CHAPTER 3

LITERATURE REVIEW AND METHODOLOGY
### 3.0 Introduction

Assessing users' need is a complex phenomenon which differs from environment to environment, individual to individual, group to group and community to community. Its determination and satisfaction is the primary goal of any library or information centre. It is realized that libraries and documentation centres are meant to satisfy information requirements of users. But very little is still known about the exact nature of users' requirements in a particular locality, region and country as a whole. It was not till recently known as to how exactly the user behaves when he is looking for some information, what kind of document is used in which situation and how the information is used when obtained.

It has been now realized that information need is a composite concept of different types of requirements and approaches to information. A remarkable analysis of this composite nature was made by Melvin Voigt. His study revealed that the same person could interact with the information system in different times depending upon his purpose in relation to his work, stage of his work, general interest, amount of information already available to him and so on.

Many studies have been done on this field which include not only the professional students but also include various communities having various occupations like farmers, police officers etc. Reviews of the studies which are related to the present topic and also conducted during the last two decades have been taken into consideration.

The studies conducted have been divided into the following:

- **3.1** Studies conducted abroad
- **3.2** Studies conducted in India
3.1: Studies conducted abroad:

In 1981, a study was made by B.S.H. Van Styvendaele on “University scientists as seekers of information: sources of references to books and their first use versus date of publication.”

For carrying out the investigation questionnaire method was adopted. As many as 734 questionnaires were circulated and among them 425 returned.

The sources are grouped in three classes: (a) commercial information channels, (b) library visits, and (c) primary, secondary and tertiary information sources. It was found that for social scientists the library was important in supplying information about books either through the searching of catalogues, especially the subject catalogue or through casual browsing (35.6%) followed by literature references in bibliographies, monographs and periodicals (24.9%). Pure scientists rarely used the library to find books. It was also found that for instance the interest potential of books older than 6 years respondents 40%, older than 10 years 20%, and older than 14 years 10% of the total number of books.

Citation studies confirm that pure science literature cited less than 20% books compared with more than 50% of the references cited in social science journals.

V.L. Brember & P. Leggate (1985), carried out a study on “Linking a medical user survey to management for library effectiveness: the user survey.” This study reports an intensive survey of medical library users in the Oxford teaching hospitals and the university science departments. Six survey techniques i.e. interview, questionnaires, feedback forms, direct observation, reference teaching experiment, analysis of exciting library records were used.
It was found that the practitioner spends nearly all his time in patient care in the hospitals. His main reasons for seeking information are for keeping up to date and for clinical problems. Secondary reasons are writing, teaching and research he uses his departmental library. His most important reference sources are journal articles and Index Medicus.

The researcher concentrates on the detailed knowledge of a narrow subject and has no involvement with patients. He occasionally visits other places for his work. He seeks information mainly for his research interests and for keeping up to date. His secondary reasons are for writing and to a lesser extent, teaching. He also uses and values bibliographic services such as current contents and specialized publication.

The practitioner-researcher seeks information mainly for his research interests, writing and keeping up to date. Clinical problems and teaching are secondary reasons.

Robert Norton and David Gautschi (1985) carried out investigation on “Users survey of an international library - resource allocation; preferred allocations of the library budget.” The overall objective of this survey was to evaluate library services as perceived by its two main user groups with the intention of translating such results as emerge into indicators and directions for future policy. The respondents were asked how they would spend their budget – how they would apportion resources given that they had already analyzed their own needs in terms of service improvement and collection development.

For Group IA they introduced two new items: they placed an increased emphasis on cataloguing and classification control and access systems by interfering an expansion in scope and flexibility as well as overall modernization. Secondly, they inferred new expanded and improved services by postulating the introduction of flexible access to company information. Of the two groups, IA had the lesser
experience of the library services. For Group IA minor amendments to existing budget lines was noticed, but it is interesting to note that of the two major expanded services, company information is accorded much greater significance than cataloguing and classification control systems: a choice for the information and material itself rather than system improvement. For groups IB the budget was stable i.e., fixed at 100.

Mary B. Bolster (1988) made a study of the “Use of information sources by social science researchers.” The purpose of this survey was to test whether or not there are differences in the information needs of faculty researchers, graduate students who have completed preliminary examinations and graduate students who have not yet taken preliminary examination. The questionnaire method was adopted. These were mailed to a random sample of faculty and graduate students from four social science disciplines at the University of Wisconsin Madison.

The data in this study support the literature that indicates that social science researchers rely heavily on citations as a major source of information. A full 94% of the respondents rated citations as being important, very important, or essential. Journals are clearly an important source of information for the social science researchers. The survey data which also indicates that there is a very high level of importance placed on department colleagues at each level of status. Journals are the most important source of information in the research process and taking citations is also an essential factor in the acquisition of information.

Stephen E. Wiberley and William G. Jokes (1989) worked on “Patterns of information seeking in the humanities.” This study describes how humanities in a small interdisciplinary group seek information. The humanities confirm findings of previous research, although with significant variations. Humanities ignore on live
databases and seldom consult reference librarians, but they do rely on archivists and special collections librarians. They limit the use of formal bibliography to one or two sources and employ it intensively only when exploring new topics. Often they disregard going to the person or location that can supply it. This study concludes with questions for future research and suggestions for library practice.

George D'Elia and Nancy Freeman Rohde and Cogswell and Kathy Gorman all together carried out an investigation (1990) on "Information requirements assessments of the Hymphery Institute." The purposes of these assessments were to describe the current information environment of the Institute and to identify the kinds of supports that the proposed IIC could provide to facilitate the information processing activities of the Institute. They employed a variety of methodologies. They are: (i) analysis of the major administrative information system, (ii) a survey of the faculty using a self report questionnaire, (iii) interviews with academic administrators faculty, (iv) interviews with senior clerical staff, (v) group interviews with student assistants.

