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Perceived image specialisation in multiscalar tourism destinations

Abstract

The aim of this paper is to study the perceived image specialisation of multiscalar tourism destinations as reflected in tourists' online user-generated content (UGC). For this purpose, perceived image and place specialisation among subregional brands within a regional destination are studied in the case of Catalonia. The analysis consists of a computerised quantitative content analysis based on keyword counts, aggregated into attraction factor categories, of more than 128,000 travel blog and review entries. First, the density of each attraction factor is analysed for each subregional brand. Second, spatial coefficients are applied to further ascertain the relative specialisation of each subregional brand. Results show strong perceived specialisation between subregional brands within Catalonia as a multiscalar destination and highlight the role of each one in the building of the image of Catalonia as a whole.

Keywords

multiscalar destination; destination image specialisation; spatial indexes; travel blogs; online travel reviews; Catalonia

1. Introduction

Perceived tourist images are extremely important for destinations as they affect tourist behaviour, satisfaction, and decision-making (Molina & Esteban, 2006; Cakmak & Isaac, 2012). The perceived images posted online by tourists in user-generated sites are usually instantly transmitted to many other potential tourists through electronic word-of-mouth, or the eWOM effect (Bronner & Hoog, 2011; Mack, Blose, & Pan, 2008; Park & Gretzel, 2007; Riedl, Konstan, & Vrooman, 2002; Ring, Tkaczynski, & Dolnicar, 2014; Volo, 2010), and are highly trustworthy, especially among prospective travellers (Cox, Burgess, Sellitto, & Buultjens, 2008; Fotis, Buhalis, & Rossides, 2012). Through the analysis of tourist perceptions in Web 2.0 travel blogs and reviews, images of destinations and regions can be drawn (Banyai & Glover, 2012; Bosangit, McCabe, & Hibbert, 2009; Cakmak & Isaac, 2012; Carson, 2008; Johnson, Sieber, Magnien, & Ariwi, 2012; Mali, Yafang, & Zhia, 2013; Serna, Gerrikagoitia, & Alzua, 2014) and destination brands can be compared (Govers, Go, & Kumar, 2007).

In most regional destinations, different agents and administrations manage different brands at different geographical levels (local, regional, and national), overlapping and interrelating among them (Datzira-Masip & Poluzzi, 2014). And although conflicts and synergies between subregional (or even local) brands and between them and the regional brand are at work, the analysis of the specialisation and the role of each subregional image in the building of the perceived image of the whole regional destination is not yet a generalised field in the domain of destination image research.

In this respect, and because this can become crucial in the case of many multiscalar regional destinations, this paper has the compelling motivation to analyse how the perceived image of this type of destination is shaped and built from the contribution of the several specialised images perceived in each subregional brand conforming the region. To do this we propose a method to identify the specialised perceived images for each subregional brand in a multiscalar destination and then to observe coherences but also incongruences among them as well as between them and the general brand. As a result, this paper develops a framework useful to understanding the perceived image of multiscalar destinations

according to the contribution of each of their subregional brands' perceived images. This provides, then, an analytical framework both for academics and public and private practitioners, especially destination management organisations (DMOs), to proceed with a better comprehension on the complexity of the image destination and a more effective development of brand architecture strategies based on customers' perceptions (Datzira-Masip & Poluzzi, 2014).

As stated, studies focusing on the spatial distribution of perceived images from the perspective of the image specialisation of the subregional brands within a multiscalar destination have not yet been conducted and this paper is clearly innovative in this context. With this aim, the study implements a useful methodology based in spatial indicators, well developed in other areas of regional analysis that, as demonstrated later, can also be useful in the research domain of multiscalar image perception analysis. Because of the growing importance of 2.0 travel blogs and reviews when studying perceived destination image, these indicators are applied to the analysis of these online image builders in order to highlight the specialisation of each subregional brand in certain attraction factors. Destination image perceived specialisation refers in this context to the degree to which certain places are communicated and perceived through certain imagery, activities, attributes, feelings, or identity components that characterise and distinguish them from others as tourist destinations.

Following this foundation, the paper develops user-generated content (UGC) and image formation and specialisation emphasising the role of Web 2.0, and highlights the usefulness of travel blogs and reviews to analyse tourist destination perceived image specialisation in multiscalar destinations. In the methodological section, the case study (Catalonia) is introduced, the dataset is explained, and techniques of content analysis and spatial analysis, well-known in other knowledge domains, are presented as tools for the analysis of perceived image in multiscalar destinations. Finally, a section containing results and discussion precedes the concluding remarks, which show the value of the analysis of subregional brand specialisation in the academic and professional debate on the social construction of a destination's image. It helps to recognise and apprehend the complexity of the notion of destination image and enables destination managers to better comprehend the processes

occurring at the destination level based in the image perception of the potential or current visitors.

2. User-generated content and image formation and specialisation

Since the first decade of the new millennium, 'the Internet has become the main channel for seeking and disseminating information' (Lin & Huang, 2006, p. 1202). Tourism is no exception as the Internet has become a major source of information, a platform for business transactions, and a continuously growing communication tool for travel and tourism (Filieri & McLeay, 2013; Pan, MacLaurin, & Crofts, 2007; Ring et al., 2014; Schmallegger & Carson, 2008). In recent years, the major developments of the Internet have been in what is called the participative Web (Web 2.0) and UGC (Cox et al., 2008; Filieri & McLeay, 2013).

Web 2.0 has gained huge popularity, reaching millions of people in very little time (Fotis et al., 2012) by allowing the collaboration of people and information sharing in previously unavailable ways. Any individual can now post their own multimedia contents (video, audio, text, photos, etc.) and opinions for other users to see and respond to (Cox et al., 2008). For Anderson (2007), six major ideas define Web 2.0: (1) it consists of UGC, (2) it harnesses the power of crowds, (3) data is shared on an epic scale, (4) it is grounded on the architecture of participation, (5) it facilitates network effects, and (6) openness. UGC is based on 'the pivotal role that individual consumers have in submitting, reviewing and responding to online content' (Cox et al., 2008, p. 744). The barriers of entry to UGC have been lowered dramatically, and it is a particularly powerful and credible source of information among users and especially digital natives (Anderson, 2007; Ayeh, Au & Law, 2013).

In tourism, this new way of interacting and sharing information through Web 2.0 is called Travel 2.0. Travel 2.0 sites containing content published by real travellers are becoming increasingly popular and are leading the change in the way travellers search for, view and evaluate travel information (Bronner & Hoog, 2011; Cox et al., 2008; Filieri & McLeay, 2013). In this context, the tourist image is widely transmitted, formed and re-formed through Web 2.0 and UGC. Web 2.0 exerts an important influence on destination image reproduction among users, given that they continuously post online content that reinforces, transforms, and deforms the image of the destination (Cox et al., 2008; Mali et al., 2013), thus

influencing the perceived destination image of other tourists (Ring et al., 2014). For the analysis proposed in this paper, destination image can be defined as the 'totality of impressions, beliefs, ideas, expectations, and feelings accumulated towards a place over time' (Kim & Richardson, 2003, p. 218). Thus with Travel 2.0 sites, it must be acknowledged that the creation and transmission of destination image is not only driven by national tourism organisations (NTOs), destination management organisations (DMOs), and other tourist agents sending images to passive tourists who perceive them, but also that the tourists themselves become powerful agents of image transmission to other users (Ring et al., 2014), deeply contributing to image reproduction and closing the hermeneutic circle of image (Caton & Almeida, 2008; Marine-Roig, 2015).

The mechanism by which tourists form an image through online UGC is the electronic word-of-mouth (eWOM) (Riedl et al., 2002), easily accessible to anyone, anywhere, *anywhen* (Mack et al., 2008), usually written and anonymous (Volo, 2010). Generally speaking, eWOM is informal communication that occurs through UGC, published by the users themselves and not by professionals. Many argue that it is highly influential and trustworthy (Ayeh et al., 2013; Cox et al., 2008; Fotis et al., 2012; Park & Gretzel, 2007; Ring et al., 2014) and has the potential to reach millions of people. eWOM has similar characteristics to offline word-of-mouth (Ring et al., 2014) and to friends' and relatives' advice, as mentioned by Gartner (1994), which is considered one of the most influential information sources inducing the formation of organic images, with the difference that in eWOM tourists probably do not know the person generating the online content.

The interest of researchers and of tourism organisations towards UGC and eWOM in tourism is increasing (Cakmak & Isaac, 2012) mainly because of the considerable influence and effects these may potentially have on user-tourist behaviours, decisions, expectations and perceptions. Indeed, among the vast array of information that potential tourists may access when planning a trip, (online) word-of-mouth is one of the most influential (Bronner & Hoog, 2011; Cakmak & Isaac, 2012; Cox et al., 2008). Moreover, the capacity of social media and the Web 2.0 to disseminate the images UGC conveys through eWOM and reach other tourists is high, as the online visibility of such images is intrinsically high, their usage and usability are high, and they are especially search-engine friendly (Marine-Roig, 2014).

