2.1 Introduction

The purpose of the literature review is to provide an in-depth analysis of previous studies and researches undertaken to study tourist information needs, information behaviour, tourism in Kerala and application of Information and Communication Technology in tourism. For this purpose a good number of books, articles in primary periodicals, secondary periodicals- Library and Information Science Abstract (LISA), LISA Plus, Web of Science-, e-journals available through digital libraries - Emerald, Science Direct, Sage online, EBSCO, Taylor and Francis- and free online journals were studied. Literature dealing with the following aspects of the present topic were analysed and the most relevant publications are discussed in this chapter.

i. Information needs
ii. Information seeking behaviour
iii. Kerala Tourism
iv. Tourist information needs
v. Tourist information behaviour
vi. IT applications in tourism industry.

Analysing the behaviour of users of information has been the focus of a large number of studies as reviewed here. Some of them are theoretically and methodologically significant and relevant to the present study. Many of the literature reviewed are case studies on information needs and information seeking behaviour of tourists and different types of users like academicians, lawyers, students, doctors, etc.

2.2 Information Needs

“An information need is a recognition that your knowledge is inadequate to satisfy a goal that you have” (Case 2002). The study of information needs dates back to 1948 when Bernal and others presented a paper on scientific information in the Royal Society conference. Since then, a considerable body of literature has been produced dealing with information needs of both individuals and groups in a variety of contexts. In 1962, American information scientist, Robert S. Taylor used the term information need to
describe an inquirer’s desire to locate and obtain information to satisfy a conscious or unconscious need.

A survey of the information needs of scientists in pure sciences was conducted by Devarajan\textsuperscript{1}. The trend in interdisciplinary and multidisciplinary nature of research in pure science is increasing. Scientists in pure science like to read primary journals more than any other types of information sources. *Physical Review letters* is the most important journal among physicists, *Journal of American Chemical Society* is the most favorite among chemists and *Indian Journal of Medical Research* and *Nature* are the favorite journals among biochemists. The scientists in pure science use indexing and abstracting periodicals as the important channels to seek information, and the subject catalogue as the primary tool for literature search. Subject bibliographies constitute their second choice for literature search. The majority of users in pure science subjects are aware of the services offered by university library system. Reference service is the most popular among them.

A case study by Devarajan\textsuperscript{2}, on the information needs of research scholars in humanities disciplines of University of Kerala found that majority of the scholars prefer to use textbooks rather than reference books and periodicals. The rating for use for non-book materials was very low and human sources of information are depended by a small number of them. The existing collection in the Kerala University Library in the field of humanities is inadequate to meet the requirements of the scholars. The publishers’ catalogues and announcement bulletins are the main source for the current information. Even though the service of University Library is not adequate to meet research needs, scholars use the library regularly because it is a significant channel of information. Further it is found that, information needs of the scholars are highly influenced by the phase of their research.

A study of management information sources for university departments was carried out by Loughridge\textsuperscript{3}. The study focused on the role of libraries as source of management information vis-a-vis central administrators and informal sources. It was revealed that the department heads did not look upon the library as a source of management information. They believed that libraries are for academicians and researchers and that management information should come from the central administration and ancillary sources but mostly ended up getting them from ancillary sources alone.
The criteria for assessing information needs of users were discussed by Cummins\(^4\). Personal interaction and liaison through regularly scheduled meetings and surveys can be used for assessing the need. For making better service to the users, one should first identify and study the products and the services one can offer and then carry out interaction with potential users to select the type of services to be made available.

Scheiber et.al.\(^5\) surveyed public health researchers and practitioners in Germany regarding information retrieval issues. The results indicate serious shortcomings in information supply and filtering in the field of public health. A surprising finding of the study was that many of the commonly used German literature could not be found in the two German public health databases HECLINET and SOMED, let alone in other public health databases like MEDLINE, EMBASE or HEALTH. The study also brought out the effectiveness of imparting a database counselling to the prospective users of such databases.

In a study, Otike\(^6\) investigated the information needs and seeking behaviour of lawyers in United Kingdom. The study identified that information needs of lawyers are influenced by their nature of work and the purposes for which the information is sought. 53.8% of the lawyers need detailed information which they obtain from articles in law journals, judgments in law reports, or issues raised in textbooks. Some people use brief and factual information from textbooks, loose leaf publications, government reports, law reports, lecture notes, etc. to meet their daily information needs, while some others use human sources of information like, personal contacts, colleagues, senior lawyers, etc.

The subjective aspects of user’s information needs were studied by Kawatra\(^7\). The interests of users fall into three regions; umbral, penumbral and alien. Umbral is the specific sub contents in which a user is presently involved. Those subjects which are helpful to the users in making more extensive study of the specific topic is called penumbral and alien subjects are not directly related to specific topic of study of the user but may needed for reference. He described characteristics of needs as subject content, nature, quantity, processing, speed of supply of information, specificity, processing and quality of information. There are two methods for analysing user’s information requirements- direct and indirect. Direct method includes studying of information
gathering habits, reading habits, service performance and flow of information among users. Indirect method includes analysis of library records, citation analysis, etc.

A framework for the assessment and analysis of information needs was put forward by Nicholas\textsuperscript{8}, based on the findings of research projects related to scientists, journalists, social workers, politicians, stockbrokers, academics and the general public in the use of information systems. The kind of job, culture, personality, information thresholds, level of information awareness, gender, age, time availability, access to resources, etc. are the factors involved in meeting the information needs. The characteristics of information need are found to be subject, function, nature, intellectual level, viewpoint, quantity, quality, currency, speed of delivery, place of publication, processing and packaging.

Cohn et.al.\textsuperscript{9} conducted a study among women treated at Virginia hospitals, to explore hereditary breast cancer information needs of early onset breast cancer survivors. Young breast cancer survivors are at increased risk, compared to other breast cancer survivors, and have distinct and substantial information needs. These include (1) better understanding of their health and current or potential health problems (2) greater ability to manage their health and make health care decision and (3) better adjustment to potential or current health problems related to breast cancer or breast cancer risks. The study revealed that women who sought information were mostly interested in topics related to cancer risk for their family, particularly their children. Regarding the sources of information, the study demonstrated that the medical oncologists served as the most common and most valuable sources of information about breast cancer. The other influential sources of information were pamphlets, magazines, and the World Wide Web, and the potentials of these sources to generate and distribute information to individuals and families so as to complements the information supplied by health care professionals is significant. This would enable clinicians to focus their time and efforts on addressing patient and family-specific questions and concerns. However, misleading portrayals of breast cancer in the media and popular magazines, particularly those targeting a female readership are serious concerns and it is difficult for an individual to assess the accuracy of the information. If magazine articles and the Internet sites available to patients and families are of poor quality and contain inaccurate, unclear, or misleading information,
clinicians may find themselves spending time dispelling the misconceptions and fears generated by these sources.

Bruce\textsuperscript{10} found that response of an individual to information can generally be classified into three. Depending on his anticipated information need he may 1) keep the information in a personal collection, 2) leave it as such so that it may be accessed later if needed or 3) ignore or destroy it because it is not likely to be useful. Despite this classification, the individual responses are multidimensional and dynamic. Based on these observations he argued that the effectiveness of information is subjective and biased by its anticipated need. Library services like cataloguing, classification and indexing are based on the anticipation of information needs of the users and the collection is organised based on these anticipated needs.

A study by Gamage\textsuperscript{11} focusing on information retrieval by environmental scientists in Sri Lanka revealed that availability and easy retrieval of up to date information is a major bottleneck. This is caused by library collections which are archaic, inadequate and improperly stored, many times in buildings separate from the main university library. They are keen to get access to electronic resources and look forward to an environmental information network for the university libraries being setup at the national level.

Information needs, seeking behaviour, and preferences of doctors in UK, with reference to Evidence Based Medicine was studied by Davies\textsuperscript{12}, in the context of massive production of electronic resources in this area and the rapidly increasing computer usage, access, literacy, etc. among the doctors. A unique data collection method was used in the study, by utilising clinical librarians as data collectors which helped in identifying the unperceived needs of information by doctors for their day to day work. Clinical librarians acted as participant observer data collectors worked in most situations. This research identified that doctors in the UK asked roughly one question for every four patients they have treated. Despite the advances and ease of use of electronic resources, the preferred information source was colleagues. Shortage of time was the major barrier for accessing electronic information to aid clinical decision making.

In contrast, a study among humanities teachers Muhammad Tahir et.al.\textsuperscript{13} found that they prefer printed information to online and multimedia resources. Reference books
from personal collection and departmental library are the primary sources for teaching. Supplementary information usually comes from subject experts and colleagues through personal discussions and e-mails. Such sources are also valuable for carrying out research and its guidance.

In a study by Mchombu et.al.\textsuperscript{14} on information needs and sources of caretakers and inmates of orphanages and poor homes in Namibia were analysed quantitatively and qualitatively using interviews, questionnaires and group discussions. The information needs are vast and diverse; the most critical being related to social security schemes, educational concessions, identity documents, child care support and health services. It was found that both the caretakers and inmates were relying on interpersonal communication as the main means of information and the sources included social workers, teachers, friends and relatives. They also used audio, visual and printed media and church sermons as information sources.

Shih et.al.\textsuperscript{15} proposed an Information Needs Radar Model (INRM), to describe information needs in terms of the content user, content usage, and content feature, and further analysed whether content satisfies the information needs. Information seeking is the act of obtaining information from existing resources in both human and technological contexts, and past studies have applied the behaviour of users to determine the user needs. The major tools for information seeking like search engines, information retrieval, and recommendation systems have a limitation in describing the overall information needs of the users. The information seeking architecture based on radar model has a stable and better performance irrespective of data size, which demonstrates the applicability and effectiveness of the architecture. The radar model can easily satisfy the customer demands and it is not only helpful in the development of information filtering, recommendation systems, and knowledge based systems, but also enhances the reliance and loyalty of users towards the system. Enhanced customer satisfaction and loyalty in turn results in the information system being well maintained and updated, giving further benefits to the customers.

Strezovska\textsuperscript{16} analysed the intricacies in translating a tourist brochure for potential foreign tourists. The brochure should, not only give information but also generate a feeling of trust and homeliness. For this, information should be clearly presented, preferably from the perspective of the potential tourist. To woo a first time tourist, the
brochure should be able to fascinate and captivate, whereas to be useful for a tourist who had been there earlier, the brochure should give up to date and accurate information. Both aspects can be covered in a single brochure where the cover pages and front pages are designed to attract and the remaining pages designed to give accurate information. These aspects can as well be delinked to generate separate brochures for these target groups.

