CHAPTER-2
REVIEW OF RELATED LITERATURE

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CHAPTER-2
REVIEW OF RELATED LITERATURE

2.1 What is Literature Review?

Review of related literature is a key element of any research. Literature review is an evaluation of literature related to the subject area of the study. The review describes, summarises, evaluates and clarifies the literature available on the related topic. It gives a theoretical base to the research and helps to determine its nature. Works, that are irrelevant, are discarded and those, which are peripheral, are looked at critically. The study of related literature involves locating, reading and evaluating reports of researches as well as reports of causal observations and opinions that are related to the individual’s planned research project. A literature review is more than the search for information. “All works included in the review must be read; evaluated and analyzed, relationships between the literatures must also be identified and articulated, in relation to field of research” (Muskal, 2000). Electronic information sources and services are widely discussed topic among the research. Much of the materials are scattered in text books, journals articles, case studies written by both Indian as well as the foreign authors. Review of related literature is done so that the objectives and methodologies of their studies can be taken into consideration in brief, this chapter presents an overall review of studies conducted abroad as well as in India a in a chronological under related to the topic of the study.

2.2 Definitions of Literature Review

According to cooper (1988) “A literature review uses as its database reports of primary or original scholarship a does not report new primary scholarship itself. The primary report used in the literature may be verbal but in the vast majority of cause reports are written in document. The types of scholarship may be empirical, theoretical critical analytic, or methodological in nature. Second as literature review seeks to describe, summaries, evaluate, clarify and /integrate the content of primary report.”

2.3 Why Literature Review?

Literature reviews provide you with a handy guide to a particular topic. It acts as a stepping-stone towards achievement of your objectives in research. For scholars, the depth and breadth of the literature review emphasizes the credibility of the writer in his or
her field. Literature reviews also provide a solid background for a research paper's investigation. Comprehensive knowledge of the literature of the field is essential to most research papers. (Muskal, 2000)

The role of the literature review is to analyze the existing literature and give justification as to how your research will fit into the existing body of knowledge. "This means that the literature review provides the general understanding which gives meaning to the discussion of findings, conclusions, and recommendations. This allows the author to demonstrate how his research is linked to prior efforts and how it extends our understanding of this general line of scholarly inquiry" (Muskal, 2000).

A crucial element of all research degrees is the review of relevant literature. So important is this chapter that its omission represents a void or absence of a major element in research (Afolabi, 1992).

According to Bourner (1996) there are good reasons for spending time and effort on a review of the literature before embarking on a research project. These reasons include:

- To identify gaps in the literature
- To avoid reinventing the wheel (at the very least this will save time and it can stop you from making the same mistakes as others)
- To identify other people working in the same fields (a researcher network is a valuable resource)
- To increase your breadth of knowledge of your subject area
- To identify seminal works in your area
- To provide the intellectual context for your own work, enabling you to position your project relative to other work
- To identify opposing views
- To put your work into perspective
- To demonstrate that you can access previous work in an area
- To identify information and ideas that may be relevant to your project
- To identify methods that could be relevant to your project
As far as the literature review process goes, ultimately the goal for students is to complete their review in the allocated time and to ensure they can maintain currency in their field of study for the duration of their research (Bruce 1990).

2.4 Introduction

The purpose of this study was to investigate about the Use of Electronic Resources in Central University Libraries in Uttar Pradesh and Delhi: A Comparative Study. In order to gain some insight from previous studies that have been done in the field of electronic resources, this chapter, the Review of Literature, concentrated on use of electronic resources in central university libraries of Uttar Pradesh and Delhi. The contribution of academicians, research scholars, information scientists and library professionals on this topic in various dimensions has yielded in valuable set of research output.

As this kind of research is new in the field of library and information science in India, an attempt is made to present review of all relevant literature published from 2000 to 2011.

This was presented in a *chronological order*. The chapter ends with the summary of the studies that were reviewed.

In the present investigation, the researcher has made an attempt to highlight the review of literature under four broad headings.

1. Selection of electronic resources
2. Acquisition of electronic resources
3. Use of electronic resources
4. Evaluation of electronic resources

The reviewed articles are arranged chronologically in ascending order.

There are lot of articles are available related to my topic but I have taken some important articles abstracts and some finding of the related articles.

2.4.1. Selection of Electronic Resources

Miller (2000) in his article titled “Electronic Resources and Academic Libraries, 1980-2000: Historical Perspective” described how collection is to be developed in an electronic environment. Over the past twenty years, academic collection development specialists have dealt with dramatic changes, brought about by decreasing purchasing
power and the growing importance of electronic resources. The collection managers have rethought their efforts and revised criteria for the selection of materials in new formats while also maintaining traditional collections.

Fan (2003) conducted a study to examine electronic resources, including journals and databases for Chinese studies, collected in North American East Asian academic libraries. For the purpose of data collection a small survey of 26 East Asian academic libraries in North America was conducted in May 2003 in order to learn more about collection development practices and accessibility issues for Chinese electronic resources based on the eight-question. The findings of the study were as about 57 percent of the responding libraries have collection development policies for their electronic resources, 36 percent do not, while 7 percent were unsure; budget constraints, time constraints, lack of technical support, lack of training, and Chinese/English computer operating system incompatibilities, were given as the top five constraints in the collection of Chinese electronic resources and providing access to them.