Travel blogs and reviews belong to Web and Travel 2.0 (Anderson, 2007; O'Reilly, 2005; Schmallegger & Carson, 2008). They are peer-to-peer virtual settlements (Lin & Huang, 2006) that host UGC written by travellers and take the form of online personal diaries conveying travel stories and experiences, along with recommendations and product evaluations (Bosangit et al., 2009; Magnini, Crotts, & Zehrer, 2011; O'Reilly, 2005) accessible to anyone. Blogs can be broadly defined as dynamic websites, the contents of which are organised by posts following reverse chronological order (Bosangit et al., 2009; Cakmak & Isaac, 2012). Their features include the incorporation of multimedia information, their relatively unstructured content that is not managed by any host organisation, and their usually informal style. The topics within travel blog pages seem to relate to general themes such as climate, cuisine, transport, accommodation, or specific regional stereotypes (Magnini et al., 2011; Schmallegger & Carson, 2008).

The primary functions of travel reviews 'are the collection and dissemination of user-generated content—reviews, ratings, photos, and videos—on travel' (O'Connor, 2010, p. 761). The main difference between travel blogs and travel reviews is that the contents in travel blogs are mainly concerned with destinations (entries classified geographically) whereas in travel reviews, although they depart from a geographical classification, contents are usually bound to previously created templates about specific tourist attraction factors, services, or activities. There is usually a huge number of reviews available for the same product, service or destination (De Ascaniis & Gretzel, 2012). Travel blogs and reviews, especially the latter, have rapidly expanded in recent years (Bosangit et al., 2009; Cakmak & Isaac, 2012; Carson, 2008; Filieri & McLeay, 2013; Jones & Alony, 2008; Marine-Roig, 2014; O'Connor, 2010).

Many authors acknowledge the importance of travel blogs and reviews as rich and meaningful data sources giving insights into the tourism phenomenon and especially into tourists' perceptions, thoughts, and opinions, with a great potential for researchers, destination managers, marketers, etc. (Ayeh et al., 2013; Banyai & Glover, 2012; Cakmak & Isaac, 2012; Carson, 2008; Johnson et al., 2012; Kurashima, Tesuka, & Tanaka, 2006; Pühringer & Taylor, 2008; Wenger, 2008). Destination image is just one of the vast numbers of fields of research into travel blogs. Lin and Huang (2006) showed how tourists' personal

storytelling can actually create and project tourist image and promote destinations. Perceived destination image has been analysed through travel blogs by Pan et al., (2007), Wenger (2008), Cakmak and Isaac (2012), and Mali et al. (2013), among others. Pan, Ting, and Bau (2014) analyse this by combining qualitative analyses and quantitative frequency analyses. Others, like Serna et al. (2014), use online travel reviews to study the cognitive aspect of destination image.

Most remarkably, travel blogs and reviews can be temporally and spatially located. This is a particularly relevant characteristic from the point of view of the analysis of coherences and incongruences in the image perception of places that are part of a spatially comprehensive destination. So, tourist experiences and perceptions can be related to a specific place and time (Kurashima et al., 2006) and then, although that has been already used for the analysis of the image, geographical relations between images can be established. This is even more interesting due to the fact that this information is genuine and unsolicited; to analyse it from a spatial perspective then can be even more influential for tourism planning and decision-making (Filiery & McLeay, 2013; Gretzel, Yoo, & Purifoy, 2007; Pan et al., 2007; Schmallegger & Carson, 2008). This also permits adding a new perspective to the well-established idea that destination image is a complex multidimensional social construct (Gallarza, Gil, & Calderon, 2002; Marine-Roig, 2015) formed by cognitive, affective, conative (Gartner, 1994; Kim & Richardson, 2003) and spatial (Son, 2005) components.

Effectively, images are embodied in representations that are formed by different meanings, signs, and symbols that identify them (Urbain, 1989); the representations of a place not only present products, but also convey attributes, characteristics, concepts, values, and ideas (Datzira-Masip & Poluzzi, 2014; Mackay & Fesenmaier, 1997). These signs and attributes, reflecting image specialisation, are communicated through UGC and are considered elements of identity (Almeida & Buzinde, 2007) that qualify and identify the place and by which the place is re-recognised. From a multiscale point of view, the image of one specific destination is, then, the result of the specific contribution of each subregional brand, including how attraction factors (cognitive elements of image) relate to the characteristics and physical attributes of place (Kim & Richardson, 2003), the characteristics of the built

environment, the scenery, culture, and friendliness of people (Cakmak & Isaac, 2012) and, in sum, its specific identity.

In fact, destination image formation is currently highly complex as multiple administrations and agents at different geographical scales create and manage their own brands (Datzira-Masip & Poluzzi, 2014) and visitors tend to broadly identify them. Then, as part of this image formation process, in multiscale destinations with destinations articulated at different geographical levels, brand specialisation plays an important role as it provides visitors with certain images and elements to operationalise concerning where specifically to travel within a destination. Tourists must then consider the spatial variability of the available activities, the differences in image attributes, and the general identity components of the destination.

In multiscale destinations, tourist image specialisation indicates the degree to which certain places within a destination act as subregional brands in the sense that they are communicated or identified with certain elements or image components that foster attraction to the region as a whole but that differentiate these subregions from others. This image specialisation is understood as part of destination brand architecture, which consists of the organisation of several brands at multiple geographical scales and of the creation of meaningful relationships among them in order to avoid internal competition, achieve synergies, and add value to each brand (Datzira-Masip & Poluzzi, 2014). Thus, destination image specialisation refers to the degree to which certain places are communicated and perceived through certain imagery, activities, attributes, feelings, or identity components that distinguish them from others as tourist destinations.

In this respect, it is acknowledged that the 2.0 transmitted image of any complex destination as a social construct (Marine-Roig, 2015; Palmer, 2005) that refers to identity is spatially variable, one that should be internally differentiated into several subregional brands through the selection of a consistent mix of elements (Cai, 2002). Such elements correspond to the attributes that identify the destination brand as such, are present in image representations, and, according to their degree of spatial variability, create specialisation within the multiscale destination image. From this perspective, destinations can assess their brand architecture strategies through the actual tourists' perceptions (Datzira-Masip & Poluzzi,

2014)—and indeed, online UGC, such as travel blogs and reviews, represent an open window to understanding perceived brand-region specialisation in the eyes of tourists. In this respect, brand architecture is related to the concept of multiscale destinations in the sense that it is a branding strategy that approaches and conceives of destinations and their brands as multiscale, that is, as having different interrelated geographical levels.

To analyse this, specialised hosting websites present multiple advantages (Jones & Alony, 2008; Marine-Roig, 2014) because of the high concentration of travel blogs and reviews about the specific destinations they convey. Their main advantage for locating, downloading, and classifying blogs and reviews about specific destinations is that users usually classify their posts geographically by destination and/or attraction and temporality.

3. Methodology

Tourism and hospitality studies have developed multi-item, multidimensional image scales to measure different aspects of image, such as country image and international image scales, destination image scales, cognitive destination image scales, etc. (Gursoy, Uysal, Sirakaya-Turk, Ekinci, & Baloglu, 2015). Moreover, many authors have used the qualitative and/or quantitative analysis of UGC to study the perceived image of a tourist destination, usually a country, region or city. While the majority of studies analysing travel blogs and reviews are based on local destinations, especially cities (Choi, Lehto, & Morrison, 2007; Dickinger, Kölltringer, & Körbitz, 2011; Mali et al., 2013; Pan et al., 2007; Xiang, Wöber, & Fesenmaier, 2008), some studies have been conducted related to countries (Bosangit et al., 2009; Wenger, 2008), regions (Serna et al., 2014), or the combined study of countries and regions (Carson, 2008; Govers et al., 2007; Krizman & Belullo, 2007). However, although it is relevant in order to apprehend and understand the complexity of the concept of destination image and also in order to develop adequate brand architecture for the destination, no studies have been found that focus on comparing several geographical brands in one specific multiscale destination. In fact, studies generally have used limited-size samples of UGC data and have analysed the destinations as a whole. Examples of recent studies are Li, Lin, Tsai, and Wang (2015) who examine destination image formation through a sample of 1,033 travel blogs on Taiwan, and Kladou and Mavragani (2015) assessing destination image of Istanbul across 203 online travel reviews from TripAdvisor.com.

Hence, this paper studies the perceived specialisation of several Catalan tourist subregional brands according to the relevance of specific tourist attraction factors and related to the whole perceived image of Catalonia as a multiscale destination. The analysis consists of a computerised quantitative content analysis of travel blogs and reviews, based on keyword counts, aggregated into attraction factor categories. The density of each attraction factor is analysed for each subregional brand and then this information is used to calculate spatial indexes in order to assess the specialisation and differentiation of each subregional brand. In this section, first the case study region (Catalonia) is presented. Then the characteristics and processes used to obtain the dataset are explained. Subsequently, content analysis is presented as the technique of analysis, and finally, the specific spatial analysis measures used in this study are deployed. Having in mind that the proposed method can be applied to any territorial level, from a practitioner perspective, it can be very helpful to NTOs and DMOs in designing and/or promoting geographical tourist brands and destinations.

3.1. The case study: Catalonia

Catalonia is a European region and distinct geographic entity that covers an area of 32,107 km² and has 7.5 million inhabitants. It has a clear identity, based on its own history and language (Catalan) and distinct cultural, political, and legal traditions. It is a first-order worldwide tourist destination. It is the third most visited tourist region in the EU-28 as defined by Eurostat (Eurostat, 2015) and offers many attractions for all sorts of visitors, including beaches, culture, relaxation, nature, family holidays, sports, and business tourism. In 2014, Catalonia was visited by over 16 million overnight foreign tourists and tourist accommodation establishments registered more than 65 million overnight stays (hotels: 50.02; campsites: 14.81; and rural tourism: 0.94).

Figure 1. *Geographical brands promoted by the Catalan Tourist Board (CTB)*



Source: CTB (2015)

Even though Catalonia is a destination brand in its own right, drawing from the capital of Catalonia, Barcelona, it clearly is a multiscale tourism destination, where the regional brand acts as an umbrella brand that includes nine geographical or subregional brands: Barcelona, Catalunya Central, Costa Barcelona, Costa Brava, Costa Daurada, Pyrenees, Terres de l'Ebre, Terres de Lleida, and Val d'Aran. These tourist brands are linked to groups of bordering counties defining subregions with a relatively homogeneous tourist supply. Indeed, any tourist brand in Catalonia is managed and/or promoted by several DMOs (CTB, 2015) across five territorial administrative levels (Datzira-Masip & Poluzzi, 2014, Fig. 3): (1) Spanish State, (2) Catalan Autonomous Community, (3) 4 provinces, (4) 41 counties, and (5) 947 municipalities (Idescat, 2014). Whereas administrative divisions are virtually immutable, tourist brands change over time. This has been the case of the former Costa de Maresme, Costa de Garraf, and Catalunya Central, that have been renamed as Costa de Barcelona (including the former Costa de Maresme and Costa de Garraf) and Paisatges Barcelona (Barcelona Landscapes) in the case of Catalunya Central to benefit from the international popularity of the Barcelona brand (Datzira-Masip & Poluzzi, 2014).

As shown in Table 1, tourist flows are not equally distributed among brands, resulting in higher arrivals of foreign tourists to the capital region (Barcelona) and the coastal areas (Costa Brava, Costa Barcelona and Costa Daurada). Similarly, hotel stays and bed nights are also unevenly distributed with the same brands being the most frequented by tourists.

Table 1. Tourist data 2014 on hotel establishments of the Catalan brands

Brands	Hotel beds		Foreign tourists *		Hotel overnight stays	
	Value	Distrib.	Value	Distrib.	Value	Distrib.
Barcelona brand	75,592	24.9%	7,054,110	42.1%	18,304,509	36.6%
Catalunya Central	13,952	4.6%	944,239	5.6%	1,842,685	3.7%
Costa Barcelona	48,781	16.0%	2,351,012	14.0%	7,671,245	15.3%
Costa Brava	76,417	25.1%	2,983,205	17.8%	10,668,867	21.3%
Costa Daurada	57,705	19.0%	2,183,544	13.0%	8,885,526	17.8%
Pyrenees	15,159	5.0%	539,339	3.2%	1,062,514	2.1%
Terres de Lleida	4771	1.6%	229,141	1.4%	367,381	0.7%
Terres de l'Ebre	5206	1.7%	260,927	1.6%	616,881	1.2%
Val d'Aran	6443	2.1%	208,825	1.2%	599,028	1.2%
Total	304,026	100.0%	16,754,342	100.0%	50,018,636	100.0%

*Foreign tourists for whom the brand is their first main destination

Source: Authors from Idescat (2014)

3.2. The dataset

The first step in processing the thousands of blogs and reviews was to gather the relevant travel blogs and reviews related to the case study found in specialised hosting websites. We selected the websites that ranked highest using the 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). Then, the first four websites in the ranking were selected: TripAdvisor.com (TA), TravelBlog.org (TB), TravelPod.com (TP), and VirtualTourist.com (VT). The data gathered cover a period of 10 years (2005–2014).

Once the hosting websites were selected, data were collected and downloaded using Web copiers as this was deemed the best option for gathering and processing the many thousands of entries. Previously, a manual exploration of the websites was undertaken to ascertain their structure and locate the HTML (HyperText Markup Language) files relative to the case study. Then, the data were arranged into a structure of folders and files using a batch programme:

root\webhost\brand\town\entrydate_pagename[_topic].htm.

With this data arrangement, we know exactly which brand region and destination tourists are referring to as well as the exact date on which the entries were created.

Subsequently, the data were cleaned, as online sources usually contain *noise* (Carson, 2008) that requires cleaning prior to analysis. In the case of Catalonia, the main problems addressed involved character encoding and needless content (identified with a Web editor interface and erased through a mass removal utility). Then, the data were debugged by implementing a preliminary frequency count and identifying misspelled keywords. Misspellings, especially of proper nouns, had to be corrected prior to content analysis. Next, the language of blog and review entries was detected through a *Language Detection* programme based on the Naive Bayes classifier. In language-dependent content analyses it is important to work with one language. For this analysis only entries in English were used.

As a result, the dataset for analysis, which includes travel blogs and reviews about Catalonia and its geographical brands, contains 128,412 blogs and reviews classified by users per tourism brand and year. Three of the brands (Terres de Lleida, Terres de l'Ebre, and Val d'Aran) have very few entries in comparison to the rest. They were excluded from the data analysis because the low number of specific posts about them could lead to biased results. Unclassified files and files not written in English were excluded. Therefore, the final number of files used for analysis, only in English, was smaller than the initially retrieved dataset. A total of 127,895 files were used for analysis (see Table 2).

Table 2. Travel diaries geo-classified according to blogger and reviewer destination

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Barna	1604	1271	1471	1389	1255	1592	5679	23,539	29,973	40,156
cBarc	47	54	81	83	28	45	71	258	459	731
cBrav	242	171	242	198	130	120	296	1292	1504	1907
cDaur	56	94	118	124	125	280	640	2521	2453	3067
pBarc	47	37	37	44	20	35	88	396	904	512
Pyren	26	15	26	9	5	20	8	37	120	143

Dataset: 127,895 diary entries in English

Site Content Analyzer software (<http://www.cleverstat.com/en/sca-website-analysis-software-index.htm>) was selected to conduct keyword counts. Site Content Analyzer was chosen because it offers the computer-aided text analysis (CATA) software advantages for text analysis, but is especially designed for Web analysis, which enables the treatment of HTML information maintaining HTML language hierarchy. It can process thousands of files at the same time. This software enables work with composite words and provides a blacklist to

exclude certain meaningless words. The Site Content Analyzer software generated a comma-separated value (CSV) file for each brand region (we had previously classified entries per tourism brand according to bloggers' geographical classification) conveying all the words appearing in that entry-file, their count, weight, and density.

To assess the validity of tourists' geographical classification of entries, we used a utility to process strings to count the total mentions of destinations and tourist brands in the text of each of the entries. We thus used lists of the destinations in each brand and checked how often they appeared in the entries classified as belonging to a certain tourist brand, and we compared these results to the bloggers' classification of entries per brand. For this purpose we calculated correlations between both datasets. The Pearson correlation displays a very strong and significant correlation between both datasets (0.9988), effectively showing that when users classify entries according to a certain destination or brand they actually speak about this destination or brand in the text of these posts. Spearman's Rho coefficient also shows a strong correlation of both datasets (0.9428) that, despite reflecting some interference, generally corroborates that the order of the brands according to the number of the files classified by users and the order of brands according to their mentions in the text broadly corresponds.

After this validity test was performed, a string processing utility was used to count the total frequencies of the words belonging to each attraction factor category for each tourist brand. This gave rise to a file with the total word frequencies of each category within each brand, and a table with the localisation of different attraction factors per brand region was produced, thus enabling the subsequent analysis of spatial indexes.

3.3. Content analysis

Content analysis was found to be the most suitable technique to perform the massive analyses of the blogs and reviews gathered. 'What makes the technique particularly rich and meaningful is its reliance on coding and categorizing of the data' (Stemler, 2001) and it presents several advantages for the analysis of travel blogs and reviews (Banyai & Glover, 2012; Cakmak & Isaac, 2012; Pan et al., 2007). Nevertheless, difficulties in locating the targeted travel blogs about specific destinations are acknowledged (Akehurst, 2008). In this

respect, due to the huge amount of data and the difficulty in finding appropriate information for analysis within the vast amount of online sites, it has been observed that the majority of studies on travel blogs and reviews analyse posts located on specialised hosting websites (Bosangit et al., 2009; Carson, 2008; Dippelreiter et al., 2008; Mack et al., 2008; Marine-Roig, 2014; Pan et al., 2007; Pühringer & Taylor, 2008; Serna et al., 2014; Volo, 2010; Wenger, 2008; among others).

While some studies advocate for the application of both qualitative and quantitative methods to the analysis of travel blogs (Cakmak & Isaac, 2012), in the case of this paper, a quantitative approach was deemed *the most suitable* to analyse massive data sets, operationalise the huge amounts of UGC information, and to be able to summarise the results in a way that would render them useful for researchers and destination managers. This approach is objective, systematic, and reliant on scientific methods (Neuendorf, 2002), and it usually deals with the number of appearances of a subject, how the subject is distributed, and its relation to other subjects.

The smallest analysis units are keywords within categories. By including or excluding certain words in categories, our categorising system solves most of the problems encountered by other research studies analysing user-generated texts (Stepchenkova, Kirilenko, & Morrison, 2009). A list of composite words was also created.

