CHAPTER 1
INTRODUCTION

1.1: preamble

Today, in this technological era, Internet is the information superhighway. It is an international network of computer networks. It is a global computer network providing a variety of information and communication facilities consisting of interconnected networks using standardised communication protocols. Users from any part of the world can connect or access information irrespective of time and place. Internet is a worldwide network which gives access to an overwhelming amount of data and electronic information. It is a world’s wonder network with information on any subject in the universe and provides access to a number of information sources and services.

Internet technology is the most useful economically viable in the era of present communication system. It is a vast collection of large and small interconnected networks extending all the ways across the world. Internet research is a practice of using Internet especially the World Wide Web, for research, being Internet is widely and readily accessible to hundreds of millions of people in many parts of the world and provide instant information. Internet research includes personal research on a particular topic and research about Internet.

World Wide Web is one of the most popular Internet services. It is referred to as WWW, W3 or simply the WEB. According to Tim Berners-Lee, one of the web’s chief architects from CERN, the World Wide Web is the “universe of network of accessible information, an embodiment of human knowledge which has a body of software, a set of protocols and conventions and used hypertext and multimedia techniques to make the web easy for anyone to roam, browse and contribute to”. It is a collection of web sites and contains linked documents having text image sound and video. One can retrieve documents, view images, animation, listen to sound files, speak and hear voice and view programs from it. We can access, share and exchange
information through it. World Wide Web is the life blood of Internet body. It can be regarded as a network of web pages. These pages are the entities of information on the web. The web offers a wealth of information such as consumer resources, education, job hunting, travel, cooking, current research, Government data, statistics, entertainment, games and sports, health, online communications, news and current events at our fingertips. But the web is not organized in any way and it is constantly changing and evolving, sites are being added, removed, updated, and revised on a constant and unpredictable basis. So the web is called dynamic in nature. The hypertext documents, formatted and annotated with the Hyper Text Mark up Language, making up the web are called web pages and the multiple web pages with a common theme and published within a common domain name is called a web site. In short World Wide Web is the information store of the Internet with a collection of websites and network of web pages.

There are different types of web sites namely official websites of offices, government websites by government agencies, websites of service organizations and institutions, commercial websites and personal websites and so on.

Web searching has become a daily behaviour for many people. Searching the web site through Internet is called browsing. Internet explorer, Netscape navigator, Mozilla fire fox, Google chrome are some of the examples of Internet browsing software.

World Wide Web is like an ocean of information; it is not easy to find specific information from it because the web is very huge and growing all the time. So there are certain tools used to search information from the web. They are called search engines. They search through all the web sites and create an index of the information of the web sites and act as a single point to find relevant information. E.g. Google, Yahoo, Bing, Lycos, Info seek etc.

A search engine is a software program that is designed to search information on the World Wide Web. A web search engine uses software known as WebCrawler to follow the hyperlinks connecting the page on the World Wide Web. The
information on these web pages is indexed and stored by the search engines. To access this information, a user enters keywords in a search form and the search engine queries its indices to find web pages that contain the keywords and displays them in search engine result page (SERP). SERP is the listing of results returned by a search engine in response to a key word search. The results normally include a list of items with titles, a reference to the full version, and a short description showing where the key words have matched content within the page. The information may be a mix of web pages, images, and other types of files. Some search engines also mine data available in databases or open directories.

The search engines are generally classified into three, general or individual search engines, directory type search engines and Metasearch engines. Individual search engines search through all the web sites and create an index of the results, directory type search engines provide directories of major topics and they are very useful in browsing subject information and Metasearch engines are a combination of a number of search engines and they search simultaneously through other search engines and display the results. So the Metasearch engines are also called search engines of search engines, combined search engines, simultaneous search engines or aggregators. Metasearch engine is a search tool that sends user requests to several other search engines and/or databases and aggregates the results into a single list or displays them according to their source. Metasearch engines enable users to enter search criteria once and access several search engines simultaneously. Metasearch engines operate on the premise that the Web is too large for any one search engine to index it all and that more comprehensive search results can be obtained by combining the results from several search engines. This also may save the user from having to use multiple search engines separately.

