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## **Affective component of the destination image: A computerised analysis**

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### **Abstract**

The aim of this chapter is to conduct a massive computerized quantitative content analysis of user-generated contents concerning a specific destination in order to shed light on the affective image of a destination as expressed by tourists online. Despite its significant implications for tourist satisfaction and decision-making, the affective component of the tourist image of a destination is still underresearched. The results in this chapter show its major importance for the overall image construct.

### **Introduction**

The social media have revolutionized communication (Agarwal, Mondal & Nath, 2011) in the travel and tourism industry (Xiang & Gretzel, 2010) especially due to the experiential nature of the tourism product. User-generated content (UGC), with no economic interest behind opinions and accounts, are highly credible and trustworthy for users (Leung, Law, Van Hoof & Buhalis, 2013; Litvin, Goldsmith & Pan, 2008) and highly influential for tourist decision-making (Schmallegger & Carson, 2010; Yoo & Gretzel, 2010). As a consequence, knowing what is said by users-tourists in the web 2.0 becomes of major importance for destinations.

UGC has proved to be a good source for the study of destination reputation, branding and image, as well as to study the tourist experiences and behaviour (Költringer & Dickinger, 2015; Lu & Stepchenkova, 2015; Pan, MacLaurin & Crotts, 2007). However, there is room to maximize the usefulness of travel blogs and reviews as sources of information for businesses, DMOs and the academics (Pan et al., 2007) doing research concerning the affective image of a destination as expressed by tourists online through data analysis systematization and computerization of the online UGC (Marine-Roig & Anton Clavé, 2015). This allows overcoming the disadvantage of collecting data manually which is still done in most analyses of UGC in spite of their enormous growth (Banyai & Glover, 2012; Lu & Stepchenkova, 2015) and gives new opportunities for understanding the role of affective components of the image of a tourism destination within the whole image construct.

### **Feelings and emotions within tourist image**

As defined by some scholars, destination image is the expression of knowledge, impressions, prejudice, imaginations, expectations, ideas, feelings and emotional thoughts people hold about a place over time (Bandyopadhyay & Morais, 2005; Kim & Richardson, 2003). Indeed, images and representations contain various elements of identity that are the different values, elements, ideas, feelings that build up the tourist image (Almeida & Buzinde, 2007; Marine-Roig, 2011).

The destination image is created or formed by different components (Andsager & Drzewiecka, 2002; Baloglu & McCleary, 1999; Gartner, 1994; Kim & Richardson, 2003; Krizman & Belullo, 2007). The cognitive and the affective components are the most mentioned in the tourism-related research literature as being central for the formation of the overall destination image. In fact, for many authors, the tourist image construct consists of these two interrelated components “woven into overall impressions” (Baloglu & McCleary, 1999; Krizman & Belullo, 2007).

The cognitive component has been the most widely studied, by focusing on the evaluation of physical attributes of places (Kim & Richardson, 2003) while the affective component, representing the evaluation of the destination at an emotional level, has been far less analysed despite its huge implications for tourist satisfaction, decision-making and behaviour. In this vein, Russell and Pratt (1980) created a spatial model of eight adjectives that describe the affective image component dividing them into positive ones (exciting, arousing, pleasant and relaxing) and negative ones (sleepy, distressing, unpleasant and gloomy). The aspect of positiveness or negativeness of the affective image, which is related to feelings, has been studied by authors such as Govers, Go, and Kumar (2007) who detected some negative image components in a destination’s image and stressed their importance for tourist authorities at the destination.

The affective component of image is meaningful as the cognitive process that gives meaning to the emotion has already occurred. In this respect, the affective image appears later than the cognitive one (Russell & Pratt, 1980). Therefore, “in tourism contexts, evaluation of affective qualities of places might become even more important than objective, perceptible properties of places” (Kim & Richardson, 2003). Furthermore, for Andsager and Drzewiecka (2002) the affective component is strongly related to the notion of difference, which addresses value-based responses to images that fit or do not fit pre-established images of destinations. This emotional interpretation of a place is greatly related with the conative component of image, and thus will influence tourist behaviour and decision-making, destination choice, as well as the degree of satisfaction with the tourist experience (Bandyopahyay & Morais, 2005; Gartner, 1994; Kim & Richardson, 2003).

UGC are of great interest to study the affective component of image or the feelings attached to the destination. They are seen as representative sources of the ‘real’ thoughts and feelings of tourists (Carson, 2008) and can greatly influence people who read them (Chen, Shang, & Li, 2014; Filieri & McLeay, 2013) as they communicate experiences, and “experience involves personal or intersubjective feelings activated by the liminal process of tourist activities” (Wang, 1999).