2.3 Information Seeking Behaviour

The term "Information seeking behavior" generally covers what the individual do to frame and expresses the information needs, search and get the information, evaluate, select and use the required portion. This behavior is influenced by the context and purpose as well as native skills, preferences and barriers perceived or encountered by the individual. Extensive studies and researches were done in this area for analysing the information needs of both individual and group, in a variety of contexts.

Wilson and Walsh\textsuperscript{17} analysed information behaviour in an interdisciplinary perspective to provide an overview of information seeking behaviour, information need and information acquisition. A detailed study of intervening variables which have great impact on information seeking behaviour and information acquisition is presented. The variables are personal characteristics, education level, demographic variables, (age, sex and other factors), economic variables, social variables, environmental variables, situational variables, source characteristics (means of access and credibility), etc. This will help to understand the phenomenon of information seeking behaviour of different types of people in different contexts. Information provider or a librarian can apprehend behaviour of a user and in the light of user behaviour, better services can be provided.

In a research study on the information seeking behaviour of journalists, Fabritius\textsuperscript{18} examined the characteristics of different digital information sources, its role in journalism and the ways in which the journalists utilise these sources for their day to day work. The searching behaviour was investigated by means of seven hierarchical concepts: journalistic culture, medium, subject, work practice, item processing, information seeking and information retrieval. The information seeking behaviour and retrieval are very much affected by the approach to information sources and the indented application of information.
In a paper Gaslikova\textsuperscript{19} discussed some common problems connected with information system development. An information need arises in a context or event. These contexts can be described by means of different parameters such as time of information seeking, types of participants and their demographic, social, professional, educational and behavioural characteristics. The author emphasises on close interrelationship between the designers of systems and their potential users, so that need based information systems could be developed.

Lumande and Mutshewa\textsuperscript{20} studied the types of information resources used by science academics of the University of Botswana, the ways they learn about the existence of information resources and how they generate academic ideas. Journal articles are the preferred source of information, followed by text books and Internet. Library catalogue is the most depended tool for locating information followed by abstracting services and conversation with colleagues. 74\% of the respondents generated new ideas through discussions with colleagues. The participants search information mostly for career development, for fulfilling professional needs and for satisfying their personal ego. The main library (University of Botswana library) is depended by majority for locating information, followed by consultation with colleagues. 14.8\% depend on direct purchasing. The academic staff disseminates information mostly by teaching, research papers, seminar presentations and through broadcasting.

Five models of information searching and seeking behaviour were reviewed by Wilson\textsuperscript{21} in order to find out the interrelationship between the components of an information retrieval system. The five models are Wilson model of information behaviour (1981), sense making theory of Dervin (1983), behavioural model of information seeking strategies of Ellis (1993), Khulthau’s model (1991) and Wilson model (1996). The author finds that, all models are concerned with general behaviour of information seeking and the use of computers in information retrieval systems. There should be clear cut rules for the design of interactive systems on the basis of information behaviour search.

Heinstrom\textsuperscript{22} has studied how personality of users influences learning and information behaviour. Personality is a subject of psychology and it gives essential understanding of search behaviour. There are five models of personality - extraversion, agreeable, conscientiousness, neuroticism and openness. The study finds the relationship
of these five models of personality with learning style and search behaviour. Different persons search information in different ways. Information need is a highly conceptual subject and the information seeking behaviour depends on user’s subject, working environment and organisation he works for.

A case study was undertaken by Wales\textsuperscript{23} to analyse the information seeking behaviour and information use of veterinary practitioners. The preferred information sources of veterinarians for diagnostic and therapeutic information are journal articles, text books and conference reports other than Internet and electronic databases. Journals are the most popular sources for current awareness also. MEDLINE database is the preferred online reference source. Professional meetings, courses and seminars are the popular non-documentary information sources. The order of preference of communication channels was e-mail, letters, Internet sites, fax, and telephone. 66\% of the respondents used Internet for work related purposes and 11\% for non-work related purposes, while 54\% used it for many purposes. Among the Internet respondents, 78\% never used online public access library catalogues and 74\% never used news groups, publishers’ websites or online newspapers in their veterinary work. Majority of the respondents used e-mail for contacting other veterinarians. The most popular type of information exchanged is clinical and case related information followed by research information. All of the participants were in need of enhanced library services and access to full text journals.

Wein\textsuperscript{24} identified the importance of teaching online information retrieval skills to students of journalism courses. New knowledge is developed by merging information from different sources. For attainment of knowledge, information retrieval skills are very important. Information retrieval systems have features that help to find information in such a way that irrelevant data is excluded while relevant information is found. The study finds out that only a small community of journalists is adept in utilising new technology for information retrieval. In large newspaper companies more information retrieval resources are used and some of them share this. Most of the newspaper companies have good libraries with librarians for carrying out the searches and for assisting the journalists with searches. Even though the journalists are expected to carry out the information searches by themselves, the library staff is doing this for them.

A detailed account of the history of the study of information seeking behavior is given by Wilson.\textsuperscript{25} Initial investigations were limited to how a user (typically a library
user) navigated an information system and used the information obtained. After World War-II, there was an abundance of scientific publications, journals and conferences, which together with the information and communication technology revolution, lead to wide spread use of computer based data bases and catalogues. Recent studies of information seeking behavior focused on these resources and took place outside the closed walls of a library by conducted on groups of people as well as individuals. With the advent of World Wide Web, the online information sources are being used not only be researchers, scientists and academicians, but also by people of different sects for different purposes. Studies on information seeking behavior also take place in such varied contexts.

A joint study by Duff and Johnson\(^{26}\) reviewed the retrieval of information from archives by historians. Numerous types of users with different needs seek information in archives. Genealogists, academic researchers, freelance writers, occupational researchers, museum staff, teachers and government employees are the major users of historical information. The study reveals that information seeking in archives is non-linear and includes a number of different tasks. The assortment of tasks can be grouped into four different types of information seeking activities: 1) orienting oneself, or becoming aware of the archives, the finding aids, the sources, or a collection; 2) seeking known material, including known items, known forms, or known collections; 3) building contextual knowledge; and 4) identifying relevant materials. How the historian carries out these activities depends on a number of variables, including the availability of secondary sources, previous knowledge of the topic, previous experience using the archives or the records, and the time period of their research topic. During the research process, questions get refrained or refined, sources get revisited, and finding aids get re-examined as the historians build their contextual knowledge and increase their understanding of the research topic. Time and money were important constraints on how historians conducted their research. When they have to travel to do their research, the historians made sure that they made optimum use of their time. Information found in the finding aids helped them to decide which collections would yield the greatest returns.

In a study Callinan\(^{27}\) investigated the existing differences in information seeking behaviour of first year biology and final year biochemistry students in university college, Dublin. Differences were examined in the use of information sources for their course works, use of library and e-library and types of activities they perform for their
awareness. The study showed that final year students visit the library every day while, first year students visit the library once a week or even lesser. Both sample groups visit the university library for borrowing books. Use of e-libraries among first year biology students is much more than final year students. Higher percentages indicate that they use websites more than library books for information search. In response to the difficulties in obtaining information, first year students reported that they encountered internal computer system problems within the university due to the slowness in downloading information. Final year students face difficulties in obtaining textbooks from the long term loan collection, and in locating materials especially, journal articles. In response to the question what did students enjoy about seeking information, first year students said that they mostly enjoy searching in the electronic environment i.e. Internet. Final year students showed their enjoyable aspects of seeking information in “Easy to find books needed” as well as by online browsing.

According to Steinrova and Susol\textsuperscript{28} there are two aspects for information behaviour. One is information usage and the other information production. Normally users prefer to easily accessible and well organised sources of information. They are searching for new ideas to extend their current level of knowledge and chose information which can be used immediately. Users of information are normally not ready to devote more time for seeking it. The survey revealed that researchers are depending mostly on electronic sources like e-conferences, e-journals and web pages. Among these, e-journals are the most accepted communication channel for researchers. The popularity, speed of publication and opportunities for publishing are the authors’ criteria for selecting a journal for publishing their article.

Nicholas et.al.\textsuperscript{29} did Deep Log Analysis (DLA) techniques, a more sophisticated form of transaction log analysis, to demonstrate what usage data can disclose about information seeking behaviour of virtual scholars. Statistics of Emerald and Blackwell digital journal libraries are used to demonstrate the types of analyses that are possible using such techniques. In regard to the type of items viewed, the two digital libraries have distinctive differences. Emerald users are heavily using the abstracts. This might be a result of the site structure as users have to view an abstract if they want to view the full text, or it might be due to greater use of the Emerald site by non-subscribers. In terms of individual user groups, the trial users made greater use of articles (29\%) than paid-up
subscribers (24%) who had much greater download choice. Old universities when compared to new one, are more deeply using the digital resources and are more frequently visiting the digital libraries. Non-subscribers were more likely to view a single item in a session than subscribers. There is strong relation between the number of visits made and the number of items viewed. People making more visits were also the people who viewed more items. More than half (56%) of those people who made above fifteen visits a year viewed more than 4 items in a session, whereas the same figure for people who visited once was 26%.

Black and Tagg\textsuperscript{30} analysed the information seeking behaviour of physicians while deciding on treatment plans. When the physician depends on his previous cases to decide on a new case, it is called self referencing where as due to lack of confidence or experience he has to depend on external information, it is called surrogating. The study analysed the merits and demerits of various sources of surrogated experience and tried to explain them using source credibility theory.

An emerging, but significant, form of digital information seeking behaviour, called ‘bouncing’ was described by Nicholas et.al.\textsuperscript{31} The evidence for this behaviour has emerged from deep log analysis studies of a wide range of users of digital information resources. Much of the evidences and discussions provided were from the scholarly communication field. Bouncers are people who get into a site, view a just a few items or pages and go out of the site, presumably to visit some other site without book marking the first one for later visit. It was also observed that the less the bouncer penetrates into the site, the less probable he was to come back to the site later. The reasons for bouncing in and bouncing out are lack of information retrieval training, low level of information literacy, low quality contents, and a blind faith in searching through search engines.

Yousefi and Yousefi\textsuperscript{32} conducted a study to find out information seeking behaviour and needs of engineers, social scientists, and accountants of a manufacturing company in Iran by examining professional factors in information behaviour and the role of library and the librarians. Even though there were enough resources accessible in the library, the participants were unhappy about them, because of lack of information seeking skills and lack of knowledge about their own information needs and the searching process. There were considerable differences in the information needs and information seeking behaviour in the categories of social science and engineering. Social science
peoples did not give importance to the newness of resources, because of the nature of their discipline, while the engineers placed greatest importance to the date of publication of the material and also preferred that resources be updated every six month. The librarians have an important role in providing specific information seeking skill instructions suitable for careers and professional activities of users of each department.

