1.1 Introduction:

The purpose of Literature Review is to provide the background to and justification for the Research undertaken. A Literature Review primarily sets the foundation for new research, guide the researcher through the research process and also selecting relevant theoretical framework of the study. It enable one to gain a comprehensive overview and summery of the available information on a specific topic. It provides for objective thinking and a systematic approach to the research undertaken.

In short, Review of Literature is an evaluation and integrating the previous research together, it explains, how it integrates into the proposed research study.

1.2 Methodology and Information Resources:

Information resources both primary and secondary sources were consulted for literature Review that includes:

- Elsevier (www.elsevier.co.in)
- DOAJ (Directory of open access journals)
- e-Shodh Sindhu at http://www.inflibnet.ac.in
- Emerald at www.Emeraldinsight.com
- Shodhganga (shodhganga.inflibnet.ac.in)
- Google scholars
- ScienceDirect.com
- Library and Information Science Abstract (LISA) from 1969 to March 2016
Effort has been made to identify the existing literature on the research problem by scanning and browsing the original documents and consulting abstracting sources. Appropriate note were taken, whenever the original documents were not available, the relevant information has been culled from the abstracts for the preparation of the review.

One of the major developments in the Library and Information field in the past decade has been the introduction and spread of Electronic Information Resources. A resource is a generic term that refers to a broad spectrum of material that can be useful for the researcher. An electronic resource means anything from E-journal to web link.

The field of Electronic Information Resources is rapidly changing due to the fact that there are regular technological developments. The importance and wide range of these EIRs for communication, information retrieval and academic and research activities are acknowledged world over. The last few decades have also seen a large amount of published material in electronic form.

Literature on information need and its use has been and continues to remain hot topic for research in all disciplines. Information use involves a set of actions that an individual takes to explore information needs, seek information, evaluate and select information, and finally uses this information to satisfy one’s need (Majid & Kassim, 2000).

In the present day of electronic information environment, information and communication technology and e-resources provide platforms for access and use of information relevant to ongoing research, which in turn, have an impact on the research and academic activities of users. A quantitative in depth study of relationship between access and usage of e-resources is the need of the hour.
The quantum of digital information resources available on line is increasing exponentially and efforts are being made for the economy and effective delivery of such information to the end user. Consortia based e- resources and open access have gathered momentum since past decade.

The review includes paper presented in Seminars, Conferences, articles published in Seminars; Conferences; article published in scholarly Journals; Books and Library Websites which deal with the current developments in the use of Electronic Information Resources.

1.3 Review of Related Studies

In this Chapter, previous studies were reviewed in relation to the Awareness, Usage, Attitude and Satisfaction of users towards Electronic Information Resources. The review of literature is organized and discussed under the following headings: Information and Communication Technology; Technology Acceptance Model; Electronic Information resources; Awareness of Electronic Information Resources; Use of Electronic Information Resources; use of Electronic Information Resources in the context of Research Institutes; Attitude of users regarding Electronic Information Resources; Satisfaction of users regarding Electronic Information Resources and Barriers in the use of Electronic Information Resources; etc.

1.3.1 Information and Communication Technology

Information Technology is a generic term used for a group of technologies. The major components of information technologies as most relevant in modern library and information system are computers, communication and networking. Computers’ capacity is to hold and process large amount of data; communication does transmission of the data in high speed over great distance; and networking is connect distant computers. These have proved a boon
to the libraries and information centers in meeting the challenges of ever-increasing and varied requirements of the users.

Anunobi (2011) presents the adoption and use of ICT in Library and Information services in Federal University of Technology, Owerri (FUTO) Library. The paper showed the success of Library ICT adoption and limitations. Author further, discussed the challenges toward the provision of effective and efficient ICT based services in the library including the off ending ICT policies, environmental challenges etc. Low level of awareness of ICT, global access to information and ease of use among others factors were also identified.

Khademizadeh (2012) in his study, examines the attitudinal correlates of ten selected scientific and research institutes libraries in Iran towards the use and application of ICT in their various libraries. Result of his study showed that 84.7% of the users answered that electronic sources make it easier to gather and use information. Further, he discussed that there is a significant relationship between e-environment and collection development ($\chi^2$ 62.86, p=0.000). Based on these findings, he recommended that libraries in the developing countries should provides training those librarians who do not have knowledge of ICT in order to remove the fear and anxiety hindering them from developing good attitude towards the use of ICT in their libraries.

Lian and Ruan (2013) Examine CALIS’s work in the developed Eastern and the under-developed Western regions in China and considers how CALIS has used information technology to narrow the gap between academic library communities in these distinct regions. Study also attempted to promote professional understanding about academic libraries in China’s Western region, especially about the ways in which these libraries have used information technology and digital databases of local culture to help transform communities across their regions. He suggested that the users need and wants should be investigated and
the impact of CALIS’s preferential policies and initiatives on these libraries should be further analyzed so the policies can be improved and new strategies can be formulated.

1.3.2 Technology Acceptance Model (TAM)

Nowadays, new technology is rapidly replacing old applications of libraries by providing more powerful tools and faster services to its user. This adoption can be successful, however, only when users accept and effectively use the technology. Therefore, organization and developers should understand that the acceptance process is essential in making the adoption process effective. One of the key measures of IT implementation success is achieving the intended level of usage of the IT. System usage is a reflection of the acceptance of the technology by users (Amoako, Gayampah & Salam, 2003). The Technology Acceptance Model (TAM) is an information systems theory that studies, how users come to accept and use a technology (Davis F. D., 1989).

