (2012) focused on use and availability of open source and commercial software for library automation and repositories or digital libraries. According to authors, digital library development in India has been started very well. Focus has been on raising digital libraries. But it is very important to educate LIS professionals and for this adequate training, promotion and management if required. It is also needed that amendments be made in copyrights legislation to go well with the electronic surroundings. Some colleges or institutions have taken positive steps by arranging workshops to train LIS professionals.

Chandel and Saikia (2012) studied the challenges and opportunities of e-resources and declared that the advent of e-resources and their increased use have changed the library scenario from physical to virtual. Users' preferences are now more for e-resources and virtual libraries with little attraction for physical libraries. In spite of innumerable advantages of e-resources, there are certain problems relating to their acquisition, maintenance, management, etc. which needed collaborative efforts of professionals and all other bodies associated with creation, distribution and use of

these resources to establish sound practices and the models. Researchers in this paper highlights the issues, emphasizing the need to develop or procure ERMS which can integrate all these resources along with printed material to provide single window approach to all resources available locally as well as globally in a universal library.

A study by Saikia & Gohain (2013) on user guidance states that user guidance is necessary to help users meet their information needs and the creation of awareness of resources in the Library. This implies that the availability of Library staff to guide users, as well as organization of workshop as well as dissemination of useful information about e-resources in the Library influences utilization.

Octavia-Luciana and Madge (2013) described the current situation characterized by a true information explosion but at the same time by the low use of electronic information making it necessary at the level of this library an increased emphasis on the promotion of these resources among users, on a marketing approach to users, on their familiarization and on their training for using these resources. In these conditions the degree of uses of electronic information resources would increase considerably.

Velmurugan (2013) showed that e-journals and e-databases were the most used electronic resources by the respondents. The respondents learned about the electronic resources available in the Central Library from library professionals, followed by (26.01%) from the library notice board and (22.76%) from the institutional website. This study also shows the issues of respondents about using the electronic resources available at the Central Library.

Mittal (2013) conducted a study about the use of internet by students. He found that internet use is growing at a rapid rate as internet provides a vast amount of information at a high speed. According to this survey 88% of people are using internet and 83% of them are using daily. According to survey, respondents use e-resource mainly for their education purpose and research work and most of them are familiar with e-resources like e-journals, e-book, e-thesis which are helpful for them in their research work. They are not much familiar with other e-resources as they do not know how to access directly these resources.

The study on Redeemers University notified that the use of electronic resources had tremendous impact on the academic performance of the undergraduate students of Redeemer's University. However, there was a need for the users to acquire more skills in the use of electronic resources (Adeniran, 2013).

Prangya Das (2013) made an attempt to study the issues of electronic information resources access, awarenesss, and use by the reserach scholars of science departments of Berhampur University, Berhampur, Odisha with a view to survey the exposure of research scholars to electronic information resources. The study confirms that the science research scholars are aware of various e-resources i.e. – e-database, e-journals etc. Findings highlights the problems encountered by the users. She suggested that University should take initiative to provide paid e-journals through consortia.

Mittal and Bala (2013) states that majority of the students, research scholars and faculty members use e-resources in University and colleges. Majority of the respondents use e-resource for educational purpose and research work. They again states that due to insincere efforts of the universities regarding availability of e-resources, less awreness among the staff and students. So training programme should be held to enhance the knowledge of students and faculties about e-resources. Punjab University, Chandigarh has the maximum number of e-resources for their students as is has a separate budget for e-resource section.

Singh (2013) in his study on use of e-resources and services by users at Indian Institute of Management Bangalore states that e-books and e-research reports/projects are frequently used by most of the respondents. The findings reveals that majority of the respondents (97.30%) are well aware of e-resource service and facilities provided by IIM Bangalore Library. Resources brought out by Wiley Interscience are frequently used whereas those of Springer Link and Taylor & Francis are occasionally used by most of the respondents.