In a study reported by Bhatti\textsuperscript{33} information seeking behaviour of faculty members of the Islamia University of Bahawalpur is discussed. The need for changes and improvement in the quality of education has become apparent in Pakistan in the higher education sector during the last two decades. The motivations for such a change have been the explosion and proliferation of information in various formats, and changing patterns of information seeking and retrieving. In any educational or research institution, the library plays a pivotal role, supporting all subject areas taught in the university. Nearly all respondents use library resources for teaching, more than half for research, and a smaller number for various other purposes. Information seeking may be motivated by a wide variety of needs, including personal, professional, entertainment, etc. The successful operation of a library depends to a large extent on the choice of library collections. The collection should meet the needs and requirements of users. Consequently, librarians must be aware of how faculty seeks information. Knowledge of faculty information needs and information seeking behaviour is imperative for developing valuable collections, and improving facilities and services. Library staff should focus on assisting users to develop a better image for the library. Reference librarians should help teachers to improve their information seeking and should find the types of information they need.

The effectiveness of Kuhlthau's Information Search Process (ISP) model was investigated by Hyldegard\textsuperscript{34} by analysing the information seeking behavior of library and information science students in the context of assignment writing. The study addressed both cognitive and emotional aspects and the effect of contextual and social factors. Similarities and differences in behavior of individuals and groups and their correlation to the ISP model were highlighted in the study. It was concluded that the ISP model is not accurate enough to model the behavior of groups.

Synek\textsuperscript{35} tried to bring up the main processes related to information behaviour. People tend to grossly underestimate the importance of quality of information. The trend of present time is the urge to get any information, regardless of its credibility as soon as
possible. The people become neglectful of quality of information and they mostly do not feel any need to validate the new information against their previous knowledge. Most people consider the Internet as the tool which solves their information needs, but Internet is only just another way to get relevant information with its own negative traits. To improve themselves the users should think more about information they are looking for or handling and should put down all the possible prejudices about fail seeking. For searching information, there should be balance of mind, free of stresses about lack of time or expectation of search difficulties. If the user is successful in maintaining the mental balance, the first step towards right information is made because the ability to focus on problem with clear and open mind dramatically increases the accuracy of search. Another problem which decreases the efficiency of information seeking is the serendipity effect.

In an article Wilson\textsuperscript{36} assessed the information needs and information seeking behaviour so that libraries and information workers would design and deliver effective and need based information services. All organisations have information needs to satisfy their goals and objectives. Information seeking behaviour is a continuous activity and an event driven phenomenon. The driving event can be considered as a crisis - either for the individual or for an organisation. In spite of the fact that the individual has the information seeking skill, they have to re-learn in practice of each seeking occasion. It is very important to ensure the authenticity, validity and reliability of the information sources used.

Fazlur Rahiman and Tamizhchelvan\textsuperscript{37} investigated the information seeking behaviour, use of information channels, information seeking process and information needs of students of colleges affiliated to Anna University, Coimbatore. The study revealed that the library remains the predominant primary source among the students, as it is continuously being depended by the young engineering students. The information seeking process of students was indicated by the frequency of visits to library. Student those who have daily visiting behaviour mostly access newspapers whereas students who visit monthly do so to borrow books. The libraries and the managements should focus on adding more projects and thesis, online resources, CDs and DVDs since a large number of students feel that these resources are insufficient. Another finding is that users rated the circulation, indexing, abstracting and OPAC services as excellent whereas a sizeable number of respondents feel that collections in the digital library, online resources, patent
and standards needs improvement. Majority of the students are satisfied with the availability of number of newspapers, books and periodicals. Regular user education programmes are to be conducted for teaching how to find out the needed resources and how better the resources be utilised.

Information seeking behavior of faculty and students of Southeastern Lousiana University was analysed by Chow and Croxton\textsuperscript{38} with specific emphasis on virtual reference services and latest means of communications. On the whole, direct reference interactions were preferred over virtual reference. Among the virtual reference methods, E-mail was the most accepted means for virtual reference. Online chatting was the next preference for students whereas telephone was the preference for faculty and staff. Other means like text messaging, voice chat, video calls (Skype, Google chat, etc.) are not yet widely used for reference services. People tend to use the medium which they feel, will most conveniently meet their need with minimum effort. These decisions were quite often biased by the individual's familiarity with the medium and perception about other media.

Detterbeck et.al.\textsuperscript{39} analysed the information seeking behaviour of fashion bloggers. The information in fashion blogs should be up to date and accurate. It should also sound credible, authentic and unique. This requires access to latest editions of costly fashion magazines which may not be viable for bloggers who are mostly unaffiliated to any institutions. Hence they seek information service providers who market access to such magazines and also have special skills for acquiring, abstracting and presenting the information. From this perspective a successful blogger is an up to date and confident researcher and the information service provider should have skills and resources capable of supporting him.

An interesting study by Druncan and Holtslander\textsuperscript{40} about information seeking behavior of nursing students of Western Canadian University covered the students’ search strategies and response to unsuccessful searches. It was found that choosing the appropriate keywords was mostly a trial and error process with non-optimal search results and associated frustrations. The study recommends that, strategies to use optimum keywords and subject headings should be taught as part of information literacy training of the students.
2.4 Kerala Tourism

Tourism is the largest industry in the world and has emerged as one of the few alternatives to develop the economy. Throughout the world importance of tourism is recognised and policies are formulated for the development and promotion of tourism. For reasons highlighted in section 1.1.5, tourism is considered by many as the one and only alternative for the economic development of Kerala. Many studies have been conducted for gauging the importance of tourism in economic development and for identifying ways to stimulate the tourism industry.

Kokkranikal and Baum\(^{41}\) identified strategies to promote rural tourism in Kerala. The sector survives by the natural beauty of the villages and backwaters of the state. The tourists are mostly hosted in small resorts and home stays run by families and societies. The study identifies that providing training on entrepreneurship, communication skills, western culture and etiquettes will help the rural people to succeed in their endeavours. Though such training can be provided on a need basis, it is also practical to introduce tourism awareness and related skills as part of general education curriculum. This will also attract better talent to the tourism industry as a whole.

The development of tourism and its impact on the economic development of Kerala has been reviewed by Mathew.\(^{42}\) Even though Kerala is severely facing difficulties from unemployment of educated youth, return of NRI’s, reluctance of investors to start industries, losses suffered by farmers of food and cash crops, etc., tourism has recorded remarkable growth in recent years. It has created amazing progress in the areas of foreign exchange earning, employment generation, infrastructural development, local industries, standard of living, regional development, etc. By transforming the state into a high quality destination, tourism can play a strategic role in accelerating the economic development of Kerala. Tourism is the only sector which has the potential to contribute to the socio-economic development of the state.

Nagarajan\(^{43}\) analyses how India can make use of the tremendous opportunities in medical tourism for its economic growth. This requires vision, policies, regulations and strategic planning initiated and led by the government. An effective mechanism should evolve for coordinating the services of hospitals, doctors, hotels, tour operators and transportation services in private and public domain to provide hassle free services with
international standards and competitive pricing. Suitable cities may be identified and promoted as medi-cities. Overseas marketing and partnership with international players will also help.

Sorupia\textsuperscript{44} discussed the importance of re-evaluating the role of transportation in the degradation and damage of the resources, due to the increase in the number of visitors to areas which where once considered as remote. Since transportation facilities are now available to reach every nook and corner of the world, a number of areas rich in biodiversity have been destroyed. Deforestation to give way to roads and tourism facilities, and even the trampling of pedestrians will damage the nature. Careful planning for controlled development and enforcement of suitable restrictions for tourism activities at sensitive areas will protect the natural environment.

A study by United Nations Economic and Social Commission for Asia and the Pacific\textsuperscript{45} stressed that tourism is playing a major role in socio-economic development in Asia and the Pacific. Presently tourism contributes a major share of the GDP for many countries. For the least developed countries, it is the major source of foreign exchange and hence sole path to technological and economic development. Though there are many instances where local communities prosper and benefit by small tourism related interventions by the government or non-government organizations, systematic studies and reliable data regarding the economic contributions are lacking in many countries. This hinders the formulation of national policies, regulations and schemes for the integrated development of tourism in the Asia-Pacific region.

A SWOT analysis to verify the needs, perceptions, preferences and satisfaction of the tourists of Himachal Pradesh was conducted jointly by Rishi and Giridhar.\textsuperscript{46} The SWOT analysis revealed that even though the state has immense tourism potential, due to lack of various facilities, Himachal is not able to cash upon the unique natural offerings. Necessary facilities like good food, pure water, proper accommodation, transport, accessibility, etc. were found lacking in certain cases, but most of tourists’ expectations were met with. Majority of the respondents believed that they would come again based on the fact that the natural beauty of Himachal draws them towards it. The state has the potentials for becoming one of the world’s top tourist destinations, if it can overcome its deficiencies and suitable marketing strategies and infrastructural facilities are developed.
to promote its offerings in a sustainable manner. Importance of developing and promoting possibilities of eco-tourism is stressed in the study.

According to Cherukara and Manalel,47 Kerala has become a prominent destination of wellness tourism by virtue of the facilities for treatment in Ayurveda and modern medicines. Except for the rise of ‘Ayurveda resorts’ around major tourist destinations and setting up of hospitality wings in some private hospitals, willful and collective effort has not been made for its promotion. Though Ayurveda took the lead, modern medicine, naturopathy and dentistry are also catching up. For further development of medical tourism in the state, hospitals should be given industry status for power, import of machinery, equipments, etc. A private public partnership model will be desirable in promoting medical tourism. Fairs and road shows are to be organised for promoting medical tourism besides participating in international medical tourism events.

A paper by Edward and George48 considers Kerala’s progress in tourism as a role model for other states. Kerala announced its industry status for tourism in 1986 itself and various incentives and subsidies were offered to attract investment. This resulted in significant growth of tourism in the next few years. The first tourism policy published in 1995 spells out the major direction for growth in the industry. Infrastructure development, human resource development, marketing and product development were identified as priority areas. Afterwards there was an emphasis on developing new products or new destinations every year. The drawback of the first tourism policy is stated to be the lack of a detailed action plan. This has been overcome in the “Vision 2020” policy document brought out in the year 2000.

HRD initiatives of tourism industry with special reference to Air India Ltd. were studied by Khan49. The study emphasises that the need of the hour is to analyse, enhance and sharpen the capabilities of the employees by establishing full fledged HRD boards which will do the career planning, development and counselling. This, along with a few changes in the organisational structure and measures for conflict reduction between management and employees will go a long way in enhancing the productivity.