Thong (2002), Vaidyanathan et al. (2005), and Park et al. (2009) have studied the potential factors affecting the acceptance of digital libraries among users using the TAM.

Thong (2002) identify three features for system interface, three organizational variables and three personal differences (essentially external factors) in his study., he further suggest that these three interfaces would affect the perceived usefulness, the ease of use and the decision to use IT in field. The findings of his study showed that both perceived usefulness and perceived ease of use are the defining factors in users’ acceptance of digital libraries.

In the research performed by Vaidyanathan et al. (2005) five systematic and individual factors such as search function, terminology, relevance, design and display, and reliability were considered as external factors which have significant effects on perceived ease-of-use.
and perceived usefulness of digital libraries which in turn have a significant effect on individual user acceptance.

Park et al. (2009) examined the factors that influence people’s adoption and use of a digital library system were examined and the applicability of the Technology Acceptance Model (TAM) in the context of developing countries was tested. Using data from a survey of 16 institutions in Africa, Asia and Central/Latin America (n = 1,082), a path analysis revealed that perceived ease of use of the library system had a significant impact on perceived usefulness, which ultimately led to behavioral intention to use. In addition, the study also examined the similarities and differences in the significant predictors of digital library acceptance across countries and continents. Further, he suggested that external variables that affect perceived ease of use and usefulness should be considered as important factors in the process of designing, implementing and operating digital library systems. Such consideration will help decrease the mismatch between system design and local users’ requirements, and further facilitate the successful adoption of digital library systems in developing countries.

Spacey (2004) studied the characteristics of staff in public libraries, which influence the attitudes of users towards the Internet. In their research, the effects of factors such as gender, age, organizational variables, computer skills, information and communication technologies (ICT) experience and also subjective norms were studied in depth. Their findings showed that the current position of staff and also the level of their position have some potential effects on their perceived usefulness of Internet but that the workplace also has some effect on its perceived ease of use. In the field of computer skills and ICT, most staff had adequate computer skills and considered the use of the Internet to be easy.
1.3.3 Electronic Information Resources:

According to IFLA/FAIFE (2007) electronic information resources are “materials that are computer controlled, including materials that required the use of a peripheral (a CD ROM player) attached to a computer; the items may or may not be used in the interactive mode.”

Renwick (2005) investigated knowledge and use of electronic information resources by the Medical Sciences Faculty at the University to the West Indies. It was found from his study that the faculty had high awareness about e-resources, but low use of specific resources, supporting the suggested problem of under-utilization. Many respondents were of the opinion that e-resources were important, although many still expressed a need for training. Over 60% felt that a workshop with a hands-on component was the preferred format for training. It was recommended that there should be greater promotion of the library’s e-resources.

Kaur and Verma (2009) conducted a study in the academic year 2006-7 at Thapar University, Patiala. The research was focused on the use of electronic information resources and for this purpose, five hundred and four users from undergraduates, postgraduates, research scholars and faculty members were selected for the study. Findings show that users from all these categories were using e-resources. The awareness about e-resources encouraged users to use such resources as much as possible. The impact of e-resources was visible from the decrease in number of printed journals in comparison to the increase in number of e journals.

According to Deng (2010) the awareness and the quality of the available e-resources were the two important factors for the effective and efficient use of e-resources. The results of Zhang, Ye and Liu (2011) indicated that by now, users of all ages have switched to the electronic format not only in terms of usage but also by preference.
Another study was conducted by Tyagi (2011) at IIT Roorkee, India found that users had knowledge about the availability of electronic journals, but many used e-resources as additional ways to use information.

Ahmad and Panda (2013) made an attempt to find whether the faculty members of universities were aware of and fully utilize the library databases and other e-resources within and outside the libraries. Results of their research revealed that majority of the faculty members were aware of and used e-resources. The study confirmed some lack of knowledge and use of library specific resources such as E-theses, patents and CD-ROM databases. It was also found from their study that all faculty members agreed that e-resources were very useful and important to their work. Many studies have shown an inverse relationship between electronic journal usage and age.

1.3.4 Awareness of Electronic Information Resources

Sajjid ur Rehman (2004) explored that Electronic Resources are vital, but extremely expensive and medical librarians are genuinely concerned about their effective use. It is a widely held view that low awareness and poor skills are among the primary reasons for their under-utilization. Responses were received from 70.9 percent of the faculty members. They reported that time constraints, lack of awareness, and low skill levels were among the primary constraints they experienced. A large number of them proposed a variety of measures of formal orientation and training to become more effective users.

Leelavathi and Doraswami (n.d.) made an attempt to determine the present status of knowledge and use of digital resources. It was observed from her study that use of digital resources is still inadequate among the engineering faculty of the universities in the developing countries. The findings of a survey revealed the knowledge and use of digital
resources by faculty members through CD-ROM databases, online databases, online journals, OPAC etc available in the engineering college libraries.

Prangya Das (2013) made an attempt to study the issues of Electronic Information Resources access, awareness and use by the research scholars of science departments of Berhampur University, Berhmpur, Odisha with a view to survey the exposure of research scholars to Electronic Information Resources. The study confirmed that the science research scholars are aware of various types of e-resources i.e. e-databases and 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.

Olatokunbo Christopher Okiki (2012) made an attempt to study the issues of Electronic Information Resources, Awareness of Electronic Information Resources, use and Attitude by Academic staff members of University of Lagos, Nigeria. He highlighted the challenges faced by the users and suggests some corrective measures for its improvement. The study showed that 55% of academic staff members indicated that the level of awareness of the subscribed electronic information resources by the Library Management is low. The paper records that the academic staff members of University of Lagos use electronic information resources for research activity, Paper writing for publication, and teaching. He further suggests that library should improve the access facilities with high Internet speed and subscription to more e-resources.