A study on the postgraduate students at Delta State University substantiated that despite of the availability of electronic information resources (EIR), the postgraduate students at Delta State University, Abraka, Nigeria lacked training on

how to access EIR to use them efficiently and effectively for academic research. Furthermore, the authors stated that students must acquire the necessary skills to find, select and use the different information resources. Orientation and training on the use of ICT and how to access the various databases should be extended to newly-registered students in every field of study at the institution (Okite-Amughoro, Makgahlela, & Bopape, 2014).

Sunil Tyagi (2014) assumed that e-resources are an accepted means of information resources in the present information society. With the advent of new resources available the need for adequate computer literacy and adeptness in using the existing sources has become the need of the hour. The study reveals the impact in terms of awareness and effective use of the available resources by the scientist. Cost, the level of importance, and the use of e-resources have dramatically increased in the digital library environment. Web Database, e-book, e-journals and other e-resource such as CD-ROM, DVD and micro materials have become important sources in libraries.

Dhanasekaran and Chandrakumar (2015) studied on usage pattern of e-journals among the faculty members of University of Madras. They found that awareness and convenience seems to be major factors in the selection of knowledge resource whether print or online. The result of the study indicates that most of the faculty members prefer e-journals as it can be accessed remotely. Users tend to select a limited number of e-journals which are seems to be pertinent to their research work. As libraries provide more online resources, librarian should take steps to make sure that user are aware of these resources and teach the user about the importance of use of e-resources. The success of e-journals and databases will depends on how well these various functions come together to produce a system of immediate and seamless access to e-journal information.

An article on use of e-resources in Punjab University Library, Chandigarh discuss the use of e-resources in Punjab University Library (Chodha, 2015). The study depicted that the e-resources are extensively accepted among the Post Graduate students and Research scholars of Punjab University in Chandigarh. 73.33%

respondents are fully satisfied and 14.67% are unsatified with the availability of e-resources where as 12% respondents did not comment.

Another study on e-resource of Indian Institute of Management(IIM) Libraries in India is also a very important article which discusses the importance and use of e-resources in IIM Libraries in India (Prakshe & Tayade, Study of e-resource of Indian Institute of Management (IIM) Libraries in India, 2015). In the study it was observed that 76.92% libraries have e-books, 8 among 13 (61.53) libraries had JSTOR. AV material was available in 53.84% and e-newspaper in 38.46%. Also 30.76% libraries have e-dissertations and 15.38% have e-thesis and e-magazines in their portal.

Akussah, Asante & Adu-Sarkodee (2015) brought forward that in their study all the four contracts (satisfaction level, preferred database, time and frequency, and level of awareness) of the electronic resources indicated a significant positive relationship with usage among the users. The authors also recommended among others that the institution in question should adopt more dynamic marketing strategies in order to inform and create awareness of the existence of the electronic resources, which can include fresh student's orientation, faculty seminars, mailing list to users, circulars, memorandums, selective dissemination of information and word of mouth.

According to Adeleke & Emeahara (2016), the low level of usage of e-resources, especially full text databases, among postgraduate students in the University of Ibadan revealed that they need to be more competent in using communication technologies, including computers and associated skills such as desktop publishing, database management, programming, and web page design to navigate in an electronic environment.

Kumar and Gopalakrishnan (2016) in their study revealed that e-resources are very important in the design of modern libraries because of their relative convenience in usage. The authors emphasized that the challenges of higher educational institutions can be met through initiatives in e-learning, by placing much emphasis on the critical role of e-resource utilization in modern academic libraries.

In a study on use of Electronic Resources in Academic Libraries and Role of Information Literacy discussed about the uses of e-resource in Academic Libraries

(Imsong & Kharbudon, 2016). They concluded that since information technology has become very fast, information can easily be accessed by just one click through various searching, linking facility. Users preference towards e-resources is raising and their demand for providing electronic information services in the library is increasing. Therefore libraries in particular are concerned in building and purchasing e-resources.

A study on E-resource uses pattern among Assam University Library under consortia service helps in understanding the pattern of use of e-resource in Assam University, Silchar (Bhattacharjee & Sinha, 2016). The study revealed that 77.6% respodents are aware of UGC Infonet and 63.2% are aware of DeLCON Consortium. They suggested that library should provide adequate electronic collections as per the needs of the respondents.

