CHAPTER 3

INFORMATION SEEKING BEHAVIOUR AND IT GRADUATES: A THEORETICAL OUTLINE

3.1. INTRODUCTION

Human beings from the moment of their birth are impelled by the environment and their motivations to seek out information that will help to meet their needs. Every day, people engage an information activity in some or the other way though they may not think of it that way at the time. Seeking and using information are the common and essential human behaviours. Activities such as noticing a change in the weather, deciding to visit a place, finding out the schedules of bus/trains, choosing a departure date, buying an air ticket are examples of such behaviours. These types of human behaviours are called as Information Behaviour (IB) and it is a type of behaviour that is basic to human existence. This behaviour includes encountering, finding, choosing, and using information. Information Behaviour encompasses information seeking as well as the totality of other behaviours that do not involve seeking such as unintentional/passive encountering of information and purposive information behaviours.

The many ways in which human beings interact with information and the ways in which people seek and utilize information are described by the term information behaviour. It is the term of art used in Library and Information Science to refer to a sub-discipline that engages in a wide range of types of research conducted in order to understand the human relationship to information. Interest in this area developed out of several streams. Librarians wanted to understand library users better, government agencies wanted to understand how scientists and engineers used technical information in order to promote more rapid uptake of new research results, social scientists generally were interested in the social uses of information in a variety of senses and so on (Bates, 2010). In more recent years, some other areas of studies such as Information Technology,
psychology, social informatics, etc. have also contributed to this area as well. Within Library and Information Science, various streams of researches are conducted such that they can contribute to a richer understanding of information behaviour.

Different ways and means by which human beings seek, locate and use information in the course of meeting their day-to-day requirements has been a topic of great interest among the Library and Information Science (LIS) researchers. Information Behaviour is an area in the field of LIS where extensive and significant researches are going on for several decades. IB researchers in general study the totality of human behaviours related to information. These studies explore various aspects of human information behaviour such as information seeking, searching, gathering, organizing and using information in their everyday lives, both personal and professional.

According to Wilson (2000), Information Behaviour is the totality of human behaviour in relation to sources and channels of information, including both active and passive information seeking, and information use. Thus, it includes face-to-face communication with others, as well as the passive reception of information as in, for example, watching TV advertisements, without any intention to act on the information given. By Information Behaviour, in general, it is meant all those activities people may engage in recognizing their information needs, searching for information to meet those needs and finally using that information.

Following are some important concepts relevant to the information behaviour. These conceptions are discussed in the following part of this chapter in detail. The concepts discussed are:

- Information
- Information Needs
- Information Literacy
- Information Seeking
3.2 INFORMATION

It is generally accredited that before the twentieth century, we lived through the "Industrial Age" and since the middle of the twentieth century we have been living in an 'Information Age'. During the Industrial age, production, for the most part, was the consequence of manual labour directed and controlled by people responsible for the productivity of machines. Due to the primitive state of communication technology and the tyranny of distance, people's family circle, friends and acquaintances was generally small. Interpretation of events could be tested by direct perception and immediate awareness by their senses of what was going on around them. People were having knowledge similar to others with whom they lived their lives. In the "information age" all that has been changed. Through technological innovation and breakthroughs in science, it became possible to convey information correctly and instantly to others, whichever part of the globe they live on, whether we have any life experience in common with each another or not (Miller, 2002).

The present society is being ascribed as knowledge based society or information society for which information is of primary importance. Information plays a significant role in the cultural, political, social, scientific and technological developments of this knowledge based society and it has become one of the essential component for every human activity and fundamental resource for the overall development of any country. The quality of life, the prospects for social change and economic development depend increasingly on information and its exploitation. With the advent of the recent technologies, in the present world of expanding communication facilities, information is available to a larger clientele in a variety of forms and information has become an essential requirement for everyone. With the latest technologies, newer information products and services have been created for their quicker availability to its clientele.

The world has now moved into the information revolution and information has become one of the basic and vital resources that the human beings need and utilize for
their development and prosperity. The dependency on information in every sphere of intellectual activity has been increasing day by day. Technological advances have made information a new basic resource of matter and energy. The exact nature of information is not easy to describe and the most explicit definition in the literature terms information as the recorded experience that is used in decision making. It is an aggregation or processing of data to provide knowledge and intelligence. Information has now emerged as the power which plays a vital role in the development and progress of the society. Next to the matter and energy, all pervasive information is a basis component in this universe (Prasad, 2012).

3.2.1 Information: Meaning and Definitions

The term ‘Information’ has been derived from two Latin words ‘Forma’ and ‘Formatio’, which mean giving shape to something or forming a pattern. Information as a concept bears a diversity of meanings from everyday usage to technical settings. Generally speaking, the concept of information is closely related to notions of constraint, communication, control, data, form, instruction, knowledge, meaning, mental stimulus, pattern, perception and representation (Prasad, 2012). Looking into the concept of information, it can be said that researchers could not even reach to consensus on the definition of information as there is no single universally accepted definition of information and the concept has been defined in many different ways which varies according to the context.

According to Bates (2010) “the term information is generally assumed to cover all instances where people interact with their environment in any such way that leaves some impression on them—that is, adds or changes their knowledge store. These impressions can include the emotional changes that result from reading a novel, or learning that one’s friend is ill. These changes can also reflect complex interactions where information combines with pre-existing knowledge to make new understandings, or enables the individual to deduce or induce new thoughts and ideas”.

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Encyclopedia of Britanica defines information “as the facts and opinions provided and received during the course of daily life: one obtains information directly from other living beings, from mass media, from electronic data banks and from all sorts of observable phenomena in the surrounding environment. A person using such facts and opinions generates more information some of which is communicated to others during discourse, by instructions, in letters and documents, and through other media” (Slamecka, 2010).

3.3 INFORMATION NEEDS

The term ‘need’ can be simply defined as the want of something without which one cannot do well. Information need is the first step in the information seeking process and can be termed as a realistic condition in which there exists an indivisible interconnection with information and need. It is only because of the need of information, information is generated and it can be said that information need is a situation in which certain information contributes to the realization of a legitimate purpose. Primary concern of any information service providers or information retrieval systems is the information needs of their users and they ultimately aim at supplying and delivering information which accurately meets the information requirements of users. There is no doubt that the success of any information service is accomplished only when the service is adjusted to meet the precise needs of its clientele.

The production, transfer and communication of information among its users take place in a diverse contexts and environments through various channels and media. Hence it is a necessity that a practically accurate assessment of the information wants and needs of the users be made for designing effective and successful information systems and services as this alone forms the basis for all information activities (Prasad, 2000). The information requirements of the individuals vary from user to user depending upon their functions, duties and responsibilities.
Information need usually indicate the beginning state for someone who seeks information. This involves all sorts of information seeking including purposive information behaviour and the non-purposive information behaviour. For conceptualizing of a problem or proposal, the users habitually need information. They very much need the required information. The users from this perspective do not know the answer they searching for and therefore find it difficult to formulate a query to the system. The query, as a formulation of the users’ information need, must in a certain sense open the door to information flow, which is controlled by, in general terms, what the user already knows, thinks, and believes, and the neurological architecture of the reasoning part of the brain (Cole, 2012). While conducting an information search, users interact with a variety of information systems such as a search engine such as Google, an online public access catalogue, any of the scholarly or research oriented retrieval systems, etc.