Ranganathan and Babu (2012) studied the awareness and use of library resources and services at Osmania University, Hyderabad. The authors studied the adequacy of library resources, opinion on e-resources or print sources, reasons for using e-resources, satisfaction level on sources of information provision. According to Grace, Kenny and Qiang (2004), academic staff (or universities) without access to information and communication
technologies/electronic resources will find themselves unable to compete in the international research arena or for the journal space for their publications. They counseled by saying that there is need for meaningful investments on ICTs towards efficiency and improved quality of research in the society especially in African countries.

1.3.5 Usage of Electronic Information Resources

Suzanne P. Lewis (2006) demonstrates that the majority of library clients still use person-to-person interaction when asking reference questions. Only 25% of the questions were received via phone, email or chat; the remaining 75% of questions were asked in person. The study also highlights the fact that some library clients are more likely to use phone, email or chat to ask questions than others. This is one possible area of future study and has implications for staffing virtual reference desk services and promoting the service to different clients.

Raza and Upadhyay (2006) in Usage of E-journals by researchers in Aligarh Muslim University: A study had prepared a report in detail on the usage of e-journals by the researchers at Aligarh Muslim University.

Shelling (2007) analysed the use of electronic resources in Shaanxi University of Science and Technology. The sample consisted 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 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 results showed comparative annual increase in quantity of publications originating from all Turkish institutions, but the increase
was remarkable after 2000. Tenopir and King (2007) found that the principal reason for using e-resources in seven US and Australian universities was that more than 50% use e-resources for research.

Khaiser and Pramodini (2007) surveyed the use of e-journals and databases by the academic community of University of Mysore. The paper describes the use of e-journals and databases subscribed by UGC-INFONET Consortium in the University of Mysore. The result of the survey revealed that the use was marginal and the scientists in the Mysore University campus need constant guidance and training to maximize the use of the electronic resources. The paper also examined the utilization and satisfaction levels of users with respect to the electronic resources. The paper also discussed about the role of Information Communication Division (ICD) of the University of Mysore in informing the users about the availability of the electronic resources.

Mutula (2008) discussed a number of regional initiatives and ICT policies that are geared towards the promotion of access and use of ICTs and electronic resources in African universities. Tenopir et al., (2008) in a survey of access and use of electronic resources in three countries: Finland, the U.S. and Australia; found that productivity was correlated with the use of e-resources in Finland and the U.S., but no correlation between the use of 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 readings by the academic staff (Tenopir et al., 2008 ); and similar result was found in the U.S. The paper concluded saying that, the correlation between use of electronic resources and academic productivity may vary from country to country.

Similar study by Galyani M.G and Talawar V.G. (2008) studied the scholarly electronic journals at the Indian Institute of Science. The survey method was conducted
through a questionnaire. The results showed a growing interest in electronic journals among the users at Indian Institute of Science. 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.

Chetan Sharma (2009) study revealed that the use of e-resources is very common among the teachers and research scholars of Guru Gobind Singh Indraprastha University and majority of the teachers and research scholar are dependent on e-resources to get the desired and relevant information. But practical usage of e-resources is not up-to the worth in comparison to investments made in acquiring these resources; secondly infrastructure and training programs should also be revised as per requirements. It is observed that the availability of e-resources on the campus is almost sufficient for all the existing disciplines but the infrastructure to use these resources is not adequate and can hinder the ability to meet the requirements of users.

Muhammad Tahir (2010) discussed the emergence to assess the use of electronic information resources and facilities by humanities scholars at the University of the Punjab, Lahore, Pakistan. The results correspond with previous studies conducted in other countries. The humanists 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 humanists perceive that modern technology made their work easier

faculty members of Karnataka State University have summed up that most of the faculty members are aware of using online-resources and UGC INFONET. Digital Library Consortium whereas a few are still not aware of availability of consortium resources. Majority of the non users belongs to the social sciences & humanities and those users which have not undergone any formal computer training.

Madhusudhan (2010) showed that 94% of the respondents use e-resources for research work. Other respondents used e-resources for keeping themselves up to date in their subject field and getting current information. Research scholars also used e-resources for teaching and publishing articles and books. Ming-der Wu. (2010) showed that the Humanities graduate students cited considerably more print materials than electronic resources. Most of the documents cited were supplied by the university library. Only a small proportion of the documents were available in electronic format either from the university library or from the web or internet. The availability ratio of journals was higher than that of books. Students' acceptance of online journals was higher than that of electronic books.

Robb and Hicks (2010) conducted a study on print vs electronic journals. The most important findings of the study were that a maximum number of journals were used widely by the residency programs like Medicine, Radiology, Obstetrics and Gynecology, and Surgery. These journals required print subscription to obtain the online access. The authors concluded that the library professionals would continue to evaluate the decision to provide only electronic access for an important quantity of the journal collection and shall have to market the decision to move to only online access to the library journal.

Arikrishnan R. (2010) gave details about how the Engineering and Technology libraries are facing challenges due to continuous increasing in the cost or subscription of journals, scholarly journals and databases which affects the academic and research activity. The study
reveals that many academic libraries have understood the importance of electronic resources of information in order to satisfy their users, among these e-journals have an absolute impact on academic libraries.

Chamani Gunasekera (2010) described that since the university library is committed to providing an excellent service for its users, it has to develop an on-going dialog with the users. One of the main tools that can be used to assess the library services is the user surveys. This study was undertaken to assess library user satisfaction with current information services and resources while identifying user needs. It was found that the undergraduates are overall satisfied with available library resources, services and facilities. But it further found that library resources and services are not being 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.

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 do. Few students use the meta search tool to retrieve heterogeneous electronic resources in the library. Very few students use alert services to obtain updated information.

Mahmood, Hartley and Rowley (2011) affirmed the importance of access to information to facilitate and support efficient and productive research. ICTs and electronic resources are sources of information in modern electronic information environment. Notably and relatively,
ICTs and electronic resources provide quicker access to information than the conventional print resources.

Mahapatra (2011) in his study of PG students of Odisha University of Agriculture and Technology (OUAT), Bhuvneshwar found that 59.17 percent users were satisfied with e-journals while 75 percent with CDROM and 54.16 percent with online databases. In Agricultural colleges of Karaikal region, Pondichery, (UT) Sundararajan Shanmugam (2011) revealed that 56 percent agricultural students were highly satisfied with the use of e-journals. More than 80 percent researchers of Faculty of Agriculture and Institute of Agriculture Research, Ahmadu Bello University, Zaria, Nigeria (Akobi, 2007) were quite satisfied with the use of TEEAL database collection.

Banker and Gajbhiye (2011) found that 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) lack of training (27.27 percent) and unfamiliarity with e-resources (22.72 percent). PG and doctoral students at Kerala Agricultural University (Francis, 2012) faced problems of non-availability of essential resources (64.75 percent), lack of knowledge in searching (59.84 percent), slow speed of internet (59.02 percent), limitation of night working (56.56 percent), non availability of abstracts (41.80 percent), additional irrelevant information (35.25 percent), inadequacy of computer terminals (17.21 percent) etc.

Berzins and Hudson (2011) in their study found that, although e- resource use is a high priority for institutions, there are two main problems that are holding back the wider utilization of these technologies. Firstly, within institutions uneven skill- sets of personnel, and a lack of internal dissemination of e- resource use findings, means that the adoption of these resources, which might have already been tried in one subject area, is slow to spread to
other areas. As institutions have moved towards e-learning strategies and units, this may well be overcome in a short term, and these units will be able to oversee the roll-out of new e-learning innovations and be able to help with the dissemination of findings, and training staff in the use of these technologies. Secondly, aside from the BLE, there is very little collaboration between institutions. This means that there is potential here to optimize e-resource use, for example by encouraging partner institutions to share the financial burden of these technologies, or by sharing good practices in this area. The research found that there is a high level of willingness amongst partner institutions to collaborate more in this way.

K.G. Sudhier (2011) study find out the use of e-resources 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 the teachers, librarians and also for the parents. They can make use of the 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 the use of e-resources by the post graduate, M Phil students and research scholars of Faculty of Arts. The fast growth of information and communication technologies and particularly the internet and electronic resources have changed the traditional method of research, storage, retrieval and communication of scholarly information.

Zhang, Ye and Liu (2011) conducted a survey of the use of e-resources at seven universities in Wuhan, China. The purpose of this survey was to report on users’ information behaviour in China. The aim was to help producers and providers collect and develop more e-resources. The results showed that most National Science and Technology library users were
graduates and young staff members; male users performed better than female ones. Findings suggested that e-resource producers should offer more foreign literature and providers should improve the quality of services.

Rathod and Rashinath Rama (2012) focused on use and availability of open source and commercial software for library automation and repositories or digital library. 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 is required. It is also needed that amendments be made in copyright legislation to go well with the electronic surroundings. Some colleges or institutions has taken positive steps by arranging workshop to train the LIS professionals. Open source software have much potential for libraries as they incorporate an interface that makes it easy for people to create their own library collection.

Recently, the need to have uniform and regulated ICT policies to integrate ICTs and electronic resources in research in African universities has been proposed in a four-day Summit of representatives of African universities in Nairobi, Kenya (Punch, 2012). The forum identified the role of ICT in improving research outcome and productivity in African universities and sought for harmonization of ICT policies/strategies in the institutions as the way forward. According to the report of the Summit that was attended by participants from 21 countries (and organized by African Virtual University); it was agreed that the outcome of the Summit will help African governments to initiate ICT policies/strategies that will support integration of ICTs in research process in African universities.
Crispen Bhukuvhan’s (2012) research has shown that lecturers are using various
electronic resources at BUSE despite notable differences in the frequency of use. Most
lecturers may have the knowledge of accessing electronic resources through the University
library’s information literacy skills workshops and seminars. There is also a hyper-linked list
of electronic resources on the University library webpage that can be used by the lecturers.
There has been a noticeable increase in the number of abstracts and articles downloaded from
various electronic resources. The research study has also revealed that there has been
relatively proportional increment in the number of articles published in refereed journals. It
has also been found that there are a lot of research papers that have been sent for review with
scientific journals. Lecturers are also referring their students to recent scientific articles in
their own fields, including their own work in some cases. The use of electronic resources
could be seen to have positively affected lecturers’ pedagogical practices and their work in
general.

Tambe (2012) discussed that e-resources are broadly accepted in academic field and in
higher education institutions like a university it is accepted very quickly. Proper training of
users makes it easy for them to use electronic resources, while without training they will
make errors in accessing. Most important academics in universities have uniformly claimed
they can run computers. Among collection of available e-resources, e-journals are most used.
To rank thee-resources; e-journals are being used most among academics in university
libraries and email, web and search engines follow. There is future for e-resources’ large
acceptance, as they will be popular among the academics in coming times.

Aggarwal and Bhalla (2012) studied the teacher/educator's preference for print or
electronic resources of information. The methods and media of information storage and its
dissemination had undergone a sea change meaning thereby, the traditional print media had
been acquiring the shape of multimedia and hyper media as sources of information. This was applicable to most areas including education. Information seeking behavior of teachers and teacher educators has also transformed to a great extent. Earlier, teachers used to spend a lot of time in libraries, looking for books, journals, magazines and other print media to support their teaching and research. But, in the recent years, the focus had shifted from print to electronic resources. Internet has revolutionized the way teachers seek information. They spent time on the internet looking for e-books, e-journals and other relevant information sources.

Alison, Kiyingi & Baziraake (2012) studied the factors affecting the utilization of electronic health information resources in universities of Uganda. The article reports on a study done on electronic health information resources (e-resources) usage in three universities offering medical education in Uganda. One of the objectives of the study was to investigate the factors influencing utilization of e-resources, which this paper set out to examine. Data was gathered through interviews, questionnaires and citation analysis. Graduate students, teaching staff/researchers, heads of departments and librarians participated. The ATLAS and Excel programs were used to analyze the qualitative and quantitative data respectively. The study revealed that utilization of e-resources was influenced by human and institutional factors. While usage was low, there was a significant relationship between usage and information literacy. Addressing factors that affect utilization of e-resources it revealed that it improves study, research, and ultimately patient care. While healthcare providers made informed clinical decisions, quality of research and student grades improved. It guided curriculum development and/or revision in those fields and guided policy formation in setting up minimum standards for libraries in universities. E-resources are important in medical education because they support study and research. Addressing their utilization therefore improves library services, study, research and ultimately, healthcare.
Chandel & 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 also 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. Researcher, in this paper, highlights the issues, emphasizing the need to develop or procure an 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.

Chaurasia and Chaurasia (2012) focused on the information seeking behavior of research scholars and P.G. students of Indian Institute of Technology Delhi. The purpose of the survey was to explore the use of information technology by the students and scholars of IIT Delhi for seeking information and particularly to know how they accessed E-Resources. The electronic journals were most preferred E-Resources by over 70% research scholars; electronic databases by 60% research scholars; whereas the electronic books were preferred by only 27% research scholars. It was found that electronic books were most preferred e-resource of over 65% P.G. students. While more than 60% P.G. students preferred electronic journals to seek information for their needs. The survey depicts that more than 60% research scholars and P.G. students responded that they required training for learning more about the E-Resources in order to widely access and make use of these E-Resources. In order to overcome the hindrances in accessing the E-Resources, the study recommends awareness programmes for the students and to provide training on E-Resources and retrieval skills.
Francis (2012) conducted a research concerning the evaluation of use of consortium of e-resources in agriculture in the context of Kerala Agricultural University. The researcher was of the view that as digital information resources available online are increasing at an exponential rate, several practices have evolved for the economic and effective delivery of such information to the end users. In this context, consortia-based information services have gathered momentum the world over during the last few years. Though, there are several library consortia in India, UGC INFONET is mainly meant for universities governed by UGC and CeRA is meant for agricultural universities. This paper discusses utilization of consortia-based digital information resources by the post graduate and doctoral students of the Kerala Agricultural University, Thrissur. Results show that cent percent of the students were familiar with the use of digital information resources available online and 87.14 per cent of them used CeRA. 82 per cent students were acquainted with CeRA and learned the required skills for the access and use of digital information resources through curriculum-based courses like 'library and information services', 'research methodology', etc. The students in general would like to strengthen the CeRA services by adding more resources and facilities.

Octavia-Luciana and Porumbeanu Madge (2013) described the current situation characterized by a true information explosion but at the same time by the low use of electronic information resources 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 usage of electronic information resources would increase considerably.

Chandran, 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 at the Central Library from library professionals, followed by 32
(26.01%) from the library notice board, and 28 (22.76%) from the institute website. This study also shows the issues of respondents about using the electronic resources available at the Central Library.

Pardeep Mittal (2013) conducted a study about the use of the internet by students. He found that use of internet 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 the survey, respondents use e-Resources mainly for their education purpose and research work. Majority of the respondents (54%) use e-Resources. According to interviews most of them are familiar with e-Resources, they also use these resources but these resources mainly include E-journals, E-thesis and E books, which are helpful for them in their research work. They are not much familiar with other e-Resources as they do not know to access directly these resources.

Sunil Tyagi (2014) assumed that E-resources are an accepted means of information resources in the present information society. With the amount of new resources available, the need for adequate computer literacy and aptness 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 scientists of pharmacopoeia libraries of India. Cost, the level of importance, and the use of e-resources have dramatically increased in the digital library environment. Web DB, e-book, e-journal, and other e-resources such as CD-ROM, DVD, and micro materials have become important sources in libraries. Pharmacopoeia librarians should use new information technologies and new approaches to better serve their scientists in new ways of acquiring information. Libraries should organize their services so that they bring their information resources closer to the busy scientists. They should acquire new skills and learn how to organize information for presentation on the Internet portals or by handheld
devices. Additional drive for Pharmacopoeia librarians in their efforts is the introduction of evidence-based practice. Librarians can teach scientists to search and critically evaluate information, thus helping in the process of their research. Librarians with experience in licensing and managing ERs are effective in rapidly diagnosing and remedying access problems.

Wulystan Pius Mtega (2014) investigates the accessibility and usage of e-resources among agricultural researchers and extension staff in five out of seven agricultural zones in Tanzania. The study identifies sources of e-resources used by these researchers and staff, as well as assessing their information literacy levels and the factors influencing their usage of e-resources. The research used a survey approach based on convenient non-probability sampling. Findings show that usage of e-resources from popular agricultural databases remains low. Factors limiting access to e-resources include poor institutional ICT infrastructure, limited funds for e-resources and low information literacy levels. Recommendations include improvements in ICT infrastructure and budgets, as well as developing electronic institutional repositories to improve extension staff access to research outputs, creating a sustainable link between agricultural research and farming activities. Information literacy modules in agricultural training institutes could also support effective access to, and use of, e-resources.

Felly Chiteng Kot and Jennifer L. Jones (2015) study uses three cohorts of first-time, full-time undergraduate students (N=8,652) at a large, metropolitan, public research university to examine the impact of student use of three library resources (workstations, study rooms, and research clinics) on academic performance. To deal with self-selection bias and estimate this impact more accurately, they used propensity score matching. Using this unique approach allowed them to construct treatment and control groups with similar background
characteristics. They found that using a given library resource was associated with a small, but also meaningful, gain in first-term grade point average, net of other factors.

1.3.6. Usage of EIRs in the context of Research Institute

Young JuJoo (2000) observed that most research on WBI had been primarily descriptive in nature, with its emphasis on the technological aspects of classroom implementation. The use of the WWW for instructional purposes is a relatively novel phenomenon and many more descriptive studies on its hardware- and soft-ware-related problems and solutions will and should be underway. Equally important, however, is to find out whether and how student motivation and learning change under these new learning environments. The present study explored relationships among some of the important motivational variables, known to influence students' learning and performance in typical classroom settings, in WBI contexts. More specifically, it attempted to extend applicability of the self-efficacy theory into computer-mediated learning environments. The present investigation further examined effects of correspondence between self-efficacy beliefs and target performance on their predictive relations. Most hypotheses derived on the basis of the self-efficacy theory received support in the current WBI application.

Daudu, Hanna Mamman (2014) investigated the role of agricultural research Institute libraries in consolidating research and development in Kaduna state, Nigeria. A survey research method was used in undertaking the study. Two research questions and two hypotheses guided the study. From the population of three hundred and eighty (380), three hundred and thirty-four (334) were sampled using simple random sampling technique. The instrument used for collection of data was questionnaire which was categorized into two (for library users and staff) with reliability coefficient of 0.77. The data collected were subjected to statistical analysis using Pearson Product Moment Correlation (PPMC). This was
necessary because of the interval measurement of variables. The study discovered that the available information resources do not meet the need of the users. Most resources like textbooks were outdated and irrelevant to agriculturalists. The study also revealed low provision of e-resources which is the trend in contemporary research. The research recommends that the libraries should acquire both current print and e-resources to meet the needs of their users. There is also a need to devise method by which new information resources and services acquired by the libraries are made known to the users.

1.3.7: Reading Habits and Attitudes

Karim and Hasan (2007) studied the reading habits and attitudes of the Bachelor of IT student and the Bachelor of Arts students from the International Islamic University, Malaysia. The study also aimed to explore these differences in terms of gender. The study used a survey approach in collecting the data. The study found that university students spend quite a significant amount of time reading newspapers, academic books and Websites. The amount of time spent on reading was seen as higher than the average individual adults surveyed in the past. The Website was seen as an increasingly important reading source. Analysis on the differences in gender revealed that male students significantly searched more for resources other than the academic books. The study suggested the opening hours be extended (for 24 hours).

Wang (2010) in scholarly journal use and reading behavior of social scientists in Taiwan has completed a study and conducted a survey among the social scientists. The author has discussed in detail on the importance of scholarly journals, preference of journal format print or online journals, satisfaction with the scholarly journal services which libraries provide to meet their information needs, use and reading differences between and scientists in other disciplines. Social scientists use electronic journals more than print journals. The study also
describes the characteristics of information needs for social scientists and shows that scholarly journals are important information resources for university social sciences faculty members.

Prabhavathi (2011) studied the information seeking behavior of post Graduate students of SPMV, Tirupoti to examine the information need, seeking behavior and availability of information resources that affects the information seeking pattern and communication process. Authors found that half of the respondents visited library everyday and main purpose of visiting the library was to prepare for examination. About 94.6% of respondents were using books to support their curriculum and examination. Author emphasized the need for orientation programme on library resources and services.

Rahiman and Tamizhchelvan (2011) investigated the information need, use of information channels, information seeking process and information seeking behavior of the students of engineering colleges affiliated to Anna University. Authors also investigated the sufficiency of the library resources and the levels of satisfaction on library services.

Kadle and Kumber (2011) investigated information seeking behavior of faculty in the changing ICT environment among the faculty members of 46 commerce colleges. The finding of the study revealed that majority of the faculty seeks information to prepare class notes. It was also observed that information was scattered in too many sources and much information on Internet is the problem often faced by the users in information seeking. Changing ICT environment was also affecting information seeking behavior of majority of users. Authors suggested that library should start information literacy programmes to make users aware of library services.
1.3.8. Attitudes:

Sullivan-Windle (1993) revealed perceptions about the three elements in the process of the effective use of the academic library - the library itself, the staff and the students. Many of the issues raised were the same as those discovered in previous studies focusing on students’ library use. These included use of facilities; problems with gaining access to the collection; availability of information about library services; how students learned to use the library; and ‘library anxiety’ as described by Mellon. However, it also yielded some interesting and unusual insights. The data enabled a picture to be built up of the student client at the Kelvin Grove Library. The results showed how the staff made students feel guilty; how students developed in stages; and how they learnt to use technology new for them.

Maria K. Hatzios’s (1996) analysis indicated that students' attitudes are more closely related to the tangible attributes of the marketing education program than to the symbolic attributes. However, the relationship of students' attitudes toward the symbolic attributes of the program was found to be significant as well. Although the r² obtained in this study may appear low, (26% and 37% for tangible and symbolic attributes, respectively), it should be noted that in social sciences, explanation of even 10 percent of the variance of the dependent variable is considered a very good result.

Kathryn Ray (1998) said students are increasingly expected to use electronic resources while at university. Studies were undertaken to determine the level of use of e-resources, how students feel about various issues surrounding electronic resources and whether attitudes change dependent upon subject studied. 317 students across three universities completed questionnaires to determine level of use of various electronic information resources; ways in which they felt electronic resources had hindered or improved their academic career; if they perceived themselves capable of using the resources; would the standard of their work suffer
without the use of these resources; and the various methods employed to acquire the skills necessary to use the sources. 155 students were questioned as part of a larger study IMPEL2, investigating the Impact on People of Electronic Libraries, supplemented by 162 students, questioned as part of an MA Dissertation, using the same methodology.

Hilary Hughes (2005) revealed the finding of his study regarding significant online information literacy needs among the international student cohort. The difficulties noted ranged across all aspects of their online use, indicating general limitations relating to awareness of online information resources available, formulation and implementation of search strategies, and evaluation of search results. In an educational context that promotes independent learning and high use of electronic resources, these limitations represent significant barriers to achieving equitable academic outcomes. This would suggest a need for a holistic response to international students' information literacy education that promotes the development of essential understandings and capabilities in ways that are relevant to their current learning context.

The findings of the study of Kouros and Abrami (2006) indicated that the Sage questionnaire is a valuable instrument for it serves both as a diagnostic measure and as a predictive measure. There were two significant predictors that explained 13.3% of the variance in student final grades; the attitudinal factor quality of product and process and the behavioral factor seeking content information. Overall, high school and junior college students had positive attitudes towards learning with fellow classmates. However, students wanted the freedom to select their group members, and group evaluation and the division of task elicited diverse views.

Sharad Goel and Winter Mason (2008) in their studies have supported the claim that individuals are influenced by the attitudes of their peers, and this influence is often asserted to
play an important role in domains as varied as politics (Lazarsfeld, Berelson, and Gaudet, 1948) and marketing (Keller and Berry, 2003). Although they do not dispute that when individuals are made aware of their differences, they may indeed influence each other, their results suggest that many such differences go undetected (also see Jussim and Osgood, 1989).

If a necessary precondition for social influence is the awareness of the orientation of the influencer, and if, as their results suggest, when individuals contemplate the opinions of their peers, they are either seeing a reflection of their own opinions (i.e., projection) or of general stereotypes, then the extent to which peers influence each other’s political attitudes may be less than is sometimes claimed.

Cathy Costa (2009) discussed the greater use of the library online information resources for their business research project than for workplace research. The most frequently mentioned databases such as IBIS-World, Pro-Quest, and Factiva are all key business resources. There were a small number of library online information resources that were not used at all by students surveyed in this study, including the Connect 4 databases and Source OECD. Students used subscription online information resources provided by their co-op workplace more for workplace research than for their student business project. The use of these resources was low. However, only 44.8% of students knew about subscription online information resources accessible in their workplace.

Patricia, Bertea’s (2009) results revealed that there is a connection between technical abilities and students’ attitude towards e-learning. Attitude is also influenced by time dedicated to computer use as indicator of pc experience. Attitude differences were found in the case of hired students compared with the unemployed ones. No influences were registered due to specialty and year of study. He/she expected to find an influence coming from
postgraduate studies, where over 60% of students had a job and attitude towards e-learning should have been according to the specialists more favorable.

Ping, Zhang (2009) explored several research implications. The first was to do with the operational treatment of attitudes in future empirical studies. First, early attitudes show significant influence on the current bi, but with much smaller r squares. This may mislead researchers to believe the small effects or research power of attitudes in general (type i error). This may be one reason why several prior studies found a non-significant impact of attitude on bi. Second, without considering the current attitudes, a to’s effect is almost the same if not much larger than atb’s, which may mislead researchers to believe that a to is equally or even more important (as in the case of figure 4b) in predicting bi than atbis?

Lindsay, Saitz (2010) found that student attitudes are multi faceted. Although students may be provided with high interest and/or challenging activities, they may not remain engaged. These well-versed reading specialist candidates understood that regardless of the activity or instruction, students might need additional support to remain engaged.

Abdulhadei. Haimour (2012) study relates to attitudes of university students toward persons with disabilities whether they were (positive or negative). The researcher used the (T-test) to extract the mean and standard deviation of students' grades on the attitudes questionnaire. The study also relates to attitudes of university students toward PWD depending on the education level variable (1st year, 2nd year, 3rd year, and 4th year) and the attitudes of university students toward PWD depending on the contact level variable (Never contact, Mild contact, Moderate contact, and Deep contact), The researcher has extracted the mean and standard deviation of students' total grades on the attitudes questionnaire.

Charles, N. Nzivo, (2012) The paper shows that KNLS? Library services and information resources are very positively perceived by most respondents. KNLS libraries are
comparatively better off than universities and other public libraries; are predominantly focused on print documents (books) as preferred sources; readers' mostly begin their search for information on a particular topic from them; for general reading and research purposes the information resource equip users with appropriate knowledge. The study focused on adult users in internet-serviced libraries within the KNLS and thus may not be used to generalize about users of all public libraries in Kenya.

Ramdhani (2012) in his Analysis on Consumer Attitude Using Fishbein Multi-Attributes Approach stated that the development of economy was growing rapidly, accompanied by increasingly sophisticated technological advances that led to the emergence of competition among firms. Increasing number of motorcycle brands in circulation led to a very tight competition in the motorcycle market, particularly in the type of motorcycle. This faces the consumer with various choices of brands, so the motorcycle manufacturers need to know the tastes and desires of consumers to create and sell a motorcycle that will be favored by consumers. The results of this study indicate that (1) that the most important attribute considered that is attached to the product brand motorcycles Honda, Yamaha, and Suzuki is the attribute of Price that has the highest positive score compared with a score of other attributes for each of the brand of motorcycles, Honda, Yamaha, and Suzuki. (2) consumer attitudes showed a positive attitude in which the score for the Honda is +60.03, +56.14 Yamaha, and Suzuki is +55.00. (3) the dominant factor influencing purchasing decisions of motorcycle products for the Honda brand is being a member of the family, while for the brand Yamaha, and Suzuki are others.

The result of V. Radjagopal (2013) studies on users’ attitudes and approaches towards e-resources and services in the academic library of puducherry union territory found that clients of government colleges need further improvement in the application of e-resources. The
colleges and universities should try to provide 24 hours’ electronic source access. This will help the researcher students and faculties to access the electronic resources and to get necessary information at their convenient time. Thus the clients also get motivation to use e-resources. It is concluded that female respondents mostly visited the library for the purpose of accessing electronic journals.

Analysis of David Otieno,Omollo’s (2013) study established that majority (68.038%) of students and all teachers (100%) had positive attitude towards ICT use in implementing Biology curriculum having in general, mean scores of 3.6110 and 3.9946 respectively. In both teachers and students there were no statistically significant differences across gender towards ICT use in the implementation of Biology curriculum even though males had slightly more positive attitude toward ICT use than females.

Ifeka E. Okeke (2013) showed through the result of his study that respondents clearly stated that the materials in the reference section of the academic library are obsolete, hence their refusal to use them. Again, it was discovered that the problem of arrangement of materials on the shelves is another major obstacle to the use of reference materials. 34(17.43%) of the respondents indicated that the materials are not properly placed on the library shelves, hence the problem of easy accessibility to the materials on the shelves.

1.3.9. Satisfaction:

Daisy Seneviratne (2006) The library faces difficulty of extending opening hours due to insufficient staff strength and the restriction of overtime payments. However, with special approval, the opening hours on Saturdays were increased by adding two more hours employing a single available library assistant. User education is very valuable to produce a satisfied library user. This enables them to make more efficient, independent use of the stock
and the services. Several steps were taken to increase productive use of library resources and services to answer this need. It was revealed that users were unaware of the online public access catalogue of the library while analyzing the data, from the 36.5% of no comment responses on the catalogue.

Khasiah and Haslinda (2008) reported that a study on customer satisfaction revealed many things that the library can do in terms of activities that would benefit library users. The results of the study by Norliya and Khasiah (2006) found that the largest proportion (91.7%) of the respondents think that the library should publish a guide on information searching skills. A large proportion (89.6%) of the respondents also think that the library should publish library and information related journals. The percentage of respondents who identify other activities is also very high, ranging from 89.4 per cent (for publishing index and bibliographies) to 75.2 per cent (for conducting lifelong learning workshop).

Mahajan’s (2009) Findings revealed that users were more or less satisfied with collection and services. Author further suggested that libraries must understand information seeking behaviour of users to provide information efficiently since methods and tools for information delivery continue to grow and changing dramatically.

Norliya Ahmad Kassim’s (2009) found that on an average, the library users are only quite satisfied with the services infrastructure/ place/ space, and collection/ information of the library as a whole. Respondents are relatively most satisfied with infrastructure/ place/ space (M= 3.41), followed by collective/ information (M= 3.27), and lastly services to users (M= 3.18) in that order. The results of the comparison of test means using ANOVA show that the levels of satisfaction on the library services, infrastructure, and libraries’ collection/ information among the respondents from the three faculties are statistically significant and all the mean scores are significantly different from one another.
Babar Zaheer Butt and Kashif Ur Rehman (2010) investigated the determinants of students’ satisfaction in higher education and found that teacher’s expertise, courses offered, learning environment and classroom facilities enhance the students’ satisfaction. The study also stated that academic environment was found to be the primary factor in selecting educational institutions. Academic environment means library facilities, journals available, computer facilities and the like.

Dhanavandan (2012) examined that students are leading users of e-resources in terms of respondents, 77% of students and 23% of faculty members. Most of the students were using the e-resources for studying and 18.6% of users for updating the knowledge. Half of the users (55%) preferred electronic journals and e-books. It is higher than the other types of resources. Majority (66%) of the respondents were satisfied with the e-resources available in the library. They were giving more importance to electronic version of documents.

The aim of the study of Binti Zainal (2013) is to integrate end user satisfaction criteria with Library Science and Information System Expectation Disconfirmation Theory (EDT). The conclusion from this study is that an integrated approach from both fields is needed to provide a more comprehensive perspective to evaluate and measure the Web OPAC end user satisfaction.
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