CHAPTER 6
FINDINGS, SUGGESTIONS AND CONCLUSION

6.1: Introduction

Webometric analysis of web resources on Medical Tourism in Kerala has been presented in chapter 5 with the help of tables and figures. In this chapter 6, the major findings, observations and suggestions have been highlighted on the basis of analysis, discussions, observations and experiences. Scope for further studies are also listed followed by a conclusion.

Web resources on Medical Tourism in Kerala include websites of travel agencies, travel companies, Medical Tourism hospitals, ayurvedic clinics and resorts, dental tourism clinics, news article in dailies, personal web sites of doctors, sites of Government agencies, images and maps and sites of Wikipedia and travel magazines and guides. Most of the sites are rich with useful contents and links. A large variety of medical tourism packages and various treatments are there with its cost required contact numbers. Links for jobs and careers, places to visit are listed in most of the sites. Some hospitals provide a link for medical tourism or International patients in their web sites. Facilities, doctors, treatments and contact us links are also there. Online booking facilities and FAQ links are there to clarify the doubts. Most of the sites contain social networking links like blogs, twitters and face book pages. Webometric analysis of the results reveals the major findings as the following.

6.2: Major Findings and Observations

6.2.1: Retrieval Efficiency of search engines

- Analysis on 10 representative variables form all the subsectors of on Medical Tourism in Kerala, the search engine Lycos retrieves 59% of the total results and stands first followed by Bing in the second position with 37% and Google in third position with only 2% of results. The remaining less than 1% is shared by all Metasearch engines, of these Ixquick stands first
with a slight difference from others followed by Dogpile and WebCrawler.(Table and Figure 5.1)

- Analysis of 10 variables on Ayurveda tourism Lycos occupies first place with a high result of 85% and Google in the second position followed by Bing in the third position with a less Percentage of 7 and 6 respectively. Among Metasearch engines Ixquick stands first, followed by WebCrawler and Dogpile.(Table 5.2 and Figures 5.2 and 5.3).

- In the search on 10 variables under Dental tourism, Google stands first with 46% of results, followed by Lycos and Bing in the second and third position with 34% and 18% respectively. Ixquick stands first among Metasearch engines followed by Dogpile and WebCrawler.(Table 5.3 and figures 5.4 and 5.5).

- A search on 5 variables of fertility tourism Bing bags first position with 60% of total results and Lycos bags second position with 34% and Google in the third position with only 5% of results. Here also Ixquick comes first among Metasearch engines (Table 5.4 and Figures 5.6 and 5.7).

- In all other contexts namely AYUSH in Kerala, Medical Tourism hospitals and IVF hospitals Lycos and Bing stands at first and second position with almost equal percentage of results with a slight difference and Google at the third position with a small percentage of total results.( Tables 5.5-5.7 and Figures 5.8-5.12).

- Analysis of 5 variables on Ayurveda centers Google shows high number of hits with 60% followed by Lycos and Bing in second and third positions respectively. (Table 5.8 and Figure 5.13).

- On analysis of 5 variables on dental tourism clinics Lycos stands at first 64% of results followed by Bing at second position with 32% and Google at third position with only 2% of results(Table 5.9 and Figure 5.14).
• In a search using 10 Medical Tourism treatments Lycos comes first with 59% of total results, followed by Google with 21% and Bing at third Position with 19% of results. Here also Metasearch engine Ixquick comes first among them. (Table 5.10 and Figure 5.15).

• In the analysis of cumulative results retrieved by all 75 search words shows retrieval efficiency of Lycos is high and attains the first position with 58%, Bing at the second position with 37% of results and Google at the third place with a less value of 2%. These results agree well with the results of the fist study with 10 representative variables on all sub sectors of Medical Tourism in Kerala. (Table 5.11 and 5.1 Figure 5.16)

• On the basis of these findings it is revealed that Lycos shows high retrieval efficiency in the field of Medical tourism in Kerala followed by Bing and Google.

• On analysis of Metasearch engines Ixquick stands first with comparatively high retrieval efficiency than other Metasearch engines Dogpile and WebCrawler.

6.2.3: Ranking of Medical Tourism Hospitals

• Based on the number of sites retrieved by all six search engines used in this study, Specialists Hospital-Kochi attains first rank, AIMS- Kochi in second place and Medical trust Hospital-Kochi at third place among medical tourism hospitals in Kerala. Trichur heart hospital and KIMS-Trivandrum come at fourth and fifth position respectively. (Table 5.12 and 5.6 and Figures 5.17-18)

• In the analysis of IVF Hospitals, CRAFT- Thrissure gets first rank and GIFT Gyno-IVF-Kochi and Samad IVF-Trivandrum get second and third place respectively.(Table 5.13 and 5.7, Figure 5.19)
• Based on the Number of hits retrieved for ayurveda centers Nagarjuna ayurveda comes first followed by Kottakkal and Dhanvanthari ayurveda at second and third position respectively. (Table 5.14 and 5.8, Figure 5.20).

• In the analysis of dental tourism clinics, Nechupadam dental clinic- Kochi and Mother dental super specialty-Calicut gets first and second rank respectively followed by MIDAC dental clinic - Calicut and Vijaya dental care - Calicut with third and fourth position respectively. (Table 5.15 and 5.9, Figure 5.21).

6.2.4: Overlapping of Search Engines

• Analysis of the overlap between 2 search engines shows that highest overlapping is between Bing and Dogpile (91%), followed by Bing and Lycos (78%) and Bing and Ixquick (68%). Lowest overlapping (31%) is seen in 2 pairs, between Google and Lycos and Google and Ixquick. On analysis, it is found that the average overlapping of Bing is 68.6% with all other search engines and that of Lycos is 50%, Dogpile with 48.4%, WebCrawler with 44.3%, Ixquick with 44% and Google with 35.6%. In short the Bing shows the highest overlapping with all others, followed by Lycos in second position. Google shows least overlapping with all other search engines and Metasearch engines. (Table 5.16 and Figure 5.22)

• Overlapping of all possible combinations was studied. On analysis it is found that overlapping between 3 search engines ranges from 18 to 42% and that of 4 search engines ranges from 15 to 28% (Table 5.17-18 and Figure 5.23).

• In the analysis of overlapping between 5 search engines the rate of overlapping ranges from 14 to 15% and among the 6 search engines 13% of overlapping is found. In short all the six search engines share 13% of common sites among the retrieved results (Table 5.19-20)

• It is revealed from the analysis that in overlapping study Bing shows high rate of overlapping with all other search engines followed by Lycos and
Google. In the case of Metasearch engines Dogpile shows high overlapping followed by WebCrawler and Ixquick.

The reason for high overlapping may be due to the multiword nature of the variables used.

6.2.5: Unique Sites in Search Engines

- An analysis for the study of uniqueness of search engines it is found that Google stands first with 40% of unique web sites followed by WebCrawler with 13% and Ixquick with 5%. Bing and Lycos show 4% followed by Dogpile with least uniqueness of 2%. In short 40% of websites in Google is not shared by any other search engines. (Table 5.21 and Figure 5.24).

6.2.6: Precision of Search Engines

- Analysis revealed that the search engine Bing shows the highest precision 1.83 followed by the metasearch engine Dogpile with precision 1.77. Search engine Lycos and Metasearch engine WebCrawler shows 1.74 and 1.73 respectively, followed by Metasearch engine Ixquick with 1.67 and search engine Google with the least precision 1.66.

- On analysis it is found that Bing stands first in precision and Metasearch engine Dogpile stands second followed by Lycos and WebCrawler at third and fourth position respectively. Google and Ixquick occupy the last two positions. Precision of search engines and Metasearch engines are in the similar range, between 1.83-1.66.(Table 5.22-27 and Figure 5.25-26).

- The present study shows that in the case of precision, notable difference is not there between search engines and Metasearch engines. More over it is proved from the related studies that precision varies with the structure of queries.

- Here the in depth nature of the topic and multi worded nature of the queries may be the reasons for having the same range of precision for all search
engines and Metasearch engines. Even though the Metasearch engines retrieve less number of results, they attain almost same precision as that of search engines which retrieve a huge amount of results.

6.2.7: Relative Recall of Search Engines

- Analysis of relative recall values shows that search engine Bing stands first with the mean relative recall 0.44 (44%) followed by Lycos with 0.32 (32%) and Google with 0.12 (12%). Metasearch engines show very low level relative recall. (Table 5.28 and figure 5.27).

- A point to be considered in the case of relative recall is that it is not a constant or permanent value, and it is always related to the other search engines and topics taken for the study. If the Metasearch engines are taken separately for a study, they may show high relative recall.

6.2.8: Search Using Synonyms

- In search using synonyms words Google handles synonyms in a moderate way while Bing and Lycos shows extremes in results. (Table 5.29 and Figure 5.28).

- In the case of Metasearch engines, Ixquick handles well in synonyms search with less percentage of difference in results, followed by WebCrawler and Dogpile. (Table 5.30 and Figure 5.29).

- It is noticed that top results retrieved by synonyms in all search engines do not show much variation.

6.2.9: Stability of Results in Search Engines

- Analysis of results shows that percentage of fluctuations in the number of hits retrieved by the consecutive searches within a month is less in Ixquick, followed by Bing and Lycos. Google with comparatively high fluctuations comes in the fourth position (Table 5.31-36).
• But considering of other characteristics like sameness of top sites and order arrangement of top sites in consecutive search results Google comes at first position and Ixquick at second position. Bing and Lycos stand at third and fourth positions respectively. On analysis it is found that Google results are more stable than that of others.(Table 5.37)

6.2.10: Annual Growth of Web Sites

• In annual growth analysis it is revealed that number of websites is diminishing in all search engines. In this study only Bing search engine shows an increase of 8.4 % of annual growth while all others show reverse growth. In the case of Ixquick Meta search engine annual growth is not measurable due to its algorithm change.(Table 5.38-43 and Figures 5.31-32).

6.2.11: Domain Wise Analysis of Web Sites

• In domain wise analysis it is found that commercial sites (.com) stands first with a high margin from all others. More than 66% of websites on Medical Tourism in Kerala possess the domain name .com. (Table 5.44 and Figure 5.33).

6.2.12: Web Developer Wise Analysis of Web Sites

• In web developer wise analysis it is found that more than 50% of the sites in the field of Medical Tourism in Kerala are created by travel agencies and travel companies. Hospitals and clinics create only 18%. Sites by bloggers are in considerable amount of 7% (Table5.45 and Figure5.34).

6.2.13: Subject Wise Distribution of Journal Articles

• From the subject wise analysis of journals, it is established that scholarly articles on medical tourism in Kerala is scattered in various disciplines. Only 4% is belongs to Medical Tourism, 14% in Medicine and 22% in Tourism field. Commerce, Management, Marketing, Business, Economics and Social Science etc are the other fields of distribution. So the web resources are the
valuable sources for the management of medical tourism sector. It is recommended to provide Index to medical tourism articles or Abstract service of medical tourism articles for academic use.

6.2.14: Findings in Relation to Hypotheses

1. It is evident from 11 tables related to the retrieval efficiency of search engines that the number of search results on a particular topic varies with different search engines. That is all search engines show varied retrieval efficiency for a particular query.

2. It is proved from annual growth study that the number of websites in a particular topic may increase or decrease in due course due to the dynamic nature of the World Wide Web.

3. It is established from the analysis of journal titles with their concerned subject field that the scholarly article on medical tourism is scattered over various disciplines due to the multidisciplinary nature of tourism.

Tables related to hypotheses are self explanatory to prove them valid.

6.2.15: Suggestions

On the basis of the findings of the study, the researcher suggests the following,

- Provide links for ‘Medical Tourism’ in the web sites of Specialty hospitals to index by the search engines there by making the website easily accessible through the Medical Tourism related queries.

- Provide an indexing or abstracting service for the journal articles on Medical Tourism in Kerala to make them available together.

- Provide the provision of synonyms search in the indexing part of the search engines as well as in web sites.
• Provide multilingual accessibility in the websites for the people with LEP (Limited English Proficiency).
• Provide online booking and communication facilities in the websites to make the destination more live and popular.
• Provide ‘last date of update’ to show the currency and ‘about us’ link to know the authority of website.
• Propose a uniform evaluation criteria and an approved methodology for all search engine evaluation studies.

6.2.16: Scope for Further Research

The present study includes only a component of the Webometric study, the search engine evaluation. The researcher suggests the following areas for further study.

• Web content analysis of websites of Medical Tourism Hospitals in Kerala/Any geographical area.
• Web usage analysis of web sites of Medical educational Institutions in any country/State.
• Web Impact Factor of websites of any Group of Organizations in any Country/ State.
• Impact of Blogs, Twitters, Face book pages, Reviews and Testimonials on Medical Tourism: A webometric study.
• Search engine evaluation studies on any particular field where the web resources are essential.
Conclusion

Medical Tourism in Kerala is an emerging field with a number of best hospitals, their infrastructure facilities, cost effective medical treatments and well trained human resources. But printed documents and 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 web sources in the World Wide Web on Medical Tourism in Kerala.

The exponential growth of the web resources propelled the rapid development of the web search engines which are the most effective tools to access information on various topics. They retrieve a huge amount of information with a number of irrelevant sites. In this study search engines and Metasearch engines are at two extremes in their retrieval efficiency, but their precisions are at the same range. Even though Metasearch engines show very low relative recall, their precision is same as that of search engines with high relative recall. Webometric studies on search engines are manifold, which provide some inputs to web site developers as well as search engine designers to make the search engines more capable.