CHAPTER-I

INTRODUCTION

Information means the communication of knowledge about an event of a given condition or the spread of knowledge derived from observation, study, experience or instruction. According to Shera\(^1\), information, both in the sense it is used by the biologists and in the sense librarians use it, is a fact. It is similar to that we receive through our senses. It may be an isolated fact or a whole cluster of facts; but it is still a unit; it is a unit of thought.

According to Prof. Bhattacharya\(^2\) Information is a message conveyed or intended to be conveyed by a systematised body of ideas. A comprehensive definition of the word 'information' is not possible due to its amorphous, complex and multifarious nature.

1.1 Types of Information

Information can be categorized on the basis of the nature of its use and purposes for which it is used. J.H. Shera\(^3\) has categorised information into six types. They are i) Conceptual information ii) Empirical information iii) Procedural information iv) Stimulatory information v) Policy information and vi) Directive information.
The conceptual information relates to ideas, theories and hypotheses about the relationship, which exists among the variables in the area of a problem. Empirical information relates to data and experience of research, which may be drawn from oneself or communication from others. Procedural information is the data of investigation, which are obtained, manipulated and tested. It is essentially methodological and it is derived from scientific attitude. Stimulatory information is a type of information, which is motivated by one or environmentally derived. That type of information, which is focused on the decision making-process, is known as policy information whereas information, which is used for coordination and for enabling effective group activity, is grouped under directive information.

1.2 Principles and Qualities of Information

The ideas underlined in the five laws of Library Science enunciated by Dr. S. R. Ranganathan are the basic concepts of librarianship. Based on the analogy of five laws of library science, Prof. Bhattacharya\(^4\) has conceived five principles of information viz. i) Information is for use. ii) Every information user, his information. iii) Every piece of information its user. iv) Save the time of the information 'user and v) The Universe of information is ever growing.

As information is an important valuable resource, it ought to have certain ideal qualities also. According to Rojas\(^5\) some of the important
qualities of information are i) Accessibility ii) Comprehensiveness iii) Precision iv) Compatibility v) Timeliness vi) Clarity vii) Flexibility viii) Verifiability ix) Free of bias and x) Quantifiable.

William F. William\(^6\) has recognised six parameters of information. They are: i) Quantity of information which can be measured by the number of documents, pages, words, characters, bits, drawings etc. ii) Content, the meaning of the information iii) Structure, the organisation of information and its logical relationship between statements or elements iv) Language, the symbols, alphabets, codes and syntax with which the ideas are expressed v) Quality, that which characterises the completeness, accuracy, relevance and timeliness of information and vi) Life, the total span of time in which value can be derived from the information.

1.3 Information Channels

Channels are the means by which ideas, opinions, facts, and interpretations are communicated. These channels may be formal-records, films-or informal-after-dinner discussions, casual meetings with colleagues, correspondences. The line between formal and informal channels is difficult to draw, a reasonable approximation might be that formal channels at the same time, while informal channels operate on an individual interpersonal basic. Channels may also be classed as primary and secondary; the primary channel carries the actual message, while the
secondary channel leads one to the primary channel. Review articles, abstracting journals, and indexes are all, secondary channels.

Some of the channels-books, journals, indexes, etc., are of course the prime concern of librarians. The librarian is an expert at manipulating the channels under his care to derive the maximum benefit to the users of the library. It is possible to regard the library as a rather complex marked place for information channels, with the librarian as its manager. The level of need to the individual user determines the channel which the librarian recommends him to use. Thus the general inquirer may be directed to an encyclopedia, the specialist to an creates secondary channels peculiar to his bibliographies, and guides to resources. Other secondary channels-abstracting journals, indexes, etc., are purchased ready made by the library; and decisions must be made on which to buy and which to create in the library.

1.4 Uses of Information

Information has one use, i.e., the assistance of problem solving. Different types of problem may require different types of information. The requirements of library can be tentative classified as:

i. Personal

ii. Technical

iii. Tasks
It is important to stress that much of librarians time is devoted to communicating information about information channels housed within the library; and since the librarian has more control over this factor than over any other, it is worth investigating the effectiveness of the secondary channels traditionally created by librarians such as cataloguers, classification schemes and shelf-arrangements.