The amount of information retrieved by search engines varies with different search engines. Some of them retrieve too may results with a number of irrelevant sites. An efficient search engine for one subject field may not be good for other subject fields. So it is essential to find out the best search engine for a particular subject field or topic. The quantitative study of websites, search engines results,
precision and recall of search engines, percentage of overlapping of search results, annual growth rate of web sites in a particular subject field etc; are come under a broad area of study in Library and Information Science called Webometrics.

1.2: Webometrics

The term webometrics was coined by Thomas C. Almind and Peter Ingwersen (1977). The persons associated with webometric studies are known as webometricians. Webometrics is the quantitative study of web resources. In other words webometrics is the application of informetric methods to World Wide Web. Bojorneborene and Ingwersen(2004) defined it as “the study of the quantitative aspects of the construction and use of information resources, structure and technologies on the World Wide Web drawing on informetric and bibliometric approaches”. Webometrics is also known as cybermetrics. Bibliometrics, Informetrics, Scientometrics, Web mining and Virtual ethnography are related and similar scientific fields of webometrics.

The science of webometrics tries to measure the World Wide Web to get the knowledge about the number and types of hyper links structure of the World Wide Web and usage patterns. Thelwall (2007) defines Webometrics as “the study of web based content with primarily quantitative methods for social science research goals using techniques that are not specific to one field of study”. Interdisciplinary research is getting more significant by enlarging the types of subjects of study and the techniques used. This field of study requires contributions from information science, computer science and statistical science. Webometrics is an emerging research field in library and information science.

Webometric covers research of all network based on communications using informetric or other qualitative measures. Its methodology draws especially from bibliometrics. It is clear that informetric methods using word counts and similar techniques can be regarded as a citation network, where the traditional information entities and citations from them are replaced by web pages. These pages are the entities of information on the web with hyperlinks from them acting as citations. The
use of info metric methods on www allows the analysis to be similar way as in the traditional citation database. Studies in webometrics focus on hyperlinks as a potential source of new information.

In bibliometrics studies journal article citations are analyzed where as in webometric studies links to journals are analyzed to find a journal impact factor. But quantitative studies of hyperlinks have broader potential applications than bibliometric studies of citations. Some have computer science goals such as improving web search engine performance, while others have information of science objectives such as using hyperlinks to help in building online document collections. One of the strength of the webometrics is that its object of the study, the web, which enjoys a widespread use that webometric result can benefit many different line of search. In short webometrics is concerned with measuring aspects of the web: domain, web sites, web pages, words in web pages, links, web search engine results and web impact factor (Jeyshankar, 2011). Thus webometrics is an emerging research field in library and information science.

Webometric research has fallen into two main categories namely link analysis and search engine evaluation. Search engines are also used to collect data for link analysis. A set of measurements is proposed for evaluating Web search engine performance (Vaughan,2004). Some measurements are adapted from the concepts of recall and precision, which are commonly used in evaluating traditional information retrieval systems. Others are newly developed to evaluate search engine stability, which is unique to Web information retrieval systems. Overlapping of search results, annual growth of search results on each search engines, variation of results on search using synonyms are also used to evaluate the relative efficiency of search engines.

The recall is the ability of a retrieval system to obtain all or most of the relevant documents in the collection. Precision is the fraction of a search output that is relevant for a particular query. Overlapping of search engines means occurrence of same sites between or among the selected search engines. Stability is based on the number of pages retrieved, sameness of sites in the top pages and arrangement of sites in consecutive tests over a short period of time. In this study the investigator attempt
to conduct a webometric study on the topic Medical Tourism in Kerala using six search engines, of these include three general search engines namely Bing, Google and Lycos and three Metasearch engines namely Dogpile, iQuick and WebCrawler. Here these six popular search engines will use to retrieve the information from the World Wide Web on the topic Medical Tourism in Kerala to ascertain the amount of information retrieved through these six search engines and to evaluate the relative efficiency of them to identify the most relevant search engine in this field. It is therefore, significant for library and information professionals to conduct research on Internet for optimum utilization of Internet. Considering the above factor the investigator attempted to conduct a webometric study on the topic “Medical Tourism in Kerala”.

1.3: Medical Tourism in Kerala

Kerala is a southern state of India with the Arabian Sea in the west, the Western Ghats towering 500-2700 m in the east and networked by 44 rivers, long shoreline with serene beaches, tranquil stretches of emerald back waters, lush hill stations and waterfalls. Kerala is famous for its equable climate with a moderate temperature throughout the year. Kerala’s sprawling plantations and paddy fields, ecotourism initiatives, unique culture and traditions, enchanting art forms and magical festivals, coupled with its varied demography have made Kerala one of the most popular tourist destinations in the world and named as one of the Ten Paradises of the World by National Geographic Traveler. Kerala backwaters like Kollam, Cochin and Alleppey, hill stations like Munnar, Ponmudi, and Nelliampathy, beaches like Kovalam, Varkala, Kollam, Fort Kochi and Kappad etc are the major attractions of the tourists. Silent valley national park, Kumarakam bird sanctuary, Thekkady wild life etc are the major ecotourism projects of Kerala. Kerala’s hospitality with spicy and exotic cuisine and Ayurvedic health holidays, world class health care system, lowest infant mortality and highest life expectancy rates, peaceful and pristine life are the major attractions for the tourists all over the world. Besides Government of Kerala started the Grand Kerala Shopping Festival since 2007 and it has been held every year during December – January to promote tourism in Kerala. Kerala is a reputed
destination in the tourism world and known by the tagline “Kerala-The God’s Own Country”.

Medical Tourism is any kind of travel to make a person or a member of his family healthier (Raj,2006) The word Medical Tourism was coined when people started looking outside west for cheaper medical treatment with international quality. It can be broadly defined as provision of 'cost effective' private medical care in collaboration with the tourism industry for patients needing surgical care and other forms. Kerala has become one of the leading Medical Tourism destinations of India and gained international attention for health tourism and is becoming a popular health tourism hub. There are a number of speciality hospitals in Kerala that offer specialized care for complex medical conditions. Patients from all over the world are becoming medical tourist in Kerala for low cost and health restorative alternative treatments. Speciality hospitals in Kerala are at the forefront of Medical Tourism. Many of the hospitals offer a complete package that includes consultancy with a medical specialist, diagnosis, appropriate medical treatment, pre and post operative care etc. The quality of health care offered by the doctors, nurses and support staff, makes Medical Tourism in Kerala the preferred choice of patients seeking healthcare solutions in World. Kerala has an excellent track record in the fields of tourism and health care.

The Confederation of Indian Industry (CII) has declared 2006-2007 as Medical Tourism Year in Kerala and they organized an International conference and exhibition on Health tourism in 2013 at Kochi, Kerala. According to the CII-Mc Kinsky report Medical Tourism industry in Kerala is expected to be worth $4 billion by 2017.

Confederation of Indian Industry along with Kerala Government is organizing an International Conference on Health Tourism 2015 at Le Meridian, Kochi, Ernakulam on 30-31of October 2015. The event aims to promote Kerala as the hub for Medical Tourism in the country by 2020. The competitiveness of Kerala in health tourism is enhanced by the attractiveness of the alternative systems of medicine, especially ayurveda, for the foreign tourists. Kerala is also known as land of Ayurveda for its traditional medicines which aim at providing rejuvenation, longevity and relaxation to stressed and strained. More over Kerala has a potential to attract tourists
around the world due to its cultural diversity, perfect beaches and fabulous cuisine mixed with a pinch of oriental mysticism. Kerala and Ayurveda have virtually become synonymous with each other. World-class facilities are also available in the other traditional forms of medicine as well as modern medical treatment.

Dental Tourism which is a sub sector of Medical Tourism is chosen by thousands of patients from around the globe. Foreigners flock to Kerala to receive cost effective dental treatment combined with taking a pleasure vacation. Tourists can experience beautiful Kerala along with superlative dental care. Many packages offer unmatched dental care and treatment along with a complete and planned vacation in Kerala. Low cost dental treatment with improved technology and standards of care by qualified dental specialists and online service after the treatment etc are the reasons for the powerful development of dental tourism in Kerala.

1.4: Tourist Visa on Arrival to Kerala

Another Happy news for the tourists to Kerala is that they can plan their holidays in Kerala even on a short notice, that is Tourist Visa on Arrival (T-voA) enabled with Electronic Travel Authorization (ETA) has been introduced for Foreign Tourists coming to Kochi and Trivandrum from 43 countries including Australia, Germany, Japan, New Zealand, Norway, Russia, Singapore, Thailand, UAE & USA for a short stay of 30 days & Kerala became the only state in India where two airports, having the T-voA enabled with ETA which will be effective from November 27, 2015 onwards. The T-voA enabled with ETA will allow tourists to apply and pay the fee for the visa online, without having to travel to the Indian missions in their home countries. Applicants who are approved will receive the official travel authorization via email and only need to present a printed copy of this to the immigration authorities upon their arrival in India.

Medical Tourism is a combination of various components like airlines, hotels, resorts. Travel companies and agencies, transportation, food outlets, a number of best hospitals, their infrastructure facilities, medical treatments and human resources. But printed documents and other reference sources are very less in this topic. Nascent
information in primary sources are scattered in the journals of various disciplines like
tourism, medicine business, economics, management etc. due to its multidisciplinary
nature.

But there are a number of information sources in the World Wide Web on
Medical Tourism in Kerala. They are essential to plan, organize and to manage
Medical Tourism packages. Considering the above factors the investigator plan to
conduct a webometric study on the topic Medical Tourism in Kerala. The analysis of
web sources in that field is very relevant for the students, teachers and researchers in
the field.

1.5: Title of the Study

Web resources on Medical Tourism in Kerala: A Webometric study

1.6: Definition of Key Terms

Web resources: - The information sources available on the World Wide Web
are called web resources.

Medical Tourism:- Medical Tourism is defined as any kind of travel to make
a person or member of his family healthier.

Webometrics:- It is the quantitative study of web resources. In other words
webometrics is the application of informetric methods to World Wide Web. Kerala:-
Kerala is a southern state of India, which has emerged as a reputed tourist destination
in the world and known by the name ‘God’s own country’.

1.7: Objectives of the Study

1. To ascertain the various types and quantities of information resources
accessible through World Wide Web in the field of Medical Tourism in
Kerala.

2. To compare and evaluate the relative efficiency of six search engines that is
three general search engines with three Metasearch engines. Bing, Google,
Lycos with Dogpile, Ixquick and WebCrawler in locating the web resources on Medical Tourism in Kerala and thereby identify and select relevant search engine in this field.

3. To compare and evaluate the above search engines on the basis of their precision and recall.

4. To find out the rate of stability of search results of these search engines.

5. To find out the percentage of overlapping of websites among these search engines

6. To estimate and compare the annual growth rate of web resources on Medical Tourism using these search engines.

7. To analyze the different categories of web sites on Medical Tourism in Kerala based on their domain (Domain wise analysis)

8. To analyze the different categories of web sites on Medical Tourism in Kerala based on their Web developers.

9. To establish the scattering of nascent information and scholarly articles (Journals) in different disciplines due to the multidisciplinary nature of tourism through the web search.

10. To rank the top 10 Medical Tourism Hospitals based on the number of web results retrieved by six search engines

11. To compare the search results of six search engines using synonyms.

12. To find out the top ranked twenty-five web sites on medical tourism in Kerala on each search engines

13. To list out Medical Tourism destinations in Kerala through web search.
1.8: Assumptions

1. The quantity of accessible information sources in the World Wide Web varies with different search engines.

2. Due to the dynamic nature of the World Wide Web number of web sites may be increased or decreased in due course.

3. Nascent information on Medical Tourism is scattered over various disciplines.

1.9: Relevance of the Study

Webometric studies for search engine evaluation is an emerging field in library and information science. The best search engine for one subject may not be the best in other subject area. The Medical Tourism in Kerala is a fast growing sector and information are scattered in different disciplines due to its multidisciplinary nature. So the web resources are the only reliable sources which are essential to plan, organize and to manage Medical Tourism sector. Considering the above factors webometric analysis of web resources using search engines on Medical Tourism is very relevant.

1.10: Methodology

Methodology used for the study is the webometric study. Six search engines namely Bing, Google, Lycos, and Dogpile, Ixquick and WebCrawler are used to collect relevant information from the web. For it different variables on the topic Medical Tourism in Kerala are selected for key word searching. Quantitative analysis is done on these results for each search engine. Search on each category is done simultaneously due to the dynamic nature of the web.

Precision and recall, stability of results, extent of overlapping are studied for comparison and evaluation of search engines with Metasearch engines using different parameters. To compare the stability of search results, data are collected five times with same keywords in 7-8 days apart, within a short period of one month and number
of hits, order of arrangement and sameness of top sites in consecutive search results and their fluctuations are studied using six search engines.

For calculating annual growth rate of web sites on each search engine, data are collected two times with an interval of one year. Difference in percentage is analysed to find the annual growth rate. Search using synonyms of keywords is done and results are analysed to compare the variations in results.

Top journals contain articles on Medical Tourism in Kerala are collected through web search and analysed them with their concerned subject field to establish the scattering of scholarly information in various disciplines due to the multidisciplinary nature of Medical Tourism.

Ranking of top Medical Tourism hospitals is done on the basis of total number of results retried by six search engines.

List of top websites on each search engines, Medical Tourism, dental tourism, Ayurvedic tourism and fertility tourism hospitals are included as appendices.

1.11: Organization of the Study

The study is organized into 6 chapters as follows,

Chapter 1: Introduction- contains an introduction of the topic, title of the study, definition of the key terms, objectives of the study, hypothesis, methodology and relevance of the study.

Chapter 2: Review of related studies- This chapter reviews the existing literature on webometric studies and its application in specific studies. It includes literature on web resources, webometrics, search engines and all other related studies.

Chapter 3: Search engines and webometrics- This chapter will gives an account of search engines, Metasearch engines, peculiar features of six search engines used for the study and an account of webometrics and related topics.
Chapter 4: Medical Tourism in Kerala - This chapter explains the current scenario of Medical Tourism in Kerala, its sub sectors, favourable factors, important Medical Tourism destinations, various Medical Tourism packages, different medical treatments and jobs and careers on Medical Tourism in Kerala.

Chapter 5: Analysis of the data - It will contain collected data and its analysis. Webometric methods are used for analysis. Tabular, graphical and diagrammatic representations are there for clarifying the results.

Chapter 6: Findings and conclusions - This chapter will enumerate the summary of major findings of the study and suggestions along with its conclusion. Scope of future studies is also discussed.

All chapters are followed by its references, a bibliography is there at the end and list of sites and destinations and other special pages are included as appendices.

Appendices: 1 to 9 (List attached)

Bibliography: A selected list of sources both print and electronics, consulted for the completion of the study

Reference: Reference are there at the end of each chapter.

1.12: Conclusion

This introductory chapter contains a brief concept of Webometrics and Medical Tourism in Kerala. Deficiency of printed documents and scattering of scholarly articles make the web resources most essential in this field. Search engines are essential tools to collect relevant information on this topic.
References


