Chapter – II

REVIEW OF LITERATURE
The review of related literature helps a researcher in getting more information to design the present study. In any research study, the role of the review of related literature is very vital. It means locating and summarizing the studies regarding a topic. In the field of research, the researcher has to acquire latest information about what has been taught and done in the particular area from which one intends to take up problems of research. The review of related literature gives a deep knowledge about the topic under the study. It helps to analyse the relationship between the completed researches and the present study. Review of related literature allow the researcher to acquaint himself with the current knowledge in the field or area in which one conduct the research. The survey of related studies implies locating, studying and evaluating reports of relevant researches, study of published articles and research abstracts.

The review of related literature enables the researcher to find out the limits of the topic. It directs the researcher to avoid unfruitful and useless problem areas. It helps the researcher to avoid unintentional duplication of well established findings. It helps the researcher to know about the tools and instruments which prove to be useful and capable in the previous studies. It also helps to know about the recommendations of previous researchers listed in their studies for further research.

There are 113 related studies which are reviewed and included in this chapter. The related studies are presented chronologically and are classified under five categories namely Information Sources, Information Services, Information Sources and Services, Electronic Information Sources and Services, Information Needs, Use Pattern and Information Seeking Behavior.
2.1. Information Sources

In this classification 28 studies are included. These studies consist of related researches in information sources.

Angchun (2011) conducted a study on "Factors Affecting Selection of Information Sources: A Study of Ramkhamhaeng University Regional Campuses Graduate Students". The researcher provides a new model of information-seeking behavior to contribute new knowledge of library services to the Thai community in the field of library and information science. This study helps stakeholders to provide new technologies, such as Web portal to library services, in order to allow equal access to information of students.

Boz and Ozcatalbas (2010) carried out a study on "Determining Information Sources Used by Crop Producers: A Case Study of Gaziantep Province in Turkey". The objective of the study was to describe socio-economic characteristics and information seeking behavior of crop producers. Results shows that crop producers used more information coming from traditional sources as compared to modern information sources.

Reddy (2010) studied on "Use of Information Sources by Research Scholars: A Case Study of Gulbarga University". The study reveals that the library is used regularly by the scholars. While there was significant levels of use and satisfaction, scholars also clearly expressed their desire for more journals and for access to electronic journals. A majority of scholars wanted the library to subscribe for new periodical titles, and nearly a third asked for access to electronic journals.
Baker (2009) carried out a study on "Information Sources Useful to Managers of New Zealand Public Libraries". Particular attention is given to use information sources on management/business topics. E-mail distribution lists are the most useful source of information for the library managers surveyed with "Australasian Public Libraries and Information Services" as the most useful journal, together with some websites. Survey respondents read more books and attended more short courses on management/business topics than on library practice.

Manoj and Sharma (2009) conducted a study on "Students' Use of Various Information Sources and need for Information Literacy Education in Kurukshetra University". The study reveals that students most frequently needed information for general subject study (46.8 per cent). More than 95 per cent needed information every week. The library (74.3 per cent) and teachers (55 per cent) are the main sources used for this purpose.

Oladokun and Aina (2009) worked on "Library and Information Needs and Barriers to the Use of Information Sources by Continuing Education Students at the University of Botswana". The findings reveal that major areas of information need related to course of study: job opportunities; career development and further education after diploma programme. The study also reveals that the University of Botswana Library does not adequately cater for the library and information needs of the students.

Pushpalatha and Mallaiah (2009) experimented on "Use of Information Resources in Chemistry: A Study of Mangalore University Library". The study reveals that the majority of the users visited the library to borrow books, to consult periodicals and browse UGC-INFONET journals. OPAC and the assistance of the library staff are the primary means to locate information.
Yikun (2009) conducted a study on "Socialized Pattern of Government Welfare Information Resources’ Access and Utilization". This paper has compared the differences of welfare information with those of administrative information and commercial information in government system through concepts analysis, which has public goods feature and stresses that universal services, neither simple market mode nor wholly administrative mode could satisfy citizen's social information needs. Based on this analysis, it points out both the necessity and possibility of multiple entities participation on the developing course of government welfare information resources.

Ahmad and Hassani (2008) analysed on "Access Methods of the Academics and Students of Shirvan Islamic Azad University to their needed Information Sources”. Results of the study reveals that academic members and students mostly used books to fulfill their information needs rather than journals or electronic resources. The intensive for information seeking, was declared by academic members, to be education and research, while students seek information sources mostly for doing their assignment, and less for updating their personal knowledge.

Kumar (2008) experimented on "Physical Science Reference Sources on the Web: An Evaluative study”. This study reveals that majority of the respondents rated the web reference as good and felt that the web sources were not prestigious than the printed sources.

Kumbar and Kumari (2008) carried out a study on "Awareness and Use of Information Resources of a Special Library: A Case study of the KMML Library”. The study reveals that in spite of having access to modern and up-to-date information sources, most respondents still preferred using conventional materials and services. 40 per cent of the respondents are of the opinion that the infrastructure facilities of the library were insufficient.
Soumen and Sen (2008) experimented on "Information Sources in Academic Law Libraries in India". This study is an attempt to identify basic role of an academic law library and legal information resources which are primarily in printed form and cater to the information needs of different kinds of users. It is found that the academic law library has traditionally served as the centre of intellectual life of the law school, the place where faculty members and students obtained legal information and assistance with research projects. Printed resources has been found to be specialized whereas online information resources are dynamic as they cover wide range of legal information.