In a study of use & assessment of Library Resources in Mizoram University & North East Hill University gives the detailed picture of uses of library resources of these two universities (Mishra & Sailo, 2016). The study reveals that majority of the respondents 70% prefer to use print sources followed by 16% who take the option of web and 14% use online resources. From the analysis of users satisfaction, it has been found that the services provided by MZUCL and NEHUCL are found to be satisfactory. The collection development of North Eastern Hill University Central Library is far better than collection development of Mizoram University Central Library.

Kashyap (2016) in the comparative study on use of e-resources by University faculty members of Madhya Pradesh and Chattisgarh reveals that 72% University faculty members from Madhya Pradesh access e-books as compared to 84.1% University faculty members of Chattishgarh. Again 74.5% University faculty members from Madhya Pradesh access e-journals as compared to 92.5% University faculty members of Chattishgarh. He also give some suggestion to overcome the problems.

Bhat and Ganai (2016) studied on impact of e-resources on budget appropriation in Agricultural libraries of Northern India. The findings of the study revealed that yet major chunk of the budget alloted year to year to agricultural libraries of Northern India is utilised for acqisition for print resources (PIRs), while endorsing a

second priority to electronic information resources (EIRs). At an average amount of Rs. 18.17 Lacs is spent by each library in each year (2009-2013) for procurment of print books as opposite to it an average an amout of Rs. 2.18 Lacs spent per annum per library for subsription of e-books. Again the major chunk of the alocated budget is spent on printed form of journals as Rs. 56.00 Lacs as opposite to Rs. 1.32 Lacs spent at an average on subcription of e-journals per annum per library (2009-2013). It is also found that the libraries are not being provided with adequite budget, which probably is the main reason behind undesirably low priority endorsed presently towards subcriptions of EIRs, espicially the e-books. They also suggeted to made available fund to libraries withput any discrimination and well in proportion to user strength of each libraries. A well articulated and qualitative e-book consortium need to be established in India particularly to meet the requirements of the students, scholars and the scientists coming under the domain of agriculture and allied sciences.

Kaur, Singh and Brar (2017) in their reserch paper on use of the internet for reading a case study of Punjabi University, Patiala states that ICT has made a profound impact on all the aspects of society. Most of the users frequently uses the Internet as the mobile phones is the most popular device to use the internet. The search engines specially Google is extensively used for accessing information. The HTML is the most preferred format for online reading. Though e-publishing industry is gaining momentum, the print and online format will coexists. The electronic format is only an enhancement and not a replacement of the print format.

Gautam and Sinha (2017) in the study on use of electronic resources among reserch scholars and faculty members of University of Allahabad, Uttar Pradesh, India states that the library users of younger generation have adopted the internet, online / offline electronic resources or web resources very quickly and at the same time the elderly library users are not comfortable in using internet, social media and e-resources. In order to make the optimal use of the e-resources available for the university library users through consortia, extensive and frequent users awareness programmes needs to be organised by the library in collaboration with INFLIBNET and other agencies.

A study on knowledge management and development of libraries, states how e-resources become an essential part of modern library services (Choudhury, Rahman, & Barooah, 2017).

In a study on social networking sites it reveals that the frequent use of facebook, Twitter, YouTube among others provides alternatives to the use of libraries. This suggests that people may be using e-resources for academic purposes but not directly from libraries (Prabhakar & Rani, 2017).

Tintswalo Pascalis Tlskula and Madeleine Fombad (2017) discussed about the use of electronic resources by undergraduate students at the University of Venda, South Africa. The findings revealed that the level of usage of these resources by undergraduate students is elementary and limited to SABINET and EBSCO host. Undergraduate students level of awareness of the different electronic resources is low. They confused electronic resources to web-based internet resources. It is also revealed that the awareness and training in the use of these resources is still generic, as training is mostly a once off orientation at the first year.