Libison and Muraleedharan50 investigated how Sabarimala pilgrimage helps in giving manifold economic benefits to local residents of Pandalam rural area. Sabarimala temple has been revered as a sacred location and has been drawing increasing number of
pilgrims year after year. Six wards of Pandalam grama panchayath have been identified as places where high level of economic activity is taking place during the pilgrimage season and the pilgrims bestows innumerable socio-economic benefits to the region. The income of people of almost all professions in Pandalam locality increases in the season. Average monthly income and employment is higher in the pilgrimage season and as a result the food habits, clothing and saving patterns also improve. In general, people of Pandalam have better economic status in terms of household amenities than other rural localities.

A study by Mammootty and Raveendran\textsuperscript{51} points out that the Malabar region of Kerala, though blessed with natural beauty, cultural heritage and historical monuments, lags significantly behind other parts of the state in tourism development. It is found that the region lacks a sound marketing plan, tourism infrastructure and attention of state players like Kerala State Tourism Development Corporation.

In a study Balmford et.al.\textsuperscript{52} stated that increasing numbers of visitors alone is no guarantee that tourism revenues will be reinvested in nature conservation, even though nature based recreation has the potential in many parts of the world to make a growing contribution to both conservation and sustainable development. Tourism can often provide a strong incentive for protection in biodiversity rich areas, and formal designation of such sites can raise their profile and influence tourism visitation. International nature tourism raises other important worries like emission of carbon dioxide, its vulnerability to changing fashions, disturbance to wildlife and nearby people, and how far its revenues filter down to local communities, etc. Nature based tourism is only likely to be sustainable under certain conditions of effective planning, management and local participation. It is the fastest growing sector of the world’s largest industry and has considerable potential to generate funds for conservation and engage people with the environment. Nature based tourism reportedly now generates roughly the same revenue as farming, forestry, and fisheries combined.

Crouch et.al.\textsuperscript{53} analysed the preferences of potential customers for space tourism ranging from high altitude jet flights to long duration orbital trips to space. It was found that price of the package, nationality of the operator, the type of training required, number of co-passengers, demand on physical fitness, etc. were critically evaluated by the customers before deciding on a package. The decisions were influenced by the age, gender, education and the adventurous nature of the customer.
Park and Jamieson\textsuperscript{54} illustrated the development processes of the Hawaii Tourism Dashboard (HTD), an online information clearing house for multiple stakeholders and a diagnostic tool to monitor the conditions of Hawaii’s tourism. The HTD is developed for obtaining a clear picture about the multidimensional aspects of tourism and the impact from which issues can be identified for further examination to prevent or to solve problems. HTD will also help in planning and managing tourism business. As a joint effort between the industry and academia, it can play an important role in increasing public awareness about tourism’s multifaceted characteristics and in assisting decision making and policy development by the government and the industry.

Climate is a critical factor on planning and execution of tours as well as in the enjoyment, satisfaction, comfort, safety and over all experience of the tour. Many places have become popular tourist destinations by virtue of specific climatic conditions like snowfall, monsoon, etc. In addition to this direct influence, climatic conditions can also affect water and food supply, heating and cooling costs, pest management, exigency management, etc. In spite of this, it is observed by Scotta and Lemieux\textsuperscript{55} that no systematic studies have been conducted about the extent to which direct and accurate climate information is available to the tourism sector and how effectively it is being used for planning and execution of the tourism activities both by operators and service providers. The study also points out that there is a strong need for encouraging direct interaction between the tourism sector and climate service providers.

Ramesh and Joseph\textsuperscript{56} reviewed the Ayurvedic health care scenario of Kerala by focusing on international tourists visiting Kerala as wellness seekers. A recent trend has shown that people from developed countries are seeking medical treatment from developing countries. India is one of the most sought after destinations for medical tourism. In the year 2004, some 1,50,000 medical tourists from UK, US, Middle East and other foreign countries visited India seeking medical care in Indian hospitals. Kerala is the only place in India where Ayurveda is practiced in its purest form; this fact has attracted many wellness seeking tourists to the state. Wellness tourism trips often open up opportunity for spiritual pursuits also, as the tourist can engage in self analysis without the stresses and distractions of home as well as work place. In the long run, wellness tourism can become the niche for foreign revenue generation for the state. However, this requires effective distribution channels, hospital based marketing strategies, as well as
data collection on the sources of information used to select Kerala as the preferred medical destination.

In a research study Liskova et.al. assessed the impact of tourism during one year on the selected fauna in the Bohemian Forest National Park in selected months of the vegetation season and off-season. An average of 30-60 tourists visit the park daily and their individual activities include hiking, hiking with a dog, harvest of forest fruits, mushrooming, cycling and cross country skiing. From November to March it is off season because of the high level of snow and in the growing season during the summer holidays (July & August) a higher concentration of animals, especially the red deer and the roe deer, was recorded in the area. The total impact of tourism on selected animal species has not been significant yet. Overall it is assessed that the impact of visitors as low and it does not endanger the ecological sustainability of the study area.

In a paper Runnels and Carrerab aimed to enhance the current knowledge on medical tourism by isolating the focal content of the decisions that patients make. For making judicious decisions on medical treatment, patients require comprehensible and suitable information. For this they depend on the opinions of family and friends, Internet sites, etc., where the accuracy can not be ensured. Medical tourism is commonly perceived and popularly depicted as an economic issue, both at the system and individual levels. The decision to engage in medical tourism is influenced by patients’ unmet need, the nature of services sought and the ease of access to such services. For beneficially employing the opportunities of medical tourism, easy access of health information and current regulatory rules of the country are to be provided.

Sravana and Joseph studied the present scenario of farm tourism, its services and satisfactory level of the services provided in Kerala. Large numbers of tourists are coming to Kerala for farm tourism and to satisfy their requirements concentration and efforts are required. Kerala being home to different agricultural crops, farm tourism in the state attracts people of different nationality, sex and age. It was found that male visitors, especially tourists from neighboring countries were more satisfied with the farm tour experience than the female visitors. The increasing demand and attraction of farm tourism open up more avenues for the agriculturalists. The study proposes to identify more farm tourism centres and to find out more farm tourism activities for the development of farm tourism in Kerala.
The choice overload phenomenon in tourism products will have negative consequences such as making no choice or incorrect choices, according to Park and Jang. Traditional economic and psychological theories suggest that having more options is beneficial to decision makers, but according to the choice overload concept too many choices can sometimes cause contradictory results. Choice overload differs from information overload in that the main focus of information overload lies in the number of alternatives and the number of attributes in the alternatives. Choice overload can be identified when consumers do not have a high level of familiarity with a product. Consumers can accumulate knowledge from both prior purchase experiences and indirect observations, but for relatively expensive and infrequently purchased products, such as tourism products they may not have enough prior experiences even if they have higher levels of knowledge.

Amitabh and Baumgarten have analysed all elements of Kerala tourism sector, with a view to understand the approaches and strategies that have been adopted and the planning and policy that have preceded the significant development of tourism in the state. Kerala has never been industry intensive, and the vast migration from the state to the Middle East during the mid ’70s and ’80s show the lack of employment opportunities in the state. The growth of tourism in the state is expected to change this, with more and more people being employed in the tourism related sectors. Kerala has been significantly successful in its tourism efforts, in creating a key tourism platform for the state and positioning itself competitively in the international tourist market. In 2002, the state was able to augment its tourism earnings to Rs. 705.6 crore as against Rs. 535 crore in 2001, representing an increase of 31.8 percent. In 2003, it recorded India’s highest growth in international arrivals at 26.8 percent. Acclaimed as India’s only ‘tourism superbrand’, Kerala has been able to develop strengths in certain core areas of product development and infrastructure creation. Tourist information centres (TIC) manned by well experienced personnel are operated at entry points like airports, railway stations and bus stations, destinations like Kovalam and Varkala, and metro cities like Kolkatta, Delhi, Mumbai and Chennai. The information centres are fully equipped with all information pertaining to the state and also perform facilitatory services on demand.
2.5 Tourist Information Needs

Tourism is an information intensive business. The characteristics of the tourism products make it high risk, requiring timely and accurate information relevant to customers’ needs. A tourism product is intangible and cannot be pre-tested, because it is normally purchased well in advance, away from the place of its consumption and it cannot be exhibited or verified at the point of sale. Selection of a tourist destination depends on the information available and not on the actual destination. As the trend towards independent travel—as against conducted tours—is increased, the demand for information is also increased and tourists prefer to gather all possible information, seek more options and choices that suits their budget and make purchases online through the Internet.

The possibilities of segmenting the leisure tourism market on the basis of consumer information search behaviours were examined by Fodness and Murray. The conceptualisation and measurement of information search and the relationships between information search and leisure tourist characteristics and behaviour were examined in the context of segmentation analysis. Two models were formed on the information search behavior; one was based on the effort and time put in planning and the number of sources used whereas the other was based on the specific sources used. Based on each model, segments were generated using a priori and post hoc methods. On comparing the models it was found that only the degree based segments could be statistically differentiated on demographic, socioeconomic and trip behavior variables. Differences in the way that leisure tourists go about acquiring the information for their trip planning can be meaningfully related to systematic travel behavior.

What the virtual communities can do for satisfying the tourists’ highly specific information needs? Prestipino explains the three problems when trying to support travellers with information products like databases or books. The first one is, information needs being too complex and multidimensional, some questions must be either clarified in a communication process or answered by generic, all encompassing answers. The latter could produce so many answers as amounting to information overflow. The second problem is that, the information system can hold a large amount of data, but it cannot assign the appropriate weight to each preference. Information needs of tourists are characterised by highly dynamic and individual factors, as preferences for sites, weather
conditions, prices, transportation, political and economic changes, appointments and so on. The third problem reported by Prestipino is that, it is difficult for humans to deal with information provided by a “black box” information system, as the user does not know why he is given a certain result. The advent of World Wide Web brought about easier access and navigation in information spaces, but soon the amount of web documents could not be managed by manually created lists, and search engines were created for easy handling of the web. The professional database providers or guidebook publishers will include only quality contents into their products, but the web has no such restrictions, and therefore quality is very heterogeneous. Existing technologies for communities are not good enough in supporting collaborative creation and maintenance of knowledge. A community system supporting communication and collaboration on shared material can result in creating an information system with high performance which will be useful for tourists.

In a study Wonga and Kwong\textsuperscript{64} identified the important selection criteria in choosing package tours for outbound tourists in Hong Kong. A total of 30 criteria were identified in the study. Safety of the tour was the most important criterion used by tourists, followed by adherence to departure dates and the service quality of travel agency. TV advertisements and travel programmes were found to be the least important criteria, and were just viewed only as entertainment that might not affect consumption decisions. Eight factors of package tours selection criteria were successfully derived by the use of factor analysis. They were tour arrangements and service quality, attractions, hotels and airlines, TV promotions and customer care, routing, personal interests, word-of-mouth and time. Among these factors, tour arrangements and service quality were considered as the most important items. Routing was the second most important factor, while TV promotions and customer care were the least important items for tourist selecting packages tours.

Luo et.al.\textsuperscript{65} analysed how the choice of information source is influenced by demographic factors, income, purpose of tour and the nature of the tour group. How this choice in turn affects the selection of accommodation, mode of travel and expenditure of the tourist were also part of the study. Strong relationship was found between the demographic factors and the choice of information source. Similarly people who use Internet as primary information source are likely to spend more at the destination than
ones who consult other information sources. In turn, people who stay at hotels are more likely to depend on the Internet than ones who find other places to stay.

How to improve information support for independent travellers? Prestipino\textsuperscript{66} explores this aspect. Before going on a trip, a traveller decides where to go and what to do. In the preparation phase, traveller is typically at home, has excellent access to information sources like books, Internet, travel agencies, etc. in a known environment and speaking in his own language. Information is dispersed through various media, and the traveller needs to retrieve and integrate it with a little support by technology. The study revealed that, the information sources typically used when preparing a trip, is a reliable friend, followed by Internet search engines. The guidebook is surprisingly seldom used for preparation. During the trip, travellers face complex information needs, ranging from destination choices and itinerary planning to information needs arising spontaneously during travel and being determined by unpredictable circumstances. Information gathering in this phase is very different from that in the preparation phase, as the traveller may have to deal with a foreign environment, unfamiliar language, and limited access to information sources. He has to depend in the first hand experience of locals and other travellers, by talking to other persons on the street or in the accommodation. A higher performance information support system allowing cooperation among community members, providing users with a personal information space, supporting reminiscing and documentation of past trips and connecting the personal information space to a large community information space will be helpful for independent travellers during the trip.

Satisfaction with the information obtained through the Internet may have positive effects on satisfaction with the selected destination. According to Castaneda et.al.\textsuperscript{67} Internet functions as an effective source of information for the tourist. Information available on the Internet is of considerable value to the tourist. The greater the tourist’s satisfaction with the Internet, the fuller is his or her enjoyment of the holiday. It depends on the tourist’s previous experience of the destination and experience of the Internet. The effect of Internet satisfaction on the enjoyment of a holiday may well be due to the huge amount of information available in the Internet, which allows a tourist to plan a holiday better suited to their needs and wishes. However, improvements in the ease of use of the information highway and the Internet experience of visitors are the determinants of destination satisfaction.
The accessibility of Australian, UK and US based hotel accommodation websites to assess whether the information published meets the needs of the disabled travellers was evaluated by Williams et al.\textsuperscript{68} Web based information sources offer new possibilities for both consumers and organisations to share information. Accommodating the diversity of needs and capabilities of disabled and challenged individuals is important for the development of tourism and satisfaction of the disabled tourists. The study finds low levels of accessibility and little specific information that is likely to meet the needs of disabled tourists. The number of disabled and impaired individuals in society provides a strong competitive mandate for organisations to meet their differing needs and capabilities. Providing accessibility will not be a matter of choice, but information accessed must also meet their needs. In this respect it must recognise the perceived risk that individuals with particular needs might face in the hotel accommodation situation.

A study by Ajims and Jagathyaraj\textsuperscript{69} pointed out that tourism in Kerala is severely affected by the non-availability of adequate and accurate information. Information centres of department of tourism should be revitalised, brochures should be provided at airports, and service of qualified and trained guides should be made available for guiding the tourists. In the case of adventure tourism, the guides must be trained, experienced and physically fit to lead the tourists. Feed backs should be collected from tourists and the service pattern should be modified according to the information obtained from the feedback. Arrangements should be made for more and more domestic and international publicity of Kerala tourism.

Eichhorn et al.\textsuperscript{70} investigated accessibility of tourism information schemes as information communication sources and their potentials to fulfill the informational needs of tourists with disability. Five interrelated need components of information - richness, reliability, sources, communication tools and customer orientation were evaluated. The existing tourism information schemes partly comply with these requirements. They are highly fragmented and accessibility is very difficult leading to deficiencies in quality, depth and breadth of information. To achieve information satisfaction for the disabled people, it is advocated that a pan-European approach to accessibility is necessary to remove informational barriers that currently restrict travel options of disabled individuals. Society has to become more aware of the needs of disabled people and there should be theoretical framework for improved understanding of the subject. Clear understanding of
differential needs and availability of appropriate sources is crucial not only to achieve information satisfaction but to enable people with disabilities to participate in tourism.

In a research study, Ballantyne et al.\textsuperscript{71} highlighted the importance of local information centres and customisation of tourism products to meet the needs and interests of the travelling public. Visitor information centers have a pivotal role and are primary responsible for promoting local tourism products and services. Establishment of close professional links between visitor information centers and local tourism operators would facilitate the development of mutually beneficial relationships that actively market, promote, and sustain the local tourism industry. Since users are predominantly searching for information about services, attractions, and facilities in the local region, centers should endeavor to provide information and resources that have a local flavour. It is very important that the staff should understand how to customise information to different travellers depending on their characteristics and preferences.

Tourists’ satisfaction with the provided information about the Baltic Sea and the demand for further information, on the Baltic coast of Mecklenburg-Western Pomerania was investigated by Kessler.\textsuperscript{72} Tourism has become an important economic sector of Mecklenburg-Western Pomerania. Investigation about the decreasing rates of growth in tourist arrivals and revenue pointed to deficiency in information sources available to potential tourists. A media analysis determined which information about the Baltic Sea is available to tourists and to which extend they meet the interests of the tourists. The survey revealed that the tourists were interested in more information or completely unsatisfied with the available information. Varying interests in information and information habits of different groups of tourists were identified. The analysis showed that most available information is superficial or that it focuses on problems of the Baltic Sea. The interests of the tourists are seldom taken into account. To improve the current situation a possible solution is the publishing of well balanced information, which takes different groups of tourists into account and reaches them frequently. An Internet based information network about the Baltic Sea could be useful.

Miedzinska and Tanas\textsuperscript{73} investigate tourism related functions carried out by libraries in Poland which are converted into tourist friendly by making some or all of the books including those related to culture, heritage and history accessible to tourists. Tourism itself is regarded as a type of cultural contact with learning as well as emotions,
and can be deepened by ready access to libraries. In addition to providing cultural, historical and geographical awareness to the tourists, some libraries have face value places of cultural heritage and architectural monument worth enough to brand them as tourism products. It is concluded that study of tourism related functions of library should be pursued at various levels and should be made a part of the curriculum for library science courses.

Raveendran\textsuperscript{74} opined that travel is a basic human instinct and the travellers need a wide variety of information. This includes location, accessibility, climate and seasons, landscape, accommodation, places to visit, entertainment facilities, etc. Information of the above nature is termed as static since it does not change rapidly with time. In contrast, information about schedules and running information of train, bus and airlines are more dynamic in nature. Information technology, especially the Internet based services should be utilised to provide the static and dynamic information to the tourists. Tourism is presently a mass phenomenon involving every human being in the world. They need detailed information about each place they intend to visit. Though the ultimate users of this information are the tourists, the actual economical benefits go to the tourism industry consisting of the destination managers and service providers. Therefore the destination countries in the world compete to produce and package such information in a most attractive format to attract the consumers from other countries. The travel intermediaries like travel agents, tour operators and reservation systems store and disseminate such information on a real time basis, in respect of each destination to service their clients and improve their business. They need the information in the easiest retrieval format so that the information needs of the clients are met as quickly as possible.

Tosic and Lazarevic\textsuperscript{75} examined the role of Alexandria Library in the development of tourism, based on cultural and artistic resources. Culture and tourism are two complex and layered fields of the modern civilization, and they have a positive effect on the overall social development. Making culture less important in terms of tourism is neither logical nor justified, because culture is overall intellect of society, and tourism is a sum of all material and spiritual resources and lifestyle of a nation. Libraries have a lot of material that can be presented before the tourists and the role of library staff is invaluable. The educated and skilled staff is the key for providing quality information service. Excellent marketing strategies should be developed for introducing the library services to
tourists and the local community. It involves well designed and accessible web presentation, sending e-mails to potential users, having liaison with travel agencies, educational institutions and companies, active participation of library staff in the media, printing and distribution of promotional leaflets, brochures, etc.

Jani et.al.\textsuperscript{76} studied tourist information needs in relation to queries made on online travel forums. The nature of queries, the kind of information obtained and the usefulness of information were analysed with respect to the potential destination and the time of posting. The study relied on posting on Lonely Planet about Japan and South Korea and concluded that the such forums are used by potential tourists to gain overall knowledge before planning a trip. Different destinations require different types of information as mandated by their current image. Queries made at initial stages of planning are related to risks involved in the tour whereas the queries made after deciding on the destination tend to be related to travel efficiency and economy.

Marrocu and Paci\textsuperscript{77} highlighted the importance of direct contacts with tourism flows as a new channel of tourism knowledge diffusion, which can be exploited by local firms to extract information on consumers’ preferences and be prepared for them. Knowledge is one of the most important factors for increasing the competition among firms as it permits to acquire information on new products and processes and thus to enhance overall productivity. Tourists are external consumers who directly arrive to the destination region and the information on external demand preferences are conveyed to the local tourist firms without any cost. The frequent interactions with tourists allow local enterprises to acquire new information on demanded products and services, which can be used to increase their productivity and, consequently, the efficiency level of the whole region. Tourism development enhances a region’s total productivity and efficiency which has a positive role which controls other intangible factors, such as human, social and technological capital.

Lange-Faria and Elliot\textsuperscript{78} analysed the role of social networking sites and similar media as tourism information resources. Such networks enable travellers to share information and prospective tourists to gather information to arrive at more informed decisions. Generally such information is regarded as honest and trustworthy. The social media also help people to stay connected with the fellow travellers and residents. Tourism
service providers also some times make use of such sites to directly interact with the customers and build their brand.

2.6 Tourist Information Behaviour

Identifying travellers’ information behaviour is very important for marketing management decisions and designing effective marketing communication campaigns and services. Many studies have been conducted for finding out the tourist information behaviour and many theories have been evolved based on it. Most of these studies followed the two influential theoretical frameworks proposed for understanding tourists’ information behaviour. The strategic model, proposed by Snepenger et al. is the first one which defines information search strategies as the combination of information sources used. The second one proposed by Gursoy is the contingency model which defines information search in terms of individual characteristics, effort, the number of sources used, situational influences, product characteristics, and search outcomes.

Buhalis\textsuperscript{79} analysed the marketing strategies adopted for tourism products in the information technology era. Internet has become the standard place where potential tourists search for competitive offers, compare and choose products and book them. There are even web sites which collect such information from different service providers and present them in a form suitable for comparison and selection and enable the booking or purchase of the chosen product by making online payment. They also serve to provide seamless travel experience by combining services related to travel, accommodation, etc. The study points to the need for more training on the vast potential of IT resources for the better growth of the tourism industry.

Vogt and Fesenmaier\textsuperscript{80} used a decision making and information search model as a framework for explaining the factors which influence the use of communications to tourism. Traditionally tourist information has been studied as a means to make destination choices. Information is largely collected and used for functional reasons or to plan and take trips. Not everyone who collects information actually intends to travel and functional need is highest or most important role in information search process. Innovation, aesthetic, and entertainment needs were rated as second, third, and fourth in importance, respectively. Information needs were also related to selected tourism psychographic and demographic variables. Respondents with less education or lower
levels of income indicated higher levels of information needs. Women had a higher level of functional needs than men. Hedonic, aesthetic, and sign needs increased with age. Therefore, tourist information should appeal to these salient needs in order to capture the attention of potential tourists. If the information stimuli, instead, shows pictures that display the traditional or old fashioned aspects of a place, people may be left disinterested and perceive the stimuli in a negative way.

Gursoy and Chen\textsuperscript{81} investigated the information search behaviour of German, French, and British travellers to the US between January and December 1997. The analysis centred around two dimensions of information search behaviour. The first one was business/leisure dimension, and the second one was dependent/independent information search behaviour. The information search behaviour was found to be decided by the nationality of the tourists and the nature of the trip viz. business or leisure travel. The German travellers browsed Internet more than their French and business counterparts. As external information source, the German business travellers sought the service of corporate travel departments where as the leisure travellers relied on travel guides. Among French and British travellers the preferred external sources were airlines in the case of business travellers and tour companies, news papers and magazines in the case of leisure travellers. On the whole they relied more on travel agencies for external information compared with German travellers who relied more on the Internet.

Anckar\textsuperscript{82} reviewed the supposition that the role of middlemen will be eliminated or reduced in tourism with the emergence of digital networks. The travel agents were traditionally the intermediaries or middlemen of the industry, and played a strong role between the suppliers and consumers. Many people use the Internet to look for travel related information, but only a small portion of the consumers have any experience with self booking services. There is a significant trend of consumers abandoning the travel agents for booking holiday journeys. Approximately half of the existing and prospective Internet bookers intend to use direct distribution approaches, whereas half intend to use the Internet merely as a communications channel to human travel agents, thereby primarily fostering re-intermediation. The emergence of travel reservation services through mobile electronic channels is likely to reinforce and expedite the disintermediation phenomenon by attracting a large portion of the many non-shopping Internet users to electronic markets.
Wober\textsuperscript{83} offered a method for successful implementation of a marketing decision support system in tourism. Tourism managers benefit from access to the Internet in two ways: the Internet provides the opportunity of easy communication and it serves as a platform for new distribution channels. The major reason for the poor application of management science models and methodologies in tourism management is the insufficient education of practitioners and the inadequacy of problem solving features of standard software solutions.

After thoroughly studying the information seeking behaviour of participants in recreational planning, Brigham and Perron\textsuperscript{84} opined that the information transfer between recreational destinations and their patrons can be optimised. With the Internet rapidly changing the way people plan recreational travel, it is necessary to have information systems which facilitate this kind of change. In the study specifically conducted for knowing how the Internet is used in the planning process and what barriers are commonly encountered, it is found that 88\% of the respondents use the Internet daily and 67\% have high speed connections. This indicates the proficiency of the respondents with technology. Majority of the respondents made reservations prior to arrival, and the majority of them used the Internet in that process. However, more than half of the people who used the Internet became frustrated or felt unhappy while looking for information on the Internet and furthermore, 21 of them actually stopped looking on the Internet and went somewhere else for the information they were seeking.

In a study Fairer-Wessels and Felicite\textsuperscript{85} observes the tourists information needs and information seeking behaviour of professional black women. The population studied was not depending on any information and communication technologies. They were using only traditional information sources including word-of-mouth and other non-formal sources of information for locating their tourist destinations and services.

Gursoy and McCleary\textsuperscript{86} developed a model that integrates various aspects of tourist information search behaviour viz. psychological/motivational aspect, economics aspect and information processing aspect. Eight determinants of information search behavior pertaining to the above three aspects were identified viz. previous visits, involvement, intentional learning, incidental learning, familiarity, expertise, cost of internal search, and cost of external search. The model also defined the constituents of each of these determinants. For example, cost of external search is the time and money
required for carrying out the search whereas cost of internal search is concerned with the
cognitive efforts required for the search. For constructing the comprehensive model of the
tourist information search, 21 propositions were developed.

Ernest et.al.\(^{87}\) explored the information seeking behavior of people and the role of
libraries in the post-Internet era compared with the pre-Internet era. Other than consulting
friends and relatives, the major sources of information in the pre-Internet era were books,
mass media, electronic media, consultant services, government and non government
agencies, etc. In the post-Internet era, most of these sources are accessible as Internet
sites, significantly reducing the time and efforts required for the access. Printed books are
also important and available for purchase or borrowing from the library and because of
the exponential growth in the universe of knowledge, the number of books being
published is also on the rise. Hence libraries should, in addition to stocking the relevant
books, use electronic services to keep the users informed of the subject content of books
and availability of new books as well as for speedy disposal of the conventional library
services. Thus libraries are simultaneously challenged and enabled by the Internet and e-
revolution.

Krupar and Auer\(^{88}\) enumerated industry specific websites of tourism that offer
information for researchers and travellers interested in studying the subject. Most of the
people working in the tourism industry and librarians are only aware of some of the
booking websites. This article gives an exhaustive list of websites related to the tourism
industry. The entries are arranged under bibliographies, data sources, databases, industry
information, airlines, ecotourism/geo-tourism/sustainable tourism, hoteliers, news
sources, restaurant sources, booking, health while travelling, travel planning, etc.

Ortega and Rodriguez\(^{89}\) found out the importance of two different forms of
information available at tourism destinations - pamphlets about local places of interest
available in the hotel reception and a small film about local places of interest available on
the hotel room TV. Information at destinations allows the tourists a better knowledge of
the natural, historical, cultural and man made attractions located around the different
destinations. Correlations were found between both international and domestic tourists on
the order of importance that they attribute to the information through pamphlets in the
hotel reception area when compared to an extensive range of hotel services. The large
majority of the international and domestic tourists positively evaluated the two types of
information available at the destinations. But the international tourists attribute more importance to the two considered forms of information than the domestic tourists. The acquired information influences the tourists to stay in the destination for visiting those attractions that the tourists were previously unaware and increases the economic impacts from travel and tourism in the destinations.

Sarma identified the influence of different information sources in destination selection of Indian tourists. Six different information sources namely, word-of-mouth, tourism department publications, advertisements in print and electronic media, professional sources like tour operators, etc. and cognitive wisdom of the tourists are examined. The influences of these information sources are tested for a few segments of tourists based on certain common segmentation variables like origin, age, benefits sought and exposure of the travellers. It is observed that cognitive wisdom of the tourists, plays a prominent role in shaping the image about a destination and the word-of-mouth, is found to have insignificant effects across various groups. Information sources are not independent of each other and one source might affect some others, and thus the collective influence of such inter-related sources are delivered to the tourists. Travellers have distinct preference towards the information sources and the effects of all these types of media are different and the authorities must offer adequate importance to it.

Zillinger in a research study analysed the interrelationship between mobility, tourist behaviour and guidebooks. Information can directly influence tourist behaviour and mobility. In turn, mobility that has been influenced by information can again shape behaviour onsite. Guidebooks are important sources of information for international, independent tourists. Tourists buy guidebook when they need to know where and when to travel. They use the book before, during and after the journey, and those who have used a guidebook on a trip are likely to consider this information source again in future journeys. The greater the distance of the destination from their home country, the more important guidebooks become. Through helping the tourists to select destinations, the guidebooks contribute to the development of tourism in a region and thereby the economy. While tourists are influenced by guidebooks, their behaviour can shape the future production of the books as well as the information they provide.

Lepp and Gibson investigated role of sensation seeking behaviour and gender of a person in deciding the nature, extent and destination of tour, and the risk perceived
therein. Sensation seeking is a personality trait associated with the need for novelty and intensity in feelings and experiences. Conducted among the youngsters in the United States, the study focused on international travel, specifically to locations rated as risky. It was found that personality traits, socio-cultural factors, and images projected in media and travelogues affect tourism preferences. There was not much gender based distinction in seeking international travel experiences. The study also confirmed that the perception of risks was similar for people with varied degree of sensation seeking, which by definition is the readiness to take risks for varied, novel, complex and intense experiences and feelings.

Bindu et.al\textsuperscript{93} investigated the perception of medical tourists towards Kerala, as an alternate medical tourism destination. The most favorable factors for Kerala as health tourism destination are its authenticity, rich Ayurvedic heritage with multifaceted attractions and health resorts. Internet has the overarching influence on tourists, but the resort operators in Kerala are still resistant to the adoption of information and communication technologies for resort marketing. The traditional electronic media like radio and television have only very low influence on tourists. It is much cheaper and cost effective to promote a resort over the Internet, compared to the traditional electronic media. The referral sources like word of mouth and personal influence are important sources of information. One sure way to ensure the spread of word of mouth is to treat the existing patients exceptionally well; this will motivate them to spread positive word of mouth to their kith and kin, and even electronically by giving good reviews of health care facilities available in Kerala. Despite the proliferation of the Internet, it is not time yet to write off the print media, because it still stands as the biggest crowd puller.

Bovero\textsuperscript{94} in her seminar paper discussed the possibilities of cultural tourism based on libraries in the Italian context. Even though Italy is considered as the richest country in the world for cultural and historical heritage, there is deficiency in infrastructures, technology, promotion and marketing. Cultural tourism is a new topic in librarianship and it is often considered as difficult and unmanageable by librarians. At the same time cultural tourism can improve library services, but the information professionals shows a low interest in cultural tourism as in the digital sector. The problem seems to be a lack of knowledge and training that needs a special reinforcement. Specific learning needs about cultural tourism projects for libraries and information professionals suggest new learning
methods, where professors and professionals can talk and learn together and create specialised documentation and learning centre for cultural tourism. Cultural tourism needs curiosity and involve a degree of risk, whereas Italian librarians consider themselves too old for taking these risks. The information professionals are not skillful enough to manage cultural tourism projects. But in parallel, they have a great attitude to professional development. The research represents a reflection on the role of libraries and librarians in a changing context, where information professionals need new alliances and convergences.

