Chapter 2

Review of Literature

2.1 Introduction:

Literature review is an important act of researcher and has to be performed when researcher undertakes research study even at any level. Review of literature on the topic is nothing but a basic work or homework to be undertaken vigilantly and in depth. It is not only to look in to what research has been done in the past on the topic, but appraises, encapsulates, compares, contrast as well as understand the weakness in the studies to correct by the researcher suitably using literature published in different forms like books, research articles, scholarly communications, and other sources in whatever form it is available. Past literature is the mirror of present and future, which helps to develop a thorough understanding and insight into previous research works that relates to the present study. It is the tool, which provides a proper guideline and idea to the researchers in many studies hence, literature related to the research topic, is essential. Review of literature for research helps in performing the systematic study based on authentic literature.

2.2 Why Literature Search?

Literature search or review helps researcher to create links to literature and develop steps while writing research report. Literature review is important due to: (www.owlcation.com/misc/literature_review)

- Literature review create rapport with audience and avoid incidental plagiarism
- Helps researcher in sharpening the focus on research topic
- Literature review is an essential task in any research and demonstrate that researcher is well aware of the topic and subject area
- Justifies the reason for undertaking research
- Allows to support theoretical framework and learn from the past experience of scholars
- Helps in Deciding methods to be adapted and shaping the research study.
• Highlights missing areas in previous research and improve in the research topic

Hence literature review is an essential part in the research study.

2.3 Facets for Literature search:

For literature search, researcher has identified following sub topics to support the main study. The literature published in different forms of literature and formats are searched, compiled, organized, synthesized and used in the research study for supporting the facts. The facets are:

1. e-Resources and use of e-Resources
2. e-Resources in engineering sciences
3. e-Resources in medical sciences
4. Importance of use, user and ISB studies
5. Use of libraries by academics
6. Related studies on the topic

The data collected from different sources is organized in these facets.

2.3.1 e-Resources and Use of e-Resources:

An electronic resource is any information source that the library provides access to them in an electronic format. The library has purchased / paid subscriptions to many electronic information resources in order to provide access to users free of charge. e-Resources include full-text e-Journals, newspapers, company information, e-books, dictionaries, encyclopedias, economic data, digital images, industry profiles, market research, career information, databases, internet resources etc. in e-forms only.

Library of Congress in it collection development policy defined “electronic resource” as any work encoded and made available for access through the use of a computer. It includes electronic data available by (1) remote access and (2) direct access (fixed media). In other words: Remote access (electronic resources) refers to the use of electronic resources via computer networks. (AACR2, 2002 edition; glossary). Direct Access (electronic resources) refers to the use of electronic resources via carriers (e.g.,
discs/disks, cassettes, cartridges) designed to be inserted into a computerized device or its auxiliary equipment. (https://www.loc.gov/acq/devpol/electronicresources.pdf)

"Acquire" refers to any electronic resource, remote or direct access, which (1), the library provides access to through official contractual, licensed, or other agreements (any of these electronic resources may or may not be owned by or housed at the library) or (2), the library receives through its acquisitions processes (e.g., purchase, gift, exchange, copyright deposit, ISSN requests, and transfer). "Collect" refers to electronic resources owned by the library and selected for the permanent collections. It may also include resources stored elsewhere for which the library has permanent ownership rights. "Link" refers to pointers from the Library's web resources or bibliographic records to remote access data. "Archive" refers to that process of maintenance in a secure and permanent digital repository managed by the library or for the benefit of the library.

Karina and Anthony (2011) defined “e-Resources in the broadest sense, which includes Virtual Learning Environments (VLEs), platforms (such as XCRI), research software’s (such as NVivo, Endnote or SPSS), and other e-resources (such as the use of Web 2.0 technologies, social networking technologies or mobile phone technologies) as they relate to systems used to aid learning, teaching, administration or management.” Sharma (2009) in his article discussed the impact of e-Resources on users and opined that today availability of e-Resources in a university (academic) library is very common. But their proper and maximum use is a matter for discussion. In his study author has also highlighted the use of e-Resources, preferences and importance of online / electronic resources among the teachers and research scholars.

A number of relevant studies have been carried out on the use of e-Resources by teachers, students and research scholars of universities and research organizations. Seventy-eight percent of the respondents feel that the use of UGC-INFONET e-Journals has created high dependency value on their research work and they need current article alert services and electronic document supply services (Madhusudhan 2008). Kaur and Verma (2006) find that users generally use all the sources available to them regularly using e-forms, like CD ROMs, online databases, Web resources and audio/video tapes in addition to print.
The definitions on e-Resources indicated that the information resources are in digital or electronic form, which can be acquired or remotely accessed using networks and also provided link to use them. e-Resources are playing important role in archiving information anywhere and accessed or acquired as per need.