Pal and Barman (2018) in the study on usages of e-journals in Gauhati University under INFLIBNET states that the e-journal facility under INFLIBNET consortium has brought another opportunity for the university library to serve their users with high quality content. E-journal consortium of INFLIBNET was introduced in Gauhati University since 2004. Although research study has already identified that at the initial years the usages of e-journals was not satisfactory but with the fulfillment of different identified conditions of the earlier study, there has been a drastic change in usage of e-journal facility. The study found that in the year 2012 there was an exponential growth and from the period 2013 to 2017 there was a balance growth in the uses of e-journal facility of Gauhati University. The study found that the maximum usage of the e-journal facility is in the month of March. It further found that the period from January to June are having the maximum usages of e-journals as compared to the period July to December.

Choudhury, Rahman and Barooah (2018) studied on ICT applications in special libraries of Assam. In the study it reveals that the ICT applications has changed the scenario of special libraries in Assam in a tremendous way.

Kavitha (2018) in a study on knowledge and usage of electronic resources by SC/ST research scholars and PG students among Periyar University affiliated colleges revealed that more number of research scholars and PG students were frequently using the e-resources for class assignment and preparation for examination. Moreever most of the users preferred to download the e-resources as in PDF formats. However some of the institutional based problems are being faced by the users. The main problems faced by the users while accesing e-resources are slow network connection, electricity, advertisements, licensing, scattered data, authentication and limited information. The study also indicated the infrastructures and training programme should also be revised as per requirements.

Kumar and Singh (2018) in the paper on online information seeking behaviour of faculty and reserch scholars on e-resources of Babasaheb Bhimrao Ambedkar University, Lucknow, India said that maximum respondents have good awareness and acquentance with e-resources, which is a healthy sign towards seeking of information and utilizing e-resources. The study reveals that maximum faculty seeks information for their study / personal assignment i.e. 34% where as 46% of research scholars use it primarily for reserch work. The study represents full text e-database are become more popular type of e-resources for seeking information through e-resources amongst 22% faculty and on the other hand e-SodhSindhu / Consortium is most popular e-resource among 27% of research scholars. The study explores that majority of respondents i.e. 39% of faculty faced problem of lack of time and 31% of research scholars faced a problem of poor connectivity of internet.

Devee and Das (2018) in the book "North east India A comprehensive Geography" states that the North East Inda is located at a crossroad between three major economics – East Asia, South Asia and South East Asia. The Geographical advantage has however not really helped into the region's economic development. Despite the high growth in India's trade with South Asia and China in the recent past

the region's role has been marginal. The North East Region has not been able to integrate and benefit from the various regional and sub regional initiatives that neighbouring countries have created. The study of North East India is necessary to understand the region as a home to diverse ethnic stock.

Balutagi, Lamani & Kumar (2018) discussed the use of electronic information resources by faculty members of engineering and technology institute libraries in Gujrat state. The study through light on the best practices to address the contradictions and to solve the problems by enginering institute libraries. The study examines the impact of elecronic information resources which have a positive impact on teaching and reserach of faculty members of engineering and technical institutions.

Sharma (2018) carried out her study on the use of e-resources by the faculty members and students of Swami Shraddanand College, University of Delhi. The study found that the majority of the users (with several forms of e-resources) are aware of the availability of e-resources. The result revealed that 47.78% of respondents want to access only electronic version whereas 32.78% users want to read the printed resources but 19.74% respondents want to use both electronic and printed versions. The analysis revealed that 73.88% of the respondents chose Delhi University Library System (Central Reference Library, Ratan Tata Library and Central Science Library) followed by 50.55% who accessed college library for e-resources further followed by 37.77% who accessed computer lab and 25% who approached other places where they got the facility to access e-resources.

Ahmad, Ahmad Dar and Mughal (2019) discussed the uses and perception of e-resources by undergraduate students in the degree college of Baramulla, Jammu and Kashmir. They suggests that college libraries need to market its services, particularly e-services among the students as the large percentage of users are not fully aware of e-resource and services available in their libraries.

Lavanya (2019) in her paper "Use of electronic information resources among research scholars in Alagappa University, karaikudi: A case study" analysed the use of electronic information resource among Research Scolars in Alagappa University. random sampling method was used in the study. According to te study 36.90%

respondents uses e-resources daily, 42.86% respondents use monthly. 46.43% respondents are satisfied with the use of e-resources.