Users’ subjective understanding of their information need represents what they actually need. This subjective understanding is reflected in their information-seeking behaviour. What is needed is something that is able to solve the problem behind the users’ behaviour. In the real life problems, different opinions are found for understanding and addressing those problems, including different opinions about what information is relevant to solve the problem. Basically, information needs are associated to some problems and what is noteworthy is how the problems are understood, delimited and formulated. It is not necessary that a mental dimension is always associated with having an information need. Similarly, people dispense information needs to other people, which they do not require themselves (Hjørland, 2007).

3.3.1 Stages of Information Needs

Taylor (1968) describes a series of four stages or levels when people approach an information system to meet their information needs.
Visceral Need: Users began with a conscious or even unconscious need for information, a vague sort of dissatisfaction probably inexpressible in linguistic terms. This unexpressed need for information can be termed as visceral need.

Conscious Need: In the next level the user reaches in a conscious mental description, an ambiguous and rambling statement which sometimes results in talking to another person about and this level may be termed as a conscious need.

Formalized Need: At the next level, the inquirer may be able to make a qualified and rational statement of the need. The person may not be aware whether the need could be answered in that form by any available person or information system.

Compromised Need: In the final stage, the users have a compromised need which may be a question asked of a librarian, or a search statement entered into an information retrieval system. At this point the question also imitates the kinds and forms of data that may be available and the ways in which they are organized or indexed. In effect, this stage is a compromise between how the requester originally foresees the query and how the query must be restated to match the language used by the source.

Considering the present study of research, at the stage of Visceral Need the IT graduates would be at the very beginning of their information seeking with feelings of uncertainty. In the Conscious Need, they come to a stage of confidence by sharing their needs with others such as friends, colleagues, teachers, librarians, etc. After this, they reach the Formalized Need stage, where they will have a clear understanding of their need. Finally, at the Compromised Need stage, they start the information seeking through various information systems.

3.3.2 Factors Affecting Information Needs

The information needs differ in nature, complexity and content. Users may have varying information needs related to various activities like educational, research,
professional, recreation, cultural, personal development, etc. and the key factors that affect the information needs of users include:

i. Conditions, enthusiasm, professional orientation and other characteristics of the individuals

ii. Social, cultural, political and economic environments surrounding the users

iii. Importance of satisfying the need

iv. Choice and cost of information services available to the users

v. Uses to which the information will be put to use

vi. Consequences of information use

It can be assumed that, considering the topic of research under study, the information needs of academic community in IT are also affected by many factors. There are some common information needs and at the same time their information needs are varying too. Considering the present study, the major factors that affects the information needs of the IT graduates are their educational and professional characteristics. Their major needs for seeking information would be regarding their academic works. At the same time, the principal academic information needs are varying among the different categories of graduates such as students, researchers and faculty members as all of them are having different conditions and tasks.

A more informed citizenry will be created not only with the sheer abundance of information but also with a complementary cluster of abilities necessary to use information effectively. For users to prosper in this information age, it is very crucial that they learn to identify, evaluate and use the necessary information. Such literacy needed for the information seekers to succeed in an era of information explosion is referred to information literacy.
3.4 INFORMATION LITERACY

In today’s world, we are experiencing an exponential growth of information and information resources. Information users have varying information needs related to various activities like educational, research, professional, recreation, cultural, personal development, etc. Because of the rising intricacy of today’s information environment, information users face varied and plentiful information choices in their academic, professional and personal lives. Large volume of information is available to the users in a variety of forms and formats. Information is available through libraries and information centers, community resources, special interest organizations, media, and the Internet. Moreover, unfiltered information comes to users increasingly raising questions about its authenticity, validity, and dependability. Besides, information is available through numerous forms, including graphical, aural, textual, etc. and these create new challenges for users in evaluating and understanding them. The indistinct quality and mounting quantity of information cause large challenges for individuals needing information.

3.4.1 Concept of Information Literacy

The ability of an individual to find, evaluate and use the right information is known as information literacy and it has become increasingly important to be information literate in the present-day information age of rapid technological change and flourishing information resources. Information literacy forms the basis for lifelong learning and enables learners to master content, extend their investigations, become more self-directed, and assume greater control over their own learning. An information literate individual is able to determine the extent of information needed, evaluate information and its sources critically, understand the economic, legal, and social issues surrounding the use of information, incorporate selected information into one’s knowledge base, ethically and legally access and use information effectively to accomplish a specific purpose (American Library Association, 2000).
Dorner & Gorman (2006) define information literacy as the ability of individuals or groups to be aware of why, how and by whom information is created, communicated and controlled, and how it contributes to the construction of knowledge; to understand when information can be used to improve their daily living or to contribute to the resolution of needs related to specific situations, such as at work or school; to know how to locate information and to critique its relevance and appropriateness to their context; and to understand how to integrate relevant and appropriate information with what they already know to construct new knowledge that increases their capacity to improve their daily living or to resolve needs related to specific situations that have arisen.

Information literacy comprises of many concepts and has grown beyond early library instruction and information skills-focused programs to the current concept of information literacy. While library instruction highlights the location of library materials, information literacy describes the course of information seeking and information use experiences. In short, information literacy focuses on information use rather than on bibliographic skills. Some of the related terms are: Information fluency, User education, Library instruction, Bibliographic instruction, Information competencies, Information skills and Development of information skills.

Information literacy is a very important aspect as far as seeking, gathering and using required information. The concept is more relevant in the present day’s information environment that is being called as information over load. Considering the present investigation, most of the academics community in the field of IT are information literate enough to filter the high quality information needed to meet their needs from the plethora of information available offline and online. The field of IT is being considered as an elite field of study in India as it has a big share in the country’s economic development and accordingly IT professionals have a promising career, in order to meet the industries requirements the IT community are adequately information literate.
As far as the information literacy of people is concerned, it is clear that the ability of an information seeker to determine the information need, to decisively appraise the available information, to effectively use and incorporate the right information into the knowledge base for achieving a task is adapted by the individuals slowly and gradually by experiences. In case of the respondents of the present study, the reality is that the faculty members having much experience in seeking and gathering information are literate enough as far their information seeking behaviours are concerned. Research scholars and PG students are less literate while comparing to them.

3.5 INFORMATION SEEKING

Information seeking is a process which is resulted by the interaction of various factors including the required information, the approaches employed the individual for the search, the social atmosphere in which the information is sought, and the psychological implications of the information on the seeker (Joinson & Banyard, 2002). Information seeking process results from the recognition of some need and on perceiving a need, the user may approach formal information systems or systems which may execute information functions besides a primary, non-information function. According to Wilson (2000), information seeking process is the purposive seeking for information as a consequence of a need to satisfy some goal. In the course of seeking, the individual may interact with manual information systems such as a newspaper or a library, or with computer-based systems such as the World Wide Web.