IFLA (2012) in its document “Key Issues for e-Resource Collection Development: A Guide for Libraries”, states that e-Resources are: electronic resources represent an increasingly important component for collection building activities of libraries. “Electronic resources” refer to materials that require computer access, whether through a personal computer, mainframe, or handheld mobile device. They may either be accessed remotely via internet or local networks. Some of the most frequently types of resources used by users are:

• E-Journals
• E-books
• Full-text (aggregated) databases
• Indexing and abstracting databases
• Reference databases (biographies, dictionaries, directories, encyclopedias, etc.)
• Numeric and statistical databases
• e-Images and e-Audio/Visual resources

Summary:
Different studies and opinions of scholars has shown that the use of e-Resources is very common now a day’s among the students, teachers and research scholars and majority of the users are dependent on e-Resources to get the desired and relevant information on the topic. But practical use of e-Resources is not up-to the worth in comparison to investments made in acquiring these resources; secondly infrastructure and training programs also necessary to develop awareness of availability of resources to users for enhancement of use. It is observed that the availability of e-Resources on the campus is sufficient for all the disciplines but the infrastructure to use these resources is not adequate and can hinder the ability to meet the requirements of users as well as users are unaware of availability of resources in e-form.
A) Literature Review Prior to 2000:

Different research studies presented on the electronic resources expressed need for electronic resources for research studies as currency in information is necessary. e-Resources are used by the users along with print resources, due to its merit.(Schwarzwalder, 1998). The appreciation of information depends on user's working surroundings and need of the resources available in any form either print or digital. The importance relies on the quality of information and quick accessibility (Olsen, 1994). Few studies also pointed out thrust importance and relations between the working behavior of the users, the demands of the electronic resources, products, and the technological capability of the users (Stewart, 1996; Pullinger, 1999; and Mahe, Andrys, and Charton, 2000).

At times, there were technical barriers in using e-Resources more effectively due to unawareness of its availability and infrastructure facilities (Meadows, 1996). It was also thought that the lack of ‘serious gathering’ in particular subject areas was a reason for the lack of enthusiasm of many academics and researchers to use electronic resources (Jenkins, 1997; Tomney and Burton, 1998; and Pullinger, 1999). A study (Rogers, 2001) at Ohio State University, in conducting survey of use of electronic journals indicated that, information community uses more e-Resources. Qualitative figures on usage of e-Resources (Woodward, 1997), suggested that academic staff and students not happy reading on screen, particularly when the quality of the image is poor, and that the quality of interfaces and the ease of use would need to improve if electronic resources were to be used more.

Most of the research studies do not tackle how the journal / periodical literature was used by academic community, researchers and students in the various disciplines previous to the introduction of electronic resources trials, and some of the differences found (Pullinger, 1999) might be recognized to disciplinary differences (Tomney and Burton, 1998). The power of these disciplinary disparities may be seen in the differential uptake of electronic information products (Kling and McKim, 2000) and different publishing models (Kling, Spector, and McKim, 2002), with many of these models trying to deal with the serials calamity of towering subscription money (Halliday and Oppenheim,
A appraisal (Tenopir and King, 2002) of electronic resources studies from 1997 to 2001 also examines the significant variation among control in reading habits, together with an apparent overall boost in the percentage of electronic as opposed to print resources which are used.

Libraries have been using various methods for promoting electronic resources to their users and methods used include straight access from the Online Public Access Catalogue (Chaney, Bulliard, and Christiansen, 1999). Another common universal survey of users who were not associated to any electronic resources trial (Pedersen and Stockdale, 1999) found that attitudes diverged between those who would be pleased to see all journals in electronic format and those who certainly did not want all their journals in electronic format. The problem of giving a proper interface may involve higher collaboration between the subject specialist staff and the organization staff (Roes, 1999), and new staff support jobs could be needed (Ashcroft and Langdon, 1999).

One of the major cross-disciplinary studies (Rusch-Feja and Siebeky, 1999), with corresponding approach and usage data, hinted the priorities of users for an incorporated access system, and some indication of a swing in attitudes. Users claimed that, if budgetary constraints were there, they could manage without print resources as long as digital access to the same resources was given. An American study (Lenares, 1999) pointed out that reluctance of some academics to use electronic resources is simply due to not having required electronic resources in their respective field.

In some instances, the print version may be there alongside other articles that are also peer-reviewed but only available in electronic format, and assessment of citation patterns (for pediatrics and pediatrics electronic pages) showed that for articles published in 1997, 1998, and 1999, the digital articles received less citations than the print articles (Anderson, Sack, Kjrauss, and O'Keefe, 2001). Although authors (and their tenure committees) were pleased to have such articles integrated in the list submitted to the committees, electronic publications still tend to be viewed as second-tier to a limited, although possibly declining, extent.

But latest research evidence showed that liking for print journals have been decreased after the introduction of electronic journals and if proper infrastructure made available for
access (DeGroote and Dorsch 2001) then no issues in using e-Resources comfortably. Electronic journals and databases enhance the effectiveness of use by user. Users spend relatively a lesser amount of time in searching for the resources and journal articles. Computer literacy of users does not play a significant role in determining electronic journal usage (De Groote and Dorsch 2003). This suggests the easiness of navigation and explores facilities provided by online databases for locating journals. Outlines of database use in academic libraries, mainly by time of month, day of the week, and time have been accounted by Tenopir and Read (2000). Although dependable usage statistics on electronic resources continue to increase and it is clear that library users are growing in numbers and are opting to sight and print articles off the web rather than photocopy from printed issues. It is clearer from the review that fast changeover is taking place and amount of patterns of use of resources in electronic format are increasing in use of their print counterparts and amount of usage of electronic resources expresses use patterns that are rarely different from their print counterparts.

