CHAPTER 2

REVIEW OF LITERATURE

2.1 INTRODUCTION

A large number of researches have been conducted on the information seeking behavior of students and faculty in conventional and modern library systems in India and at international level. These studies are classified into various categories as follows:

- Studies Based on Information Needs
- Studies Based on Information Seeking Behaviour
- Studies Based on User Studies
- Studies Based on User Education and Training
- Studies Based on other Professions

A review of selected and related studies on the above categories from the last two decades has been attempted.

2.2 STUDIES BASED ON INFORMATION NEEDS

There are several studies conducted on the topic of information needs. Some of the studies focused only on the students and some more exclusively on the faculty. A number of studies include both students and faculty.
2.2.1 Studies Based on Information Needs of Students

Many researches have been conducted focusing on the information needs of students. In this line, related to the course work, Hsieh-Yee (1996) investigated the information needs and most sought after information channels of students during preparation of course work related to projects. The study was conducted in two universities in US namely American University and the District of Columbia University. The study revealed that the students identified convenience, quality of data as the top two factors in their choice of information channels. In continuation, focusing on course work, Fidzani (1998) conducted a study among graduate students at the University of Botswana. The study aimed at identifying the information requirements and awareness of library services among the students. Data was collected from 144 students. The study showed that journals, general and text books are the most popular sources of information for course work and research.

Further Malekani (2006) conducted a comparative study on information needs and information seeking behaviour of students of the Open University of Tanzania and those of Sokoine University of Agriculture. The purpose of the study was to examine awareness and use of different sources of information for course-work and research by the students. Questionnaires were distributed among the students. The findings highlighted the positive aspects of seeking information from the student perspectives as well as the kind of assistance, they required when seeking information in library. The findings showed that there were differences in the use of library resources between both the university students. The Open University of Tanzania students relied mainly on the use of print books and journals whereas the Sokoine University of Agriculture students relied on both print and electronic resources. It was also revealed that many of the information services offered
in the library were not used effectively due to lack of awareness on the availability of resources among students.

The satisfaction level of information needs of users depends upon their awareness on the information sources, which they identify and use. In the process of identifying students’ information needs, their awareness on information sources and their preferences, Majid and Tan (2002) carried out a study among computer engineering students of Nanyang Technological University, Singapore. A questionnaire was distributed among 200 randomly selected students and 102 students responded. The purpose of the study was to investigate the types of information sources used by the students. The study found that printed materials were the most preferred format among the students. The order of preference of information seeking materials was books, lectures, internet, friends and manuals. The use of databases and electronic journals was low among the computer students.

Saimbert (2005) attempted to study the information needs and seeking behaviour of baccalaureate nursing students at the University of Medicine and Dentistry of New Jersey George Smith library. The study highlighted repeated categories of information sought by nursing students through data collected using both formal and informal interviews.

Later, Owolabi and Jimoh (2010) attempted to know the information needs and seeking behaviour of polytechnic students as a case study at the Akanu Ibiam Federal Polytechnic at Nigeria. Data was collected through questionnaire from 500 respondents of which 480 filled the questionnaire. The study revealed that the students needed information primarily for academic purpose and text books were the major source of information among them. There were several studies conducted on the information needs of students, especially under electronic environment.
Garrison and Grudzein (2007) examined how off-campus students at Central Michigan University interacted with electronic journals in an environment where a full service of document delivery option was available to them. The study found that increasingly the students were accessing resources themselves through the online packages and document delivery requests were decreasing. Wiley InterScience and Project MUSE online access statistics were compared with document delivery requests for articles available in these online packages.

Internet was found to be the most crucial source to satisfy the information needs of students through the investigation of Ajiboye and Tella (2007). They analysed the impact of information seeking behaviour on the quality in higher education in Africa. The study was conducted among university undergraduate students. The study adopted a descriptive survey design and data was collected using a questionnaire administered among two thousand respondents randomly selected from six departments in the University of Botswana, Gaborone, Botswana. It was found that the students gave primary importance for academic information.

2.2.2 Studies Based on Information Needs of Faculty

Apart from students, there were studies executed to know the information needs, especially, of the faculty. In this direction, Zhang (1998) analysed the faculty and staff's information needs and use of electronic library and information technologies at the Olin library, Rollins College, Florida. The study revealed an important point that college library had to plan new and better ways to provide value added information services to their users.

In order to know the faculty preference on information sources, Sudharani and Veeranjaneyulu (1999) invited views of users through a survey
on the information needs and use of faculty members of Sri Padmavathi Mahila Visvavidyalayam, Tirupati, Andra Pradesh. The study brought out about various library resources such as books, periodicals, other resources and through interlibrary loan from which the faculty sought for information for satisfying their needs.

Gurdev (2002) examined the use of college libraries by faculty members of University of Delhi. The study found that textbooks were most frequently needed resources, followed by reference books and general books. Main purpose of visiting library was to prepare notes for students. The study found out that journals and textbooks were not adequately available. Almost all the faculty members wanted the library services to be computerized.

Further, a study was executed by Shakeel and Farzana (2011) on the information needs and information-seeking behavior of college faculty at Bahawalpur. The study was analysed from the data collected through questionnaires from Principals, Vice Principals and teachers of the Government colleges’ selected in Bahawalpur. It was revealed that information technology had affected the users’ information seeking behavior and made their requirements be satisfied in an easier way.

Giving focus on the electronic resources, Patil and Parameshwar (2009) undertook a study to find out the information needs and usage of electronic resources by the faculty members and research scholars in various PG departments and to assess whether their information needs were fulfilled through the e-resource facilities provided in the Gulbarga University, Gulbarga, India. The studies showed that the information needs were satisfied using the electronic resources available in the University Library. It was recommended to include more number of journals in the UGC-Infonet Consortium.
2.2.3 Studies Based on Information Needs of Faculty and Students

Many studies have been conducted to know the information needs of both students and faculty. Wu (1998) conducted a user survey among graduate students, undergraduate students and professors to know their information needs, especially on reading preferences. It was pointed out that the undergraduate students were reading Chinese publications for their academic and self study reasons. But the graduate students were not only reading Chinese publication for their academic and personal study but also read western publications and copying the articles. All the three groups tend to have the same user satisfaction regarding the library online public access catalogue, network and book borrowing rules but have different opinions about which services needed improvement. To understand the mostly needed resource and to know about sequence of visiting behaviour, Okiy (2002) conducted a survey of students and faculty members to assess the use of Delta State University library in Nigeria. The books were mostly needed and utilized compared to other resources. Most users considered library services and facilities as fair. It was also found that the visiting behaviour between students and faculty had different frequencies.

Swarna (2004) conducted a study to know the information needs of the users at the B.Ed. college libraries in Andhra Pradesh, India. The study was conducted with an aim to gather the views of students and teachers on library collection, services, facilities, rules and regulations, reading facility and organization of documents.

Among, other resources available in library, paying attention on periodicals alone, Lawoe (2006) undertook a study to know the level of usage of periodicals by the students, faculty, and research scholars at the Kwame Nkrumah University of Science and Technology Library. The main purpose of the study was to add useful and adequate collection of serials on
the subjects needed by the users. Questionnaires were distributed among 483 users of the library and 82.6 percentage of the users responded. The results of the study showed that the serials collection was fairly used. The analysis also brought out the lapses of the periodical section and recommended to have new methods to serve in a better manner to the users.

In line with the above study, reference resources only were given focus by Kumari and Talawar (2009) in their study. They evaluated the needs of the students, research scholars and teachers on the use of reference sources in various university libraries in Karnataka. A total of 1740 questionnaires were distributed among them to collect data and 1275 responses were received. The survey showed that there was an increase in the use of reference sources related to the research needs, education and current information.

Further, Pushpalatha and Mallaiah (2009) organised a survey among 138 users from the Department of Chemistry, Mangalore University in India, through questionnaire to study the information needs and use of information resources in Chemistry. The study disclosed that maximum number of users visit library for borrowing books, to read periodicals and to access UGC Infonet e-resources. These users approach the library staff and OPAC for retrieving resources. It was also found that the library resources in Chemistry were current and useful but the periodicals both primary and secondary were inadequate.

2.3 STUDIES BASED ON INFORMATION SEEKING BEHAVIOUR

Studies were found exclusively on students and they are focusing on various perspectives of information seeking behaviour. They include psychological perspective, linkage between ISB and learning, impact of
internet use and influence of electronic environment. Few studies of information seeking behaviour are focused on application of models and theories. Many studies have been conducted on faculty, especially, in electronic environment, and researchers and scientists in academic environment.

2.3.1 Studies based on Information Seeking Behaviour of Students

Focusing on the information seeking behaviour of students while using libraries, Ray et al (2000) have examined about what users actually do while seeking service in academic library. The aim of the study was to understand the patterns of information seeking behaviour of students using two libraries at Northumbria University at Newcastle, UK. The results of the study showed that there were few problems and the methodology that came out of the study could provide data to offer insights into patterns of service in use.

Few studies have been conducted on the psychological perspective on the information seeking behaviour of students. In this direction, Adhami (2004) who assessed the relationship between undergraduate students’ epistemological beliefs, reflective judgement and their information seeking behaviour indicated that there was a relationship between epistemological beliefs, reflective judgement and information seeking behaviour. Undergraduates at higher stages of epistemological development exhibited their ability to handle conflicting information sources and to recognize authoritative information sources. Data was collected from fifteen first year undergraduates through interview and questionnaire.

Further, Salma and Yelwa (2004) examined the attitude of students towards resources and services of public library. Data was collected using questionnaire, conducting interviews and through observations. Survey
brought to light that majority of students visiting library were not its registered members. Resources and services were inadequate to meet information needs of users. Inadequate funds and accommodation were the problems being faced. Later, Heinstrom (2003) carried out a study to explore information behaviour from psychological perspective by relating information seeking to personality traits and study approaches. Questionnaires were distributed among 305 university students who were writing Masters’ thesis. It was emerged from the statistical analysis that there were three information seeking patterns namely fast surfing, broad scanning and deep diving. Fast surfing represented a surface study approach and involved emotional as well as low openness to experience and low conscientiousness characters, broad scanning involved extraversion, openness and competitiveness whereas deep diving linked to deep and strategic study approach.

A study focusing on creating users profile was conducted by Johns and Lawson (2005). They analysed the university undergraduate students and their library related privacy issues. The study analysed the student knowledge and perceptions of online privacy issues. The opinions regarding who should collect and retain information about patron, for what purpose and under what circumstances were brought out of the study.

Keeping in mind the scholarly activities of students, a study was conducted by George et al (2006) They attempted to explore graduate students' information behavior related to their scholarly activities at Carnegie Mellon University. Semi-structured interviews were conducted with one hundred graduate students representing all disciplines and departments. It was found that convenience; lack of sophistication in finding and using resources and course requirements affected their information behavior.

Paying attention on the international students who belong to different ethnic groups, Liao et al (2007) conducted a comparative study on
the information needs and information seeking behaviour of international graduate students and American graduate students. Data was collected through an online survey among the students at Virginia Tech. The purpose of the study was to investigate how graduate students from diverse ethnic groups discovered, selected, and used various information sources and to obtain insights into international graduate students’ information-seeking behavior, especially similarities and differences compared with the information-locating patterns used by their American peers.

Qureshi et al (2008) evaluated information needs and information seeking behaviour of students in Universities of Pakistan. The study identified impact of different factors involved in the general pattern of information gathering system by the students. Data was collected from 1000 respondents randomly selected from 9 Universities through questionnaires. Correlation and regression tools were used for analysis. The study identified that awareness of resources, surrounding environment, student participation, educational and cultural background, ability to use tools, self-evaluation, and intuition were having positive impact on students’ information needs and seeking behaviour.

Sookhtanlo et al (2009) investigated the information seeking behaviour among undergraduate students at the library of agricultural extension and education in Iran. Stratified proportional random sampling method was applied and 230 persons were selected from 4 famous universities of Iran. Questionnaires were distributed for data collecting purpose. Data was analyzed using scale-free technique, principle components, eta test, correlation and regression tools. It was revealed that awareness of scientific and other resources were the most influencing factors in students’ information-seeking behaviour. Gaps in the library facilities in different universities have direct influence on the information seeking behavior of
students, in addition to the interaction with other students and faculty were the other means that students used to acquire information.

A few studies threw light on the linkage between learning and information seeking behaviours of students. Based on this concept, Harris et al (2009) undertook a study to identify medical students learning behaviour and preferences related to information technology and information needs in order to optimize curriculum and educational space design. Data was collected through an online survey at Emory University School of Medicine. Out of 440 students, 214 have responded. The study revealed that 95% of the students used computers more than 6 hours in a week and 75% reported owning and regularly using a laptop. 55% of the students reported being underprepared for the application of clinical information in their practice and 49% of students prefer group learning.

Nasser and Andrew (2010) have conducted a pilot study to explore the interaction between learning tasks and students’ collaborative information behaviour when working as a group in a project-based undergraduate engineering design course at a Canadian university. A web-based questionnaire was sent to 63 students of which 42 responded.

2.3.2 Studies Based on Information Seeking Behaviour of Faculty

A lot of studies put forth information seeking behaviour of users especially, faculty. These studies deliberated on type of resource they consulted, their behaviours towards conventional and electronic environment and their attitude towards resources. Msuya (2002) examined the information seeking behaviour of academic members of the Faculty of Law, University of Dar Es Salaam. The objective of the study was to find out how faculty sought information in light of the changes introduced in the library, particularly the introduction of information and communication technology and re-
organization of the library. The study revealed that law reports and legislation were the most consulted type of materials and the faculty has other formal and informal sources of information apart from the university library.

Rafiq and Ameen (2009) conducted a study on the information seeking behavior and user satisfaction of university instructors. This study investigated information-seeking behavior and satisfaction level of instructors at the National Textile University, Pakistan. Questionnaires were distributed for collecting data among 35 teachers and 34 questionnaires were received. The study brought out the information seeking behavior of a community that was engaged in research and development in the field of textiles, which was the backbone of Pakistan's commerce and industry.

2.3.3 Studies on Information Seeking Behaviour in Electronic Environment

Many studies have been conducted to make out behavioural issues of academic users while using resources in a changing learning environment. These studies dealt with the concern on the awareness and use of internet, electronic resources, infrastructure of electronic environment and lack of skills in using these e-resources. Osiobe (1988) disclosed through a study of students at Port Harcourt University Library in Nigeria that browsing the net was the source of reference to the literature among undergraduates followed by faculty, library card catalogue and the subject librarian.

Pelzer (1998) conducted a study on the library use and information seeking behaviour of veterinary medical students at Iowa State University. The study revealed a major shift from the use of print indexes and abstracts to electronic environment. It also indicated that electronic resources would be important for future education needs.
Wang (2001) studied the internet dependency among students through a study conducted in an Australian regional university. The study aimed at looking into the alleged internet dependency within the Eriksonian psychosocial development framework. Data was collected from 217 students. The results showed that the internet dependency seemed to be independent of the psychological maturity and the generally perceived self efficacy. It was also understood that internet dependency could be of a multifaceted nature.

Rozic-Hristovski et al (2002) ascertained behaviour of web users in the Central Medical Library at the Faculty of Medicine, University of Ljubljana, Slovenia. The study concentrated on analysing and exploring regularities in the visitors’ behaviour that could be used to improve the quality and facilitate delivery of information services and identify visitor’s interests. The study helped in developing own solution for exploring and analysing the web logs based on data warehousing and online analytical processing technologies.

King and Montgomery (2002) studied the change in the information seeking behaviour of faculty and doctoral students after having migrated to an electronic environment at the Drexel University while using the Hagerty Library. The study revealed that though the information was provided through electronic environment, the amount of reading remained high. The readers were satisfied with the articles provided by library. However about 42% of the faculty and doctoral students relied heavily upon their personal subscription. Since the library’s information provision had migrated to electronic environment; the users needed to spend only less time in library. So, this is made known from the study that though there was a migration from print environment to electronic environment, the users were comfortable with print subscriptions of library and personal subscriptions.
Regarding analyzing the patterns of internet access, Ojedokun (2002) in his study on students of the University of Botswana explored the patterns of internet access, usage and problems faced by the students of the university. The study showed that though a considerable number of users were aware about the benefit of the internet, they lacked necessary searching skills in using it effectively. On the effectiveness of use of internet, Junni (2007) conducted a study on the process of seeking information by students for their masters' theses and the effect of internet. To answer the research question, reference lists of masters' theses from 1985, 1993 and 2003 were studied in three disciplines such as Economics, Psychology and Mathematics, followed by semi-structured interviews of students who had finished their thesis in 2003. The findings showed that the internet appeared to have had a profound effect on the type and quantity of information that students used as references in master's theses. The respondents felt that information search skills had to be improved.

In the process of identifying the most sought after channel for acquiring information among students, Dee and Stanley (2005) have discussed about the information seeking behavior of nursing students and clinical nurses in their study. Questionnaires, interviews, and observations were used to collect data from twenty-five nursing students and twenty five clinical nurses. It was found that nursing students and clinical nurses commonly rely upon colleagues, books and digital information. It was found that the nursing students accessed more on the online resources than the clinical nurses.

Griffiths and Brophy (2005) have executed a study on the student searching behaviour and the Web use of academic resources and Google to evaluate the United Kingdom’s national academic sector and digital information sources. The results showed that commercial internet search
engine dominated students’ information seeking strategy. 45% of students used google as their first reference when locating information. The university library catalogue used by 10% of the respondents.

Another study that was conducted by Weiler (2005) focused on the dependency of students on the television and internet for their information needs and their motivations. The study also revealed the fact that reading behaviour among the students to satisfy their information needs was very low since a few students preferred reading.

Francis (2005) conducted a survey through questionnaires distributed among 26 full time Social Science faculty at St. Augustine campus in the University of the West Indies to obtain data on the information seeking habits of Social Scientists who used electronic media for their teaching, research and current awareness activities. The results of the study showed that a different method of operation should be adopted to create opportunities for growth and enhancements.

In another study, Anasi (2006) attempted to find the patterns of the internet use by undergraduate students of University of Lagos, Nigeria. The study brought out that the level of the internet use was found low among students as they were lacking the search strategies to locate information. Recommendations stated that adequate computer laboratory, proper power back up system, integration of the internet and computer literacy program are to be provided.

Searching behaviours of students were analysed by Matusiak (2006) who conducted a qualitative study on the college students and community users especially while seeking information from digital image collection, found a distinct difference between two groups of users. The study also threw
light on the mental models in information seeking behaviour in digital library environment.

Rowley and Urquhart (2007) organized a study to understand student information behavior in an electronic information services environment. The study discussed the findings of the Joint Information Systems Committee User Behavior Monitoring and Evaluation Framework (1999–2004) and development of a model that included both the individual (micro) and organizational (macro) factors affecting student information behavior. The study showed that macro factors like information resource design, information and learning technology infrastructure, availability and constraints to access, policies and funding, organizational leadership and culture and micro factors like information literacy, academics' information behavior, search strategies, discipline and curriculum, support and training and pedagogy affect information seeking behaviour of students. The study recommended that further research was needed to clarify how those interactions, particularly between the macro and micro factors, operate.

Nazim and Saraf (2006) deliberated the information searching habits of internet users of Banaras Hindu University. Data were collected using questionnaire and interviews with the internet users of three institutes and six faculties. Results showed that all respondents were using internet because of quality of information they got through Internet. The study also observed that slow speed, high internet charges, lack of training and lack of organized information were some of the factors that affected the use of internet and recommended a well planned internet literacy program and preparation of subject gateways to improve the use of internet.

Sulemani (2007) has investigated the convenient access and use of electronic databases and their effect on information seeking behaviour of Health Sciences faculty at the college of Health Sciences, University of
Ghana Medical School. It was found that the faculty in Health Science institutions were accessing more digital resources than print resources, but they lack awareness about useful resources available like HINARI and PERI and repeatedly referred particular resources like PUBMED only. Therefore, it was suggested that the information seeking behaviour of faculty of Health Science libraries could be upgraded by getting awareness on resourceful digital resources.

Further, focusing on the impact of mobile technology on information seeking behaviour, Huang et al (2007) took up a study to know the acceptance of mobile learning technology among students. An online survey was conducted through questionnaire to collect data among 313 undergraduate and graduate students in two Taiwan universities. The study indicated that the acceptance level of mobile learning technology was high. The study allowed to have a thought that any technology acceptance must be valued based on the users’ intentions

Jaspal and Venkatarao (2011) surveyed the information seeking behavior of students at Dev Samaj College, Chandigarh, India. The aim of the study was to explore the use of information technology by the college students for seeking information and to know how they access e-resources. A questionnaire was circulated to randomly selected 100 students who visited the library, out of which 64 students responded. The study revealed majority of the students were not aware of e-resources instead the students used search engines as a major source to access information to update their knowledge in their subject.

2.3.4 Studies on Application of Models and Theories

There are many models and theories available in the field of information seeking. Some of the studies attempted to test, prove and fall in
line with the concept of these models and theories. Kuhlthau (1993) developed a model on information seeking process. The model has been developed based on the empirical research on the information seeking behaviour of students. This model consisted of six stages namely Initiation, Selection, Exploration, Formulation, Collection and Presentation.

Later, a study was conducted by Radford (1998) who has examined the role of non-verbal communication in academic libraries. The decision to approach or not to approach a librarian was studied through the use of Mehrabian's immediacy metaphor. It was hypothesized that non-verbal behavior of librarian is related to the user’s decision to approach while seeking information in academic libraries. Data were collected through observation and interviews from 155 users. Eye contact was identified as the most frequently mentioned behaviour which indicated the approachability of the librarians.

Wilson (1999) presented an outline of models of information seeking behaviour showing the relationship between communication and information seeking behaviour in general with information seeking and information searching in information retrieval systems. It was understood that the models addressed issues at various levels of information behaviour and could be related to envisaging a nesting of models. After analysis of these models Wilson presented a model that provided a basis for relating the models in appropriate research strategies.

Whitmire (2002) undertook a study on the disciplinary differences and undergraduates information seeking behaviour of college students with reference to Biglan model of disciplinary differences. The results of the study indicated that the Biglan model has implications for the redesign of academic library services and used as a valid theoretical frame work for future library and information science research.
Ellis’ six generic information seeking activities were tested through the study of Kakai et al (2004) to establish how undergraduate students at Makerere University, Uganda sought information. A cross–sectional survey was carried out, with samples of respondents from the Department of Biochemistry in the Faculty of Science and the Department of History in the Faculty of Arts. The samples consisted of 104 undergraduate students selected from their first, second, and third year of study. The chi–square statistics was used to test the stated hypotheses. The results provided an insight into the factors that influenced students’ information seeking behavior and the information sources used.

The Leckie model was identified among the information seeking patterns of students, in the empirical study conducted by Kerins et al (2004) which explored the information seeking behaviour of engineering and law students in Ireland found that there were similar patterns in the information seeking behaviour between students studying to become professionals. The study further showed that the engineering and law students in Ireland could be benefited from greater information literacy training, enabling them to acquire the information skills to support in their future professional work life.

Wooseob (2004) assessed information seeking behaviour of Korean graduate students in the United States. This study combined the grounded theory method within depth interviews of eight students and their spouses, as well as participant observation and informal interactions with others. The findings showed two dissimilation mechanisms in the typical Korean students’ information seeking behaviour. They are language barrier and the strong bonds in their ethnic church.

Critical theory was applied as a methodological strategy in the study performed by Mehra and Bilal (2007) who examined the international students’ information seeking strategies. The main purpose of this study was
to explore the information needs and information seeking strategy of ten Asian graduate students at the University of Tennessee. To obtain the student assessment on their use of information communication technologies both quantitative and qualitative methods were adopted. It was suggested that library staff should make extra effort to provide specialized training programs for international students about research process and how to use library and ICT services. It was also found that the inadequate level of English language skills was a difficulty in using digital interfaces.

Sadler and Given (2007) conducted a study to explore the impact of affordance theory by applying ecological psychologies’ concept of affordance to graduate students information behaviour in the academic library. The study attempted to identify to the extent to which the affordance experienced by graduate students differed from the affordances, librarians were attempting to provide. Data was collected through qualitative interviews with students and academic librarians and that explored how the students used the library resources otherwise called ‘opportunities for action’ and compared the behaviour with librarians’ intentions and expectations. The study revealed the students as an underserved population especially in the libraries outreach efforts.

Bronstein and Baruchson-Arib (2008) have conducted a study on the selection of information channels by the scholars of Jewish studies in Israel. The study focused on two theoretical frameworks. The ‘cost benefit ratio’ that focused on the quality on the information provided by the channel and the ‘least effort principle’ that focused on the accessibility of the channel. Data was gathered through questionnaires. The findings showed that in general the participants’ information channel used was not affected by the obstacles encountered during the information seeking process and the quality of the information was the decisive factor in choosing an information channel.
2.3.5 Studies Based on Information Seeking Behaviour of Researchers and Scientists

There were studies conducted on information seeking behaviour of special user groups in academic environment. One such a sort of study was conducted by Tripathi (2000) who executed a comparative study to analyze the similarities and differences in the information seeking behavior between Physical Scientists and Social Scientists focused on the methods used by them for gathering information and the study further attempted to know their information needs. The study highlighted the sources of information used by the scientists.

Albornoz et al (2007) have conducted a study on information searching and library use by researchers in humanities at the University of Argentina. The main objective of this research was to identify the patterns of behaviour of the researches at the Faculty of Humanities and Education and their use of information resources within University libraries.

Devendra kumar (2010) conducted an analytical study of information seeking behaviour among Agricultural Scientists in Sardar Vallabhbhai Patel University of Agriculture and Technology. Their preferences regarding various formats of information sources such as formal, informal and electronic information sources have been explored through quantitative survey. This study employed a structured questionnaire which was distributed among scientists in various teaching and research departments of the Sardar Vallabhbhai Patel University of Agriculture and Technology.

2.4 STUDIES BASED ON USER STUDIES

User studies are classified based on the usage of library resources and electronic environment.
2.4.1 User Studies Related to Usage of Library Resources

Many user surveys were conducted to know the usage of library resources by students and faculty. Reichmann (2001) invited views of users with an aim to analyse user structure and user behavior as well as the satisfaction of the users on the library services and to assess their needs in the library of Graz University, Austria. It was found that most of the students who used the library were the students of the corresponding faculty.

There were user surveys organized to identify the correlation between library performance and academic excellence of users. A study, in this direction was conducted by Whitmire (2002) who invited opinions of 7,958 undergraduates attending 36 colleges and universities representing four institutional types to identify the relationship between academic library performance measures and undergraduates’ library use and educational outcomes. Regression analysis determined the relationship between academic library performance measures and library use and self-reported gains in critical thinking while controlling for undergraduates background characteristics and college experiences. The results provided a better understanding of how academic library resources and services affect both library usage and educational outcomes.

Many user surveys were conducted to know the usage of library resources by faculty. Lohar and Kumbar (2002) organised a user survey on the use of library facilities and information resources in Sahyadri Arts and Commerce College and Sahyadri Science College, Shimoga (Karnataka), India. Data was collected from 91 faculty of the colleges to study the use of resources, services and physical facilities of the respective college libraries. Siddiqui (2002) conducted a study on the use of library resources. Users of the Jawaharlal Nehru University library, New Delhi, India, were grouped as staff members, researchers, postgraduate students, graduate students and others. It
was found that most of the users are visiting the library continuously to refer course material, research resources and to circulate the books. In line with these studies on usage of resources, a user survey was taken up by Marcum and George (2003). The study was conducted among 3,234 faculty members, graduate students, and undergraduates in 392 Doctoral Research Universities, Public and Private Liberal Arts Colleges of USA. Respondents were using electronic information for their research, teaching, and coursework, and have equipped themselves well to do so. They also confirmed that neither print resource nor campus library was dead.

Studies emphasizing on necessity for maintaining user profiles and collecting evidences of user interaction in the libraries have been carried out. Related to this concept, Brown (2002) has examined the need for constructing deep and rich profile of users and their information requirements in order to make the information retrieval system more effective and to establish psychology of smart information retrieval. The author provided an overview of different technological approaches to classify information.

Adomi and Ogbomo (2003) investigated the gender factor in the utilization of library resources at Delta State University Library in Abraka, Nigeria. The study concentrated on the reasons for library use; how library materials were located; which materials were consulted; the amount of the relevance of the library materials to information needs; frequency of library use and factors inhibiting effective use of the library.

Wilson (2003) described on the recent trends in user studies which included action research and qualitative methods. The study attempted to bring out new methodologies that would be of much use for the study of human information seeking behavior. The study further argued that the application of information research depended upon its effective inclusion into organizations managerial processes.
It was also proposed to bring close the two halves i.e. user and the content together. In support of this concept, Wildemuth (2003) has stressed that by gathering evidences about library users, their interactions with library services and materials and context in which those materials and services were used, librarians can make sound decisions for the future. Author discussed the methodology for conducting user studies and utilization of results as basis for decision making.

In connection with library usage, especially from students who belong to different type of institutions, Ogbomo and Adomi (2003) conducted a survey at Baptist School of Nursing, Eku, Delta State, Nigeria. Data was collected using questionnaires. It was found that majority of the users visited library daily. About 59.6% students went to library to prepare for examination, while 54% users used library to prepare assignments. The study also revealed that the students were directly going to the shelves that showed the need for conduct of user education programs. Issuance of limited books, inadequate library timings were found as additional problems. Salaam (2003) conducted a study to understand the level of utilization of library resources and services of Nimbe Adepe Library of the University of Agriculture. The outcome of the study was that students used library mainly to prepare for examination and to write class assignments. The under usage of library was due to the distance between the campus and town where most of the students reside.

Mabawonku (2004) conducted a survey of library use in distance learning of undergraduates in three Nigerian Universities. The study concentrated in identifying the use of library and information resources by the students of distance learning. Questionnaire and observation method were used for data collection. It was also found that half of the population of the sample used the main library while some of them were using departmental
libraries whereas some other respondents using libraries outside the campus for their reference.

A survey focusing especially on measuring satisfaction level of students, faculty and staff in the Paradise Valley Community College Library was carried out by Chavez et al (2005). Questionnaires were distributed among 257 students for the purpose of collecting data and the response primarily was received from the students. It was found that generally users were satisfied with the resources, facilities and circulation service. It was recommended to repeat survey in two years to compare satisfaction level of students.

Helen (2005) organized an online user survey to evaluate the performance of the main library and the six branch libraries of University of Hong Kong to identify any performance gaps, and to find out user preferences for print and electronic materials. Study brought out that majority of the respondents preferred to use online journals than print versions, but on the other hand about 71.8 percentage users opted to use printed books over the electronic mode.

Uganneya and Idachaba (2005) conducted a study to know the level of effectiveness of F.S. Idabacha Library, University of Agriculture, Makurdi, Benue State, Nigeria. The study was conducted as a survey among the students and teachers. It was found that circulation and information technology services were deficient. Frequency of visit to library was low, which indicated that library did not meet information needs of users properly. Users suggested introducing new journals and improvement in the internet service to improve the library usage.

Carr (2006) described the development of user centered approach in academic libraries over the recent decades. Having understood the change in
the concept from ‘give him what we have’ to ‘what do users want’ approach, he emphasized the concept in his article. The libraries that will not adapt the changes cannot withstand and sustain in utilizing the growth opportunities.

A study focusing the role of faculty in making the students to use the library was conducted by Adikata and Anwar (2006) in International Islamic University, Malaysia. A modified and arabised version of Baker's instrument was administered to all full-time faculty teaching Islamic studies disciplines at the university. The study revealed that teachers were instrumental in promoting the usage of libraries by the students. However the skills of students in using libraries were found not to be satisfied and therefore librarians were expected to provide a comfortable academic environment in library.

Nagata et al (2007) have conducted a study to investigate the relativeness between students’ library usage and learning outcomes. Data was collected through interviews and surveys among three focus groups namely learners group, extended use group, and place and PC use group. The results showed positive correlation between library usage and learning outcomes.

A study concentrated on how students find and use information was conducted by Warwick et al (2009). The study also considered their motivation for seeking information and decision making. For data collection, observation and interview methods were adopted. It was found that the respondents were reluctant to engage with a complex range of information sources preferring to use the internet. They also lacked confidence in evaluating the usefulness of resources.

Shivalingaiah and Gowda (2009) studied to know the library facilities and services required by the research scholars in the traditional universities in Karnataka State, India. Survey method using questionnaire as
an instrument was adopted to collect data. SPSS tool was used for data analysis. The research scholars’ responses on awareness and satisfaction level on various library facilities and services were gathered using Likert's 5 point scale. The analysis showed that for majority of the Humanities and Social Science respondents, the facilities and services available in the university libraries were poor whereas the science respondents opined that the facilities and services were moderately good. Results showed that there were significant differences in the satisfaction level of facilities and services among the research scholars of various disciplines available in the libraries.

2.4.2 User Studies on Electronic Environment

Several researchers have thrown light on the electronic environment that includes impact of digital library, electronic resource, internet and ICT infrastructure on the information seeking behaviour through their user surveys. In this line, Turner (1997) conducted a study on the library users’ to bring out their approaches while using resources, such as retrieving, reading and storing that will be useful in the interest of building digital library. The study dealt with two components which were distinct in nature and threw light on the behaviour of library users namely, library-user interaction, and information use and storage. The study concluded that for enhancing the digital library environment, an understanding of the behavior of users of traditional libraries and the reading styles of individuals would be beneficial.

McKnight et al (1997) surveyed the academic library at Loughborough University to get the views of the users on the issue of access, content, layout, navigation and advantages of electronic journals. A questionnaire was distributed among four groups of users drawn from six departments of the University. Academic and research staff, research students and taught master degree students were the members of the four groups. The
study revealed that sixty six percentage of respondents prefer electronic periodicals as easy source than the paper version.

Franklin and Plum (2004) surveyed the library use patterns in the electronic information environment at the health science libraries in USA. Random moment sampling technique was followed for the study. The survey showed about the accessibility and usage of the library resources in an information technology application environment. In a networked environment remote users of the campus outnumbered the in-house users.

Ramayah and Aafaqi (2004) discussed the role of self-efficiency on e-library usage among students of a public university in Malaysia. The data was collected from 704 university students from 4 different schools in the Malaysian University. It was found that self-efficiency on usage of e-libraries has direct impact on ease of use of e-resources and obtaining useful content. The result indicated that the expected ease of use depended upon self-efficiency and perceived usefulness depended upon the expected ease of use, when predicting e-library usage.

Agaba et al. (2004) conducted a study on utilization of electronic information resources by the academic staff of Makerera University in Uganda. The study was both qualitative and quantitative. Data was collected through questionnaire, interview and content analysis methods. The purpose of the study was to examine awareness, type of resources provided and utilization of resources. It was found that majority of the staff were aware about the availability of electronic information resources but did not utilize them. The study recommended introducing more information and communication technologies and the network bandwidth.

Kani-Zabihi et al. (2006) have conducted a study to bring out the users suggestions in building a Digital Library. Data was collected through
The study also indicated that, previously the users were not asked to suggest on digital library features or functionalities and this was given to experts. The study emphasized that users must be given opportunity to give their suggestions on the features and functionalities. Later, Bayram and Atilgan (2006) evaluated use of digital library by the faculty at Ankara University, Turkey. The purpose of the study was to understand the faculty’s awareness and use of electronic materials at the university. Findings of the study made it clear that majority of the faculty members were aware about the existence of digital library and many were using electronic databases.

Rajeev Kumar and Amritpal (2006) analysed the internet use by teachers and students in engineering colleges of Punjab, Haryana, and Himachal Pradesh in India. Questionnaires were distributed among the 1980 teachers and students of all the engineering colleges of the three states. The response rate was 80.9 percentage. The main purpose of the study was to know whether the internet can replace libraries. Survey revealed that 77.5% users felt that the internet cannot replace library services, whereas 22.5% felt otherwise since they found it was comfortable to locate information on the internet than in library.

Tamizhchelvan and Abhilashan (2006) conducted a survey on the utility of the digital library at college level where digital content is developed in different forms from websites, institutional repositories and OPAC.

Another study from faculty perception was conducted by Harley et al (2007) through which the use of digital resources by the undergraduate educators belonging to Social Sciences and Humanities was ascertained. The results suggested that faculty used online materials from both educational and non educational sources. Many of the educators did not use digital resources because of lack of direct relevance to their preferred pedagogical approaches, insufficient time and classroom resources. It was also given that resources
created by higher education institutions would continue to proliferate despite lack of formal knowledge about users.

Regarding implementation of information technology, especially the automation of libraries, Raza and Amar Nath (2007) conducted a study to establish some co-relation between quality in libraries and use of IT. In this connection a survey was conducted on four university libraries namely Punjab University Library, Chandhigarh; Himachal Pradesh University, Shimla; Punjabi University Library, Patiala and Guru Nanak Dev University Library, Amritsar in India. The study was conducted based on a survey with the help of using questionnaires, interviews and observation methods. The study revealed that Punjab University Library and Guru Nanak Dev University Library only have provided with computerized access to in-house database. Further a study was conducted focusing especially on the automation of information retrieval system by Kumbar and Mallaiah (2008) who studied the changing pattern of user expectations regarding the library catalogue as an information retrieval tool. The study elaborated the efforts of Mangalore University Library in India, in developing an online public access catalogue based on a survey conducted on the usefulness of the library catalogue, frequency of use, users’ approaches, user opinions about the adequacy of bibliographical details, sources of guidance in the use of catalogue. The survey was conducted with the aim of increasing the information retrieval efficiency and providing easy access to the users. The result showed that a joint effort of library professionals and software development experts were required to find out solutions to meet the user expectations effectively.

Achonna (2008) conducted a study on the students' awareness, access and the usage of e-journal resources at the library of Yaba College of Technology, Yaba- Lagos. The study assessed the level of awareness, access and usage of e-journal resources among the students. It was revealed that
inadequate infrastructure of computers, lack of skill in utilizing the e-
resources, insufficient power supply were found to be the hindrances for the
effective usage of e-resources.

In view of understanding the views on usage of electronic resource from the faculty perception, Lakan (2008) undertook a study to determine the availability and utilization of electronic information database by staff of agricultural complex, Ahmadu Bello University, Zaria. A survey using stratified sampling method was applied to collect data from 209 respondents to accommodate the different strata of the subjects involved in the study. The study revealed that all the libraries and information centers subscribed to various CD-ROMs and Online databases. The study also recorded a high percentage of usage of electronic databases. Research work, updation of knowledge and current awareness were the reasons behind the effective usage. A number of factors that affected the provision and use of electronic information resources in the agricultural complex were power failures, low internet bandwidth and insufficient computers. In continuation, Moghaddam and Talawar (2008) conducted a user study on the use of scholarly electronic journals at the Indian Institute of Science. Data was collected through questionnaire. 700 questionnaires were distributed and 397 responded. The study showed that the users liked to use electronic journals in PDF format for their research purposes since the journals were freely available and could be accessed all the times.

Sujatha and Mudhol (2009) studied the use of electronic information sources by the teachers, scientists, research scholars and postgraduate students in the College of Fisheries, Mangalore. Data was collected through observations and informal interviews. The study revealed the various aspects of electronic information sources such as usage, benefits and constraints.
Suggestions were provided to improve the services and to enhance the use of electronic information sources.

Further, Chowdappa et al (2009) conducted a study on the impact of electronic information sources on the academic users in Mysore. The purpose of the study was to examine the dependency of users of educational and research institutions of Mysore city on the electronic/digital media. The responses of 1000 users and the critical evaluation of 24 subject experts under Delphi study had been gathered to render valid findings and suggestions. Similarly, Singh et al (2009) attempted to ascertain the use of e-resources accessed through internet at the Manipur University. The purpose of the study was to analyse the use of electronic information services by Post Graduate students, research scholars, teachers and non-teaching staff members. Out of 800 questionnaires distributed, data was collected from 548 respondents. Users were using the internet mainly to download the information from web based resources and web sites. Lack of power supply and the low speed internet access were general problems.

In order to cope up with the current changing learning environment, researchers have conducted quite a lot of studies on ICT infrastructure and its use in academic environment. In this platform, a study was conducted by Walmiki and Ramakrishnegowda (2009) on the ICT infrastructure in six selected university libraries in Karnataka, India. Data was collected from the university librarians through questionnaire. The study revealed that most of the libraries lack sufficient hardware and software facilities and did not have adequate internet nodes and bandwidth. This caused hindrance in the dissemination of knowledge throughout the campus using network facilities.

Sampath Kumar and Biradar (2010) analysed the use of ICT in college libraries in Karnataka. The purpose of the study was to examine the use of information communication technology in 31 college libraries in
Karnataka, India by investigating the ICT infrastructure, current status of library automation, barriers in implementing library automation and problems faced by librarians in the process of implementing the technologies. The data was collected through questionnaire, observation and informal interview from selected college librarians. It was found that application of ICT in Indian college libraries has not reached a very high level, due to lack of budget, manpower, skilled staff and training. Recently, the use and availability of the ICT infrastructure in self-financing engineering college libraries in Tamilnadu, India was ascertained through the study executed by Dhanavandan et al. (2011). The data was collected through questionnaires distributed among 244 engineering college libraries in Tamilnadu and 144 questionnaires were filled in. It was identified that there was a need for adequate electronic resources. The study also traced out the nature of electronic resources, library automation level, computerized library services, electronic access points, type of digital libraries, network and topology of network, internet and intranet services and so on.

A study was conducted to examine the use of the internet in Government First Grade College Libraries in Bidar District by Patil (2011). Out of 320 questionnaires distributed to eight colleges, 260 filled in questionnaires were received. Results of the study made it clear that students should be motivated to use internet and the bandwidth of internet to be increased.

2.5 STUDIES BASED ON USER EDUCATION AND TRAINING

User Education Programs play an important role in creating awareness among the library users irrespective of faculty, students and researchers community on the library systems, resources, retrieval etc. A well planned user education program moulds the users and helps them to get right information through any of the information channels. There have been plenty
of studies carried out in this area. Few studies discussed user education program in a conventional library environment and few others talk about electronic library environment.

Murakama et al (1998) conducted a survey to know the nature of the conduct of the user education program offered by the libraries. The aim of the study was to know whether the user education programs were planned and conducted independently by the libraries or these programs are conducted by the parent body. The study was conducted using questionnaire as a tool for data collection. The survey revealed that out of 268 libraries surveyed, 105 of them offered user education program independently and 132 libraries set up additional programs besides normal orientation. The study also revealed that college libraries offered more user education programs along with library tours compared to large and midsized universities.

As elaborated, some of these studies focused on students. One such sort of analysis conducted by Marie (1999) who investigated the efficiency and comfort of university students when using computerized information research tools and to what extent these tools were effective on their practical difficulties. Data was collected from eighty humanity students through questionnaire and the methodology adopted was derived from the educational psychology concept of social representation. The study emphasized on providing training to cover user perception as well as techniques. Many studies of library user education and training programs paid focus on electronic environment.

In substantiating this view, Kamarudin (2001) studied the information needs and information seeking behaviour of students utilizing electronic resources at the Library of UiTM, University Teknologi, MARA. It was to determine the level of use of this type of resource, how students felt about various issues surrounding electronic resources and whether their
knowledge and skills helped them in the utilisation of the electronic services
provided by the library. Data was collected from one hundred and eighty
students through questionnaires. The findings indicated to conduct
information literacy course and guidance programs in utilizing the electronic
resources.

Okpala and Igbeka (2005) discussed the information seeking
behavior of users of Dike Library when using CD-ROM as a source of
information. The study indicated that the end academic user did not posses
sound technical knowledge so as to get the information available in a CD
ROM database. Level of technical knowledge has its influence on quality of
outcome of search. The study showed that the end-user must be given
training as to how to use the CD-ROM databases and to do literature search.
This study showed that mere implementation of technology to provide more
information access to users was not sufficient. But proper training only will
bring worth to the technological access.

Further, Brunton (2005) conducted a study on the effects of library
user-education program while the students engaged in the process of
information seeking at Brisbane College of Theology. This case study which
used an adaptation of Biggs’ model of presage, process and product looked at
the information search process from the perspective of theological library.
The study focused on the interconnected theories of student experience,
perception, approach and learning outcomes in the information search
process. The study threw light on the significance of user education program
and the role of librarian in an effective information seeking process. In
addition to the study discussed above,

Haya et al (2007) have studied the importance of providing training
to students for searching web based resources especially Google scholar and
Metalib. Thirty two undergraduate students were made to search for academic
articles for their thesis work. Half of the students were given training before the search process. The study showed that training had a positive effect on the amount and quality of articles saved. The study made it clear that providing training especially with respect to accessing online/digital resources will give success to users in achieving their information needs while they seek them online. Tamizhchelvan (2007) has conducted a study on the information literacy skills of engineering students. He designed questionnaires and distributed them among the students.

Bansode and Pujar (2008) conducted a study to examine the use of the internet by research scholars in Science, Social Sciences and Humanities. Out of 150 researchers among whom the questionnaires were distributed, 122 responded. Scholars were using the internet mainly for the purpose of exchanging information through e-mail. The study recommended conducting training on the effective usage of information technology tools to get required information in an effective and efficient way.

Further, Sridhar et al (2008) have recommended for conducting formal and informal training programs specific to searching information sources on the web for the users to make them effective in getting their required information. The recommendations were an outcome of a study on the awareness of different search engines. It was also found that majority of the users were not aware of various search engines except Yahoo and Google.

Biswas and Pandey (2009) explored through their study on the information seeking behaviour of the students at University of Kalyani, West Bengal, India, that providing training and guidance in the use of library resources and services were necessary to help students to meet their information requirements. The data was collected through questionnaire from 60 students. It was found that journals, textbooks and lecture notes were the most popular sources of information for the students’ course work. The study
recommended that the CD-ROM databases of journal archives and reference books be added and users should be guided to use the resources of the library.

Regarding provision of information literacy programe, Harrison (2009) discussed the need and importance of providing such training through which the engineering students could be taught various aspects of information literacy that included identifying accurate, authoritative and relevant information and evaluation of quality of information. It was further suggested that the literacy program will guide the way as to how library could be useful source for the students. The study also threw light on what educators can learn from the information seeking behaviour of students who had grown up with the internet as a primary source and how engineering librarians could be a useful source for both students and educators.

With a view to emphasise conduct of a course for researchers for searching, Drachen and Asger (2011) conducted a study on information behavior and practices of PhD students. The study consisted of a survey and interviews at three universities. The study recommended to provide specialized and to the point course at the beginning of PhD. It was further recommended that libraries should teach PhD students the most efficient methods for searching early in their studies and to provide dedicated PhD work space.

### 2.6 STUDIES BASED ON OTHER PROFESSIONS

A lot of studies have been conducted on the information seeking behaviours of users in various disciplines. A few of them are given below under various topics on the sidelines of information seeking behaviour.

Srivastava (1993) analysed the publications of Oil and Natural Gas Corporation, India, published from 1964-1993 to know the information
seeking behaviour and author collaboration in petroleum exploration. Author collaborative coefficient and average citation per paper were calculated from 5713 citations and 589 research papers. Collaboration coefficient revealed gradual increase while average citation per author and average citation per paper showed a discrete but increasing trend from 1974 onwards. The relationship between authorship collaborative coefficient and average citation per author was found to be near uniform during three decades.

Dresang (1999) assessed information seeking behavior of youth in the digital library environment. The study was related to the handheld book with hyper textual qualities and digital materials, the social nature of information seeking and emerging issues of access in the public library environment.

Senthilkumaran and Vadivel (2003) threw light on the use pattern of information channels of the scientists of CECRI, Karaikudi and engineers of BHEL in India. The data was collected through questionnaires and the study revealed that scientists and engineers depended mostly on print resources especially scientific periodicals. Both of them used formal channel rather than informal channel for getting their information. While the engineers used information for their development task, the scientists used information for their research.

Fidel and Green (2004) have analysed the information seeking behavior of Engineers. The data was collected from 32 engineers through detailed interviews. It was found that the engineers, for technical information, selected sources from the basis of right format, right level of detail and the availability of lot of information in one place. When looking for human information resources, they selected sources with which they were familiar and that saved time.
Petrauskiene (2004) has conducted a study that dealt with the problems related to resources of electronic information, and organizational issues of spreading this information. The study has highlighted the importance of electronic information and its organization to cater to the needs of various users of the library. Data was collected through questionnaire.

Norhede (2005) surveyed the information seeking behavior of users in Danish Pharmaceutical Library to know the level of usage of expensive resources and to see whether it meets with the demand. Using the model of Mortensen and Gronholdt and SWOT analysis, users perceived quality, satisfaction and loyalty were analysed. It was found that though users’ satisfaction level was increasing, still there were few problems with the printed resources, technical facilities and total value of the libraries.

Su (2005) attempted to discuss the concepts, characteristics of users and non users and ways of conducting public library user study. It was stated that better understanding of users and non users would indirectly contribute to the service quality of public libraries. It was also emphasized that some methodologies have to be suggested to have better understanding of the users.

Chang and Holland (2005) studied to assess satisfaction of the Internet Public Library’s Ask-A-Question service. The study was a three month user survey between February 12 and May 11, 2004. It showed that though most of the respondents were satisfied with the services and a few respondents expressed dissatisfaction with the service.

Gunter (2005) deliberated on the level of awareness and use of e-books in the UK through survey conducted to collect data from an online panel. Members of the panel were signaled each week to take part in the web survey. This study gave us the fact that a significant proportion of respondents were aware of e-books. The study also provided details of the
number of trial access, number of persons who purchased them based on the trial access and number of people borrowed e-books from library. This study indicated that e-books also played an important role in addition to print resources in determining the level of success in the information seeking process of a common man.

Singh and Lahiri (2006) have discussed the information searching behavior of health professionals in North-East India and the study highlighted the provision of health information through voluntary organization. The study brought out importance of building Health Information Networks. The study involved information seeking behaviour characteristics such as time factor, process factor, governing factor, hours spending factors and means used for access to subject literature.

Ahmad and Haridasan (2006) studied the use of periodicals by scholars at National Library of Veterinary Sciences. One hundred and twenty five questionnaires were distributed for collection of data and one hundred and ten were responded. Most of the respondents had the habit of frequent visit to library and satisfied with current issues of periodicals and on the availability of back volumes.

Joshi (2007) analysed the information seeking behaviour of Ayurveda Information users. These users were grouped into Scientists, Teachers, Doctors, Vaidyar and Students. It was found that the Ayurveda users generally used books, periodicals, seminars volumes, and manuscripts for getting information.

Barik et al (2007) revealed the electronic information seeking behavior of scientists and research scholars of CSMCRI Bhavnagar. The data was collected through one hundred and twenty two questionnaires from the scientists and research scholars of Central Salt and Marine Chemical Research
Institute. The study observed that the electronic resources were more popular due to easy accessibility. Reading electronic journals and searching online databases were very important information seeking activities among the scientists and research scholars.

The study on the use of ICT based resources and services in special libraries in Kerala conducted by Haneefa (2007) attempted to know the maximum usable services of the internet by the users and it was found that e-mail was the most sought after service for getting information. For this study, data was collected from 1017 respondents out of 1431 users and of which 889 questionnaires were found useful for further analysis. These questionnaires were collected from 30 special libraries of Government sector.

Ashling (2008) revealed that the users irrespective of their age group were very impatient when seeking for information that they needed. The young generation who went about Google for its information needs, exhibited their lack in critical and analytical skills though they were more confident and familiar with computer and social networking. The people irrespective of old or young should have sound critical and analytical skills that would help them to attain the right information they need.

David (2008) took up a study on satisfying the patrons of library through procuring immediately required resource through interlibrary loan. The study further explored whether to purchase the resource or to borrow them through inter library loan. The study further looked into the issues of the copyright and expense involved in the purchase or borrow process. This study showed that the information seeking behavior of patrons/users made the library to take right decisions on their policy in the inter library loan process.

Goker and Myrhaug (2008) put forth through a study in order to facilitate the tourists by providing a tourist guide through mobile as and when
information sought by the travellers and tourists. Their study showed that some research work had been done in the area of tourist information provision system. The methodology followed in the study was user centered, iterative and progressive. The study also took care about the combination of information retrieval evaluation methods with human-computer interaction development techniques.

Kaki and Aula (2008) have emphasized importance of understanding the users’ strategies in the design of search systems through their study on information processing and management. It was highlighted that before constructing any model, method, system etc, it was very important to implement some methods to enable users to use it and to evaluate the system based on their feedback. This has to be done in order to see whether the system, model, design etc. are acceptable enough to satisfy the users.

Koulikourdi (2008) has investigated the information seeking behavior of the people with disabilities in Greece and both libraries’ and users’ perspective in this field as a first time. Survey methodology was used by sending questionnaires as a tool of research for both Greek libraries and associations for the disabled. The study reported that there was a lack in services planned to give solution for the information needs of the disabled people. The problems of identifying these people and their information needs should be taken up and solved.

Susol (2008) has studied the impact of the command of foreign languages as a factor that affected information behavior. The study described that language competencies of library users had an impact on their utilization of electronic information sources.

Rajan et al (2008) has conducted a study on the information seeking behaviour of clinicians in a semi - urban town in Southern India. This study
focused on the information needs and information seeking behavior of clinicians on drugs in the background of Kasturba Hospital Drug Information center and to improve quality of care for patients. Questionnaires based on Kirkelas model of information seeking behaviour were distributed to 60 users out of which 57 were filled and received. The clinicians used text books and drug indexes as their main references. Journals and internet were not widely used. The study also revealed that the clinicians felt that the information provided by pharmaceutical company was biased.

Raza et al (2010) has conducted a study on the information seeking behaviour of researchers in the Central Drug Research Institute, Lucknow. The objective of the study was to understand the information needs of the researchers and strategy they used in searching for information. The study also covered the level of implementation of information technology in the library of the institute. Out of 60 questionnaires distributed 54 were returned. The study showed that the researchers were satisfied with services of the library and there was a good application of information communication and technology.

2.7 INFERENCES

From the review of literature reported in the above pages, the following could be inferred:

1. A large number of studies have been conducted on information seeking behaviour all over the world.

2. A total number of 139 publications have been reviewed and presented under the following sub-heading:

   - Studies Based on Information Needs
   - Studies Based on Information Seeking Behaviour
• Studies Based on User Studies
• Studies Based on User Education and Training
• Studies Based on other Professions

3. There is a relation and impact of information seeking behaviour from various perspectives such as electronic environment, user study, usage of library resources, user education.

4. There are studies reflecting the information seeking behaviour of students of various levels of studies.

5. Most of the studies are carried out through conducting survey among students and faculty.

6. Studies conducted at the library use pattern were reported.

7. Most of the studies covered users of academic intuitions.

8. There are no studies found exclusively on engineering students at the regional level particularly in Coimbatore region.

This study tries to explore information seeking behaviour of students in engineering colleges and bridges the gap in the literature.

In the next chapter an overview of theoretical and some of the models of information seeking behaviour are provided.