Wilson (2006) demonstrates an information seeking individual as the totality of experiences in the life-world. The world of work is an important sub-world within this life-world and within that there exist various reference groups with which the user identifies colleagues, the peer group within an organization, etc. as given in Fig. 3.1.

In the process of seeking information, the user will contact various information systems which have access to various embodiments of knowledge such as documents or living people. Within the information system there exist two subsystems namely
‘mediator’ and ‘technology’. The mediator in an information seeking process is always a living system, i.e. a human being and the technology is the combination of techniques, tools and machines used to search information.

Fig. 3.1 Information seeking context: Adapted from Wilson (2006)

3.5.1 Information Seeking Process

Information seeking is viewed as a cognitive process, as a social and cultural exchange, as distinct strategies applied when dealing with ambiguity, and as a basic situation of humanity in which all individuals exist. In the simplest terms, the information seeking process includes the searching, retrieval, recognition, and application of meaningful information. This search may be explicit or implicit, the retrieval may be the result of specific approaches or serendipity, the resulting information may be accepted or rejected, the entire process may be carried through to a logical finish or terminated in halfway through, and there may be a million other impending results (Kingrey, 2002).

Generally, information seeking process by a person is initiated with one or more goals in mind and the person uses a search system as a tool to help attain those goals. Information seeking tasks are used to achieve these goals and these tasks span
from putting specific questions to thoroughly researching a subject. Other tasks fall between these two boundaries. Three main kinds of information seeking tasks include observing a well known topic over time, pursue a plan or stereotyped series of searches to reach a particular target and investigating a topic in an undirected manner. Although the goals vary in different information seeking scenarios, there is a common core revolving around the information seeking component.

Most of the time, the information seeking processes assume an interaction cycle consisting of query formulation, receipt and assessment of retrieved results, and then either bringing the process to an end or reformulating the query and repeating the process until a perfect result set is found (Hearst, 1999). Hearst expressed the standard information seeking process according to the following of steps: start with an information need; select a system and collections to search on; formulate a query; send the query to the system, receive the results in the form of information items; scan, evaluate, and interpret the results; either stop, or, reformulate the query and go to step 4. He represented the information seeking process graphically as given below.

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![Information seeking process](image_url)

Fig. 3.2 Information seeking process: Adapted from Hearst (1999)
Considering the case of IT graduates under study, their information seeking process is also started with an information need and most of the times the need would be related with their academic tasks of teaching, learning and research activities. To find out answers to their queries regarding the needed information they interact with many information intermediaries. The major information intermediaries they are interacting with while seeking information are their university/institute libraries, their personal library collection, the Internet and human resources such as friends, colleagues, teachers, experts in the field, etc. The selection of the information system to acquire needed information is varying from user to user. However, in the ICT era the Internet is a highly preferred source for majority of the IT graduates under study. During the process of searching for the right and best information to meet their needs, the IT graduates use different strategies to search, evaluate, filter and interpret various information sources. If they get satisfied information they would stop the process and else, they would reformulate their strategies till they attain success.

### 3.5.2 Modes of Information Seeking

Generally, information-related behaviour of most of the people consists of absorbing and using the learning and information that they find during the course of their daily lives. As a species existing physically, biologically, socially, emotionally, and spiritually, we take up perhaps 80 percent of all our knowledge through basically being aware, being conscious and sentient in our social context and physical environment. Bates (2002) portrays four modes information seeking when human seek information during the course of their daily lives.

**Awareness:** Being aware is a passive and undirected mode of information seeking. An enormous amount of the knowledge of all an individual knows and learns certainly comes to him or her through this passive undirected behaviour of simply being aware. Being aware is the way we find information that we do not know we need to know and it almost 80 percent of the knowledge we know is acquired by being aware.
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**Monitoring:** Monitoring is a directed and passive mode of information seeking. In monitoring, for things that people have an interest in and for answers to questions they have, people keep a back-of-the-mind alertness. Information seekers do not feel such a pressing need that they engage in an active effort to collect the information of their interest; they are satisfied to catch as it goes by. Though they may have a question in mind and not act to find an answer, but notice the relevant information to answer the question. The action of maintaining current awareness in the information seeking can be referred as monitoring.

**Browsing:** Browsing is the corresponding opposite of monitoring and it is the undirected and active mode of information seeking. In this mode, information seekers actively expose themselves to possibly novel information even though they have no special information need or interest. In effect, through monitoring, seekers locate information that they know they need to know. While browsing, people do not just look at the horizon in one single movement, but rather take a glance, look further at things that interest them, then take another glimpse, and so. In the act of browsing, information seekers apply a general tendency to sample and select from information objects or sources.

**Searching:** Searching is the active and directed efforts to answer questions or develop perceptive around a particular question or topic area. If 80 percent of the information an individual possesses is given by being aware gives us, then directed searching most likely gives one percent, and browsing and monitoring taking up the rest. People expect that the required information will just come along, rather than acquiring it actively. So, it can be said that active searching for information has been a relatively rare act in most of lives. Information seekers invest seriously in acquiring the information skills needed to satisfy their needs only in moments of great necessity or great interest.
3.5.3 Types of Information Seeking

Dating back to first quarter of the twentieth century, productive investigations have been carried out by researchers in the area of information seeking behaviour, moving beyond a system focused approach to a person focused approach. These studies have resulted in the development of numerous theories and models of information behaviour portraying complex relationships among an individual’s professed information need, contexts, information resources, and information systems. Some concepts which are very relevant to the concept of human information seeking are discussed below:

3.5.3.1 Work Related vs. Everyday Life Information Seeking

On observing various studies on information seeking, it can be understood that information seeking behaviour of individuals can be conventionally divided into work or job related information seeking and everyday life information seeking. It was until 1970s researchers continued to give emphasis on studying the information behaviours of people, mainly related to their job related tasks, in their academic and professional settings including scientists, engineers, students, faculty, etc. as study participants. Most of the information seeking theories of early years were derived from studies of scholars or professionals and were limited to describe people’s work or job related information.
information seeking and use processes in the work related environment reflected a single focused current need and are usually ‘active information seeking’ or ‘ore directed information seeking’ (McKenzie, 2003).

Everyday Life Information Seeking (ELIS), often also known as non-work information seeking or citizen information seeking, differs from the of job-related information seeking and it refers to the practices information seeking and use which is connected with important activities not related to professional tasks or not associated with every day work or activities occurring at the working place. For example, the practices employed by academic scientists may not necessarily be same that connected with a person’s efforts to find a new job. The basic concept of everyday life information seeking highlights the reasonable nature of the non-work contexts and it deals with different cognitive as well as expressive informational components which people draw on to familiarize themselves in their daily life like consumption, hobbies, health care, etc.