The results indicate that faculty and staff engage in a wide range of information processing activities that cut across the traditional information system and services on campus. Faculty and staff desire integration of the various systems, standardization of applications, common access to internal and external databases, and increased communications capabilities both within the institute and with colleagues and networks outside the institute. As of 1988, all faculty and administrative staff have personal computers which are used extensively for word processing, administrative and scholarly database management and quantitative analyses using spread sheets and statistical packages. Currently, however, systems are not integrated
and in many cases not compatible; common administrative databases are not accessible to all.

Brendan Loughridge (1996) carried out a study on "The management information needs of academic Heads of Department in Universities in the United Kingdom." Previously a study of the management information needs of academic Heads of Department in universities using a Critical Success factors Approach was conducted in 1994/95. This study has now been completed and a report submitted to the British Library Research and development Department which funded the research.

A sample of sixteen English universities was developed based principally on age, history, size and the nature and range of academic disciplines represented within them. In each of the selected institutions, the university Librarian (or in one case a Deputy librarian) and two or, in some cases three academic Heads of Department were interviewed as were a member of senior administrative staff such as Registrars, Secretaries and Finance Officers and the Heads or Directors of more specialized units such as Industrial Development Units.

The principal objectives of the study were to investigate the factors which academic Heads of Department considered critical for the achievement of their organizational goals, and the nature and range of management information support provided by central administrators, libraries and ancillary support services to enable them to achieve these goals.

The interviews with the academic Heads of Department suggested that their role and the perception of their role varied according to how long they had been in office the basis on which they held office and their status within their institution. Heads of Department clearly felt that a wide variety of Common Success factors was needed to achieve their organizational goals. They largely depend upon their informal
network of contacts for information but not upon the library. From the interviews with the librarians it was clear that majority of librarians felt that they had neither the expertise nor resources to meet the information needs of academic Heads of Department.

Fidzani, B.T. made a study on “Information needs and information seeking behaviour of graduate students at the University of Botswana” (1998). This study was undertaken to determine the information seeking behaviour and use of information resources by graduate students at the University of Botswana. The overall purpose of the study was to determine what their information requirements are and determine their awareness of library services available to them. The study collected empirical data on the information requirements of graduate students. Data were gathered from 144 students out of 223 part-time and full-time graduate students registered. Findings indicate that guidance in the use of library resources and services is necessary to help students meet some of their information requirements. The study found that journals, library books and textbooks are the most popular sources of information for course work and research and students need to be taught how to use available library resources and services. Based on these findings, it was recommended that a questionnaire on students’ ability to use information resources be prepared and administered during registration to all masters’ students to establish their ability to use information resources. It was also recommended that a more aggressive information marketing strategy should be developed at both subject Librarian and departmental level to create awareness among the graduate students on the available.

Nazan Ozene Ueak and S. Serap Kurbangolacaried out a survey on “Information need and information seeking behaviour of scholars at a Turkish University (1998). Questionnaire was prepared for collection of data. The questions
asked were regarding their choices of information sources and information channels; the periods during which such information is most valuable (e.g. during writing a thesis or preparing a paper for publication), whether the type of information they seek is current or old; familiarity with electronic library sources and services; and the reasons and frequency of using information centers. The results indicate that there are major differences of the need and information seeking behaviour among the members of major disciplines and within each discipline there are strong similarities. All the respondents have indicated that although they acquire the needed information through both informal and formal channels; however given the choice they prefer the formal to the informal. When the respondents were asked as to why they attend scientific meetings all have indicated that such meetings were very beneficial not only knowledge gained from listening to presentations and discussions but also develop social contacts and relationships. It was also found that engineers and scientists expand their knowledge by following the references given in the bibliographies of journal articles, the major choice for social scientists and humanities scholars is references given in the books. The major complaints of the participants were that they could not locate the materials they were seeking at their library and all expressed a desire for the continuation of interlibrary loan services. It was surprising to find out that except for the scientists the scholars at the university prefer to make their literature search without the benefit of a Librarian.

Edward Lumande (1999) made a study on “Information seeking behaviour among University of Botswana Science Faculty”. The study used a survey method to investigate the information seeking behaviour of science academics at the University of Botswana. A questionnaire was used to gather data. The response rate was 56%. The study showed that the UBL science academics develop new ideas through
thinking and reading. 27% of them reported that they feel out about the existence of information by reading reviews. While all the respondents reported that they do not need information, 74% and 72% reported that they generate new ideas for research through thinking and reading, respectively. 50% reported that they seek information to develop their careers. The study concludes by providing some recommendations on how the UB academics can be encouraged to make use of available library resources to their benefit with emphasis on the young junior lecturers.

Study on “Information seeking behaviour of library users in a changing library environment: the case of faculty of law staff members, university of Dar Es Salaam” was made by Jangawe Msuya (2002). This study was conducted to examine the information seeking behaviour of academic members of staff of the faculty of Law, University of Dar Es Salaam. The objective of the study was to find out how staff seek information in the light of the changes introduced in the library, particularly the introduction of Information and Communication Technology (ICT) and reorganization of the library. Data collection methods were questionnaire and interview. The study revealed that 50% of the faculties of Law staff use the manual catalogue in searching information instead of computerized catalogue. In addition 36.4% were not aware that they could search library catalogue while at their offices. The study found that Law Reports and legislation are most consulted type of materials and that the staff have other formal and informal sources of information apart from the University Library. The study recommends increased sensitization of library users on the range of new services offered by the library and intensification of user training, including outreach programs.
In 2004 Miriam Kakai, R. Ikoja-Odongo and I. M. N. Kigongo-Bukenya carried out an investigation on “a study of the information seeking behaviour of undergraduate students of Makerere University, Uganda”. The purpose of the study was (i) to establish the undergraduate students information needs (ii) to determine the undergraduate students information seeking behaviour, (iii) to establish the problems that undergraduate students encounter in information seeking; and, (iv) to suggest strategies of improving undergraduate students’ information seeking behaviour. 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 sample consisted of 104 undergraduate students selected from their first, second and third year of study. Six generic information-seeking activities of Ellis were tested to establish how undergraduate students seek information. The chi-square statistic was used to test the stated hypotheses. The findings revealed that the main information demands that led undergraduate students into seeking for information include: course works and assignments (86), preparation for examinations and tests (68), general reading to enhance lecture notes (55), and class-group discussions (44). Seminars or preparation for workshops (10), tutorial presentations (15) and dissertation research (15) all had a lower rating. Students rely mainly on textbooks very little use journals or other sources. Students use the following search strategies when seeking information; starting (using lectures), browsing (on the shelves), chaining, monitoring and extracting. The results provide an insight into the factors that influence students’ information-seeking behaviour and the information sources used. The study makes recommendations that could lead to the improvement of students’ information seeking behaviour and use of information resources.