**Observation:**

It is observed that the use of print media was more popular and e-publications just initiated by the publishers. Developed countries have organized the infrastructure suitable for using e-Resources but in developing countries due to lack of infrastructure use of e-Resources was limited to special or research institutes. The preference is given to more for the print than e-Resources. All the educational institutes were subscribing to more print and e-Resources both. Since print literature was available in bulk as compared to electronic, scholars tend to use print more. But now e-Resources are growing fast and in every area the ample of information is available on net in e-form as well as subscribed e-Resources economically through vendors. The use of e-Resources enhanced more after 2000 because the infra and technological equipments are available at affordable cost and e-Resources are available in abundance.

**B) Literature Review 2000 onwards:**

Tenopir (2003), in his study entitled “Use and user of electronic library resources: an overview and analysis of recent research studies” analyzed the result of over two hundred
studies on the usage of electronic resources in libraries published from 1995 to 2003. Results drawn from his study indicated that the electronic resources have been rapidly adopted in academic spheres, though the behavior varies according to the discipline.

Dhanavandan et al (2012), in his study of use of e-Resources in engineering colleges discuss the role of e-Resources in engineering and pointed out that electronic resource is one of the emerging environment in libraries and information communication in the competitive service. e-Resources usually consist of e-books, e-Journals, articles, newspaper, thesis, dissertation, databases and CD-ROMs, which are likely to be the alternative to the print media. Emerald, Ebsco, Scopus are some of the examples of online databases. All updated information is published in these e-Resources. The familiarity and use of electronic information resources in the libraries for rapid development is necessary and important e-Journals.

Shrestha (2008), in his research study on student’s use of library resources pointed out the behavior of use of resources by students of higher education. Author has also indicated the importance of resources both print and electronic in education sector. The resources are used for various purposes by the students of academic sector. In addition to this role of libraries are discussed in assisting users in using resources more effectively. Umar (2015) in his research study assessed the use of e-Resources by LIS students, who are the future librarians. A very good study reported by Umar. Researcher has used survey method and gathered the data and analyses the findings and suggested views to enhance e-Resource usage.

Sinha, M (2011), in his study discussed the role of use of e-Resources made available through INFLIBNET project to academicians for various uses and stated that traditional functions of libraries had undergone various changes in present century of e- resources, and have a great importance in libraries and amongst the library users. The researcher made an attempt to evaluate the usage pattern of electronic resources made available in the Assam University Library under the UGC- INFONET E-Journals / Digital Library Consortium of UGC/INFLIBNET amongst the research scholars and teachers of North Eastern Region of India with special reference to Assam University, Silchar. The faculty, research scholars and students are mainly drawn from different parts of North Eastern
States and few from other parts of the country which represent truly cosmopolitan population. For that purpose, survey method has been adopted by the investigators, which comprises of administration of questionnaire, observation of the participants, and interview of some of the participants for knowing the opinion of the respondents in respect of usage of electronic resources (e-Journals/ e-books/databases) for their academic and research activities.

Lohar and Roopashree (2006), studied the use of electronic resources and discussed how the electronic resources are improving the academic carrier of the faculty and what are the problems that are faced in using the electronic resources has been the academic willingness of the users. The analysis based on the faculty members only except the student and staff. Monohar (2007), analyzed the internet usage of agriculture scientist and impact to internet users and other e-Resources on academic efficiency whereas Sornam, Monahar and Mathew (2007) studied to identify the different types of electronic resources used by the students of Kerela Agricultural University, time spent, problems faced by the users. Manohar find out the internet accessibility of agriculture scientists in the college of agriculture and analyze impact of internet, e-Resources, print or electronic media on academic efficiency. Singh (2009) examines the search pattern of online journals among the faculty members, research scholars and post–graduate students to collect the required data. The study revealed that the majority of users are aware about the availability of online Journals. It was found that users faced problem while using online journals and e-Resources.

Adegbore (2011), in his study discussed on e-resource use and pointed out that technology has penetrated in all areas of life and the use of information and communication technology (ICT) is commonplace in the 21st century. Libraries use ICT for better service and satisfying diverse user needs. Libraries have transformed into digital and virtual libraries where books, journals, and magazines have changed into e-books, e-Journals, and e-zines. These facilities increased the global dissemination of information. Electronic resources are easily accessible in remote areas due to use of ICT. Electronic resources solve storage problems and control the flood of information. Print sources are being digitized by the organizations based on use. The rapid growth of new...
technologies has changed the communication process and reduced the cost of communication for individuals. Electronic information sources can be seen as the most recent development in information technology and among the most powerful tools ever invented in human history. Electronic information sources are becoming more and more important for the academic community (Kumar and Kumar, 2008).

