

Repositório ISCTE-IUL

Deposited in Repositório ISCTE-IUL:

2024-09-09

Deposited version:

Accepted Version

Peer-review status of attached file:

Peer-reviewed

Citation for published item:

Rodrigues, H., Brochado, A. & Troilo, M. (2020). Listening to the murmur of water: Essential satisfaction and dissatisfaction attributes of thermal and mineral spas. Journal of Travel and Tourism Marketing. 37 (5), 649-661

Further information on publisher's website:

10.1080/10548408.2019.1633986

Publisher's copyright statement:

This is the peer reviewed version of the following article: Rodrigues, H., Brochado, A. & Troilo, M. (2020). Listening to the murmur of water: Essential satisfaction and dissatisfaction attributes of thermal and mineral spas. Journal of Travel and Tourism Marketing. 37 (5), 649-661, which has been published in final form at https://dx.doi.org/10.1080/10548408.2019.1633986. This article may be used for non-commercial purposes in accordance with the Publisher's Terms and Conditions for self-archiving.

Use policy

Creative Commons CC BY 4.0

The full-text may be used and/or reproduced, and given to third parties in any format or medium, without prior permission or charge, for personal research or study, educational, or not-for-profit purposes provided that:

- a full bibliographic reference is made to the original source
- a link is made to the metadata record in the Repository
- the full-text is not changed in any way

The full-text must not be sold in any format or medium without the formal permission of the copyright holders.

Rodrigues, H., Brochado, A. & Troilo, M. (2019). Listening to the murmur of water: essential satisfaction and dissatisfaction attributes of thermal and mineral spas. *Journal of Travel & Tourism Marketing*. 1-13

Listening to the Murmur of Water: Essential Satisfaction Attributes of Thermal and Mineral Spas

Thermal and mineral spa treatments are an important therapeutic tool backed by centuries of experience and numerous scientific studies showing its effectiveness. This study sought to identify key attributes that could contribute to a more systematic understanding of spa hotel guests' satisfaction. The research consisted of content analysis of 887 customer reviews from 2015 to 2016. Qualitative analysis identified six key themes: thermal (spa), hotel, food, pool, location, and staff. These were grouped into three categories: thermal and spa attractiveness, facilities, and food and beverages. The findings provide a strategic order of attributes based on consumer demographics.

Keywords: tourism; wellbeing; wellness benefits; health benefits; hotels; mineral springs; thermal spas; gender satisfaction; user-generated content (UGC), Leximancer

Word count:

Introduction

Tourism is the third largest socioeconomic activity in the European Union (EU), so this industry contributes significantly to the EU's gross national product and employment. Europe is currently the world's number one tourist destination (Juul, 2015). The tourism industry has proven resilient to the present economic crisis, continuing to provide jobs for women and young people in particular (Eurostat, 2015). Recent research by the Global Wellness Institute (GWI) (Yeung & Johnston, 2017) found that the consumer interest in thermal springs-based activities is rapidly rising, with most spa establishments experiencing solid growth in both attendance and revenues (Yeung & Johnston, 2017).

The extensive literature on thermal waters provides a comprehensive understanding based on multiple perspectives that have offered wide-ranging theoretical contributions in the areas of medicine, health, environmental sciences, and geothermal power resources. However, the existing tourism research has yet to shed light on the specific issue of customer satisfaction with thermal spas even though both satisfaction and spas are topics studied in this field. For example, Lu and Stepchenkova (2012) developed a quantitative method to assess satisfaction and dissatisfaction with ecotourism experiences. Other previous work has addressed health and wellness tourism from the sole perspective of satisfaction (Moghavvemi et al., 2017; Pyke, Hartwell, Blake, & Hemingway, 2016; Wang, 2012) or dissatisfaction (Zeelenberg & Pieters, 2004).

Regarding customers' experiences, researchers have had difficulty simultaneously identifying indicators of satisfaction with thermal spas and acknowledging, identifying,

and managing dissatisfaction with these facilities. In addition, few studies of Europe's thermal and mineral spas have explored the wellness tourism experiences of different types of guests who post positive and negative reviews on Booking.com, as well as other relevant websites. The present research's main goal was, therefore, to analyze Portuguese thermal and mineral spas' competitiveness by identifying the service factors generating customer satisfaction and dissatisfaction in wellness tourism. The findings could well be applicable to thermal and mineral spas outside of Portugal.

This study first sought to identify reviews evaluating the main attributes that have a significant impact on tourists' choices of thermal and mineral spa hotels. In particular, the analysis focused on positive and negative reviews of what Yeung and Johnston (2017) describe as "the spa establishments that promote wellness through the provision of therapeutic uses of water with special properties[. These] includ[e] . . . thermal water, mineral water and other professional services aimed at renewing the body, mind, and spirit" (pp. 67–68).

The present research's second objective was to conduct a separate lexical analysis by gender. This analysis included only positive and negative reviews of attributes that influence spa hotels' performance and that can clearly affect satisfaction and dissatisfaction with thermal and mineral spas as wellness destinations.

The data were collected from user-generated content (UGC) produced after tourists book accommodations on the Booking.com website (see www.booking.com).

This proved to be a useful source of data on tourists' experiences in thermal and mineral spa facilities. Leximancer software was used to explore these online reviews and investigate how thermal and mineral spa facilities contribute to wellness tourism as a whole.

On a theoretical level, this research's results contribute to the literature in the following ways. First, significant attributes were identified and classified into categories that are useful as a systematic understanding of thermal and mineral spas. The classifications are 1) thermal and spa attractiveness (i.e., "thermal facility" and "location"), 2) facilities (i.e., "hotel," "restaurant," "room," "pool," and "spa"), and 3) food and beverages (i.e., "breakfast" and "food").

Second, the attributes associated with satisfaction and dissatisfaction found in this study can be used as explanatory variables in market segmentation for the thermal and mineral spa sector. Last, four broad issues were identified that are critical to tourism and hospitality in thermal spas. These findings and the relationships highlighted by the Leximancer concept map generated for this research can be used to develop a more cogent framework. This, therefore, needs to comprise four main dimensions: 1) service quality, 2) food tourism experience, 3) hotel performance, and 4) destination choice.

On a practical level, the results provide a strategic order of attributes based on customer demographics that thermal and mineral spa facilities can use to implement or improve service attributes in order to maximize their guests' satisfaction. The three performance factors associated with male customers who perceived services negatively include "price," "television (TV) channel," and "breakfast." The basic attributes that contribute to female clients' negative perceptions include "room," "bed," and "cleaning." The performance factor of "cleaning," in particular, causes overall satisfaction and dissatisfaction, but all of these factors need to be addressed by spa facility managers because customers give these attributes priority overall in their spa hotel evaluations.

The paper below is organized as follows. The second section provides a roadmap for wellness tourism and the health and wellness perspective on tourism in the digital era. The third section describes the sample profile and data analysis methods. Next, the results

are provided along with a discussion of the implications of these findings for both academics and practitioners. Finally, the limitations of this study and possible directions for future research are given in the conclusion.

Literature review

Health and wellness tourism in Portugal

The Portuguese thermal spa association, Termas de Portugal (Thermal Springs of Portugal) (2018), has the motto "Portugal Thermal Spas—A Source of Energy." This seeks to promote thermal and mineral spas' significant health benefits based on therapeutic uses of water. Portuguese thermal spa facilities have made substantial investments in their infrastructure over the last two decades. These facilities have sought to establish themselves as a high-yield tourism business and have helped make Portugal a first-choice tourism destination (Termas de Portugal, 2018).

The Instituto Nacional de Estatistica (National Institute of Statistics) (2018) reports that Portugal's tourism revenue increased overall by 16.6% in 2017 over 2016, for a total of 39 billion euros. In addition, 20.6 million tourists and 57.5 million overnight stays were recorded in 2017. According to the latest statistics, the country's overall economy is clearly recovering. This recovery is probably here to stay as the economy expanded 3% in the second quarter of 2017 compared with the same period in 2016. The unemployment rate also fell to 8.0% by the end of 2017, which is below the EU average.

In terms of wellness tourism, Europe has for centuries remained far in the lead, inventing a concept of truly holistic wellness that goes far beyond spas to include nutrition, traditional medicine, mindfulness, and a powerful connection to nature.

Examples of this tourism sector's offer are baths, healing systems, hydrotherapies, diets,

and mental health therapies (GWI, 2016). Wellness tourism is now being increasingly acknowledged as a crucial sector of tourism, both nationally and internationally (Hartwell, 2014).

The wellness sector is, therefore, expected to develop further, and, since this trend shows no sign of disappearing, further growth in wellness tourism can be expected (Voigt, Brown, & Howat, 2011). Overall, experts predict that the tourism industry will continue to have a quite strong impact on Europe's economy, and Portugal will be no exception to this tendency. Europe's tourism market is expected to grow 2.8% annually over the next decade, outpacing the subcontinent's annual economic growth of 1.9% and making this industry Europe's fastest growing market (GWI, 2016).

Termas de Portugal (2018) lists 46 facilities on both the mainland and Atlantic archipelagos of Azores and Madeira, which generate a total of 13.3 million euros annually. Even though this amount contributes significantly to the Portuguese economy, the sector's revenue is considered rather small compared with this sector in other European countries. In recent years, some Portuguese spas have thus sought to adapt to tourists' new demands and consumption habits, diversifying their hotels' offer and investing in new equipment and qualified staff (Yeung & Johnston, 2014).

Nonetheless, Portugal's spa businesses are overall still less well structured to compete internationally in the health and wellness sector, and few facilities offer tourists services and activities whose purpose is not solely wellness. In addition, some facilities are old and unattractive to tourists (THR Asesores en Turismo Hiteleria y Recreacion, 2006). Despite substantial investment in the refurbishment of spas and hotels—more than 200 million euros in the period between 2004 and 2008—these upgrades have still been insufficiently extensive to position Portugal as a competitive destination in this sector (Ministerio da Economia e do Emprego, 2015). Given the current strong economic

momentum, Portugal's thermal and mineral spa businesses need, now more than ever, to strengthen their quality of service.

Spa attributes: motivations and benefits

The most up-scale hotels have expanded their services to attract tourists who now see spa therapy as the determinant ingredient in resort vacations rather than merely an extra amenity (Voigt et al., 2011). The increasing demands for these kinds of services could be a window of opportunity for potential investors in wellness tourism. Thus, key determinants of destination attractiveness are a comprehensive package of tourist attractions, infrastructure, and services that are provided by private or public organizations (Medina-Muñoz & Medina-Muñoz, 2014).

Motivations

Tourism can have an impact on the emotional, spiritual, and cognitive wellbeing of both local communities and wellness tourists (Hartwell et al., 2016). Wellness tourism, in particular, is a holistic concept that includes tourists' desire to enhance their spiritual, psychological, physical, and social wellness (Bushell & Sheldon, 2009). Wellbeing or wellness tourism is not the same as health tourism because wellness tourists have different motives for traveling. Health tourism focuses primarily on the treatment of illnesses, while wellness tourism concentrates on prevention (Smith & Kelly, 2015; Voigt et al., 2011).

Enjoyable vacations can offer health, psychological, and wellness benefits especially to senior travelers. Travel motivations among the elderly include enjoying improved health while traveling, spending time with family and friends, and visiting new locations (Horneman, Carter, Wei, & Ruys, 2002; Milman, 1998). The world's aging

population tends to be more active, healthier, and wealthier and to live longer (Patterson & Pegg, 2009). According to a European Commission (EC) (2014) report, seniors tend to prioritize safety, and they have become increasingly quality conscious when traveling.

In addition, senior citizens of retirement age can travel during off-season periods at lower prices, and these travelers tend to stay for longer periods (EC Enterprise and Industry Directorate-General, 2014). Even short periods of leisure can provide health benefits to senior tourists. For example, a study of 40 elderly women in Japan found empirical evidence that a vacation of 2 to 3 nights can promote improved health among older women (Toda et al., 2004).

A literature review conducted in the field of hospitality research also found that women appear to be more inhibited by concerns about leisure activities, especially if these entail being far from home (Pesonen & Komppula, 2010). When comparing the desire to travel of different genders, researchers have observed that men and women have convergent purposes with regard to leisure activities. However, women have a tendency to spend vacations with family and friends (Tiago, Couto, Tiago, & Faria, 2016). Interestingly, having a family and/or social entourage tends to make women more conservative about their travel plans, but this is not true of men, who show a greater overall willingness to travel than women do (Exworthy & Peckham, 2006).

While women are unquestionably more interested in wellbeing activities than men are, statistical studies have shown that the number of women in the wellbeing segment is not greater than the number of men (Pesonen & Komppula, 2010). Nonetheless, the demand for wellness tourism is currently driven by women in their 50s and above (Kickbusch & Payne, 2003).

Benefits

In 1948, the World Health Organization first stated that "[h]ealth is a state of complete physical, mental, and social wellbeing and not merely the absence of disease and infirmity." After World War II, a shift occurred in the health needs of many populations, giving birth to a new wellness movement that reflected post-war advances in medicine leading to fewer deadly diseases and lower mortality rates. Dunn (1959) first coined the term "wellness," including in this idea that physicians consider wellness to be a general condition of health encompassing wellbeing of the spirit, mind, and body. Many decades later, Mueller and Kaufmann (2001) suggested that the main purpose of wellness services is to maintain or promote individuals' health.

Among the reasons for the growth of wellness tourism are the world's aging populations, especially the large numbers of baby boomers who are being increasingly targeted as an increasingly influential market segment by marketers. Many baby boomers are healthier, financially better off, and better educated, and they possess a greater desire to escape and seek authentic experiences (Patterson & Pegg, 2009). This generation also values medical thermal spa treatments for their substantive health-related benefits, namely, preventative health treatments, nutrition and fitness, and health and wellness education (Patterson & Pegg, 2009).

In response to this demand, the thermal and mineral spring industry now includes structured and professionally delivered programs (Meyer, 2014) in the form of:

- Mineral spring spas—spa offerings with on-site natural mineral, thermal, or seawater resources, which are used in professionally administered hydrotherapy treatments
- European spa products focused on wellness and health
- Resort and/or hotel spas—most having sprung up or appearing where spas are a
 profitable amenity added to traditional resort vacation opportunities

In order to develop sustainable tourism, the EC has co-sponsored the strengthening of cultural roots through which European and non-European tourists can discover how Europeans have lived since ancient times (Juul, 2015). The top destinations in this market include a large number of European countries with a long history of using thermal and mineral waters for curative and therapeutic treatments (Yeung & Johnston, 2017).

Thermal treatments are a set of therapeutic actions practiced in thermal spas, which are recommended or prescribed by family doctors or hydrologists (Constant et al., 1998), including treatments based on:

- Hydrotherapy—baths, hot and cold shower baths, and water massages better known as balneotherapy
- Climatotherapy—favorable climatic conditions
- Heliotherapy—sunbathing
- Aerotherapy—air bathing
- Thalassotherapy—seawater and algae
- Aromatherapy—essential oils

Thermal spa treatments, therefore, are an important therapeutic tool supported by centuries of experience and numerous scientific studies that demonstrate its effectiveness (Maraver & Karagulle, 2012).

These treatments can be defined as a set of techniques that facilitate contact between the person to be treated (i.e., the spa user) and natural mineral water and other complementary therapies (Constant et al., 1998). In a more restricted sense, thermal spa treatments have a series of beneficial effects due to the specific composition of natural mineral water, complemented by the benefits derived from thermal spa environments and applications of relevant techniques (Gordon & Golanty, 2009). Treatments must be

medically prescribed and carried out at a thermal spa facility. The effectiveness of hydrological medicine has been fully proven, and spa users also benefit from the associated effects of the surrounding environment (Albertini et al., 2007).

The *Global Wellness Economy Monitor* (Yeung & Johnston, 2017) reports that over one-quarter of all thermal and mineral springs establishments offer value-added spa services (e.g., massages and facials) along with bathing options. These facilities offer a wide range of services, so they bring in more revenue than those facilities with bathing only (Tsang & Qu, 2000; Yeung & Johnston, 2017).

Satisfaction and dissatisfaction with hospitality in thermal spas

The general concept of satisfaction includes the impacts of different aspects of individuals' lifestyles, such as health, work, family, and leisure activities, on individuals' wellbeing. Good experiences can, in turn, positively affect individuals' health, family life, and relationships (Chen & Petrick, 2013). Wellness tourists, in particular, have high expectations that must be satisfied, including self-realization and a sense of belonging. Compared with other tourists, these travelers are more successful in their professional careers and are particularly concerned about preventing physical problems and preserving their good health (Puczkó & Bachvarov, 2006). This type of tourist is driven by an enjoyment of luxurious experiences that can—through gratification generated by, and satisfaction with, events—add value to their vacations (Kim, Chiang, & Tang, 2017).

The concept of satisfaction is similar across the extensive literature on this topic since most researchers agree that satisfaction reflects overall positive service evaluations and it has significant implications for revisit intentions (Han & Hyun, 2015). The provision of additional travel services can also lead to satisfaction in wellness tourism through, for example, training programs, physical fitness plans, and healthy diets (Kim et

al., 2017). Oliver (1980) points out that customer satisfaction is both an affective and cognitive reaction to satisfactory services and that customer dissatisfaction is the result of individuals comparing their real service quality experiences to their expectations.

Thermal spas are presently diverging from twentieth-century hydrotherapy facilities that provided treatment for infections to contemporary spas that mix traditional health therapies with leisure and recreational activities (Alonso-Álvarez, 2012). Current trends in thermal spas thus reflect a shift from traditional thermalism to up-to-date, complete wellness and health complexes (Radnic, Gracan, & Fister, 2009). Neal, Uysal, and Sirgy (2007) argue that satisfaction with leisure activities can have a positive effect on individuals' overall life satisfaction, so leisure and health are the main motivations behind tourists' trips to wellness destinations (Chen, Prebensen, & Huan, 2008; Ryff & Singer, 2008). Nawijn and Mitas (2012, p. 533) found that "wellness tourism influences different dimensions [and] more specifically the cognitive component of life satisfaction."

Another important finding is that tourism incorporating wellness experiences enhances sustainability and promotes satisfaction both for destination countries and tourists (Chen & Chen, 2010; Uysal, Sirgy, Woo, & Kim, 2016). The main goal of wellness tourism is to provide pleasant experiences. Smith and Puczkó (2008) report that the use of thermal water has healing properties, and this form of therapy was used in ancient times. Ever since then, individuals have found that staying in towns with hydrotherapy facilities promotes relaxation and recuperation.

However, the provision of high-quality wellness services is necessary to ensure contemporary tourists' satisfaction during three phases of traveling. These are the planning or pre-travel phase, destination experiences, and the post-travel phase, in which the electronic dissemination of information is especially prominent. This information can

be used to identify the elements of customer satisfaction in order to improve both theoretical frameworks and tourism management practices in the wellness sector.

Wellness tourism in the digital era

The digital era has had a marked influence on many tourism phenomena and has also produced novel sources of data that can be exploited by researchers (Leung, Law, van Hoof, & Buhalis, 2013). The information that tourists generate is widely believed to be unbiased and capable of offering insights from—and real voices expressing—an insider's perspective (Yoo & Gretzel, 2008). Given the intangible nature of hospitality and travel experiences from the perspective of prospective tourists who have never been to their chosen destinations, tourists naturally tend to search for information supplied by other tourists through UGC on the Internet (Lu & Stepchenkova, 2015). Hotel customers, in particular, can easily find most of the information they need online (e.g., price, location, and facilities) to compare hotel attributes and choose the most convenient facilities (Sparks & Browning, 2011).

For customers, an online review is the most common way to communicate a complaint, comment on their satisfaction, and rate a place, service, or hotel. For managers, online reviews represent the best channel through which to assess additional information on service delivery, quality, and customers' demands. The most valuable feedback comes mainly from negative comments with low ratings since these are more likely to reflect real problems (Schuckert, Liu, & Law, 2015).

Electronic word-of-mouth (e-WOM) refers to any positive or negative statement made by potential, actual, or former customers about a product or company, which is then made available to a multitude of people and institutions via the Internet (De Bruyn & Lilien, 2008). The importance of online reviews is growing among marketers, and many

e-travel agencies are linking their sponsored products with customer reviews (e.g., TripAdvisor.com, Hotels.com, and ebooking.com). Many online organizations are encouraging consumers to post product reviews on their websites (Mayzlin, 2006).

Research on tourism has shown that WOM can result from both negative and positive tourism experiences. If tourists express satisfaction with service quality and facilities, these individuals are more willing to return in the future, and they form repurchase intentions. This in turn can lead these tourists to disseminate positive WOM (Anderson, Fornell, & Lehmann, 1994).

In terms of health and wellness tourism, WOM is an important source of information on available treatments (Tiago et al., 2016). Hotel bookings can increase if travelers' reviews are positive, which confirms the importance of e-WOM in the hotel industry (Ye, Law, Gu, & Chen, 2011). Concurrently, service failures—together with promises that are not kept and employee misconduct and lack of training—have a negative impact not only on customers' experiences but also on family and friends' future travel plans (Hoffman & Chung, 1999). Thus, hospitality managers and marketers need to acknowledge that tourists use the Internet to share their experiences and that these reviews can significantly influence potential guests' plans (Litvin, Goldsmith, & Pan, 2006).

The digital age offers various opportunities for thermal and mineral spa tourists to harness the benefits of information communication technologies in affordable, simple ways (Abou-Shouk, Lim, & Megicks, 2013). Thus, the Internet has become one of the most important platforms for travel-related services, in which tourism professionals can provide services and communicate information to their target customers (Tsang & Qu, 2000). E-WOM has a strong impact on tourists' behavior that cannot be neglected and must be managed to improve the effectiveness of tourism and hospitality products.

Methodology

The first step when examining Web-generated content is to determine the most appropriate methodological approach. The main purpose of establishing a clear methodological approach is to ensure generalizable and reproducible results (Lai & To, 2015; Smith & Humphreys, 2006). To satisfy the purposes of this study, the selected methods were systematically applied in four phases: 1) definition of goals and scope, 2) data collection, 3) classification, and 4) analysis. Notably, previous research electing to use Leximancer software has used both smaller and larger quantities of qualitative data, as shown in the examples in Table 1.

Please insert Table 1 here.

Lexicographic analysis

According to Smith and Humphreys (2006), Leximancer 4.0 can be used to analyze the mathematical relationships between lexical data and associated concepts and then represent these connections visually as a concept map (Cretchley, Rooney, & Gallois, 2010). This inductive process identifies "themes" by analyzing patterns and forming clusters based on relationships. Leximancer has previously been successfully used as a data analysis tool in marketing, hospitality, tourism (Brochado, Troilo, & Shah, 2017; Sainaghi, Phillips, & Zavarrone, 2017; Wu, Wall, & Pearce, 2014), health (Cretchley, Gallois, Chenery, & Smith, 2010), and accounting research (Crofts & Bisman, 2010).

For each theme identified, Leximancer finds any related "concepts," which facilitate deeper analyses and interpretations of findings. This software then evaluates the validity of the lexical relationships uncovered and presents the resulting structure and concepts in a final version as a concept map, while the weighted terms are compiled into a "thesaurus." The operational method Leximancer uses is a concept space approach in

which words are mapped into a much smaller set of concepts (Chen et al., 1996). This process comprises the following steps: 1) data preparation, 2) generation of a concept thesaurus; 3) analysis; 4) identification of a faceted, two-level classification system; 5) creation of an index; and 6) development of a concept map. Detailed information on Leximancer's algorithms has been widely described and discussed in the literature (Smith, 2000).

Data collection and information source

Booking.com was selected as the platform from which to collect tourists' reviews of thermal and mineral spas in Portugal. This website encourages tourists to post positive and negative reviews while reporting their experiences, which serves the purposes of the present research. This study could thus identify satisfaction and dissatisfaction attributes by separating the reviews into two groups by satisfaction and dissatisfaction content, thereby generating separate concept maps and examining gender-related differences for each group (Cadotte & Tugeon, 1988).

Booking.com is the most popular travel-related site (The eBusiness MBA Guide, 2017) with 40 million estimated unique monthly visitors, followed closely by TripAdvisor with 38 million. For the present study, spa facilities were segmented based on the information available from Termas de Portugal (see http://www.termasdeportugal.pt/). Ten hotels and/or resorts were selected from the 40 thermal and mineral spas in Portugal, based on a minimum average review score of 8.3 (i.e., from 0 to 10, with 10 = excellent).

The sample consisted of 887 reviews of which negative reviews included 7,688 words and positive reviews 5,730 words. The retrieved reviews were those written in Portuguese and posted from January 2015 to November 2016. Additional information

gathered from the www.booking.com website included the hotels and/or resorts' name, number of stars, review scores, and ratings, as well as the reviewers' gender.

Research method

The selected methodology was applied in three phases. First, a preliminary exploratory analysis examined the data for word clusters and key themes and concepts. Second, the themes and associated concepts were further explored by tagging the reviews with the reviewers' gender and separating them into positive or negative reviews based on the associated ratings (Grace et al., 2010). Last, a separate analysis of the positive and negative reviews of the different gender groups was conducted to study the distribution patterns of concept groups, thereby revealing the thematic clusters underlying male and female reviewers' understanding of spa services (Baldauf & Kaplan, 2010).

The present study's approach was applied to achieve the main objective of this research, namely, examining both positive and negative reviews on thermal and mineral water spa establishments separately and according to reviewers' gender. This, in turn, facilitated further analyses to meet the second objective of identifying positive and negative reviews that focus on the service attributes that influence guests' satisfaction and dissatisfaction.

Data analysis

Leximancer 4.0 software was used to process the data from positive and negative texts reviewers posted on Booking.com. This software has been mostly utilized in social science research, such as qualitative health research (Cretchley, Gallois et al., 2010), literature reviews of particular concepts (Dann, 2010; Indulska, Hovorka, & Recker, 2012), and tourism studies (Scott & Smith, 2005). More recently, researchers have

employed Leximancer to examine tourists' shopping experiences (Wu et al., 2014), explore satisfaction with ecotourism experiences (Lu & Stepchenkova, 2012), and investigate the role of themed attractions (Pearce & Wu, 2016).

Leximancer uses a number of statistical-based algorithms to identify concepts in text data. Because the number of concepts is typically large, they are grouped by proximity into clusters, which constitute themes (Leximancer Pty Ltd, 2016). Thus, Leximancer utilizes a quantitative approach to conduct qualitative analysis (Indulska et al., 2012). This software assists researchers to examine texts, moving from words to concepts and from concepts to themes (Anagnostopoulos & Bason, 2015). To achieve results that are easier to interpret, all words that are not meaningful (e.g., "his," "couple," "for," "they," "not," and "there") are removed, thereby addressing research questions more efficiently. Finally, similar concepts are merged into one word (e.g., "TV" and "Wi-Fi").

Sentiment analysis

Sentiment analysis generates outputs divided into positive or favorable reviews and negative or unfavorable reviews that express tourists' feelings toward their experiences. Leximancer can be used to identify terms that have positive and negative connotations. For example, the phrase, "the service is unacceptable," is a negative description. This software's Automatic Sentiment Lens can thus identify the words that reveal unfavorable sentiments (Leximancer Pty Ltd, 2016).

In addition, sentiment analysis can provide insights by organizing tourists' descriptions in terms of negative, positive, or neutral comments (Pang & Lee, 2008).

Sentiment analysis has also been described as attitude mining because it uses content analysis and computer language to capture meaningful information. This tool has often

been used in marketing research and customer orientation studies to extract meaning from UGC (Schoen et al., 2013).

According to Turney (2002), sentiment analysis seeks to determine the attitude of speakers or writers toward some topic or the overall contextual polarity of documents. The strength of polarity is classified according to the content's closeness to very positive and very negative attitudes (e.g., "dirty," "good," "bad," "very," and "could not have done more to") (Turney, 2002).

Negative (i.e., weaknesses) and positive (i.e., strengths) reviews provide attributes that have been grouped into four categories in previous research focusing on hotel and restaurant hospitality (Cadotte & Tugeon, 1988). These attribute groups are satisfiers (i.e., positive attributes and/or strengths), dissatisfiers (i.e., negative attributes and/or weaknesses), criticals, and neutrals. Prior studies that have investigated positive and negative attitudes in customers' reviews on websites have further identified six categories: positive, negative, mixed, neutral, irrelevant, or uncertain (Godes & Mayzlin, 2004). The present research, therefore, sought to measure sentiments generated by experiences to categorize reviewers' comments into reactions ranging from extremely positive to extremely negative.

Results

Sample characteristics

The demographic and psychographic information extracted from the reviews in the sample was relatively limited. Among those reviewers who reported their gender, more were male (63%) than female (37%). The majority of reviews (76%) included both

positive and negative aspects related to their stay. Most of the facilities in the sample are located in the north of Portugal (70%) (see Table 2).

Please insert Table 2 here.

General description of reviews

To address the first aim of the present study, a concept map was generated to reveal the most common themes and concepts (see Figure 1) found in all 887 reviews (13,418 words). In total, 395 negative reviews (7,688 words) and 504 positive reviews (5,730 words) of 10 thermal and mineral spa facilities in Portugal were posted on Booking.com. This map includes concepts—the smaller gray nodes—that are grouped into themes—the larger shaded circles (Leximancer Pty Ltd, 2016). As can be seen in Figure 1, the six dominant themes in post-experience customer reviews are "thermal (spa)" (702 hits), "room" (344 hits), "pool" (331 hits), "location" (246 hits), "food" (230 hits), and "staff" (210 hits).

Please insert Figure 1 here.

A classification algorithm was used to conduct the text analysis. Smith and Humphreys (2006) explain this process as follows:

[Leximancer defines] blocks of n sentences and adds [up] their weightings in each concept. The software allows the extraction of [the] contextual information of text tags ... [in] negative and positive reviews and by male and female reviewers[. This] ... expanded the basic features of this research in terms of selecting the relevant concepts with likelihood percentages. (p. 268)

Visitors who rated their thermal mineral spas experiences as "negative" form the smallest group (i.e., 54 out of 887 reviews). These reviews are linked with the "hotel" and "pool" themes. The most significant concepts are "bed" (71% likelihood of usage),

"reception" (70%), "bar" (62%), "room" (47%), "bath" (55%), "exterior" (44%), "area" (41%), "pool" (39%), "interior" (27%), and "access" (14%).

The largest group are those who rated their thermal mineral spas experiences as "positive" (i.e., 162 out of 887 reviews). These reviews are linked with the "location" and "staff" themes. The most important concepts are "comfort" (95%), "location" (85%), "excellent (service)" (71%), "sympathy" (96%), and "staff" (82%).

Negative and positive reviews

For consumers, an online review is now the most common way to register complaints, express feelings, comment on levels of satisfaction, and rate services or hotels (Yoo & Gretzel, 2008). For management, online reviews represent the best channel to assess additional information on service delivery and quality—especially negative reviews with low ratings because these are more likely to reflect real management problems (Schuckert et al., 2015). However, both negative and positive reviews were of particular interest in this study as they can help to understand more fully tourists' experiences during their stay in thermal and mineral spas.

Negative reviews

The negative reviews posted on Booking.com were identified by content analysis, resulting in 395 reviews (7,688 words) with six dominant negative themes, as shown in Figure 2. The themes most closely associated with negative experiences are "thermal (spa)" (167 hits), followed by "pool" (118 hits), "price" (73 hits), "restaurant" (51 hits), "room" (47 hits), and "service" (19 hits). "Thermal (spa)" and "air-conditioner" are the two major complaint categories with high counts in reviews by female reviewers. The

major complaint categories identified by male reviewers are "pool," "clean(liness)," "exterior," "price," "spa," and "restaurant."

Please insert Figure 2 here.

Positive reviews

Positive reviews of wellbeing tourism facilities were identified by content analysis, resulting in 504 positive reviews (5,730 words), as shown in Figure 3. A concept map was generated with six key positive themes. The most prominent themes are "hotel" (380 hits), "experience" (294 hits), "thermal (spa)" (290 hits), "staff" (231 hits), "food" (66 hits), and "rest" (64 hits). "Staff" and "space" received the most positive reviews by female guests, while major positive attributes identified by males are "restaurant," "hotel," "room," and "relax(ation)."

Please insert Figure 3 here.

Frequency analysis

Thermal and mineral spa facility experiences were examined using thematic content analysis, which included identifying informational themes and generating frequency counts of these themes. This formed the basis of the content component analysis by favorable and unfavorable reviews. Table 3 presents the frequencies of keywords extracted from all 887 reviews. The words with a frequency less than 50 were excluded from further research. The top five most frequently occurring words are "hotel" (335 hits), followed by "room" (323 hits), "pool" (259 hits), "staff" (145 hits), and "breakfast" (141 hits).

Please insert Table 3 here.

Discussion

To address the first aim of this study, as mentioned previously, a general concept map was produced to identify the most common themes and concepts that represent thermal and mineral spa experiences (see Figure 1 above). The second aim was to examine how guests evaluate their negative (see Figure 2 above) or positive experiences (see Figure 3 above).

General review evaluation

The data used to identify the six main themes shown in Figure 1 above provide the basis for a solid understanding of each theme, as well as practical suggestions. First, the "thermal (spa)" facilities are the most frequently mentioned attribute. More than half of the customers who mentioned this attribute highlighted the "easy access and location with magnificent views." One customer review said, "the thermal treatments area is very pleasant and relaxing; we have returned home feeling rejuvenated."

These results confirm that wellness tourists value hydrotherapy and acknowledge that mineral and thermal waters have natural healing properties, as reported by Yeung and Johnston (2014). Previous research has confirmed that both tangible (e.g., location and access) and intangible (e.g., pleasant and relaxing facilities) components of hotel services shape the functional and emotional features of hotels' image. These, in turn, can contribute to customer satisfaction (Cadotte & Tugeon, 1988; Zhang & Mao, 2012).

"Room" comfort emphasizes the room's quality as reflected in comments such as "[a q]uiet room, [which is] cozy [and] comfortable . . . [and] great for a few days of rest. . . . The staff is nice, [and the place has a] nice atmosphere [and a] very comfortable bed."

Overall, hotel hospitality has been previously found to comprise five dimensions:

comfort, personalization, warmth, welcoming staff, special relationships, and service that comes straight from the heart (Ariffin & Maghzi, 2012).

Thus, personalized services and accommodations ensure customers are satisfied with thermal and mineral spa hotels and resorts (Lu & Stepchenkova, 2012). Conversely, dissatisfied comments express concerns that hotel managers need to acknowledge, such as poor room maintenance, a lack of amenities, and hotel conditions that fall below the minimum standard expected by guests.

The theme of "pool" reflects how health resorts and sanatoria use thermal mineral water pools for treatments and recreational activities (GWI, 2014). Pools are described as a primary source of dissatisfaction that ruins tourists' thermal and mineral spa resort experiences. Various reviews indicate that "the exterior access to the pool during cold months" should be improved and that "the water temperature" needs to be increased for comfort. Thermal pools should include health services especially designed to promote spas' well-known therapeutic benefits, and pool areas need to be easily accessible. These results confirm Patterson and Pegg's (2009) findings.

"Location" attributes in reviews mainly highlight the easily "accessible location with magnificent views." One reviewer highlighted the "[c]lose location to other places of interest." Lu and Stepchenkova (2012) conducted a similar study whose results also indicate that the room, nature, food, location, and value for money influence guest satisfaction. Geographical location and natural assets include the sun and sea in Portugal's western coastal and southern regions, biodiversity, a diverse topography, and a rich historical heritage (Governo de Portugal, 2014). These assets can be more extensively leveraged by entrepreneurs who need to develop thermal and mineral spa businesses that fuse unique settings, local traditions, and location-specific offerings with world-class services and built environments.

"Food" quality is a critical attribute for male guests. Reviewers praised the food quality and prices in such comments as "[a v]ery good restaurant, very nice room and . . . excellent price-quality ratio" and "[the f]ood [is] very well prepared and tasty." Thus, food can become an increasing important motivational factor for those planning wellness vacations and contribute to local thermal spas' development, as previously reported by the GWI (2017).

The "staff" was the last frequently mentioned attribute. Reviews primarily highlight the staff's positive attitude. The complimentary comments made by guests include "the staff is super nice and attentive" and "[t]he staff is always ready to help you."

The existing literature reveals that hotel staff is an important predictor of trust. Trust comprises two aspects, namely, trust in employees or staff and trust in a company's practices (Sirdeshmukh, Singh, & Sabol, 2002). The first facet of trust relates to customers' perceptions of staff behavior and performance in service encounters. The second is mainly based on company performance (Ariffin & Maghzi, 2012). The reviews examined in the present study often mention that the staff is unprepared, which can lead to service failure. The short-term success of spa hotels thus depends heavily on continually investing in proper staff training, reducing turnover, and cultivating employees' capabilities.

Negative reviews

Three new themes emerged from the separate analysis of negative reviews. Unfavorable comments included complaints about the "price" as compared to perceived service quality. One customer complained, "the price is too high for the quality of the service."

Another guest wrote, "the rooms are very old fashioned, which makes the price too high."

Customer satisfaction can increase customer loyalty, reduce price sensitivity, and increase

cross-buying in the competitive wellness tourism market. Given this context, managers need to foster superior customer satisfaction and increase positive e-WOM (Deng & Pei, 2009).

"Restaurant" was a critical theme, especially for male guests. One reviewer particularly noted that "[t]he price, quality (and quantity) ratio of the restaurant is just not acceptable." Another guest commented about "[t]he lack [of] attention given by the staff [to clients] in the restaurant."

Customers evaluate not only food but also multiple aspects of service experiences, (Kim, Chen, & Jang, 2006). In spa hotels, the price customers pay includes the meals and services they receive, so, in this complex pricing environment, utilizing guests' price perceptions to understand the role of prices in customer satisfaction is more effective than using objective pricing strategies (Han & Kim, 2009). In particular, understanding the multiple aspects of services is particularly important in spas with full-service restaurants.

The last negative appraisal attribute is "service" quality. One customer commented that "the food was very good, but the service was unprofessional." Another reviewer reported "old infrastructure and poor service." Overall, what differentiates one setting from another is not only the food and facilities but also the quality of the services provided, which confirms Chu and Choi's (2000) findings.

Service quality appraisal is particularly important for online communities as it gives tourists indirect access to prior service experiences, on which prospective tourists can base their expectation that the companies in question will deliver quality services (Godes & Mayzlin, 2004). Consequently, service failures could be the main reason for customer dissatisfaction, and the resulting negative e-WOM needs to be closely monitored.

Positive reviews

Of the themes the analyses extracted from positive reviews, the most frequently mentioned is "hotel." Theoretical studies in the literature suggest that employees' service mindedness and thoughtful actions enhance customers' perception and, thus, lead to a favorable hotel image (Zhang & Mao, 2012). The present results suggest that positive reviews strengthen hotels' overall image with statements such as "[this is a m] odern[,] comfortable hotel with an excellent view" or "[the f]antastic pool [was] very pleasant . . . [and] I enjoyed the gardens, the park, and the lake."

A number of empirical studies have found a clear relationship between positive perceptions of hotel brands and travelers' brand choices and positive WOM (Dimitrovski & Todorović, 2015). In addition, Kandampully and Hu (2007) point out that hotel image is influenced by both service quality and satisfaction and that these, in turn, enhance hotels' image, thereby strengthening customer loyalty. In line with the cited authors, the current study confirmed that hotels' favorable image is created by improving service quality.

Two new themes appeared when positive appraisals were analyzed as a group: "experience" and "relax(ation)." One guest mentioned, "[this is a m]agnificent location where one feels relaxed. . . . [A]fter one week in the hotel I left feeling younger."

Chen, Huang and Petrick (2016) examined the relationships between holiday recovery experiences and life satisfaction through the mediating role of tourism satisfaction. The cited authors found that individuals who are able to control what they want to do feel relaxed and disconnected from work. In addition, when they have new and challenging experiences during their holidays, they are more likely to be satisfied with their holidays (Chen et al., 2016).

Given the emerging wellness trend, tourism marketers in charge of publicity campaigns need to emphasize the relevant leisure experiences (Patterson & Pegg, 2009). Advertisements should include statements from wellness tourists about their perceptions of escape and relaxation programs (Mueller & Kaufman, 2001). Market research has shown that most three- to five-star hotels provide comprehensive wellness facilities. Thus, wellness hotels seeking to increase their competitiveness must specialize in health information, individual care, and a wide range of cultural and relaxation programs.

Although the same hotels can host health and wellness tourists, these two segments have to be considered separately when selecting marketing strategies (Mueller & Kaufman, 2001). Examining reviewers' key positive and negative concepts offers critical information that can help managers identify realistic consumer service options. Their hotels can then develop appropriate strategies and competitive advantages in the wellbeing tourism sector.

Conclusion

From a theoretical point of view, the literature on tourism has converged on affirming the importance of destination attractiveness to tourist satisfaction and tourism-related businesses' competitiveness (Caber, Albayrak, & Matzler, 2012). More specifically, the extensive literature on destination attractiveness offers an extremely wide range of attributes that have been identified and accepted as significant (Caber et al., 2012).

The present research, as mentioned previously, first identified attributes, which were then grouped into categories that could be useful to a more formal understanding of customer satisfaction in thermal and mineral spas. The final categories include:

- Thermal and spa attractiveness (i.e., "thermal [spa] facility" and "location")
- Facilities (i.e., "hotel," "restaurant," "room," "pool," and "spa")

• Food and beverages (i.e., "breakfast" and "food")

Tourists are not all the same. They have different images of their experiences, and their sociodemographics are heterogeneous (Dolnicar, 2008). Thus, the qualitative interpretations of the guest reviews examined in the present study further enhanced the accuracy of the above list of key hotel and resort spa attributes.

Thermal and mineral spas across Portugal offer wellness treatments and recreational activities interchangeably, so market segmentation needs to be used to delineate marketing strategies to attract different types of tourists. This research, therefore, also segmented the review sample according to gender. Six service attributes capture the gender-related key service details mentioned in the reviews examined. The specific attributes associated with men and women's satisfaction and dissatisfaction can be used as explanatory variables in market segmentation studies of thermal and mineral spas' guests.

This research was conducted in response to calls from researchers specializing in thermal spa and wellness tourism for further studies examining the different impacts of spa hotels' attributes on guests' satisfaction and dissatisfaction. The present study focused on thermal spa hotels primarily offering therapies using thermal and mineral waters to create value based on sustainable tourism. We identified four broad issues that are critical to tourism and hospitality in thermal spas.

The findings and relationships shown on the Leximancer concept map can be used to develop a more cogent theoretical framework for exploring wellbeing tourism. In addition, the relationships need to be tested within the four main dimensions in question. These are 1) service quality in thermal spas primarily focused on therapeutic uses of mineral waters, 2) food tourism experiences, 3) hotel performance associated with

thermal spas, and 4) destination choice (i.e., country image associated with thermal resorts).

Finally, this study's methodological approach combined quantitative analysis based on tourists' ratings with qualitative content analysis of tourists' reviews. This approach highlighted important satisfaction and dissatisfaction attributes and identified the areas that need to be strengthened in order to develop a successful plan for wellness tourism businesses.

The attractiveness of wellness destinations is fundamentally based on what practitioners and researchers have identified as the key attributes of destination attractiveness and customer satisfaction (Medina-Muñoz & Medina-Muñoz, 2014). Lodging businesses need to use these attributes to move from simply avoiding customer dissatisfaction to maximizing customer satisfaction through above-and-beyond service delivery (Zhang & Cole, 2016).

On a practical level, the present study's results provide a strategic order of attributes based on customers' demographic attributes, which thermal and mineral spa facilities can use to implement or improve their service attributes and, thereby, maximize their guests' satisfaction. The three performance factors male customers perceive negatively are "price," "TV channel," and "breakfast." The basic concepts that contribute to female clients' negative perceptions include "room," "bed," and "clean(liness)." The performance factor involving "clean(liness)," in particular, causes reviewers' overall satisfaction and dissatisfaction.

These factors should, therefore, be given priority overall when examining guests' evaluations of hotels. To be successful, managerial strategies need to be able to increase tourism expenditure and visitor numbers by providing satisfying, memorable experiences (Pyke et al., 2016).

The present research on thermal and mineral spa hotel businesses associated with wellness tourism included content analyses of key attributes of recreational and health facilities that offer therapeutic water treatments. Unlike many highly-structured assessments in previous satisfaction and valuation surveys, this study emphasized customers' natural language used in their depictions of spa experiences. The data were collected from reviews posted on Booking.com about 10 thermal and mineral spa facilities, and Leximancer software produced content maps that represent these consumers' experiences.

This research's first contribution to the literature on thermal and mineral spa tourism is a conceptualization of the main categories of attributes driving customer satisfaction and dissatisfaction in this niche market. In addition, the qualitative methodology applied, while not pioneering, is still relatively new in the field, and, until now, this method has not been applied to thermal and mineral spa facilities. The results include practical advice for managers regarding the importance of thermal conditions and equipment, hotel facilities, food quality and price, pool and bath access, location and accessibility, and staff professionalism and friendliness. These six themes (i.e., thermal [spa], hotel, food, pool, location, and staff) are clearly identified in the concept map (see Figure 1 above) of customers' overall representations of their thermal and mineral spa experiences.

Hotel service quality has long been a major concern of and hot topic for scholars and practitioners alike (Ye, Law, & Gu, 2009). Previous research has indicated that the service quality of Portuguese hotels is still lagging behind international standards (Brochado & Gameiro, 2015; Tsang & Qu, 2000). To leverage the demand for Portuguese thermal and mineral spas and expand this tourism sector, entrepreneurs and local governments need to develop more spas that fuse unique settings, local traditions, and

place-specific offerings with world-class built environments and services. Portugal's natural assets include a moderate continental climate with plentiful sun and sea in coastal areas, a diverse topography and gastronomy, and an ancient historical setting.

Several limitations of this study arise from the number of negative reviews (i.e., 395) being somewhat lower than the positive reviews. This may mean that the sample was not sufficiently large enough to identify all potential issues that might negatively affect dissatisfaction with thermal and mineral spa facilities.

Furthermore, the results of this study rely on the assumption that all the reviews were posted by guests who have actually stayed in the facilities (Ayeh, Au, & Law, 2013). Finally, a post-experience sample could have selected for a particular kind of customer who posts online reviews. Conducting additional interviews could help to gain a better understanding of customers' motivating factors that influence satisfaction and the relationship between these factors and guests' satisfaction and dissatisfaction with hotels expressed in online posts.

A question worth investigating in future studies is how Internet usage in health and wellness trip planning differs between tourists who seek leisure experiences and those who travel for health purposes. Another recommended line of future research would be to focus on additional factors that are not included in this research but that could also contribute to a better understanding of tourists' choice of health and wellness destinations (Medina-Muñoz & Medina-Muñoz, 2014).

References

Abou-Shouk, M., Lim, W. M., & Megicks, P. (2013). Internet adoption by travel agents: A case of Egypt. *International Journal of Tourism Research*, *15*(3), 298–312. Alonso-Álvarez, L. (2012). The value of water: The origins and expansion of thermal tourism in Spain, 1750–2010. *Journal of Tourism History*, *4*(1), 15–34.

- Anagnostopoulos, C., & Bason, T. (2015). Mapping the first 10 years with Leximancer: Themes and concepts in the Sports Management International Journal Choregia. *Choregia*, 11(1), 25–41.
- Anderson, E. W., Fornell, C., & Lehmann, D. R. (1994). Customer satisfaction, market share, and profitability: Findings from Sweden. *Journal of Marketing*, *58*(3), 53–66.
- Ariffin, A. A. M., & Maghzi, A. (2012). A preliminary study on customer expectations of hotel hospitality: Influences of personal and hotel factors. *International Journal of Hospitality Management*, 31(1), 191–198.
- 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.
- Berry, L. L., Carbone, L. P., & Haeckel, S. H. (2002). Managing the total customer experience. *MIT Sloan Management Review*, 43(3), 85–89.
- Brochado, A., Troilo, M., & Shah, A. (2017). Airbnb customer experience: Evidence of convergence across three countries. *Annals of Tourism Research*, 63, 210–212.
- Bushell, R., & Sheldon, P. J. (Eds.). (2009). *Wellness and tourism: Mind, body, spirit, place*. New York: Cognizant Communication Corporation.
- Caber, M., Albayrak, T., & Matzler, K. (2012). Classification of the destination attributes in the content of competitiveness (by revised importance-performance analysis). *Journal of Vacation Marketing*, 18(1), 43–56.
- Cadotte, E. R., & Tugeon, N. (1988). Dissatisfiers and satisfiers: Suggestions from consumer complaints and compliments. *Journal of Consumer Satisfaction*, *Dissatisfaction and Complaining Behavior*, 1(1), 74–79.
- Chen, C. C., Huang, W. J., & Petrick, J. F. (2016). Holiday recovery experiences, tourism satisfaction and life satisfaction—is there a relationship? *Tourism Management*, 53, 140–147.
- Chen, C. C., & Petrick, J. F. (2013). Health and wellness benefits of travel experiences: A literature review. *Journal of Travel Research*, 52(6), 709–719.
- Chen, C. F., & Chen, F. S. (2010). Experience quality, perceived value, satisfaction and behavioral intentions for heritage tourists. *Tourism Management*, *31*(1), 29–35.

- Chen, C. H., Wu, M. H., Huang, Y. A., & Cheng, J. S. (2013). Service demand of senior for spa on wellness tourism: An explorative study. *International Proceedings of Economics Development and Research*, 67, 25–29.
- Chen, H., Schatz, B., Ng, T., Martinez, J., Kirchhoff, A., & Chienting, L. (1996). A parallel computing approach to creating engineering concept spaces for semantic retrieval: The Illinois digital library initiative project. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 18(8), 771–782.
- Chen, J. S., Prebensen, N., & Huan, T. C. (2008). Determining the motivation of wellness travelers. *Anatolia*, 19(1), 103–115.
- Chu, R. K. S., & Choi, T. (2000). An importance-performance analysis of hotel selection factors in the Hong Kong hotel industry: A comparison of business and leisure travellers. *Tourism Management*, 21(4), 363–377.
- Cretchley, J., Gallois, C., Chenery, H., & Smith, A. (2010). Conversations between carers and people with schizophrenia: A qualitative analysis using Leximancer. *Qualitative Health Research*, 20(12), 1611–1628.
- Dann, S. (2010). Redefining social marketing with contemporary commercial marketing definitions. *Journal of Business Research*, 63(2), 147–153.
- De Bruyn, A., & Lilien, G. L. (2008). A multi-stage model of word-of-mouth influence through viral marketing. *International Journal of Research in Marketing*, 25(3), 151–163.
- Deng, W. J., & Pei, W. (2009). Fuzzy neural based importance-performance analysis for determining critical service attributes. *Expert Systems with Applications*, 36(2 PART 2), 3774–3784.
- Dimitrovski, D., & Todorović, A. (2015). Clustering wellness tourists in spa environment. Tourism Management Perspectives, 16, 259–265.
- Dolnicar, S. (2008). Market segmentation in tourism. In D. Woodside, & A. G., Martin (Eds.), *Tourism management: Analysis, behaviour and strategy* (pp. 129–150). Wallingford, UK: CABI Books.
- Exworthy, M., & Peckham, S. (2006). Access, choice and travel: Implications for health policy. *Social Policy and Administration*, 40(3), 267–287.
- Global Wellness Institute. (2014). *Thermal/mineral springs economy*. Miami, FL: Global Wellness Institute.

- Global Wellness Institute. (2016). *Ten predictions for the future of wellness, travel, spa and beauty in Europe*. Miami, FL: Global Wellness Institute.
- Godes, D., & Mayzlin, D. (2004). Using online conversations to study word-of-mouth communication. *Marketing Science*, 23(4), 545–560.
- Governo de Portugal. (2014). Relatório do grupo de trabalho interministerial:Turismo de saúde [Report of inter-ministerial work group: Health tourism]. Lisbon: Governo de Portugal
- Han, H., & Hyun, S. S. (2015). Customer retention in the medical tourism industry: Impact of quality, satisfaction, trust, and price reasonableness. *Tourism Management*, 46, 20–29.
- Han, H., & Kim, W. (2009). Outcomes of relational benefits: Restaurant customers' perspective. *Journal of Travel & Tourism Marketing*, 26(8), 820–835.
- Hartwell, H. (2014). Wellness tourism: A destination perspective. *Tourism Management*, 42, 305–306.
- Hartwell, H., Fyall, A., Willis, C., Page, S., Ladkin, A., & Hemingway, A. (2016).

 Progress in tourism and destination wellbeing research. *Current Issues in Tourism*, *August*, 1–63.
- Heung, V. C. S., Kucukusta, D., & Song, H. (2011). Medical tourism development in Hong Kong: An assessment of the barriers. *Tourism Management*, 32(5), 995–1005.
- Hoffman, D. K., & Chung, B. G. (1999). Hospitality recovery strategies: Customer preference versus firm use. *Journal of Hospitality & Tourism Research*, 23(1), 71–84.
- Horneman, L., Carter, R. W., Wei, S., & Ruys, H. (2002). Profiling the senior traveler: An Australian perspective. *Journal of Travel Research*, *41*(1), 23–37.
- Indulska, M., Hovorka, D. S., & Recker, J. (2012). Quantitative approaches to content analysis: Identifying conceptual drift across publication outlets. *European Journal of Information Systems*, 21(1), 49–69.
- Instituto Nacional de Estatistica. (2018). *Statistics on Portugal*. Retrieved from http://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_destaques&DESTAQUE Sdest_boui=313635203&DESTAQUESmodo=2
- Juul, M. (2015). Tourism and the European Community: Recent trends and policy developments. Retrieved from

- http://www.europarl.europa.eu/thinktank/en/document.html?reference=EPRS_ID A(2015)568343
- Kandampully, J., & Hu, H.-H. (2007). Do hoteliers need to manage image to retain loyal customers? *International Journal of Contemporary Hospitality Management*, 19(6), 435–443.
- Kickbusch, I., & Payne, L. (2003). Twenty-first century health promotion: The public health revolution meets the wellness revolution. *Health Promotion International*, 18(4), 275–278.
- Kim, E., Chiang, L., & Tang, L. (2017). Investigating wellness tourists' motivation, engagement, and loyalty: In search of the missing link. *Journal of Travel & Tourism Marketing*, *34*(7), 867–879.
- Kim, H. J., Chen, M. H., & Jang, S. S. (2006). Tourism expansion and economic development: The case of Taiwan. *Tourism Management*, 27(5), 925–933.
- Leung, D., Law, R., van Hoof, H., & Buhalis, D. (2013). Social media in tourism and hospitality: A literature review. *Journal of Travel and Tourism Marketing*, 30(1–2), 3–22.
- Leximancer Pty Ltd. (2016). *Leximancer user guide*, *release 4.5*. Retrieved from https://doc.leximancer.com/doc/LeximancerManual.pdf
- Litvin, S., Goldsmith, R., & Pan, B. (2006). Electronic word-of-mouth in hospitality and tourism management. *Tourism Management*, 29(3), 458–468.
- Lu, W., & Stepchenkova, S. (2012). Ecotourism experiences reported online: Classification of satisfaction attributes. *Tourism Management*, *33*(3), 702–712.
- Lu, W., & Stepchenkova, S. (2015). User-generated content as a research mode in tourism and hospitality applications: Topics, methods, and software. *Journal of Hospitality Marketing & Management*, 24(2), 119–154.
- Marković, S., Lončarić, D., & Lončarić, D. (2014). Service quality and customer satisfaction in the health care industry. *Tourism and Hospitality Management*, 20(2), 155–170.
- Mayzlin, D. (2006). Promotional chat on the Internet. *Marketing Science*, 25(2), 155–164.
- Medina-Muñoz, D. R., & Medina-Muñoz, R. D. (2014). The attractiveness of wellness destinations: An importance-performance-satisfaction approach. International *Journal of Tourism Research*, *16*(6), 521–533.

- Milman, A. (1998). The impact of tourism and travel experience on senior travelers' psychological well-being. *Journal of Travel Research*, 2(37), 166–170.
- Ministerio da Economia e do Emprego. (2015). *Plano estratégico nacional do turismo* [National strategy plan of tourism]. Lisbon: Ministerio da Economia e do Emprego.
- Moghavvemi, S., Ormond, M., Musa, G., Isa, C. R. M., Thirumoorthi, T., Mustapha, M.
 Z. B., & Chandy, J. J. C. (2017). Connecting with prospective medical tourists online: A cross-sectional analysis of private hospital websites promoting medical tourism in India, Malaysia and Thailand. *Tourism Management*, 58, 154–163.
- Mueller, H., & Kaufmann, E. L. (2001). Wellness tourism: Market analysis of a special health tourism segment and implications for the hotel industry. *Journal of Vacation Marketing*, 7(1), 5–17.
- Nahrstedt, W. (2004). Wellness: A new perspective for leisure centers, health tourism, and spas in Europe on the global health market. In K. Weiermair, & C. Mathies (Eds.), *The tourism and leisure industry shaping the future* (pp. 181–195). New York: The Haworth Hospitality Press
- Nawijn, J., & Mitas, O. (2012). Resident attitudes to tourism and their effect on subjective well-being: The case of Palma de Mallorca. *Journal of Travel Research*, *51*(5), 531–541.
- Neal, J. D., Uysal, M., & Sirgy, J. M. (2007). The effect of tourism services on travelers' quality of life. *Journal of Travel Research*, *November 1*. https://doi.org/10.1177/0047287507303977
- Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research*, *17*, 46–69.
- Pang, B., & Lee, L. (2008). Opinion mining and sentiment analysis. *Foundations and Trends® in Information Retrieval*, 2(1–2), 1–135.
- Patterson, I., & Pegg, S. (2009). Marketing the leisure experience to Baby Boomers and older tourists. *Journal of Hospitality Marketing & Management*, 18(2–3), 254–272.
- Pearce, P. L., & Wu, M.-Y. (2016). Tourists' evaluation of a romantic themed attraction: Expressive and instrumental issues. *Journal of Travel Research*, *55*(2), 220–232.
- Pesonen, J., & Komppula, R. (2010). Rural wellbeing tourism: Motivations and expectations. *Journal of Hospitality and Tourism Management*, 17(1), 150–157.

- Puczkó, L., & Bachvarov, M. (2006). Spa, bath, thermae: What's behind the labels? Tourism Recreation Research, 31(1), 83–91.
- Pyke, S., Hartwell, H., Blake, A., & Hemingway, A. (2016). Exploring well-being as a tourism product resource. *Tourism Management*, *55*, 94–105.
- Radnic, R., Gracan, D., & Fister, M. (2009). Repositioning of thermal spa tourism of North-west Croatia in accordance with the European thermal spa tourism trends.

 International Journal Of Multidisciplinary Research for South And South-Eastern Europe, 15(1), 73–84.
- Ryff, C. D., & Singer, B. H. (2008). Know thyself and become what you are: A eudaimonic approach to psychological well-being. *Journal of Happiness Studies*, 9, 13–39.
- Sainaghi, R., Phillips, P., & Zavarrone, E. (2017). Performance measurement in tourism firms: A content analytical meta-approach. *Tourism Management*, *59*, 36–56.
- Schoen, H., Gayo-Avello, D., Metaxas, P. T., Mustafaraj, E., Strohmaier, M., & Gloor, P. (2013). The power of prediction with social media. *Internet Research*, 23(5), 528–543.
- Schuckert, M., Liu, X., & Law, R. (2015). Hospitality and tourism online reviews: Recent trends and future directions. *Journal of Travel & Tourism Marketing*, *32*(5), 608–621.
- Scott, N., & Smith, A. E. (2005). Use of automated content analysis techniques for event image assessment. *Tourism Recreation Research*, *30*, 87–91.
- Sirdeshmukh, D., Singh, J., & Sabol, B. (2002). Consumer trust, value, and loyalty in relational exchange. *Journal of Marketing*, 66(1), 15–37.
- Smith, A. E., & Humphreys, M. S. (2006). Evaluation of unsupervised semantic mapping of natural language with Leximancer concept mapping. *Behavior Research Methods*, 38(2), 262–279.
- Smith, M., & Kelly, C. (2015). Wellness tourism. *Tourism Recreation Research*, *31*(1), 1–4.
- Smith, M., & Puczkó, L. (2008). Health and wellness tourism. In M. Smith, & L. Puczkó (Eds.), *Health and wellness tourism*. Oxford: Butterworth-Heinemann.
- Sparks, B. A., & Browning, V. (2011). The impact of online reviews on hotel booking intentions and perceptions of trust. *Tourism Management*, 32(2), 1310–1323.

- Termas de Portugal. (2018). *Imprensa*. Retrieved from http://www.termasdeportugal.pt/imprensa
- Tiago, M. T. P. M., Couto, J. P. de A., Tiago, F. G. B., & Faria, S. M. C. D. (2016). Baby boomers turning grey: European profiles. *Tourism Management*, *54*, 13–22.
- Toda, M., Makino, H., Kobayashi, H., Nagasawa, S., Kitamura, K., & Morimoto, K. (2004). Medical assessment of the health effects of short leisure trips. *Archives of Environmental Health: An International Journal*, 59(12), 717–724.
- Tsang, N., & Qu, H. (2000). Service quality in China's hotel industry: A perspective from tourists and hotel managers. *International Journal of Contemporary Hospitality Management*, 12(5), 316–326.
- Turney, P. (2002, July). Thumbs up or thumbs down? Semantic orientation applied to unsupervised classification of reviews. In P. Isabelle (Ed.), *ACL '02 Proceedings of the 40th annual meeting on association for computer linguistics* (pp. 417–424). Stroudsburg, PA: Association for Computational Linguistics.
- Uysal, M., Sirgy, M. J., Woo, E., & Kim, H. L. (2016). Quality of life (QOL) and well-being research in tourism. *Tourism Management*, *53*, 244–261.
- Voigt, C., Brown, G., & Howat, G. (2011). Wellness tourists: In search of transformation. *Tourism Review*, 66(1), 16–30.
- Wang, H.-Y. (2012). Value as a medical tourism driver. *Managing Service Quality*, 22(5), 465–491.
- Wu, M. Y., Wall, G., & Pearce, P. L. (2014). Shopping experiences: International tourists in Beijing's Silk Market. *Tourism Management*, 41, 96–106.
- Ye, Q., Law, R., & Gu, B. (2009). The impact of online user reviews on hotel room sales. *International Journal of Hospitality Management*, 28(1), 180–182.
- Ye, Q., Law, R., Gu, B., & Chen, W. (2011). The influence of user-generated content on traveler behavior: An empirical investigation on the effects of e-word-of-mouth to hotel online bookings. *Computers in Human Behavior*, 27(2), 634–639.
- Yeung, O., & Johnston, K. (2014). *Global spa & wellness economy monitor*. Miami, FL: Global Wellness Institute.
- Yeung, O., & Johnston, K. (2017). *Global wellness economy monitor*. Miami, Fl: Global Wellness Institute.
- Yoo, K. H., & Gretzel, U. (2008). What motivates consumers to write online travel reviews? *Information Technology & Tourism*, 10(4), 283–295.

- Zeelenberg, M., & Pieters, R. (2004). Beyond valence in customer dissatisfaction: A review and new findings on behavioral responses to regret and disappointment in failed services. *Journal of Business Research*, *57*(4), 445–455.
- Zhang, J. J., & Mao, Z. (2012). Image of all hotel scales on travel blogs: Its impact on customer loyalty. *Journal of Hospitality Marketing & Management*, 21(2), 113–131.
- Zhang, Y., & Cole, S. T. (2016). Dimensions of lodging guest satisfaction among guests with mobility challenges: A mixed-method analysis of Web-based texts. *Tourism Management*, *53*, 13–27.

Table 1. Attributes of Portuguese tourists visiting thermal mineral spas

Demographics	(N = 887)	Percent
Reviews by Gender		
Female	328	37%
Male	559	63%
Total	887	100%
Reviews by Type		
Only negative	54	6%
Only positive	162	18%
Negative and positive	671	76%
Total	887	100%
Demographics	(N = 887)	Percent
North	620	70%
Center	179	20%
South	88	10%
Total	887	100%
Star Rated Hotels		
3 Stars	250	28%
3 Stars	230	
4 Stars	513	58%
		58% 14%

Table 2. Frequency analysis: main attributes and categories

Concept	Frequency	Favorable Reviews	Unfavorable Reviews
(Count)	of Occurrence		
Hotel (335)	Occurrence 59%	The quality of the hotel (location, dinner meals architecture, decoration and overall service) [male] The hotel architecture, thermal pool, <i>a la carte</i> meal, and excellent buffet at a low price [female]	I did not like the state of degradation of the hotel considering the price I paid. [male] Huge hotel, labyrinthine, lack of signage (impossible to find the pool or the restaurant) [male]
Room (323)	57%	The room is extremely clean. [female] The bathroom and bedroom were immaculate. [female]	More light needed in the corridors and in some areas of the room and a lack of towels and slippers [female] Poor toiletries and missing extra blankets in the room [male]
Pool (259)	46%	The pool with very warm water was great. [female] Excellent pool (cleaning and infrastructure available) [male]	I found the pool too small for so many guests. [male] The pool was dirty; the spa was old and dirty—a disappointment. [male]
Staff (145)	26%	Friendliness and professionalism of the hotel staff providing pool and room service [male] Super nice and attentive staff [female]	Hotel far from the spa and inexperienced and disinterested staff [female] Lack of staff, disorganized, lack of professionalism [male]
Breakfast (141)	25%	The breakfast is very good. [male] The surrounding area was well maintained, and the breakfast had a greater than expected variety of food. female]	The small breakfast room generates some delays in the availability of tables. [female] The breakfast food was tasteless. [male]
Spa (118)	21%	The spa was very quiet and well equipped. [female] Excellent spa included in the overall price [male]	The spa is close to the hotel but, during the winter, it is unpleasant to access the spa. [female] The cost of using the spa, namely, the swimming pool with showers and Turkish bath, seemed a little high. [male]

Concept (Count)	Frequency of	Favorable Reviews	Unfavorable Reviews
	Occurrence		
Location (116)	20%	Quiet location, nice room, and comfortable bed [female] Interesting location, very spacious and full of green spaces [male]	No indication of location to help find the hotel [male] The pool is located in the shade very early, and, for that reason, both the water and the pool area are cold very early. [female]
Restaurant (103)	18%	The restaurant is very good, the room very nice, and the price-quality ratio is excellent. [male] Restaurant meals were cooked very well. [male]	The restaurant is very expensive considering that guests stay for long healing periods. [male] At the front desk, no one was able to tell us the restaurant prices or what dishes were available. [male]
Friendly (98)	17%	Helpful and friendly staff [male] Generally friendly environment [male]	No one was friendly during check in; staff are not friendly at all. [female] Inexperienced service [male]
Comfort (85)	15%	I found the comfort of the room, the space in front of the restaurant, and the décor to be excellent. [male] I liked the level of comfort and calmness of the hotel and the landscape around it. [male]	The modern design diminishes the comfort in some respects. [male] The room is not comfortable. [female]
Indoor (58)	10%	Silence, calm, pleasant place, interior and exterior decoration [male] The place and the interior wood decoration of the pool [male]	The interior of the hotel needs to be redone with a new décor. [male] Indoor pool and spa: usually empty, despite the overly occupied outdoor pool, because it costs €11 per hour [male]
Quality (55)	10%	The restaurant, without being extraordinary, has an excellent price-quality ratio. [male] The spa is very good quality with reasonable prices but outside the hotel. [male]	Delay in service, quality of food, lack of light outside so had to read the menu with the light of a mobile phone [male] The resort's restaurant is overpriced for the quality offered. [female]

Concept (Count)	Frequency of Occurrence	Favorable Reviews	Unfavorable Reviews
Excellent (54)	10%	I liked everything, particularly the attentiveness and friendliness of the staff and the dinner, which was excellent. [male] General facilities, good mattress comfort and excellent bath [male]	A great location at a good price, but not excellent for this kind of hotel [male] Breakfast is very weak given that the region of the hotel has excellent products. [male]

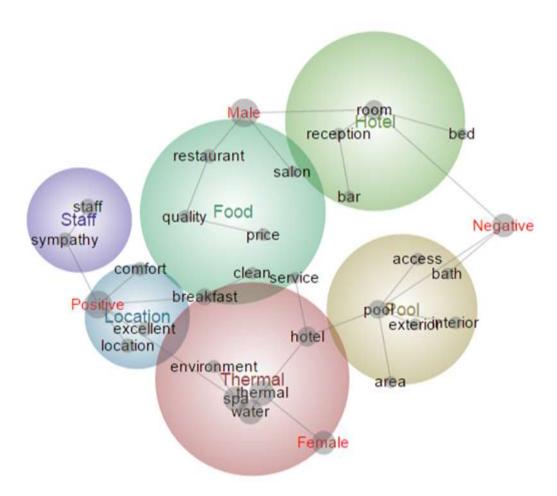


Figure 1. General concept map of reviews

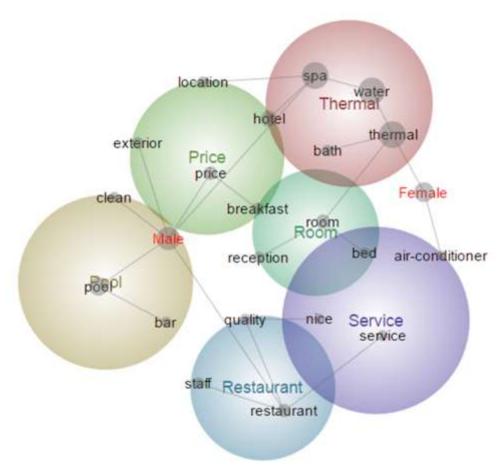


Figure 2. Concept map: negative reviews

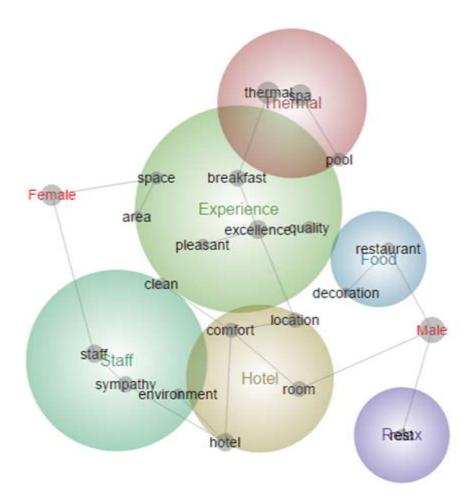


Figure 3. Concept map: positive reviews