Although many studies of information seeking behaviour have been done, there remain some severe gaps in our knowledge. One of the more important of these relates to the utilization of library material—we know practically nothing about the what—why—how—when and where of books use. Another gap in the record is the lack of longitudinal studies. They are many cross section of user behavior. And the channel usage, but few researches have followed up earlier work.

1.5 Users

In a library or information centre environment the users are the-last link or the recipients of the information in the communication cycle. There are a number of terms used as synonyms or near synonyms to user such as patron, client, member, customer etc. the user is an important component in an information system. This vital fact was not recognised for a long time by our information managers. It was revealed from the library and information science literature that for a long time information workers focussed their studies only on components of information system except user.
1.6 Types of Users

The users of one type of library are different from those of another type. In a public library the users are mainly children, students, housewives, researchers, retired persons, neo-literate etc. In an academic library the users are students, teachers and researchers whereas in a special library the users are mainly researchers or specialists who are specialising in a narrow field of subject. From what is stated above it can be assumed that in public libraries the users are heterogeneous and in the academic and special libraries the users are almost homogenous in nature. For an effective information requirements of his library users. In fact one should understand the following: Who are the users? What are their needs, use pattern and use behaviour? For these, studies focussed on library users directly or indirectly at necessary.

1.7 Users and Information Use

Today information users live in a complex environment.

The major environment factors are the following:

a. Increasing laziness or uncertainty of users information needs;

b. A vast quantity of information is being gathered as well as pouring into the systems which have their own of presentation;

c. The mechanisms of matching information needs with information sources have been increasingly made efficient, which are sophisticated and complex;
d. There is therefore, a need for training users of information with respect to the ways in which information needs are expressed, new methods of searching and manipulating with the mechanism of information retrieval; and

e. The modern concepts of user friendliness, user assistance and user education have developed several devices and courses to inculcate in the regular information seekers a methodology for productive approach for information gathering and self education.

1.8 User Studies - Definitions

The term ‘user studies’ has been defined variously by different information scientists. According to Wysoki user studies or use studies could be concerned with studying information processing activities of the users. Empirical studies of the use of, the demand or need for information are usually called user studies. In-fact a study which is focussed on users to understand directly or indirectly their information needs, use behaviour and use pattern is usually called a user study is a meaningful user service, user study is a precondition.

1.9 User Studies - Genesis and Development

An early user study in the field was conducted in the late 1930s by Louis R Wilson. The study was an attempt to investigate the distribution and status of libraries in the United States. When we trace the development
of user studies it will be seen that it was activated by two international conferences viz. ‘The Royal Societys’ Conference held in London in 1948 and the Washington Conference of 1958. A study entitled 'pilot study on the use of scientific literature by scientists' conducted by Ralph R Shaw is considered another important pioneer study in this direction. During 1950s and 1960s there were comparatively only a limited number of studies. A comprehensive bibliography on user studies compiled by Davis and Bailey in 1964 contains only 438 studies. It is reported by Crawford that by 1977 more than 1000 important studies were conducted on user studies. A number of user studies including state of the art reports and review reports were also published. A critical review of the surveys of scientists, use of libraries by Stephanie. A Barber use studies, a review of literature from 1966 to 1970 by Wood, assessing information needs and uses. A state of the art report by S.N. Singh, users survey concerning teachers and research scholars in the Department of Chemistry by Krishan Kumar etc. are some of the important studies in the field. Studies conducted by Menzel, Paisely, Stevens etc are worth mentioning. The present trend on user studies show that the rate of studies on the subject is increasing year after year.

1.10 Users Approach to Information

Information need is a composite concept, which is generally dynamic in users. The information requirement is generally affected by various factors like purpose of his work, stage of his work, diversity of
interest. According to Melvin Voigt The users different approaches to meet information requirements are Current approach. Everyday approach, Exhaustive approach and catching up or brushing up approach. The current approach is that users want to keep themselves abreast of the nascent developments in his field of interest. Everyday approach is sought to satisfy the specific piece of information required by the user, during day to day investigation in the form of facts the exhaustive approach is sought at when a researcher wants comprehensive detail about a specific topic on the field of study. Catching up approach is adopted in situations where a particular user requires information pertaining to relate subject fields.