The attitudes, values, and interests and characteristics people have in their way of life are determinants of the information seeking behaviour of people, by which they monitor various events related to their daily life and the ways by which they seek information to resolve certain problems related to those events. Studies related to the Everyday Life Information Seeking had been surpassed by studies of job-related information seeking and use for a long time until the late 1970s. Since then, widespread surveys were made to explore citizen information needs and seeking. The surveys revealed that people favor informal sources and they hardly ever seek support of public libraries to work out their everyday problems (Savolainen, 1995).

3.5.3.2 Collaborative Information Seeking

The assumption of Collaborative Information Seeking (CIS) was emerged in the recent past only. The basic concept of the CIS is that information seeking is not always a lonely activity but people, while information-seeking, perform collaborating tasks also and work in distinct ways. Research on CIS basically focuses on how groups of people
perform the information seeking activities. Collaboration information seeking is a practical and essential constituent of information seeking and use in many settings like, a group of researchers writing a research paper, a team of engineers operating together to create a plan, a family preparing a long trip, a group of doctors diagnosing a patient, etc. such type of activities involve a group of people appearing together with single purpose, looking for and sharing information to accomplish a single goal. People, as collaborators, seek and use information in a highly coordinated manner, they may be peers or take on asymmetrical roles (Shah, Capra & Hansen, 2014).

According to Prekop (2002) participants in the collaborative information seeking activities perform multiple roles, and quite a few of them enact the same role. He explained various formally assigned and informally adopted roles of collaborators describing the behaviours and the responsibilities they perform while seeking information collaboratively. The seven roles are Information gatherer, Information referrer, Information verifier, Information seeking instigator, Information indexer/abstractor, Group administrator and the Group manager.

3.5.3.3 Inferential information-seeking

It is found that an information literate person, while searching for information, responds appropriately, if preliminary searches yield many search results or too few. If the required information could not be found at all or what is needed is inaccessible, the individual inspired by a measure of the kind of lateral thinking may appear to offer the best available options. This type of information seeking behaviour by users points to the concept of ‘inferential information-seeking’, a generic type of information seeking but not hitherto been the subject of detailed attention by researchers, coined by Andrew K. Shenton.

According to Shenton (2009), in inferential information-seeking process, users move towards the information via some circuitous methods and the process will result in attaining useful information that is broadly related to the perceived need. Apparent
barriers to information seeking are decisive in shaping inferential information-seeking. While seeking for information with clear and well established information need, individuals may face with but some barriers and accordingly, a less direct or inferential approach to access information is undertaken by the users. The information accessed via inferential information seeking process may not be immediately usable and the users may have to apply considerable cognitive efforts for making it appropriate to their own situations.

The inferential theory to information seeking emphasizes that, although it is reported to be a quick decision that learners seek, inferential information-seeking does not present a “quick fix”. Using an indirect route to information access that relates to the need, the information seeker will have to offer considerable effort in cognitively processing the material so as to construct the kind of personal sense essential to resolve the condition that led to information-seeking action. The inferential approach to information seeking is also not only difficult but also it can result in the collection of disingenuous information, if unwisely applied because the acquired information may be too explicit to the context in which it emerged and of little direct significance to the end-user’s own state of affairs. However, an inferential approach occupies itself as a useful weapon in the individual’s armoury when looking for information, with the condition that it is applied appropriately and with discrimination.

As far as the information seeking behaviour of the IT graduates is concerned, their information seeking and use pattern is normally focused on current academic and research needs. So their information seeking pattern can be classed into work related information seeking. In the context of high-powered researches that involve a group of people appearing together with single purpose to accomplish a single goal, the collaborative information seeking process is also witnessed among the IT academic community. Example for such a situation is when a faculty member is conducting research on an important area of IT such as developing a software. He having many
collaborators such as professional colleagues, research scholars, students, etc., all of the group seek and use information in a highly coordinated manner.

3.5.4 Information Seeking in the Digital Age

In the present world of ever changing information environment, the World Wide Web has caused a paradigm shift in the way people traditionally were seeking and retrieving information. In the recent years, we have been witnessing an explosive raise in public interest in information access and communication technologies. Along with this growing enthusiasm, the fast growth of electronically available information sources has made the Web people’s preferred choice of information access. Users have now access to a plethora of web-based information services, including digital libraries, subject based gateways, and web-enabled document collections. Due to the convenience and seamless access to vast amount of information sources, more and more people make use of the Web for their information needs. For information seeking activities, people now depend heavily on the Internet and other ICT based services rather than the library and information centers.

Web information includes a wide variety of topics and serves a broad range of population. Even though, seeking information is a convenient one, gathering useful and meaningful information from the Web, however, has been challenging to Web users. The primary concern in Web information gathering is information mismatching and information overloading; the gathered information may perhaps have much useless and meaningless information. In recent times, the phenomenon of digital divide among the information rich and poor has also raised the questions of developing information competency among the citizens and there is much talks on new types of information literacy like ‘computer literacy’, ‘digital literacy’, ‘multi-media literacy’, etc. On the Web, information users have to adopt different strategies and tactics of seeking information in order to boost their ingestion of knowledge. The pertaining factors regarding the information seeking on the Web are discussed below.
3.5.4.1 Internet Self-efficacy

Self-efficacy is the self belief an individual has in his or her potentials to organize and implement the courses of action required to produce given accomplishment. It is a dynamic concept which changes as new information and experiences are attained. Self-efficacy generally has three components: magnitude - the heights of task difficulty that people judge they can achieve; strength – people’s confidence about its magnitude; and generality - the amount to which the expectation is generalized across situations. Self-efficacy of an individual influences his or her academic learning processes in a positive manner. At the beginning of an activity, users will have differing viewpoints about their ability to obtain knowledge, achieve skills, master the material, etc. Initial self-efficacy differs as a function of aptitude such as abilities and attitudes and earlier understanding. Individual aspects such as objective setting and information processing, along with situational aspects, such as rewards and teacher feedback, influence students while they learn. From these, users gain indications signaling how well they are learning, which they use to review efficacy for further learning (Torkzadeh, Chang & Demirhan, 2006).

Internet self-efficacy is a user’s self belief in his or her abilities in utilizing the Internet and is a vital factor as far as information seeking on the Internet is concerned. It focuses on what a person believes he or she can achieve online now or in the future. It does not refer to a user's skill at performing specific Internet-related tasks, instead, it review a person's conclusion of his or her capacity to apply Internet skills in a more encompassing mode, such as finding information or troubleshooting search problems. All novel information seekers on the Internet face a variety of barriers (Eastin & LaRose, 2000). Novice users are usually found to be less comfortable using the Internet, are less pleased with their Internet expertise and are more liable to come across stress-inducing problem situations.
3.5.4.2 Network Competence

Network competence is the intersection of computer literacy and information skills and it broadly deals with requirements associated with all kinds of actions manifesting the use of the Internet, like shopping online, designing home pages and televoting. Network competence may be defined the abilities an information user have to identify, access and use electronic information from the networked environment. It includes the user’s knowledge of the range, organization and uses of networked resources. A network competent individual should recognize the role of networked information in the information seeking process and utilize his or her capabilities when locating, accessing and using information or assessing the relevance of information found on the Internet.

