CHAPTER II

REVIEW OF LITERATURE

This chapter offers a brief review of literature related to the present study. A host of studies is available on information sources and services and ICT and information services. Such studies constitute the background of the present study and help the researcher avoid the duplication of work and save his time and energy, in identifying a problem for research. In short it opens the avenue for research in a new area. So, an attempt is taken to review the related studies done in India and abroad. The available studies collected from various sources such as books, journals, theses, reports, and websites have been reviewed under two headings.

- Studies on Information sources and services
- Studies on ICT and Information services

Studies on Information sources and services

The study on information sources and services has drawn the attention of many scholars and researchers in recent years. This is because both sources and services are the two determinants of the library to achieve the goals of the educational institutions. In fact, information sources are input and information services are output of the library. So, the poor collection of information sources makes information services ineffective and failure. It can be seen in the reviews given below.

Jordan (1963) evaluated the library characteristics of colleges, ranking high in academic excellence. The study reported that there is a positive correlation between
the size of information sources and the use of a library. The excellence of the academic institution, which the library belongs, measured by composite scores of academic rating.

Mukharjee (1965)\(^2\) carried out a study on library facilities in training colleges of India, to evaluate the prevalent position of 50 teacher training colleges. The study revealed that majority of libraries did not have sufficient space for functioning and some of them did not have their own libraries. The information services like indexing and abstracting, inter-library loan are not available in such libraries. Therefore most of the students and staff depend on university libraries.

Burns (1968)\(^3\) analyzed the holdings in science and technology in the University of Idaho. The study showed that there is a definite relationship between the size of a given information source and the competence of the library to respond to the needs of its users.

Roshan Raina (1980)\(^4\) conducted a study on degree college libraries in Kashmir. The study found that the text books collection was outdated one. Majority of the libraries followed closed access system. Moreover, all library services except circulation was found absconded. Acquisition rate was very low due to lack of fund.

Neelamegham (1981)\(^5\) studied some issues in information transfer: a third world perspective. The study pointed out that the accessibility was one of the pre-requisites of information use.

Unomah (1987)\(^6\) examined the unavailability syndrome in academic libraries, a case study of Bendel State University. The study confirmed that the availability of information sources affect the use of library services.
Kuhithau (1991)\(^7\) conducted a study on inside the search process: information seeking from the users’ perspective. The study argued that the action of information seeking depends on the needs, the perceived accessibility, sources and information seeking habits.

Mallaiah and Badami (1993)\(^8\) undertake a study on library and information service facilities in Mangalore University, covering 60 research scholars. The majority of the scholars visit the library for borrowing books and consulting periodicals. More than half complained about the non-availability of current issues.

Katogi (1994)\(^9\) made a study on the genesis of the National Diet Library, Japan and its organizations, collection and preservation of documents and their accessibility and use. The study indicates the major collections and their catalogues, bibliographies and indexes. And also describes its services; inter-library loan, and library automation used in the library.

Kolo (1994)\(^10\) examined the library services to adult literacy in Nigeria. The findings of the study showed that the library services in Nigeria have been of poor quality on account of acute shortage of quality information sources. Thus, he concluded that shortage of information sources affected information services to a great extent.

Nomma (1994)\(^11\) investigated the information services in National Diet Library, Japan. The study observed that the application of information and communication technologies, shifts towards networking, development of automated cataloging and indexing systems, creation of bibliographic databases of domestic and
foreign materials, introduction of information services, library services to users and plans for total automation.

Ologbonsaiye (1994)\textsuperscript{12} in his work, resource management for libraries argued that quality of information sources have influence on the use of library services.

Veeranjaneyalu (1994)\textsuperscript{13} carried out a study on information sources and services in Shri. Venkateshwara Medical College Library, Tirupati. Data were collected through questionnaire from P.G. students and teaching staff. The study revealed that basic resources were found inadequate and the respondents were not satisfied with the services rendered by the library.

Marama and Ogunrombi (1996)\textsuperscript{14} undertook a study on the availability of library and information science collections in Nigerian University libraries. The study noticed that there was a high non-availability of library and information collections in the university libraries. Moreover, the librarians cannot conduct quality research and get published, and the students of library science cannot even use library services. For effective information science collection and services, the study recommended that minimum five percent of the book budget should be allotted for this purpose.

Ajibero (1998)\textsuperscript{15} investigated the user expectations in Nigerian university library services in the 21\textsuperscript{st} century. The study pointed out that the quality of library services depends on the quality of information sources.

Apeji (1999)\textsuperscript{16} made a study on information availability and use in the Nigerian Educational Research and Development Council (NERDC) library. The study found that books and back volume of journals are the important sources of the
library, which were inadequate. The study suggested that the provision of sufficient fund and use of computer provides better library services.

Heron, et al. (1999)\(^{17}\) assessed the service quality and customer satisfaction. The study identified that the service quality includes three areas like resources, organization and service delivered by the staff.

Singh (1999)\(^{18}\) investigated the user assessment of collection and reader services in IIT Library, Kanpur. The study identified that majority of the users rated the library collection, services and attitude of library staff was good but they were not satisfied with the photocopying services.

Veeranjaneyulu and Ramesh (1999)\(^{19}\) made a survey on useful information requirement of agriculture scientists in Andhra Pradesh. The study revealed that 83% of the agricultural scientists are not happy with the collection of books, periodicals and other reference materials available in the agricultural libraries.

Al-Ansari and Al-Enezi (2001)\(^{20}\) made a survey on the resources, facilities and services at Health sciences libraries in Kuwait. The study explored the facilities, use of IT and information services. Moreover, the study concluded that such libraries offered only basic information services. A significant number of libraries were not automated and majority of the library staff were non-professional. It affects the information retrieval of the users.

Joshi (2001)\(^{21}\) made a study on Veterinary College libraries in Maharashtra. The study found that book collection and journal subscription was inadequate. Moreover, most of the libraries were understaffed. The study recommended that Indian Council
for Agricultural Research and Agricultural Universities should regular conduct orientation program for librarians.

Siddiqui (2001)\textsuperscript{22} conducted a study on the use of library collections in the Jawaharlal Nehru University Library. The study identified that 69 percent of users visit the library daily and 31 percent found the library collection adequate to cater their information needs.

Covey (2002)\textsuperscript{23} made a study on the assessment of Academic library. The study identifies the ineffective services of the academic library. And also, the study instigates to develop the library guidelines, the best practice and the standard instruments to make the best academic library.

Lohar (2002)\textsuperscript{24} carried out a study on the use of library facilities and information resources in Sahyadri colleges, Shimoga, Karnataka. This study was based on questionnaire survey conducted among 91 teachers from both the Sahyadri Arts & Commerce and Science colleges. The analysis of the data included the use of library resources, classification and cataloguing, library services and physical facilities. The study concluded that the academic achievement of the users is based on the use of libraries.

Choukhande and Kumar (2004)\textsuperscript{25} made an analytical study of information needs and use pattern of faculty members and research scholars of Amravati University. The study indicates that the reference sources preferred by the users are encyclopedias, periodicals, dictionaries etc. The users in comparison with other electronic resources, audiovisual materials go to a least. Most of the users use
catalogue bibliographies, indexes and abstracts. Majority of the users use the library to borrow books for study, research and training programmes.

Keshava and Savanu (2004)²⁶ studied the information needs and information seeking strategies of agricultural scientist. The study showed that majority of the faculty members are satisfied with the existing collection and services of the library and they rated the services as very good. Hence, the study observed that good library collection rendered good information services.

Olowa (2004)²⁷ examined the barriers of free access of information sources in Nigerian libraries. The study pointed out that the natural and artificial barriers affected the free access of information. In fact the poor estimation of library was attributed to lack of accessibility of information sources.

Oyediran-Tidings (2004)²⁸ studied the information needs and seeking behaviour of library users at Yaba College of Technology, Lagos. The study found that the students used the library at the lower level on account of the non availability of desired information sources. Thus, the study proved that the non-availability of information sources directly affected the information services.

Chavez, et al. (2005)²⁹ carried out a study on library user survey: resources, facilities and circulation services. The main objective of the study was to measure the satisfaction of users such as students, faculties and staff in valley community college library. The finding of the study revealed that the users were satisfied with the facilities, resources and circulation service. The study recommended to conducting survey in two years to compare the satisfaction of users in the study area.
Akhtar Hussain and Krishna Kumar (2006)\textsuperscript{30} conducted a survey on use, collection and services of IIRS library. The study found that maximum number of the users utilise the library services daily. Majority of the respondents (81.25\%) mainly used the library to borrow books and other materials and the least number of respondents use the library for audio-visual materials. Moreover, most of the respondents (87.50\%) preferred to print collection followed by electronic collection (68.75\%). About 86.25\% respondents used current periodicals. Majority of the respondents are fully satisfied with library services.

Naushad Ali and Hasan (2006)\textsuperscript{31} carried out a survey on library and information services in central library of Aligarh Muslim University from the teacher’s point of view. The study revealed that most of the users visiting the library to borrow books and collect teaching aids. Moreover majority of them were not satisfied with overall functioning of library.

Meenakshi (2007)\textsuperscript{32} studied the use and usage of information resources in Government College libraries of Chandigarh. The study found that a majority of users visit the library for study / research purpose and to locate information, to borrow books and to access internet. Most of the users are not satisfied with the library due to lack of information resources with less library services, and by the irrelevant information available in the college libraries.

Partap (2007)\textsuperscript{33} undertook a study on staff, collection, and services of college of Education libraries in Jalandhar, Kapurthala and Amrister districts of Punjab. For this purpose, a survey was conducted on 18 Education college libraries in the above districts. The investigator found that most of the libraries were kept open for 6 to 7 hours a day. The study also pointed out those old colleges had large
collections. The study suggested for user orientation programme and increase collection and services.

Ugad (2008)\textsuperscript{34} analyzed the relationship between the availability and accessibility of information sources and the use of library services at Michael Okpara University of Agriculture. The objective of the study was to examine the relationship of availability and accessibility of information sources with the use of library services. The study made clear that the information sources are not easily accessible and there is significant relationship between the accessibility and use of library services. About 79.8 percent respondents viewed that the use of library services depends on the accessibility of information sources and 81 percent depends on the availability of resources. The study concluded that the information sources are not easily accessible, due to the lack of satisfactory library services.

Biradar, et al. (2009)\textsuperscript{35} also studied the use of information sources and services in library of Agriculture Science college in Shimoga, India. The objectives of the study were to examine the frequency and purpose of library visit, to identify important information sources and to assess the usefulness of agriculture science periodicals and services provided by the library. The study made clear that almost all the users visit the library. However it was found that though the documentary sources are sufficient, the frequency of the use of encyclopedia, patents, reports and directories were very low. The frequency of the use of non-documentary sources was also low. This was due to the lack of awareness. Therefore, the study suggested the need for establishing e-consortia model among the agriculture libraries in India and also focused on information literacy programmes.
Harle (2009)\textsuperscript{36} studied the new opportunities for commonwealth libraries and concluded that libraries are critical in any higher education. The earliest universities were built around their libraries and the newest will continue to need a library at their heart. The library provides vital resources, facilities and services to learners, teachers, scholars and practitioners.

Kumari, H and Talawar (2009)\textsuperscript{37} conducted a study on the use of reference sources in university libraries of Karnataka. The objective of the study was to assess the use of reference sources in University libraries. The study concluded that a small percentage of users use bibliographies and directories as compared to the users of dictionaries, yearbooks and encyclopaedias.

Sami Lalitha, K and Iffat Rabia (2009)\textsuperscript{38} studied the use of information sources and services in Agriculture science college library, Shimoga in Karnataka. This study ascertained the use of information sources and services in the library. The study showed that above 70 percent users used lending service and 50 percent satisfied with it. Further, the study highlighted the service such as CAS, SDI, ILL, and CD-ROM fairly used. Therefore, the study stressed establishment of e-consortia model among agriculture libraries in India.

Shivalingaiah and Vasappa Gowda (2009)\textsuperscript{39} examined the facilities and services in university libraries in Karnataka. The study concludes that the university libraries have to concentrate on various facilities and services, which deserve more attention to cater the needs of the researchers, and also have to tackle the problem and train the researchers on various areas for the better use. Further, the study suggests that necessary steps will be taken to strengthen the existing facilities and services to maximise the utilization.
Akhtar Hussain, et.al (2010)\textsuperscript{40} conducted a study of information sources and services of the National Medical Library in India. The study found that the majority of users visit the library daily for borrowing and returning the books and preparation for competitive examination etc. The study noticed that 12.28\% users are not satisfied with the working hours of the library and 17.54\% users are also not satisfied with the ventilation, lighting, water facility etc. Majority of users use whole document collections of the library. It has also found that in the reference services, 63.16\% users are not satisfied with the uses of bibliographical sources, whereas 35.09\% users are not satisfied with the search of the specific information. It is recorded that most of BDS students uses IT based services, ie, 5.2\% online service, 33.3\% CD-ROM database service and 45.4\% internet service.

Mashroofa and Javasundara (2010)\textsuperscript{41} made a study on journal based information services in Sri Lankan university libraries. The study revealed that journals are important in searching information. The study also showed that the university library discharge its services promptly. The researchers find current information in journals. So, the effective flow of journal based information service is essential to develop teaching, learning and research activities. Moreover, the study pointed out the services such as document delivery, SDI, abstracting, indexing and translation are poorly carried out or not performed effectively in Sri Lankan university libraries.

Prabakaran (2010)\textsuperscript{42} studied the information access patterns of faculty in arts and science colleges in Chidambaram, Tamil Nadu. The study identifies the information requirements, usefulness of library resources and services and problems encountered by faculty members of two arts and science colleges (Govt. Arts &
Science College and Sri. Raghavendra Arts & Science College) in the study area. The study concludes that, more than half of the faculties visit the library daily or once a week and use books or reference works most often. They generally visit the library to prepare for access or to update their knowledge. Periodicals and internet are used as mass media to get required information. The study shows that most of the respondents are not satisfactory with library catalogue for the means of information retrieval.

Shankar Reddy (2010)\textsuperscript{43} conducted a study on the use of information sources by research scholars in Gulbarga University. The study identified that the majority of scholars used the library regularly. While there are significant levels of use and satisfaction, scholars are also clearly expressed their desire for more journals and for access to e-journals.

Kannappanavar and Manjunatha (2011)\textsuperscript{44} examined the library resources and services of engineering colleges in Karnataka. The study explored the status of resources and services provided to the users, some of the colleges have rich collection and infrastructure facilities, which have to share with other colleges. Computers and communication infrastructure are inevitable in the era of information technology. Hence libraries are to provide more fund and trained manpower to maintain and extend better service to the engineering college library users.

Nattar (2011)\textsuperscript{45} conducted a study on use of information source and services in library of engineering colleges in Tamil Nadu. The study found that the documentary and non-documentary sources are sufficient but the frequency of use of sources like encyclopaedia, patents, reports and directories are very low. On the other hand, the non-documentary sources are less used due to lack of awareness and inconvenience. And also, the study analyse the importance of e-library and suggested to establish the
e-library model among the engineering colleges and focus on information library programmes.

Ugad, Akobundu Dike and Chilaka, George (2011)\textsuperscript{46} carried out a study on size and quality of information sources and the use of library services in the university libraries in the South-East Nigeria. He revealed that there is a significant relationship between the size and quality of information sources and the use of library services. The study found that these information sources variables to a large extent influence the use of library services.

Akhtar Hussain and Krishna Kumar (2013)\textsuperscript{47} conducted a study on utilization of information resources and services of the Master School of Management library in Meerut, India. The findings of the study revealed that majority of the users were aware of library services like reference service, current awareness service, photocopy service and online search service, whereas indexing, abstracting, book bank and bibliographical services are using minimum levels.

Vasanthakumar and Balasubramanian (2013)\textsuperscript{48} assessed the use of college library by the faculty and students of mathematics in arts and science colleges in North Madurai, Tamil Nadu. The study suggests that user education is needed for the proper utilization of the resources and services. Moreover the college libraries should conduct short term training programmes on the effective use of library resources and services and the effective use of information and communication technology.

\textbf{ICT and Information services}

The introduction of information communication technology (ICT) has influenced the libraries to produce better services and adapt changes. The libraries
also have significant changes with collection buildings, service provision and library management. The advent of ICT introduces and disseminates e-resources, and its progress has increased the utilization of libraries. In fact ICT has revolutionized the information sources and services to a great extent. It has increased the number of users because of its fast information process and retrieval. So, it has drawn the attention of scholars and researchers to analyze the influence of Information communication Technology in information services. As a result a host of studies on these issues are available in India and abroad. Such studies constitute the core of this study. Hence the available studies are reviewed briefly here.

Chang (1998) examined the role of electronic information sources and services in the academic library. The study divided the library services into three functional areas such as acquisition, organization and delivery and described how the emergence of electronic resources was challenging the traditional function of each area. The objective was to address issues, raise questions and provoke thinking, whilst looking at the changing approach of library services and libraries continue to provide towards a more and more electronic era.

Clyde (2000) conducted a study on school library automation. The study made clear that how the computers could make changes in the library services as an administrative tool, as a resource for teaching information skill and as part of the library collection in the form of software and databases.

Kogamuramath and Angadi (2002) assessed the library home page design and development in TISS library. The study emphasized the need for the library home page and elaborates the techniques of designing and developing a library home page.
The finding of the study showed that the structure and maintenance of web page is important for better services.

Tadasad, et.al (2003)\textsuperscript{52} conducted a study on the use of internet by undergraduate students of PDA College of Engineering, Gulbarga. The study found that a very few students used internet facility, which needs to be increased. The study suggested that internet facility should be extended to library, which provides e-information both to students and faculty members.

Cholin and Karisiddappa (2004)\textsuperscript{53} analysed the impact of electronic resources in the academic environment. The study suggested that the consortia approach for the academic libraries should develop their electronic resources with the existing print sources.

Mohamed Haneefa (2004)\textsuperscript{54} analysed the application of ICT in special libraries in Kerala. The tools used in the study were structured questionnaires, semi-structured interviews and observations in automated special libraries of premier research institutions in Kerala. The study identify the factors which promote or hinder application of ICT, user satisfaction, ICT skills of library professionals and the facilities for training in ICT. The results of the study show that majority of the libraries have basic hardware and software facilities, provide training for their library staff in ICT based services. Inadequate trained library professionals are the main barrier to the application of ICT.

Muhammed Salih (2004)\textsuperscript{55} surveys the computerization of University libraries in Kerala. The main objective of the study was to identify and compare the application of computers in house-keeping operations, infrastructure, finance, library
services in University libraries. The study covers four major University libraries of Kerala – University of Kerala, University of Calicut, M.G University and Cochin University of Science and Technology. Data was collected using questionnaires to librarian, person-in-charge of computerization, users and from websites of the university libraries. The study found that none of the university libraries is totally computerized. All the libraries have INFLIBNET, University LAN and providing internet services to the users. The study concluded that setting up of Consortium of Universities is essential to share the resources between university libraries in Kerala.

Subash Khode and Divik Kumar (2004)\textsuperscript{56} made a study on free information sources and services in internet libraries. The study concluded that the cost of books, journals and other materials are rapidly increasing and budgets are reducing in the libraries. Mean while internet is becoming a useful tool for accessing free information sources. So, the librarian should maintain an index of online e-journals, magazines and other information sources, which are freely available on the internet in the library to save space and money of the library and time of their users in searching the information.

Ali and Husan (2005)\textsuperscript{57} made a study of users’ opinion on the use of electronic services at IIT library, Delhi. The study opined that the users can easily access of online databases and other e-resources compared to CD-ROM databases. The study suggested that the library should subscribe to more web-based resources than CD-ROM databases.

Bhatnagar, Anjana (2005)\textsuperscript{58} conducted a study on web-based library services. The study revealed that when the cost of books, journals and other printed documents
are rapidly increasing and budgets are reducing in the libraries, internet in becoming a useful tool for accessing fee information sources through various search engines.

Chakravarthy and Singh (2005)\(^{59}\) made a study on e-resources for Indian Universities. The study highlighted two major consortium initiatives, UGC-Infonet and INDEST consortium, that save the academic libraries, so that they can cater the needs of its clientele. The study concluded that the endeavour of UGC - Infonet and INDEST consortium are acceptable. The consortium strengthens the higher education system in India through library services.

Dollah (2006)\(^{60}\) made a study on digital reference services in selected public academic libraries in Malaysia. The study identified the usage of both traditional and digital library services, user awareness of digital reference services, user satisfaction. The study also stressed the need for digital reference service.

George Carole, et.al (2006)\(^{61}\) explored the information seeking behavior of graduate students in Carnegie Mellon University. The findings of the study indicate that people, especially academic staff plays a central role. Students rely heavily on internet as well as the university libraries’ online resources for information, though still using the physical library for hard copy materials such as books, journals and papers. A few graduates mentioned that they face difficult in locating information.

Mohamed Haneefa (2006)\(^{62}\) studied the information and communication technology infrastructure in special libraries in Kerala. The study investigated the current state-of-the-art of the ICT infrastructure and the level of use of the e-resources available in the library. Moreover, majority of the libraries have basic hardware facilities such as computers, servers, printers and which was underutilized. The study concludes that most of the libraries need proper ICT facilities including software,
hardware and library personnel have to be trained properly to make use of the resources optimally.

Suresh Jange and Lalitha K. Sami (2006) investigated the influence of internet on library and information centers of National Institutes of Technology, India. The objectives of the study were to understand the perceptions of internet technology by library professionals, to identify the purpose of using internet by library, to explore the use of internet services and its impact on library activities and services, to identify the search strategy adopted for searching information by libraries, to know the level of satisfaction towards internet and evaluate the features of internet as an information source, to understand the difficulties in using the internet and to make comparisons between internet vs library. The study indicated that the libraries of NIT acknowledge the significance of internet in library activities and services. Efforts have to be made to understand and utilize the significance of newsgroups, discussion, forum, FTP, TELNET, freeware/shareware and charting services for the benefit of library sources and services. The study recommended that the librarians have to reorient themselves and adopt the new technology to generate fruitful services. The findings of the study confirmed that the internet services are not replace the traditional libraries but supplements the library activities and services.

Vinitha, et al. (2006) analyzed the impact of information and communication technology on library and its services. This paper highlighted the changing dimension of library services due to the impact of ICT. The study also discussed the most essential features such as infrastructure, staff support and budgetary aspects with respect to Indian context. Majority of libraries in India do not have computer facilities. The print media is still a major source of information in libraries.
Haneefa (2007)\textsuperscript{65} assessed the use of ICT based resources and services in special libraries in Kerala. Most of the users used e-mail service, followed by World Wide Web. A good number of users were not satisfied with the application of ICT infrastructure, and proposed formal orientation and training in ICT based resources and services.

Verma and Kaur (2007)\textsuperscript{66} made comparative study highlighted on the impact of electronic resources in libraries of IIT, Delhi and Roorkee. The study concluded that, the users are giving more importance to non-printed materials than printed one. The number of users coming to the library is decreased due to internet and network services in departments and hostels.

Devalingam and Satyaram (2008)\textsuperscript{67} analysed the use of electronic resources by the faculty in Jay Ram College of Engineering and Technology, Dharmapuri in Tamil Nadu. In this study 73 questionnaires were distributed among the faculty members for analytical purpose. The study found that the use of electronic resources improve the academic career of the faculty, but they face the problem of using electronic resources. However the study stressed the importance of electronic resources in information dissemination.

Keisham Sangeetha and Sarika (2008)\textsuperscript{68} evaluated the ICT based services in the academic libraries of Manipur. The study revealed that 3 colleges, out of 25 colleges surveyed have fully automated. Even though 20\% (5) college libraries in the state are not automated, and 4\% (1) partially automated. It was noted that 32\% (8) colleges of them have already submitted proposal for initiating automation work, and remaining 32\% (8) colleges waiting for approval from the college authorities. The
study suggested that every library in the select colleges should be automated, so that the user can get their information services at right time.

Ahmad and Fatima (2009) investigated the usage of ICT products and services for research in social sciences at Aligarh Muslim University. The study found that majority of the researchers is familiar to use the ICT products and services. The study suggested that there should be orientation workshops and training programmes for the researchers for the use of ICT products and services.

Hassan S. Dala (2009) studied the role of information and communication technology in academic libraries and the achievement of the millennium development goals. The study identified the role of ICT in academic libraries to improve the standard of education in the country so as to achieve the millennium development goals by 2015. The study described the types of ICTs found in Academic libraries and the problems facing the use of ICT. The study also suggested the strategies on how to overcome ICT problems in academic libraries.

Patil, D.B. and Parameshar (2009) conducted a study on use of electronic resources by the faculty members and research scholars in Gulbarga University. The study used questionnaire method to collect information needs of the faculties and researchers. The finding of this revealed that the electronic resources are helpful in meeting information requirements. The study also found that the faculties and research scholars need training to use the electronic resources effectively.

Swain and Panda (2009) made a study of librarian’s opinion on the use of electronic resources in business school libraries of an Indian state. The study made clear that, how e-resources are consumed by the users of business schools in Orissa and revealed the usage trends of leading online databases like, Emerald and Ebsco.
Haneefa and Sukkoor (2010)\textsuperscript{73} conducted a study on information and communication technology literacy among library professionals in Calicut University, Kerala. The study showed that young professional assistants are more competent towards ICT as compare to other senior staff.

Natarajan, et.al (2010)\textsuperscript{74} made a survey on the use and user’s perception of e-resources in Annamalai University. The study revealed that despite of the availability of wide range of electronic resources, the frequency of its use in low due to lack of time, awareness and subject coverage and slow downloading.

Sampath Kumar and Biradar (2010)\textsuperscript{75} examined the use of ICT in 31 college libraries in Karnataka, India by investigating the ICT infrastructure, library automation, barriers to the implementation of library automation and librarian’s attitudes towards ICT. The study found that, the application of ICT in such libraries has not reached high level due to lack of man power, trained and skilled staff and budget.

Al-Ansari (2011)\textsuperscript{76} made a study on application of information and communication technologies in special libraries in Kuwait. The study found that there is a lack of government funds to purchase, upgrade and managing the ICT. The study further revealed that some libraries have made significant progress in the application of ICT, and some are still using manual system.

Danavandan, et al. (2011)\textsuperscript{77} studied the ICT infrastructure facilities in self-financing engineering college libraries in Tamil Nadu. The study identified that, lack of adequate finance is the main reason for the non-development of ICT infrastructure in the case of libraries and concluded that establishment of ICT facilities can improve the efficiency of information sources and services.
Hassan and Khaiser (2011)\textsuperscript{78} made a comparative study on the use of e-resources among the users of the University library in Iran & India. The finding of the study revealed that there was significant difference in the use of e-books, e-journals and online databases in both countries. The study also noticed that the users face different type of problems in accessing the e-resources.

Kamba (2011)\textsuperscript{79} studied the implication of ICT’s in libraries of higher education institutes in Africa. The study identified that ICT has changed the way of information seeking. It has become user-friendly to access the library services from their homes, classroom and hotels to interact with the library staff and receive information services without physically visiting the libraries.

Ramesh (2011)\textsuperscript{80} examined the users’ attitude towards digital information resources with special reference to engineering colleges in Erode district, Tamil Nadu. The study indicates that 69.75\% and 30.43\% of engineering college teachers use digital information resources for the purpose of their class room teaching and research work, 88.04\% of teachers use internet as digital information resources. The study reveals that majority (80.45\%) of the teachers opined that access to current information only through digital resources. Among the total respondents, 67.39\% stated that, too much information retrieved in one of the vital hindrance in using digital resources. The study helps the library professional in planning and developing digital information resources in providing modern services to the library users.

Sivakumaran, et.al (2011)\textsuperscript{81} investigated the attitude towards information and communication technology among library professionals in and around Chennai. The study found that 85\% respondents feel that ICT motivates the library professionals to
learn more and saves the time of the staff. The study showed that library professionals are eager to upgrade their ICT skills and implementation of ICT in the libraries.

Susan (2011)\textsuperscript{82} analysed the impact of ICT on professional development and Educational needs of library professionals. The main objective of the study was to assess the infrastructure facilities and to evaluate the professional development activities of library professionals in the Universities of Kerala. The study found that most of the University libraries have basic hardware and software facilities but some of the facilities are not used properly and have no proper maintenance. All libraries have conducted training programmes for the professionals in ICT based service except Sree Sankaracharya University Library. The study concluded that university libraries can also put forward development projects to various finding agencies like UGC, DSI, ICSSR etc. and improve the library facilities.

Tiwari and Sahoo (2011)\textsuperscript{83} conducted a study on infrastructure and use of ICT in the University libraries of Madhya Pradesh. The study revealed that ICT has increased the digital resources in libraries and improved the network system. The study indicated that lack of infrastructure; proper planning and frequent change in ICT are the major barriers for the development of ICT in the study area.

Kumar (2012)\textsuperscript{84} conducted a study on information and communication technology in Textile Engineering College Libraries of Haryana. The study observes the current position of libraries in the ICT environment and indicates the availability of ICT and e-resources. Moreover, the colleges have well equipped library and gives more importance to various aspects of ICT such as internet, e-mail and online databases. The study revealed that such libraries are made an endeavor to do well in collection development, information services and infrastructure facilities.
Maan (2012)\textsuperscript{85} analyzed the usage of ICT products and services in Adesh institute of Engineering and Technology in Faridkot of Punjab. The objectives of the study were to find out the level of use and purpose of using various ICT products and services, to examine the level of expertise of users regarding the use of ICTs, to identify how ICT has impacted information needs of users and find out the problems of users in online services. This study made clear that the respondents are using smart card for the library services. Among the total respondents, 91.8 percent satisfied and 5.4 percent are not satisfied with the services. The study pointed out that 85.4 percent users visit library daily and 6.4 percent visit twice daily. It was found that more internet speed for the users would enable them to make better use of library services. The study observed that special training for the new user makes them familiar with the whole library system. It indicated that SDI and CAS should be effective to provide up to date information. The study suggested that the damaged smart card should be replaced by new one.

Nallathambi and Kanakaraj (2012)\textsuperscript{86} made a study on utilization of e-resources among the faculty members of Engineering colleges in Salem and Namakkal Districts, Tamil Nadu. The study confirmed that, majority of the respondents in the engineering colleges have used e-resources daily.

Rajkumar Bhardwaj and Parmjeet K.Walia (2012)\textsuperscript{87} conducted a study on web based information sources and services in St. Stephen’s College of Delhi. The objectives of the study were to study the awareness, use method of using the e-resources among the faculty members, to study the frequency and purpose of using e-resources by the faculty members, to identify the search method used in searching the electronic resources, to identify the method of training to use the e-resources to conducting the training programme in the college, and to rate the quality of library
and information services and usage of e-resources through the library portal. The study revealed that majority of the faculty members are aware about the e-resources and desired training to use the available resources through workshop and lecture methods. Most of the respondents are satisfied with N-LIST resources and video library contents. The study concluded that, it is the right time for library professional to come forward and convert the traditional library into teaching library, providing organized training to use e-resources to users.

Sunil Kumar Satpathy, et al. (2012)\textsuperscript{88} assessed the use of ICT based services by faculty members and students of CVRCE, Odisha. The study identified that the use of ICT based services by the faculty members and students satisfactory. However, the central library needs to take some more steps to strengthen such services, includes regular organization of orientation programs, automated library systems, online databases, digital library and institutional repository.

Thanuskodi (2012)\textsuperscript{89} studied the use of internet and electronic resources among medical professionals with special reference to Tamil Nadu. The study pointed out that users were aware about the e-resources. It observed that lack of IT knowledge and limited access to computers was the acute problems of the users in accessing e-resources.

Vijayakumar and Jaison Thomas (2012)\textsuperscript{90} conducted a study on application of information communication technology in college libraries. The study concluded that the status of computerization of library, housekeeping operations and computer based library services of college libraries is in nascent stage.
Elavazhagan and Udayakumar (2013)\textsuperscript{91} assessed the use of e-resources in the BITS, Pilani – Hyderabad campus. The study found that the e-resources save time, energy and money, easy to use, more informative and preferred, flexible and effective.

Hema, et al. (2013)\textsuperscript{92} made a study on use of ICT based resources and services by the faculty members, research scholars and P.G students of Arts and Science Colleges in Union Territory of Puducherry. The study shows the ICT based resources and services, purpose of use and users’ awareness on accessing e-resources.

Syed Noor Mohd and Mohamed Ismail (2013)\textsuperscript{93} made an assessment on availability of ICT infrastructure facilities to access e-resources among the engineering college libraries of North Maharashtra University. The study concluded that all the sample engineering college libraries having necessary ICT infrastructure and facilities to access the electronic resources for the benefit of their users.

**Research Gap**

The studies on information sources and services are not a new area in library and information sciences. In fact, there are many studies done in India and abroad related to information sources and services, and how far lack of sources and lack of modernization affect information services in agricultural, engineering and medical college libraries. The study also highlighted that, improper organization of materials and lack of infrastructural facilities impedes the utilization of information sources and services. It is astonishing to know that except few studies (Lohar, 2002; Prabhakaran, 2010; Vasanthakumar and Balasubramanian, 2013) on all other studies, concentrate on school of management, agricultural university, engineering and medical college libraries, in relation to collection building and organization, ICT and information services, library management and services. It shows that such studies on arts and
science college libraries have been neglected totally in India and other countries. The neglecting scene of research in this area has created the widest gap in library and information science researches. It instigates the researcher to fill this gap and create new epoch in such research field. Consequently he keeps the step in this attempt at micro level. Hence the present study analyses information sources and services in arts and science college libraries in Kanyakumari district.

The researcher has reviewed ninety three studies on information sources and services and ICT and information services done by various scholars and researchers in different times and areas. However all studies indicates that there are poor collection, lack of modernization, inadequate library staff, infrastructure facilities, guidance and training influence the information services in professional and vocational college libraries. Moreover, the studies provided suggestions and recommendations to the officials and managements for fund reservation, collection development, organization and modernization with view to increase collection and maximize information services in the study area.
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