The most basic counting system is word frequency counts. The validity of word frequency counts to study tourist image in travel blogs has been proven by previous studies (Cakmak & Issac, 2012). These words are then accumulated for categories and subcategories. 'The assumption made is that the words that are mentioned most often are the words that reflect the greatest concerns' (Stemler, 2001). We used an *a priori* (deductive) model to create categories according to certain theoretical backgrounds or already established frameworks (Banyai & Glover, 2012). Although other approaches such as sentiment analysis can give rich insight into blog and review data (Capriello, Peyton, Davis, & Crofts, 2013), in this case keyword counts grouped into categories were considered the best means to meet the goal of identifying Catalonia's main attraction factors in tourists' images online. Although destination image is formed by several components (cognitive, affective, conative, and

spatial), attraction factors were chosen as the most suitable to give insights into destination image specialisation across different territories. As Richards (2002) points out, attractions, attraction systems, and their markers are central parts of the tourism process, very often being the main reason for visiting a destination. We observe that several authors have identified categories of analysis that correspond to tourism attraction factors (Beerli & Martin, 2004; Carson, 2008; Choi et al., 2007; Govers et al., 2007; Mali et al., 2013; Wenger, 2008; Xiang et al., 2008) such as activities, products, events, locations, culture, history and art, leisure and recreation, natural environment, weather/climate, accommodation, etc. However, Govers et al. (2007) stress that 'for each destination, very specific unique image components can also be identified' (p. 989). Moreover, authors such as Stepchenkova and Morrison (2006) opt to exclude hotels and accommodation from the image variable set.

Finally, eight categories of attraction factors were chosen for our study: 1. Food & Wine, 2. Intangible Heritage, 3. Leisure & Recreation, 4. Nature & Active Tourism, 5. Sports, 6. Sun, Sea & Sand, 7. Tangible Heritage, and 8. Urban Environment. Moreover, to obtain an even more precise idea of the specialisation of brand regions in certain factors within general attraction factor categories, for some attraction factors we analysed subgroups or subcategories as an example to demonstrate how this method can also reveal very specific specialisations related to some features or elements that are key parts of tourists' images. These subcategories are within category 3. Leisure & Recreation: 3.1 Theme Parks, 3.2 Festival/Theatre/Cinema; within category 5. Sports: 5.1 FC Barcelona, 5.2 Snow & Luxury Sports; and within category 7. Tangible Heritage: 7.1 Gaudí, 7.2 Buildings/Architecture, 7.3 Archaeological Sites. Finally, we opted for general categories of attraction factors to achieve an overview of the tourism specialisation of brand regions and to zoom in on some specific elements of interest by creating subcategories.

3.4. Spatial analysis

Spatial indicators are statistical analysis measures that allow us to infer theses and conclusions about the structure specialisation of any territorial unit (Diniz & Upadhyay, 2010). In geography and regional economy, regional specialisations have often been measured through the use of spatial indexes which enable the assessment of the relative localisation or concentration of certain industries or economic sectors in certain regions and cities

(Dewhurst & McCann, 2007; Guimaraes, Figueiredo, & Woodward, 2007; Rivera, Sheffi, & Welsch, 2014). In general, spatial indexes allow one to ascertain whether a certain sector or activity is located within certain territories, the extent to which this activity is concentrated or evenly spread, how specialised a territory or region is in a specific activity, and how diversified it is. These spatial indexes have also been used to reflect the evolution of the specialisation of regions in certain economic sectors (Herrerias, Palacios, Callejon, & Herrerias, 2004). The spatial indexes most commonly used by authors are localisation coefficients and indexes (Guimaraes et al., 2007; Jofre-Monseny, Marin-Lopez, & Viladecans-Marsal, 2014), and location quotients (Dewhurst & McCann, 2007).

In tourism, spatial indexes have mainly been used to establish the geographies of local tourist production systems by analysing the concentration of tourism activities (Capone & Boix, 2008). Kang, Kim, and Nicholls (2014) used them to assess high/low concentrations or locations of tourism activity in certain areas. Papatheodorou and Arvanitis (2014) use different spatial indexes to study shifting patterns of regional tourism concentration (convergence and divergence) in Greece during the economic crisis. Yang and Fik (2014) analyse several factors using a weighted spatial model to account for spatial heterogeneity in tourism growth patterns and localised patterns of tourism growth associated with localisations of tourism resource endowments and hotel infrastructure. However, there is a lack of studies using spatial indexes to determine regions' tourist specialisations in certain attraction factors, services, or activities from a demand perspective. In this respect, our study proposes combining spatial indexes, classic tools of economic and industrial location and specialisation, with the study of tourists' online images by analysing how specialised or diversified each brand region of a territory is in certain attraction factors according to tourists' perceptions in travel blogs and reviews as well as how localised the different attraction factors are across the brand regions from the tourists' perspective.

The use of these spatial indexes presents many advantages: they provide quantitative results that are very well suited to massive analyses, they provide relative measures of specialisation among different subregional brands, and they are especially designed to unveil differentiation when comparing them with other techniques such as perceptual maps or cluster analyses, which provide more qualitative and unconnected results.

In our case, the regions are the different subregional brands and the sectors of activity the different attraction factors represented in tourist images. We calculate four coefficients per brand, as shown in Table 3:

Table 3. *Adapted spatial specialisation formulas used to calculate the spatial indexes*

Location quotient:	$LQ_{ij} = \frac{x_{ij}}{x_{.j}} \bigg/ \frac{x_{i.}}{x_{..}}$	Localisation coefficient:	$LC_i = \frac{1}{2} \sum_{j=1}^h \left \frac{x_{ij}}{x_{i.}} - \frac{x_{.j}}{x_{..}} \right $
Specialisation coefficient:	$SC_j = \frac{1}{2} \sum_{i=1}^n \left \frac{x_{ij}}{x_{.j}} - \frac{x_{i.}}{x_{..}} \right $	Diversification coefficient:	$DC_j = 1 - \frac{(\sum_{i=1}^n x_{ij})^2}{n \sum_{i=1}^n x_{ij}^2}$
n:	Number of attraction factors	h:	Number of brand regions
$x_{i.}$:	Total value of attraction factor i	$x_{.j}$:	Total value in brand region j
x_{ij} :	Value of attraction factors i in brand region j	$x_{..}$:	Total value (in all sectors and brand regions)

Source: Authors

- *Location quotient* (LQ): The location quotient is an index $[0..\infty]$ for comparing a brand region's share of a particular attraction factor with the share of that same activity found on a larger spatial level.

- $LQ_{ij} < 1$ means that attraction i in brand region j is not very significant, or lower than that found in the base region.

- $LQ_{ij} = 1$ means, in this case, that the relative importance of attraction factor i in brand region j mirrors its importance in the base region.

- $LQ_{ij} > 1$ means that the attraction factor i in brand region j plays an important role and indicates a relative concentration of attraction factor i in brand region j compared to the base region.

- *Localisation coefficient* (LC): The attraction factor localisation coefficient $[0.1]$ informs whether one factor i is more or less concentrated in some regions.

- $LC_i = 1$ means that attraction factor i is highly concentrated in a few brand regions.

- $LC_i = 0$ means that attraction factor i has an even distribution.

- *Specialisation coefficient (SC)*: The regional specialisation coefficient [0..1] allows characterising the region's activities in terms of its higher or lower specialisation compared to the base region's activities.

- $SC_j = 0$ means that the brand region j is not specialised in any activity and all attraction factor shares equal the base region average.

- $SC_j = 1$ means the closer to 1 the ratio is, the more specialised brand region j is.

- *Diversification coefficient (DC)*: The diversification coefficient [0..1] measures the degree of attraction factor diversification in region j .

- $DC_j = 0$ means that brand region j has the highest degree of diversification and the attraction factors are distributed evenly among the n branches of activity considered.

- $DC_j = 1$ means that region j has a heavily concentrated attraction factor pattern, with the entire activity of the region in a single factor.

4. Results and discussion

As observed in Table 4, the subregional brand with the greatest volume of information and entries (which is reflected in a higher number of words counted within categories) is Barcelona, and the one with the lowest volume of information, entries, and words gathered is the Pyrenees. In terms of attraction factor categories, the category with the most words within it is 'Tangible Heritage' and the one with the least words is 'Intangible Heritage.'

In general we can observe that 'Tangible Heritage' is very prominent in most of the subregional brands and is either the most or the second-most mentioned attraction factor. Conversely, 'Intangible Heritage,' in absolute numbers, is either the least or one of the least present factors, except for the case of the Pyrenees. Concerning 'Tangible Heritage' subcategories, we observe that 'Gaudí' and 'Buildings/Architecture' are mentioned very prominently in the case of Barcelona; in contrast, 'Archaeological Sites' are far less mentioned in general and mostly appear in the Barcelona, Costa Brava, and Costa Daurada subregional brands. In the case of the coastal brands, only Costa Barcelona has 'Sun, Sea & Sand' as its main factor of attraction, although the Costa Brava and Costa Daurada regions are renowned for this type of tourism. Concerning 'Leisure & Recreation' activities, we observe that they are most mentioned in Barcelona. However in the case of subcategories,

‘Theme Parks’ are most mentioned in Costa Daurada. ‘Sports’ are mentioned very prominently in Barcelona, as well as ‘FC Barcelona’ and ‘Snow & Luxury Sports.’

Although in absolute numbers some subregional brands have factors which are relatively more prominent (e.g. ‘Nature & Landscape’ in Barcelona Landscapes and Pyrenees or ‘Leisure & Recreation’ in the case of Costa Daurada) and Barcelona accounts for most of the mentions of the majority of categories, this does not show clear information on specialisation. Hence, in general it is difficult to see the relative specialisation of each subregional brand in certain attraction factors relative to the whole base region of Catalonia. In fact, the main attraction factors mentioned for Catalonia itself as a whole, ‘Tangible Heritage’ and ‘Urban Environment,’ are in a similar proportion to Barcelona, showing a close relationship between the images of both. However, ‘Leisure & Recreation’ comes in third place in the case of Catalonia, especially due to its presence in Costa Daurada, which reveals that although the relationship of the image of Catalonia in the eyes of bloggers is very similar to that of Barcelona (accounting for the greatest number of blog and review entries), other elements of other subregional brands also contribute to the brand image of the whole of Catalonia. The distribution of ‘Tangible Heritage’ and ‘Intangible Heritage’ mentions, for example, is quite homogeneous in all subregional brands.

Table 4. Localisation of attraction factors per tourist brands

TOURISM ATTRACTION FACTORS	TOURISM BRAND						SUM
	Barcelona brand	Costa Barcelona	Costa Brava	Costa Daurada	Barcelona Landscapes	Pyrenees	
1. Food and Wine	72,511	3623	3619	3111	860	383	84,107
2. Intangible Heritage	10,082	396	349	1512	58	1011	13,408
3. Leisure and Recreation	62,044	2230	5308	17,793	894	243	88,512
3.1 Theme Parks	8780	97	141	11,773	8	3	20,802
3.2 Nightlife & Partying	26,791	1572	1804	4617	122	89	34,995
4. Nature and Landscape	23,373	743	4221	1609	4023	1730	35,699
5. Sports	36,274	597	635	383	108	87	38,084
5.1 Barcelona FC	16,039	138	35	42	38	0	16,292
5.2 Snow & Luxury Sports	1716	163	385	123	25	65	2477
6. Sun, Sea & Sand	34,451	4933	12,773	9415	305	164	62,041
7. Tangible Heritage	411,621	4130	28,653	8240	11,348	1018	465,010
7.1 Gaudi	141,486	688	123	256	114	1	142,668
7.2 Buildings/Architecture	71,684	696	2185	947	624	154	76,290
7.3 Archaeological Sites	2556	71	1283	1653	41	28	5632
8. Urban Environment	168,071	1928	6719	5037	2661	695	185,111
TOTAL*	818,427	18,580	62,277	47,100	20,257	5331	971,972

Dataset: 127,895 diary entries in English classified by traveller's destination

*Total corresponds to categories 1–8, not subcategories

The geolocated information obtained about attraction factors in absolute numbers for each brand (percentages and site-wide density of each category relative to a specific brand) may therefore be insufficient to determine the specialisation of these subregional brands from the tourists' points of view. Some categories seemed to have a proportionally similar presence in most of the brands, although geographically each of the territories has different attraction factors and is different. So, the available information does not reflect the subregional brand's specialisation and/or the location or concentration of certain attraction factors in certain geographical brands and in relation to the rest of the brands and the whole territory of Catalonia. It is in this context that spatial indexes play a fundamental role, as they are able to highlight relative specialisations and differentiation between subregional brands (Table 5).

Table 5. Spatial localisation indicators per brands

	TOURISM BRAND						
	Barcelona brand	Costa Barcelona	Costa Brava	Costa Daurada	Barcelona Landscapes	Pyrenees	
TOURISM ATTRACTION FACTORS	Location quotient by brand						Location coefficient by factor
1. Food and Wine	1.024	2.253	0.672	0.763	0.491	0.830	0.044
2. Intangible Heritage	0.893	1.545	0.406	2.327	0.208	13.748	0.145
3. Leisure and Recreation	0.832	1.318	0.936	4.148	0.485	0.501	0.159
3.1 Theme parks	0.501	0.244	0.106	11.679	0.018	0.026	0.517
3.2 Nightlife & Partying	0.909	2.350	0.805	2.723	0.167	0.464	0.109
4. Nature and Landscape	0.778	1.089	1.845	0.930	5.407	8.836	0.191
5. Sports	1.131	0.820	0.260	0.208	0.136	0.417	0.110
5.1 FC Barcelona	1.169	0.443	0.034	0.053	0.112	0.000	0.142
5.2 Snow & Luxury Sports	0.823	3.442	2.426	1.025	0.484	4.784	0.160
6. Sun, Sea & Sand	0.659	4.159	3.213	3.132	0.236	0.482	0.305
7. Tangible Heritage	1.051	0.465	0.962	0.366	1.171	0.399	0.047
7.1 Gaudí	1.178	0.252	0.013	0.037	0.038	0.001	0.150
7.2 Buildings/Architecture	1.116	0.477	0.447	0.256	0.392	0.368	0.098
7.3 Archaeological Sites	0.539	0.659	3.555	6.057	0.349	0.906	0.409
8. Urban Environment	1.078	0.545	0.566	0.562	0.690	0.685	0.066
Coefficient of Specialisation	0.047	0.350	0.172	0.441	0.244	0.464	
Coefficient of Diversification	0.601	0.329	0.555	0.460	0.666	0.385	

Dataset: 127,895 diary entries in English classified by traveller's destination

Concerning the *location quotient*, as it appears in Table 5, we observe that all Barcelona quotients are far closer to 1 than the other brands. This is explained because the Barcelona

entries represent a very high percentage of the total blogs and reviews about Catalonia (approximately 84%). In this case we see how a single brand can weigh much more than others in the total image of the whole destination. Nevertheless, we can see its relative specialisation in 'Sports,' 'Urban Environment,' and 'Tangible Heritage,' three key aspects of tourism in Barcelona, which can be explained by the even stronger location quotients of subcategory elements such as 'FC Barcelona,' in the case of sport, and the robust specialisation in 'Gaudi' and 'Buildings/Architecture,' two elements which together reflect the top tourist attraction in Barcelona (Gaudi's buildings, namely La Sagrada Família). In general, we observe that the results concerning location quotients of attraction factors are related to the geographical or natural features of the brands and to the most popular tourist attractions or *must-sees* in each brand. This is consistent with the explanation provided by Capone and Boix (2008) about the relationship of tourism consumption with the existence of the corresponding natural endowments and tourist resources. This can be explained because usually tourist subregional brands are created in relation to regions' differential identities and tourism attractions or products, either because the brand is delimited according to these differential products and tourist identities or because the creation of the brand incentivises the creation of specific products and identities. Thus, the three coastal brand regions (Costa Barcelona, Costa Brava, and Costa Daurada) are relatively specialised in 'Sun, Sea & Sand,' and the two hinterland brands (Barcelona Landscapes and the Pyrenees), with their outstanding natural resources and mountainous landscapes, are perceived as specialised in 'Nature & Landscape.' Moreover, both Costa Brava and the Pyrenees, which have mountainous regions and ski resorts, are relatively specialised in 'Snow & Luxury Sports.'

Concerning the location quotients related to specific *must-see* elements, Costa Daurada is the most specialised in 'Leisure & Recreation' because of the extraordinary location quotient of the subcategory 'Theme Parks,' in which a specific theme park (PortAventura) is widely mentioned. Moreover, although in general Costa Daurada is not specialised in 'Tangible Heritage,' it is the most specialised in a specific type of tangible heritage: 'Archaeological Sites' because of the multiple mentions of Tarragona's Roman archaeological heritage, declared a World Heritage Site by UNESCO. Additionally, Costa Barcelona is highly specialised in 'Food & Wine,' mostly because it contains the Penedes wine region, and in

‘Intangible Heritage,’ because of the multitudinous carnival events held in Sitges. Barcelona Landscapes is the most specialised in ‘Tangible Heritage’ because of the repeated mentions of the religious sanctuary of Montserrat, and finally, in the case of the Pyrenees, we observe an outstandingly high specialisation in ‘Intangible Heritage,’ which we found is due to the extraordinary mentions of a specific popular festival called ‘Patum’ in a few entries (the ‘Patum of Berga’ is registered in UNESCO’s Representative List of the Intangible Cultural Heritage of Humanity).

Most of these relative specialisations could not be seen in absolute numbers of mentions. This can be clearly exemplified by the case of the Costa Brava brand region because in absolute mentions of each attraction factor, Costa Brava’s most mentioned attraction was by far ‘Tangible Heritage,’ followed at a distance by ‘Sun, Sea & Sand.’ Conversely, with the localisation quotients we observe that compared to other subregional brands, it is relatively most prominently specialised in ‘Sun, Sea & Sand’ and ‘Nature & Landscape,’ and nonspecialised in ‘Tangible Heritage’ in general. Furthermore, very low specialisations in certain attraction factors are also relevant. For example, the attraction factor least located in a subregional brand is ‘Sports’ in Costa Daurada. This can be highly valuable information for DMOs to assess whether their branding strategies are working or not and whether they should emphasise some elements or others in their promotions at different regional levels.

Concerning the *localisation coefficient* by attraction factor, we observe that in coherence with previous results, the category which has the highest localisation coefficient, therefore localised in more specific brands (not in all similarly), is the ‘Sun, Sea, & Sand’ category (0.305) followed by ‘Nature & Landscape’ (0.191) and ‘Intangible Heritage.’ In contrast, the most evenly distributed attraction factor across all brands is ‘Food & Wine.’ This is the factor that all subregional brands have most in common and could be seen as a remarkable feature of Catalonia as a whole.

With regard to the *coefficient of specialisation* of subregional brands, in coherence with what was previously explained, Barcelona is the brand with the lowest coefficient of specialisation, very close to zero, because as it accounts for the majority of posts about Catalonia, it is relatively unspecialised compared to the region of Catalonia as a whole

(which is principally accounted for by Barcelona). In contrast, brands with a higher coefficient of specialisation in certain attraction factors are Costa Daurada and the Pyrenees. These two brands share the fact that they have specific geographical features (Costa Daurada has its coast and the Pyrenees its mountains and natural landscape) and are also specialised in very specific *must-see* features.

Concerning the *coefficient of diversification*, we observe that the two subregional brands with the most diversified elements—or about which bloggers and reviewers mention more different attraction factors with similar importance—are Barcelona Landscapes followed by Barcelona brand.

If we compare both the coefficient of specialisation and the coefficient of diversification we observe that, in general, the brands with a higher coefficient of specialisation have a lower coefficient of diversification. However, this is not a general rule as the two coefficients are not opposed. It is possible for a region to be specialised in a certain activity and at the same time to have a diversified economy. For example, Barcelona, which is the least specialised brand relative to the whole region, is not the most diversified in attraction factors. Therefore, we can see that the comparison of both coefficients provides an added nuance concerning the brand destination's image specialisation.

In this respect, we can assess with spatial indexes the tourist diversification of subregional brands, which is considered to be very positive in the case of mass coastal tourism destinations (Claver-Cortes, Molina-Azorin, & Pereira-Moliner, 2007). Thus, in the case of Catalonia we can see that one of the coastal brands (Costa Brava) has low specialisation but is highly diversified and that another (Costa Barcelona) is relatively specialised but does not have a diversified product if compared to other brands. Finally, Costa Daurada has the highest specialisation of all brands as well as a relatively high coefficient of diversification.

According with the results obtained, the application of spatial indexes to the study of tourists' image of a multiscalar destination enables a better understanding of its formation as a social construct of a complex, multiple, relativistic, and dynamic nature (Gallarza et al., 2002). It achieves this by showing the relationship of specific but also multiple identities and

perceived images of certain places and by not only enabling the comparison of multiple regions' specialisations and their identities in relation to one another and in different periods of time, but also by obtaining a complex global view of the destination by considering the role of multiple identities and images at different geographical levels in its formation. Hence, results contribute to the better understanding of the relationship among the different tourist brands to be able to appropriately manage multiscalar destinations (Datzira-Masip & Poluzzi, 2014). The application of spatial indexes emphasises the role of regional specialisation in the formation of the image of a multiscalar diverse destination, such as Catalonia, that encompass multiple images at different geographical levels and suggests that subregional brand identities should be incorporated both in theories about destination image formation and in practices about the building of a multiscalar brand. In the case of Catalonia, although the image of Catalonia as a whole in the eyes of bloggers and reviewers is similar to their perception of Barcelona, the complexity and specificities accountable to other subregional brands have also been clearly identified.

If tourist images are ultimately a perceptual construct, built from impressions and ideas tourists have of destinations (Anton Clavé, 2010; Cai, 2002; Hunt, 1975; Krizman & Belullo, 2007), the application of spatial indexes to the analysis of perceived tourist images online of multiscalar destinations enables a better understanding of the tourist 'imaginary' (Urbain, 1989) and image components (Gartner, 1994; Kim & Richardson, 2003; Son, 2005). This especially advances the understanding of the dynamic spatial component of image or 'designative image,' which relates images and identities to certain places and that is strongly bound to tourists' behaviours in space (Son, 2005). This online image is not shared by all tourists visiting Catalonia, but by those generating content about it and posting it online for others to read. In this respect, this research provides an understanding of a multiscalar destination's dimensions from a demand perspective, as perceived by tourists (Pearce, 2014).

Furthermore, as stated, image specialisation is closely attached to branding, which involves the projection of images and identities for strategic purposes. The competition among destinations and the ever increasing similarities between them and the changing nature of tourist demand have led destinations to develop and manage their brands to gain strong

differentiated positions (Datzira-Masip & Poluzzi, 2014). As Ateljevic and Doorne (2002) put it, 'identities of destinations around the world are endlessly reinvented as marketing creates powerful social and cultural representations of place' (p. 648). Today, however, this idea should be widened to include the contribution not only by marketing but also the social media and the tourists themselves to reinventing and reproducing places through powerful online representations and images. Results allow advocating for the inclusion of the perceived specialisation of each subregional brand in the building of the regional brand.

Knowing and understanding what online user-generated images say about a multiscalar destination—the specificities of each unique geographical subregional brand—is, in fact, a 'must' for tourism destination branding. In our case we can argue that DMOs should consider the differential perception of tourists about destination subregional brands in relation to one another and in relation to their identity components when creating, studying, or managing official brands to assess their branding strategy.

5. Concluding remarks

In the context of global competition and claims of the uniqueness by places all over the world, 'the need for destinations to create a unique identity—to differentiate themselves from their competitors—is more critical than ever' (Morgan, Pritchard, & Pride, 2004, p. 60). Being different from other destinations, or unique, or, more importantly, being seen as such, has become the basis of survival in the current globally competitive marketplace (Morgan et al., 2004). Accordingly, branding strategies aim to create and promote unique images and identities that will set the destination apart from others and make it competitive. The manual for destination survival would seem to include the terms 'to be different,' 'unique,' and '*special-ised*.'

The application of spatial indexes to the study of tourists' images online has proved to be a useful method to assess brand image specialisation in multiscalar destinations. This method enables assessing the distribution of tourists' images per subregional brand: how specialised or un-specialised they are, what renders them different, how diversified they are, and where certain types of attraction factors are located relative to other brands and to the whole region, as seen from the tourists' point of view. In this respect, it could contribute to give a

further understanding to the integrated model to conceptualise destinations proposed by Pearce (2014) by giving insight into the demand-experiential-perceptual conception of them at different geographical levels by tourists. As Kang et al. (2014) assert, assessing the spatial patterns of tourism, especially of factors that may shape it in the future (such as tourists' images), becomes crucial to design desirable tourism strategies at national, regional, and local levels.

Spatial indexes have proven useful in comparing the characteristics of geographical areas because they show new information about the specialisation and particularities of some brands that were not visible when working in absolute numbers and they allow an understanding of the local specificities of Catalonia as a destination. In this respect, this methodological adaptation of spatial indexes to the study of tourist image opens up new possibilities for the application of spatial and geographic measures to the study of tourist image.

Travel blogs and reviews have also proved to be very rich and useful tools to analyse specific destinations and have the fundamental advantage of being spatially located and temporally classified. In this respect, subregional brand territories have been found to be specialised in tourist attraction factors and some unique *must-see* features and attractions. Natural geographical and cultural features play an important role in the specialisation and differentiation of brand region images. Conversely, other elements such as tangible heritage attraction factors are evenly spread among all subregional brands. This shows both harmonisation and specialisation tendencies of subregional brands relative to the regional supra-brand as perceived by tourists, which can be useful for DMOs to assess to direct brand architecture strategies at different geographical scales (Datzira-Masip & Poluzzi, 2014).

Besides this, the results show the various challenges and complex scenarios for destination branding at different geographical levels, where the pursuit of specialisation by the different subregional brands is combined with the branding of Catalonia as a whole diversified destination (Ring et al., 2014). In this respect, future studies should assess the relationship of changing government tourism policies at different geographical levels (Kang et al., 2014) to branding and the actual distribution of tourists' perceived images.

Effectively, tourists reflect in their posts that both specialised elements and diverse elements are worth mentioning and transmitting to others for each of the brands. As Buhalis (2000) explains, tourists highly appreciate special attributes and values, and the perception of these elements affects their satisfaction, loyalty, return visit to, and expenditure at the destination. Thus, destinations should aim to differentiate themselves and their tourism products to be able to achieve a 'unique tourist product benefit.' However, most destinations, and multiscalar are a good example of this, lie in between the two extremes of the continuum: the unique status areas and standardised commodity areas (Buhalis, 2000).

Therefore, this research proposes to consider geographical scales both when analysing and building the image of a destination. This is a key issue from the management perspective regarding an increasingly complex tourism marketplace, where multiple destination brands coexist at several geographical levels. In such cases, it is fundamental that DMOs demonstrate the effective application of brand architecture strategies by assessing customers' perceptions (Datzira-Masip & Poluzzi, 2014). In this respect, with this method we identify that a successful tourist destination like Catalonia, in the eyes of bloggers and reviewers, is spatially specialised through differentiated subregional brands. This renders the whole region diversified in tourism attraction factors.

Last but not least, from an academic standpoint, this study adds a new dimension to the study of tourist image by emphasising the idea that regional destination image is multiscalar and should be conceptualised and analysed as such, at different geographical levels, taking into account different brand levels (Datzira-Masip & Poluzzi, 2014) and their specialisation. This provides insight into the whole picture and into the nature of the destination image as a complex multidimensional construct (Gallarza et al., 2002), and provides a major capacity to comprehend the processes occurring at the destination by observing them from their different constituent parts.

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References

- Akehurst, G. (2008). User generated content: the use of blogs for tourism organisations and tourism consumers. *Service Business*, 3(1), 51-61. doi: 10.1007/s11628-008-0054-2
- Almeida, C. & Buzinde, C. (2007). Politics of identity and space: Representational dynamics. *Journal of Travel Research*, 45(3), 322-332. doi: 10.1177/0047287506295949
- Anderson, P. (2007). What is Web 2.0? Ideas, technologies and implications for education. *JISC Technology & Standards Watch*. Retrieved July 13, 2015 from <http://www.jisc.ac.uk/media/documents/techwatch/tsw0701b.pdf>
- Anton Clavé, S. (2010). Identity and tourism: Between image and perception. *Paradigmes*, 5, 156-165.
- Ateljevic, I. & Doorne, S. (2002). Representing New Zealand: Tourism imagery and ideology. *Annals of Tourism Research*, 29(3), 648-667. doi: 10.1016/S0160-7383(01)00077-9
- Ayeh, J., K., Au, N. & Law, R. (2013). Do we believe in TripAdvisor? Examining credibility perceptions and online travelers' attitude toward using user-generated content. *Journal of Travel Research*, 52 (4): 437-452. doi: 10.1177/0047287512475217
- Banyai, M. & Glover, T. D. (2012). Evaluating research methods on travel blogs. *Journal of Travel Research*, 51(3), 267-277. doi: 10.1177/0047287511410323
- Beerli, A. & Martin J. D. (2004). Factors influencing destination image. *Annals of Tourism Research*, 31(3), 657-681. doi: 10.1016/j.annals.2004.01.010
- Bosangit, C., McCabe, S., & Hibbert, S. (2009). What is told in travel blogs? Exploring travel blogs for consumer narrative analysis. In W. Hopken, U. Gretzel, & R. Law (Eds.), *Information and Communication Technologies in Tourism 2009* (pp. 61-71), The Netherlands: Springer-Verlag. doi: 10.1007/978-3-211-93971-0_6
- Bronner, F. & de Hoog, R. (2011). Vacationers and eWOM: Who posts, and why, where, and what? *Journal of Travel Research*, 50(1): 15-26. doi: 10.1177/0047287509355324
- Buhalis, D. (2000). Marketing the competitive destination of the future. *Tourism Management*, 21(1), 97-116. doi: 10.1016/S0261-5177(99)00095-3
- Cai, L. (2002). Cooperative branding for rural destinations. *Annals of Tourism Research*, 29(3), 720-742. doi: 10.1016/S0160-7383(01)00080-9
- Cakmak, E. & Isaac, R. K. (2012). What destination marketers can learn from their visitors' blogs: An image analysis of Bethlehem, Palestine. *Journal of Destination Marketing & Management*, 1(1-2), 124-133. doi: 10.1016/j.jdmm.2012.09.004
- Capone, F. & Boix, R. (2008). Sources of growth and competitiveness of local tourist production systems: an application to Italy (1991-2001). *The Annals of Regional Science*, 42(1), 209-224. doi: 10.1007/s00168-007-0133-7
- Capriello, A., Mason, P. R., Davis, B., & Crotts, J. C. (2013). Farm tourism experiences in travel reviews: A cross-comparison of three alternative methods for data analysis. *Journal of Business Research*, 66, 778-785. doi: 10.1016/j.jbusres.2011.09.018
- Carson, D. (2008). The 'blogosphere' as a market research tool for tourism destinations: A case study of Australia's Northern Territory. *Journal of Vacation Marketing*, 14(2), 111-119. doi: 10.1177/1356766707087518
- Caton, K. & Almeida, C. (2008). Closing the hermeneutic circle? Photographic encounters with the other. *Annals of Tourism Research*, 35(1), 7-26. doi: 10.1016/j.annals.2007.03.014
- Choi, S., Lehto, X. Y., & Morrison, A. M. (2007). Destination image representation on the web: Content analysis of Macau travel related websites. *Tourism Management*, 28(1), 118-129. doi: 10.1016/j.tourman.2006.03.002

- Claver-Cortes, E., Molina-Azorin, J. F., & Pereira-Moliner, J. (2007). Competitiveness in mass tourism. *Annals of Tourism Research*, 34 (3), 727-745. doi: 10.1016/j.annals.2007.03.010
- Cox, C., Burgess, S., Sellitto, C., & Buultjens, J. (2008). *Consumer-generated web-based tourism marketing*. Queensland, Australia: CRC for Sustainable Tourism
- CTB (2015). *Catalan Tourist Board Press Pack '15*. Retrieved July 13, 2015 from <http://www.act.cat/press-pack/?lang=en>
- Datzira-Masip, J. & Poluzzi, A. (2014). Brand architecture management: The case of four tourist destinations in Catalonia. *Journal of Destination Marketing & Management*, 3(1), 48-58. doi: 10.1016/j.jdmm.2013.12.006
- De Ascaniis, S. & Gretzel, U. (2012). What's in a travel Review Title?. In M. Fuchs, F. Ricci and L. Cantoni (Eds.), *Information and Communication Technologies in Tourism 2012* (pp. 494-505). Vienna, Austria: Springer. doi: 10.1007/978-3-7091-1142-0_43
- Dewhurst, J., & McCann, P. (2007). Specialisation and regional size. In Fingleton, B. (Ed.), *New Directions in Economic Geography*. (pp. 204-220). Cheltenham: Edward Elgar
- Dickinger, A., Koltringer, C., & Korbitz, W. (2011). Comparing online destination image with conventional image measurement: The case of Tallinn. In R. Law, M. Fuchs, and F. Ricci (Eds.), *Information and Communication Technologies in Tourism 2011* (pp. 165-177). Vienna, Austria: Springer. doi: 10.1007/978-3-7091-0503-0_14
- Diniz, F. & Upadhyay, V. (2010). Productive specialization and regional development at state level in India. *Regional Science Inquiry Journal*, 2(2), 105-118
- Dippelreiter, B., Grun, C., Pottler, M., Seidel, I., Berger, H., Dittenbach, M., & Pesenhofer, A. (2008). Online tourism communities on the path to Web 2.0: An evaluation. *Information Technology & Tourism*, 10 (4), 329-353. doi: 10.3727/109830508788403132
- Eurostat (2015). Tourism. In *Eurostat Regional Yearbook 2015* (pp. 189-206). Luxembourg: Publications Office of the European Union
- Filieri, R. & McLeay, F. (2013). E-WOM and accommodation: An analysis of the factors that influence travelers' adoption of information from online reviews. *Journal of Travel Research*, 53(1), 44-57. doi: 10.1177/0047287513481274
- Fotis, J., Buhalis, D., & Rossides, N. (2012). Social media use and impact during the holiday travel planning process. In Fuchs, M., Ricci, F., and Cantoni, L. (Eds.). *Information and Communication Technologies in Tourism 2012* (pp. 13-24). Vienna, Austria: Springer. doi: 10.1007/978-3-7091-1142-0_2
- Gallarza, M. G., Gil, I., & Calderon, H. (2002). Destination image: Towards a conceptual framework. *Annals of Tourism Research*, 29(1), 56-78. doi: 10.1016/S0160-7383(01)00031-7
- Gartner, W. C. (1994). Image formation process. *Journal of Travel and Tourism Marketing*, 2(2-3), 191-216. doi: 10.1300/J073v02n02_12
- Govers, R., Go, F. M., & Kumar, K. (2007). Virtual destination image: A new measurement approach. *Annals of Tourism Research*, 34(4), 977-997. doi: 10.1016/j.annals.2007.06.001
- Gretzel, U., Yoo, K. H., & Purifoy, M. (2007). *Online travel review study: Role and impact of online travel reviews*. Texas: Laboratory for Intelligent Systems in Tourism (A&M University)

- Guimaraes, P., Figueiredo, O., & Woodward, D. (2007). Measuring the localization of economic activity: A parametric approach. *Journal of Regional Science*, 47(4): 753-774. doi: 10.1111/j.1467-9787.2007.00527.x
- Gursoy, D., Uysal, M., Sirakaya-Turk, E., Ekinici, Y., & Baloglu, S. (Eds.) (2015). *Handbook of scales in tourism and hospitality research*. Boston, MA: CABI
- Herrerias, R., Palacios, F., Callejon, J., & Herrerias, J. M. (2004). Analisis de convergencia en la Comunidad de Castilla y Leon [Analysis of convergence in the Community of Castilla y Leon]. *Proceedings of 9th Congreso de Economia Regional*, vol. 2 (pp. 136-153)
- Hunt, J. D. (1975). Image as a factor in tourism development. *Journal of Travel Research*, 13(3), 1-7. doi: 10.1177/004728757501300301
- Idescat (2014). *Statistical Yearbook of Catalonia 2014*. Retrieved July 13, 2015 from <http://idescat.cat/pub/aec/en>
- Jofre-Monseny, J., Marin-Lopez, R., & Viladecans-Marsal, E. (2014). The determinants of localization and urbanization economies: Evidence from the location of new firms in Spain. *Journal of Regional Science*, 54(2), 313-337. doi: 10.1111/jors.12076
- Johnson, P. A., Sieber, R. E., Magnien, N., & Ariwi, J. (2012). Automated web harvesting to collect and analyse user-generated content for tourism. *Current Issues in Tourism*, 15(3), 293-299. doi: 10.1080/13683500.2011.555528
- Jones, M. & Alony, I. (2008). Blogs - The new source of data analysis. *Journal of Issues in Informing Science and Information Technology*, 5, 433-446
- Kang, S., Kim, J., & Nicholls, S. (2014). National tourism policy and spatial patterns of domestic tourism in South Korea. *Journal of Travel Research*, 53(6), 791-804. doi: 10.1177/0047287514522875
- Kim, H. & Richardson, S. L. (2003). Motion picture impacts on destination images. *Annals of Tourism Research*, 30(1), 216-237. doi: 10.1016/S0160-7383(02)00062-2
- Kladou, S. & Mavragani, E. (2015). Assessing destination image: An online marketing approach and the case of TripAdvisor. *Journal of Destination Marketing & Management*, 4(3), 187-193. doi: 10.1016/j.jdmm.2015.04.003
- Krizman, D. & Belullo, A., (2007). Internet - An agent of Tourism destination image formation: Content and correspondence analysis of Istria travel related websites. *4th International Conference: Global Challenges for Competitiveness: Business and Government Perspective* (pp. 541-556). Pula: Juraj Dobrila University of Pula, Department of Economics and Tourism
- Kurashima, T., Tezuka, T., & Tanaka, K. (2006). Mining and visualizing local experiences from blog entries. *17th International Conference on Database and Expert Systems Applications* (pp. 213-222). Krakow, Poland: Springer-Verlag. doi: 10.1007/11827405_21
- Li, Y., R., Lin, Y., C., Tsai, P., H., & Wang, Y., Y. (2015) Traveller-generated contents for destination image formation: Mainland China travellers to Taiwan as a case study. *Journal of Travel & Tourism Marketing*, 32(5), 518-533. doi: 10.1080/10548408.2014.918924
- Lin, Y. S. & Huang, J. Y. (2006). Internet blogs as a tourism marketing medium: A case study. *Journal of Business Research*, 59(10-11), 1201-1205. doi: 10.1016/j.jbusres.2005.11.005
- Mack, R., W., Blose, J., E., & Pan, B. (2008). Believe it or not: Credibility of blogs in tourism. *Journal of Vacation Marketing*, 14(2), 133-144. doi: 10.1177/1356766707087521

- Mackay, K., J. & Fesenmaier, D., R. (1997). Pictorial element of destination in image formation. *Annals of Tourism Research*, 24(3), 537-565. doi: 10.1016/S0160-7383(97)00011-X
- Magnini, V. P., Crotts, J. C., & Zehrer, A. (2011). Understanding customer delight: An application of travel blog analysis. *Journal of Travel Research*, 50(5), 535-545. doi: 10.1177/0047287510379162
- Mali, X., Yafang, B., & Zhia, S. (2013). The perceived destination image of Hangzhou city of China as received in the travel blogs of western tourists. *Risus - Journal on Innovation and Sustainability*, 4(1), 101-112
- Marine-Roig, E. (2014). A webometric analysis of travel blogs and reviews hosting: the case of Catalonia. *Journal of Travel & Tourism Marketing*, 31(3), 381-396. doi: 10.1080/10548408.2013.877413
- Marine-Roig, E. (2015). Identity and authenticity in destination image construction. *Anatolia - An International Journal of Tourism and Hospitality Research*, 26(4), 574-587. doi: 10.1080/13032917.2015.1040814
- Molina, A. & Esteban, A. (2006). Tourism brochures: Image and usefulness. *Annals of Tourism Research*, 33(4), 1036-1056. doi: 10.1016/j.annals.2006.05.003
- Morgan, N., Pritchard, A., & Pride, R. (2004). *Destination branding: Creating the unique destination proposition* (2nd Edition). Burlington, MA: Elsevier
- Neuendorf, K., A. (2002). *The content analysis guidebook*. Thousand Oaks, CA, USA: Sage
- O'Connor, P. (2010). Managing a hotel's image on TripAdvisor. *Journal of Hospitality Marketing & Management*, 19(7), 754-772. doi: 10.1080/19368623.2010.508007
- O'Reilly, T. (2005). *What is Web 2.0: Design patterns and business models for the next generation of software*. Retrieved July 13, 2015 from <http://www.oreilly.com/pub/a/web2/archive/what-is-web-20.html>
- Palmer, C. A. (2005). An ethnography of Englishness. Experiencing identity through tourism. *Annals of Tourism Research*, 32(1), 7-27. doi: 10.1016/j.annals.2004.04.006
- Pan, B., MacLaurin, T., & Crotts, J. C. (2007). Travel blogs and the implications for destination marketing. *Journal of Travel Research*, 46, 35-45. doi: 10.1177/0047287507302378
- Pan, S., Ting, P. H., & Bau, D. Y. (2014). Perceptions of Taipei as revealed in travel blogs: A tale from two sides. *Asia Pacific Journal of Tourism Research*, 19(6), 700-720. doi: 10.1080/10941665.2013.779590
- Papatheodorou, A. & Arvanitis, P. (2014). Tourism and the economic crisis in Greece - Regional perspectives. *Région et Développement*, 39, 183-203
- Park, Y., A. & Gretzel, U. (2007). Success factors for destination marketing Web sites: A qualitative meta-analysis. *Journal of Travel Research*, 46(1), 46-63. doi: 10.1177/0047287507302381
- Pearce, D. G. (2014). Toward an integrative conceptual framework of destinations. *Journal of Travel Research*, 53(2), 141-153. doi: 10.1177/0047287513491334
- Pühringer, S. & Taylor, A. (2008). A practitioner's report on blogs as a potential source of destination marketing intelligence. *Journal of Vacation Marketing*, 14(2), 177-187. doi: 10.1177/1356766707087524
- Richards, G. (2002). Tourism attraction systems: Exploring cultural behavior. *Annals of Tourism Research*, 29(4), 1048-1064. doi: 10.1016/S0160-7383(02)00026-9
- Riedl, J., Konstan, J., & Vrooman, E. (2002). *Word of mouse: The marketing power of collaborative filtering*. New York: Warner Books

- Ring, A., Tkaczynski, A. & Dolnicar, S. (2014). Word-of-mouth segments: Online, offline, visual or verbal?. *Journal of Travel Research* (in press). doi: 10.1177/0047287514563165
- Rivera, L., Sheffi, Y., & Welsch, R. (2014). Logistics agglomeration in the US. *Transportation Research Part A: Policy and Practice*, 59, 222-238. doi: 10.1016/j.tra.2013.11.009
- Schmallegger, D. & Carson, D. (2008). Blogs in tourism: Changing approaches to information exchange. *Journal of Vacation Marketing*, 14(2), 99-110. doi: 10.1177/1356766707087519
- Serna, A., Gerrikagoitia, J. K., & Alzua, A. (2014). Towards a better understanding of the cognitive destination image of Euskadi-Basque Country based on the analysis of UGC. In Z. Xiang and I. Tussyadiah (Eds.), *Information and Communication Technologies in Tourism 2014* (pp. 395-407). Switzerland: Springer. doi: 10.1007/978-3-319-03973-2_29
- Son, A. (2005). The measurement of tourist destination image: applying a sketch map technique. *International Journal of Tourism Research*. 7(4-5), 279-294. doi: 10.1002/jtr.532
- Stemler, S. (2001). An overview of content analysis. *Practical Assessment, Research & Evaluation*, 7(17). Retrieved July 13, 2015, from <http://PAREonline.net/getvn.asp?v=7&n=17>
- Stepchenkova, S., Kirilenko, A. P., & Morrison, A. M. (2009). Facilitating content analysis in tourism research. *Journal of Travel Research*, 47(4), 454-469. doi: 10.1177/0047287508326509
- Stepchenkova, S. & Morrison, A., M. (2006). The destination image of Russia: From the online induced perspective. *Tourism Management*, 27(5), 943-956. doi: 10.1016/j.tourman.2005.10.021
- Urbain, J. D. (1989). The tourist adventure and his images. *Annals of Tourism Research*, 16(1), 106-118. doi: 10.1016/0160-7383(89)90033-9
- Volo, S. (2010). Bloggers' reported tourist experiences: Their utility as a tourism data source and their effect on prospective tourists. *Journal of Vacation Marketing*, 16(4), 297-311. doi: 10.1177/1356766710380884
- Wenger, A. (2008). Analysis of travel bloggers' characteristics and their communication about Austria as a tourism destination. *Journal of Vacation Marketing*, 14(2), 169-176. doi: 10.1177/1356766707087525
- Xiang, Z., Wober, K., & Fesenmaier, D., R. (2008). Representation of the online tourism domain in search engines. *Journal of Travel Research*, 47(2), 137-150. doi: 10.1177/0047287508321193
- Yang, Y. & Fik, T. (2014). Spatial effects in regional tourism growth. *Annals of Tourism Research*, 46, 144-162. doi: 10.1016/j.annals.2014.03.007