The idea of network competence dedicates equal attention both to issues of skilful use of ICTs and the thoughtful use of information content available on the Internet. Basically, it is not only the problem of computer skills or the mastery of technical qualities offered by the new search engines (Savolainen 2002). Savolainen explains network competence as the mastery of four major areas as the knowledge about the networked information resources and their organization; the expert in using ICT tools such as Web search engines; judgment of information, such as the assessment of its worth fullness, filtering out inappropriate information and focusing on specific needs; and communication of information by using the tools of computer mediated communication.

3.5.4.3 Information Search Tactics

The Internet consists of so large volume of information that a single search on the Internet can generate an overwhelming amount of information, causing irritation and a feeling of information overload to its users. Besides this, as the size of the Internet increases, efficient access to information becomes increasingly more difficult. The ability of an individual to locate relevant and efficient networked information is conceivably the most significant as much of what we do on the Internet. Information seekers need to
search in a strategic and concise manner to restrict the several possibilities that can inundate a searcher and prevent a virtual blockage that forbids access to information in the networked environment. Clearly, information is useless unless it can be efficiently located and retrieved.

Navigating the Internet has become a necessary literacy skill for today's information users and many users may be experts in using the computer, however, we cannot assume that they have the necessary skills to navigate the Internet and search for information efficiently. An important question then becomes whether or not they hold the required skills, strategies and temperaments needed to efficiently search the Internet while overcoming the challenges inherent within a complex, multidimensional and unbounded online environment (Henry, 2005). Therefore, searching on the Internet is not just a popular activity but is the skill to obtain relevant information.

Searching competently among the massive range of networked resources and locating the relevant information sources while seeking information is daunting task and the same is achievable only by experienced human searchers with clear searching strategies or tactics. Every move an information seeker makes toward the target of finding desired information is seen as a tactic. There can be good, effective and bad tactics; they may help finding right information, but not necessarily always. Furthermore, a tactic may be good in one situation and not in another. Bates (1979) proposed four types of information search tactics as Monitoring Tactics, File Structure Tactics, Search Formulation Tactics and Term Tactics.

To sum up, IT graduates are in the forefront as far as the digital information seeking activities of different types of information seekers are concerned. Investigations on the information seeking pattern of different types of population and the findings of the present study have confirmed that nowadays people depend heavily on the Internet and other ICT based services rather than the library and information centers and printed information resources for meeting their information requirements. Studies also report that
the digital information seeking habit is more prevalent among the information seekers of
science and technology subjects. It is a fact that generally people of technology
backgrounds are always exceptional in adapting to ICT based services. IT graduates
possess significantly the basic qualities such as internet self-efficacy, network
competence and searching skills that have to be there to master in the digital information
seeking patterns.

3.6 INFORMATION SEEKING BEHAVIOUR MODELS

A model, in general terms, can be defined as an outline for thinking about a
problem which can develop a proclamation of the relationships among theoretical
propositions of the problem. Extensive researches have been conducted on the behaviour
of individuals dealing with information since early 1900s and consequently a significant
number of models of human information behaviour have evolved over the years.
Majority of the information behaviour models offer some statements, portraying the
human information-seeking activities, the grounds and consequences of those activities,
the relationships among various phases of those activities, etc through figures and
diagrams (Wilson, 1999). Presently, there exist numerous information behaviour models
presenting a certain segment or a full succession of activities leading to acquiring
information and the work of art of each model varies depending on the perception
assumed by the researchers who developed the model. The following part of this chapter
explains some of the mostly discussed models of information behaviour.

3.6.1 Wilson’s General Model of Information Seeking Behaviour

Wilson’s Model of Information Behaviour, probably the first model in the field of
information behaviour, developed in 1981 by Thomas D. Wilson, presents the way of
thinking when information users interact with information. The model suggests the
information-seeking behaviour is resulted from the recognition of some information need
perceived by the user. The basic needs may be physiological, cognitive or affective. The
contexts for the information need by an individual may be the person himself, the
responsibility that stress of his personal or professional life or the social, political, economic, technological environments around him. In their attempt to find out information to satisfy a need, the information seekers meet with large number barriers and they arise out of the same set of contexts.

According to Wilson’s general model, the information behaviour of users, in their effort to satisfy the information need arose out of various contexts, may take a variety of forms. To meet the needs perceived by them, the users may make use of formal information systems like libraries, information centers, on-line services, etc. or of systems which may perform information functions in addition to a primary, non-information function such as estate agents’ offices or car sales agencies, etc. Besides the information systems, the users may seek help of human beings as well like friends, colleagues, teachers, experts, etc. during their information behaviour. Wilson termed this process of getting information from other people as “information exchange” and called it as a fundamental aspect of human interaction with information. In information exchange, individuals may be in search of facts, advice, opinions, etc. and are received in writing or orally and the process can be termed as information transfer.

During the information-seeking behaviour process users may experience success or failure in their attempt to satisfy their perceived information need. In case of the successful information behaviour, completely or partly satisfied by the perceived need, individuals make use of the information found. If they fail satisfy the need, they reiterate the search process until they satisfy the need. The model also shows that, either they satisfy or fail to satisfy the need, the information found may also be recognized as being of probable importance to the need of other users and, accordingly, may be transferred to such users. Wilson’s model of information seeking behaviour can obviously be portrayed as a macro-model or a model of the gross information-seeking behaviour. The model put forward how information needs are arisen in information seekers’ mind and different types of barriers that may avert the search for information (Wilson, 2006).
3.6.2 Dervin’s Sense-Making Model

Brenda Dervin developed the Sense-Making Model of Information Behaviour in 1983 and the concept of ‘sense-making’ is the focal point of her model. According to Dervin (1983) the term “Sense-Making” is a label for a logical set of concepts and methods used in the attempt of studying the way information seekers construct sense of their worlds of information needs and use information. The basis of Sense-Making approach rests heavily on some assumptions and based on those, the Sense-Making approach hypothesizes that human information seeking and use is not a "transmitting" activity, but relatively "constructing" activity. Based on this the Sense-Making focuses on how individuals use the observations of others as well as their own observations to construct their concepts of reality and use these concepts to guide their information behaviour. The Sense-Making model, as shown in Fig. 3.5, rests on three variables; a situation, a gap and the use.
Situation: It refers to situations in time and space, which defines the context in which information problems arise and the sense is constructed. These are the situations that predict information seeking and information uses. The different situation movement states of the users seen as different ways of being stopped in movement through time-space give rise to question-asking and information seeking.

Gap: The gaps seen as needing bridging, the "information needs" or the questions people have as construct sense and move through time-space. The gap identifies the difference between the contextual situation and the desired situation.