Ali, Naushad (2005), in his work “The use of Electronic Resources at IIT Delhi Library; a study of search behaviors’ carried out on the use of electronic resources by teachers, students and research scholars of universities and research organizations. Seventy-eight percent (78%) of the respondents feel that the use of the UGC-INFONET e-Journals has created high dependency value in their research work and they need current article alert services and electronic document supply services.

Alwarammal, R., Sivaraj, S & Madasamy, R (2009), in their research entitled “Promotion and usage of electronic resources by the students and member of faculty in Engineering Colleges in Tamil Nadu, India: An Empirical Study” in which studied the engineering college students and faculty members’ usage of electronic resources in Tamil Nadu, India and found that the 50% of the faculty and students were aware, and also actively used the electronic resources. Most of the users preferred the printed textbooks for academic curriculum. They preferred electronic journals and databases for quick searching and downloading for their project work, presentation of conference / seminar, research work and continuing professional development.

Asemi, A (2005), in his study “Information searching habits of Internet user: A case study on the Medical Science University of Isfahan” concluded in his study that all the respondents were using the e-Journals frequently because all faculties were provided connection to the E-Journals. It was revealed that the researchers of the university were getting quality information through the e-Journals. 55% percent of the respondents searched for scientific information through the e-Journals.

Dadzie, (2005), in his study entitled “Electronic resources: access and usage at Asheshi University College” investigated the use of electronic resources by students and faculty of Asheshi University, Ghana. He investigated the use of electronic resources by students
and faculty of Ashesi University Ghana to determine the level of use, the type of information accessed and the effectiveness of the library’s communication tools for information research and problems faced in using electronic resources. Results indicate that 85% respondents used the internet to access information, and respondents mainly accessed information in the library by browsing the shelves.

Ganesan, and Narmada, (2011), studied the “Impact of e-Resources in engineering college libraries in Anna University, Tricy: A case study” and their study shows the reading behavior of faculty and students. They are giving more importance to electronic versions of documents with the availability of more resources through the internet with high speed connectivity. The demand for e-Resources in their specific subject is increasing. Accordingly, the librarians have to evolve more scientific methods to develop a standard collection of e-resources along with the printed documents in accessing the requirements of the academic community.

Khaiser, Nikam., and Pramodini, (2007), in their research “Use of e-Journals and database by the academic community of University of Mysore: A survey’, found that the level of satisfaction among the respondents regarding the use of e-Journals and database offered at UGC- InfoNet indicates satisfaction from the use of e-Resources.

Koganmuramath, M (2010), studied the “Information Needs and Information Seeking Behavior” and he explored the degree to which specific electronic resources are significant. The study found that electronic information resources play a significant role in the information seeking pursuits. Among the types of internet information sources e-Journals, databases, and the web are ranked first, second and third in importance, followed by online catalogue, portals and listserv. Social Science researchers use electronic information resources more often than humanities researchers. Doctoral students and professors have a higher rate usage of electronic information resources. All the users surveyed utilize electronic resources for their research at least some of the time, and continues to use them as a means of gathering information. Thus author highlighted the use of e-Resources by the different categories of users.
Observation:
It is observed that since 2000 onwards slowly the use of e-Resources is increasing as more publishers are migrating towards e-publications. Prior to 2000 more use of database searching of information was popular and the hard copies of the articles were procured separately. But slowly the use of e-Resources becomes more popular in academic sector. However after 2010 more efforts towards use of e-Resources were initiated by the publishers and subscription to the e-Resources were managed through consortium policies. This enhanced the use of e-Resources in recent years. The availability of e-Resources over the net are:

- VLE (Blackboard and Moodle), Student record system, Exams database, E-mail
- CM Education, Info Trac, Facebook, Twitter Emerald e-journals
- Various subject specific databases, Elsevier e-journals E-books
- Web 2.0, JISC online resources

The following e-resources are also used:
- SPSS, Blogs, Wikis e.g. Virtual Schools, Skype, Health and Social Care database
- VLE – Blackboard, Online databases and journals, EBSCO

2.3.2 Use of e-Resources in Engineering Sciences:
Archana and Kabir (https://dyuthi.cusat.ac.in/) pointed out that resources have become a vital part of an academic library especially in universities and higher education institutions. The availability of electronic resources and the acceptance of the format among the academics are rising day by day. As far as engineering students are concerned, they are much techno-savvy and are more used to electronic resources. It has become necessary for the libraries of engineering institutions to subscribe and provide access to electronic resources to satisfy its user community. Many studies have identified that academic users are much preferring online journals and databases than their print. The authors also listed out few publishers who brings out more useful to engineering

Merugu and Bandi (2014), in their communication indicated that emerging field of e-Resource management offers engineering college libraries the opportunity to improve effectiveness, both for themselves and their parent institutions. Authors summarize e-Resource management theory and also electronic information and its services. Application of ICT, on e-resource management in engineering college libraries and e-services is described. The management of e-services in engineering college is difficult task for librarian because they are time sensitive. With a stagnant or declining library budget, technical college libraries have to improve their operational efficiency by applying knowledge management in order to meet the challenges. The communication mainly focused on concept of e-Resource management and its role in engineering college libraries in the present environment.