Manjunath and Mallinath (2007) conducted a study on "Teacher's Attitudes Towards Library Facilities and Information Resources in First Grade Colleges in Shimoga District: A Survey". The study collected the opinions of the faculty members about use of information resources and services in first grade college libraries in Shimoga District. Majority of college libraries in Shimoga District are not satisfactory, but there are a good number of colleges, which has adequate and well organized document collections, and provide satisfactory services to the users. The study also reveals that the conditions of newly established colleges are suffering from inadequacy of library resources.

Mohamed (2007) carried out a study on "Use of ICT Based Resources in Special Libraries in Kerala". The results of the study reveals that the ICT based resource used by the nearly 60 per cent of the library users. A good number of the users are not satisfied with the application of ICT in their libraries and indicates that the ‘inadequate ICT infrastructure’ as their reason for dissatisfaction.
Manohar (2007) analysed on "An Investigation into the Use of the Electronic Resources by Agricultural Scientists in the College of Agriculture, Vellayani". The study shows that the use of the internet and electronic resources has created a great impact on Agricultural Scientists in teaching research and extension activities of the College of Agriculture, Vellayani. Majority of the respondents prefer electronic media for literature search than print media.

Nair (2007) studied on "Information Resources on Agricultural Economics: A Study with Special Reference to Kerala". Examined in detail the resources of information units of organizations dealing with agricultural economics in the region and the provisions for resource-sharing between them, the study reveals that information resources available collectively are sufficient, but that at individual institutions are not adequate, full or reliable.

Busayo (2006) carried a study on "Accessibility and use of Library Resources by Part-time Students: A Case Study of the Federal Polytechnic, Ado-Ekiti, Nigeria". This study investigates the accessibility and use of the Federal Polytechnic Ado-Ekiti library resources by the part-time students of the institution. The result shows that the library is far away from the satellite campus and, therefore, not accessible to the majority of the part-time students.

Rajeswari (2005) undertook a study on "Use of Information Sources in Digital Environment: A Case Study". The objective of the study is about the use of electronic resources by the faculty, research scholars and students. The study reveals that internet access, e-mail and OPAC are used by the almost all staff users. It is also found that teaching staff and research scholars are very much benefitted from access to e-journals through Infonet.
Dulle (2001) undertook a study on "Researchers' Perspectives on Agricultural Libraries as Information Sources in Tanzania". Reported results based on the study aimed at assessing the capability of agricultural libraries in meeting researchers' information needs, found the means used by researchers to cope with the scarcity of scientific information and based on study findings, gave some recommendations on how to improve agricultural library services in Tanzania.

Sekiguchi (2001) carried out a study on "A Questionnaire Survey on Medical Information Sources for Patients in Hospital Libraries. [In Japanese]". Three types of attitude were identified: services to patients are important and being addressed; services would be useful for the management of their hospital; and, no interest. Hospital Libraries are expected to take the lead in providing medical information services to patients in cooperation with Doctors and other medical staff.

Maheswarappa and Havanur (1998) studied on "Use of Information Sources Verses The Personal Attributes of Biological Scientists in An University Environment in India: A Case Study of Karnatak University, Dharwad". Important findings of the study are that the abstracting and indexing journals, primary periodicals, research reports and subject bibliographies are the most frequently used sources of information. The monograph/textbooks, library catalogues and newspapers are frequently used, and dictionaries, personal contacts, conference/seminar papers, yearbook and directories, encyclopedias, theses, handbooks and manuals, and institutional sources are occasionally used.
Ajala (1997) conducted a study on "Use of the University of Ibadan Library Resources by Graduate Students". The study examines the frequency of use and the information sources used by the respondents and identifies a search pattern for library materials. The findings show that a number of students use other libraries for material not available in the University Library.

Ward (1993) investigated on "Networked CD-ROMs as Academic Information Sources: The Growth of Networked Electronic Information Sources in Academic Libraries". Trends in CD-ROM publishing, including the future of CD-ROM in the views of the publishers and of librarians, suggest that other electronic media may replace CD-ROM for some applications, but that CD-ROM is likely to remain a part of hybrid information systems. The networking of CD-ROM services is constrained by the cost, by technical complexity, and by restrictive licensing agreements.

Rodenburg (1992) studied on "Research and Development Professionals as Information Users: A Study of the Use of Information Sources". The study examines the time professionals spend on information gathering, what their requirements are, and what sources are most useful. It was found that researchers spend an average of 24 hours weekly on communicating with colleagues and information gathering.

Ehikhamenor (1990) analysed on "The Use of Formal Information Sources in Physical Science Research in Nigerian Universities". The study reveals that the variety of formal information sources and library services which they use. Primary journals are the most important source; visits to the university library were infrequent. It is not possible for a university library to stock all the journals needed, and the academic scientists are increasingly dependent on their own resources.
Abate (1989) conducted a study on "Information Sources Utilized by Private Practice and University Physicians". The study reveals that Physicians' Desk Reference is the most frequently used information source, especially by physicians in private practice. Pharmaceutical manufacturers' promotional literature and sales representatives are used significantly more often in private practice settings. Colleagues, journals and pharmacists are used to a similar extent by both groups; the hospital library is used in frequently.

Osiobe (1986) analysed "A Study of the Use of Information Sources by Medical Faculty Staff in Nigerian Universities". Results of the survey indicates a high degree of correlation between each pair of the 10 specialties in their use of information sources. Specific item analysis of use among the specialties however indicates some degree of variation between the specialties.

Kremer (1982) studied on "Evaluation of Information Sources Used by Engineers". The findings indicate complementary interaction of informal and formal sources; general preference for convenient sources and underestimation of library services; and high emphasis on the importance of random information acquired by chance rather than as the result of specific searching.
2.2. Information Services

In this category 17 studies are included. These studies consist of various library related researches in Information Services.

Mahawar (2011) undertook a study on “User Perception and Use of Library and Information Services in the Higher Research and Academic Institutions in Lucknow City”. The main objective was to identify the awareness of library and information services among users of the libraries and information centres in higher research and academic institutions in Lucknow. The study also reveals that satisfactory level of half the users about internet services/access is excellent.

Mashroofa and Jayasundara (2010) experimented on “Journal based Information Services in Sri Lankan University Libraries: A Study”. The study shows that university library staffs were prompt and helpful in delivering most of the services to their users. However, some services such as document delivery, SDI service, abstracting, indexing services and literature search services are either poorly carried out or not performed effectively. It was also noticed from the responses of the staff and students that the service levels were apparently different for the two groups of users.

Vasappa and Shivalingaiah (2009) analysed on “Awareness and Use of Library Facilities and Services by the Research Scholars in the Universities in Karnataka: An Analytical Study”. The analysis shows that majority of the humanities and social science research scholars, the facilities and services available in the university libraries are poor whereas the science scholars opined that the facilities and services are moderately good. It was further observed that majority of the respondents were aware of the “UGC Infonet facility".
Suresh and Pasha (2009) carried out a study on "Information Management and Services at Research Universities in Dubai". The study also reveals that regular user orientation programmes had to be arranged for optimizing the utilization of information sources and services. About 83.3 per cent of libraries strongly agreed that Information Technology is an indispensable tool for accessing wealth of information and 8.3 per cent just agreed to it and it also revealed nearly half the libraries in Dubai do not face difficulty in extending services as the users are competent.

Stilwell (2007) carried out a study on "Library and Information Services in South Africa: An overview". Opened with a review of information policy, the article describes information sources, systems and services in South Africa, embedded them in the wider national information system. A description of the library and information education and training sector and the organized profession follow. This overview is based on literature retrieved from the available, mostly electronic, databases.

Ajdahun (2006) studied on "Technical Education and Library Services: A study of the Federal Science and Technical Colleges in Nigeria". Result shows that the school Libraries were adequately staffed. Their collections are above 2000 textbooks, the minimum standard. However, the library buildings are not only not well located, they also lacked adequate seating spaces.

Biradar and Kumar (2000) conducted a study on "Evaluation of Information Services and Facilities offered by DVS Polytechnic College Library: A Case Study". Results shows that 37.5 per cent students and 46.88 per cent teachers are satisfied with lending service and 48.75 per cent students and 50 per cent of teachers respectively have good opinion about book bank facility of the college library.
Singh (1999) conducted a study on "Reader's Services in IIT Libraries (India): A Comparative Study". The study has revealed that reader's services namely circulation, IIL, reference, bibliographical, CAS, photocopying, translation, and document reservation are being provided by all IIT Libraries. A high per cent of users are of their provision except translation service, where user awareness is found to be low. SDI service is not provided at the time of conducting the initial survey. CD-ROM search service is the most popular service among the users. Online search service is available at Bombay, Kanpur and Madras.

Bigdeli (1996) studied on "Library Services to Overseas Students in Australian Universities". The study reveals that ESB local postgraduate students had more library knowledge and used UNSW library more effectively than NESW international postgraduates. It also reveals that European students found their culture closer to the dominant culture in Australia than non-European International students. Furthermore European students used library more effectively than international students from Non-European countries.

Lahmon (1996) analysed on "An Examination of the level of Library Service provided for off campus programs according to the Association of College and Research Libraries Guidelines for Extended Campus Library Services". The results of the study indicates that over half of the respondents consulted the 1990 guidelines when developing off-campus library service programs. This study also shows that funds are provided for off campus library services, but the amount is not enough.
Singh (1994) studied on "Evaluation of Collection and Services Provided by IIT Libraries: User's Point of View". It has been found that majority of users in the order of priority visited the library to update their professional knowledge, consulting the documents for research use and for borrowing/returning the documents. Library catalogue has been found to be most useful by most of the users. Photocopying service provided by the library has been found to be very popular by users.

Foster (1992) studied on "Access to Academic Law Library Services: A Survey". The study discussed the results of a survey of 91 academic law Libraries on access to library services by various patron groups, access to online and CD-ROM information sources in libraries, and the effect of the privatization of federal government information on law libraries.

Hauzner and Janovec (1992) undertook a study on "Library and Information Services at the University of Agriculture in Prague". This study discusses the services provided including: access to a wide range of information sources such as special journals and daily newspapers; literature searches carried out on the PolTox III and AGRIS databases on CD-ROM; and SDIs which could be set up on current contents. Results of searches are presented either in printed format or on discs. The audiovisual section produced educational and promotional video programmes while the graphics section is responsible for the production of exhibitions, maps, and diplomas.

Livingston and Narasimha (1992) carried out a study on "Agricultural Library Services in Guntur District: An Evaluation". Reprographic facilities provides an average of 300-400 copies per day to users. The study also
revealed that the agricultural institution in the district poorly served with respect to information support and the agricultural research institutions functioning in the district has inadequate library and information facilities.

Kawatra (1986) carried out a study on "Reference Service in the Teacher Training College Libraries". The study discusses the role of the teachers training college library and examined the need for reference and information sources. It also explains how to locate educational information and data and provided a list of important library tools for the educator which includes international and Indian sources.

Taylor (1985) conducted a study on "Information Services and Activities at the Polytechnic of Central London Library Technology Centre". The Library Technology Centre (LTC) at the Polytechnic of Central London was established in 1982 with the aim of increasing awareness of the application of information technology amongst librarians and information professionals. It describes various activities through which the LTC disseminates information: demonstrations; enquiry service and published information sources; and the information technology information services network.

Moore and Stenstrom (1976) analysed on "A Study of Library Service in the Lewis and Clark Region of North Dakota". The findings from this survey included the following: (1) for most persons in the region the library is not a primary information source; (2) the public library is unused by 75 per cent of the people and is used intensively by 10 per cent.
2.3. Information Sources and Services

In this category 19 studies were included. These studies consist of various library related researches in information sources and services.

Sheela and Mary (2012) carried out a study on "Information Sources and Services of B.Ed. Colleges in Kanyakumari District". The result has revealed that 54 per cent of users want to use only printed version of information sources and 46 per cent of users use both printed and electronic sources. It has been found that the colleges provide internet facilities to 36 per cent of the respondents and 64 per cent users are not getting internet facilities in their college for searching the information.

Sheela (2011) analysed on "Information Sources and Services of Engineering College Libraries: A Case study". It has been found that 48 per cent of users have faced problem of library hours, followed by 48 per cent respondents are trouble with lack of insufficient quantities of materiel and 42 per cent of users facing with staff inability to help with request.

Ugah (2011) carried out a study on "Size and Quality of Information Sources and the Use of Library Services in a University Library". The result has revealed that the size of information sources, as agreed by the majority 150 (89.3 per cent), in the university library is rated inadequate. The size of information sources not influencing the use of library services was scored 42 (25.0 per cent). On the other hand, 126 (75.0 per cent) disagreed that the size of information resources did not influence their use of library services.
**Hussain (2010)** experimented on "Study of Information Sources and Services of the National Medical Library in India". The study examines the use of information sources and services of the National Medical Library (NML) in India (New Delhi). The present study demonstrates and elaborates the various aspects of use of NML such as purpose of use, physical facilities, services and collections of the documents.

**Parvathamma and Shankar (2010)** studied on "Information Resources and Services in Public Libraries in Gulbarga District, Karnataka State, India: User's Perspective". It has been found that majority of the users are men and between 11-30 years of age. Students and job holders in private/public undertakings are the regular visitor to the library. Newspapers and magazines and reading room service are the most frequently used information resources and services respectively.

**Biradar (2009)** analysed on "Use of Information Sources and Services in Library of Agriculture Science College, Shimoga: A Case Study". It has been found that a large number of users used books followed by periodicals. As far as usefulness of periodicals is concerned, users opined that The Indian Journal of Agriculture Science (62.92 per cent) and Karnataka Journal of Agriculture Science (60.67 per cent) are the most useful journals.

**Musoke (2009)** analysed a study on "Document Supply Services Enhance Access to Information Resources in Uganda". This paper aims to highlight the development of document supply services in Uganda. The findings reveal that the improved document delivery service has played an important role in resource sharing, which has led to increased access and usage of information resources in Uganda.
Parvathamma and Shankar (2009) carried out a study on "Use of Information Resources and Services in Public Libraries: A Case of Bidar District, Karnataka State, India". Books and magazines, friends/teachers and radio/television are the information channels most frequently used to satisfy their information needs. Newspapers and magazines are the most frequently read information sources and fictions are the most frequently borrowed documents.

Xiong and Liu (2009) studied on "Chinese E-Government Information Resources and Services: A Survey Report". The survey reveals how librarians underestimated the extent of Chinese e-government development and how this might affect their collection development strategies and user services.

Popoola (2008) carried out a study on "The Use of Information Sources and Services and its Effect on the Research Output of Social Scientists in Nigerian Universities". This study has revealed that no significant difference between male and female users regarding the use of information sources in social science research.

Subramanian and Nikam (2008) experimented on "Electronic Facilities and Service Offered in University Libraries in Karnataka and Tamilnadu: A Comparative Study". The study investigates into the various electronic facilities and services offered in university libraries. The study reveals that the library professionals acquiring computer knowledge in Karnataka. 77.6 per cent acquired while in service, 15.9 per cent of them before joining service and the remaining of 6.5 per cent of them did not acquire at all. In Tamilnadu, 91.0 per cent of the respondents acquired computer knowledge while in service, 7.15 per cent of them did not acquire computer knowledge and the remaining 1.9 per cent of them acquired before entering service.
Ugah (2008) studied on "Availability and Accessibility of Information Sources and the Use of Library Services at Michael Okpara University of Agriculture". The study has revealed that information sources in the library are not readily available or easily accessible and concludes that the independent variables of availability and accessibility has influence on, and a significant relationship with, the use of library services.

Lohar (2007) undertook a study on "Users opinion towards Library Resources and Services in the City Central Library Davanagere: A Survey". The study reveals that majority of users suggested improving document collection in terms of multiple copies of text books, more reference books, and other competitive books. Many number of respondents opined that the arrangement of reading materiel in the library was orderly but not convenient.

Naushad and Hassan (2006) carried out a study on "Library and Information Services in Central Library of Aligarh Muslim University from the Teachers Point of View: A Survey". The result of this study has found that most of the teachers use journals from their respective departments rather than from the central library. The study also reveals that most of the teachers feel convenient to search latest information from internet.

Mostert (2005) conducted a study on "Parliamentary Information Sources, Systems and Services in South Africa". The Parliamentarians expressed a variety of information needs. Although the predominant preference source of information was still for printed sources (78 per cent), the use of electronic sources (24 per cent) was notable, taken into account its recent introduction.
Adams and Cassner (2004) studied on "A Survey of Distance Librarian-Administrators in ARL Libraries: An overview of Library Resources and Services". The authors conducted a survey of distance librarian-administrators at Association of Research Libraries' member libraries who plan for and manage distance learning library services. The findings from the survey reveals librarian-administrators and library deans/directors of the current state of, and emerging trends in, distance learning library services.

Das (2000) studied on "Information Resources on the Internet and Information Services in L and ICs". The study discusses the information services available on the internet and possible information services in Library and Information Centres (L and ICs). It also discusses their availability on Websites; Science Direct, 'UnCover' and patent information, noting their possible organisation and dissemination in L and ICs as a challenge to library professionals. It highlights the economics of periodical subscriptions with the arrival of scientific publishers on the web.

Grainger and Lyon (1991) carried out a study on "A Comparison of the Currency of Secondary Information Sources in the Biomedical literature. 1 Weekly Current Awareness Services". 3 weekly biomedical current awareness products (Reference Update Deluxe, Current Contents on Diskette, and Medical Science Weekly) which were distributed on floppy disc, were studied over a period of 3 months. The findings suggested that monthly journal issues appear in the secondary sources on average 6-7 weeks after publication data and weekly journals appeared after approximately 4 weeks.
Compton (1989) experimented on "A Study of the Information Resources and Library Services Used by Doctoral Students in Science Education at the University of Georgia". It is found that the student group: (1) relied primarily on manual searches of indexes and abstracts, journals, and citations; (2) used traditional print materials extensively i.e. books, periodicals, and textbooks.

2.4. Electronic Information Sources and services

In this category 41 studies are included. These studies consist of various library related researches in Information Sources and Services.

Okiki and Asiru (2011) studied on "Use of Electronic Information Sources by Postgraduate Students in Nigeria: Influencing factors". The research was carried out in the six Universities south west region of Nigeria. From the study on the factors influencing the use of EIS in Nigerian Universities, it was found that EIS was used more by male 1117 (53.82 per cent) than female 1010 (46.18 per cent).

Tyagi (2011) conducted a study on "Usage of Electronic Information Sources and Services by Users at Mahatma Gandhi Central Library IIT Roorkee: A Case Study". The survey shows that majority of respondents marked that library possessed useful online journals and databases. User's perception of e-resources as a replacement for print in meeting their information needs to a very high extent: e-resources has become a substitute for printed materials.

Boumarafi (2010) carried out a a study on "Electronic Resources at the University of Sharjah Medical Library: An Investigation of Students' Information-Seeking Behavior". Results shows evidence of use of e-resources, but they did not explicitly establish that some of the major problems mentioned by participants did bind the information searches of the respondents. An extensive literature review sets the background for the study.
Satpathy and Rout (2010) conducted a study on "Use of e-resources by the faculty members with Special reference to CVRCE, Bhubaneswar". The study has found that faculty members were aware the various types of e-resources, e-databases and e-journals. At the same time the central library of CVRCE plays an important role in promotion, assistance and guidance in accessing the e-resources.

Tahir (2010) experimented a study on "Use of Electronic Information Resources and Facilities by Humanities Scholars". It is found 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.

Natarajan (2010) undertook a study on "Use and User Perception of Electronic Resources in Annamalai University: A Case Study". The study reveals that despite the availability of wide range of e-resources the frequency of their use was low. The reasons identified for this are lack of awareness, lack of subject coverage; and slow down-loading. The study also observes that more than 50 per cent of the users are of the opinion that the relevance of the e-resources covered by e-journals consortium of Annamalai University is satisfactory.

Chandran and Elavazhagan (2010) analysed a study on "Utilization of E-resources at Valivalam Desikar Polytechnic College, Nagapattinam, Tamilnadu: A Case Study". The study has found that majority of the teachers 46 (88.46 per cent) and students 28 (93.33 per cent) preferred internet. The study also found that 16 (66.66 per cent) teachers and 18 (32.14 per cent) students were able to access the e-resources very easily.
Kumar and Sharma (2010) experimented on "Use of Electronic Resources at Punjab Agricultural University: A Study". The study has found that internet was most extensively used e-resource. Majority of the users use CABCD (an abstracting database in CD format). This study also examines the problems faced by the users in accessing the e-resource and finally paved the way for librarians to plan and provide their services in a better way.

Saravanan and Stephen (2010) conducted a study on "Barriers encountered by the Faculty Members of Arts and Science Colleges in Kanyakumari District when accessing E-Resources". The study also indicates that 93.3 per cent of the respondents had internet facilities in their respective library. The study also reveals that lack of spot guidance was the major barriers while accessing e-resources (55.8 per cent), which was followed by printing facility (32.5 per cent) and low speed internet connectivity by 11.7 per cent.

Sharma and Sharma (2010) carried out a study on "Perception and Preferences of e-resources among faculty members of National Institute of Technology (NIT) Kurukshetra". The study reflects the use of e-resources which is very common among the faculty members of NIT Kurukshetra and majority of the respondents are depend on e-resources to get the desired and relevant information. It was found that NITK and its library are very rich in e-resources as well as in IT infrastructure.

Sheeja (2010) undertook a study on "Surveying Scholars' Perceptions of Electronic Environments: A Case Study of University Libraries in Kerala (India)". The study reveals that the organization of resources and services in University Libraries was not fully oriented towards supporting the process of research, and scholars were not satisfied with existing primary resources and
personalized services. The study provides recommendations to enhance research-oriented library resources and services.

Singh and Patel (2010) experimented on "Impact on Electronic Resources on Library Users in M.P. Christian College of Engineering and Technology, Bhilai: A Study". The study also has found that 80.95 per cent respondents out of 336 used electronic resources daily, 10.71 per cent respondents used electronic resources once in a week, 8.33 per cent respondents used electronic resources 2-3 times in a month. The study also indicated that CD-ROMs are preferred by 5.36 per cent respondents, 6.55 per cent respondents preferred Web OPAC electronic resources, 63.10 per cent respondents preferred Internet electronic resources, 25 per cent respondents preferred e-journals electronic resources.

Thanuskodi (2010) analysed on "Use of Internet and Electronic resources for Agricultural Science Information: A Case Study". Results of the study shows that majority of the students did not had own personal computer or laptop. The study reveals that majority of the respondents (57.28 per cent) felt that the internet and electronic resources could not replace the print resources.

Bashir (2009) undertook a study on "Electronic Information Resources and Services in Agriculture: A Study". This study reveals that even if there was a lot of primary, secondary, and tertiary sources of information was available in digital form, high annual subscription charges, inadequate IT infrastructure, and lack of desired level of reading tendency among Indian students, scientists and researchers making them less usage of the digital information. Less computer literacy among the users and staff was the reasons for under utilization of available digital information.
Biradar and Kumar (2009) conducted a study on "Evaluation of Web Based Information Sources: An Analytical Study with particular reference to Physics Reference Sources". The study shows that 52 per cent of web based sources contain the author's name and remaining 48 per cent of web based sources had no author's name. Among 404 web based sources, 27 per cent of them belong to commercial domains (.com) followed by educational domain (19.6 per cent) and organizational (8.4 per cent).

Sharma (2009) studied on "Use and Impact of E-Resources at Guru Gobind Singh Indraprastha University (India): A Case Study". The paper examines the existence of various e-resource databases in Guru Gobind Singh Indraprastha University Library. The study shows the use of e-resources was very common among the teachers and research scholars of Guru Gobind Singh Indraprastha University and majority of the teachers and research scholar were depend on e-resources to get the desired and relevant information.

Chowdappa (2009) conducted a study on "Impact of Electronic Information Sources on the Academic Users in Mysore: An Analytical study". The study has found that the information users of higher education in Mysore city heavily relied upon conventional books and journals on one hand, and digital resources, especially Internet and CDs on the other. The study reveals that 95 per cent of the respondents had relied on internet for availing e-mail facility in the highest range. The overall analysis indicates that the dependence of the researchers on the information technology based tools was higher than the conventional sources of information.
Kannappanavar and Swamy (2009) carried out a study on “User Perception and Opinion Towards the Audio and Visual Services in Agricultural Science University Libraries in India with special reference to South India: An Evaluative study”. The study discusses about the Audio visual services provided by the Agricultural Science University Libraries in South India. The study found that 48 per cent of PG students, 56 per cent of research scholars and 49 per cent of faculty members are of the opinion that the audiovisuals materials were available in their respective libraries. This shows that majority of the users are not satisfied as per as audiovisual services are concern.

Bajinder and Verma (2009) analysed on “Use of Electronic Information Resources: A Case Study of Thapar University”. The finding shows that a large number of users had started using electronic journals. The study also reveals that the users access e-resources more from the hostels and computer centre as compared to the library. Eventhough the use of e-journals increased, the users still use them occasionally.

Singh (2009) carried out a study on “Use of the Libraries of Colleges of Education in Punjab”. The survey reveals that most of the users were visiting libraries frequently for research work. Majority of the users are not familiar with referral, inter-library loan and reservation services. It is found that books on respective subjects of education were used more often than the reference and general collection.

Patil and Parameshwar (2009) experimented on “Use of Electronic Resources by the Faculty Members and Research Scholars in Gulbarga University, Gulbarga: A Survey”. The study reveals that the electronic resources available in the Gulbarga University Library were much helpful in fulfilling their information needs and also that all the
faculty members and research scholars used the books as a major source of information and majority of the faculty members and research scholars searched printed journals and electronic resources. The study also reveals that there is need to train the faculty members and research scholars used the electronic resources.

Sami and Iffat (2009) carried out a study on "Use of Electronic Information Services in Research Libraries". The study reveals that electronic information services, are not favored by many of the users. The study also reveals that print media still appears to be a preferred media and the study that create about the services introduced in the library is very essential for the usage of the service introduced.

Sujatha and Mudhol (2009) conducted a study on "Evaluation of Electronic Information Services in the Fisheries College Libraries in South India: A study". This study describes the evaluation of electronic information services in the light of current status of electronic information services in fisheries college libraries in south India. The study has found that the libraries do not have enough trained staff to manage all the complex aspects of electronic information services and also found all the libraries were providing the Internet services with a minimal fee to the users.

Vasappa and Shivalingaiah (2009) analysed on "Attitude of Research Scholars towards Usage of Electronic Information Resources: A Survey of University Libraries in Karnataka". The study reveals that the electronic resources had created a positive hope among the research community in searching information. Overall, more than half of the respondents (58.12 per cent) indicated their first preference towards print resources over electronic resources (41.88 per cent).
Kanniyappan (2008) experimented on "Use and Impact of E-resources in an Academic Research Environment: A Case Study". The study survey conducted at Anna University Library is to find out the use of different types of electronic resources and services the impact of these resources on the academic development of faculty members. The study also reveals that most of the faculty members are aware of the availability of electronic resources which they used frequently for their teaching purposes.

Rotich and Munge (2007) undertook a study on "An Overview of Electronic Information Resources sharing initiatives in Kenyan Universities". This study examines successes and/or failures of such initiatives among Kenyan Universities in relation to the objectives for which they were intended to fulfill, arguing that progress can be achieved much more easily by focusing future efforts toward building on the successes, and avoiding the pitfalls that had been experienced. It is concluded that although on-line information sharing networks are not a panacea to all the problems facing information providers in Kenyan Universities.

Mathew and Ally (2007) carried out a study on "Use of E-resources Among P.G Students of Kerala Agricultural University". The study reveals that many of the respondents were unaware and had not used online thesis/dissertations, abstract/indexes, OPAC, online databases which were very relevant for their study and research. The study also shows that majority of the respondent's uses Google search engine.

Varghese (2007) analysed on "How the Doctoral Students were Searching Electronic Information Resources: A Case Study of University of Calicut". The study reveals that the science doctoral students in the University of Calicut were used various types of electronic information resources related their research and internet resources are the most widely used resources.
Zamani and Tahereh (2007) undertook a study on "Survey of Students' Satisfaction from Computerized Services in the Central Library and the School of Education Library". The present study seeks to establish the satisfaction of the students with the computerized services of the Central Library, as well as the Library of the School of Education. The resulted data reveals that students has a positive attitude towards the impact of computers on library services.

Lohar and Roopashree (2006) conducted a study on "Use of Electronic Resources by Faculty Members in B.I.E.T, Davanagere: A Survey". This study reveals that majority of the respondent were using electronic resources once in a week. Majority of the respondents indicate that the information available in the electronic resources was always adequate. Regarding the hindrance of accessing the electronic resources, majority of the respondents stated that too much information retrieved was the main barrier to use electronic resources.

Ramlogan and Tedd (2006) carried out a study on "Use and Non-Use of Electronic Information Sources by Undergraduates at the University of the West Indies". The study reveals that over half of the total respondents had not accessed any of the EIS. Lack of awareness of the services' availability is the overriding factor for non-use. It was concluded that undergraduate's make infrequent or no use at all of certain EIS largely from lack of awareness.

Mohamed (2005) conducted a study on "Electronic Information Resources in the Special Libraries of Kerala". It is found that all the special Libraries in Kerala were providing e-mail and World Wide Web facilities and majority of the libraries of central government autonomous institutions were providing ftp, telnet, list serve and usenet/Newsroups services.
Lohar and Mallinatha (2005) experimented on "Students Attitudes Towards Digital Resources and Services in B.I.E.T Davanagere: A Survey". The study reveals that majority of the respondents (86 per cent) was using Internet service in their library. At the same time 50 per cent of respondents prefer to use 'Google' search engine. Majority 60 (34.09 per cent) of the respondents were using digital resources 'for finding relevant information in their subject field.

Ali (2005) carried out a study on "The Use of Electronic Resources at IIT Delhi Library: A Study of Search Behaviors". The study has found that boolean logic and truncation were the most often used search facilities by IIT users. Lack of printing facilities, terminals and trained staff were the major reasons that would discourage users from accessing the EIS. The survey also reveals that some 60 per cent of users face difficulties while browsing e-information.

Shamin (2005) carried out a study on "Knowledge and Use of Electronic Information Resources by Medical Sciences Faculty at the University of the West Indies". The objective was to determine faculty's knowledge of electronic resources, access to a computer, and use of electronic resources (both number and frequency) available at the Medical Sciences Library (MSL). It was found that faculty had high awareness of the electronic resources available in the MSL. Many respondents felt that e-resources were important.

Choukhande and Dongre (2004) experimented on "An Analytical Study of Electronic Sources and Services provided to Users with Special reference to Research Scholars of Visvesvaraya National Institute of Technology Library, Nagpur". The main objective was to study the different factors such as information, sources, services, adequate collection, various
channels of information and the constraints faced by the research scholars in using or searching information through electronic sources. The study reveals that the research scholar's access information from various channels equally as the seminar, conference, symposia provides information on current topics. It was also found that the traditional sources and electronic sources were equally.

**Jones and Tedd (2003)** conducted a study on "Provision of Electronic Information Services for the Visually Impaired: An Overview with Case Studies from three Institutions within the University of Wales". This study concentrates on the needs of the visually impaired and covers the blind, the partially sighted and those with colour blindness. The study reveals that appropriate access to electronic information sources needs to be provided for all those with disabilities.

**Pathick and Das (2001)** analysed on "Utilization of Electronic Information at IPR Library: A Case Study". The study lists its primary objectives, collection development and provision of electronic information sources. Discusses user needs, sources available at the library, electronic information services, electronic mail, web access and home page, and the repackaging of information for the Institute's research activities in plasma and related fields.

**Debowski (2000)** conducted a study on "The Hidden User: Providing an Effective Service to Users of Electronic Information Sources". The study reveals the challenge of providing electronic services to remote information users. Explores issues relating to the development of self service skills and competencies by distanced users, and examines the provision of information services for accessing the Internet and other electronic information services.
Majid and Abazova (1999) worked on "Computer literacy and Use of Electronic Information Sources by Academics. A Case Study of International Islamic University Malaysia". The study reveals that computer literature academics use electronic information sources more frequently. Similarly, a significant relationship was noted between the age of academics and their use of electronic information sources.

Ray and Day (1998) carried out a study on "Student Attitudes towards Electronic Information Resources". To determine the level of use of this type of resource, how students feel about various issues surrounding electronic resources and whether attitudes change dependent upon subject studied. 91 per cent of respondents acknowledged access to a networked computer via University, a figure which was expected. Also, 17 students (5.4 per cent) acknowledged access at home as well as the University.

2.5. Information Needs, Use pattern and Seeking Behaviour

In this category eight studies are included. These studies consist of the various library related researches in Information seeking behavior.

Peratchiselvi and Murugesapandian (2011) conducted a study on "Information Seeking Behaviour of Faculty Members of Colleges Affiliated to Alagappa University, Karaikudi". The findings of the study indicate that 82 per cent faculty members sought information for preparing class lectures, 79 per cent for keeping up-date knowledge, and 54 per cent for writing and presenting papers. The Google search engine is mostly used because it is fast in getting access.

Oladokun (2010) analysed on "Information Seeking Behavior of the Off-Campus Students at the University of Botswana: A Case of Two Satellite Centers". The focus of the study was on the information-seeking behavior of
the off-campus students in 2 of the 7 satellite centers of the Centre for Continuing Education, the outreach arm of the University of Botswana. The findings reveals that the library and information needs of the students were not significantly met. As printed sources were revealed as their preferred choice of information format, e-mail and the Internet sources were not given much priority.

Parvathamma and Anandhalli (2010) analysed on “Use of Reading Materials in Engineering College Libraries in Karnataka State, India: A Study”. The study has found that majority of students and teachers visit library at least once in a week and an average, they spend less than two hours during each visit. Purpose of visit to library was mainly to borrow text books. All the users are satisfied with the text book collection and Indian journals in their libraries.

Thanuskodi (2010) worked on “Information Needs and Use Pattern of District Court Lawyers of Salem and Erode in Tamilnadu”. The findings indicate that practicing lawyers were using a variety of information sources to satisfy their information needs. The present studies observed that majority of respondents were not aware of e-resources. On the whole, respondents perceived District Bar Library collections, services and facilities as adequate to meet their information needs effectively.

Rani (2009) conducted out a study on “Information Seeking Behavior of Teachers and Students in Selected Schools”. The study attempts to gather the information seeking habits and behavior of teachers and students in schools, to identify the information sources used by teachers and students and to ascertain the problems faced in using the school library. The study reveals that books were used more than other types of information resources, both by teachers and students.
Jiarlimon and Marbaniang (2008) analysed on "Information Needs and Search strategies of the Co-Ed. College Students in Shillong: A Case Study". The main problem was the collection of resources where 67 per cent of the respondents reveal that college libraries do not had adequate collections. The study has also found out that there were still many more students that do not use internet as one of their sources of information.

Malekani (2006) carried out a study on "A Comparison of Information Needs and Information Seeking Behaviour of Students of the Open University of Tanzania and those of Sokoine University of Agriculture". The objective was to compare the information needs and information-seeking behavior of these students. The O.U.T students rely mainly on the use of print books and journals as opposed to electronic information resources, where as S.U.A students use both print books and electronic resources at varying degrees. The results further show that many of the information services offered in the library were not used effectively due to lack of awareness on availability of these resources among many students.

Shanta and Devi (2004) analysed on "User Needs: A Case Study of Community Information Centres of Manipur State". The study revealed that 47.76 per cent of the users were not aware of the IT services and 54.33 per cent of respondents were not getting the right information at the right time. It is noted that, 61.19 per cent of the users were not aware of the digital/digitization and its resources available in the centre.

After studying the review of related literature in Information Sources and Services, the investigator finds that no one has done research in
Information Sources and Services in Anna University, Tirunelveli Engineering College Libraries. In order to fill up the gap, the investigator has chosen the title "Information Sources and Services in Anna University, Tirunelveli Engineering College Libraries". All the important aspects of the research reports reviewed are taken into account and applied in the present study. The researcher has collected reviews from Online LISA, electronic version of online journals, DOAJ and Library Science Journals.

The ensuing chapter explains the Area Profile of Engineering Colleges followed for the present study.