Castaneda et.al.\textsuperscript{95} observes that the perceived ease of use of the Internet is the most important factor in deciding its acceptance and hence its future value as a tourism information source. The perception of usefulness is strongly linked to the perception of ease of use and savings in time and effort, all of which can be improved for the general public by promoting the use of Internet. This in turn can be achieved by free availability of Internet, improved connection speeds and reduced connection cost. The study concludes that future development of Internet in tourism is conditioned upon its ability to supply up to date and accurate information and enable hassle free purchase of tourism products and services online.

Sparks and Pan\textsuperscript{96} conducted a study to investigate the use of information sources in seeking information about a destination by the Chinese outbound tourists. The study revealed that television programs are an important source of information used by Chinese people to learn about target destinations. Internet is a substantial information source and stands to have a stronger impact over time. Experienced friends, magazines, etc. are also highly used sources by the tourists. Referral sources like friends were influential in predicting the image of a target destination in terms of natural beauty and climate. Resources in terms of time and money are significant factors in determining whether someone intends to visit a destination or not.

Darcy\textsuperscript{97} presented the results of a survey conducted to determine the relative importance of room selection criteria that people with disabilities deem as important. The information was collected in four formats; direct e-mail, attached with the electronic or hard copy newsletters, placed on their website notices, or distributed through some other means. The results suggest that while socio-demographic variables offered some insight into criteria selection, the most significant explanation for criteria selection and
information preferences were the dimensions of disability and level of support needs. The preferred format of accessible accommodation information provision was based on a combination of textual, floor plan and digital photography. The accommodation sector may implement a new system of information collection, presentation, marketing and promotion that will be more effective and efficient in the management of accessible accommodation.

Dey and Sarma\textsuperscript{98} did a study in north-east India, a region with vast tourism potential that has not yet been aggressively marketed, to investigate the usage of information sources by tourists visiting newly emerged destinations. Information acquisition, regarding destination, accommodation, transportation, etc. may be regarded as the starting point in tourism decision making process. The three motive based segments viz. nature loving explorers, nature loving vacationers and change seekers were found to exhibit differences in information source usage. Nature loving vacationers and the change seekers mostly relied on friends and relatives to seek information on north-east destinations, the nature-loving explorers came to know about north-east destinations through travel intermediaries. Since information through friends, relatives and colleagues seems to constitute the most prominent source that has influenced the respondents, utmost care needs to be taken by the destination marketers to ensure a high level of satisfaction among visitors so as to generate positive words of mouth.

It is generally agreed that availability of accurate information enables the tourists to take precautions necessary to cover risk factors at the destination. To reconfirm this, Pfeil et.al.\textsuperscript{99} evaluated the knowledge, attitudes and practices (KAP) regarding seasonal influenza vaccination among travellers to resource limited countries. In addition to the awareness level of the tourists, their education and perception about the importance of the vaccination were found to affect the rate of vaccination. Higher media coverage alone was not effective at enhancing the vaccination rate. The study recommends to involve family physicians and travel medicine practitioners to convince the travellers for vaccination.

Rotar et.al.\textsuperscript{100} researched into the usage of Internet as a source of tourism information among the visitors of Dalmatian coast in Croatia. Croatia is a small and not a very wealthy country, so tourism provides an important source of income and an opportunity to present itself as a beautiful, civilised and democratic country. Internet
communication is one of the most important indicators of change in tourism and its overwhelming use is considered to put in danger the interpersonal communication. The study revealed that Internet has become the most important medium of communication and promotion of tourism. Even more important than the Internet are people and the impression getting from the interpersonal discussions. As a medium of promotion, the Internet should be not just informative but also fun, attractive, socially engaged, educational, etc. The Internet is a democratic medium, mostly oriented towards the English language, but in tourism it is important to give attention to other cultures and languages also.

In a research note Chang and Caneday\textsuperscript{101} opined that people’s strategies and choices to utilise tourism information have shifted dramatically over the years following ubiquitous access to the Internet. They conducted a research to examine tourists’ trip situations, tasks, and perceptions toward WebGIS, a web based geographic information system to provide a new generation of interfaces which has expanded the ways in which travel information can be accessed. WebGIS offers an integrated platform that has the ability to satisfy people’s information needs by offering rich information. Users showed distinct behavioural tendencies under different trip situations and task performances when searching tourism information using WebGIS. Usefulness and playfulness were the key factors that determined the level of usage and interaction. WebGIS are perceived more useful for tourists planning their leisure trips and local recreation than for planning business trips.

Luthe and Schlapfer\textsuperscript{102} in a study examined consumer preferences as a potential driver of supply side innovations in the winter tourism industry. This is an area where the availability of reliable information on market demand could have aided the adoption of environmental friendly means. The study has developed an innovating decision making approach based on factual information and consumer recommendations.

A model of tourism information search was developed by Ho et al.\textsuperscript{103} considering that the search typically involve a search engine to query and locate the sites to browse and many switching back and forth between browsing and querying. The paper also investigated the role of prior knowledge and searching expertise, among other factors, in carrying out efficient and fruitful search.
2.7 I.T. Applications in Tourism Industry

The use of information technology in tourism industry is becoming more and more important. A well managed and organised information system, make it easy for travellers to get the information they needed. The administrators will have some control over the information and the channels through which the travellers receive it, to make sure that all the delivered information are relevant. Many studies were conducted to analyse the application of information technology in tourism industry.

Information technology is playing an ever increasing role in tourism management. Tourists are in need of accurate, relevant and timely information in order to aid them in their travel decisions. Tourism product is largely intangible, perishable, heterogeneous and volatile, and provision of timely information is very important. Horan\textsuperscript{104} discussed the importance of information and information technology to tourism industry. The use of virtual reality in tourism is also studied in the article. By using video clips, animation and virtual walkthroughs of tourism destinations, hotels, attractions and local environment, the intangibility of the tourism products can be reduced. The virtual environment is augmented by various sensory simulations such as sight, sound, and even touch, together with their respective feedback. This makes an excellent way to access, conceptualise and manipulate the tourism information. Virtual reality technology will have a major impact on the future of the tourism industry, because it employs a vastly different approach for the representation of information.

Schulz\textsuperscript{105} pointed out the transition of global computer reservation system in travel industry. The computer reservation systems (CRSs) were developed in the sixties for automating the seat reservation procedure of airlines. Using the global CRSs, travel agencies can make reservations directly from their terminal with any airline and on all continents without having to go through a coordination process or contract negotiations. All global CRSs provide the basic functions for the reservation process such as product presentation, reservation, fare quote, ticketing and additional services. The CRSs have reached a significantly high economic and technological level and travel agents would hardly be able to do their work without these tools. At the same time, high costs incurred for setting up the infrastructural facilities with complicated functional requirements and worldwide networks, forcing the CRSs to inflate their distribution cost which in turn reflects in ticket pricing. So now the airline companies are using two approaches for
reducing distribution costs. Direct distribution through Internet for reducing costs incurred by travel agents and fees to CRSs and last minute offers for tickets at particularly good prices in auctions though the Internet.

Buhalis\textsuperscript{106} analysed some of the most critical IT developments to demonstrate how they influence the tourism industry, by blending the theoretical background of IT with the strategic functions of the industry for proposing a multi-dimensional framework for the incorporation of IT in tourism. Tourism industry is very much affected by the technological revolution. Both tourism destinations and enterprises increasingly need to adopt innovative methods to enhance their competitiveness. On the demand side, the new generation of sophisticated, knowledgeable and demanding consumers increasingly become familiar with the emergent features of information and communication technologies and requires flexible, specialised, accessible, interactive products and direct communication with principals. Hence, new best management practices are now emerging, taking advantage of the IT revolution and re-engineering the entire business processes of the industry.

Eby et.al.\textsuperscript{107} analysed the information needs and preferences of tourists who use personal automobile for their tourist travel, to support the development of Advanced Traveller Information Systems (ATIS). Using personal automobile for tourist travel is most likely popular because of the affordability, flexibility, and convenience of self driving. The development of ATIS presents challenges as well as opportunities for destination marketing organisations and business firms working in the industry. As the information technology is being advanced and developed in rapid pace, ATIS will soon become an information source competing with the traditional media and sources for the tourist information. ATIS is most likely to be the preferred information source while driving to destinations and it may be possible to increase tourists’ satisfaction with their trip by providing effective means for destination marketers to provide right information to the tourist in right time. Tourists frequently need information about lodging, food, health, safety, and banking and an ATIS can answer all these types of queries.

Travel industry is globalised and it is accelerating, observes Xie.\textsuperscript{108} The development of computer technologies presents tremendous opportunities for the industry. Computers and Internet enormously shrink the distance between tourist locations and tourists. It is estimated that, other factors remaining same, use of Internet
creates a 10% increase in the number of tourists. Today travel agencies put the content of their services onto the Internet and advertise it in top advertising websites, so that the prospective customers can know about the agency and their services very well. It is more convenient to cooperate between travel agencies through Internet than before. The convenience boosts the globalisation of travel agencies. However, there are some disadvantages among these impacts. The hardware devices, computers and communicational facilities are out of balance over the world. For example, the number of computers in America is greater than the total number of other countries. This imbalance is sure to widen the gap between developed countries and other countries and also affects the globalization of travel industry. So the development of poor countries’ travel industry will lag behind that of wealthy countries.

Kanellopoulos\textsuperscript{109} analysed the nature of tourism products and observed that some of them are to be treated like perishable commodities. The tourism information system should have the flexibility and capability to handle the information in real time. For example it should be possible to chart out an optimum travel comprising of connecting flights, trains and a combination of them to reach multiple target cities considering the fares of various airlines. This may also have to be linked to dates of special events at the destination, availability of rooms, etc. Full integration, flexibility and personalisation are some of the key characteristics required for a full fledged tourism information system. Through an interactive, immediate, and accurately timed direct marketing website it is possible to achieve precise targeting, personalisation, privacy and measurability. Utilisation of intelligent tourism information systems offers better information management and enables automatic inter organisational communication of a higher quality.

Moller-Jensen and Hansen\textsuperscript{110} studied the two interrelated issues of implementing successful tourist information system. First the selection and categorisation of objects for presentation and the second is the definition of the spatial scope of information relevance for each object. Devices like mobile phones, PDAs, etc. having integrated global positioning system with global information system support spatial narratives by providing guidance that allows the user to visit objects in a destination in a desirable sequence. A mobile information system that can automatically present the information at the relevant
speed and location would be able to provide benefits to travellers that would not have been possible without the GPS or mobile GIS integration.