1.11 Nature of Information Need

The information need (need for information) is a factual situation in which, there exists an inseparable interconnection with 'information' and 'need'. Information originates and is generated because there exist a need or an interest. The concept of information is of primary concern. The ‘information’ objectively necessary for realising a function is the objective information. Such ‘information needs’ of users have to be satisfied.

The need of information with specific content is an objective demand of the user. If an individual is in need of specific information for realizing specific tasks, then the need for information is an objective information need i.e. qualitatively and quantitatively determined information needed by an individual for solving an objectively assigned
task. Since any individual already has certain qualitatively determined information that may be used in solving the tasks, then to a certain degree. However, the individual may bring forth new tasks which are to be fulfilled or the fulfillment of which is to be aimed at, the information acquired so far will never fully suffice. There will always remain a need resulting from the difference between the objective (overall) need and that part of it that has already been satisfied. Thus satisfying the information need always means satisfying that needs which has not yet been satisfied.

1.12 Types of Information Need

Tague has presented the following types of information needs (most of which are self explanatory)

Social or pragmatic information needs - required for coping with day-to-day life.

Recreation information needs.

Professional information needs.

Educational information needs.

Another categorisation can be the following:

Success needs - for employment opportunities, self improvement (dress, speech, personal carriage etc.)

Specialized information needs - for the physically handicapped, emotionally disturbed, geographically isolated, the non-English speaking groups etc.
1.13 Factors Affecting Information Needs

By far, the most important factor that affects the information needs of an individual is the type of work in which he is involved - as found by un and Garvey. Another factor (relating to type of work), is - whether the work is basic or applied.

The discipline, within which an individual is working also affects his information needs - for example, the information needs of researchers in the pure sciences is probably more urgent than that of researchers in the social sciences, because science is ever growing. The scientist will need to constantly update his knowledge.

1.14 Information Seeking Behaviour

When a need is felt for anything, more often than not, people, take action in order to satisfy that need. Different strategies or modes of action are resorted to. The same applies for the satisfaction of information needs. An individual realizes that he needs information, he knows that in all probability the information will not come to him on its own, therefore he has go to about seeking it.

Ching-Chih Chen has defined information seeking as follows, “Information seeking patterns are the paths pursued by the individual in the attempt to resolve a need.”
According to Girja Kumar,\textsuperscript{11} “Information seeking behaviour is mainly concerned with who needs what kind of information for what reasons; how information is found, evaluated and used.”

T.D. Wilson\textsuperscript{12} defines what he calls ‘information behaviour’ as, “those activities a person may engage in when identifying his or her own needs for information, searching for such information in any way, and using or transferring that information.

1.15 Information Seeking Models

The influence of new technology on Information Seeking is also providing a new set of alternative models that more accurately describe the Information Seeking process as a dynamic activity. Models of Information Seeking attempt to describe the process a user follows to satisfy an information need. The Information Seeking models focus on the behavior of Information Seeking activities.

Ellis' Model of Information Seeking

The primary model used will be based on Ellis’ work - initially, his model with six categories (Ellis 1989). Since Ellis has stated that these activities are applicable to hypertext environments (of which the World Wide Web is one).
Starting is identifying the initial materials to search through and selecting starting points for the search. Starting, as its name implies, is usually undertaken at the beginning of the Information Seeking process to learn about a new field. Starting could also include locating key people in the field or obtaining a literature review of the field. It is also common to rely on personal contacts for informal starting information. For example, in the Web environment, the activity of starting could involve going to the Yahoo! site to find the general category listing of links related to the field of inquiry and looking for overviews, FAQs (Frequently Asked Question files - a commonly-used informal document describing a particular subject), or reputable reference sites. Another possibility is going to a bookmarked page that has proved to be useful in previously looking for similar information or consulting a colleague's own Web page or one he might have recommended.

Chaining is following leads from the starting source to referential connections to other sources that contribute new sources of information. Common chaining techniques are following references from a particular article obtained by recommendation or a literature search to references in other articles referred to in the first article. It's also quite natural to pursue the works of a particular author when following these chains. There are two kinds of chaining:
1. **Backward chaining** is following a pointer or reference from the initial source. For example, going to an article mentioned in the initial source’s bibliography.

2. **Forward chaining** is looking for new sources that refer to the initial source. For example, using a citation index to find other sources that reference the initial source.

The only real constraints to chaining are time available and confidence in pursuing a line of research further. For example, using a Web browser, backward chaining would be following links on the starting page (be it a online document or collection of links which we can assume are related in some way) to other sites. Forward chaining could involve using a search engine to look for other Web pages that link to the initial Web page.

**Browsing** is casually looking for information in areas of interest. This activity is made easy by the nature of documents to have tables of contents, lists of titles, topic headings, and names of persons or organizations. Browsing is being open to serendipitous findings; finding new connections or paths to information; and learning, which can cause information needs to change. While on the Web, browsing is particularly unconstrained as the most-common way to follow a link is simply clicking the mouse. With link availability and adequate access speed, pursuing a new connection is quite simple. Only the worry of getting lost in an ocean of links might constrain browsing through the Web. A common example of
browsing on the Web would be finding an online journal article and following its link back to the overall journal table of contents to an entire other article. This might in turn lead to a page linking to all of the journal's various contributing authors, its editorial board, or supporting organizations home pages.

**Differentiating** is selecting among the known sources by noting the distinctions of characteristics and value of the information. This activity could be ranking and organizing sources by topic, perspective, or level of detail. Differentiating is heavily dependent on the individual's previous or initial experiences with the source or by recommendations from colleagues or reviews. A Web-oriented example would be organizing bookmarks into topic categories and then prioritizing them by the depth of information they present.

**Monitoring** is keeping up-to-date on a topic by regularly following specific sources. Using a small set of core sources including key personal contacts and publications, developments can be tracked for a particular topic. A Web browser monitoring activity could be returning to a bookmarked source to see if the page has been updated or regularly visiting a journal’s Web site when it is scheduled to publish its new Web edition.

**Extracting** is methodically analyzing sources to identify materials of interest. This systematic re-evaluation of sources is used to build a
historical survey or comprehensive reference on a topic. With a Web browser, extracting might be saving the Web page as a file or printing the Web page for use in an archive or for a segment of an overview document.

In follow-up studies, Ellis adds two more features to his model: verifying, where the accuracy of the information is checked and ending, which typifies the conclusion of the Information Seeking process such as building final summaries and organizing notes. (Ellis 1991) These changes not only reflect further studies, but it believe that as Information Seeking has become more mechanical, its processes are easier to note. However, despite refining the processes and the relationships between features of his model, Ellis also agrees that the boundaries between the features are very soft.(Ellis 1996) In using the Web, verifying might involve extracting keywords from a source and searching for corroborating information on another Web page. Admittedly, the Web’s newness and large percentage of un-branded information make verification of information difficult.

![A stage process version of Ellis’s behavioural framework]

Fig. 1. A stage process version of Ellis’s behavioural framework
Kuhlthau\textsuperscript{13}, studying the information seeking behaviour of students doing a research assignment, formulated a model depicting common patterns of tasks, feelings, thoughts and actions in six stages.

- **Initiation**: to recognize information need
- **Selection**: to identify general topic
- **Exploration**: to investigate information on general topic
- **Formulation**: to formulate focused perspective
- **Collection**: to gather information pertaining to focus
- **Presentation**: to complete information search

Wilson\textsuperscript{14} on the other hand provides the following model to explain the process (Ref. Fig. 2):
The model suggests that information-seeking behaviour arises as a consequence of a need perceived by an information user, who in order to satisfy that need, makes demands upon formal or informal information sources or services, which results in success or failure to find relevant information. If successful, the individual then makes use of the information found and may either fully or partially satisfy the perceived need - if he fails to satisfy the need, he will have to start searching again. The model also shows that part of the information-seeking behaviour may involve
other people through information exchange and the information perceived as useful may be passed to other people as well as being used by the person himself or herself.

Fig. 3. Wilson’s 1996 model of information behaviour

In 1996, Wilson\textsuperscript{15} revised his earlier model after drawing upon research from a variety of fields other than information science, including decision making, psychology, innovation, health communication and
consumer research. While the basic framework of the 1981 model remains, the revised model had a few additions as follows (Ref. Fig. 3).

The terms used in the new model are explained as follows – ‘intervening variables’ represent the ‘barriers’ whose impact may be supportive of information use as well as preventive; ‘information-seeking behaviour is shown to consist of more types than previously, information processing and use is shown to be necessary part of the feedback loop if information needs are to be satisfied; the stress/coping theory tries to explain why some needs do not invoke information-seeking behaviour; the risk! reward theory tries to explain which sources of information may be used more than others by a given individual and the social learning theory embodies the concept of ‘self – efficacy’ i.e. the conviction that one can successfully execute the behaviour required to produce the (desired) outcome.

1.16 Kuhlthau's Model of the Information Search Process

Kuhlthau provides an additional model which focuses on the information search process from the user's perspective. Her six stages in the Information Search Process (ISP) Model are:

1. **Initiation** - beginning the process, characterized by feelings of uncertainty and more general ideas with a need to recognize or connect new ideas to existing knowledge.
2. **Selection** - choosing the initial general topic with general feelings of optimism by using selection to identify the most useful areas of inquiry.

3. **Exploration** - investigating to extend personal understanding and reduce the feelings of uncertainty and confusion about the topic and the process.

4. **Formulation** - focusing the process with the information encountered accompanied by feelings of increased confidence.

5. **Collection** - interacting smoothly with the information system with feelings of confidence as the topic is defined and extended by selecting and reviewing information.

6. **Presentation** - completing the process with a feeling of confidence or failure depending how useful the findings are. (Kuhlthau 1991)

**1.17 Belkin's Information Seeking Process Model**

Belkin provides another view of the Information Seeking process, described as Information Seeking Strategies (ISS). This view can be perceived of as a more task-oriented overlay of either Kuhlthau or Ellis’ model. The set of tasks are:

- **Browsing** - scanning or searching a resource
- **Learning** - expanding knowledge of the goal, problem, system or available resources through selection.
• **Recognition** - identifying relevant items (via system or cognitive association).

• **Metainformation** - interacting with the items that map the boundaries of the task (Belkin, Marchetti, and Cool 1993).

Again, this model is not linear or like a typical waterfall flow of process. Belkin even stresses this non-linearity in that he suggests that the model should support "graceful movements" among the tasks.

### 1.18 Belkin's Anomalous States of Knowledge

Belkin also provides some useful perspectives with the Anomalous State of Knowledge (ASK) theory, "the cognitive and situational aspects that were the reason for seeking information and approaching an IR system" (Saracevic 1996). Belkin proposes that a search begins with a problem and a need to solve it - the gap between these is defined as the information need. The user gradually builds a bridge of levels of information, that may change the question or the desired solution as the process continues (Belkin, N. Oddy, and Brooks 1982).\(^{16}\)

In other words, this view of information seeking is as a dynamic process with varying levels of expertise growing in regard to knowledge about the solution and in using capabilities of the particular information system itself. Taking these ideas, Belkin advocates a systems design using a network of associations between items as a means of filling the knowledge
gap. By establishing relationships between individual pieces of knowledge, a bridge of supporting information can be used to cross the knowledge gap. Using a collection of associations in this manner provides a framework that can be applied to designing Collaborative Filtering mechanisms, which work from building associations between users.

Girja Kumar’s\textsuperscript{17} presentation of the information seeking process is as follows:

i. Identifying objective

ii. Defining need

iii. Assessing information system

iv. Establishing sources of information

v. Information acquisition

vi. Use of information

vii. Satisfaction Dissatisfaction

According to Line\textsuperscript{18}, all people are individuals and will seek and use information in different ways. Much of our daily life is spent in information gathering and sifting of one kind or another - merely looking at people involves an information process, since we notice things about them and do a rapid assessment. Most of this information gathering is carried out automatically, and is not perceived as such; it is an integral part of our personalities and we all do it differently. There is no such thing as a homogeneous body of information users. A group of people with the same
level of education may be working on the same subject at the same time; but they will use information in different ways. Some information will obviously be relevant to all of them, some to only one or two. Some of the group will scan and absorb vast quantities of material, others will read much less. Some will be content with abstracts of many articles, some will not. Some will prefer oral channels, some will prefer to see information in print so that they can pore over it; some always prefer to ask other people; some prefer to avoid people whenever they can. Some like browsing, some find it a waste of time and energy. Some enjoy computer searching, some have technophobia; and when people do search – they use the Internet in very different ways.

### 1.19 Factors Affecting the Information Seeking Behaviour

The means that an individual resorts to in order to satisfy an information need will depend on certain factors. Certain points will have to be considered when an individual decides on a certain course of action, they include:

1. Whether the source is within reach
2. Whether money will be involved - if so, how much money
3. Whether time will be involved, if so, how much time
4. Whether the source will have the answer to their problem
5. Whether they will understand what the source provides as answer

Other factors include social, political, geographical, educational, etc.
Social factors - For example, a desire for information on such topics as sex education, fashion, music, (openly available in other societies), may not be looked upon kindly in certain societies (read ‘closed’ societies) as a result of which an individual may have to resort to stealthy means for acquiring the information.

Political factors - The political system (particular those under dictatorship) may define certain types of information (defense, freedom - of speech, of expression, rights, etc) as forbidden to particular groups or to the public as a whole, consequently, the non-availability of such information may motivate a person to resort to ‘underground’ (in the government’s opinion) means.

Geographical factors - The geographical location of an individual also decides how he goes about seeking information. Geographical isolation may lead a person to resort to uncommon means of seeking information.

Educational factors - The educated and uneducated’ may have differing methods of seeking information, the educated person resorting to more formal means (information systems) while the uneducated one depending more on informal methods (i.e. other people).
1.20 Significance of the Study

The significance of the study is argued on the basis of the following points:

a. The study aims to make aware of the collection and services of the library.

b. Simultaneously the study will project the effectiveness of sources and services of state university libraries of Tamil Nadu.

c. The study focuses on the skills of using electronic sources available in the library.

d. The study attempts to highlight the adequacy of the collection and the services with the academic and research needs of the university libraries.

e. The study examines the effective channels through which information is accessed.

f. The study emphasises on the need of user education, training of using electronic sources in the library based on the users responses.

1.21 Statement of the problem

The structural components of any library consist of books, staff, and the readers. The basic objective of a library and information centre is to provide optimum library and information service to its users and their user satisfaction. Libraries and information centers are the repositories of books as well as depositories of information and knowledge. It is needless to
emphasis that information is indispensable for any human activity aiming at 

social progress. Therefore, any library and information services should be 

based on the information needs of the users.

In order to determine the information needs or users’ requirements, it 
is need to conduct systematically the user studies and user information 
seeking pattern. User study is the one, which mainly focuses on ‘users’ to 
measure their information needs, their use behaviour and use pattern. The 
user study is the means for systematic examinations of the system and 
services provided by LIC. The study is directly linked with the 
effectiveness of library and information services as they aim at satisfaction 
of user’s needs. It implies a willingness to relate product or system design 
to the perceived needs of those for whom the product or system design in 
intended. This urges to conduct information seeking behaviour studies so 
as to collect organize and disseminate what is needed or required by the 
users. Information seeking behaviour is concerned with who needs and 
what kind of information and for what purposes. It is also concerned how 
information is found, evaluated and used.

The libraries need to have all the up-to-date and, accurate information 
about the users as well as the knowledge of users is one of the prerequisites 
for the proper planning and development of resources and services of 
libraries. Therefore, it is said that understanding the users means the half the 
battle in providing the information services is over. Therefore, the librarians
need to know: who the users are, what their functional responsibilities are and areas of interest; how much time they spend on reading information sources, what the sources of information are most frequently used by them, how useful the collections of library are, information services used by the users, methods adopted for searching various print and electronic information sources and problems encountered in using and searching information sources. These are some of the questions for which the planners and organizers of libraries and information centers need to find answers from time to time in order "to make the resources and the services provided by the library relevant and appropriate to the user community it serves. Hence, an attempt has been made in this work to “Assessment of Information Needs and Use Pattern of Biologist of Select State Universities of Tamil Nadu: An Empirical Study.”

1.22 Aim of the study

The fundamental aim of the study is to access the information need and use pattern of biologist of select state university of Tamil Nadu. The aim of the study not only making awareness about the collection and services of the library it is also provide suggestion to the university/library authorities to make use of the collection effectively and efficiently by the user academic user community of the state universities of Tamil Nadu. To fulfill the aim of the study the researcher evaluate the information seeking behaviour and use pattern of the library users.
1.23 Objectives of the study

The following are the important objectives of the present study.

1. To study the information needs and seeking behaviour of faculty members, research scholars and students of Biological department of select state universities of Tamil Nadu.

2. To know the different information use pattern followed by faculties, research scholars and students of Biological department of select state universities of Tamil Nadu.

3. To analyse different factors which facilitate information sources and services to the faculty members, research scholars and students of Biological department of select state universities of Tamil Nadu.

4. To find out information gathering behaviour of faculty members, research scholars and students of Biological department of select state universities of Tamil Nadu.

5. To study nature of information needs and adequacy of collection of faculty members, research scholars and students of Biological department of select state universities of Tamil Nadu.

6. To find out various channels through which information is accessed by faculty members, research scholars and students of Biological department of select state universities of Tamil Nadu.

7. To find out constraints faced by the faculty members, research
scholars and students of Biological department in using and
searching information in libraries.

8. To suggest measures to improve the efficiency of the librarian to
provide effective information service to their user’s community.

1.24 Hypotheses of the Study

In order to study the above mentioned objectives, the following
hypotheses were formulated and tested with appropriate statistical tools:

1. There will be no significant difference in information needs and
seeking behaviour of faculty members, research scholars and
students of Biological department of select state universities of
Tamil Nadu.

2. There will be no significant difference in information use pattern
followed by faculties, research scholars and students of Biological
department of select state universities of Tamil Nadu.

3. There will be no significant difference in different factors which
facilitate information sources and services to the faculty members,
research scholars and students of Biological department of select
state universities of Tamil Nadu.

4. There will be no significant difference in information gathering
behaviour of faculty members, research scholars and students of
Biological department of select state universities of Tamil Nadu.
5. There will be no significant difference in nature of information needs and adequacy of collection of faculty members, research scholars and students of Biological department of select state universities of Tamil Nadu.

6. There will be no significant difference in various channels through which information is accessed by faculty members, research scholars and students of Biological department of select state universities of Tamil Nadu.

7. There will be no significant difference in constraints faced by the faculty members, research scholars and students of Biological Department in using and searching information in libraries.

1.25 Limitations

The findings of this study are applicable to teaching staff, research scholars and students of biological department of select four state universities of Tamil Nadu, India namely, Annamalai University, Bharathidasan University, Bharathiar University and Madurai Kamaraj University and it does not represent respondents of other Universities. To undertake the study in all universities of Tamil Nadu is not possible at the level of an individual researcher, due to constraints imposed by money, time, energy and efforts.
1.26 Scheme of work

The thesis has been organized into six broad chapters. A brief description of the chapters is given below.

Chapter I

The first chapter is introductory in nature. It gives brief description about information needs and seeking behaviour.

Chapter II

The second chapter reveals various views of the earlier studies in the area of study. The review of related literature provides a comprehensive view of the works accomplished so far.

Chapter III

The third chapter focuses on the structure and design of the study. This chapter includes the statement of problem, objectives, hypotheses, methodology, data collection, data analysis and limitations of the study.

Chapter IV

The fourth chapter deals with the profile of select four state universities and Tamil Nadu undertaken for study.

Chapter V

The fifth chapter deals with the Analysis and Interpretation of the data and testing of hypothesis.

Chapter VI

The sixth chapter is devoted to the findings, suggestions, area for further research and conclusion of the study. This chapter is followed by Bibliography and Appendice.
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