In fact, travel blogs and online travel reviews (OTRs) are of great relevance due to their trip diary-like nature recounting travel experiences (Bosangit, McCabe & Hibbert, 2009; Chen et al., 2014; Filieri & McLeay, 2014; Pan et al., 2007). They are written freely by tourists (with no constraints) (Jones & Alony, 2008; Marine-Roig & Anton Clavé, 2015) usually during the post-trip phase, when the trip has already taken place. Post-visit image is perhaps the most elaborate and processed. It can be understood as an unreal image as it is an idealization of the trip (Anton Clavé, Fernández & González, 2008).

The most popular research methods for the analysis of travel diaries have been content analysis, both qualitative and quantitative, narrative analysis (Banyai & Glover, 2012) and, more recently, sentiment analysis techniques (Schmunk, Höpken, Fuchs & Lexhagen, 2014). This chapter explores a new methodology enabling massive data analysis of the affective component of the destination image as expressed in these online sources through data systematization and computerization.

The analysis is applied to the case of Catalonia, a Mediterranean destination with a millenary history, its own culture and language and a wealthy historical and natural heritage

that according to the official statistics of the Catalan Government (<http://empresaiocupacio.gencat.cat/en>), welcomed about 16.8 million foreign tourists in 2014. The capital of Catalonia, Barcelona, is its principal destination.

## Methodology

The methodological framework proposed in this chapter is based on web content mining. It aims to discover and extract useful data or information from webpage contents, especially by automatizing the harvesting and analysis of contents (Liu, 2011). Web content mining has been used to analyse destination branding and image from online sources (Költringer & Dickinger, 2015). Abburu and Babu (2013), for instance, propose a framework for web data extraction and analysis based on three main steps: finding URLs of webpages, extracting information from webpages, and data analysis. In this research, although we use a similar process, we download all useful HTML pages, and then eliminate all the noise in order to leave only what the user has written and posted, preserving the original HTML format, to conduct data analysis.

The first major step to deal with large quantities of information in a computerized manner has been to create a consistent and suitable dataset. Several authors manifest difficulties in locating travel blogs in relation to a given case study (Carson, 2008). Here we have targeted blogs and reviews in specialized websites due to their clear advantages for blog mining, data-download and analysis as they concentrate thousands of travel blogs and reviews about a destination in a single space. After the exploration of specialized websites, a selection criterion has been applied: the presence of blogs or reviews concerning the case study should be significant (more than 100 entries) and allow obtaining date and destination. A total of 11 websites have been found fulfilling this criterion. Then, these websites have been ranked by applying a weighted formula “ $TBRH = 1*B(V) + 1*B(P) + 2*B(S)$ ” (Marine-Roig, 2014), where ‘B’ corresponds to Borda’s ordering method, ‘V’ to the visibility of the website (quantity and quality of inbound links), ‘P’, its popularity (received visits and traffic in general), and ‘S’, the size (number of entries related to the case study), and then the first four in the ranking were selected: TravelBlog.org (TB), TripAdvisor.com (TA), TravelPod.com (TP), and VirtualTourist.com (VT).

Most studies gather very small samples of blogs and reviews, usually not exceeding a few hundred entries, and they do so manually (Lu & Stepchenkova, 2015). The best way to gather and process large numbers of entries is to download all relevant travel blogs and reviews onto the computer via a web copier. In this chapter, manual exploration of websites hosting blogs and reviews was undertaken to view their structure and locate the HTML files relative to the case study (Marine-Roig & Anton Clavé, 2015). In the case of Catalonia more than 250,000 files were retrieved (all existing entries, excluding lodging and restaurants, until January 2015). However, 139,122 files were empty (with no contents) and were eliminated. Finally 133,477 entries remained for content analysis.

Data mining was conducted in order to extract useful information from the HTML structure of tags such as the destination, date of writing or update, travellers’ country of origin, theme or webpage title. We arranged the data following the format below through a batch programme to enable multiple classifications:

*root/host/brand/destination/entrydate\_lang\_[isfrom]\_pagename\_[theme].htm*

Online sources, often full of ‘noise’ (Carson, 2008), were cleaned prior to analysis removing from the downloaded webpages all information not generated by the user without losing the HTML format.

Language detection was done after the cleaning stage (Marine-Roig & Anton Clavé, 2015). The language of blog and review entries was detected through an ad hoc Java

programme, based on the Language Detection Library (LDL) of N. Shuyo. This library, based on the Naive Bayes classifier, detects each language with a probability higher than 99%. For this case study the only files that remained were those with a probability of more than 85% of being written in English.

The next step was the analysis of text within travel blogs and reviews through quantitative content analysis. This approach is objective, systematic, relies on scientific methods (Neuendorf, 2002) and usually deals with the number of appearances of a subject, how it is distributed, and its relation to other subjects. Categorization was crucial and to be useful, categories should be very well defined, structured and mutually exclusive (Stemler, 2001).

We used a thematic approach following an a priori (deductive) (Stemler, 2001) model of categories, according to certain theoretical backgrounds or established frameworks (Banyai & Glover, 2012). Concerning the affective component of image, Carson (2008) and Pan et al. (2007), among others, show the value of assessing whether the feelings tourists have about a place, activity, or event are positive or negative. Besides, other authors state that the affective component of image can also be targeted through the analysis of several opposite concepts or dichotomies (Andreu, Bigne & Cooper, 2000; Baloglu & Mangalolu, 2001; Baloglu & McCleary, 1999; Russell & Pratt, 1980).

In this analysis the categories to classify travel blog and review content in order to unveil the affective image component were divided into: 1. Opposite feelings: which are represented by Good (positive) vs. Bad (negative) feelings extracted from standard lists in American and British English; and 2. Opposite concepts/dichotomies, formed by related keywords (see Table 5.1). The lists of keywords within each opposite concept were mainly built using the Oxford Dictionary of Synonyms and Antonyms (2007). Concerning negative forms, we tried as much as possible to use attributes that are usually only used positively or negatively (amazing vs. disgusting, for example) and do not lead to doubt. Some negative forms have been transformed into composite words (example: 'not nice') to avoid possible problems.

In this chapter, the smaller analysis units are keywords within categories. The most basic counting system is word frequency counts that are then accumulated by categories. "The assumption made is that the words that are mentioned most often are the words that reflect the greatest concerns" (Stemler, 2001).

Site Content Analyzer (SCA) software was selected to conduct keyword counts. This software generates a CSV file for each blog entry conveying all the words appearing in that entry-file, their total count (total number of appearances), density (percentage of appearance relative to total words) and weight (prominence or visibility of the word according to HTML structure, e.g. a word in the title has a much higher weight than a word appearing in a smaller font within the text). The HTML tags in weight order are: first, the "title" (required in all HTML documents which defines the title of the document), then the headings ("h1", "h2" and "h3"), followed by "a" (defines a hyperlink, which is used to link from one page to another, "img alt" (alternate text for an image), then, with the same weight, come h4, "b": bold font, "i": italic font, "u": underline font, "strong" (defines important text), "em" (renders as emphasized text), and "h5", etc.

SCA was chosen because it provides CATA software advantages for text analysis but is especially designed for web analysis enabling the processing of HTML information (no need to "copy-paste") maintaining HTML hierarchy. It can process thousands of files at the same time. This software enables working with composite words and providing a black list with stop words.

## Findings

The application of the methodology to the study of feelings and dichotomies in travel blogs and reviews about Catalonia shows the different types of results summarized in Table 5.1.

Table 5.1. References to good and bad feelings and to dichotomies

	Count	Density	Weight		Count	Density	Weight
Good feelings	473,909	6.67%	20.25	Bad feelings	45,664	0.64%	10.75
Love	25,403	0.36%	12.30	Hate	1,145	0.02%	5.46
Beautiful	88,762	1.25%	21.45	Ugly	514	0.01%	9.14
Pleasant	8,014	0.11%	10.79	Unpleasant	657	0.01%	10.84
Friendly	7,037	0.10%	8.04	Unfriendly	138	0.00%	17.39
Fun/interesting	65,456	0.92%	17.31	Boring	3,059	0.04%	8.96
Lively	4,694	0.07%	12.16	Gloomy	1,073	0.02%	4.46
Noisy	9,204	0.13%	12.18	Quiet	5,950	0.08%	12.41
Full	17,067	0.24%	11.17	Empty	1,248	0.02%	4.88
Orderly	3,258	0.05%	5.62	Chaotic	1,741	0.02%	12.12
Clean	4,212	0.06%	11.49	Dirty	3,061	0.04%	7.78
Relax	9,684	0.14%	9.62	Distress	548	0.01%	3.50
Authentic	19,518	0.27%	14.37	Inauthentic	1,572	0.02%	9.97
New/Fashionable	15,251	0.21%	25.81	Old/old-fashioned	19,574	0.28%	14.30
Cheap	6,129	0.09%	5.37	Expensive	11,721	0.17%	17.24
Modest/poor	4,288	0.06%	11.42	Luxurious/wealthy	1,769	0.02%	11.41
Safe	2,377	0.03%	4.87	Unsafe	3,694	0.05%	8.96

Dataset: 133,477 entries in English (7,102,487 words)

Concerning the categories of good feelings and bad feelings, quite remarkably good feelings are far more mentioned and denser in tourists' accounts than bad feelings, more than 10 times more. This may indicate that tourists had an overall positive experience at the destination, that positive elements are much more representative of their perception than negative ones (probably showing satisfaction with the experience as stated by Bandhyopahyay and Morais (2005) and also that the destination has a positive reputation (Lu & Stepchenkova, 2015).

The weight of good feelings is about double that of bad feelings, meaning that when good feelings are mentioned they are in more visible or prominent positions on average in website HTML texts (such as in the title, in bold fonts, in bigger fonts, etc.). This is very interesting as it could respond to the fact that a posteriori image, as a construction, is not a real image, but an idealization of the trip that is shared and transmitted to others (Anton Clavé et al., 2008). Post-visit perceived image will elude some elements and preserve others that tourists will purposefully select. Probably, although negative experiences may have occurred, as can be seen by the presence of some negative feelings, tourists will not be willing to express these negative experiences as the most prominent features of their "idealized" trips, for others to read. Moreover, this generally positive image in blogs and reviews is then more likely to reach other tourists who read them given their prominent and visible place in the webpage and their greater likelihood of being disseminated (Marine-Roig, 2014) since search engines will give more prominence and weight to the highest level words in HTML structures (the most prominent ones) when looking for and delivering contents related to user searches.

Concerning the dichotomies of analysis, in general categories of attributes related to positive feelings are more frequently mentioned than their negative counterparts. Indeed, the three most mentioned attributes for the destination are "Beautiful", "Fun/interesting", "Love", while their negative counterparts are mentioned far less. Then come the attributes "Old/old-fashioned" and "Authentic" which are related rather to the type of true experience

and traditional values of the destination tourists were looking for, and that may have been confirmed by the experience. However, some of the most prominent attributes have negative connotations and appear more strongly than their more positive counterparts. These are “full”, “expensive” and “noisy” which may be related to the type of tourism coming to the destination and the influence of high season congestion which is reflected in tourists’ comments. In other cases, such as “friendly” vs. “unfriendly”, the negative counterpart, although much less frequent, has a much higher weight or visibility, indicating that when tourists feel unfriendliness they express it “out loud”. In this sense, quite remarkable is the case of the “Safety” vs. “unsafety” dichotomy. The negative sentiment (unsafety) is expressed much more strongly than “safety”. This may be explained by the fact that tourists expect certain safety standards, and only feel the need to mention the issue of safety when they feel unsafe or some event such as pickpocketing has occurred. This also indicates that, although in general positive attributes and feelings are more prominent, in some specific issues such as unsafety, both the total mentions and the weight and visibility of these words are higher.

Finally, a very relevant issue here is that of all words written by tourists in online travel blogs and reviews (7,102,487), a large proportion (about 10%) are feelings and affective items (6.67% are positive feelings, 0.64% negative feelings, and many others). This indicates the great importance of the affective image component for the construction of the overall tourist image and its great potential for online dissemination to other people during the post-trip phase. It also reinforces the idea of the utility and relevance of the study of the affective component of image by DMOs to assess tourists’ satisfaction with the experience, tourist behaviours and perceptions in general (Bandyopahyay & Morais, 2005; Gartner, 1994; Kim & Richardson, 2003) and that UGC such as travel blogs and reviews are rich and meaningful sources of information to do so (Schmunk et al., 2014). At the same time, it disputes other studies such as Carson’s (2008) claiming that blog content is relatively shallow and provides little detail about tourists’ satisfaction or expectations.

## **Conclusion**

The study of the affective component of image is highly relevant for DMOs in order to get an insight into tourists’ perceptions, satisfaction and behaviour. UGC contained in travel blogs and OTRs have proven very rich and useful sources to study this. Our results have shown the huge importance of feelings and affective attributes when tourists express their perceived images, indicating their importance as elaborations of the experience during the post-trip phase and as an integral part of the overall image construct and its formation, and of what image will be transmitted to other users. In this case, positive feelings and attributes were dominant and more prominent and visible online, although in some specific cases negative attributes were also remarkably dense and weighty.

The implementation of this methodology allows dealing with massive datasets of travel blogs and reviews about a destination and giving insights into the affective component of image, while also preparing data for analysis and systematizing procedures so that the data can become useful for destinations. Site Content Analyzer software was especially useful to study not just the total word counts within categories, but also their density across files and their weight, which is especially relevant to ascertain the visibility and potential dissemination of certain contents.

Future research should continue to analyse the affective component of image in UGC, and its role and prominence in the overall image construct. Additional studies should assess the prominence and visibility of positive feelings and attributes in online trip diaries, and the differential affective images of various destinations at different geographical levels.

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