To understand what differences exist between first year biology and final year bio-chemistry students in University College Dublin so that measures can be taken to address those needs. It examines students’ awareness and use of different sources of information for their course work, their use of the library, why they visited the university library, the type of assistance they had received in using the library as well as the type of instruction they would like to receive in the future. A questionnaire was designed and administered to both sample groups to investigate the information seeking behaviour of these students in different years of their studies. The study highlights the positive aspects of seeking information from the student’s perspective as well as the barriers they encountered when seeking course related information. The findings show that there are differences in the extent to which sources of information are used by students in different years of their studies. Apart from websites and web-based lecture notes, lack of awareness is the primary reason why undergraduate biology students did not use the library’s electronic databases. The study does not distinguish between third and fourth year students in the final year sample. One of the key recommendations is that bibliographic instruction should meet the specific information needs of first year biology and final year biochemistry students. This study establishes the importance of a cross-sectional study in understanding the difference in students’ information needs in different years of their studies.

Allen Foster conducted a study on “A Non linear model of information seeking behaviour of inter disciplinary academic and post graduate researchers(2005).” The research questions were addressed; (i) What are the
activities, strategies, contexts and behaviour used and perceived to be used by inter-disciplinary information seekers? (ii) What is the relationship of the core processes, context and behaviour as part of inter-disciplinary information behaviour? (iii) How can the information seeking behaviour of inter-disciplinary researchers be represented in an empirically grounded, theoretical model of information seeking behaviour?

The study applied the naturalistic methods recommended by Lincoln and Guba for maximizing credibility, transferability, dependability and confirmability in data collection and analysis. Sampling combined purposive and snowball methods, and led to a final sample of 45 inter-disciplinary researchers from the University of Sheffield. In-depth semi-structured interviews were used to elicit detailed examples of information seeking. The results of the study are represented in a non-linear model of information seeking behaviour. The model describes three core processes (Opening, Orientation, and Consolidation) and three levels of contextual interaction (Internal Context, External Context and Cognitive Approach), each composed of several individual activities and attributes. The interactivity and shifts described by the model show information seeking to be non-linear, dynamic, holistic, and flowing.

Kingkaew Patitungkho reported a study done on “Information Seeking Behaviour of Faculty Members of Rajabhat Universities in Bangkok, Thailand” in 2005. Data were collected by using a questionnaire from seven faculties in Rajabhat Universities. Results show that most of respondents (41%) stated their method of seeking information by consulting a knowledgeable person in the field. 213 respondents (82%) seek information for preparing lectures. It is revealed that most of the faculty members (57%) used textbooks. 74% of respondents read information materials in Thai and 24% percent read materials in English. The Internet had been almost universally adopted; they trace materials from the library via the
Internet.Google.com was used for searching information by respondents. They use frequently e-mail for communication. It is found that 42% of respondents use the ERIC (Education Resources Information Centre) database. The majority of respondents faced the common problem while seeking information i.e. unavailability of information.

Carole George et.al. have conducted a study on “Scholarly Use of Information: Graduate Students’ Information Seeking Behaviour” (2005) Semi structured interviews were conducted with one hundred departments from Carnegie Mellon University. The results of the study indicate that the graduate students’ information seeking behaviour is influenced by primarily academic personnel in addition to other students, friends, university library staff, and people outside the university. 96% reported that academic personnel influence their research and information seeking. 73% graduate students pointed to another rich source of help that comes from other students. This varies across disciplines (62% in arts and architecture to 82% in business and policy). About one third reported that during research groups or in casual discussions, peers share information on reference books, websites, articles, journals, papers, movies and names of key people in the field. For the technical aspects of information seeking graduate students (40%) turn to university library personnel primarily librarians. Those who seek help say university library personnel point to relevant resources, respond to questions, announce new resources and teach graduate how to find resources, use the library, navigate the website, create a more focused keyboard search or plan and conceptualize a new project. Graduate students seek help in one to one sessions, email, orientation sessions, research seminars, on site at the reference desk, live chat sessions and in class sessions. Preferences vary. 97% students reported that they use the non library
internet, 73% use google search engine for their information seeking. More than (55%) half students said that the university library plays an important role in their research. 94% use the university libraries' online services saying they are easily accessed fast, convenient and time saving. 58% students also come to the library for print journals, periodicals and magazines.

3.2: Studies conducted in India:

S.D Vyas and S. Reddy (1983)\textsuperscript{17} together carried out an investigation on "users' survey of the American Studies Research Centre (ASRC) Hyderabad with special reference to use of periodicals". The questionnaire was circulated among 100 visiting and local scholars of the centre. The response was 100%.

After analysis it has been observed that the scholars start their research work from age 25 onwards. 29% scholars got the ASRC grant. It has been observed that PhD scholars visiting the centre normally take 2 to 3 years to complete their research work.

Above 70% scholars are well aware of abstracting, indexing, and reviewing periodicals, through which they come to know about literature being published in the area of their research. More than 50% scholars discover the references through abstracts/indexes and consulting the authorities in the field. 50% scholars get reference through searching library shelves other than ASRC. Majority of the scholars keep their personal file of references.

74% scholars indicated that they use their own university libraries for their research requirements. 69% scholars indicated the importance of latest published
materials. 63% scholars feel satisfied with the number of current journals subscribed by ASRC in their research areas. 50% scholars were not satisfied.

Regarding reprographic service it was found that 40% of the scholars have occasionally made photocopies of articles of interest. 36% scholars have frequently made photocopies. 8% never requested for photocopies.

T. Subrahmanyam (1983) carried out a study of information seeking behaviour of doctoral candidates in Social sciences. The objectives of this present investigation are (i) to understand the different sources of information that the doctoral researchers in social sciences make use of in gathering information that is helpful in their research work. (ii) to understand the extent of use by the researchers of the services offered by the university library; and the views of the researchers. (iii) to know to improve the library service.

Interview method was adopted in this study. A sample of 32 research scholars (including part time) were selected at random giving representation to all the disciplines in the social sciences.

After analysis the data revealed that 22 (69%) of the researchers in the sample selected their topic under the guidance of the research supervisor and the remaining researchers selected their topic by themselves. As a first step in the literature collection 17 (53%) of the researchers straight started reading standard works and of leading authors for gaining background knowledge and in the process makes note of relevant references where as the 15 (47%) of the researchers first prepared a tentative bibliography and then started reading literature. Researchers did regularly browse at the shelves and current periodicals for locating the relevant literature. The researchers found problem what they expressed in locating needed documents in the library because the books of related subjects were scattered in the shelves.
Researchers sought the assistance of library staff in location specific publications and rarely for specific information. Reprography service was not utilized by the researchers.

Researchers feel that the university library can offer services such as documentation lists, title page service, retrospective bibliographies, indexing and abstracting periodicals.

A.L.Kapoor (1984) made a study on the use pattern of the periodicals and the information seeking behaviour of the scholars in geography known as Ratan data library; it aimed at to ascertain (i) The periodicals mostly used by scholars. (ii) The gaps in the periodicals holding from the users point of view. (iii) The research strategy of the scholars and their information seeking behaviour. (iv) The extent to which scholars depend on libraries. (v) The steps required for improvements in services and materials.

For the purpose of citation study, the Ph.D. theses approved by university of Delhi in the department of Geography were taken up to collect a list of journals commonly and frequently used by scholars, a questionnaire was got filled from 18 scholars, M.Phil students 4, PhD students 6 and teachers 8.

The analysis of the data reveals that journals were available in Ratan data Library indicating there by 60% availability. Out of the 64 journals not only 20 titles were directly related to Geography while 44 titles fell within the areas like hydrology, ecology, general science, geology, psychology, botany etc. Besides these, 68 titles cited were primarily in the area of economics and sociology. This brought out the dependence of scholars in Geography as other disciplines to the extent of 59% out of 158 journals referred by the PhD. Scholars as many as 76 titles were referred only once.
There were 41 journals which were used for 2-4 times and 41 journals which were referred to for 5 or more times. Comparative ranking of the journals cited in these and priority list compiled through the questionnaire filled by the scholars in the department of geography. It appears that the respondents mentioned 11 journals as essential for their research work. 55 titles have been suggested by only one respondent each, 33 titles by 2-4 respondents and 16 titles by 8 or more respondents. The rank list of 17 journals which have been cited at least twice. The fact is that out of Ph.D theses approved, 11 theses were in the field of urban and economic geography and 2 were related to sociology.

G. Devarajan (1989)\textsuperscript{20} worked on information needs and use habits of pure scientists. The main objectives of the study were to examine the information needs and use pattern of scientists in the field of pure sciences. As many as 75 questionnaires were distributed for collection of data.

The data reveals that the majority of users (59.64\%) prefer to read primary periodical as the most important source of information. The users' second (22.80\%) preference goes to secondary periodicals such as indexing and abstracting periodicals and third (5.26\%) goes to the technical reports.

Physical review letters is the most favourite journal among physicists. In the use of chemistry journals, “Journal of American Chemical Society” has the maximum preference (50\%). The analysis of data regarding the use of microforms reveals that only a negligible percentage (8.77\%) of users are interested in using microforms. The interest in reading information sources that are published in foreign language other than English in pure science field is comparatively less.

The users of four science are aware of the services generated by the national agencies, viz. INSDOC. The majority of users in pure science subject are aware of the
services generated by University Library system. Reference service is the most familiar service among them. Reprography service is the third familiar service to them.

A.S.Chandel (1990) made a study of the information needs of social scientists in three universities on North Eastern Region, North Eastern Hill University, Gauhati University and Manipur University engaged in the area studies of the N.E.India. The main objective of the study was to ascertain the (a) Types and forms of literature used. (b) The age and language of the document cited. (c) Distribution of publication by the country origin. For this purpose the investigator applied the citation studies for the investigation. He examined 65 dissertations which were submitted in NEHU, Gauhati University and Manipur University during the period of 1981-86. All the selected theses were on area studies on N.E. The selection of theses from these universities is as under:

(a) NEHU - 35
(b) Gauhati University - 15
(c) Manipur University - 15

The total of 4808 citations has been analyzed from the above dissertation taking the following information from each dissertation:

(a) Country of publication
(b) Year of the publication of the cited document.
(c) Language of the document
(d) Subject of the dissertation, and
(e) Types and forms of the cited document

The analysis reveals that maximum literature cited falls in the decade 1970-79 with 34.5%. 1968-90 showing the 50% of the literature cited were with the periodical
of 10-150 years from the citing year. The subject wise analysis also falls in the same decade i.e. in which education ranks first with 69.29%, followed by anthropology, political science, geography, economics, sociology and history with 37.47%, 26.46%, 33.33%, 33.1%, 32.44% and 26.92% respectively. The maximum literature cited is 10-15 years old.

The highest percentage of cited document is of general books, i.e. 48.88% followed by official publications, reports, seminar/conference proceedings, census reports, statistical sources, gazetteers etc. with the percentage of 13.51, 8.66, 5.73, 2.97, 2.58, 2.3 respectively.

Indian publication are the main sources of information used in research to the extent of 71.67% followed by UK and USA with 14.75% and 11.19%. Maximum literature being referred is in English language i.e., 85.05%. Comparing the literature in the forms of books and periodicals articles 74.89% and 25% respectively. N.E India is mainly based on the available resources in book form. The periodical usage is much below the other desired rank.

A study was made by Krishan Kumar (1990) on information seeking behaviour of sociologists. In this study data was collected through questionnaire and unstructured interview. One case study was carried to get a deeper understanding of information seeking behaviour. The study was confined to sociologists (M.Phil and Ph. D students, teachers) of University of Delhi and Jawaharlal university.

As regards to the compilation of bibliography it was noticed that indexing periodicals and reviewing journals are hardly used by sociologists for compiling bibliographies. One senior teacher mentioned that he corresponded with other libraries to get lists of books on his area of interest.
Order of priority for seeking information varies, depending upon the kind of information required, stage of research etc. Discussion with colleagues within organization, consultation of supervisor and knowledgeable persons in the field seem to be on high percentage.

In the first stage, researchers identify the latest books on the topic of his interest. In these latest, they examine the references. Average number of journals scanned regularly consists of about five in numbers. These include "economic and political weekly", 'contribution to Indian sociology', 'main stream', 'seminar' and 'sociological review'.

For seeking information, researchers consult their supervisor or discuss with colleagues within organization or consult knowledgeable persons in the field. Role of librarians is marginal. The reason seems to be that they do not have faith in the capability of library staff to provide information. Librarians are generally called upon to locate materials, if the need arises.

V. Saraf et al. (1990) carried out an investigation on information seeking behaviour of research scholars in N.E. India. The study attempts to investigate the following:

(a) What type of information sources are consulted by the research scholars.
(b) What is the frequency of use of different types of literature.
(c) What are the modes of information gathering.
(d) What difficulties are faced in information.
(e) What are the frequently consulted journals by researchers.

For this purpose data has been collected through questionnaire from NEHU and Manipur University. The questionnaire was distributed to research scholars either personally or through teachers. The response as 61%. According to interpretations of
data, consulting supervisor ranks was at the top, followed by consulting experts in the subject abstracting and indexing journals, rank was at 6th and 9th position.

The analysis reveals that articles and books are the main sources consulted for specific information on consulting library catalogue and discussion with librarian ranks at 5th and 11th position. Use of abstracting journals for special information rank at 8th position. For keeping up-to-date articles, review articles, books statistical publications and newspaper clipping are the chief sources consulted in descending order of preferences. Research scholars are heavily depended upon articles.

The findings reveal that researchers mainly depend upon the supervisor. Periodicals and books are the two major sources being used by researchers to obtain information.

A study was carried out on “Information Gathering Habits of R&D Personnel of selected large scale industries” by N.B. Pangannaya & Ramakrishna Rao (1993). The objectives of the study were—(i) to identify the information requirements of R & D Personnel (ii) to identify the existing pattern of information gathering behaviour of R & D Personnel (iii) to identify some of the factors influencing information gathering habits of R & D Personnel; and (iv) to study the various characteristics of information behaviour of R & D Personnel and relate them with the information gathering habits.

The data were obtained by applying questionnaire technique. 43 questionnaires were distributed out of which 40 were returned i.e. the response rate was 93 %. From the analysis of the data it has been found that most of the respondents gather information keeping more than one purpose in mind, i.e. they gather information for, writing a review article, preparing for a new project and procuring procedural information for design and development work. Books are one of the widely number of
periodicals scanned by each respondent is three. It has also been observed that 82.5% of the respondents were reluctant to use the abstracting and indexing journals. The time spent by all respondents in gathering information on an average is six hours per week. In this case specialization and qualification of the respondents has no bearing on the time spent in information gathering.

The main reasons for dissatisfaction of the respondents with respect to the use of present available literature and services are the absence of a good library in the vicinity and inadequate of existing library both in collection as well as services. The respondents use their own libraries only once in a week. The respondents do visit their libraries but only occasionally. The respondents are moderately successful in gathering information from their own library and seldom from other libraries. The success of gathering information through librarian is seldom and the reason is that all the industries do not have well qualified librarians.

M. Lalitha made a study on "Information Seeking Behaviour of Medical and Engineering Personnel-a comparative study with reference to their library use." (1995) Questionnaire, literature search, interview, and observation method were applied for data collection. Response rate was 60.63%. It was found that both medical and engineering communities want to be specialists when it comes to their respective professions. Conferences are not the most frequently used source of information. Both want current and professional information and the coverage they require is only selective. They want information for updating their knowledge. The primary library (institutional library) is used by a large majority especially the practitioner engineers who depend on the library. The doctors depend on other libraries also. This is more true in the case of undergraduates who are not able to borrow book from their own library. None in the engineering community showed a
preference for 100% fiction whereas there were doctors and medical students who went in for 100% fiction reading. Majority of the medical community spent more than 10 hours per week on reading alone, where as the engineering community spent 5 to 10 hours on reading. Most of the doctors and engineers read to improve general ability and knowledge. But, among the engineers, when their promotion is being determined by departmental interviews, they read more.

“Borrowing Behavior of Students in Teacher Education College Libraries of West Bengal” was studied by B.K.Chattapadhyay (1995). The main objectives of the study were to reveal the borrowing behaviour of the students under study in general and to examine whether there is any significant difference between students of Government and Non-Government teacher Education Colleges in borrowing of subject as well as general books. The responses of 415 out of 440 users (through questionnaire) were analyzed (with tables). It was found that in respect of subject books the borrowing behaviour of 9.4% of the students in general is very unsatisfactory as they have not borrowed any subject books at all through out the session. The behaviour of 34.5% is unsatisfactory as they have borrowed 1-3 books per month. The borrowing habit has been fair with 39.3% of the students; they have borrowed 4-6 books per month. Only 16.8% of the students have shown satisfactory borrowing behaviour, having borrowed more than 6 books per month. It was also found that 91.1% of the students in general have been at the unsatisfactory level in the borrowing behaviour regarding general books of which 59.3% are at the very unsatisfactory level, having not borrowed at all any general book through out the session. The findings indicate that the borrowing behaviour of the students of Non-Govt. colleges is better than the students of Govt. colleges in both the cases. viz. borrowing subject books as well as general books.
A study of “Information seeking behaviour of the Agricultural scientists in Manipur” was made by Ahoijam Swarnalata Devi and Ramansu Lahiri(1996). The purpose of the study was to examine the system (i.e. information retrieval process) frequently for better information organization and information retrieval. To study the information seeking behaviour of the scientist, agricultural – officials (i.e. extension officers) and the target groups (i.e farmers) and finally the outcome of their involvement through the eyes of public opinion (i.e. press) in context of the development of agricultural output in the state.

Data were collected through a structured and detailed questionnaire. The questionnaires were distributed to 52 scientists available out of which 40 have responded. It was found that agricultural information is sought by all the respondents for their research purpose and experimentation in this field. It has been observed that majority of scientists (90%) have obtained agricultural information from libraries and 70% from department of Agriculture followed by 60% from ICAR, 55% from outside source (National /International), 50% from farmers, 40% from Agricultural farms and colleagues and 30% from other source. Majority of scientists collects information through reading, 80% of them through attending conference/seminars 75% of them by personal visit 55% by letter 28% by telephone and print media. Regarding dissemination of research reports the analysis reveals that the scientists have preferred ‘publication’ and seminar/conference methods as best media of dissemination of their research results. Regarding the availability of agricultural information in the state analysis reveals the opinions of the scientists. To a majority (50%) agricultural information available in the state is minimum. To a sizable section (30%) it is quite insufficient and only to 5% the information available is insufficient.
A study on “Methods of Seeking Information by women researchers in History and Political Science: A case study of University of Delhi and Jawaharlal Nehru University” was made by Neena Talwar Kanungo (1997). This paper seeks to explore the methods of seeking information by the women researchers in the disciplines of History and political Science. Two separate questionnaires were distributed among 130 women researchers, those who are either engaged in M.phil or in Ph.d in the disciplines of History and Political Science. Response rate was 54.28% (History) and 45.72% (Political science). It shows from the analysis that researchers give first preference to discussion with the supervisor followed by discussion with experts, library visit. Regarding accessing information the researchers in both disciplines are largely depending on the library collection of their institutional libraries. Besides these they have been making use of the collection of other libraries. In the area of History the libraries used are Nehru Memorial Museum Library, ICSSR, National Archives of Indian Library, Archaeological Survey of India Library, National Museum library and State Archives Library etc. In the case of Political science they have been using Nehru memorial Museum library.

A study on “Information Seeking Behaviour of Physical Scientists and Social Scientists” was made by H.N. Prasad and Manorama Tripathi (1998). It deals with the similarities and differences in the information seeking behaviour of Physical Scientists and Social Scientists. The study finds that the Physical Scientists and Social Scientists did more teaching than research work. Majority of Physical Scientists and Social Scientists were heavily engaged in contributing articles in journals or writing books. Both used formal and informal channels of information. The Physical Scientists used primary journals and abstracting and indexing periodicals to a large extent where as Social Scientists
used books, monographs. In order to remain in touch with latest developments in their fields, the Physical scientists scanned current issues of periodicals, abstracting and indexing periodicals while social scientists took part in conferences and seminars to keep themselves up to date. All Physical scientists and 75% of social scientists were unsatisfied with the information sources and services offered at the libraries they attended. The socio-economic information was used by almost 95% of the social scientists whereas 77.77% of the Physical scientists used current information.

B.S. Garg surveyed on “Information Seeking Patterns of Users of Engineering Institutions in Rajasthan” (2000). The objective was to determine the purposes and motives of seeking information, to find out the degree of usefulness of various sources of information and study the use of different information channels, to discover the sources for professional and technical ideas of users, to examine the nature of search for current information and to know the extent of delegation of information gathering and the reasons for delegation. It was revealed that the faculty members are motivated for seeking information by multiple motives, though the degree of motivation varies from motive to motive. In terms of relative importance of these motives, ‘Lecture preparation’ made the highest contribution followed by ‘Professional need’, ‘Career development’ etc. As regards the use of formal sources of information, journals are optimally utilized, followed by books, handbooks, conference literature etc., whereas ‘Face-to-Face Discussions’, occupy the prime position, succeeded by personal experience, seminar or conferences etc., in terms of relative degree of use, as far as informal sources are concerned. So far as use of the electronic sources of information goes, ‘Computers’ top the list, followed by Radio & TV, E-mail, audio-visual sources, compact discs, ‘Online data bases’ and ‘multimedia’. However, the use of electronic
sources of information seems to be limited, because these not only require necessary operational skills, but also are not accessible to all. Information sources which users prefer to approach instantly, in order to meet their information needs include ‘Approaching the Institute’s Library’, ‘Consulting colleagues/teachers’ and ‘Approaching the Institute’s Librarian’ in order of priority. Rating and ranking of sources for generation of ideas revealed that ‘thinking’ made the highest contribution, followed by ‘Reading’ and ‘Brainstorming/conversation’. As regards the delegation of information gathering work, it is primarily to make the students/professionals involved, coupled with the ‘lack of time’ and ‘monotonous nature of job’ that it is reported to.

Ashu Shokeen and Sanjay K.Kaushik surveyed on “Information Seeking Behaviour of Social Scientists of Haryana Universities (2002) The data of survey was collected through a structured questionnaire. He found that social scientist depend more on documentary sources to keep abreast of latest information in their respective fields of specialization. Current journals are the most used source of information, very frequently used by 85 respondents and frequently by 51 respondents. Books are the second most used source of information, used by 62 and 70 respondents very frequently and frequently respectively. Use of current journals and reference books is significantly affected by the subjects of the social scientist. Browsing is the 1st preferred method of searching the required information by the social scientists followed by searching through indexing and abstracting periodicals, citations in articles, consulting library staff and consulting colleagues as 2nd, 3rd and 4th preference respectively. In addition to their institutional libraries, most of them use other libraries, especially situated in Delhi.
A.K. Varma made a study on "information needs and users: A survey of users of Ravishankar University Library, Raipur." (2003) The objective was to find out the information seeking attitude of users' need, and to improve the services being rendered by the library. This study has been made with the help of questionnaire distributed among the Teachers, Research Scholars and PG students. It has been found that majority of users (51.19%) visit the library occasionally. Among them, frequency of teachers is the highest, since they are busy in teaching activity, as well as most of their requirements are fulfilled by the departmental library. The maximum number of users (86.73%) use the library to find and read document for a course of study, then comes the number of users (65.3%) who visit the library to borrow or return books. Books and journals both are used frequently by the maximum number of users of all the three categories. A maximum number of users are satisfied with the collection of books and theses, but a large number of users think that the collection of journals is inadequate. A majority of teachers (73.9%), research scholars (72%), and students (42.85%) do not find the reading materials sufficient to fulfill their aims and purpose. The maximum numbers of users try to acquire the reading materials from other libraries in case of not fulfilling their demand by the parent library. About the collection of other reading materials; viz. technical reports, conference proceedings, reference books, etc. maximum number of users are satisfied with this collection. Mostly all the users are satisfied with the arrangement and maintenance of reading materials and library services. A majority of users are in the habit of seeking help from the library staff.

"A study of information seeking behaviour of the users in PG departments of Biochemistry and Microbiology, Nagpur University" was carried out by Chitra Rekha Kuffalikar and Vaishali Mahakulkar (2003). The objective of the study was to
examine the purpose of the users visit to the departmental libraries, to ascertain the
dependence of the users on other departmental libraries, to check the relative use of
bibliographical sources and tools in the information search, identifying the presence
of ‘invisible college’ in the information seeking behaviour of the users and to
ascertain the dependence of the users on informal modes of communication and their
changing preferences. Questionnaire and census survey method was applied for the
study. It was found that the purpose of users visit to the departmental libraries are
different as per their academic ranks and categories i.e. to keep up-to-date with the
current information for study for preparing lectures, paper presentations, conferences,
seminars, paper reading etc. Users mostly depend on their departmental libraries but
in some cases, occasionally they visit other libraries to satisfy their information needs.
There is clear indication of “invisible college” and user dependence is more on
informal modes of communication, than the formal, though the sample study of the
citations of thesis of recent years do not indicate this trend. Changing preference is
more visible in the survey and observation.

Dr Veena Saraf and Dr. Bijoy Bharali carried a study on “Identifying
information seeking strategies: A study of North east India”(2004)34. The objective of
the study were to (i) investigated the nature of information needs of the medical
practitioners. (ii) To identify the types of sources and channels used by them. (iii)
To identify the types of barriers they face while seeking information (iv) To identify
any relationship among information needs, information channels, information sources
and information barriers. Data were collected through questionnaire It was observed
that the formal and informal channels are extensively used by practitioners for all the
three variables of information needs,i.e.conferences/seminars ,medical information
and uptodateness. They do not use computerized database either in their institutional
library or outside the library. The channel Internet/online searches is used for collecting information to satisfy their required information needs like latest project reports, medical catalogue etc. It showed that the institutional libraries are unable to provide required information like latest textbooks, reference books, journals etc. for the medical practitioners.

A study was made by K.K. Manjunatha and A.Y. Asundi (2004) on "Information needs of Sericulture Research Workers: a study with respect to information needs of Sericulture Scientists in India." The objectives were (i) To study the information needs of Sericulture scientist, (ii) To study the type of information required, (iii) To study the search for gathering information, (iv) To know the preference of information sources, (v) To study the difficulties encountered while collecting information sources, (vi) To study the library services required and need for national Sericulture information system.

Questionnaire method was applied for the study. Regarding information needs it was found that majority of the scientists that is 72.9% require information for updating of knowledge 42.9% for formulating hypothesis, 33.3% for support theory, 99% to avoid duplication, 62.3% to identify specific research and 71.4% for designing research. Regarding type of information required it was observed that 77.2% scientists required current information followed by 64.8% of scientists requiring Research & Development information, 50% of scientists required bibliographical information, 45.7% of scientists required methodological information and 40.5% of scientists need factual statistical information. About preferences of information sources it revealed that 87.6% scientists scan periodicals, followed by attending conferences (68.1%) and consulting review of literature (60.5%) etc. With regard to the preference of sources of information sericulture scientists preferred in
the first place, Review articles followed by Abstracting journals and Discussion within the organisation. Regarding the difficulties faced by the scientists it seemed that half of the scientists expressed 'lack of time', 40% of the scientists felt 'lack of suitable abstracting and indexing journals and also 29.5% of the scientists found difficulties in locating suitable sources. It was also observed that Scientists require some useful information services like Sericulture Database, Current Awareness, Abstracting services, and Bibliographical services. 93.8% of the scientists expressed their opinion of having National Sericulture Information System with sharing of library sources.

3.3: Methodology:

Research is simply the process of arriving at dependable solutions to problems through planned and systematic collection, analysis and interpretation of data. Research is the most important tool for advancing knowledge, for promoting progress and for enabling man to relate more effectively to his environment, to accomplish his purpose, and to resolve his conflicts. It is "the use of appropriate methods in attempting to discover new knowledge or to develop new applications of existing knowledge or to explore relationships between ideas or events." Thus research is an investigation directed to the discovery of some fact of careful study of a subject. It is a course of critical or scientific enquiry. It is oriented towards the discovery of the relationships that exist among the phenomenon of the world in which we live.

A good research depends upon the methods and procedure adopted by the investigator without which one cannot attain the desired goal of research. An
effectiveness of any study depends upon well organized methods and procedure used in the study.

There are many methods applicable in any research. These are as under:

**Research Methods**

<table>
<thead>
<tr>
<th>Historical Method</th>
<th>Survey Method</th>
<th>Case Study Method</th>
<th>Delphi Method</th>
<th>Statistical Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation Technique</td>
<td>Questionnaire Technique</td>
<td>Interview Technique</td>
<td>Documentation Technique</td>
<td></td>
</tr>
</tbody>
</table>

For the present study from survey method Questionnaire technique has been adopted for data collection.

**3.31: Questionnaire Technique**

Questionnaire is widely used for data collection particularly in surveys. It is used in obtaining objective and qualitative data as well as in gathering information of qualitative nature. In fact, one should have used the term ‘mailed questionnaire’ since the instruction is used as guide in interviewing. Questionnaire is “a formal list of questions, especially as used in an official enquiry.”
In this technique to collect data essential for conducting research, a set of questions are asked from the participants. Questionnaire is constructed translating the aims and objectives of the survey study. This is a major instrument for data gathering in survey studies. The dictionary of statistical it as “a group of or sequence of questions designed to elicit information upon a subject or sequence of subjects from and information”

This technique is most feasible and economical for gathering data, when the coverage of study is geographically very large and where researcher could not collect it personally. The main advantage of a questionnaire technique is low cost for a large coverage. It is suitable for respective information with the greater validity.

3.4 : Population:

The study includes undergraduate students of 31 general colleges both provincialized and private colleges of Barak valley. Considering the huge number of students and teachers of these colleges sampling technique is adopted for the present study. Thus the sampled population of students and teachers are 310 and 155 respectively. The population also includes Librarians of all these 31 colleges. The names of the colleges in the three districts of Barak Valley are given below districtwise:

**Degree Colleges in Cachar District**

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Name of the colleges</th>
<th>Address</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gurucharan College</td>
<td>Silchar</td>
<td>Provincialized</td>
</tr>
<tr>
<td>2</td>
<td>Radha Madhab College</td>
<td>Silchar</td>
<td>-Do-</td>
</tr>
<tr>
<td>Sl. No</td>
<td>Name of the colleges</td>
<td>Address</td>
<td>Status</td>
</tr>
<tr>
<td>--------</td>
<td>------------------------------------------</td>
<td>---------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>1</td>
<td>Karimganj college</td>
<td>Karimganj</td>
<td>Provincialized</td>
</tr>
<tr>
<td>2</td>
<td>Rabindra Sadan Girl's college</td>
<td>Karimganj</td>
<td>-Do-</td>
</tr>
<tr>
<td>3</td>
<td>Nabin Chandra College</td>
<td>Badarpur</td>
<td>-Do-</td>
</tr>
<tr>
<td>4</td>
<td>Ramkrishna Nagar College</td>
<td>R.K.Nagar</td>
<td>-Do-</td>
</tr>
<tr>
<td>5</td>
<td>Swami Vivekananda College</td>
<td>Sonakhiira</td>
<td>Private</td>
</tr>
<tr>
<td>6</td>
<td>Patherkandi College</td>
<td>Patherkandi</td>
<td>-Do-</td>
</tr>
<tr>
<td>7</td>
<td>Nilambazar College</td>
<td>Nilambazar</td>
<td>-Do-</td>
</tr>
<tr>
<td>8</td>
<td>Chargola Public College</td>
<td>Bazarghat</td>
<td>-Do-</td>
</tr>
</tbody>
</table>

**Degree Colleges in Karimganj District**
### Degree Colleges In Hailakandi District

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Name of the colleges</th>
<th>Address</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Srikrishna Sarada College</td>
<td>Hailakandi</td>
<td>Provincialized</td>
</tr>
<tr>
<td>2</td>
<td>Lala Rural College</td>
<td>Lala</td>
<td>-Do-</td>
</tr>
<tr>
<td>3</td>
<td>S.K. Roy College</td>
<td>Kathlicharra</td>
<td>Private</td>
</tr>
<tr>
<td>4</td>
<td>Abdul Latif Choudhury College</td>
<td>Algapur</td>
<td>-Do-</td>
</tr>
<tr>
<td>5</td>
<td>S.C. Dey College</td>
<td>Kalinagar</td>
<td>-Do-</td>
</tr>
<tr>
<td>6</td>
<td>Women's College</td>
<td>Hailakandi</td>
<td>-Do-</td>
</tr>
<tr>
<td>7</td>
<td>M.H.C.M Science College</td>
<td>Algapur</td>
<td>-Do-</td>
</tr>
</tbody>
</table>

It shows that there are 13 Provincialized colleges and 18 Private colleges in Barak Valley.

#### 3.5: Distribution of Questionnaires:

The investigator personally visited all the colleges and circulated the questionnaires to the students, teachers and librarians. This present study includes undergraduate students of 31 provincialized and also private general colleges of Barak Valley pertaining to degree education. Considering the huge number of students and teachers of these colleges, sampling technique is adopted for the study. Thus the sampled population of students and teachers are 310 and 155 respectively. The population also includes librarians of all those 31 colleges. While distributing the questionnaires it was observed that students from the colleges in rural area are not even aware of the questionnaires. In that case the investigator collected
data from them by interviewing them. The number of questionnaire distributed to three different categories are given in the following table.

Table 1: Distribution of Questionnaires

<table>
<thead>
<tr>
<th>Category</th>
<th>Questionnaire Distributed</th>
</tr>
</thead>
<tbody>
<tr>
<td>i) Students</td>
<td>310</td>
</tr>
<tr>
<td>ii) Teachers</td>
<td>155</td>
</tr>
<tr>
<td>iii) Librarians</td>
<td>31</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>496</strong></td>
</tr>
</tbody>
</table>
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