Maharana, Choudhury and Dutta (2004) conducted a survey to reveal the present status of collection of e-resources in the libraries; to find out collection development policies of e-resources adopted by these libraries and to evaluate such policies and practices; to explore the current practice of selection and to recommend practicable guidelines for improved collection development programmes. For the purpose of data collection a questionnaire were used to elicit information on the various aspects of the subject study, which includes the present status of e-collection, policies and practices etc. from the ten R&D libraries of Kolkata city. The major findings of the study were that the libraries under the study have been subscribing to a wide range of electronic databases, such as AGRIS, MEDLARS, Sociological Abstract, INIS etc. this shows the strength of e-collection of these libraries; six (60%) of (he libraries have policy statement for development and management of their e-resources. Only 3 (30%) out of 10 libraries subscribes to CALIBNET; all the libraries except NIRJTAFT have their own website. They provide OPAC, ILL, email service etc eight (80%) libraries don't follow a standard practice to preserve their digital resources and technical training is provided to the staff of 7(70%) libraries on digital e-collection.
Mulla and Chandrashekara (2006) conducted a study to examine libraries within the region of state of Karnataka, India; and also to examine the level of effort taken by the engineering colleges’ libraries in Karnataka to build electronic resources. The study reveals that less than one fifth of the libraries possess high level availability of electronic resources; the moderate level is identified among 42% of libraries; the low level is identified among 34% of the libraries; the region wide analysis indicates that the Bangalore region has high level availability of electronic resources; only 14 out of 61 libraries (23%) have taken great care to build electronic resources (bibliographic and full text databases) in various disciplines; about 10% of the libraries in Bangalore and 7% in Mysore regions concentrate more on building the electronic resources, probably due to their availability of funds as well as the demand from their users; in-house databases (bibliographic databases) compiled by the sample libraries indicates that 23% of the libraries have built a large database; 26% have built moderate-sized database while more than 51% of the libraries have built a small database; and a region wise analysis shows that about 50% of libraries in the Bangalore region have built a high volume of bibliographic records.

2.4.2. Acquisition of electronic resources

Al-Baridi and Ahmed (2000) conducted the study to present an overview of the development of electronic resources at the KFUPM Library. It will also highlight the KFUPM Library experiences in developing these resources an overview of the development of electronic resources at the King Fahd University of Petroleum and Minerals (KFUPM) Library. The paper will also highlight the use of the KFUPM Library Web site and Internet to enhance the library collection, expand services, and improve operations to provide access to a growing array of internal and external electronic resources. Finally, the authors wish to share their experiences particularly with the library professionals of the Arabian Gulf region. The KFUPM Library Information Gateway is being continuously redesigned and restructured to provide access to CD-ROM databases, electronic journals, document delivery services and several other electronic information resources.

Breeding (2004) discussed the fundamental aspects to managing electronic resources in his study “The Many Facets of Managing Electronic Resources”. According to him there
are two fundamental aspects to managing electronic resources: back-end acquisition functions and front-end content delivery. Back-End Management Tools for Library Staff includes Traditional Online Catalog Approach, E-Journal Holdings Data Services, and Electronic Resource Management Applications. Whereas Front-End Management: Delivering Access to Users includes Links from the Online Catalog, E-Journal Locator Resources, Linking to Full Text, Open URL-Based Link Resolvers. He reviewed the various approaches and products for managing electronic resources; it becomes apparent that the data describing the library's holdings stands at the center of all of them. At a minimum, all the applications that a library employs to manage its electronic resources should draw from the same knowledgebase of its electronic holdings. A library should not have to maintain the same information in multiple ways. If the library catalog, linking environment, electronic resource management system, and Meta search engine cannot all share the same physical knowledgebase, then it should at least be possible to have a master copy of the data that is automatically distributed through these applications. He suggested the many facets of electronic resource management should be delivered through a set of interconnected modules that work together, sharing common data files or at least communicating with each other through open protocols. What I see in today's set of products seems far from that ideal. I'm optimistic, however, that a more cohesive approach will emerge in the very near future.

Kennedy (2004) studied the Dreams of Perfect Programs: Managing the acquisition of electronic resources and found that more than a decade, academic libraries have been wrestling with the thorny issue of managing the acquisition of electronic resources. He had a look at several in-house initiatives around the country, commenting on the successes and failures of the homegrown programs built to track, update and manage the acquisition and behind-the-scenes maintenance of electronic resources. Realizing that libraries are now well equipped to identify what dream programs should entail, this paper also comments on how we can prepare for the future of electronic resource management.

Weir (2010) made an attempt to examine the electronic resources and its management in their study Innovative Practices in Electronic Resources and Acquisition Management.
Results of the studies show that Electronic resource as a profession continues to change on a monthly, if not weekly basis. In many cases there are proprietary tools that can assist an electronic resource professional in accomplishing the daily tasks that must be accomplished in order to successfully maintain the electronic resource collection. However, many times the resources needed to acquire these proprietary resources are not available and electronic resource professionals must find low cost or no cost solutions to the issues they are facing. Another shift academic libraries are facing is the need for more people to work with electronic resources and their maintenance. There are many ways of accomplishing the creation or restructuring of units to better meet the needs of the institution. In this situation as well many electronic resource professionals find themselves with no additional funding to restructure or hire new staff, and therefore have to find creative solutions to these issues. Hopefully this article provided some ideas and solutions in this area as well.