Bellary and Surve (2019) in their studies on "E-Resources are boon for the teaching and research work of an academic institute : A survey on uses and awareness of e-resources by the NMIMS (Deemed University) engineering faculties, Mumbai" showed that 85.71% faculty memebers access to different e-resources for research and learning purpose.

Rahman, Choudhury and Barooah (2019) in their study investigated about the management of collection in university libraries of Assam in ICT environment. the study covered the main criteria like library organizational structures, collection development policies, document selection, supplier selection, licensinging policy, technical processing, organisation of resources, access to collection, library services collection maintenance etc. Though the e-resources considered as a vital component of university library collection, till now some of the reputed university library not in a position to purchase the e-resources and though some university library have their e-resource collection till now that are not fully organized due to various factors like insufficient fund, inadequite trained staff in handling computers and software packages, and administrative concerns etc.

Saikia and Barooah (2019) in their study discussed about the impact of ICT in College Libraries of assam for promoting Higher Education with special reference to Lakhimpur district. The study showed that out of eight selected colleges of the district most of the collge libraries are fully or partially automated. All the college libraries are under Dibrugarh university and only 37.5% of the college library has made internet access facility to the readers.

Onuhoha & Yunisa (2019) of University of Nigeria – Nsukka, discussed about the challenges associated with accessing and utilizing library electronic information resources by Economics Education students in South East Nigeria. According to the study there were a number of challenges that were identified commonly which include slow internet speed, struggle in finding related information, surplus of information on the internet, slow speed of the internet affected the speed at which information is

retrieved, limited computer system, power outage, lack of ICT skills, insufficient database on Economics education, expensive internet subscription, limited access to e-resources, and poor networking system. Based on the challenges appropriate strategies were suggested to solve the identified challenges. The strategies include an increase in bandwidth, provision of stable power, organize training and workshops on ICT provide more user friendly platform, first year students should be introduced to computer training among other strategies. Based on the findings the researchers recommended that government and other non-governmental organizations should partner with library management to make cater to these challenges to bring about a sailing experience in the effective use of e-resources.

Mani, Vijayalakshmi, Thirumagal and Priyadarshini (2019) in their study on usage of e-resources among the students of South Tamil Nadu with special reference of Manonmaniam Sundaranar University, Tirunelveli, Tamil Nadu revealed that 78.3 % respondents are aware and used e-resources followed by 63% are using e-resources in the frequency of 2-3 times in a week, 53% are using e-resources for research purpose, 59% are access e-resources in the library, 17.3% are using e-resources to improve professional competences, 39% of the respondents felt that lack of training as a key constraint for the effective use of e-resources, and 35% of the respondents are highly satisfied with the present e-resource collection of the library. The study concludes that library \plays important role in the usage of e-resources by its users. Library needs to facilitate e-resource and give training for the effective usages of e-resources by the users.

Esh (2019) in his study on usage of e-journals in University of North Bengal under INFLIBNET (2012-2018) analysis with INFISTATS reveals that e-SodhSindhu consortium provided by INFLIBNET has brought another opportunity for the university libraries to serve their users with high quality content. This change needs to be further evaluated to identify the actual usage by INFISTATS (usage statistics portal for e-resources). It identifies the year in which the maximum and minimum use of e-journals is found, and JSTOR & Science Direct has the maximum use percentage (55percent). The study also found that seven e-journals had the highest percentage of

use (91 percent) indicating the extensive use of e-journals facilities by the user community of the University of North Bengal.

Meena and Balasubramanian (2019) in the study of utilization of e-resources by the distance learners of Madurai Kamaraj University, Madurai, Tami Nadu analyses the awareness and usage of the e-resources by the distance learners of Madurai Kamaraj University. The users of resources and services like the internet, IT skills in Madurai Kamaraj University study centre, Madurai are employed for the study. Out of 216 respondents 56.01% respondents have very good awareness on the ICT based resources and services, 25.46% respondents have good awareness and 18.15 respondents have poor awareness on the ICT based resources and services. They also recommended that all information should be transparently displayed in the library premises i.e. counseling, practical schedule, recently published books as many of the learners come from different parts mainly from remote villages.