Buhalis and Law\textsuperscript{111} projected future developments in e-Tourism and demonstrated critical changes that will influence the tourism industry structure, after analysing the published articles on e-Tourism in the past 20 years. Using a wide variety of sources, the authors comprehensively reviewed and analysed prior studies in the context of Internet applications to tourism. The technological revolution experienced through the development of the Internet has changed dramatically the market conditions for tourism organisations. ICTs evolve rapidly providing new tools for tourism marketing and management. They support the interactivity between tourism enterprises and consumers and as a result they re-engineer the entire process of developing, managing and marketing tourism products and destinations. The e-Tourism research is in its infancy and increasingly ICTs will provide the “info-structure” for the entire industry and will overtake all mechanistic aspects of tourism transactions. The future of e-Tourism will be focused on consumer centric technologies that will support organisations to interact with their customers dynamically. Consumers are becoming incredibly powerful and are increasingly able to determine elements of their tourism products. They are also much more sophisticated and experienced and therefore are much more difficult to please.

Eraqi and Abd-Alla\textsuperscript{112} found out that tourist information systems are an essential means for effective tourism marketing and improving quality of services. Most of the Egyptian tourism business sector enterprises are yet to develop their online presence. Organisations having online presence do not have marketing information applications or tourism marketing services to support online marketing and transactions. Even though more than 100 Internet service providers are operating in Egypt for the tourism business sector with information services, tourism establishments have not taken full advantage of it. They keep using traditional channels for promoting and advertising their tourism products. The main barriers for information systems penetration are the lack of computer literacy and acquaintance with information technology. Another problem is that the employees have not yet fully realised the value of tourist information systems. To improve the situation, tourism business sector companies in Egypt need to develop information technology based marketing strategies for taking full advantages of e-tourism. The government should employ its own control to modify the regulations for
helping tourism business sector enterprises to adopt information system technologies in an effective manner.

Tourism Information System has parallels to Geographic Information System. Based on this fact, Esen et.al.\textsuperscript{113} compared applicability of Gantt, CPM, PERT and TOC procedure in TIS. It was found that Gantt and CPM methods are not suitable for calculating duration and critical path corresponding to given destination. PERT gives better results. TOC was found to give even better results due to smaller number of activities involved, thus making it most suitable for TIS and GIS applications.

Livi\textsuperscript{114} gives a concise account of the impact of information technology on functioning of tourism related firms. In the tourism industry growth of information and communication technology has a tremendous role, right from daily functioning to strategic business decisions and from marketing and advertising to production and supply. One fallout of this scenario is that many traditional companies who couldn’t swim along with the flow are forced to either wind up their businesses or to do limited business with a section of the customers who still approach them out of habit or loyalty or due to lack of trust in online transactions.

Sindhu et.al.\textsuperscript{115} illustrated the procedures for development of an expert system for travel guidance. TravelRouter is an initiative that can provide tourists with information on the route and the distance between any two towns in the region without consulting a travel agent. TravelRouter can be made to execute on the Internet browser using special visual Prolog features and this makes it more useful in tourism industry. Several such other expert systems like hotel booking, car rental booking, tour planner or tourist destination finder could be developed as well and can be integrated into the tourism web portal of the state. Such portals can be used even while travel using WAP enabled devices like palm top. TravelRouter is an intelligent routing module designed for inclusion in TouristAdvisor, which is a comprehensive web enabled intelligent information system proposed for the Kerala. In the era of ubiquitous computing with WAP enabled devices and convergence of technologies, the use of intelligent agents in the tourism information systems architecture provide wide re-engineering possibilities.

Park et.al.\textsuperscript{116} proposed a tourist domain ontology that consists of concepts for tourist contents and locations, and a tour service application ontology for various
intelligent tour services. They have also developed an intelligent tourist information system for a local area with ontology, ubiquitous technology and web environment approaches. In this system, tourist can search the contents and can download text, picture or video files and can also request tour services instances from the Tour Service ontology. The tourist approaches the system with various tourist views: 1) user location view, 2) zone view, 3) attraction view, 4) travellers’ preference view and 5) interactive ubiquitous recommend view. The TIS system extracts or inserts the tourist contents and relevant files from the Tourist Contents Database according to tour service menu referred by the instances of ontology and rank the contents by the preferences of travellers. The contents are converted into the service formats according to the client requests by referring to the instances of the Tour Service ontology which provides tourist information in HTML format with text, pictures, animations, video, etc. The information can be delivered to travellers' terminals through Web, CDMA or Wi-Fi.

Lim et.al. investigated the weather and calendar effects on the usage pattern of a tourism web site. The study revealed that number of visitors to the tourism web site is influenced by rainfall, cloud cover, season, and the day of the week. In rainy, cloudy or a workday, the number of people who search for tourism information is greater than on other days. In addition, the number of visitors is highest in the summer. Tourists are sensitive about the quality of hotels, restaurants and food, etc. Therefore, depending on the quality of contents and design structure they perceive on the tourism web sites, tourists’ cognitive states may change along the process of searching for relevant information on the tourism web sites. The study also revealed that, Internet users are often overwhelmed by the huge amount of information available online and thus cannot always locate what they intended to find. Most of the information offered by tourism web sites is not determined by considering tourists’ needs, instead it is based on the interests of the service providers.

Buhalis and Jun asserts that the influence of ICT in all facets and processes of tourism is so exhaustive that there is a paradigm shift in the tourism industry and most of the tourism related activities can now be called as e-tourism. From its original role as electronic distribution system to facilitate computerised reservation and global distribution, ICT has extended its arms to e-commerce, e-business and digitisation of all processes and value chains in the tourism, travel, hospitality and catering industries. The
study also cautions that despite its wide spread influence and application in the tourism industry, ICT is not a panacea or spell that will fetch results on its own; its success still depends on management vision and perseverance.

A geo-referenced information system for Agra was developed by Singh et.al.\textsuperscript{119} This helps the tourists to find interested locations, sights, accommodations and other places of interest which are nearby to them by analysing and displaying the tourism objects in geographic context on interactive tourist maps. GIS is a system of computer hardware, software, and procedures designed to support the compiling, storing, retrieving, analysing, and display of spatially referenced data for addressing, planning and management problems. A well organised GIS also includes a focus on people, organisations, and standards. Internet GIS provides a perfect tool to access, disseminate and visualise tourism data with integrated images, text, tables, diagrams. It can show location of hotels, tourist sites, points of interest, and so forth. The implementation of geo-referenced information system will provide almost unlimited access to information to anybody having Internet connection enabling them to take better decisions while planning their itinerary in Agra.

Sreejit and Katiyar\textsuperscript{120} assessed the possibility of using Open Source GIS (OS GIS) based software’s to create a low cost GIS project and to publish the same over Internet using free Web GIS software. OS GIS is one of the most innovative approaches in the field of GIS, providing cost effectiveness. OS GIS software like QGIS can provide practically all the GIS tools required for the GIS application like Tourist Information System. MapServer and Google Map API can be used for web based GIS and query. For the developing countries like India, cost is the primary consideration for the adaptability of GIS technology and QGIS provides all the data storage and analysis for free. The MapServer software provides an efficient environment for the tourism industry. This can be very helpful in the promotion of tourism in India and a tourist planning to visit a specific place can get all the details from the web based portal.

Chunchang and Nan\textsuperscript{121} explained the main contents of the geographical information system and the technology of a tourism information system. A tourist information system based on geographical information system can focus on the information requirements of travellers. MapX and MapInfo professionals are the two software used for designing a TIS. MapX provides with a fast, easy to use, powerful map
and MapInfo is a powerful map based windows platform solution. The author illustrates the steps for creating a tourism information system of Sichuan province. Tourist information system developed using the above two software, based on the map data will provide users with a quick and convenient travel information query method.

Husain and Dih\textsuperscript{122} proposed a Personalised Location based Traveller Recommender System (PLTRS) to provide personalised tourism information to its users. There are various channels like tourism websites, social network sites, blogs, forums, and various search engines such as Google, Yahoo, etc. and many platforms through which travellers can find out information and share their tour experience. Information found in this way is not filtered based on travellers’ preferences. Hence, travellers face an information overflow problem. There is also increasing demand for more information on local area attractions, such as local food, shopping spots, places of interest and so on during the tour. PLTRS mobile application is a unique service which can provide personalised tour information during a trip via their mobile phone. It is a combination of existing technologies and is validated extensively to assure personalised tour information for users under a wide range of situations.

A Web Based State Management Information System (WBSMIS) for Delhi was designed for tourists by Sharma et.al.\textsuperscript{123} The system is designed using Internet web technology to provide all the information needed to explore the state of Delhi. A web application, function modules and data modules are integrated to simplify information management and make speedy access to information.

Wei\textsuperscript{124} illustrated the role that the geographic information system plays in tourism management. Tourism has strong geographical attributes and GIS is an information system offering services such as data collection, storage, processing, spatial analysis and so on, to geographic research and decision making. With the rapid development of information technology, the functions of GIS are more and more powerful. Geographic information system applied to tourism management is the preferred platform of tourism information. The important phases of establishing a TGIS are: the construction of tourism geographic information database, the establishment of data structure and the data model and the design of Tourism Geographic Information Database System. GIS applied in tourism management also need to improve according to the development of information technology which constantly poses and solves new challenges.
Integrated planning and management is required for promotion of tourism in rural areas. To facilitate this, Lee et al.\textsuperscript{125} classifies villages as core villages, sub core villages and connection nodes according to the spacial centralities, resources, accessibility and mutual interactions. 43 villages of Korea were assessed using geographic information system and the relationship between them described using network terminology and quantitative indicators.

2.8 Conclusion

For reviewing the literature on the research topic “An investigation into information needs and information behaviour of tourists and design of a tourist information system for Kerala” background materials from 1988 to 2013 on various topics such as information need, information seeking behaviour, tourism and IT application in tourism industry were collected. A total number of 125 literature, including journal articles, conference proceedings, theses, dissertations, etc. were analysed. Even though many studies have been conducted about information need and information behaviour, tourist information need and information behaviour was a unique subject, and literature collection was a laborious process. Similarly, lot of studies have focused on design of tourist information system most of them did not fit to the frame work of library and information science. Search engines and bibliographic tools often confused the topic tourist information system with geographical information system, or treated it as an engineering or compute science subject. The literature study justifies the designing of the frame work of an information system for tourists visiting Kerala and shows that it is imperative and useful for both library science and Kerala’s economy.

References:


