

# Chapter 13

## Gathering Medical Tourism Information through Algorithmic Text Analysis of Tweets

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### **ABSTRACT**

*Informed use of medical tourism services depends on an up-to-date knowledge of the available services, and their costs and risks at various potential destinations. Such information can also assist in the competitive development of healthcare services. Innovation, product development, and health user relationship management by medical service providers is enhanced, as is knowledge base construction and management. This chapter shows that new forms of social media can provide valuable and previously difficult to obtain real-time knowledge on medical tourists' perceptions, concerns, and sentiment towards medical tourism destinations - both those already visited by other users and those under consideration for a possible visit. We show how analysis of comments from such social media as Twitter micro-blogs can be used to reveal potential and recent medical tourism motivations in the medical services markets in various locations.*

### **INTRODUCTION<sup>1</sup>**

In 2007 the term 'social technographics' was coined by the Forrester Research Group in the US (since shortened to social-graphics) in order to help businesses engage in social media with a more human approach, catering to individuals where, when, and how they are participating and contributing to the social Web (Forrester Group, 2007). By 2010 the group was reporting that one in every three online Americans

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is a “conversationalist” - someone who updates their status in the statusphere (any social network with an update window) at least once per week. Conversationalists represent 33% of today’s online social behavior. The goal of Social Technographics/Social-graphics was however not only to classify individual participation in social media, but also to encourage the design and segmentation of focused marketing, branding, and engagement programs that would appeal to these respective groups. The Group believed that in order to effectively form ties that bind with customers, businesses must genuinely understand the social behaviors of consumers. By personalizing the messages and the digital conduits between brands and markets, businesses evolve from a carpet bombing campaign that is essentially marketed at faceless consumers toward using mediums that appeal to targeted demographics (characterized by age, income, gender, education, and so on), instead of psychographics (grouped by interest).

The medical tourism industry in any location is highly dependent on customer sentiment and medical tourists’ perceptions of currently available services for its capture of visitor flows. However, the cost of monitoring these perceptions in near real-time for appropriate action can be prohibitively expensive and often not even possible with traditional methods of analysis of medical tourism motivations and targeted demographics. Since the introduction of the Internet, enormous opportunities have opened up for social interaction at a distance (Forrester Group, 2007; Akehurst, 2009). Tourism in general is ranked one of the leading industries in terms of online transactions (Werthner & Ricci, 2004), and is well placed to take advantage of these new opportunities revealed by social-graphics (Adam, Cobos, & Liu, 2007). However *actual* on-line content may be limited in value and relatively difficult and costly to locate (Akehurst, 2009), involving complex ongoing relationship revolving around lifestyle issues and the value placed on such sources of information. The barriers to effective Internet usage according to Carson (2005) include technical competence, variations in technology, adoption by governments, enterprises and consumers, resistance to the innovations brought on by the Internet, access to IT infrastructure, the costs of using IT, and the existence of government policies which might support but equally might discourage effective Internet exploitation.

So while access to hard-to-reach medical market segment or uncovering the unsuspected strengths and weaknesses of a medical tourism destination or organization may now be possible using the internet, the challenge for market researchers and managers is how to search and visit the vast number of social media outlets in order to derive up-to-date and useful information (Akehurst, 2009). Choi (2007) relied on analyzing the material contained within online magazines and full length blogs while in our work, we take advantage of data that is both delivered in real-time and time-date stamped through *micro-blogs* (tweets). Carson and Mack (2008) highlight the considerable time and effort required to find relevant information in blogs as well as the opportunities and usefulness of these sources.

The objective of this research was simply to examine whether tweets can be sentiment mined for market intelligence on medical tourism, as the views being expressed by actual and/or potential consumers in a reliable and as close to real-time way. The results lead us to propose that micro-blogs can be used as a source of useful information in the development of user-provider relationships within the medical tourism industry. We came to this conclusion through capturing and studying the sentiments expressed in micro-blogs related to a range of different medical tourism destinations (reporting on three of these in this paper), investigating the ways sentiment mining could be used in market research for the medical tourism industry. In achieving its objective, this paper reviews the current research undertaken related to sentiment mining and medical tourism, explains the technological background, the nature and location of the data and the analytical models employed. We also discuss the reliability of these models. Finally conclusions and directions for future work are described.

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