2.4.3 Use of electronic resources

Mutshewa and Rao (2000) describe how the University of Botswana Library has taken advantage of the new technologies to enhance its service to its patrons. The university local network is used to bring library electronic resources to the desktops of the patrons in their offices. Conclusion as The University of Botswana Library uses the available information technology resources to enhance its service. From time to time, the library professional staff is in search of new ways to improve the service. Information technology has been put at the forefront in the library's quest to provide quality service.

Standard Organization, NISO – National Information Standards Organization. The problem relating to vendor supplied data are stated as:
1. Vendor reports do not provide sufficiently detailed information,
2. Vendor reports are inconsistent in their application of the definitions of variables,
3. Vendor reports are not commensurable between each other and,
4. Some vendors do not report anything. Another method to understand usage of networked Electronic Resources is through web survey. The web survey has a number of limitations. The third method of assessment based on infrastructure through which patron access it’s provided to networked Electronic Resources. This is nothing but studying the subject gateways and their use. The advantages of infrastructure assessment are mentioned. The scope of networked Electronic Resources is mentioned as 1. Digital Libraries 2. Pre-Print & Post-Print server 3. Open Access Journals and 4. Institutional Repositories.

Micalla (2003) conducted a study to encouraged students’ use of the library, and particular of its electronic resources and what factors encourage students to seek out information in the library setting. A pilot survey was conducted a class of student taking in "introduction to psychology" at Baruch College, City University of New York. That survey had a number of open ended questions through statistical analysis, Micalla found that use of the library correlated to the students’ use of the library's electronic resources and also found out that. Students who express an interest in learning about the library's electronic resources will be more likely to have higher self efficiency.

Tenopir (2003) conducted the study which summarized and analyzed more than 2000 recent research publications that focus on the use of electronic library resources and were published between 1995 and 2003. The studies used a variety of research methods, including observation, surveys, interviews, experiments and transaction log analysis. The tier 1 and tier 2 studies make several valid conclusions that shed light on user behavior with electronic resources. Both faculty and students use and like electronic resources. Print is still used for some reading and in part of research in almost every discipline. Print remains the most popular medium for books; e-books use is still in the very early stage. Subject experts use hyperlinks to view related articles, students use of
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hyperlink is less clear. A college and high school student use the internet more than library for research and believe they are more expert at searching them their teachers. **Tadasad, Maheswarappa and Seema (2003)** conducted a study based on survey among the one hundred and ninety three undergraduate students of Engineering. It was observed that, the internet use is confined to general or recreational purposes and its potential in supporting curricular requirements has not been realized by the students. The use of Internet at College is being made by very few students and this needs to be increased. Also Internet facility should be extended to library, as it has become an important source of information, facilitating effective communication and being a major information retrieval tool. Concludes that awareness needs to be created among the students for using Internet in addition to the library facilities and training is to be provided to acquaint students with interest.

**Rehman and Ramzy (2004)** conducted a questionnaire based survey of health professionals affiliated with three teaching faculties of Kuwait University. It was conducted to find out the nature and extent of use and the reasons of low use of these resources. Responses were received from 70.9% of the faculty members. They reported that time constraints, lack of awareness, and low skill level were among the primary constraints they experienced.

**Zhu (2004)** conducted a study under the title Understanding Open URL standard and electronic resources effective use of available resources". The objective of the study was to know the Open URL standard and electronic resources use of available resources. The Open URL standard provides a mechanism to transport metadata identifiers of a digital item from one resource to another a: well as a way to construct links in a dynamic linking, environment. The Open URL standard provides a means of integrating electronic resources. This article first describe some integration issues for electronic resources in the library and continues to discuss types of URL before giving an overview of the Open URL standard and the Open URL linking system, the link resolver. The major Open URL linking products and host solution options are described, and the impact of the Open URL standard and Open URL linking system on library users and library services are discussed new developments in the Open URL standard and Open URL linking systems are provided in the concluding section.
Doraswamy (2005) studied the use and familiarity of electronic information resources in his paper titled “Familiarity and Use of the Available Electronic Information Resources by the Students in V.R Siddhartha Engineering College Library, Vijayawada: Survey”. The study was conducted by using questionnaire method. The findings show that 61.25 percent students are familiar with electronic information resources, 27.50 percent of the students use the computer daily and 5.63 percent have never used it. A less percentage of students, i.e., 2.5 percent of students used CD-ROM, 33.13 percent internet, 38.13 percent e-mail, 36.87 percent search engines, and 21.25 percent use VRSCE website ‘daily’ respectively. The online databases are used by 25 percent and VRSCE catalogue’ once a month. 18.75 percent of students use online journals rarely. 42.50 percent of the students use electronic information resources for communication purposes. The main problems faced while using electronic information resources were lack of training and time.

Vishnu Kant (2005) conducted a study of the use of online services by the scientist of CSIR libraries; to determine the impact on online searching as research and development; to highlight the problems coming in online searching of information and to find out how much the scientists are affected through online information searching. The methodology was based on questionnaire method in various CSIR Institute libraries located in Lucknow. The findings of study were as, about 53% of scientists spent two hours in online searching for the purpose of comprehensiveness and current up to datedness of information; scientists generally access full text databases and bibliographic databases provides them needed information about the research and technological development; Boolean logic search and keyword searching are the most helpful technique for information retrieval from the store of databases.

Dadzie (2005) conducted a study to investigate the use of electronic resources by students and faculty of Ashesi University, Ghana, in order to determine the level of use, the type of information accessed and the effectiveness of the library's communication tools for information research. A questionnaire-based survey was utilized. It consisted of 16 questions to determine level of use, type of information accessed, assessment of library's communication tools, problems encountered when using electronic resources and ways to improve the provision of electronic information in the community. The
study found that general computer usage for information access was high because of the University's state-of-the-art IT infrastructure; usage of some internet resources were also very high, whilst the use of scholarly databases was quite low; the low patronage was attributed to inadequate information about the existence of these library resources; and the study recommends, among others, the introduction of information competency across the curriculum and/or the introduction of a one-unit course to be taught at all levels and the provision of more PCs on campus.

Mathew and Sheeja (2005) conducted a case study to identify the use of e-resources by the faculty and research scholars of Cochin University of Science & Technology and to know whether they were satisfied with the e-resources currently available in CUSAT; to ascertain the awareness of e-resources among the faculty and research scholars; to identify the use pattern of e-resources among the faculty and research scholars; to know whether research scholars and faculty prefer to access the electronic version or the traditional print version; to know the requirement of research scholars and faculty regarding the accessibility of e-resources and to collect suggestions regarding the collection development of e-resources. 60 questionnaires were equally circulated among the faculty and research scholars of the different department of the University. Out of 30 questionnaires mailed to the faculty, 14 were returned and in the case of research scholars 29 were returned out of the total sample selected by the investigators around 70% sample population are aware of The e-resources available in the University and access them without any problem; the majority of the faculty members (78.6%) were aware of the e-resources available in the university and knew how to access them; about 21.4% of the faculty opined that they were aware of e-resources but they had some problems in accessing the e-resources; in the case of research scholars around 70% were aware and knew now to used them but a few 40% were not familiar with usages of e-resources, and about 20.4% observed that the access was not easy and all the respondents were positive about the need to conduct a regular training and awareness programs 100%; only 14% of respondents were satisfied e-resources available in CUSAT and only 6% of the faculty and research scholars depend on the University library to access the e-journals about 94% of the respondent accessed the e-journal from the computer lab.
Kumbar, Raju and Praveen (2005) conducted a study that electronic resources have become the vital part of human life in 21st century. It is clear from the study that how electronic resources are useful to research scholars and also problems in accessing and utilizing of electronic resources. 92.86% of respondents use e-resources for the purpose of their research work. 97.21% of use internet as an e-resource. The majority (45.71%) of the respondents use FSTA database. 75.11% of the respondents opened that access to current information in only through electronic resources. 52.86% of respondent stated that too much of information retrieved in one of the hindrance in using electronic resources. At the same time more than 70% of respondents opened that standard of their work would suffer without e-resources.

Naushad Ali (2005) conducted the study to examine the use of electronic information services (EIS) among the users of the Indian Institute of Technology (IIT) library in Delhi, India. Both questionnaire and observational methods were used for data collection. The Analysis of the data collected covers awareness of EIS services, use of e-journals advanced search, facilities acquaintance with electronic information sources, the purpose of using e-information problem faced by the users while using EIS, infrastructure facilities available and satisfaction level of users. Lack of printing facilities, terminals and trained staff are the main reasons that would discourage users, from accessing the EIS. The survey also revealed that some 60 percent of users face difficulties while browsing e-information.

Nicholas (2005) conducted a study to find the faculty’s views towards college students about open web resources. Questionnaire method is used for collecting data of 90 faculty members of 40 colleges. The finding of the study reveals that 60% of respondents said that college subscribed online resources according to the need of the students. Only 70% colleges allocate significant funds to subscribe to online data bases and journals. Most faculty members said that students used the open web resources for quick search of materials and carrier development. Search engines were used for searching web resources.

Prem Chand and Others (2005) explained the use of electronic journals available under UGC INFONET consortium in University libraries. The concept of Electronic Journals, Electronic Publishing, Electronic Serials, Online Journals and Electronic
Periodicals is stated in the beginning. The development of UGC INFONET and their services were discussed in three phases. The UGC INFONET providing access to University libraries to their web. The respective libraries have to provide their IP address in order to access of electronic journals and electronic resources offered by the UGC INFONET. User statistics of these electronic resources is not promising. It is necessary to initiate such steps that could help to encourage the users to use the electronic resources offered by UGC INFONET. In this context, the development of infrastructure and user training played a crucial role.

Lalitha and Rabia (2006) discussed the need of electronic resources in the Public Libraries because of the various advantages of the electronic resources in changing publication industry and various services rendered through electronic resources. Public libraries, which were setup to act a easily accessible and free source of information to the common man, over a period of time had became less attractive due to the exponential increase in publication and budgetary constant. So the librarian must exploit the electronic resources to provide varied services to its users, firstly to keep pace with the change in time and secondary to make learning more enjoyable and more effective. This will bring public back to the public libraries had been setup.

Sunil and Angelo (2006) conducted a study to investigate the increase in the accessibility of information due to the use of electronic resources; to access the influence of increase access to information in the teaching and learning process and to study the attitude of academicians towards the electronic information. The study employed census method sampling covering all the post graduate social science education of Loyala College of social sciences and Kerala institute of medical sciences. The major findings of the study were as about 92.9% of Loyala college and 81.3% KIMS are of opinion that access to e-resources; the quality of teaching improved very much with the use of information from e-resources; it is found that, internet become a daily reference solutions o about an average of 50% of academician and e-mailing became a routine communication mode to a considerable majority of population.

Lohar and Roopashree (2006) conducted a study to know the availability of different types of electronic resources in B.I.E.T. Libraries; to study the use of different types of electronic resources by the faculty members; to study the purpose and utilization of the
electronic resources by the faculty members; to find out the hindrances faced by the faculty members while accessing and using electronic resources and to observe the impact of electronic resources over the traditional one. Total 60 questionnaires consisting of 13 questions were distributed among the faculty members and the required data was collected. The findings of the study were that only 10% of the faculty members have more than 25 years of experience in teaching; majority of respondents (26.67%) were using electronic resources once in a week; and 35.09% of faculty members are using electronic resources for finding relevant information in their area of specialization; majority 55(42.64%) of the respondents used .internet and 30 persons (23.26%) used CD-ROMs. The information available in electronic resources was said to adequate; regarding the hindrance of accessing the electronic resources 22(27.85%) stated that too much information retrieved was the main barrier in using electronic resources; majority of respondents 42(30.66%) stated "access to current up-to-date information" as a benefit of using electronic resources and majority of respondents 21 (23.33%) faced problems due to lack of timing and 19 (21.11%) faculty members indicate lack if training as the main problem in using electronic resources.

Husain (2006) studied “The patterns of internet use by the faculty including purpose for use, its impact on teaching and research, and the problem faced while using the internet”. A questionnaire, expert review and pilot test was used to collect data from the faculty among four colleges of Kuwait University related to Arts, Social Science, Science and Engineering. A large majority of respondents have been using the computer and Internet for more than five years. They use the internet mostly for and give importance to email, search engines and www resources mainly for communication research and publication. It has helped them to save time, find up to date information, and cooperate with their colleagues, slow speed, lack of time are major barriers. Most of them were interested in improving the internet use skills through training.

Anuradha and Usha (2006) investigated “the use and usability of e-books from the perspectives of users in an academic and research environment. This study involved an e-mail questionnaire to survey researchers in the academic and research environment of the Indian Institute of Science regarding their use of e-books. Findings indicated that the students tend to use this new technology more often than faculty members and staff.
Those who did use e-books mostly used reference and technical material. The highest response was from the Centre for Ecological Science, followed by the Super computer Education and Research Centre, and then the Department of Molecular Reproduction and Development and Genetics. The majority of the respondents were using computers for over five years for a variety of purposes including e-mail communication, internet browsing and text processing as well as for other advanced uses such as numerical computing and DNA sequence analysis. However, the use of e-books appears to be very low, indicating a requirement for creating awareness and user education about both software and hardware related to e-books. Only 37 of the 104 respondents had used the free trial offer from Kluwer and Edutech e-Books during July 2004.

**Satish and Kumber (2006)** investigated the availability of institute's websites and the extents of the library information hosted on the websites; to study the regular use of internet by the users and their frequency of visit to institute websites. This study was based on part of a questionnaire survey conducted for the doctoral studies at Karnataka University, Dharwar. This study revealed that the lack of interest of users in library website is because of the inadequate and static information being made available on it. This study also revealed about the services users expect to access through the internet at their convenience.

**Asefeh and Nosrat (2006)** presented a survey and investigated the relationship between awareness and use of digital resources among students in Isfahan University of Medical Sciences. To carry out the survey a questionnaire was designed for collecting data. Result indicated that. 70% of students are aware of digital resources available in the university database, but 69% of them do well to using the resources. 62% are aware of offline databases whereas, only about 19% used them through central library, LAN Network. About 70% are aware of online databases accessible via central library Website and about 53% of respondents have used them as well 64% are aware of "Central library books and Journal Databases" whereas more than half of them Le. 54% have referred to mentioned database. 87.2% of students felt that the available digital resources met their information on needs. Conclude, students were less eager to use online databases, attributed to factors such as infrequent periodic orientation and kick of
education on use of offline databases and limited numbers of terminals connected to the center in CL users are facing some problems.

Koovakkai and Hanna (2006) conducted the study under the title "Electronic information use among the faculty" a teacher in universities plays a vital role in providing up to date information with latest technology, they have to be good users of such information. Hence, it is worth studying the use of information by the university teachers. A pre-structured questionnaire was used to collect the data. The study revealed that the most important purpose of use electronic resources by the university teachers is doing the research. The availability of information and the satisfaction of the teachers in the available resources are not high Non-availability of full text lack of time and lack of system speed are the most important barriers for the teachers in using the e-information.

Hangsing (2006) studied the use of electronic journals in North Eastern Hill University (India). The author noted, lack of sufficient infrastructure to use electronic journals is the prime reason for low use. It is reported that 50% University libraries do not have internet connection, a mandatory for the use of electronic resources. He found that the bandwidth available in North Eastern Universities is not sufficient. There is no facility of uninterrupted power supply to the University library. He made a comparison of use of electronic resources among North Eastern Hill Universities and reported NEHU and TEZPUR Universities are far better than other University libraries. The author studied usage VS downloads and identified several issues to be attended. Most of the libraries are using electronic journals offered by UGC INFONET.

Kiran Kaur (2006) conducted the study to examine digital libraries in Malaysia to identify electronic services provided to patron via the digital library as out linked in the literature. A checklist prepared from the examination of the literature is used to identify e-services provided by the sample libraries. Results revealed that a majority of these libraries were seriously lacking in the provision of e-services via the digital, library. The emphasis is on third party resource provision, such as online databases, e-journals and e-books, and digitized materials of local content, etc. Commendable, a small number of libraries are beginning to provide services such as query through e-mail and web forms, online document delivery, on-line request of materials, interlibrary, loans, e-services and some have interesting initiatives that should be replicated by others.
Hashiman (2006) conducted the study under the title, "The use of electronic information resource among the users of Penang Public Library Corporation." The findings revealed that EIRs services provided by PPLC are being regularly used by the users. It was noted that the younger group relied more on the EIRs. The most preferred EIRs were internet (51.9%) and OPAC (43.2%). The preference of internet was higher among school students with 25% users and college student with 17.2% users, whereas the preference of OPACE was higher among the professional group with 30% users. The use of other EIRs was less popular with electronic Journals (19.1%), online databases (16%) and CD-ROMs (7.4%). It is recommended that PPLC must strive aggressively to promote the less popular EIRs that are provided but seldom used by the library users.

Saaravanan and Mary (2007) conducted a survey to know the purpose for using internet and study the teachers approach. The questionnaire was prepared and distributed to 60 teachers of different colleges for collecting data. The collected data were analyzed and it was found that 63% of teachers use internet for accessing information. Google is most preferred search engine 73% of users use Google search engine for searching information' is most. Some problems were also faced while accessing information on internet.

Mallinath and Raju (2007) conducted a study to know the internet use and its impact among the engineering colleges of Mysore. Structure questionnaire were designed to collect the data. Out of 100 questionnaires 90 filled questionnaires were received back. The outcome of the survey was that, 92.22% of the total respondents use internet for email, 86.66% respondents was using Google as the favorite search engine for accessing information. The study also highlights some suggestion such as increase of trained staff and improvement in speed of connectivity.

Sarasvady and Khatri (2007) conducted the study under the title "Study of the use of electronic resources for implementing library consortium". Most of these studies are western countries oriented and hardly studies were available in India. The present study was carrying out a survey of the academic staff and the researchers who use the libraries. The result of the study in the last ten years there is phenomenal increase of the electronic collection and the correlation between the availability and awareness is found among
teaching and research users. The young participants who use e-journals show a higher level of an awareness of the collection and willing to resort for more e-journals.

**Biradar, Rajashekar and Sampath Kumar (2008)** conducted a study to explore university students and teachers use of search engines for retrieval of scholarly information. The main objectives are to examine the use of search engines, use of popular search engines and also to know the methods of learning search strategy by students and faculty in the university environment. Result of the present study shows that 100% of the student and 97.91% of faculties used search engines for retrieval of information on the internet. Google and yahoo receive the highest overall ratings. Study reveals that majority for respondents take help from their friends and use help message of search engines to learn the research strategy.

**Rajeev (2008)** conducted a study to analyze the patterns of use of internet and electronic resources for patient care, the internet skills of the dentists, and problem faced by them while using the internet and e-resources. The instrument used in the study was questionnaire and observation. The major finding was a majority of respondents (70.8%) access the internet from the college or work place, while 19.3% also access from home. 42.6% of the respondents use the internet and e-resources for finding health/dental sciences information, followed by patient care with 26.5% responses Email has been chosen as the most popular internet service and e-journals as the most popular e-resources, with 95.3% and 63.7% response respectively. A majority of the respondents (71.3%) feel fully satisfied with internet service and e-resources. A majority of the respondents (80.2%) feel that the internet and e-resources cannot replace the print resources that in only supplement of print resources.

**Ahmad and Louise (2008)** conducted the study to discuss the use of e-information sources by healthcare personnel in the kingdom. A questionnaire with open ended questions was designed to collect data from 11 governmental hospitals and health centers in Riyadh. It identified a range of problems and obstacles that impact on the use of electronic information sources. Some obstacles to have been identified including health personnel were over helmed with work load; lack of information skills; low level of information literacy; lack of information policy. The survey indicates that the
scientists in Mysore University Campus Need constant guidance and training to maximize the use of e-resources.

Kanniyappan, Nithyamandan and Ravichandran (2008) conducted a survey at Anna University Library, Chennai (Tamil Nadu) to find out the use of different types of electronic resources and services and their impact on the academic development of faculty members. Also described are the problems faced in using the electronic resources and the success rate of satisfaction in getting the required information on e-resources services. The findings were found that all the respondents used computers/online services (100%). Regarding the e-information services, (53.47%) of the staff members are fully satisfied, E-mail (60.67%), internet (56.67%), OPAC system (58%) and on line journals (56.67%), researchers found that online e-journals are very useful to (48.60%), university library site to 40% and research project sites to 33.67% of the staff majority of the respondents 52.66% used the e-journal of more than the printed journals and 32% of the e-journal and printed journals equally. The present survey reveals that most of the faculty members are aware of the availability of electronic resources and they are, being use frequently for their teaching purposes.

Sujathan and Mudhol (2008) examine the "Use of Electronic Information Sources (EIS) by the teachers, scientists, research scholars and postgraduate students in the college of Fisheries, Mangalore". The objective of the study was to identify the constraints faced by the respondents while using the EIS and the access the satisfaction level of the users with access to EIS in their institution. The questionnaire was administered using a simple random sampling technique. It is observed that the majority of the respondents have rich experience in the use of EIS, where 71.5% have more than three years of experience. E-mail is the most frequently used e-information source followed by web:" sources. Among the various fisheries information source in electronic format, subject specific information websites (79%) international/regional institution websites (75.3%), e-journal (65.5%), (CD-ROM) bibliographic databases (60.5%), research project sites (56.8%) and professional association websites 543% are found to be used by the majority of the respondents.

Kumar and Kumar (2010) The paper aims to examine the perception and usage of e-resources and the internet by the engineering, medical and management academics in
Bangalore City, India. The prime objective is to find out how academics compare e-sources with print sources and how they perceive the advantages of e-sources and problems for accessing them. Data were collected from 300 students and faculty members in selected engineering, medical and management colleges of Bangalore City. The questionnaire consists of 15 main questions. The questions are designed for the students and faculty members to elicit their experience with the e-sources and internet use for their study and research work. Study results show that the students and faculty who participated in this survey are aware of e-sources and also the internet. Even though majorities of the academic community use electronic information sources for their academic-related work, most of them prefer print to electronic information sources. Many of the students and faculty learned about the electronic information sources either by trial and error or through the advice of friends. Librarians need to reallocate more budgets to expand the availability of electronic resources for students and faculty. Library professionals should also help users to ascertain what high-quality free resources are available on the internet and how to search these resources more effectively and efficiently.

**Abdul Mannan and Naved Ahmad (2009)** conducted a survey to examine the comparative use of e-journals by research scholars of two Indian central universities, namely the AMU and the BHU. Most of the objectives of the study were accomplished and it is evident that the two universities are very similar with respect to their research scholars’ knowledge and use of e-journals. The survey reveals that most of the research scholars are aware of e-journals in both universities. From this survey, the investigators have been able to find out that a good number of research scholars are consulting e-journals from their computer center and central library not only for research purposes but also to update their knowledge. It is very interesting to conclude that majority of the researchers from both universities under survey use the central library and university computer centers for use of e-journals. A large proportion of researchers from both the universities use e-journals for research purposes. The authors inferred that a majority of the researchers under survey keep abreast of the use of e-journals through scanning the printed journals available in their universities as well as through surfing the internet. Overall, the satisfaction level of the researchers of both the surveyed universities with
regard to use of e-journals is largely very high. The study also reveals that most of the researchers of both universities use e-journals daily, and find the information in e-journals is always very useful for their research. The most popular search engine they tended to use was Google, followed by Yahoo! But research scholars are facing problems because of lack of training and slow downloading times, limited number of computers and lack of technical knowledge. Most of the researchers feel that in comparison to print journals, e-journals are time saving and easy to use.

Patil and Parameshwar (2009) the paper explains about the electronic resources and their use by the faculty members and research scholars in the Gulbarga University, Gulbarga. Further, the data is collected through a questionnaire to study the information needs of the faculty members and researchers in various PG departments in Gulbarga University. The paper revealed that the electronic resources available in the Gulbarga University Library are much helpful in fulfilling their information needs. There is need to train the faculty members and research scholars in using the electronic resources. Further, there is need to include more number of journals in the UGC-Infonet Consortium.


**Bhat (2009)** made an attempt to study the use of Electronic Resources in University libraries particularly Pondicherry Library System. The growth of Electronic Resources and amount to be spent to acquire them is stated in the beginning. The author reported the use of Electronic Resources in their libraries is not promising. The author reported reasons for less usage of Electronic Resources in their library and referred the observations of exports in academic libraries on this issue. Electronic Resources are very expensive and the awareness on online resources is not up to the mark. One of the reason identify the availability of information is huge quantity. To overcome this problem suitable infrastructure and its functions is reported. The role of library web site and its advantages are studied in this context. Educating the users through web or internet is identified to promote usage of Electronic Resources.
**Chetan and Gobind Singh (2009)** conducted the study to examine the existence of various e-resource databases in University library and also highlight the preferences and importance of online resources among the teachers and research scholars. Study showed the use e-resources is very common among teacher and research scholar of Indraprastha university and majority of the teachers and research scholar are dependent on e-resources to get the desired and relevant information. It is also 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 no adequate and can widen the ability to meet the requirements of users. The present study is an attempt to examine the role of the internet and electronic resources in dental colleges and hospitals of Panjab, India.

**Singh, Devi and Raychaudhury (2009)** conducted a survey to describe the use of the electronic information focusing on the internet services by the users of Manipur university library. Also examine the utilization purpose, difficulties and satisfaction level of users about internet based e-resources service provided by the library. A structured questionnaire was randomly distributed among 800 users of the library comprising of PG students, research scholars, teachers and other non teaching staff members during April 2006 April 2007. Find that low speed internet access, erratic power supply and lack of required full text journals are problem with regard to the use of internet based e-resource.

**Tahir, Mahmood and Farzana (2010)** the purpose of the paper is to assess the use of electronic information resources and facilities by humanities scholars at the University of the Punjab, Lahore, Pakistan. A questionnaire survey of faculty from arts and humanities departments at the University of the Punjab was conducted. In total, 62 faculty and research staff participated. Findings – The results show that 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. The study is based only on the humanities faculty in a large university of Pakistan. The survey should be replicated on a larger sample for generalization. Keeping in view the
positive trend of humanists towards modern technology, universities and libraries should
give more funding to provide electronic resources and facilities in the arts and
humanities discipline. Special training programmes for humanists should be organized.