Mulla, and Chandrasekhara (2006), in their article stated that libraries have witnessed a great metamorphosis in recent years both in their collection development and in their service structure. Over the last several years, a significant transformation has been noticed in collection development policies and practices. Print medium is increasingly giving way to the electronic form of materials. Authors examine the level of effort taken by the engineering college libraries in Karnataka to build electronic resources. Some of the major players in electronic full-text journal publishing listed are : Elsevier Science Publishers - Science Direct (http://www.sciencedirect.com/); Academic Press- Ideal Library (http://www.idealibrary.com/); Springer Verlag - Link Electronic Service (http://link.springer.de/); American Chemical Society (ACS) (http://pubs.acs.org/); Wiley Interscience (http://www.wiley.com/); American Physics Society (APS) (http://publish.aps.org/); Indian National Digital Library in Science and Technology (INDEST) (http://www.library.iitb.ac.in/indest/) etc.

Kannappanavar, and Manjunatha, (2011), discussed e-Resources and its impact on Engineers. The authors discussed the role of libraries in enhancing the use of e-Resources. Authors collected data from 45 engineering college libraries and analyzed and explored the status of resources and services provided to the users. Some of the colleges
have rich collection and infrastructure facilities, which have to share with other colleges. In the era of information technology, computers and communication infrastructure are pre requisites, hence libraries have to provide more fund and trained manpower to maintain and extend better service to the engineering college library users.

Hari Prasad Reddy (2013), conducted a study on usage of e-Resources in AP and stated that use of e-Resources has enhanced and more than 60% users are liking and consulting e-Resources. Analysis of data collected from a sample of 1490 students in selected engineering college libraries of Prakasam district, by using a questionnaire, revealed that the students are using electronic information sources for their course work (20.6%), communication (24.1%), career development (33.8%) and other activities (21.5%). The study also reveals that the majority of the students are using various types of electronic information sources namely e-books (60.5%), e-Journals (58.1%), e-magazines (55.2%), e-news (59.8%). The search engines is Google (91.1%) is frequently used by engineering students compared to Yahoo (83.6%), Ask (67%), Bing (47.2%) and AltaVista (42.8%). This indicates that engineering students are using e-Resources for various purposes and also depends on e-Resources.

Some engineering colleges provided links to useful and qualitative e-Resources from their webpages useful for engineering and can be used. Olin College of Engineering, (https://library.olin.edu/specialized_searches/subject.aspx?subject=9) , also provided a list which includes ASTM, ASEE, Compendia, Derwent Innovative Index , Engineering Village, Gale database, INSPEC, IJEE, Intute, Science Direct, Springer Link, Wb of Science, Scopus, WoldCat.

**Summary:**
The literature on use of e-Resources in engineering sciences indicated that qualitative e-Resources are available and institutes / libraries are subscribing to the resources. The librarians are also conducting the use studies at various places. It is also noticed that students, faculty and researchers are now using e-Resources extensively.
2.3.3 Use of e-Resources in Medical Sciences:

Haribhai (2015), presented a study of use of e-Resources in medical colleges in Gujarat, medical colleges and reported that libraries are shifting towards automation and e-Resource services in the case of medical college libraries. Generally medical college libraries are positive towards automation and the application of IT in library operation and e-Resources services. Application of IT helps to provide more advanced effective and efficient services in medical college libraries. Medical college libraries are using advanced e-Resources for accessing and retrieving information. This research study presented impact of e-Resources and services of medical college libraries in Gujarat. The e-Resource use by faculty, researchers and students in medical college library has discussed well and concluded that medical college users are more interested in useful e-Resources. Author further stated and concluded that most of the medical college libraries are purchasing e-Resources for their users. There are many e-Resources available even over internet like e-journal, e-book, database, blog; portal etc. but resources mostly used are e-Journals and e-books.

Some medical colleges provided links to useful and qualitative e-Resources from their web pages for medical studies and can be used. Rowan University (http://www.lib.rowan.edu/som/find/eresources) provided links to various medical resources like Access Emergency medicine, access medicine, access surgery, AIDSinfo, Annual Reviews, MBJ Case report, clinical key, Drug information portal, Dynamed, Embase, nature, Ovidmedicine, Popline, PsycINFO, Pubmed, etc.