Use: It refers to the uses to which the individual puts newly created sense as information helps and hurts. It is the outcome, that is, the consequences of the sense-making process, getting new or revised understandings, sense, pictures.

According to this model, all people live in time and space and there are universals of sense-making that allows more successful prediction and explanation. The means to identifying these universals lies in focusing on the human mandate to move through time-space. This then draws attention to the ways in which movement can be stopped as a perspective for looking at situational conditions, the kinds of gaps humans need to bridge in order to keep moving as a perspective for looking at sense-making or information needs, and the different ways in which people assess success in gap-bridging as a
perspective for looking at information use or effects of information-sharing and communicating. Sense-Making model observes the connections between situations and information needs, between information exposed to and uses. As per the Sense-Making model, it is stated as hypothesis that people who are sense-making have gaps in situations and assess the value of information, regardless of how constructed, in terms of the uses to which they can put it.

3.6.3 Ellis’ Behavioural Model of Information Seeking

David Ellis developed the Behavioural Model of Information Seeking in 1987 with an objective to develop an empirically based model of the information seeking behaviour of academic researchers that could enlighten the development of effective information retrieval systems and which might be of more general interest for researchers in the information studies field. The prepositions of the approach were that the complex prototype of information seeking behaviour was a comparatively small number of different types of activities and the model characterized them as starting, chaining, browsing, differentiating, monitoring and extracting. The behavioural model itself consists of the relation between these components. These can interact in various ways in different information seeking patterns (Ellis, 2005).

![Ellis' Behavioural Model of Information Seeking](image)

Fig. 3.6 Ellis’ Behavioural Model of Information Seeking: Adapted from Ellis (1987)
Ellis (1987) interviewing a range of academic social scientists analyzed and broke down their information seeking patterns of into six as characteristics as given below.

**Starting**: ‘Starting’ in the information seeking includes those activities which shape the initial search for information by recognizing sources of interest that could provide as the origin of the search. It refers to the characteristics of the information seeking patterns of researchers who are beginning work in a new area or on a new topic. A better starting helps the researchers to quickly establish the other characteristics of information gathering and time and again something emergent is being desired at the starting which can be developed and added to as time goes on.

**Chaining**: The characteristics patterns of information seekers searching for information which engage following citation connections between materials is referred to as ‘Chaining’. As the information seekers set off from the original key reference or references to material cited in that materials, starting can switch straight away to chaining. Researchers often perform two forms of chaining: backward chaining and forward chaining.

**Browsing**: Browsing is a familiar form of information seeking which helps in identification of materials and providing direct access to materials and a diverse form of activities have been associated with it. Excepting the merely random browsing, the major recognized forms of browsing can all be understood as semi-directed or semi-structured searching in an area of prospective interest. Typically, researchers browse, as a means of maintaining current awareness.

**Differentiating**: After the successful browsing, the researcher develops knowledge of the differences between the sources of material and this activity of discriminating between different sources or types of source of information by the individuals while seeking for information is referred to as differentiating. The researcher, while browsing, become able to identify different sets of sources in terms of the differing prospects of their having useful material and it results in differentiating. By means of differentiating, the
researchers can focus on those sources which they professed as having the highest likelihood of containing material which was pertinent and of the right type.

**Monitoring:** The activity of keeping up-to-date with the progress in an area by following exacting sources regularly is referred to as ‘Monitoring’. The constant monitoring of developments in the field of interest is a significant part of the information seeking activities of many researchers. Typical ways the individuals monitor the developments in their fields are through the use of informal contacts, monitoring services and research directories, journals or newspapers, and publishers' catalogues.

**Extracting:** Extracting is one of the most directed and focused characteristics of information seeking activities, which refers to the activity of systematically going through a particular source or sources and extracting information from that source. For the effectual extraction of materials, individuals need to set aside discrete and considerable periods of time for working through the source from which the material is extracted.

### 3.6.4 Kuhlthau’s Information Search Process Model

Carol C. Kuhlthau developed the Information Search Process (ISP) Model in 1991 from the user’s perspective as exposed in a series of studies by her. The Information Search Process Model is the product of more than two decades of experimental research that began with a qualitative study of secondary school students, verified and refined through quantitative and longitudinal methods of diverse library users and further developed in case studies of people in the workplace. Kuhlthau (1991) stated that in order to expand the state of knowledge on a particular issue or topic, an individual engage in a constructive activity for finding meaning from information and the process results in the Information Search Process.

The ISP Model presents seeking information as a way to realize a goal and presents that there are six stages in the process of information seeking. The model
identifies that the individuals experience affective, cognitive and physical realms common to each stage of information seeking. Central to the ISP is the conception that the users feel affective and cognitive uncertainty and it increases and decreases in the process of information seeking. Uncertain, vague, and ambiguous thoughts instigated in the minds of people become unambiguous, clearer and more focused as they progress through the search process. They become more confident and certain in terms of the feelings of anxiety and doubt they were having at the beginning stages.

![Model of the Information Search Process](image)

**Fig. 3.7 Kuhlthau’s Information Search Process Model: Adapted from Kuhlthau (1991)**

The model of the information seeking process expresses a holistic observation of information seeking from the user’s perspective and the six stages in information seeking are:

**Initiation:** According to the ISP Model, ‘initiation’ is the first stage in the information seeking process and it is when an individual becomes aware of a lack of knowledge or understanding he/she has to deal with a topic or issue. In this stage, the feelings of uncertainty and apprehension are common among the individuals. At this position, the task of an individual seeking for information is simply to identify a need for information. The thoughts individuals have rest on pondering the problem in detail, understanding the
task needed, and linking the present problem to experience and knowledge the individual has in the past.

**Selection:** The second stage is ‘selection’ stage, during which the primary task of the information seeker is to recognize and select the general topic to be explored or the approach to be followed to deal with the problem in hand. After the selection is made, a feeling of optimism is seen in the information seeker and he/she become ready to begin the search process. If the selection is delayed or postponed, feelings of anxiety are expected to intensify until the choice is made. Characteristic actions in the selection stage are to confer with others. At this stage, some people try to perform a preliminary search of available information, and skim and scan for an overview of optional topics.

**Exploration:** Exploration stage of the information search process is characterized by feelings of confusion, uncertainty, and doubt and they normally increase throughout this stage. Information seekers need to expand personal understanding about the topic during exploration and, therefore, the task at this stage is to explore information on the general topic. The lack of ability of the information seekers to express the required information accurately at this stage makes communication between them and the system discomfited. Tracing information about the general topic, reading to become informed, and relating new information to what is already known include the typical actions in this stage.

**Formulation:** The primary task at this stage of formulation evolve of forming a focus from the information encountered by selection and the typical thoughts are identifying and selecting ideas in the information from which to form a focused perception of the topic. The feelings of uncertainty reduce and confidence increases at this point and, therefore, the stage of formulation is regarded as the decisive moment of the information search process. A focus in the search process is comparable to a hypothesis in the process of construction and, if construction is take place, the topic happens to be more personalized at this stage.
**Collection:** The distinctive task evolved in the ‘Collection’ stage is to congregate information related to the focused topic. At this point the information searching process, the communication between the information seeker and the information system functions most effectively. The typical thoughts in this stage are centered on defining, extending, and supporting the focus. As general information on the topic is no longer appropriate after the formulation stage, actions during this stage involve around choosing information pertinent to the focused perspective of the topic and preparing detailed notes. The users will have a clearer sense of direction at this stage and thus they are able to indicate the need for relevant, focused information to intermediaries and to systems and conduct a wide-ranging search of all available resources.

**Presentation:** The final stage in the information search process as per the ISP Model is ‘Presentation’. The characteristic task in this stage is to complete the search process and to prepare to present or otherwise use the findings. The feelings a users have commonly at this stage of relief with a sense of satisfaction if the search has gone well or disappointment if it has not and typical thoughts of the users focus on terminating the search with a personalized amalgamation of the topic or problem. Actions in the presentation stage include a summary search in which decreasing relevance and increasing redundancy are noted in the information encountered.

**3.6.5 Wilson’s Revised Model of Information Behaviour**

Wilson (1997) reviewed and analyzed the large number of information behaviour literature in terms of the concept of information need, intervening variables in information-seeking behaviour, information-seeking and acquisition behaviours and information processing and use to present a revised general model of information behaviour. As a result of the review, Wilson's 1981 model of information seeking behaviour was expanded to provide a more effectual general model for the information behaviour, from which all may learn and which all can embrace as a general model and may provide to incorporate studies for the benefit of future research in a variety of fields.
Wilson's revised model portrays a series of information activities consisting of making out the information need to using the acquired information. The model also presents diverse intervening variables, which influence the information behaviour considerably and some activating mechanisms which trigger the process.

Different phases of the model are discussed below.

**Information seeking context:** Information seeking is always perceived by a need and the need is always inclined to the context of information seeking. The context can be the information seeker him or herself, or the role the individual plays in his or her work or life, or the social, economical, political, technological, etc. environments surrounding the individual. The information needs of an individual vary from those of others and the needs of the same individual differ depending on the changes in situation. The role of the individuals in their personal and professional life affects their behaviour patterns for that particular role as definite roles specify specific information needs. The environment conditions surrounding the information seeker also cause occurrence of specific needs.

**Intervening variables:** The model suggests that there exist several intervening variable that determine significantly the information behaviour and are psychological, demographic, role related or interpersonal, environmental and source characteristics. Psychological variables include attitude on life and system, political direction, method of learning, subject knowledge, etc. Demographic variables comprise of the age, sex, economic and social position, education and job experience, etc. Role-related variables cover professional nature, requirements, organizational position, level of responsibility, etc. Environmental variables encompass the economical situation, stabilization, technology, type of organization, organizational culture, etc. The source characteristics include the currency of information, suitability, and dependability.

**Activating Mechanisms:** The model include a thought of ‘activating mechanism’ between 'person-in-context' and the decision to seek information that stimulate and trigger off information seeking. The activating mechanisms have been explained by a
stress/coping theory. An individual engage in seeking activities only when he is certain that the possessed knowledge is not sufficient to understand the situation and make a decision. In such a situation, stress occurs in the individual and results in information seeking and depending upon the amount of stress the motivation to look for information also varies. Another activating mechanism is also inserted between the determination of need and the initiation of action to satisfy the need and the concepts has been explained by the risk/reward theory and the concept of self-efficacy of social learning theory. The risk/reward theory explains that the amount and nature of perceived risk result in giving up information seeking and why in some situations people seek information and in some not, and why certain information sources are more frequently used than other. Another important stimulator of information behaviour is the self-efficacy of social learning theory which estimates whether a person can successfully carry out the behaviour or not. It affects strongly decisions to undertake necessary activities, and determines whether a person even try to cope with the situation.

**Information seeking:** There are four modes of information seeking, namely, passive attention, passive search, active search and ongoing search. In the passive attention mode, the individual without any purpose of acquiring information absorbs information from the environment. While, in the passive search mode of information seeking, the seeker display a behaviour by which he or she acquire the information which is relevant to the individual. The third mode is active search, in which the information is sought actively and purposefully by people. The ongoing search mode refers to the situation where continuing searches are performed by seekers to update or expand their interested area of information.

**Information processing and use:** Information acquired by an information seeker is processed and used for the purposes for which the same has been sought and which provides the link back to the need arising situation of the person-in-context.
3.6.6 Model of Professionals’ Information Seeking Behaviour

A number of models focusing on a precise aspect of the information-seeking process of a specific professional group or subgroup have been developed. Despite having certain common postulations, however, in terms of the conceptual frameworks and graphic representations, these models of various types of professionals were as incredibly diverse as the professions they characterize. Gloria J. Leckie, Karen E. Pettigrew and Christian Sylvain developed the Model of Professionals’ Information Seeking Behaviour in 1996 with an aim to find out the generalized significant themes of the information seeking of professionals.

According to Leckie et. al (1996) to establish the information seeking behaviour of professionals, a clear understanding of the distinction between the works of various professionals from that of other groups like scientists and scholars is required. The term "profession" has been used in the common sense to mean all those service-oriented occupations having a theoretical knowledge base, requiring extensive formal postsecondary education, having a self-governing association, and adhering to internally
developed codes of ethics or other statements of principle like that of doctors, lawyers, teachers, clergy, nurses, physiotherapists, librarians, accountants, and engineers.

Basically, the model assume that the professionals, in the course of daily practice, perceive particular information needs prompted by the roles and related tasks undertaken by them and which, in turn, give rise to an information-seeking process. However, their information seeking is significantly influenced by a number of intervening variables, which can ultimately affect the outcome. The model presents six components of professional’s information-seeking process, which can occur simultaneously, thus representing the true complexity of a professional's work life.

![Diagram of Professional Information Seeking Behaviour](image)

**Fig. 3.9 Model of Professionals’ Information Seeking Behaviour: Adapted from Leckie et. al (1996)**

The specific features and components of the model are described as follows.

**Work Roles and Associated Tasks:** The work life of professionals is complex and a diversity of roles are played by them in the course of their daily work. The most important role, possibly, common to all professionals, is that of service provider creating and delivering a variety of services to their clients. Most of the professionals also play the
role administrators and managers in their private practice as well as in institutional settings. Professionals also play the role of a researcher as well as an educator. Along with these roles, professionals also are students keeping up their work with the advancements in their field and upgrading knowledge and talents by taking courses. The model assumes that professionals may have diverse information needs due to their varying tasks stemming from various roles and the information seeking of professionals is highly linked with the performing of different roles and its related tasks.

**Characteristics of Information Needs:** Information needs of professionals are normally arisen out of situations pertaining to specific tasks that are associated with the work roles played by them. Their information need is varying and can be influenced by a number of intervening factors relating to both the individual as well as the general characteristics of professionals. The individual characteristics that influence the formulation of the information need include the nature of the specific profession and individual demographics such as age, career stage, area of specialization, and geographic location. The general characteristics that enter into the equation of information needs are context, frequency, predictability, importance and complexity. The information-seeking activity is influenced by the level of complexity, importance and urgency, and whether the information need is anticipated or unexpected.

**Sources of information:** Professionals seek information from diverse channels of information including formal or informal, internal or external, oral or written and personal channels and various sources include colleagues, librarians, handbooks, journal articles, and their own personal knowledge and experience. The difference in the sources professionals use affects the ways in which works are performed in various professions and may add to usual patterns of information seeking that are common to certain groups. The important aspects that make a professional different from others is that the advanced body of specialized knowledge that an individual possesses to practice a specific profession and therefore professionals rely on their own personal knowledge and experience first when faced with a work-related decision or problem.
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**Awareness of information sources:** Direct or indirect knowledge professionals having on various information sources and the awareness about the process or about the information retrieved plays a central role in the overall information seeking process and establishes the path of information seeking. Normally, professionals consult a source for information if they are familiar with it and have had prior accomplishment using that source. Trustworthiness, packaging, timeliness, cost, quality and accessibility are also dominant factors that influence the use of the sources. Similar to the other components of the model, these factors are also not constant but are interrelated. Professionals use their own awareness of information sources and assess the comparative significance of various factors over others during their information-seeking.

**Outcomes:** Outcomes are referred to as the results of the information-seeking process and in the case of professionals, meeting the information need and accomplishing the task at hand can be considered as the optimal outcome. On the other hand, it may also happen that the outcome of the information seeking is that the need is not satisfied and further information seeking is required. The model conceptualizes this situation as a "feedback" loop. On realizing that the information gathered was not very exact, a second round of information seeking is embarked by the individual using completely different merge of sources and the pattern of awareness factors that come into play may also change here. The feedback loop also illustrates that an information-seeking outcome is not one-dimensional as an outcome from one task related with a particular role may, rather unpredictably, assist the professional in another role.

3.6.7 **DISCUSSION ON MODELING IT GRADUATES’ INFORMATION SEEKING**

The assessment of the concepts portrayed by various fundamental information seeking behavior models, discussed above, review of various information seeking patterns of academic communities in different settings and the findings of the present study, the investigator could make the following remarks regarding the outline of information seeking of the IT graduates. The information seeking pattern of IT graduates
incorporate various information seeking stages portrayed by many of the models. As exposed by the Wilson’s general model, information needs of IT graduates arise out of their various academic as well as non-academic accomplishments. But their rigorous information seeking activities take place when they seek for academic information. To meet the needs perceived by them, they make use of formal information systems such as libraries, information centers, Internet, etc. or human beings such as friends, colleagues, teachers, experts, etc.

Both formal and informal information systems are found to be very helpful to the IT graduates for the transfer of required information. In the formal systems, the Internet has much role more than even the libraries in the present time. They make extensive use of various online services such as online databases, consortia, subject gateways, institutional repositories, social media, etc. to meet their needs. The human interactions also have predominant role. For students, information and knowledge transferred from their classmates, seniors, teachers and other experts is highly valuable. Knowledge is gained by the researchers and teachers as well through their interaction with colleagues, experts and other collaborators.

During the information seeking process through the information systems or through other people most of the users succeed in their effort of retrieving required information. At the same time, some of them experience failure or emerge as partially satisfied in their attempt to convince their perceived information need. In case of the successful information behaviour, the individuals make use of the information found. If they fail to satisfy the need, IT graduates having good information seeking skills, do not cease their efforts, rather they try to reiterate the search process changing their strategies until they satisfy the need.

In the process of interacting with formal and informal systems of the IT graduates, there are several phases similar to the Ellis’ behavioural model. The first phase is at the starting stage when the individual is having an information need. Examples for this stage
are like a student is in need of some information related with his/her syllabus, a researcher needs information for starting the research works, a faculty member needs information to deliver a lecture on a new topic, etc. In this stage, they shape the information seeking process by recognizing the sources that could provide the information.

If they recognize and choose the information system and sources, they start to search for the information. During this phase of information seeking they thoroughly explore various information sources employing various search strategies such as simple as well as advanced searching techniques. They sometimes simply browse various sources, for example, by examining the contents pages of journals in a broad subject area, checking the periodicals held by the library, simply browsing along the content pages of databases, etc. They also indulge in chaining activities following citation connections between materials and reach to related information sources.

In the next phase, IT graduates try to differentiate the right and required information after browsing, chaining and searching various sources. Graduates having a realistic awareness of potential sources and a reasonably sophisticated knowledge of the differences between these sources become able to properly differentiate in their information seeking pattern. It is visible among graduates having the habit of regularly monitoring developments in their fields through journals, colleagues or associates, social media, etc. In the final phase, they extract the right information they found to meet their specific needs. During all these phases, graduates also face with many feelings of uncertainty and anxiety as portrayed by Kuhlthau’s ISP model. Individuals who could effectively handle these situations succeed in their efforts and others fail.

3.7 CONCLUSION

Information in the present era has evolved as a powerful item that change the way people live and has direct impact on almost every areas of life creating new environments to realize people’s aspirations. In an information society, it is highly important to know
the way by which people deal with information. The field information seeking behaviour conceptualizes all the behaviour in which information is sought, searched, identified, acquired and used by people either passively or actively. For more than one century, from its sprinkled initial stages in the early twentieth century, the field of information behaviour research has now come a long way to establish itself as an important area of doctoral research in the field of library and information science.

For several decades and more, rigorous investigations have been conducted by researchers in the field to have a much profound and sophisticated understanding of how people interact with information. The research in the field had been so extensive that it resulted in the drive to establish theoretical and conceptual structure for the discipline beginning with the developments of information-seeking process models and then researchers moving further on to test those models undertaking their research within specific theoretical frameworks employing the cognitive approach, phenomenology, social constructivism, activity theory, etc. The field had now evolved as one with a healthy theoretical diversity with a large number of theories and models. Based on these theories and models, intensive researches are going on the field on almost every walks of information scenarios.

It is clear that presently the technological improvements of one kind or another drive the research in the area of information seeking behaviour and will continue to drive the research in the future as well. In today’s era of information and communication technologies, where the way people think about and look for information has changed drastically and information seekers increasingly employing the Internet for their information seeking, the subjects of information seeking behaviour research plays an important role as researchers has taken up large number of studies on the Internet-based information behaviours in recent years. For, example, the ideas like cloud computing and social networking systems are focus of substantial interest among the information science researchers. In short, it may be said that in the future the nature of information and information need of users and the situation of information use may change, but the need
for exploring the methods and strategies people employ to identify, acquire, use and share information of all kinds will exist and thus the field of information seeking behaviour will also stay alive.

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