**Kapoor (2010)** the purpose of the paper is to quantify the use of electronic journals in
comparison with the print collections in the Guru Gobind Singh Indraprastha University
Library. A detailed analysis was made of the use of lending services, the Xerox facility
and usage of electronic journals such as Science Direct, Emerald Management Xtra,
ACM, IEL Library, subscribed to by the Library. The paper finds that, although many
more users at the University are accessing electronic 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. More research can be done by carrying out a deep
log analysis of usage statistics of e-journals. Usage statistics of some of the resources
could not be accessed. The paper provides useful information on the use of electronic
journals in comparison with the print collections in a university library.

**Satpathy and Rout (2010)** the paper aims to assess and evaluate the use of e-resources
by the faculty members of C.V. Raman College of Engineering (CVRCE),
Bhubaneswar, with a view to examine the exposure of faculty members to e-resources.
Besides, it aims to highlight the problems encountered by the users and suggests some
remedial measures for its improvement. The authors investigate the use of e-resources
by the faculty members of CVRCE through a survey based on a structured
questionnaire. Various statistical methods have been used for data analysis. The study
confirmed that faculty members are aware of the e-resources and various types of e-
resources, e-database, and e-journals. It suggests for the improvement in the access
facilities with high Internet speed and subscription to more e-resources by the Central
Library of CVRCE.

**Dastforoush and Venkatasha (2010)** conducted a study under the title “Electronic
Journals Usage and User Studies: A Literature Review” in a way that will be of value to
researchers. The review was presented under three headings and nine subheadings.
Electronic journals have been rapidly adopted in academic spheres and they have rapidly
established themselves as a viable publication media in many fields. This review
demonstrated that there are four main research methodologies which are being used for
profiling electronic journals usage and users including questionnaires, interview, citation analysis and transaction log analysis. Also, it was concluded that one of the aspects has been mostly analyzed in the studies of users carried out so far is that of the variables determining their behavior in the use of electronic resources. Clearly different behaviors can be identified according to variables such as discipline, age and academic position. Therefore policy makers and publishers should take into accounts these variables to design appropriate journals and services.

**Maya Devi (2010)** Conducted a study to explores the use of electronic resources by the agricultural scientists of Central Institute for Sub-tropical Horticulture (CISH) and Indian Institute of Sugarcane Research (IISR). A survey questionnaire was designed for the purpose of data collection. The result reveals that scientists working in CISH are more dependent on electronic resources for their work in comparison with scientists of IISR. The numbers of agricultural scientists who visited library daily is found to be more in IISR institution. The satisfactions of the scientists towards the utilization of electronic sources in both the institutions were not found to be more significant as concluded by the observed differences.

**Mulla (2011)** conducted a survey to evaluates the use of library at the HKBK College of Engineering (HKBKCE) in Bangalore (Karnataka). A survey of 60 faculty members was conducted through a questionnaire. The analysis of the collected data covers the use of electronic resources and how the electronic resources are improving the academic carrier of the faculty and also what are the problems that are faced in using the electronic resources. Concludes that the main intention of the usage of electronic resources have been the academic interest of the users.

### 2.4.4 Evaluation of electronic resources

**Davis (2001)** discussed evaluation of selection activities for electronic resources in libraries. For selection of non-book format the criteria is given in two levels i.e. 1. Content 2. Presentation & Format. For selection of electronic resources it is necessary to keep in mind infrastructure access method etc., besides content and format of the product. Understanding the required technology is a mandatory before going to electronic resources. In traditional selection criteria usually requisition of Author, Publisher and Producer are taken into account. Content is another criteria in traditional
collection development for acquisition of electronic resources. The author suggested considering access methods, archiving facility, licensing limitations, user delimitation, user capability and restrictions and contractual obligations.

**Nataranjan (2003)** discusses the definition of databases and the functions of Internet, which helps the LIS professionals in many ways for providing better service to their users and describes the different types of electronic resources available. The factors determined for quality of e-resources like authority, content, currency and timeless and special attributes for evaluating the e-resources is discussed under the headings like content, access, technical support, cast, legal and support tools. Database quality criteria have been discussed in detail under ten headings. The selection of different types of e-resources and the evaluation of the same are discussed in detail. This article concludes that LIS professionals should be well aware of the e-resources available and evaluate them before acquiring/accessing them for their users.

**Hayati and Alijani (2005)** conducted a study on “six search engines namely AltaVista, Excite, Google, Hotbot arid Lycos to compare and evaluate in terms of their search capabilities”. (i.e. duplicate, false drops, mirror sites, dead links) and retrieval performances from the reference list of central library of Shiraz University the questionnaire were distributed to students at the time when they were present at the reference desk. The finding of the study shows that 70% of respondents said that Google showed the best performance followed by AltaVista.

### 2.5 Observation Based on the Review of the Literature

It is explicit from the review of literature that the significant number of developments took place in the field of electronic resources. Majority of libraries have accepted the use of electronic resources and start giving due importance to electronic resources. The importance of use of electronic resources has been highlighted by various authors. The usage of electronic resources is being followed in libraries in India. A strategic plan for use of electronic resources in central university libraries is reported necessary. The use of electronic resources and their evaluation are thoroughly acknowledged. So a research gap for use of electronic resources in central university libraries has been identified. Therefore, the present study is taken up on use of electronic
resources in central university libraries in Uttar Pradesh and Delhi: A comparative study to fill the identified research gap.
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