Medical College of Wisconsin is useful for medicine on their webpage (http://www.mcw.edu/Libraries/Resources/Databases.htm) also linked some resources. The resources in medicine linked are: E-medicine, JSTOR, Drug information, Drudigest, Clinically, Badgerlink, ebrary, EBSCO (Medical), JCR, Lexicomp, NCBI, PubMed, Ovid-PsycINFO, Ovid-MEDLINE, Web of Science, Scopus, Toxnet, Academic online, Annual Reviews, PACT, BIOSIS, MEDLINE, Toxnet, Wildcat etc. All these are in addition to e-Journals and e-books.
Harder (2008), in his study entitled "Electronic Resources in Medical Libraries: Issues and Solutions", is a collection of ten articles on issues of electronic access and use of books and journals in medical libraries. The author has pointed out that management of electronic resources has become an essential function for medical libraries. Further author opined that use of e-Resources is increased due to “costs and challenges of shifting collections from print to electronic materials; collaborative arrangements and cost sharing that may save on the cost of bundled electronic journals; models for pricing electronic journals, development of electronic journals, and history of pricing; development of open access scholarly publishing and ways open access affects the pricing of subscription journals; and the issue of open access publishing and desired relief for library budgets”.

Bhat and Mudhol (2014), indicated that libraries are reservoirs of knowledge forever. Gradually these traditional libraries are going to be replaced by digital resources. It was observed that use of digital resources is increasing in medical students of the Govt. medical college Jammu. The result of their survey of medical colleges in J and K are presented and discussed in their study. This indicates that all the medical colleges use of e-Resources either commercial or free are used to maximum extent.

Md. Sohail and Andleeb Alvi (2014), discussed on web resources and its use in medical sciences. Authors pointed out that in recent years, the internet has emerged as the most important and powerful medium for the communication of information. There is a tremendous growth in the number and variety of information resources available on the internet which becomes an important source for scholarly scientific literature and also more number of information resources as well as the results of scientific and medical research is now being available on web. A well structured questionnaire was administered to 120 students to collect the primary data from respondents. A total number of 92 filled in questionnaires were received showing overall response rate of 76.66 %. Different segments of students have very different and varied use patterns of web resources depending on study topic, study year, psychological dispositions, and other demographic factors.

Thanuskodi S (2010), in his study stated that, internet is making substantial inroads in patient care and dissemination of health care information. It is changing the way health
sciences professionals obtain information. They use the internet and electronic resources to-do things like accessing medical records, providing remote patient care through telemedicine facilities, and accessing health care literature. Medicine is among many other sciences, an area in which the expansion of information is enormous and which is critically dependent on up to date information. Study reveals that respondents have high problems in accessing e-Resources in terms of virus, difficulty in using digital resources due to lack of Information Technology (IT) knowledge and limited access to computers and e-Resources.

Govt. of India, DGHS initiated ERMED India Consortium (http://www.nml.nic.in/) is a resource sharing project of National Medical Library’s Electronic Resources in Medicine Consortium is an initiative taken by DGHS & MOHFW to develop nationwide electronic information resources in the field of medicine for delivering effective health care. 39 centrally funded Government Institutions including 10 DGHS libraries + 28 ICMR Libraries and AIIMS library are selected at the initial stage as its core members. The MOHFW aims to provide fund required for the purchase of electronic journals under the NML-ERMED consortium project. The consortium coordinated through its headquarter set up at the NML. The nomenclature of the consortium is provisional; the same may be finalized after the approval of the competent authority. The consortium works under the guidance of the National Level Steering Committee and the National Level Finance Committee constituted after the approval of the competent authority.

Summary:
It is observed that in the professional courses and S and T large number of e-Resources are being made available to users in these fields. However users are unaware of the availability of resources. There is a need to develop information literacy among the users so as to enhance the use of e-Resources more effectively.

2.3.4 Use, User and ISB Studies:
Stuart Hannabuss, (1987) in his study stated that the connection between information contributor and customer is a vital measure of efficiency. In commerce subject the achievement of association might be measured by market share, while in the non-profit
sector like library, and information services, the success is measured by these criteria such as book delivery, library services and satisfaction of the user. The main aim of the librarian has to satisfy users in their quest for information need. The librarian has also to provide the latest information to its users in least time.

Pazur, (2002), carried out study of scientists at the Rudjer Boskovic Institute (RBI) in Zagreb. The results indicated that a high acceptance and use of electronic resources is seen in the user community. The RBI respondents stressed the availability of e-Resources before the print version and are most important advantage of the electronic resources to users. Very few respondents opined that electronic resources have no disadvantages at all. Most of the respondents preferred print version more than e-Resources in case both versions were available to them. But many used both versions equally.

A study of Obst (2003), showed that print journal usage decreased by 22.3 % in the first year and 30.2 % in the second year after introduction of electronic resources. Journals published both in print and online lost 30.4 % of their print usage within 2 years. Academic Press and Elsevier publishers also have reported that, e-Resources usage exceeded than print usage by a factor of 3 or 4 times. The e-Resources of Blackwell, High Wire and Springer were used on average 14.6 times as frequently as the corresponding print journals. Print titles not available online suffered a greater decline in usage compared with print/online journals.

Hadagali and Kumbar (2011), have checked the use of e- resources by the faculty community and the research community of the universities in the State of Karnataka, in order to get the level of use and the various reasons of using e-Resources, and its effect on the academic members. They have concluded their study indicating that use of e-Resources by academicians is enhancing. Uthm Johor et al (2011) in their studies of usage of Electronic Information Resources and Information Searching was accomplished by the scholars of Engineering. The study started at the utilization of e-Resources which are becoming even more accepted by users and thus giving freedom to the users to use the e-Resources right on the computer desk top. The Engineering students use different databases to get the information needed by them to satisfy their hunger of knowledge.
The academic libraries are important hub of education sector, where patrons can get varied services form libraries like check out books, conduct research, find a quiet and silent place for study, and browse through magazines and other documents. Today’s college libraries extend use of the internet, making many services and resources accessible right from their websites to users. To better understand academician’s study habits, librarians have to explore how, and why, users, use their libraries. In the survey of the users the writer noticed following major reasons for which users in academic libraries visit the libraries. The main reasons isolated are: study alone silently, use of online databases, use of text and reference materials, meet the study group members for discussions on the topic, issue and return of books, consult suggested reading, job opportunities and current news, etc. Among these 4 reasons are prominent as per the writer and these are: study alone peacefully, use of online databases, reference materials and meet the study group members for discussions. (http://blog.cengage.com/top-four-reasons-students-use-their-college-library/)

Martin, L. A. in his communication User studies and planning libraries (https://www.ideals.illinois.edu/bitstream/handle/2142/6863/librarytrendsv24i3g_opt.pdf?sequence=1) pointed out that study of use and user are fair standards in library planning and providing effective library services. Investigations of use and users are still frequently applied even today to support library management by strategic planning.

Summary:
It is observed that use of e-Resources is increasing as compared to previous. Different studies indicated that the use of e-Resources is in case of both versions available to users; users prefer to use print resources initially but later shift slowly to use of e-Resources due to advantage of searching, downloading, preserving and transferring files to users. For librarians also e-Resources are more important as they facilitate to provide enhanced library services to users. Thus e-Resource subscription and use is increasing among the information society.
2.3.5 Use of Libraries by Academics:

Amkpa (2000), in his article on the use of the University of Maiduguri Library revealed that a most of the university students are not using library properly and exhaustively, as they are unaware about the library systems. The librarians have to give proper orientation to use library effectively which may encourage students to visit the library and use the library to its best. This clearly indicates that due to ignorance users are not properly making the use of libraries in academic institutes. Author also suggested that orientation might help to enhance the use of libraries in academic areas.

Felicia Yusuf and Juliana Iwu (2010), in their study examined the amount of exploit of library e-Resources in Covenant University Library, Nigeria. Two different questionnaires have been used to collect data. 400 permanent library scholars were selected using the stratified random sampling method. The findings of the study has clearly revealed that 88% of the users have visited the library to read for exam purpose while most faculty members have visited the library to read e-Journals, or print. Users have also used OPAC more than library catalogues. Authors suggested to the faculty members for enhancing the use of libraries by student’s community to give reading projects that may help users to refer and consult journals and resources from libraries as well as other e-Resources, not only just for examination purpose but for enhancing the knowledge. Further were also suggested to initiate “library week” every semester to display the resources available in the library.

Mason (2010), suggested, librarians have to be compassionate and be always ready to help all users on the one side and on the other side, users also know that that librarians and faculty members are there to educate the use of library and fulfill their information needs. The librarians also be up-to-date with the knowledge so as to give the latest information to its users even though it is not in the library and available in any format.

Chinwe M.T. N and wezehI.N.Shabi (2011), in their study stated that Students’ educational work hampers as the library is not being used to its full potential. Satisfying the user’s needs in the educational sector is main task of libraries and have prime objective of all the libraries and all the librarians. Librarians and library staff should
provide the best possible qualitative service to their students and other users. Authors concluded that librarians have to understand user and their needs on priority and also orient them. The library is a store house of vast information and the power house of information but using information technology libraries have to provide services to users.

Omotayo (2010), shows that e-Resources are the most valued information communication channel for researchers presently. With the advent of the internet and e-publishing, libraries have become more easily accessible to users. Print books may be around for a long time, but print journals are rapidly being supplanted by e-Journals. It is an important to study the use of electronic journals, scholars' attitudes, and future patterns of use, for library development, and because of the central role, journals play prominent role in scientific communication.

Cui and Lian (2010), in their article indicated that the comprehensive description and analysis of electronic reserve services in academic libraries in China. Librarians also suggested possible solutions to build multi-functional e-reserve services in order to face the challenge of the vast expansion in both the academy and the economy of modern China. This reveals that three-level (national, regional and campus-wide) e-reserve resource systems have been developed jointly or individually by Chinese Academic Libraries. Their development, implementation and implications are discussed; existing problems and possible solutions are also identified.

‘A qualitative study of the impact of electronic journals on scholarly information behavior’ by Olle and Borrego (2010), explains the qualitative study of the impact of e-Resources on the information behavior of academic researchers at Catalan Universities, showed that academic researchers now read more, and more widely. However, their reading is becoming more superficial; they are compelled to improve their discrimination skills in order to decide what to read in more depth. The electronic accessibility means that researchers now make fewer library visits. Web browsing and table of contents (TOC) e-mail alerts are replacing physical browsing, and searching is a very popular option for keeping up to date with developments. Internet search engines, especially Google and Google Scholar, are becoming important sources of information for
researchers. However, they face problems in managing their personal scientific information.

**Summary:**

From the literature review it is noticed that libraries are reshaping in their activities due to adaptations of ICT, e-Resources and internet resources etc. Librarians have to provide new services based on the digital collection to academic users. The role of librarian is to orient users to access libraries more for the academic use.

**2.3.6 Related Studies on the Topic:**

‘Use of electronic resources by faculty at Istanbul University, Turkey: the results of a survey’ by Hulya Dilek-Kayaoglu (2008), explains the Istanbul University faculty was surveyed to examine use of e-Journals by their users. The majority of respondents supported the transition from print to e-Resources. This support was provided from the faculty in the field of natural sciences more. About three-fifths of the respondents reported that the major barrier to use of e-Journals was the lack of subscriptions in their field.

‘Use and users of electronic resources at Catalan universities: the results of a survey’ by Angel Borrego et al (2007), presents the results of a survey on the use of electronic resources by the academic staff of the universities belonging to the Consortium of Academic Libraries of Catalonia (CALC). The results indicated that a high proportion of teaching and research staff is aware of the collection of electronic journals and there is an increasing preference given for the electronic resources over printed. The collection of e-Resources is highly valued now and most users expect to increase use of e-Resources during the next few years. The results also confirm that the importance of discipline and age are explanatory factors of the use of e-Resources.

The use of electronic journals by Dutch researchers: a descriptive and exploratory study’ by Henk Voorbij and Hilde Ongering (2006), gives an overview of user studies performed in the past few years. Authors have categorized frequency of use of e-Resources, perceived advantages and drawbacks, actual behavior, and the benefits of
electronic journals. The results of a user study among faculty ends with a discussion of the implications of the results for future research. The ultimate goal of electronic publishing is to provide fast and easy access to the information contained in the publications with simple, powerful search and retrieval capabilities.

There are quite good number of case studies published by Indian and other foreign researchers, some of them are: ‘Print and electronic resources: usage statistics at Guru Gobind Singh Indraprastha University library, by Kapoor (2010), presents the use of e-journals in comparison with the print collections in the Guru Gobind Singh Indraprastha University Library. The survey covers users at the University are accessing e-Journals; it is not affecting the use of the print collection. The numbers of transactions and photocopy requests of print articles are continuously on the rise.

‘Use of electronic journals by doctoral research scholars of Goa university, India’ by Chirra and Madhusudhan (2009), examines the use of electronic (e)-journals by doctoral research scholars of Goa University, Goa (India). The main aim is to know the use of e-Journals for research work. Further, the study aims to highlight the problems in accessing e-Journals, degree of utilization, and influence of e-Journals on research work. The authors arrive at the conclusions that: the e-Journals have become vital part of information for research work. This study helped in knowing the importance and use of e-Journals in comparison with printed journals particularly for the research community. Most of the respondents are accessing e-Journals from the Departments, Computer Labs for their research work and e-Journals meet the instant desire of users to have an access to information. Springer & Kluwer is the leading publisher among the use. Boolean Search is the most popular advance search technique now used by researcher. The study shows that there is need for user orientation for efficient searching of e-Journals and databases. The most common problem faced by the users is that there is difficulty in accessing full text and many of the users are not satisfied with the Internet facilities available in Goa University and they provide some constructive suggestions for improving the accessing of e-Journals.
Summary:

The studies and case studies regarding the use of e-Resources by the users of different education research institutes indicate that the growth in use of e-Resources is witnessed among the users. They have positive attitude towards the use of e-Resources but the use might be increased if they are oriented for the use of e-Resources as well as awareness of e-Resources in the field.

Observation from the Literature Review:

It is observed that use of e-Resources studies in different areas are noticed but the studies in Engineering and Medical colleges (Use of e-Resources) in Goa city is not visualized. The topic is not similar to studies and the selection of the topic is proper. Both the educational branches are professionals and valuable and as a librarian it is observed that awareness among the users is not to the mark and libraries / institutes subscribing to intellectual and qualitative resources in the form of electronics are underutilized. It also felt that if a survey of use and need of the users identified than it is also possible to enhance the use and eventually quality of education. The use of resources even available free over the net in not noticed and hence such studies which can identify needs and develop awareness of e-Resource availability is essential. This is one of the reason in selecting this topic which is not touched in depth. Users many times only know the availability of free journals available on the net. But the collection of the library is not noticed and hence missed the links. Now publications in the form of electronics are growing at speed as compared to past. It was also not easy to subscribe prior to 2000 comfortably, but now various resources sharing project made institutes and users in any discipline to get e-Resources economically under the consortium models. This study elaborated the role of e-Resources and different e-Resources available in both branches, analyses use and need, and also suggest points in raising the use of e-Resources more. The scholars have predicted the future of libraries that may have more or less paperless and based on digital resources can be consulted using mobile technology and internet.
References:


