

What satisfaction is perceived through online reviews from customers in mountain hotels?

A QUALITATIVE & SENTIMENT ANALYSIS

Dissertação, apresentado ao Departamento de gestão, com vista a obtenção do grau de mestre, no âmbito da realização do ciclo de estudos de Mestrado em Gestão de Negócios.

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Data: 23 de Fevereiro de 2021

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Trabalho realizado sob a orientação do Prof. Doutor Ricardo Filipe Ramos e a coorientação do Prof. Doutor Nuno Miguel Fortes Fonseca Santos

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Resumo

As redes sociais tornaram-se espaços populares para a partilha de informação turística, enquanto provocam várias alterações nos processos de gestão. Para os hotéis de montanha, não é exceção.

O objetivo desta investigação serviu para analisar a experiência desses hóspedes, recorrendo ao *feedback online* no Trip Advisor (TA) para perceber a sua satisfação. Com este objetivo, definiu-se o problema de investigação: Qual é a satisfação percebida através dos comentários *online* de hóspedes em hotéis de montanha?

Para responder a esta questão, foram recolhidos 5591 comentários online a partir de 20 hotéis de quatro e cinco estrelas localizados no Geopark Natural da Serra da Estrela, para serem investigados através de ferramentas de análise qualitativa, recorrendo à análise de sentimentos.

Os resultados revelam as expectativas e características destes clientes, das quais este destaca o serviço de piscina e spa, a vista do quarto, ou os espaços ao ar livre. Outra das descobertas confirma que a nacionalidade, o sexo, a experiência do utilizador, a data de estadia e a categoria de hotel escolhida influenciam o sentimento dos clientes. Os novos conhecimentos estendem perceções acerca deste tipo de cliente, contribuindo com valiosas informações para os gestores hoteleiros alinharem estratégias de acordo com as expectativas dos clientes.

Apesar dos comentários *online* já terem sido investigados em contexto hoteleiro, nenhum estudo analisou hóspedes de hotéis de montanha, pelo que este, levanta nova discussão sobre este tipo de cliente.

Palavras chave. Análise de sentimentos, Análise de texto, Hotéis de montanha, Redes sociais, Serra da Estrela.

Abstract

Social networks have become popular spaces for sharing tourist information while causing several changes in management processes. For mountain hotels, it is not an exception.

This investigation aimed to analyze these customers' experience, using online reviews at Trip Advisor (TA), to understand their satisfaction. With this objective, the research problem was defined: What satisfaction is perceived through online reviews from customers in mountain hotels?

To answer this question, 5591 online reviews were collected from 20 hotels in the range of four and five stars located in the National Natural Geopark of Serra da Estrela (NNGSE), to be investigated through qualitative analysis tools, using sentiment analysis.

The results reveal the client's expectations and characteristics, of which he highlights the pool and spa service, the room view, or the natural outside spaces. The findings also confirm that nationality, sex, online experience, date of stay, and hotel category influence the customers' sentiment. The new knowledge extends perceptions about this type of client, contributing to hotel managers' valuable information to align strategies according to clients' expectations.

Although online reviews have already been investigated in a hotel context, no study has analyzed mountain hotel customers, which raises a new discussion about this type of client.

Keywords. Sentiment Analysis, Text Mining, Mountain Hotels, Social Media, Serra da Estrela.

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Acronyms List

CAQDAS Computer-assisted Qualitative Data Analysis Software

eWOM Electronic Word of Mouth

NNGSE National Natural Geopark of Serra da Estrela

SA Sentiment Analysis

SM Social Media

TA Trip Advisor

TM Text Mining

UGC User-Generated Content

UNWTO World Tourism Organization

1. Introduction

Mountain regions offer a significant diversified resource base for developing tourism activities and a distinct tourist destination position (Center of Portugal, 2020). Somewhat because of the characteristics and natural-based elements such as the mountain range with dark-green water, flowing through the forest with animal sounds in their habitat or fresh air that carries the fauna's scent flora, which all stimulate traveler's sensory experiences (Chang, 2016; Cheng, Tang, Shih, & Wang, 2016). In mountain hotels, those surrounding natural-based elements (e.g., forests, rivers, and landscapes) are considered a perfect space to create an integrated hotel experience (Chang, 2016).

Those integrated experiences might encompass a range of hard-level activities, such as rock climbing, long and challenging treks, mountain biking, as well as soft activities, including hiking or low-intensity treks (Rebelo et al., 2018). Those activities are encouraged by the involvement of glancing at unique landscapes, living the wildlife, or being within the scenic beauty of mountain destinations, providing diverse opportunities to visit idiosyncratic cultures, histories, and recreational experiences (Charters & Saxon, 2017).

In recent years, mountain tourism has gradually increased its position among tourists' preferences at an International level. The principal reason is the strong relationship that man develops with nature and precisely with the mountain, becoming a destination of excellent tourist influx (Rama et al., 2019). A growing number of tourists are drawn to the clean air, a development in line with the increasing number of travelers to mountain areas, which already attracts up to 20% of global tourism (Charters & Saxon, 2017).

Mountain destinations were one of the main attractions in 13% of European residents' trips in 2016 (Eurostat, 2018). The relationship between mountains and tourism is undeniable. E.g., the number of visitors to the Rocky Mountain National Park amounted to approximately 4.67 million in 2019 contrasted to 2.67 million in 2008 (Statista, 2020b), and the Glacier National Park in the United States attracted a total of roughly 3.05 million visitors in 2019, an increasable growth compared to the 1.81 million visitors in 2008 (Statista, 2020a).

Since Porter (2001) admonishes market dynamics changes and the rise of new information and communication technologies, the UNWTO (2018) notes that the advances in technology and digital platforms' emergence have revolutionized business models and consumer behavior. Beyond question, both the research community and managers' expertise assume acknowledging the critical role of innovation in tourism (Belias et al., 2020).

One of the reasons is the consequence of Internet technology advancement (Mariani et al., 2018), where the rise of social media (SM) provides people new ways of exchanging feedback on products and services (Moro & Rita, 2018) by promoting relationship development between users from diverse environments, resulting in a rich social structure (Kapoor et al., 2018). Consequently, the increasing number of reviews posted markedly

reorganizes travelers' support to selecting hotels and hotel managers to define their strategies (Hu, Chen, & Chou, 2017).

Nowadays, the data available online effectively collects the views of a broad and diverse range of customers (Zhao et al., 2019). As a result for the travel industry, data-generating sources lead to the advancement of big data analytics, which has brought to this industry growing interested in using user-generated content (UGC) to uncover intricate and inherent patterns in data (George et al., 2014; Xiang, Schwartz, & Uysal, 2015).

This sort of support for decision-making is vital for hotel managers (Amado et al., 2018) by providing insights to enlighten critical questions. E.g., what is the most suitable product for a specific market, how to advertise such products in that market, through what communication channels, at what points in time and for what price, or supported by what kind of promotional and advertising actions (Bendle & Wang, 2016).

Although the interplay between UGC from online reviews in the hospitality industry and customer satisfaction has been identified (Berezina et al., 2016; Xiang, Schwartz, & Uysal, 2015), these studies usually analyzed hotels from general locations. However, no current studies analyze reviews of mountain hotel customer's satisfaction. Considering previous studies and the remaining needs to explore the level of satisfaction of hotel mountain tourists, this study's objective is to analyze online mountain hotel reviews collected from the social media platform TripAdvisor (TA) to perceive the customers' satisfaction and the reasons for the aforementioned sentiment.

To achieve this aim, 5.591 TA reviews were extracted from 20 mountain hotels and analyzed using the sentiment analysis (SA) technique to understand the level of satisfaction among mountain hotel customers and Maxqda 2020 to comprehend the reasons for such sentiment. Through the TA reviews collection, our study will benefit from the voluntary respondents' availability, the speed of data collection, the access to a large number of opinions, and unbiased responses (Gehlbach & Barge, 2012). Uncovering the level of satisfaction of hotel mountain customers and the motives of such satisfaction, this paper intends to bring valuable insights for the literature and hotel managers by bringing to light the expectations of this specific segment that can be used in the decision-making process to meet the clients' demands.

Considering this objective, we defined the following research problem: What is the satisfaction perceived through online reviews from customers in mountain hotels?

To answer this question, we embrace a qualitative analytics approach to use the UGC to enrich mountain hotel customer management. Through the variety of the knowledge extracted, we expose the relevance of the proposed method and developed significant findings and insights to show how mountain hotels could exploit, visualize, and capitalize upon gathered data of their own, to enlighten strategic planning and unveil operation organizational problems.

In the interest of the research problem, our case study approach aims to:

- Understand how customers perceive mountain hotels;
- Establish the expectations of these specific customers;

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- Unveil the reasons for the (dis)satisfaction of these specific customers;
- Highlight insights into future improvement applications.

The selection of text mining (TM) techniques as sentiment analysis (SA) using R statistical and MAXQDA data analysis tools are the soft computing star points to unveil the objective of investigating the (dis)satisfaction of the hotel customers in mountain tourism destinations.

After the described introduction highlighting the study's objectives in Chapter 1, the thesis structure is organized as follows:

- Chapter 2 provides the state of the art with the literature review according to tourism's actual panorama's worldwide and in Portugal, detailing than the mountain tourism destinations. Later, we encompass an overview in the National Natural Geopark of Serra da Estrela (NNGSE) case to cross the review into the direction of the hotelier tourism's summarization context and customer satisfaction in the hotel industry. Subsequently, a review of SM and its impacts on tourism and how it provokes this emergence in scrutinizing online reviews aboard the UGC and the online social media TA;
- Chapter 3 covers the methodological approach around TM, SA, and qualitative analysis;
- Chapter 4 combines the developed work with the analysis and discussion of the results obtained and the results' theoretical and practical implications;
- Chapter 5 includes the study's conclusions, embracing the contributions, limitations, and future work suggestions.

2. Literature Review

2.1. Tourism

According to UNWTO (2008), tourism is a social, cultural, and economic phenomenon that involves people's movement to countries or places outside their usual environment for personal or professional reasons. These people are called visitors, either tourists or excursionists, residents or non-residents, and tourism has to do with their activities.

The tourism sector is one of the most notable globally. It is an activity that affects the environment in multiple forms and a stimulating agent in the economic, social, and environmental performance of tourism companies for the community, regional, and global economy (Anca et al., 2020). This movement occurs through the increasing number of destinations starting to invest in tourism, turning it into a critical driver of socio-economic progress creating of jobs and enterprises, export revenues, and infrastructure development (UNWTO, 2017). Over the past six decades, tourism has experienced continued expansion and diversification to become one of the world's largest and fastest-growing economic sectors. The evidence is that the UNWTO (2019) estimates that from 1950 to 2018, the number of international tourism arrivals changes drastically by increasing from 25.2 million in 1950 to 1.4 billion international arrivals in 2018 (Figure 2-1).

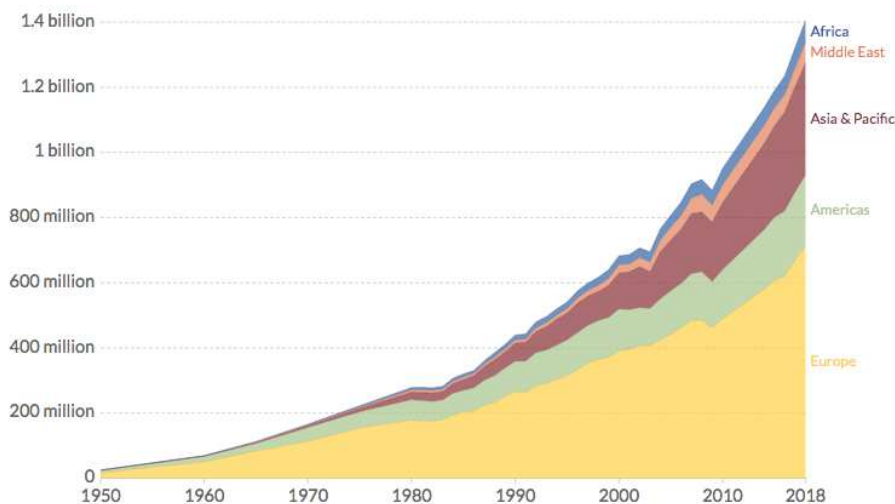


Figure 2-1 - International tourism arrival by world region, adapted from Roser (2017)

In January 2020, the World Tourism Barometer and Statistical Annex (2020a) revealed that international arrivals worldwide grew 4% in 2019 to reach 1.5 billion, which overcame the prediction of Tourism Towards 2030 (2017) 1.4 billion only by 2020. Despite this, they address that 2019 was slower than the exceptional rates of 2017 (+7%) and 2018 (+6%), which was caused by uncertainty surrounding Brexit, geopolitical and trade tensions, the collapse of Thomas Cook and several low-cost airlines in Europe,

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provoking global economic slowdown and weighed on growth, but mainly on advance economies.

Considering the future, according to Tourism Towards 2030 (2017), international tourist arrivals worldwide in the year 2030 are expected to reach 1.8 billion (Figure 2-2).

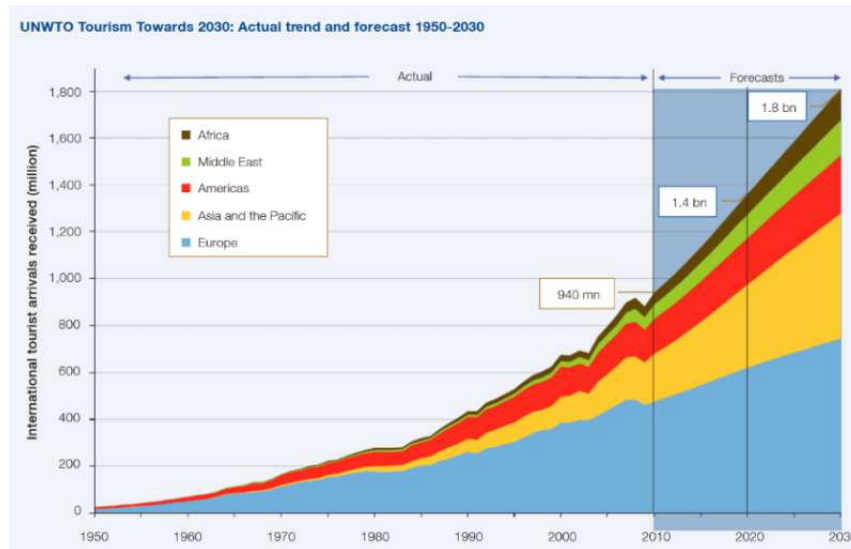


Figure 2-2 - Actual trend and forecast 1950-2030 for World Tourism, adapted from World Tourism Organization (2017)

International tourist arrivals in the emerging economy destinations of Asia, Latin America, Central, and Eastern Europe, Eastern Mediterranean Europe, the Middle East, and Africa will grow at the double the rate (+4.4% a year) of that in advanced economy destinations (+2.2% a year). As a result, it is expected that by 2030, 57% of international arrivals will be in emerging economy destinations (versus 30% in 1980) and 43% in advanced economy destinations (versus 70% in 1980). Consequently, Europe and the Americas will further decline their share of international tourism, mainly because of the slower growth of the comparatively mature destinations in North America, Northern Europe, and Western Europe (Figure 2-3).

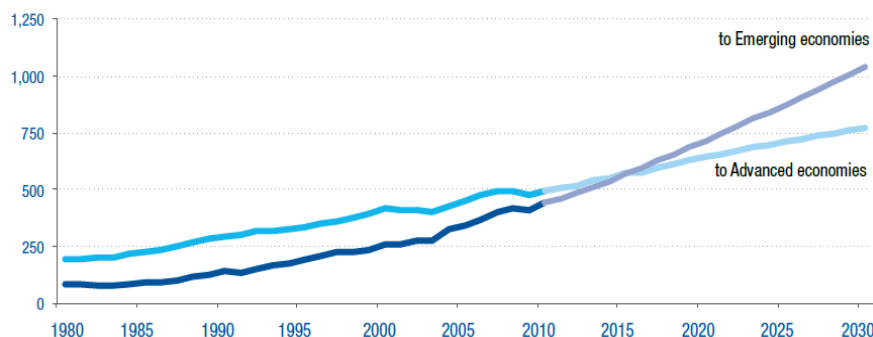


Figure 2-3 - Inbound tourism, advanced and emerging economies - International Tourist Arrivals, million, Adapted from ONWTO (2011)

Despite the prospering position of tourism globally, a particular scenario occurs in late 2019 and early 2020. The COVID-19 pandemic disease affected the tourism sector (UNWTO, 2020c).

International tourism has long seen continued expansion and has only experienced declines in 2003, following SARS and the Iraq war in 2009, amid the economic and financial crisis, but with hurried and robust recovery the following years, demonstrating the strength and resilience of the sector (UNWTO, 2020c).

It is too early to estimate the gross impact of the disease on international tourism. However, according to the last 15 September UNWTO report (2020b), scenarios point to a strong rebound in 2021.



Figure 2-4 - International tourism arrival: Future scenarios (millions), adapted from UNWTO (2020b)

Figure 2-4 illustrates the fall from international tourism arrivals as well as traces three different scenarios:

- Scenario 1: Recovery in 2½ years (mid-2023);
- Scenario 2: Recovery in 3 years (end of 2023);
- Scenario 3: Recovery in 4 years (end of 2024).

2.2. Tourism in Portugal

Portugal is in the extreme southwest of Europe and includes Madeira and Azores islands (Figure 2-5). The climate varies significantly from region to region and is influenced by the relief, latitude, and proximity to the sea, which provides mild winters, especially in the Algarve. In Porto, North and Center, especially closer to Spain, winters are colder, although temperatures are moderate compared to the rest of Europe. There is also

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snowfall, which is more frequent in the Serra da Estrela mountain, one of the thirteen Natural Parks of mainland Portugal where the highest point is located, and conditions for skiing can be found.

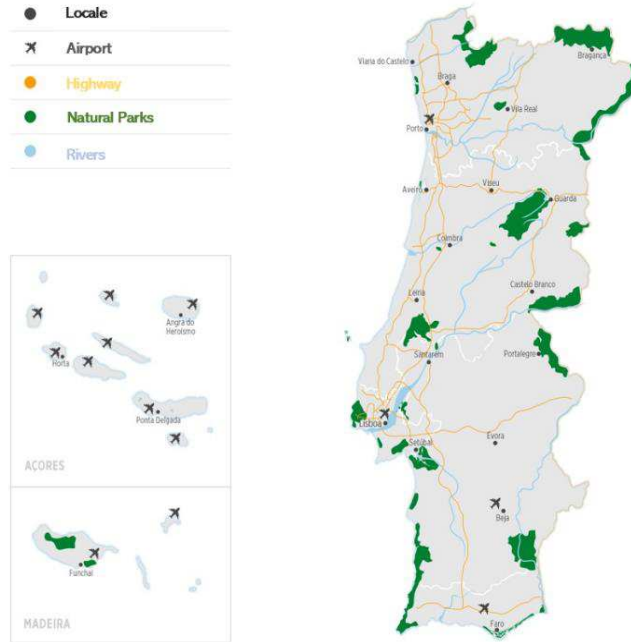


Figure 2-5 - Portugal Map, adapted from VisitPortugal (2020)

Summers are hot and dry, especially in the interior regions and on the coast the heat is moderated by the maritime influence. Given this, Portugal is a perfect destination for all seasons. However, Figure 2-6 accents that nonresidents comparatively to residents are more attracted to tourism during a larger part of the year. As expected, once this mild climate offers 3000 hours of sunshine a year and 850 km of beaches bathed by the Atlantic Ocean, the mouth of the peak distribution in the number of overnight stays is in August (VisitPortugal, 2020).

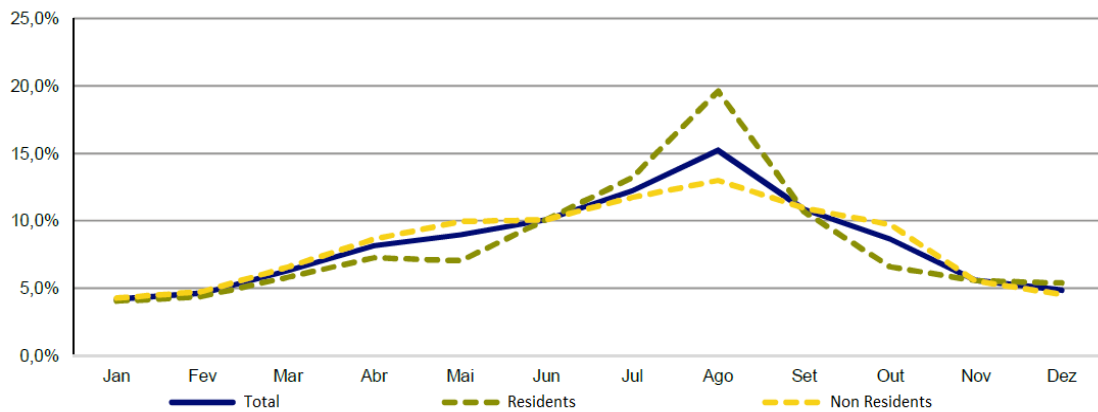


Figure 2-6 - Monthly distribution of the number of overnight stays 2019, adapted from Instituto Nacional de Estatística (2020)

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The history of tourism in Portugal has an extended growth, but it is with the rapid growth of mass tourism at the international level that the national tourism sector finds itself catapulted into the spotlight of the largest world destinations, through the increase of mass flows to the Algarve, resulting from the construction of Faro airport in 1965 (Costa, 2005). During this century, the tourism industry has significantly contributed to Portugal's economy. As the country came out of recession and tourism began to increase, Portugal has been recognized nationally and internationally with numerous awards attributed by the World Travel Awards. In 2019, by the third consecutive year, Portugal was considered the best destination in the world, and in 2020, for the fourth straight year, the best destination in Europe (VisitPortugal, 2020; World Travel Awards, 2020)

Accordingly, over the last five years, arrivals in tourist accommodation have been increasing at a higher rate (Figure 2-7), with an extra ten million arrivals in 2019 compared to 2014. Overall, around 27.9 million arrivals were registered at accommodation establishments in Portugal in 2019 (Statista, 2020c).

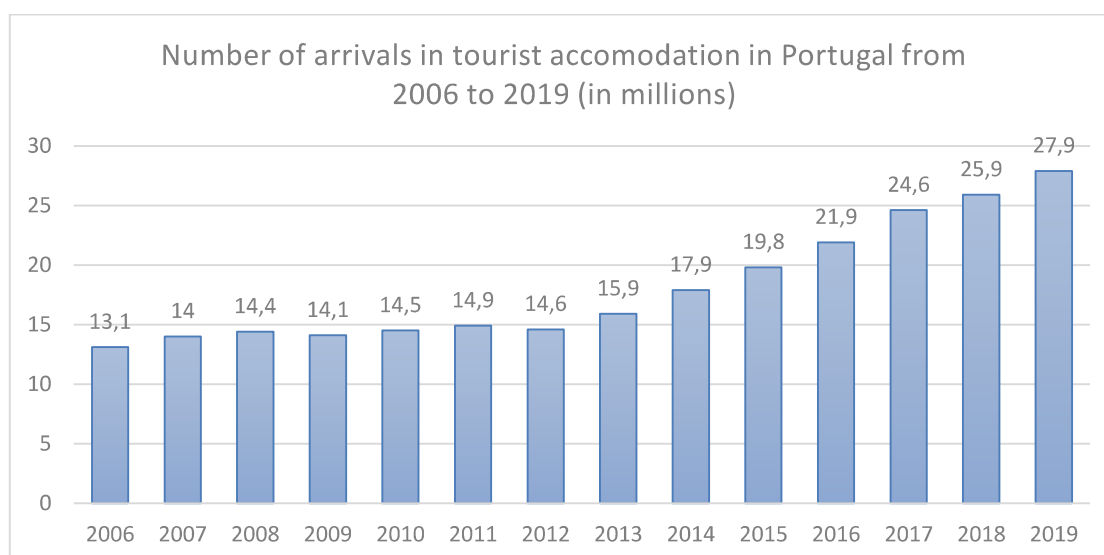


Figure 2-7 - Number of arrival in tourist accommodation in Portugal from 2006 to 2019 (in millions), adapted from Statista (2020c)

Portugal is also one of the leading travel destinations in Europe leading travel destinations in Europe, and based on forecasts, by 2028, the travel and tourism sector's contribution to the country's GDP will reach around 45 billion euros. Tourism demand is highest in the city destinations of Lisbon and Porto, being both among the leading ten city destinations in Europe. Lisbon is the most visited destination for international tourists, while the Algarve region is most famous for its seaside resorts, attracting millions of international tourists each year (Statista, 2020c).

In 2019 there were 7,155 establishments in operation (tourist accommodation establishments, camping sites, holiday camps, and youth hostels) +19.2% than in 2018. 92.0% of the guests were in tourist accommodation establishments (hotels, local accommodation, and rural/lodging tourism), followed by camping sites with 6.8%, holiday camps, and youth hostels with 1.2%. Considering the overnight stays (%) in most

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tourist accommodation facilities by country of residence, Figure 2-8 illustrates that the United Kingdom remained the primary source market (18.8% of total overnight stays from non-residents), having registered an increase of 1.0%. The German market (12.3% of the total) decreased by 5.3%, while the Spanish market (11.0%) increased by 7.6%. Among the new markets, the North American, Chinese, Brazilian, Irish, and Canadian are leading (Instituto Nacional de Estadística, 2020).

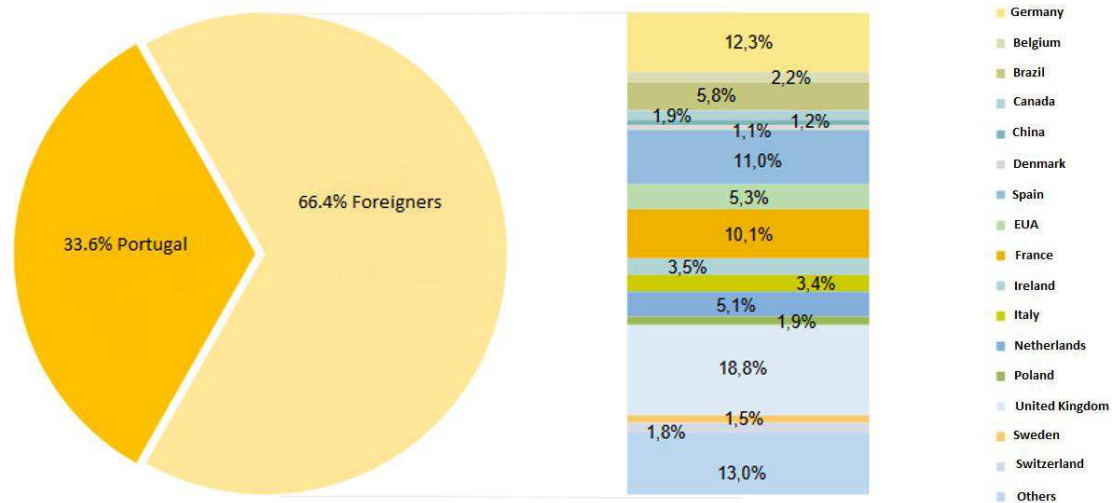


Figure 2-8 - Overnight stays (%) in most tourist accommodation facilities by country of residence, 2019, adapted from Instituto Nacional de Estadística (2020)

2.3. Mountain Tourism

Mountain Tourism is a territory classified as a localized tourist system in a defined geographical area (Favre-Bonte et al., 2019). Mountains cover around a quarter of Earth’s landmass and provide space for about an eighth of its population. They are also home to thousands of glaciers and provide freshwater to almost half of the world’s population. They play significant roles in driving global climate change by different ecosystem services and are the international focus of agricultural resources and tourist activities (Grover et al., 2014). Mountains are essential for at least half of humanity not only because they are sources of water, energy, agricultural and forestry products, but also because they hold unique landscapes, clean air, natural beauty, history, and culture (Charters & Saxon, 2017)

Mountain areas include more than 475 protected areas covering further than 264 million hectares (Nepal, 2002). Their physiognomies can widely differ depending on several factors, such as climate, geomorphology, and vegetation. In general terms, mountains usually comprise a montane, subalpine or alpine zone (Charters & Saxon, 2017). Each area contains unique physical conditions, offering in general, hotel customers different forms of product experience, such as nature tourism, snow tourism, adventure tourism, or active tourism (Favre-Bonte et al., 2019).

Depending on the stage of destination development, local or regional environments, and the innovation levels that they embrace, those destinations might differ considerably in their attractiveness, preservation of the natural environment, and achieving socioeconomic prosperity (Duglio & Letey, 2019; Favre-Bonte et al., 2019; Kuščer et al., 2017). A common tendency demonstrated in tourism and mountain tourism destinations is the climate impact and consequent sustainable practices of management, as noted through significantly recent studies (Anca et al., 2020; Ballotta et al., 2020). However, the primary sources of income for the local or regional environment across several industries are accommodations, food services, transportation, arts, entertainment, and retail trade (Ballotta et al., 2020).

National or local governments usually protect mountain areas due to national or regional parks, natural reserves, and valuable natural sites (Paunović & Jovanović, 2017). Collaboration among actors is an expressive way to integrate the tourism offer becoming vital to preserving the destinations' beauty and attractiveness by pushing attention to environmental practices since it makes the tourist appealing. As a result, the tourism companies who adapt their strategies to sustainable options directly benefit from contributing to protecting and valorizing their territory (Buffa et al., 2018).

Generally, the altitude highly contributes to snow conditions. However, a study conducted on the Alps concluded that snow as the main driver for tourism development is a poor sustainable choice (Bonzanigo et al., 2016).

Considering mountain hotels, managers need to offer a different dynamism, so other options must be considered to enrich destination competitiveness. Namely, providing alternative sports, e.g., ski-related sports, such as speed riding, skijoring, or non-skiing sports like snowshoeing, fat biking, yooners, or alternative activities, such as spas or aquatic centers, interactive nature trails, local sightseeing, and cultural events. Besides, to modernize the tourists' experience, hotel managers should, for example, expand services such as delivering ski passes and rented ski equipment directly at the accommodations (Favre-Bonte et al., 2019). But not only that, they extremely have to embrace new customer mind-sets, regarding them not only as individuals but also as social customers within communities, both offline and online (Frow & Payne, 2007).

2.3.1. The National Natural Geopark of the Serra da Estrela

In Portugal, it is estimated that mountain areas occupy around 18% of the national territory, from which 11% are above 600 meters of altitude and only 0.5% above 1100 meters. Mountains dominate the region of the North of the *Tejo* river, having been important, both from the historical point of view, as an important element of the geography countries, in relation with the landscape, the forestry and the pastoral territory and development trajectories concerning the agricultural ways of life (Cunha, 2003).

Serra da Estrela (Figure 2-9) is the most representative of Portugal in terms of natural values related to altitude (Gomes et al., 2017) by being a mountainous massif positioned in Portugal's center north, with its highest point reaching 1,993 meters. It is also a Natural Park and one of the thirteen Natural Parks of mainland Portugal. Decree-Law No. 557/76

(1976) classified the Estrela Natural Park as “a region of mountain economy character, where a rural population lives preserving the habits and ways of living. A local culture that is important to be cared for and promoted, where wildlife refuges and endemic plant formations of national importance remain, representing an extraordinary natural component of great landscape value”.

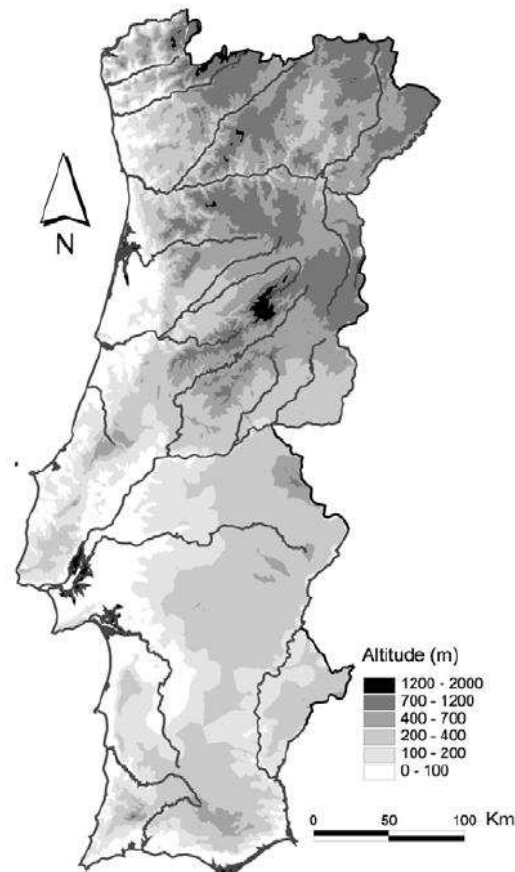


Figure 2-9 - Hypsometric map of Portugal, adapted from Cunha (2003)

In this region we found a level III statistical territorial unit (NUTS III, called Beiras and Serra da Estrela), which is a geographical area composed of 15 municipalities (Almeida, Belmonte, Celorico da Beira, Covilhã, Figueira de Castelo Rodrigo, Fornos de Algodres, Fundão, Guarda, Gouveia, Manteigas, Mêda, Pinhel, Sabugal, Seia and Trancoso).

Like most of the mountain environments in Portugal, human presence has caused evident tensions regarding environmental preservation concerns. Still, depopulation has been increasing its exposure due to the abandonment of traditional activities essential to the preservation of the diversity of ecosystems, mainly provoked by the crisis in the textile industry, which not only imply an increase in unemployment as it also hampered the reinstatement of lowly qualified people back to the active life (PTD, 2007).

According to CENSOS 2011 (Instituto Nacional de Estatística, 2011), the socio-demographic and economic data illustrates that this region has 236 023 inhabitants. From

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2001 to 2011, the population decreased by 8.8%, contrary to a 2% increase registered for Portugal and 0.9% in the central region. Consequently, there is a 3.6% decrease in population density for the same period of analysis. As regards the aging index, it is verified there are 236 elderly people for every 100 young people, much higher than the 127.8 and 163.4 registered for Portugal and the central region. The illiteracy rate is 8.8% higher than the 5.2% in Portugal and 6.4% for the central region. Regarding the purchasing power per capita, there is an index of 76.8, which is lower than the 87.5 in the central region and well below the national index of 100. Concerning the unemployment rate, *Beiras e Serra da Estrela* equals the national rate at 13.2% but is higher than that recorded for the central region with 11%.

Geographic Zone	Resident Population			Population Density			Aging Index	Rate of anal phabetism [%]	Buying power per capita	Unemployment Rate [%]
	Nº		Rate variation [%]	Hab/Km ²		Rate Variation [%]	N ² of the elderly by every 100 yong			
	2001	2011	2001/2011	2001	2011	2001/2011				
Portugal	10 356 117	10 562 178	2.0	112.4	114.5	2.1	127.8	5.2	100.0	13.2
Continent	9 869 343	10 047 621	1.8	110.8	112.8	2.0	130.6	5.2	110.3	13.2
Center	2 348 397	2 327 755	-0.9	83.3	82.5	-0.8	163.4	6.4	87.5	11.0
Beiras e Serra da Estrela	258 799	236 023	-8.8	41.0	37.4	-3.6	236.0	8.8	76.8	13.2

Table 2-1 - Socio-demographic and economic data from Beiras and Serra da Estrela Instituto Nacional de Estatística (2011)

In the Serra da Estrela mountain setting are as well other mountain villages as *Loriga*, *Alvoco da Serra*, *Lapa dos Dinheiros*, *Valezim*, and *Cabeça*. There, are also smaller mountains, such as the *Serras da Lousã*, *Açor*, or *Caramulo*, which makes up the vast mountain range designated as *Sistema Central*, a subsystem known as the *Montejunto-Estrela* (Aspiring Geopark Estrela, 2017; Center of Portugal, 2020). Due to its extended area and diversity of resources, it is the largest protected area in Portugal, which must be conserved and valued to preserve biodiversity and geodiversity (Fernandes & Almeida, 2021).

The region has specific characteristics of extreme scenic beauty, geological, orographic and climatic characteristics of the Atlantic Region and the Atlantic Mediterranean, where the granitic orography, the glacial and fluvial glacial marks, together with their biodiversity and local ways of life, incorporate a specificity and rich heritage (Castro et al., 2016). One of the most important examples is the “*transumância*” of sheep flocks that go down into the valleys and plains during the cold winter season to return to the mountain pastures in spring. In essence, a pastoral way of life-based on a culture of mobility looking for fresh pastures in the mountains (Cunha, 2003).

Given the relevance of this destination, UNESCO, in July 2020, designate Serra da Estrela as a World Natural Geopark, making this destination a privileged area with high tourism potential due to their great historical and cultural value, generating an ecocultural combination of great environmental relevance (En.unesco.org, 2020; Gomes et al., 2017).

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This recognition was the result of the application proposal of a partnership between the Polytechnic Institute of Guarda, with the University of Beira Interior as well as the municipalities of *Gouveia*, *Manteigas*, *Celorico da Beira*, *Fornos de Algodres*, *Guarda*, *Seia*, *Oliveira do Hospital*, *Covilhã*, and *Belmonte* (Estrela Aspiring Geopark, 2017).

A Geopark is a defined geographical area holding a remarkable geological heritage combined with a sustainable development strategy under geo-conservation and the education for sustainable development and tourism. Among its purposes, we can include the construction of new infrastructures, the promotion of new local products, services and the encouragement of crafts and local economic growth, all of which create new employment opportunities (Castro et al., 2016).

Tourism is a privileged source of profitability to rural places so it should be properly framed in territorial regulation plans having account not only interests in several areas of economic development but also the needs for preservation of the quality of environmental conditions that are the own survival of tourism (Cravidão & Cunha, 1993). So, the Geopark Estrela classification defined by the European and Global Network of Geoparks wishes to bring a new vision on tourism of this territory by introducing a holistic view of the area (Estrela Aspiring Geopark, 2017).

Serra da Estrela, a privileged mountain tourist destination in the country, is, according to the Portugal Tourism Strategy 2027 (Turismo de Portugal, 2017), a differentiating strategic asset for the country's future. The following Figure 2-10 illustrates the geographic location and the limited area of the most recent National Natural Geopark of Serra da Estrela (NNGSE).

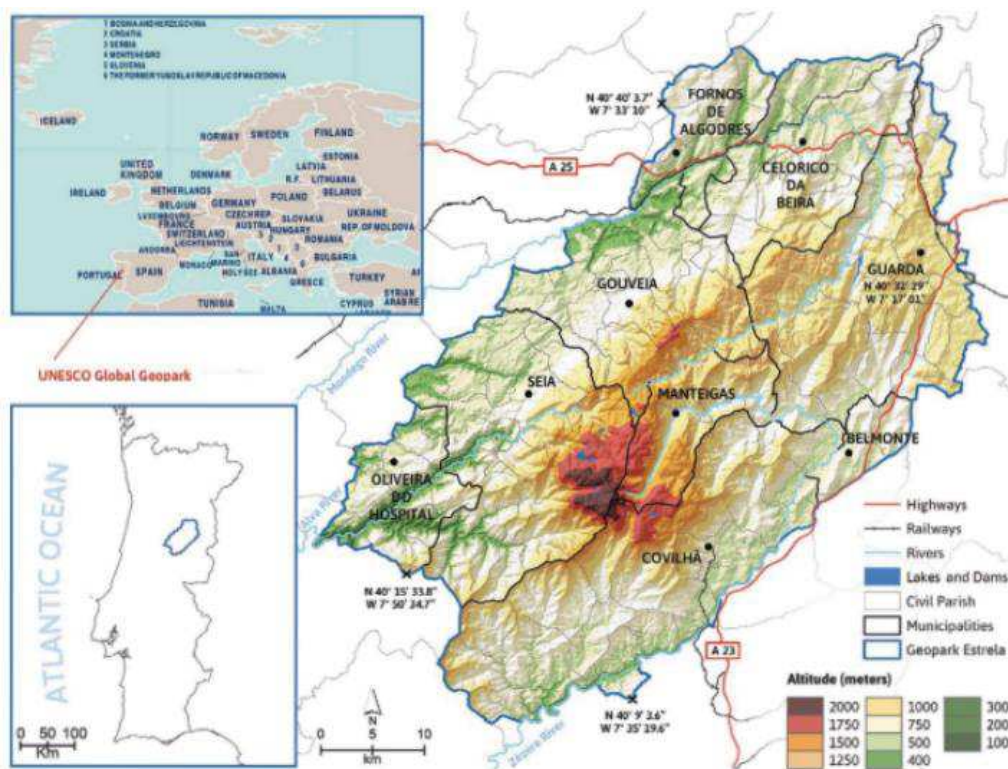


Figure 2-10 - The Geographic Location of the NNGSE, adapted from Estrela Aspiring Geopark (2017)

Making up the largest mountain in the national territory are distinctive geographical and environmental areas of interest such as fluvial beaches, forestry diversity, biological, ecological, and a varied landscape organization and climatic resources. Describing their highlights, Fernandes and Almeida (2021) documented differentiating features that characterize the region's tourism potential. They can be structured into:

- Natural resources (geological, geomorphological, climatic, and fluvial);
- Landscape and environmental resources (Mountain ecosystems, biodiversity, and ecological thresholds);
- Resources of historical, monumental heritage and traditional architecture;
- Cultural resources linked to traditions and festivities;
- Gastronomy and wine resources;
- Rural resources are associated with livelihoods, customs, and agro-pastoral activities.

The resources, products, and tourism activities that this space holds and promotes are explained currently by other idiosyncratic or emblematic attributes and places such as the *Lagoa Seca* moraine field, the glacial landforms *Zêzere* glacial valley or the granite weathering forms of *Covão do Boi* granite columns, as well as the *Covão da Nave*, or the *Covão do Urso* (En.unesco.org, 2020). These kinds of environments can be represented in the areas of *Cabeço de Santo Estêvão*, *Penhas Douradas*, and *Penhas da Saúde*. There also many water resources and several fluvial beaches as well as over 25 lakes and lagoons. Among these, the only touristic destination with snow during the winter is equipped with two ski areas.

Another distinctive element of this region is gastronomy and wine resources, being the Serra da Estrela cheese one of the most important products desired by the tourist. With a protected designation of origin certification, this cheese is manufactured using only raw ewes' milk, salt, and a crude plant rennet from the dried flowers of *Cynara Cardunculus* L., resulting in a cheese with peculiar sensorial features (Inácio et al., 2020). This product has also been the focus of significant attention by numerous studies (Carocho et al., 2016; Tavaría et al., 2003). Portuguese gastronomy is an immaterial asset of the country's cultural heritage to be a differentiating element of the tourism offer. Given this, Rodrigues et al. (2019), by investigating this issue has interviewed local restaurants in this area and found that the gastronomic elements most present are the goat, sausages (*farinheira*, *mioleira*, *morcela*, named "*chouriços*"), lamb, olive oil, sheep cheese, wine, cod, curd, cherry, pork, beef, chestnut, trout, vegetables, and jams. About deserts, sweet rice, cream milk, or corn porridge. Overall, their raw material is the previously mentioned.

The NNGSE area also hosts museums and interpretation centers and has a good educational network and resources such as good accessibility and proximity to the Spanish market. A good trail network that presents over 1000 km and well-served touristic infrastructures with a total number of 3274 beds in 35 hotels and 220 small accommodation units (local and rural): (3) five-stars Hotels, (17) four-stars Hotels, (12) three-stars Hotels, (3) two-stars Hotels, and (220) Small accommodations. This area also offers nine camping and six campervan sites, and tourism operators also started to offer more nature-oriented activities such as bicycle rental, motorcycle rental, canoeing,

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horsemanship, climbing, ski, mountaineering, bird watching, observation of fauna and flora, geology observation, guidance, paintball, paragliding, playful fishing, walking tours, rappel, slide, snowboard or target shooting (Estrela Aspiring Geopark, 2017; Turismodeportugal, 2020).

The climatological scenario from Serra da Estrela, it is considered Mediterranean, with dry and warm summers. The wet season extends from October to May. The averages monthly temperature from *Penhas Douradas*, *Lagoa Comprida*, and *Penhas da Saúde* meteorological stations reveal that the warmest month is July and the coldest is January, which is annually marked by snowfalls. Besides, the average annual air temperatures are below 7° C in most of the plateaus areas and, in the Torre area, they may be as low as 4° C (Chaves et al., 2012).

Serra da Estrela is one of Portugal’s highest and snowiest mountains (Center of Portugal, 2020), and it is the only touristic destination with snow during the winter. Thus, most visitors are attracted mainly during this period (Estrela Aspiring Geopark, 2017). Considering this, Figure 2-11 focuses the Serra da Estrela’s average snow conditions to understand their period of most activity better.

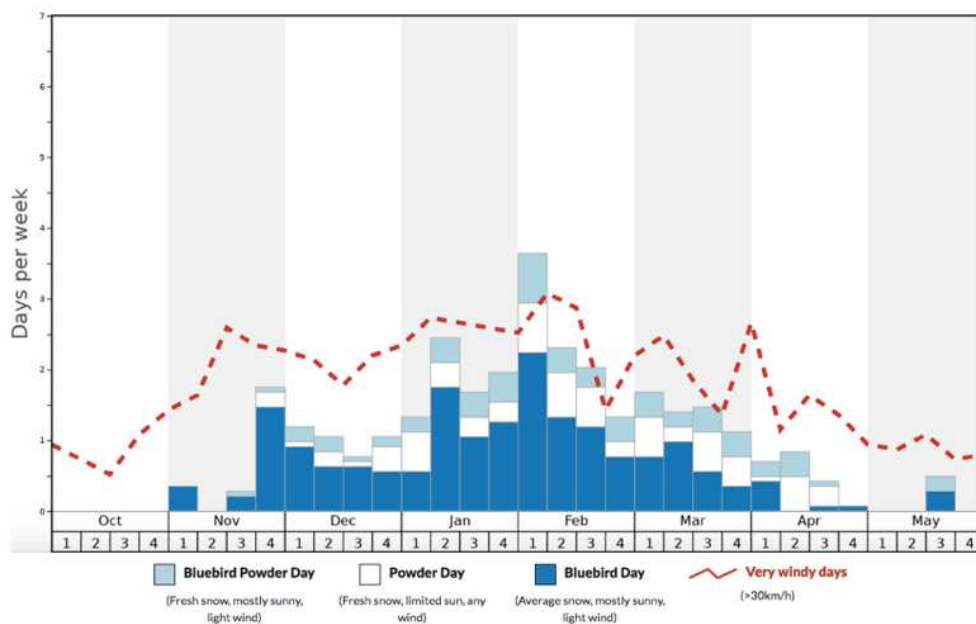


Figure 2-11 - View average snow conditions in Serra da Estrela, adapted from Snow-forecast (2020)

According to Figure 2-11, the most appreciated winter days on the Serra da Estrela mountain are the “bluebird powder days” when it is generally radiant sunny with light winds following a fresh snowfall. Unfortunately, climate conditions may prevail on “powder days” when the visibility can be limited. However, the snow is significantly deep and fresh for keen powder-hounds. Besides, “bluebird days” can suit numerous skiers that are not necessarily searching “powder” but want to enjoy the snowy mountains in sunnier conditions and light winds (Snow-forecast, 2020).

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As noted, this high mountain region is firmly related to winter seasonality and significantly dependent on snow conditions. However, the application proposal for UNESCO global Geopark (2017) declares that such an area has many potentials.

Despite the cultural diversity and multiple forms of enjoying the attributes abroad the Serra da Estrela mountain, most visitors still travel only a few days per year, such as weekends or holidays, and as previously mentioned, mainly in the winter (Estrela Aspiring Geopark, 2017).

Next, Table 2-2 proves the previous assumption. In 2017, the average length of the stay at the Serra da Estrela mountain per guest was still only 1.6 days (including national and foreign visitors), while in Portugal, the average was 3.2 days. The average length of the stay in the central region was also higher, with 2.0 nights registered (Pordata, 2020). Compared to Serra da Estrela, the Alpine convention territory has an average length of stay per guest between 3 to 4 days (Estrela Aspiring Geopark, 2017).

Territories	Residence					
	Total		Portugal		Foreign	
Years	2001	2017	2001	2017	2001	2017
Portugal	3.3	2.7	2.1	2.0	4.3	3.2
Centre	1.9	1.8	1.8	1.6	1.9	2.0
Beiras e Serra da Estrela	-	1.5	-	1.5	-	1.6
Manteigas	1.5	1.8	1.5	1.9	1.4	1.6

Table 2-2 - How many nights and where visitors stay, on average, for tourists living in the country or abroad, more and less in hotel establishments such as pensions or hotels, adapted from Pordata, (2020)

The NNGSE area had noticed a significant increase in accommodation units, especially in the small local lodgment's (Estrela Aspiring Geopark, 2017), following Portugal's tendency (Pordata, 2020). However, hotels must ponder that they usually have lower rates considering the average number of nights, as seen through Table 2-3, where it is notorious the competitive difference from hotels (with 2.5 nights average lengths of stay) to alternative accommodations (e.g., tourist villages – 5.0 nights; Inns – 5.4 nights; Aparthotel – 4.3 nights; Tourist Apartments – 4.8 nights).

Year	Portugal – Tourism accommodation					
	Hotels	Tourist Villages	Inns	Lodge	Apart-hotel	Tourist Apartments
2017	2.5	5.0	5.4	1.9	4.3	4.8

Table 2-3 - How many nights and where visitors stay, on average, by type of establishments, adapted from Pordata (2020)

Therefore, considering the hotel's view of the Serra da Estrela mountain, they have not yet experienced their true potential. Apart from being the most prominent mountain destination in Portugal, they are facing more competitive environments nowadays considering the faster growth of alternative accommodations.

2.4. Hotelier Tourism

A hotel is a complex experience-based product (Xiang, Schwartz, & Uysal, 2015). It is a hospitality unit that offers its customers a range of goods and services, such as accommodation or meals, but provides complimentary services such as information, room reservations, cleanliness, caring, and safety (Belias et al., 2020).

Hotels as a system of reception and provision of services are technical components of a specific infrastructure of the total tourist product (To et al., 2015). For this reason, hotels become more than units offering experiences rather than products (Yang, 2015) since the tourist product subsists of materials and intangible components. Material components can be classified, estimated, and consequently, subject to specific standards. In its place, intangible elements can neither be classified nor estimated, and they are not subject to particular criteria (To et al., 2015).

Therefore, hotel customer satisfaction is a complex human experience within a hospitality service setting, and thus it has been defined that the hotel product consists of various levels. The core product, i.e., the hotel room, deals precisely with what the customer receives from the acquisition. But the hotel product additionally involves promoting, supporting, and boosting elements that concern with, for example, how the customer obtains from the purchase, the interactions with service providers and other customers, as well as necessary conditions (e.g., the front desk), which present access to the core product and various value-added products and services (Xiang, Schwartz, Gerdes, et al., 2015). So, when a product or service is offered with standards higher than customers expect, emotions of pleasure and satisfaction awaken, recognizing what eventually was purchased or experienced as superior to what he expected to be. These expectations consist of many different factors, commonly shaped by past buying experiences, friend advice, promises or competitors' information, and the various promotions that the company is implementing (Belias et al., 2020).

Today, most tourists pursue better value for the money, sustainable tourism products, and authentic tourism experiences (Cheng, 2016). Accordingly, consumers compare both products' price/value proposition: hotels and alternative accommodation (Prnewswire, 2020). This means that hotels nowadays face more competition. Aznar, Sayeras, Galiana, and Rocafort (2017), as well as Zervas et al. (2017), confirmed this by studying the impact of Airbnb on the hotel sector and found that hotel revenues had fallen in both cases.

As previously noted, by confronting this with the information on the NNGSE, where we have identified an increasing number of alternative accommodations, hotel managers have to be worried once they normally have a higher average length of stay when comparing with hotels (Pordata, 2020). So, this must be faced, and respectively, considering experts and hotel managers that recognize the sustainable innovation strategy as a critical attribute in modern hotel management (Hornig et al., 2017), noting currently that long-term economic sustainability and growth are also depending upon the nature of their environmental policies (Xu & Gursoy, 2015). A simple way to achieve this is by using online reviews as a data source for managerial decisions, through publicly available datasets easily collected at low prices (Guo et al., 2017).

2.4.1. Customer satisfaction in the hotel industry

The hotel customers' satisfaction is a systematically documented subject in the hospitality literature, remarkably contributing to this industry development (Prayag et al., 2019). This is understandable since travelers' hotel experience composes an essential and integral element of their overall travel experience (Kau & Lim, 2005). Identifying customers' satisfaction is fundamental for the hotel's sustainability. While satisfied customers may revisit a hotel and recommend it to others by disclosing positive comments or compliments about hotel attributes or unusual performances (Pizam & Ellis, 1999), dissatisfied customers may not return and suggest it to others. If they decide to express negative comments about their experience, it might hurt the hotel's reputation (Berezina et al., 2016).

Hotels' satisfaction refers to the difference between the customers' pre-expectation and the experience's perceived performance. When the experience surpasses the expectation, the outcome is revealed by the form of gratification and satisfaction. When the perceived performance does not meet the expectation, a feeling of displeasure and dissatisfaction happens (Kim & Chung, 2020). Satisfaction is, therefore, a judgment about the pleasure level of consumption-related fulfillment in terms of product or service attributes, taking into account levels of under or over-fulfillment (Oliver, 1997). On the other hand, dissatisfaction is a customer's affective status when experience discomfort caused by service failure (Fornell & Wernerfelt, 1987). This sentiment is intensified when confronted by service failures repeatedly and do not witness the service providers making sufficient recovery efforts (Weiner, 2001). This evokes emotions of anger, regret and might drive customers to requests refunds (Sánchez-García & Currás-Pérez, 2011; Szymanski & Henard, 2001) or lead to complaining behavior and negative electronic word-of-mouth (S. Cheng et al., 2005).

Underpinning the conceptualization of costumers satisfaction, multiple theories were used (Oh & Kim, 2017). However, the most widespread is the one proposed by Oliver (1980), who developed the expectancy-disconfirmation theory. According to this theory, positive disconfirmation will occur if the actual performance is better than the expectation. However, If the actual performance is equal to the expectation, no disconfirmation will happen. On the other hand, if the actual performance is lower than expected, negative disconfirmation will occur. Consequently, no disconfirmation and positive disconfirmation cause customer satisfaction, while negative disconfirmation causes customer dissatisfaction (Li et al., 2020).

While everyone recognizes what satisfaction means, it does not necessarily represent the same thing to everyone (Oliver, 1997). Customers have particular ways of judging how they view the world and what they think and influence not only their overall assessment of quality but also their perceptions of each specific transaction (Kim et al., 2019; Mueller et al., 2003). This implies that the causes of customer dissatisfaction may be different from those of customer satisfaction according to the two-factor theory (Herzberg et al., 1958). For instance, Chan and Baum (2007) found that customers are simultaneously (dis)satisfied by different unrelated dimensions, and Alegre and Garau (2010) argued that the absence of satisfiers does not necessarily lead to and reinforce customer dissatisfaction.

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Given this importance as a marketing construct to hotels, numerous studies using online reviews have appeared to recognize which categories lead to customer satisfaction (Table 2-4).

Summary of the categories of customers' satisfaction identified in previous studies	
Author(s)/year of publication	Key Categories
Guo et al., (2017)	Poor Communication Nightlife Recommendation Natural Beauty
Kim et al., (2016)	Staff Service Restaurant Breakfast Design Housekeeping
Berezina et al., (2016)	Beach Sports Outlets Family Structure
Xu and Li., (2016)	Wi-fi Noise Room
Khoo-Lattimore and Ekiz., (2014)	View Price Location Pool Bar
Zhou et al., (2014)	Close to the airport/railway station Close to the city center Friendliness
Li et al., (2013)	Transportation Convenience Convenience to tourist destinations Air conditioning
O'Connor., (2010)	Cleanliness and Maintenance Quiet Public Areas Maintenance Booking/Reservation Issues
Matzler et al., (2006)	Wellness Area/Spa Reception
Choi and Chu., (2001)	Security Value Business Services

Table 2-4 - Key categories of customers' satisfaction

Known to have positive consequences on hotel reputation and profitability, satisfaction reinforces positive attitudes toward the brand, leading the customers to re-purchased again (Berezina et al., 2016), remain loyal for longer, and spread more positive reviews (Kim et al., 2013), which Sparks and Browning (2011) found significantly influence the booking intention. A different research area concerns the influence of financial performance, such as revenue per available room (Phillips et al., 2017). Considering this last, positive reviews have a significant impact on hotel demand and RevPAR.

Considering the important impact of positive reviews and that complaining behavior is regarded as a powerful reaction requiring a provider demanding additional cost and effort, hoteliers need to prevent customer dissatisfaction (Ro & Wong, 2012). Identifying the source of customer dissatisfaction is the first step to alleviating it. The next step is to implement service recovery strategies to improve services and customer loyalty (Craighead et al., 2004). So, if the company's ultimate purpose is to decrease the number of customer complaints, they must do everything they can to eliminate dissatisfaction (Kondo, 2001), and what can be best described as a pleasurable experience for the customer involves going beyond satisfaction (Patterson, 1997).

Past studies suggest key determinants that influence general hotel customer satisfaction. However, other studies have shown that customers' perceptions, expectations, and preferences vary across different hotel categories (Xu & Li, 2016). Only recently, research has explored tourist preferences in mountain destinations (Pickering et al., 2020). So, it is quite necessary to fill the literature gap about mountain hotel customer satisfaction, which is nowadays living growing tourist influxes (Rama et al., 2019).

2.5. Social Media

The shift from static HTML Web pages to a higher dynamic web that is more organized and based on serving web applications to users is formally known as Web 2.0. The term is given to describe a second generation of the World Wide Web that is focused on the capacity for people to cooperate and share information online in blogs, wikis, and web services, which are all seen as components of Web 2.0 (Webopedia, 2020).

Today internet users continue to grow daily, making world internet usage increase to 4.574.150.134 billion, meaning 58,7% of the total world population (Internetworldstats, 2020). This excessive growth fostered the number of web applications/platforms with different functionalities, which brought SM's summary term. Social media consists of a group of Internet-based applications that develop on the ideological and technological grounds of Web 2.0 and that allow the creation and exchange of UGC (Kaplan & Haenlein, 2010).

In 2018, existed nearby 674 million SM users in China. Despite Facebook, YouTube, and Twitter being blocked in the country, local social networking sites such as Tencent, WeChat, and Weibo have attracted millions of users, making China the world's biggest SM market (Statista, 2018). However, Facebook is the biggest social network worldwide, with almost 2.5 billion monthly active users as of the fourth quarter of 2019 (Statista, 2019).

Kaplan and Haenlein (2010) introduced a taxonomy that classifies SM types according to their (a) level of social presence/media richness and (b) level of self-presentation/self-disclosure. They also identify six types of SM: social networking websites (e.g., Facebook, LinkedIn), blogs, content communities (e.g., YouTube, Flickr, Scribd, Slideshare, Delicious), collaborative projects (e.g., Wikipedia, Wikitravel), virtual social worlds (e.g., Second Life), and virtual game worlds (e.g., World of Warcraft). However, such taxonomy neglects other types of SM, such as microblogs (e.g., Twitter), consumer review & rating websites (e.g., TripAdvisor, Epinions), and Internet fora such as ThornTree or Fodor's Travel Talk (Fotis et al., 2012).

SM is also progressively adopting e-commerce applications and editorial/sponsored content features, which are gradually helping the tourism industry. Still, as a consequence, it is turning out to be increasingly more hard to recognize SM as such and clearly distinguish them from other types of websites or applications (Gretzel, 2018).

2.5.1. Social Media and Tourism

SM has become crucial for the tourism sector (Perez-Vega et al., 2018). One of the reasons is Internet technology advancement and the adoption of mobile devices that have created massive user-generated big data (Mariani et al., 2018). This phenomenon has provided new ways for exchanging feedback on products and services (Moro & Rita, 2018), leading the industry to numerous changes in processes and methods of work (Pejic-Bach et al., 2020).

SM increasingly assumes a role in distributing tourism products/services by encouraging social commerce (Ulrike Gretzel, 2018). Social commerce encompasses social media to support electronic commerce (Hu, Chen, & Davidson, 2019). Social commerce features play a particularly significant role for tourism products/services distributed via daily deals websites, on which tourism and hospitality-related offers often constitute the majority of sales (Ditta, Gretzel, & Kattiyapornpong, 2013). SM further offers opportunities to engage with existing and potential customers beyond transactional interactions, allowing new customer relationship management (Gretzel, Fesenmaier, Lee, & Tussyadiah, 2011).

Most tourists nowadays search for testimonials, suggestions, and past experiences from online social networks, and that reshape not only the way people project their voyages but also the way they share their travel experiences with their family and friends (Oliveira et al., 2020; Pickering et al., 2020). Further, while SM users often post travel-related content to help others or share experiences with loved ones, they also acquire much enjoyment in the process (Gretzel et al., 2011). The increase in sharing online travel information is widespread at travel fora and social networks (Hu et al., 2017). However, other types of relevant SM, including sharing photos (e.g., Instagram) or videos (e.g., YouTube), may also be considered as websites for sharing travel information (Moro & Rita, 2018).

This postmodern "Era" increasingly transforms tourist behavior, whereby tourists significantly prefer personalized trips to pre-organized or general tourist packages (Kotiloglu et al., 2017). Given this, the UGC is now incredibly relevant and is directly affecting tourism consumption decisions (Baker & Kim, 2019; Oliveira et al., 2020).

2.5.2. UGC in the hotel industry

Most tourists nowadays search for past experiences from social media (Oliveira et al., 2020), where visitors invariably share these experiences with the capability to exchange immediate feedback (Moro & Rita, 2018). This paradigm demands that the hospitality industry changes processes and methods of work (Y. H. Hu et al., 2017). Given this, user-generated content (UGC) is incredibly relevant and directly affects clients' decision-making (Baker & Kim, 2019). On the other hand, UGC pressures hotel managers to satisfy their customers since their shared experiences reach a larger audience (Amado et al., 2018). UGC has been defined as the public content published by users accessible on websites and social media platforms with no monetary or commercial interest (W. Lu & Stepchenkova, 2015).

In recent years, tourism research has witnessed increased UGC use as a data source for conducting research. For instance, Zhou et al. (2014) exploited UGC available on Agoda.com to detect the key attributes that influence hotels' customer satisfaction. While Gao et al., (2018) developed a study to investigate the collective influence of cultural, hotel, and reviewer characteristics on online ratings in the hotel sector and found a negative relationship between the reviewers' power distance and their online hotel ratings, indicating that cultural factor plays a significant role in the customers' online rating behavior. Through 412.784 online ratings, one other study aimed to investigate local vs. international travelers' preference using hotel characteristics of tourists from nine countries (Liu et al., 2017) and found that the determinants of customer satisfaction in the hotel industry vary across customers with different languages.

Online data can be used to observe the impact of consumers or opinions of a population. Different work models created and proposed in past studies encompassed advanced knowledge to academia and the managerial experts. Currently, the understanding of the usefulness of online reviews in data analytics is undeniable. It constitutes a novel attempt to manage the emerging amounts of extensive data flows online more efficiently and, consequently, simplify an astonishing number of manual tasks. However, Table 2-5 illustrates the general limitations of the existing models, which might include:

- The distinctiveness of models once the vast bulk of them requires adaptations when considering diverse datasets, platforms, or samples;
- Limited samples, once the population is frequently encircled to one city, country, region, language, or source of information, which may impair the observations obtained;
- Restricted analysis over segment markets (e.g., mountain hotels).

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The following Table 2-5, summarizes the method, main features, achievements/strengths, and weakness of the previous studies.

AUTHOR	SAMPLE/POPULATION	METHOD	ACHIEVEMENTS /STRENGTHS	WEAKS
Ye, Law, Gu, (2009)	3625 online reviews from three randomly selected large cities in China (Guangzhou, Chongqing, and Xi'an) Extract from Ctrip	<ul style="list-style-type: none"> ▪ Log-linear regression model 	<ul style="list-style-type: none"> ▪ Importance of online reviews on online bookings ▪ Introduction of a proxy for the number of online bookings 	<ul style="list-style-type: none"> ▪ Source restricted ▪ Location-specific ▪ Restricted date of the extracted sample ▪ Improvement of the model is needed
Au et al., (Au et al., 2010)	964 online reviews from Hong Kong hotels Extracted from Ctrip	<ul style="list-style-type: none"> ▪ Content analysis ▪ Grounded theory approach ▪ Keyword analysis 	<ul style="list-style-type: none"> ▪ Culture impacts the e-complaints ▪ Classification of e-complaints into nine categories 	<ul style="list-style-type: none"> ▪ Language-specific (English) ▪ Location-specific ▪ Limited sample
Chiappa et al., (2015)	60,648 online reviews from 100 largest U.S. cities. Extracted from Expedia	<ul style="list-style-type: none"> ▪ Cluster analysis ▪ Correspondence analysis ▪ Statistical association analysis ▪ Factor analysis; ▪ Linear regression model 	<ul style="list-style-type: none"> ▪ Analyze a broad sample ▪ Highlight the differences in types of hotels with unique, salient traits that satisfied customers 	<ul style="list-style-type: none"> ▪ Source restricted
Berezina et al., (2016)	2,510 online reviews from Sarasota, Florida Extracted from TripAdvisor	<ul style="list-style-type: none"> ▪ Text-mining approach with PASW Modeler ▪ Categorization and text-link analysis 	<ul style="list-style-type: none"> ▪ Compare both satisfied and dissatisfied customers ▪ Reveal that both tangible and intangible dimensions are being evaluated in online reviews 	<ul style="list-style-type: none"> ▪ Source restricted ▪ Location-specific

What satisfaction is perceived through online reviews from customers in mountain hotels?

Guo, Barnes, & Jia, (2017)	266,544 online reviews in the hotel sector from 16 countries Extracted from TripAdvisor	<ul style="list-style-type: none"> ▪ Latent dirichlet analysis (LDA) 	<ul style="list-style-type: none"> ▪ Analyze a broad sample ▪ Uncovers 19 controllable dimensions ▪ Highlight differences according to demographic segments. 	<ul style="list-style-type: none"> ▪ Improvement of the model is needed ▪ Do not analyze rare or infrequent words in the long tail of the distribution ▪ Source restricted
He at al., (2017)	11,043 online reviews in the four largest cities in China: (Beijing, Shanghai, Guangzhou, and Shenzhen) Extracted from TripAdvisor	<ul style="list-style-type: none"> ▪ Natural language preprocessing ▪ Text mining ▪ Sentiment analysis 	<ul style="list-style-type: none"> ▪ Revealed that the overall review star rating correlates with the sentiment scores for both the title and the full content of the online customer review. ▪ Revealed that both extremely satisfied and extremely dissatisfied hotel customers share a common interest in the five categories: food, location, rooms, service, and staff. 	<ul style="list-style-type: none"> ▪ Language-specific (English) ▪ Location-specific ▪ Source restricted
Ahania, Nilashi, Ibrahim, Sanzogni, & Weaven (2019)	4930 reviews on 200 spa hotels Extracted from TripAdvisor	<ul style="list-style-type: none"> ▪ Hybrid machine learning techniques ▪ Clustering SOM, HOSVD dimensionality reduction & CART techniques ▪ Decision trees 	<ul style="list-style-type: none"> ▪ Develop a market segmentation algorithm in target specific ▪ Highlight that Spa hotels can effectively segment their market on the basis of traveler reviews and ratings ▪ Revealed nine traveler segments 	<ul style="list-style-type: none"> ▪ Improvement of the model is needed ▪ Only developed the method for user ratings on hotels and considered the hotel's ratings for method evaluation

Table 2-5 - Previous studies - method, main features, achievements/strengths, and weakness

Current literature has shown that UGC can serve as a data source for researchers to support hotel managers. This data source publicly available and easily collected at a low price (Guo et al., 2017) is considered more objective since reviews are posted spontaneously, unlike traditional questionnaires (Schuckert et al., 2015). This field affords different forms of commitment, making it possible and desirable for companies to personalize their engagement, assuring it continuously by taking advantage of customers' opportunities (Cabiddu et al., 2014).

2.5.3. Trip Advisor

Trip Advisor is one of the most widely used travel websites and apps to access and share information about hotels. It is often a hotel manager's first point of call because of the importance the site has acquired for any accommodation facilities' reputation (Xie et al., 2014). It is available in 49 markets and 28 languages and contains more than 859 million reviews and opinions of 8.6 million accommodations, restaurants, experiences, airlines, and cruises with an average of 459 million monthly visitors (Y. H. Hu et al., 2017; TripAdvisor, 2020).

TA is ranked as one of the most trustworthy sources according to general managers' perceptions (Torres et al., 2014). Numerous studies have been based on TA's data (Ahania et al., 2019; Berezina et al., 2016; Guo et al., 2017; O'Connor, 2010). But TA is challenging to categorize once is a part social network, part virtual community, and part blog, like many Web 2.0 sites. However, their primary functions are collecting and disseminating UGC (reviews, ratings, photos, and videos). All the data submitted by users is scrutinized to ensure that it corresponds to content guidelines, and once approved, reviews are added consecutively to each property's page and displayed indefinitely. On the other hand, users' quantitative ratings are used to generate a summary score and rank the properties in terms of overall popularity within a destination. This index is later used to determine how properties within a destination are exhibited to subsequent visitors, with the most popular displayed first. Hotels can also post a management response to each review, but requests to remove or edit consumer reviews are not allowed (O'Connor, 2010).

Some criticism also accompanies TA fame because of the opportunity to comment anonymously without needing to have enjoyed the hospitality industry's services (Gerrard, 2012) or fraudulent practices on TA, which are documented in other studies (Mkono, 2015). However, suspicions of fraud on TA are not the norm on this platform, perhaps because the reputation management system on TA increases users' motivation to contribute reliable reviews (Yoo, Sigala, & Gretzel, 2016). Besides, as the number of reviews grows, the impact of possible fake reviews falls. Moreover, O'Connor (2008) stated, TripAdvisor appears to be doing an excellent job of policing its system. Given this, it is important to note that this study extends the number of investigations, analyzing a considerable sample of reviews abroad 20 hotels.

3. Methodology

In the literature chapter, this study framed the importance of online reviews in the consumer decision-making process when booking a hotel nowadays.

In this chapter, the dataset is described, followed by the processes used to answer the research problem posed in the introduction.

For this study's objective, we seek to understand the relationship between mountain hotel reviews' most salient features and their sentiment score. These features are the reviewer's date of stay, hotel category, nationality, sex, and online travel experience. Additionally, explore the extracted data and the results from TM within a qualitative approach using a Computer-assisted Qualitative Data Analysis Software (CAQDAS).

The present chapter starts with defining the population and sample to be considered in the study before presenting the data collection procedures and data analysis processes and steps. The data analysis section also includes a brief introduction to TM, SA, and the CADQDAS system Maxqda, along with an explanation of those methods used for data analysis.

3.1. Population

Since the case study is designed to analyze the UGC from hotel customers, our population consists of mountain hotel customers.

3.2. Sample

This study's sample consists of customers of mountain hotels located on the NNGSE hotels (Table 3-1) that published their experience in the TA social network from 2001 to 2020.

What satisfaction is perceived through online reviews from customers in mountain hotels?

Hotel Name	Hotel Category	Hotel Star Rating	TA Star Rating	Reviews extracted from TA
Inatel Piodão	Hotel	4*	4.0	188
Flag Hotel Convento do Desagravo	Hotel	4*	4.5	138
Belmonte Sinai Hotel	Hotel	4*	4.0	86
Luna Hotel do Carquejais	Hotel	4*	4.0	283
Luna Hotel Serra da Estrela	Hotel	4*	3.5	261
Pousada da Serra da Estrela	Hotel	4*	4.5	928
Tryp Covilhã Dona Maria Hotel	Hotel	4*	4.0	449
Casa das Penhas Douradas & Burel Mountain Hotels	Spa Hotel	5*	4.5	362
Casa de São Lourenço & Burel Mountain Hotels	Spa Hotel	4*	4.5	29
Hotel Lusitania Congress & Spa	Spa Hotel	4*	4.0	163
Puralã Wool Valley Hotel & Spa	Spa Hotel	4*	4.5	323
Convento do Seixo Boutique Hotel	Spa Hotel	4*	5.0	56
Alambique de Ouro Hotel Resort & Spa	Spa Hotel	4*	4.0	588
Aqua Village Health Resort & Spa	Thermal Spa Hotel	4*	4.5	141
H2ohotel	Thermal Spa Hotel	4*	4.5	1.010
Palace Hotel e Spa – Termas de São Miguel	Thermal Spa Hotel	4*	3.5	78
Abrigo da Montanha Hotel Rural	Rural Hotel	4*	4.5	70
Madre de Água Hotel Rural	Rural Hotel	4*	5.0	259
Quinta do Crestelo Aparthotel	Rural Hotel	4*	4.0	63
Hotel Rural Quinta da Geia	Rural Hotel	4*	4.5	116
N. of reviews				5.591
N. of reviews per 4* hotel				5032
N. of reviews per 5* hotel				559
Avg. reviews per hotel				279,55
N. of nationalities of the reviewers				51

Table 3-1 - Star Ratings, Hotel Category, and Number of Reviews

3.3. Data Collection

This study's data collection process took place in April 2020 and comprises the extraction and compilation of online reviews from TA for the selected sample.

We have found at TA three hotels with five-stars and seventeen hotels with four-stars with these criteria. Those hotels were used to extract the largest number of reviews available online, and from the extraction process, emerge the final number of 5591 online reviews.

The variety of tourism accommodation types developed in these mountain areas offering a wide selection of different hotel categories provides us an opportunity to scrutinize hotel accommodations such as Standard Hotels, Spa Hotels, Thermal Spa Hotels, and Rural Hotels.

To extract online reviews from TA, we utilized the Web Scraping program Octaparse. Octaparse is an automated tool for data extraction from websites (Octaparse, 2020). Web

scraping consists of the process of extracting selected text information from web pages. The scraping process's key benefit is that unstructured data can then be structure and liable to be worked and explored in databases. This free web scraping software is used to collect a large amount of data accurately, quickly, and conveniently, and has been used in previous studies (Deng et al., 2020; Yadav & Roychoudhury, 2019)

Figure 3-1 schematizes the process mentioned above, from the web scraping to the final dataset used in the analysis.



Figure 3-1 - Data collection procedures steps

In addition to textual review content, other customers' features were collected (Table 3-2), and then a collection of data was made by saving the reviews into an excel spreadsheet.

List of output features in reviews	
Feature	Description
Review	The total comment where is notably large amounts of words per review
Date of Stay	It is divided into 12 months of the year
Nationality	Country origin
Hotel Category	Rural Hotels, Spa Hotels, Thermal Spa Hotels, Standard Hotels
Sex	Males, Females, Undetermined
Online Travel Experience	The number of reviews, ratings, forum posts, and photos that a reviewer has posted on TA

Table 3-2 - List of output features/components in reviews to be analyzed

3.4. Data Analysis

3.4.1. Text Mining and Sentiment Analysis

Text mining (TM) consists of analyzing naturally occurring text within various sources to discover and obtain semantic information (Onwuegbuzie et al., 2012) from extensive datasets using a robust set of methods (Villeneuve & O'Brien, 2020).

Onwuegbuzie et al. (2012) also assume the following four significant information sources are comments, observations, drawings/photographs/videos, or documents. It also identified seventeen qualitative literature analysis methods, including TM, classical content analysis, word count, or keywords-in-context.

Those qualitative analysis methods have different techniques involving various disciplines, e.g., statistics, mathematics, signal processing optimization methods, data mining, machine learning, visualization approaches, and social network analysis (Philip Chen & Zhang, 2014). Furthermore, from the varied techniques to analyze and dissolve information, we do acquire powerful methods for establishing trends and patterns (Ramos et al., 2019).

The techniques can also be applied to smaller volumes of information, but emerging challenges regarding large amounts have recently risen, such as integrating a vast number of distinct sources and dealing with structured and unstructured data or performance issues (Amado et al., 2018). However, the automated analysis is feasible when the subject comprehends a large body of knowledge, and the benefits of using a computerized analysis overcome the limitations of such analysis by providing a quick mean at extracting insightful knowledge for analysis without the need of extensively reading all the subject (Moro & Rita, 2018).

Ramos, Rita, and Moro (2019) proved this feasible by exploiting TM approaches to provide quicker solutions for producing organized structures and supplementary methods for summarizing the results in logical slots of information, and Moro, Cortez, and Rita (2015) proposed a similar methodology based on TM techniques. They carried an analysis using dictionaries of relevant terms composed of n-words for serving a topic modeling algorithm to display relevant topics that encompass distinct trends.

Besides, such content of analysis, like text analytics or TM techniques applied in online reviews, is also defended by Siering, Muntermann, and Rajagopalan (2018) to examine unstructured text documents. Accordingly, our hybrid approach is also the result of Onwuegbuzie et al., (2012) encouragement to reflect on the use of various qualitative methods of data analysis to obtain more of their research syntheses.

Textual data analysis may include other methods as natural language processing (C. Cuizon et al., 2018). However, in the current context, such as hotel reviews, the TM standard method must include SA (Villeneuve & O'Brien, 2020).

Sentiment analysis (SA) is an essential task widely used in the industry to elucidate users' sentiments (X. Li et al., 2020). The method analyzes the type of words and expressions that a user employs to understand how it feels about the topic discussed. Typically in industry, people analyze product sales, service strategies, and lyrical trends by exploring personal sentiment information in articles and reviews (X. Li et al., 2020). This range of automated extraction is the detection of opinions, sentiments, emotions, and subjectivities in a text that contains a mix of positive and negative sentiment, often useful to identify the polarity of sentiment in a document (positive, negative, or neutral) and even the strength of sentiment expressed (He et al., 2017; Villeneuve & O'Brien, 2020).

The regular tasks of the SA techniques are (Sergej et al., 2014):

- Finding documents relevant to a specific topic or purpose;
- Pre-processing documents. For example, tokenizing documents into single words, extracting relevant information, removing HTML code, or marking words and phrases with POS tags (part-of-speech);

- Identifying product property and sentiment.

Through SA, hospitality managers can better understand which characteristics among their units' services may be the most influential of satisfaction to their customers (Calheiros et al., 2017). E.g., Berezina et al. (2016) have unveiled that satisfied customers mention their hotel stay's intangible viewpoints, such as staff associates often than dissatisfied customers, and in contrast, dissatisfied customers frequently mention the hotel's tangible elements, such as furnishing and finances.

Calheiros et al. (2017) exposed several findings, including that food produces ordinary positive sentiments, while hospitality produces both ordinary and strong positive feelings. Yu, Li, and Jai (2017) found that fundamental practices and advanced green practices positively influence customers' satisfaction. Besides, terms as guest training, energy, water, purchasing, and education are significantly associated with overall customer satisfaction.

To conduct the SA technique was used R statistical software. The R tool is an open-source software for statistical computing that includes a myriad of packages (Cortez, 2014). For the SA, the package “sentimentr” was used to compute the sentiment score of our dataset. The SA output classifies the reviews in positive, neutral, and negative sentiment. Then, text data was pre-processed to be ready for analysis using “tm” package to remove punctuations, numbers, white spaces, stemming, and convert all letters to lower case and a function in this package returned the terms with the highest frequencies. This process aims to discover key concepts in an objective way to support the scheme for manual coding.

From the SA outcome, we have employed the sentiment score as a dependent variable and individual features of the reviewers, as the date of stay, nationality, hotel category, sex, and online travel experience as an independent variable.

3.4.2. Qualitative Analysis with Maxqda

Maxqda is a world-leading software in the market for qualitative and mixed methods research. It examines all kinds of data from texts to images, audio/video files, websites, tweets, focus group discussions, and survey responses (Maxqda Organization, 2020).

Lewins and Silver (2009) defend that CAQDAS is software packages, which include tools designed to develop a qualitative approach to qualitative data. Qualitative data involves texts, graphics, audio, or video. CAQDAS packages may also enable incorporating quantitative (numeric) data and include tools for taking quantitative approaches to qualitative data.

This approach also permits the comparison of code segments, creation of frequency tables, and various visualizations of data relationships (Booth, 2014). The use of such a method has been encouraged by several authors (W. Lu & Stepchenkova, 2015; Onwuegbuzie et al., 2012), highlighting the importance of using qualitative methods to obtain more research outcomes. Following such recommendations, this method was used and validated in recent studies with very interesting results (Hodsdon, 2020; Taecharunroj, 2019).

Before inputting the reviews into Maxqda and implement the above-mentioned techniques, the designation of categories to code was accomplished using a twofold method, first identifying categories within the knowledge of previous research and theory (see Table 2-4 for more details). For instance, following the Two Factor Theory (Herzberg et al., 1958), different categories among evaluations were identified. Second, through a summative content analysis, interpretation bias was reduced through the support of the most frequent words in reviews, afterward, considering this study's objective, we reduce overlap and redundancy among the categories to code by condensing literature categories and the most frequent words and have developed a coding scheme inductively through 20 categories to customers with expectations exceeded and 29 categories to customers with unmet expectations (Thomas, 2006). This quantification is an attempt not to infer meaning but, rather, to explore the text usage to eliminate such labeling creation's inherent subjectivity (Hsieh & Shannon, 2005).

After inputting the reviews into Maxqda, the coding process began using what researchers call "in vivo coding", by labeling a section of text with a label taken from the text itself (Booth, 2014). The manual labeling was an iterative and comparative procedure employed to examine the underlying semantic structure and further assemble words from the coding schema into meaningful groupings of words that would be easier to interpret. This process was completed from one of the authors being impartial while coding within the knowledge of more than 7 years of work experience in the hotel industry.

4.1. Word Frequency

In agreement with the study objectives, we use the most frequent terms to understand how customers perceive mountain hotels. We operate a word count once this use of TM techniques enables extracting meaningful patterns from large volumes of textual information (Zhao et al., 2019).

The TM process for building the corpus of word frequency was prosecuted by cleaning the text from irrelevant words such as articles and adverbs, and the outcome results are shown in Table 4-1.

Word Frequency								
Ranking	Word	Freq	Ranking	Word	Freq	Ranking	Word	Freq
1 ^o	Hotel	6213	17 ^o	Serra	891	33 ^o	Located	601
2 ^o	Rooms	4469	18 ^o	Mountain	854	34 ^o	Water	592
3 ^o	Pools	3248	19 ^o	Indoor	844	35 ^o	Children	572
4 ^o	Breakfast	2357	20 ^o	Location	826	36 ^o	Price	561
5 ^o	Staff	2354	21 ^o	Estrela	772	37 ^o	Facilities	555
6 ^o	Services	1785	22 ^o	Fantastic	752	38 ^o	Night	539
7 ^o	Restaurant	1681	23 ^o	Recommend	709	39 ^o	Swimming	520
8 ^o	Friendly	1482	24 ^o	Little	697	40 ^o	Family	514
9 ^o	View	1343	25 ^o	Area	671	41 ^o	Bar	497
10 ^o	Quality	1217	26 ^o	Small	671	42 ^o	Rest	484
11 ^o	Spa	1096	27 ^o	Time	666	43 ^o	Reception	474
12 ^o	Comfortable	1085	28 ^o	Large	651	44 ^o	Bathroom	463
13 ^o	Place	1037	29 ^o	Spacious	639	45 ^o	Decoration	447
14 ^o	Food	1012	30 ^o	Attentive	607	46 ^o	Helpful	428
15 ^o	Cleanliness	915	31 ^o	Outdoor	607	47 ^o	Visit	427
16 ^o	Dinner	892	32 ^o	Buffet	601	48 ^o	Experience	422

Table 4-1 - Word frequency from reviews

The top terms (Table 4-1) center around the hotel's core and main products/services and essential attributes (Xiang, Schwartz, Gerdes, et al., 2015). Accordingly, the first four most frequent terms are “hotel”, “room”, “pools” and “breakfast”. All of them correspond to the infrastructures of the establishments. Then, the terms “staff” and “services” appear, and even the term “friendly” came in the top ten. Contrary to the previous observation, all these words are related to the attention to the service's quality. Considering both observations, customers of mountain hotels are most worried about talking from the hotel's infrastructures and the people who work there or the hotel people working processes.

Consequently, our results are in line with the discoveries of Sparks and Browning (2011), who concludes that the majority of hotel reviews are either about the core functions of the hotel (e.g., rooms features) or customer service (interactions with staff). Similarly, following O'Connor (2010) study, he likewise identified room and hotel as the two most

frequently used words in reviews and various other words, including breakfast, staff, location, or bathroom.

The "restaurant" and "food" terms appear in the seventh and fourteen places, respectively, as similar to Xiang et al., (2015) studies. Although both previous studies identified "clean" as the second term more frequent within online reviews, however at our ranking, "cleanliness" appears only at fifteen. This is perhaps because it is a determinant less valued by this specific customer, or because this service became considered by customers as standard, more granted during the time and then, less influent. Although, due to the COVID-19 pandemic, this determinant is probably affected.

At this ranking, the spotlight might go into the terms "pools", the third term more frequent, "view", the ninth more frequent, and "Spa", the eleventh more frequent. Accordingly, a distinctive pattern might be identified with great importance. We see the presence of the terms "pools", "spa", "indoor", "water", and "swimming", and all of them correspond to the same determinant, the pools & spa facilities. Supporting this determinant as an essential core of value to customers of mountain hotels.

At twentieth rank, we found the terms "location" behind and around the words "serra", "estrela", "mountain", "area", or "outdoor". All words are related to the ambient where the hotel is located, concluding that mountain hotels' surrounding spaces are an element of great relevance to mountain hotel customers. An assumption that is also supported by the ranking of the term "view" in ninth place. We also note that terms as "little", "small", "large", or "spacious" are most frequent within the reviews. They indicate that the scales or sizes of infrastructures or services are critical to this specific customer. Although, those results are not exclusive (Xiang, Schwartz, Gerdes, et al., 2015)

The outcome also brought up terms like "family" and "children", indicating this segment's serious scale to hotels located in mountain destinations. Additionally, terms as "price", "facilities", "night", "bar", "rest", "reception", "bathroom" and "decoration", come also like some of the most frequently found in the reviews. In the end Table 4-1, the terms "visit" and "experience" also contribute to the understanding that customers expect experiences at mountain hotels.

Most of these words are functional and objective, while sectional represent customers' subjective evaluation of their experience. Besides, just the mere variance in frequency in the usage of these terms does not allow us to draw satisfactory conclusions regarding mountain hotels. We must look at the relationships among the terms and how frequently other terms have been used within categories so that we can draw some meaningful insights, which is accomplished in the section of the qualitative analysis after the theoretical observations regarding the feature's reviews and sentiment.

4.2. Sentiment Analysis

The result poles from SA show that the sentiment values ranged between -0.68 to 2.46, corresponding to the negative and positive poles. Next is presented Figure 4-2, which illustrates the sentiment density.

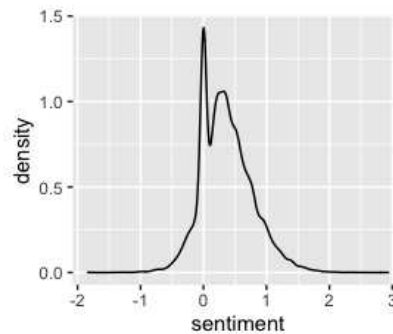


Figure 4-2 - Sentiment density

We can perceive that most of the reviews are positive. However, vast of them close or extremely close to 0 (neutral). Next is presented the scale of sentiments that illustrates both positive and negative sentiment in more detail (Table 4-2).

Values	Absolute values	Relative Values	Mean	Std. Deviation	Sentiment Scale
Values > 0	234	4.18%	-0.100734266	0.094054522	Negative
Values = 0	0	0.00%	0	0	Neutral
Values < 0	5357	95.82%	0.443367577	0.243045995	Positive
Values between -0,68 and 2,46	5591	100%			

Table 4-2 - Sentiment Scale - Positive and Negative

The results reveal that 95.82% (5357) of the reviews are positive, and 4.18% (234) are negative. This result is consistent with the previous study of Li et al., (2013), which found that positive reviews generally outnumber negative ones. They have also reported that the percentage of positive reviews was higher for the luxury hotels than for the budget hotel group. This implies the validity of this study results and suggests that the lower the rating of the hotel the higher the percentage of negative reviews.



Review example	Sentiment Felling	Sentiment Scale	Sentiment Value
The hotel restaurant's buffet is of poor quality and an expensive price. The starters were almost all cold. The rice was undercooked. The variety was low as of poor quality. Charging for a buffet like this 22.50€ doesn't make sense. I haven't eaten in a long time so bad.		Negative	-0.1857677
The excellent resort of superior quality, excellent care, and particular attention to children. Rooms of superior quality with excellent and impeccable cleanliness and particular care. Excellent service both in professional quality and in education by the employees. Congratulations.		Positive	1.25199

Table 4-3 - Example of reviews to each sentiment scale

TA assigns an online rating to the hotel based on the average rating that each customer presents in their review. So, next, we present Figure 4-3, which confronts the TA hotel classification and the sentiment mean.

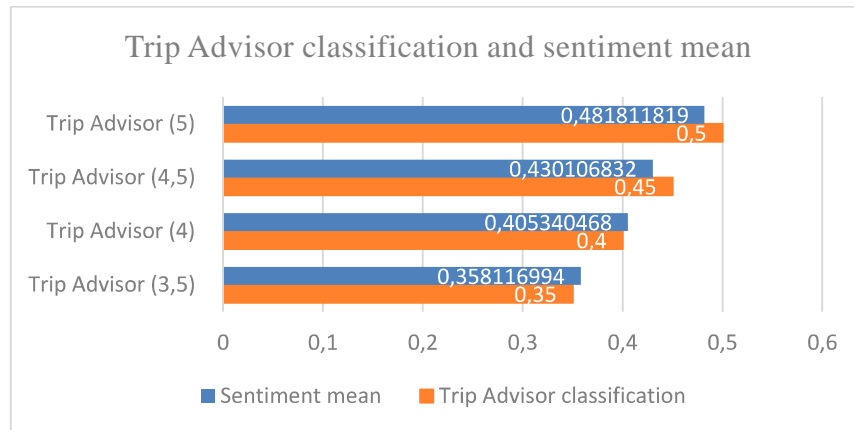


Figure 4-3 - Trip Advisor classification and sentiment correlation

The SA results support that the classification attributed by users in TA is very similar to the results obtained at the mean sentiment throughout the hotels with the same TA classification. Supporting the findings of the past studies of Geetha, Singha, and Sinha (2017), and He et al. (2017), each has discovered that the sentiments of online reviews and customer ratings are highly correlated.

4.2.1. Date of Stay

First, we scrutinized the review's sentiment, depending on the date of the reviewer's stay by presenting some demographics and observations.

Starting with Figure 4-4, which corresponds to the sentiment score from 2012 to 2020, we can drive some considerations. Figure 4-4 includes all the years containing more than 100 comments, and additionally, the year 2020 only has months from the first quarter.

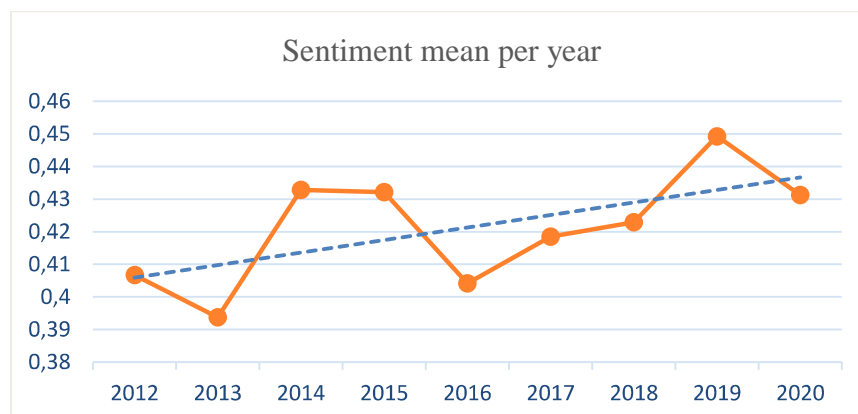


Figure 4-4 - Sentiment - Year

By time series analysis, we can identify activity peaks to understand the underlying pattern at a particular time (Ranco et al., 2015). This has been applied in various investigations (Ibrahim & Wang, 2019; Y. Lu & Zheng, 2020), which have found upward and downward sentiment trends in several critical time points that lead to significant deviations.

This work time series analysis has revealed that from 2012 to 2020, the sentiment mean slight increase in their score, since higher in 2020 than in 2012. Still, in 2013 and 2016, the sentiment score has declined. Sentiment scores from 2012 (0.41) and 2019 (0.45) are slightly different, but the progress is not much linear, which confirms the common fluctuate sentiment trends during the time, as past studies have recognized (Ibrahim & Wang, 2019; Y. Lu & Zheng, 2020).

The sentiment score can provide a good indicator of user satisfaction while providing more insight into the customer experience period (Moghaddam, 2015). Therefore, previous observations allow us to assume notable slight progress in managing the provided service. This may be the result of the increased position of nature and mountains among tourists' preferences (Rama et al., 2019), following the growing number of accommodation units as well as the worriedness of tourism operators and local stakeholders to their management impact through offering for example, more nature-oriented activities (Estrela Aspiring Geopark, 2017).

Following the previous analysis, we present the sentiment mean and the number of reviews per month (Figure 4-5).

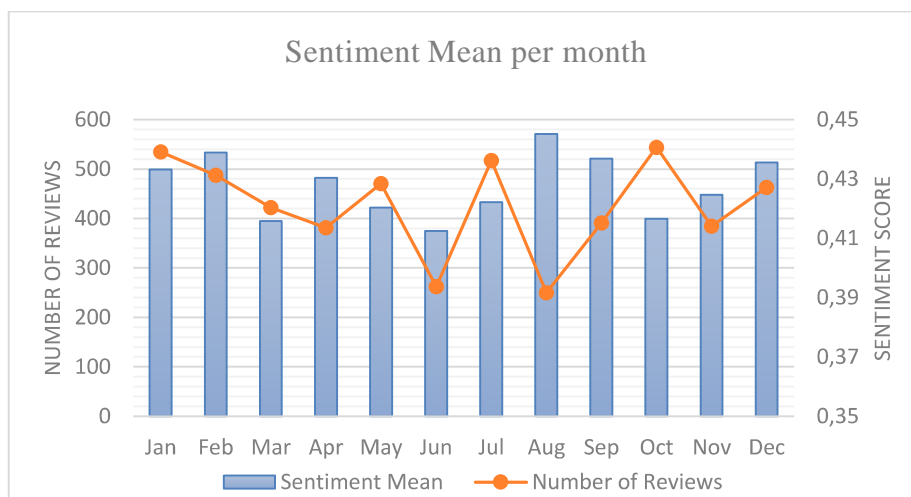


Figure 4-5 - Sentiment and reviews - Month

Through Figure 4-5, we observed that the four months with higher sentiment scores are October, January, July, and February.

Contrary to the study of Khorsan, Rafiee, and Kayvanfar (2020), our results, based on the number of reviews, show that the popular months to mountain hotel customers are August and February, which is expected since the weather in the NNGSE is excellent in August to experience sun and in February to experience snow, and obviously can influence

tourists to travel to the NNGSE. The weather is easily seen as an essential factor and key driver for tourism and a vital destination attribute (Yangzhou Hu & Ritchie, 1993), determining the customers' demand and tourism flow or even the quality of their experience (Denstadli & Jacobsen, 2014).

Though August is the most popular month of travel in NNGSE, travelers are not the happiest visitors in these months. This result is closely aligned with the results of Khorsan, Rafiee, and Kayvanfar (2020), once they find that one of the most popular months is as well, one of the months with the lowest rate. They then suggest that hotel managers should try to present better services, especially in the months with the lowest rates and high demand, because of the vast number of travelers in these months. On the opposite, they also suggest that managers should detect the reason for satisfaction in the months with the best rates among other months to expand it to additional months.

The climate in NNGSE is Mediterranean with dry and warm summers. The wet season extends from October to May. Accordingly, the warmest month is July, and the coldest is January, as defended by Espinha Marques et al. (2005). Which also assumed that the available data concerning snow precipitation is scarce. Although current information reports from the Snow-forecast (2020), website <https://www.snow-forecast.com/resorts/Serra-da-Estrela/history>, support the assumption that the tourism flow in the NNGSE may be extremely diverse because of the various climate from July, August, and September in the months of the higher temperatures to January and February in the months with a high probability of snowfall (Snow-forecast, 2020). Although, between both seasons, this customer finds more satisfaction in the winter season than in the summer season. However, the month with the high number of reviews is August.

There are not many differences in the number of reviews between January and August month, although the sentiment score's difference is significant. Therefore, the months with the most popularity / highest number of reviews are not necessarily the ones with the higher sentiment, and the same applies to the contrary, once October as the third less popular month is also the one with the highest score of sentiment. However, June is the month with the low number of reviews and the lowest sentiment score.

June and August are both the months with the lowest sentiment score, contrasting with the highest and linear robust sentiment score in the months of the wet season as of December, January, and February. Additionally, Once the wet season extends from October to May (Espinha et al., 2005), the average sentiment of those months is 0.423268619, and the average sentiment of the summer season months is 0.409156042. Therefore, we can perceive that despite the unexpectedly high sentiment score in the month of July, customers of mountain hotels are more satisfied in the months of the wet/winter season.

Accordingly, management attention to August might be advised from the above mentioned Figure 4-5 that provenly justifies improvements. Additionally, October, January, July, and February are the months to study as the most satisfactory cases.

Looking at the previous observations, we assume that mountain hotels adapt well to the wet season's local conditions than to the local conditions of the summer season.

The snow-related phenomena in this area are spatial and temporal irregularly (Espinha et al., 2005). However, this high mountain region is firmly related to winter seasonality once it is the only touristic destination with snow during the winter equipped with two ski areas (Estrela Aspiring Geopark, 2017). Therefore, the hotels are mostly designed to serve these preferences. Notwithstanding, Bonzanigo, Giupponi, and Balbi (2016) concluded that even in the Alps, snow, as the main driver for tourism development, is a poor sustainable choice.

Mountain regions typically offer more than just snow tourism, so hotel managers should adapt their strategies depending on the season because what makes tourists satisfied in the wet season is far different from what makes them satisfied in the summer season.

The Eiffel Tower can distinguish France, and the Sydney Opera House distinguishes Australia; however, there are other memories from those places. Therefore, mountain destinations also offer more than snow tourism, as offering nature tourism, adventure tourism, active tourism (Favre-Bonte et al., 2019; Kuščer et al., 2017), and this area has many potentials (Estrela Aspiring Geopark, 2017).

The physical and the service environment is a significant product for the hotel industry as it satisfies customer needs (Zemke & Pullman, 2008). Accordingly, Cheng, Tang, Shih, and Wang (2016) study findings suggest that hotel operators must attribute a high level of importance to hiring a full-time executive artistic manager in the top management team to engage in innovation, combining local culture and the natural environment into design the service of the customers' needs.

4.2.2. Hotel Category

To foreword analyze if the sentiments expressed in the review are dependent on the hotel category selected by the reviewer, we present some demographics along with some observations.

Towards the component of the hotel category, different types of observations went conducted. Accordingly, the next Figure 4-6 illustrates the sentiment score to each hotel category in the analysis.

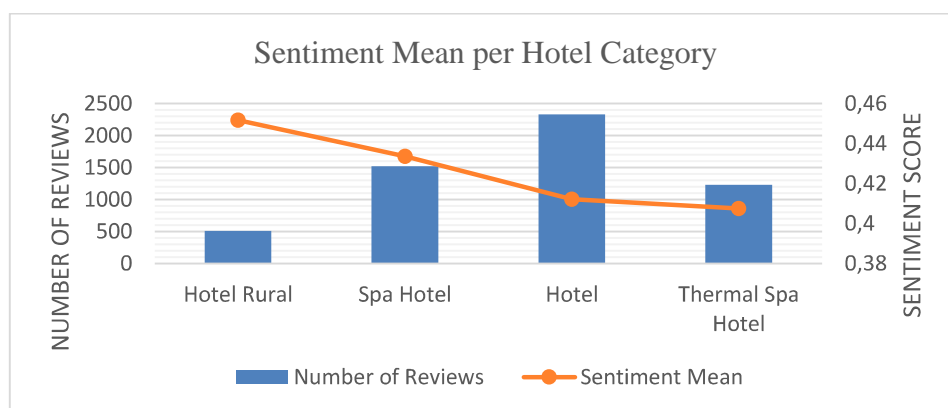


Figure 4-6 - Sentiment - Hotel category

The hotel category that guarantees the highest average sentiment is the category with fewer reviews, the Rural Hotels. In some sense, Rural Hotels is a series of niche markets within a niche market, broadly defined as tourism in rural areas and natural surroundings, combining various activities and services to ensure these places' development and progression (Jesus & Franco, 2016).

Rural tourism is defined as a new tourism movement occurring in rural areas, and this sort of tourism makes use of the unique natural environment, rural landscape, folk culture and customs, farming culture, rural villages, and other resources to provide sightseeing, leisure, experience, fitness, entertainment, and shopping experiences for tourists (Wu et al., 2017). Facing both rural tourism and mountain tourism definitions, we can perceive that they are both closely associated. Besides, even the Wang et al. (2013) study about rural tourism in China is published in an academic journal named *Journal of Mountain Science*. This supports the assumption that customers of mountain hotels are nearby expecting facilities following rural tourism expectations. Therefore, and following our results, mountain hotel accommodations that offer more singular rural spaces provide higher chances of meeting this specific customer's expectations.

Perceptions of rural may be socially formed and exchange by country and culture, however, specific common attributes are acknowledged as low population densities and only a small proportion of land given over to the built atmosphere, creating an impression of space (Ghaderi & Henderson, 2012). Additionally, the low number of reviews in rural hotels is also in line with the standard expectation of this hotel category, which possible, in the future moment where rural hotels get a large number of tourists, its essence can be distorted, and then felling's of dissatisfaction may be triggered. Consequently, a precaution in balancing supply and demand should suggest managers' central attention to rural hotels.

Following the Rural Hotels, the hotels with higher sentiment mean are Spa Hotels. Then the Standard Hotels, and, with the lowest sentiment mean, the Thermal Spa Hotels.

The differences between the sentiment of Rural Hotels and Thermal Spa Hotels are not too robust to drive significant conclusions, nevertheless, confronting the results between Rural Hotels and Thermal Spa Hotels, customers are more satisfied in Rural Hotels, or at least we find them with a higher sentiment score.

Both Spa Hotels and Thermal Spa Hotels effectively satisfy the demands of luxury hotel customers, and all definitions emphasize 'wellbeing' and lifestyle activities in travel contexts (Kay Smith & Diekmann, 2017). However, in general, the distinction between Spa Hotels and Thermal Spa Hotels are the thermal water, and numerous studies have shown the important therapeutic role of the mineral elements and other chemical compounds presented in thermal waters (Harzy et al., 2009). Accordingly, travel and tourism concepts such as wellness tourism, health tourism, and spa tourism are sometimes used interchangeably. They consequently include diverse travel motives and activities (Uysal et al., 2016). This industry growth reflects generalized changes in consumer sentiments toward combining health and leisure activities and perceptions that spa treatments may promote (De la Hoz-Correa et al., 2018). Therefore, we accept that Spa Hotels and Thermal Spa Hotels customers visit those hotel categories because of distinct

motives and to practice different activities. The spotlight to management is that attention must be deposited in the Thermal Spa Hotels segment, once they are the ones with the least sentiment mean. Accordingly, the management revision must consider the whole framework.

Notwithstanding, Heyes et al. (2015) have study if a luxury hotel can compete without a spa facility and concluded that they would be at a severe disadvantage if they have no wellness facilities. Nevertheless, in our results, Rural Hotels without Spa facilities are the hotel category with the higher mean sentiment, although also the category with fewer reviews.

Additionally, to support the analysis that the reviews' sentiment depends on the hotel category, we dispose of the next Figure 4-7, analyzing the number of reviews during the year and per hotel category.

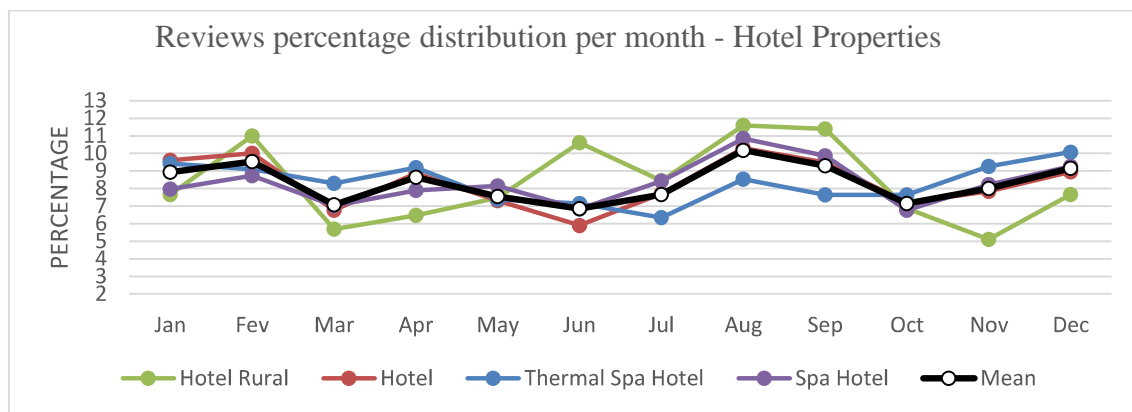


Figure 4-7 - Reviews percentage distribution per month - Hotel Category

We conclude that mountain hotel customers also tend to visit different hotel categories depending on the years' time. Once the reviews per hotel category are not distributed equally during the year, some meaningful information is observed.

First, Rural Hotels have a higher percentage of reviews in June, being the only category that grew on that date. However, in November, this category is practically the only one with a downward trend, and March and April are months with lower percentages compared to the remaining categories.

Not surprisingly, Thermal Spa Hotels have fewer reviews in the summer season (July, August, and September). On the other hand, higher percentages of reviews in December and November.

Regarding Standard Hotels and Spa hotel's demand, they are more or less in accordance with the average demand numbers during the year.

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Further ahead, we present each category with their corresponding sentiment trend in the next Figure 4-8 to Figure 4-11.

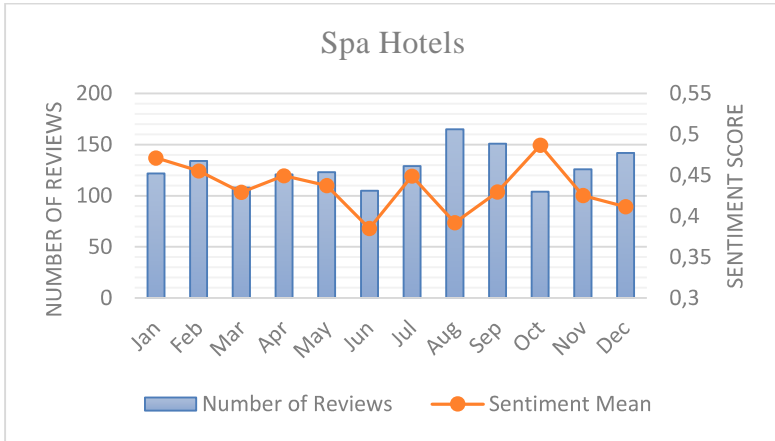


Figure 4-8 - Spa Hotels - Sentiment and reviews per month

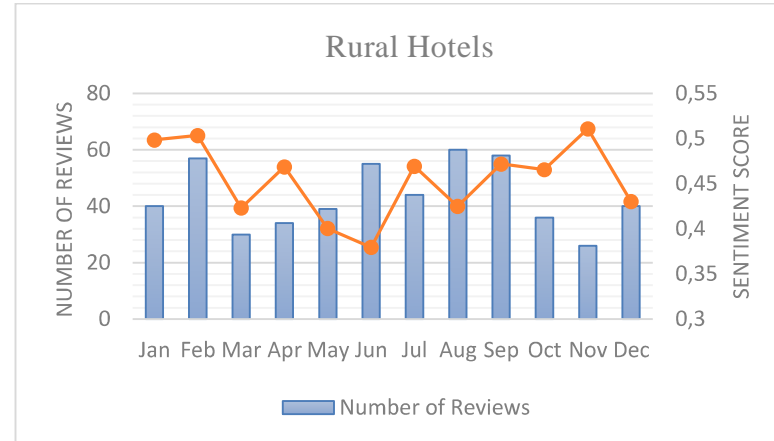


Figure 4-9 - Rural Hotels - Sentiment and reviews per month

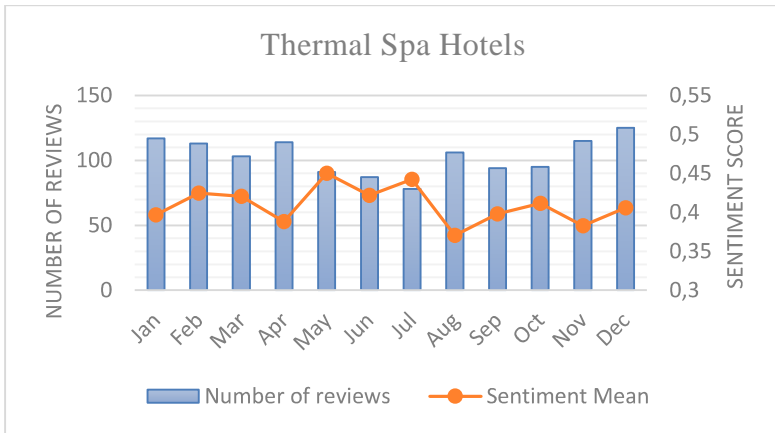


Figure 4-10 - Thermal Spa Hotels - Sentiment and reviews per month

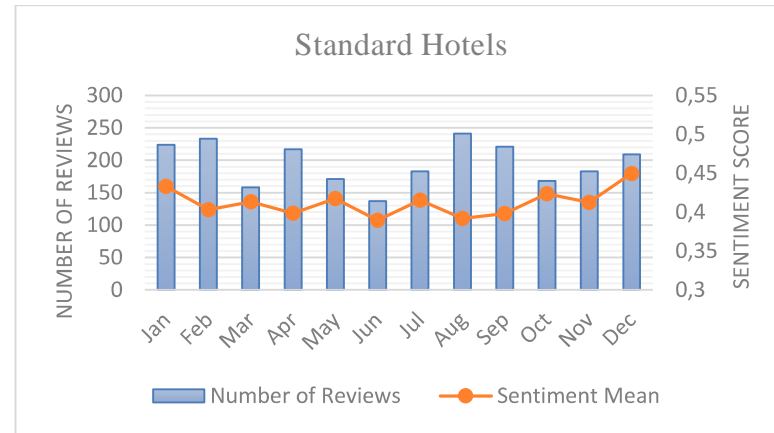


Figure 4-11 - Standard Hotels - Sentiment and reviews per month

The following explanations are derived from the observation of the previous Figure 4-8 to Figure 4-11.

First, the previous Figure 4-8, correspondingly to the Spa Hotels:

- The higher sentiment score is observed in October, although it is also the month with fewer reviews.
- The lower sentiment is observed in June, even if with the second low number of reviews.

Second, the previous Figure 4-9, correspondingly to the Rural Hotels:

- The higher sentiment score is observed in November, although is also the month with fewer reviews.
- The lower sentiment is observed in June, even with a significant number of reviews.

Third, the previous Figure 4-10, correspondingly to the Thermal Spa Hotels:

- The higher sentiment score is observed in May, and this month is also the third one with fewer reviews.
- The lower sentiment score is observed in August, and this month, the number of reviews is near average.

Fourth, the previous Figure 4-11, correspondingly to the Standard Hotels:

- The higher sentiment score is observed in December, and this month, the number of reviews is near the average.
- The lower sentiment is observed in June, and this month is the one with fewer reviews.

To highlight is that except for the Standard Hotels, all the remaining hotel categories score higher sentiment in the month with fewer reviews. In conclusion, the smaller number of customers they have lodged in the house, the more satisfied they are.

To Spa Hotels and Rural Hotels, October, and November, are respectively those months. Those months characteristics are possibly affected by seasonality, usually considered a problem because of the inefficient use of available facilities throughout the year and the variability of prices for products and services (Vergori & Arima, 2020). Past studies from Johson, Lervik Olsen, and Wallin Andreassen (2009) find it is crucial to balance service quality and price to improve enlightening experiences. Although, to Thermal Spa Hotels, the highest sentiment and the lowest number of reviews are in July, in a “peak season”. However, as previously concluded, Thermal Spa Hotels have fewer reviews in the summer season, and its peak season is in December and November. Admittedly, the price may be one reason for higher sentiment in the months of fewer customers. However, one of the other reasons may be itself the unique experience of fewer customers, because uniqueness as a functional attribute significantly contributes to the holistic experience, which helps maximize tourists’ enjoyment during their stay and long-lasting place attachment (Prayag & Ryan, 2012). Additionally, as hospitality services involve relatively more prolonged interactions between customers and employees, those present uncommon opportunities create relationships, from where these relationships often contribute to customers’ positive experiences (Hur et al., 2015).

4.2.3. Nationality

Travelers who post reviews in TA are 75.41% from Portugal, and 24.59% are from foreign countries. From 24.59% of the foreign market, 14.11% originated from Europe, 8.30% from the Americas, 1.34% from Asia, 0.55% from Oceania, and 0.29% from Africa (Figure 4-12).

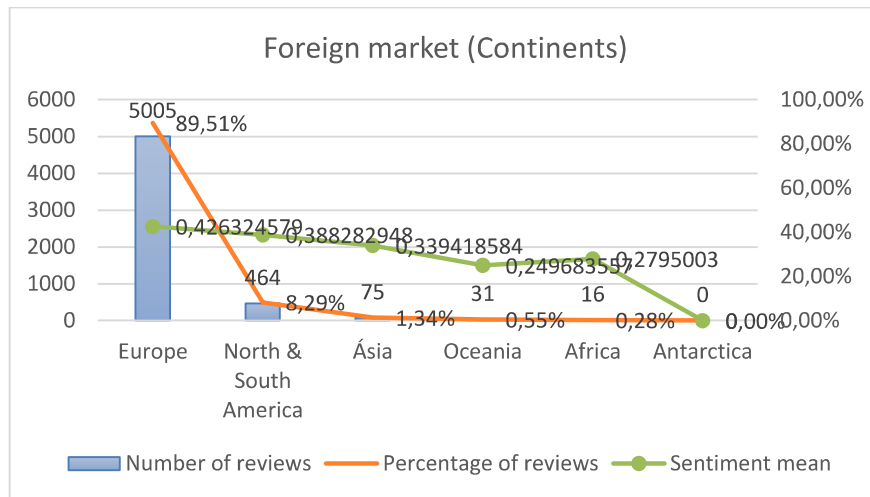


Figure 4-12 - Foreign market - Continents

Most foreign reviews are from Europe, and between different regions, the average sentiment diverges. Those results support that customers' diverse cultural backgrounds and languages can produce different behaviors following product and service (Chen et al., 2012). Our results show also that the reviewers at a higher distance, like Oceania, tend to leave lower ratings to the hotels as defended in the study of Gao, Li, Liu, and Fang (2018). Most of the travels are domestic (Figure 4-12), which is a limitation in our results. However, it is also perceived that Europeans are travelers with a higher sentiment score. Then the North & South Americans are the second most happy, then Asia, Africa, and at last Oceania.

Liu, Teichert, Rossi, Li, and Hu (2017) have also found that travelers from diverse languages differ considerably in their attention to various hotel attributes' in determining their rating for hotels. Therefore, the importance of segmenting hotel customers in terms of nationality is tremendous when analyzing the hotel industry's preferences and satisfaction. Besides, if hotel managers are not conscious that nationalities play a determinant role in designing satisfaction enhancement programs, multiple problems could be present when implementing them (Martín et al., 2020). Travels are in significant part from Portugal, and among the foreign travelers, Brazil, Spain, the United Kingdom, and France are leading the demand (Figure 4-13).

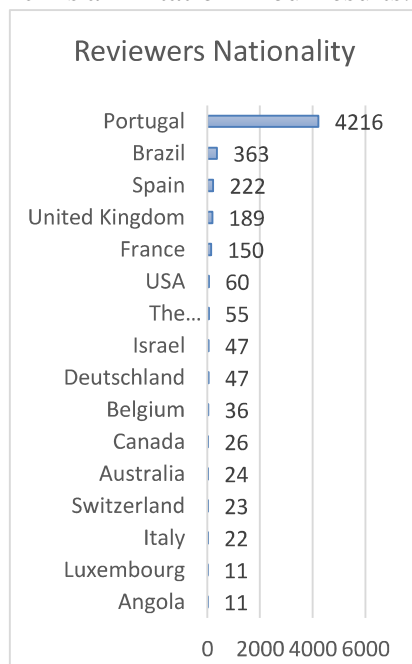


Figure 4-13 - Reviewers Nationality

What satisfaction is perceived through online reviews from customers in mountain hotels?

To complete the previous observations, we dispose of the following Figure 4-14 that illustrates the world's reviews' original distribution.

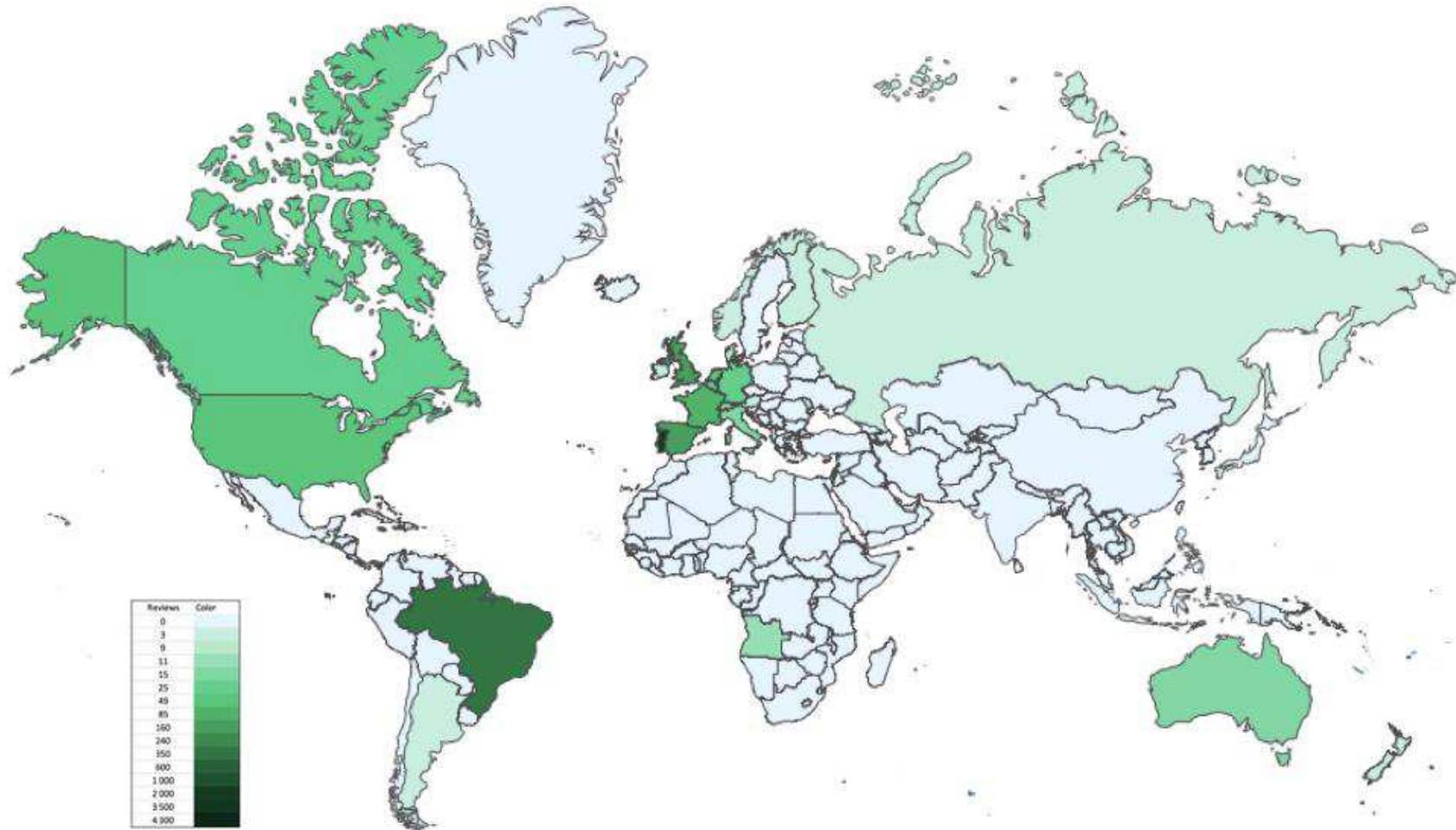


Figure 4-14 - World reviews distribution - World

4.2.4. Sex

To foreword analyze if the sentiments expressed in the review are dependent on the sex of the reviewer, we present some demographics along with some observations. We start with Figure 4-15, correspondingly to each sex's percentage within the analyzed sample and with each sentiment score.

DISTRIBUTION AND SENTIMENT MEAN

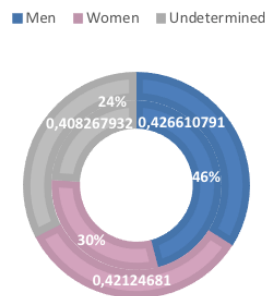


Figure 4-15 - Percentage and Sentiment - Sex

The demographic analysis of Figure 4-15 determines that, based on their declared first name, males are the most presented sex in the reviews representing 46%, and females represent 30%. Finally, 24% of the reviews are with undetermined sex.

Males mean sentiment is higher than females ($0.4266 > 0.4212$), higher than the average, and higher than those with undetermined sex ($0.4266 > 0.4082$). Females' sentiment is lower than the male sentiment and higher than the undetermined sex. Besides, customers with undetermined sex tend severely to have a significantly lower sentiment. Accordingly, the sentiments expressed in the review are dependent on the sex of the reviewer. Therefore, our study outcome supports Yoo & Gretzel (2011) findings once their results indicate that males are more motivated to ease their negative feelings while females show stronger motivations to help the company. In accordance, the sentiment score results increase to males. In addition, Thelwall, (2018) assumes that males reviews might be more balanced by attempting to be professional with both positive, and negative points in all reviews, and then this would make the prediction of sentiment more difficult.

Following the previous observations, we present Figure 4-16, which corresponds to the sentiment from each sex over the year.

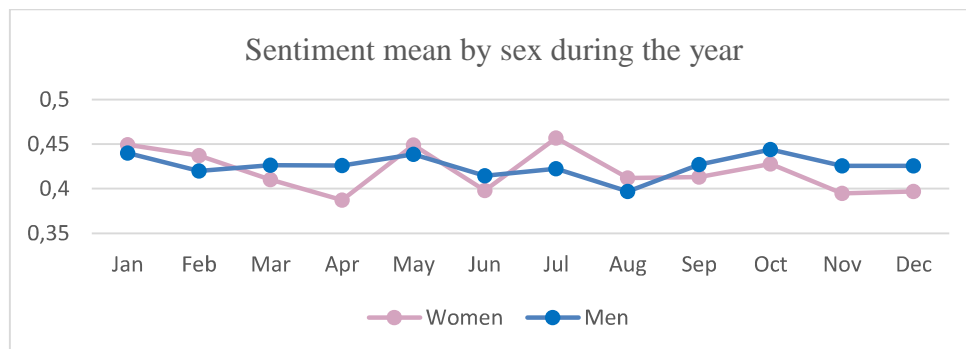


Figure 4-16 - Sentiment of each sex - Month

The average sentiment per sex might diverge throughout the year, as illustrated by Figure 4-16. Compared with males, females have more fluctuate sentiments throughout the year. Their higher sentiment is perceived in July, and the lower sentiment is observed in April, the Easter period. Additionally, June, November, and December are the months with the lower sentiment. Curiously, December is also a month distinguished through a period of the year event known as Christmas. Both events are strongly related to food services, and once the quality of food, price, and the buffet is more influential among females (Franco et al., 2016), this determinant may be the reason for the dissatisfaction in those months.

The study results of Thelwall, (2018) have also offer evidence that lexical sentiment analysis algorithms have gender biases, detecting more strong positive and negative sentiment from females than from males. However, this issue should not be exaggerated because the gender differences are not large. Therefore, the reason pointed before might be, in fact, the correct context of the results. Although, extended conclusions when the results are of small differences may lead to incorrect marketing conclusions.

Figure 4-16 also suggests that females have five months with higher sentiment during the year than males, and these months tend to be at the peak seasons, knowingly in this region during August and February. Regarding the opposite sex, males get higher sentiment during seven months of the year, and contrary to females, males tend to have higher sentiment in months adjacent to the low season as of October or March. The higher sentiment is in October and the lower sentiment in August, the moment of the high season during the summer. Accordingly, between males and females, we found that January and May are the second and third months of higher sentiment mean.

In the following sentences, we look at the worst three months sentiment mean from each gender:

- Females' worst three months average sentiment: April, November, and December.
- Males worst three months average sentiment: August, June, and February.

Dependent on the previous observations, we suggest hotel managers should assess needs based on their customers' sex to help in designing a compelling product mix (Franco et al., 2016).

4.2.5. Online Travel Experience

To analyze if the sentiments expressed in the review depend on the online travel experience that the reviewer has in TA, next, we present some demographics along with some observations.

From two kinds of reviewer experience: online and offline, we have collected the online experience. The offline experience is defined as the number of cities the reviewer has visited (Hong et al., 2016). The online experience is defined as the number of contributions in SM (Gao et al., 2017). In accordance, the TA's online experience is estimated by the number of contributions, which equals the total amount of reviews, ratings, forum posts, and photos a reviewer has posted. Therefore, this variable reflects the participation of a reviewer online (Gao et al., 2017).

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Accordingly, the following descriptive statistic of the online travel experience in Table 4-4 determines that our sample's minimum number of contributions was 1, and the maximum was 67094. Consequently, each reviewer has, on average, 172 contributes, and the standard deviation is 140.78.

Descriptive Statistics of variable – Online Travel Experience				
	Mean	St. dev.	Min.	Max
Contributions	172	140.78	1	67094

Table 4-4 - Descriptive Statistic - Online Travel Experience

Figure 4-17 represents each reviewer depending on the number of contributions derived from the extracted variable and the review's sentiment.

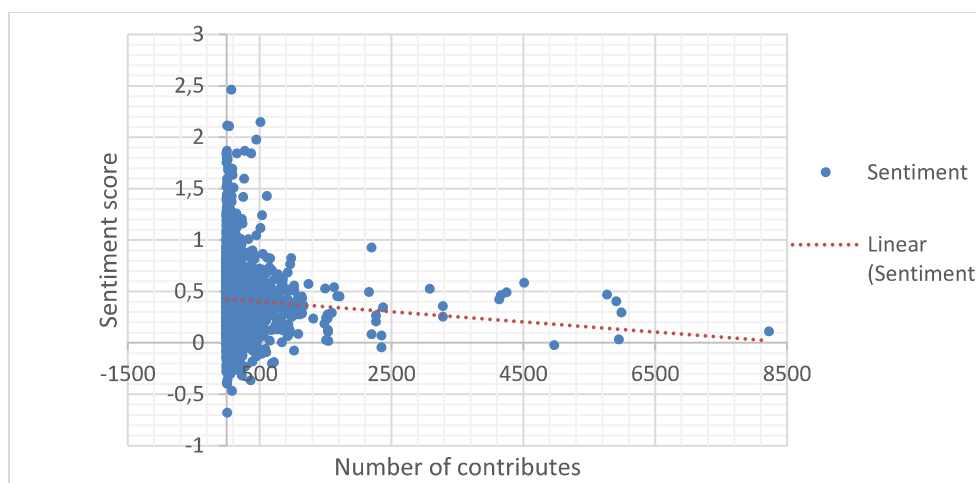


Figure 4-17 - Sentiment per number of contributes (Overall sample)

Initially, we included a review with 67094 contributions marked as the reviewer with the largest number. However, we considered the value to be too atypical and excluded it from the final results because of forcefully dispersed effects.

Figure 4-17 allows us to understand that both height sentiments are found in reviewers between 0 and 500. Besides, the linear sentiment tends to have lower sentiment if the number of online interactions (contributes) increases. Therefore, the sentiment is dependent on the customer's number of interactions online. The sentiment score depends on the online travel experience of each customer and therefore, supports Yu et al.'s (2017) study, which argues that travelers rank their experiences distinctively because they have varying background experiences.

Once a significant part of the reviewers (5384) had between 0 and 500 contributes, next we present Figure 4-18 to confirm if online travel experience influences sentiment, we present Figure 4-18 to generalize results.

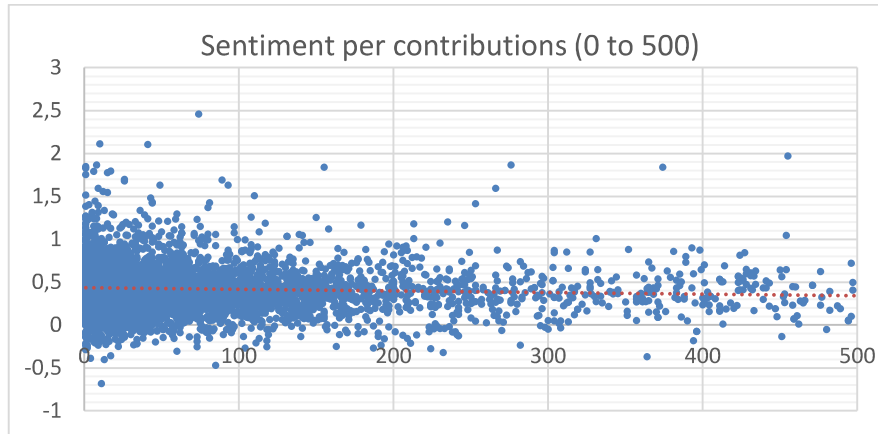


Figure 4-18 - Sentiment per number of contributes (0 to 500)

Figure 4-18 contributes to confirming that the linear sentiment tends to have lower sentiment if the number of online interactions increases. This confirms the theory of Khorsand et al. (2020) which defend that experienced travelers ranked lower than new ones because the experienced travelers are probably more realistic than the new ones.

4.3. Qualitative Analysis

Towards Maxqda, we managed two groups of reviews to analyze both negative and positive sentiment. Given this, we have composed two major codes to input the categories designated by the twofold method (word frequency and previous research and theory - see Table 2-4 for more details). These codes are named:

- Expectations exceeded;
- Unmet expectations.

Through the qualitative analysis that involved reading each review, the process aimed to unveil the reasons for these specific customers' (dis)satisfaction.

What satisfaction is perceived through online reviews from customers in mountain hotels?

Figure 4-19 illustrates the map of the subcode network from the category's expectations exceeded and unmet expectations.

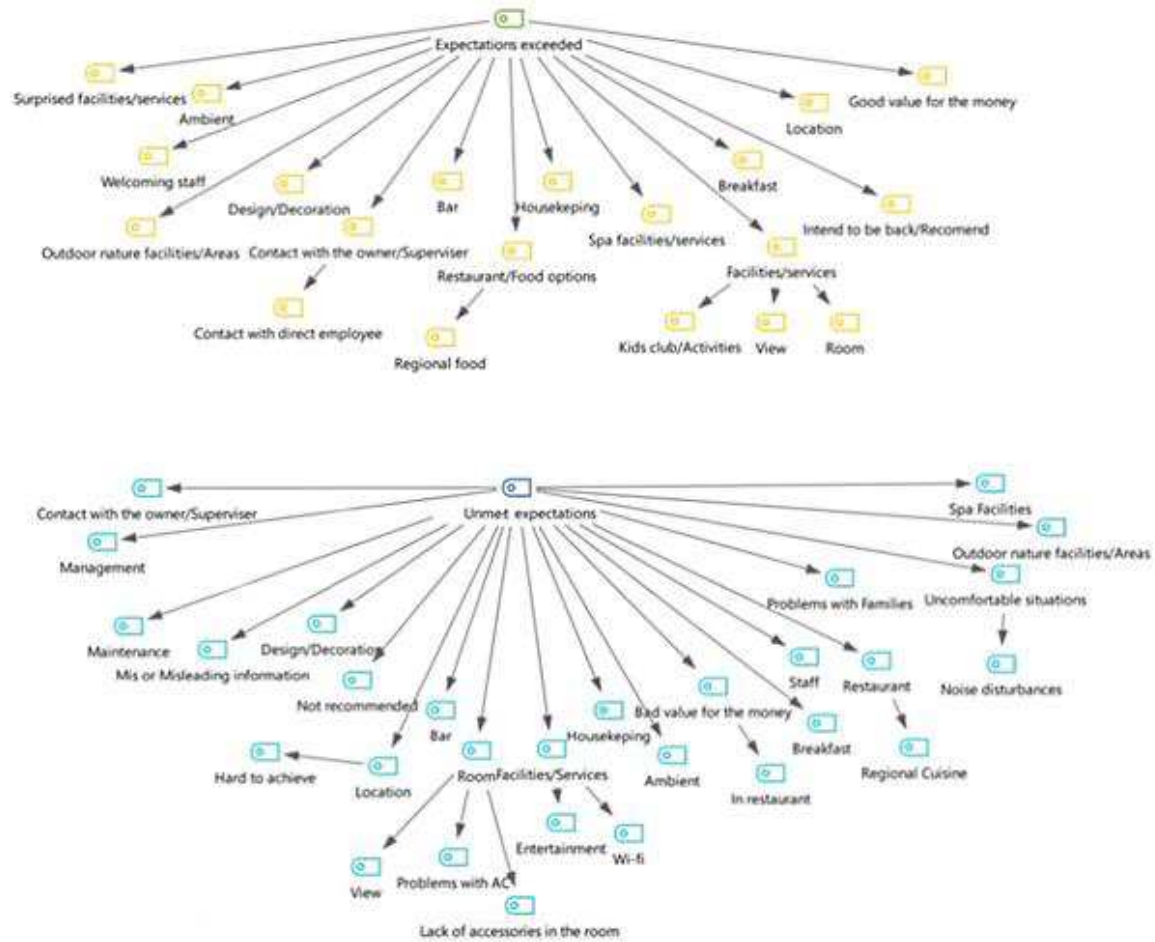


Figure 4-19 - Subcode network map - Expectations Exceeded and Unmet Expectations

The perspective of this study includes (1) Customer verbal evaluation of the experience (e.g., “the staff was very friendly”); and (2) Expression of possible future actions (e.g., “I will recommend this hotel to my friends” or “I will not return in the future”).

Through this method, this study took a broader comprehensive perspective, an approach in accordance to Xiang, Schwartz, Gerdes, and Uysal (2015), who assumes by this way would have a better chance to capture the complex, idiosyncratic nature of personal experience and thus increase the understanding related to the customers' overall satisfaction with a hotel property.

4.3.1. Expectations Exceeded

This section presents the main findings into the category expectations exceeded (Figure 4-20).

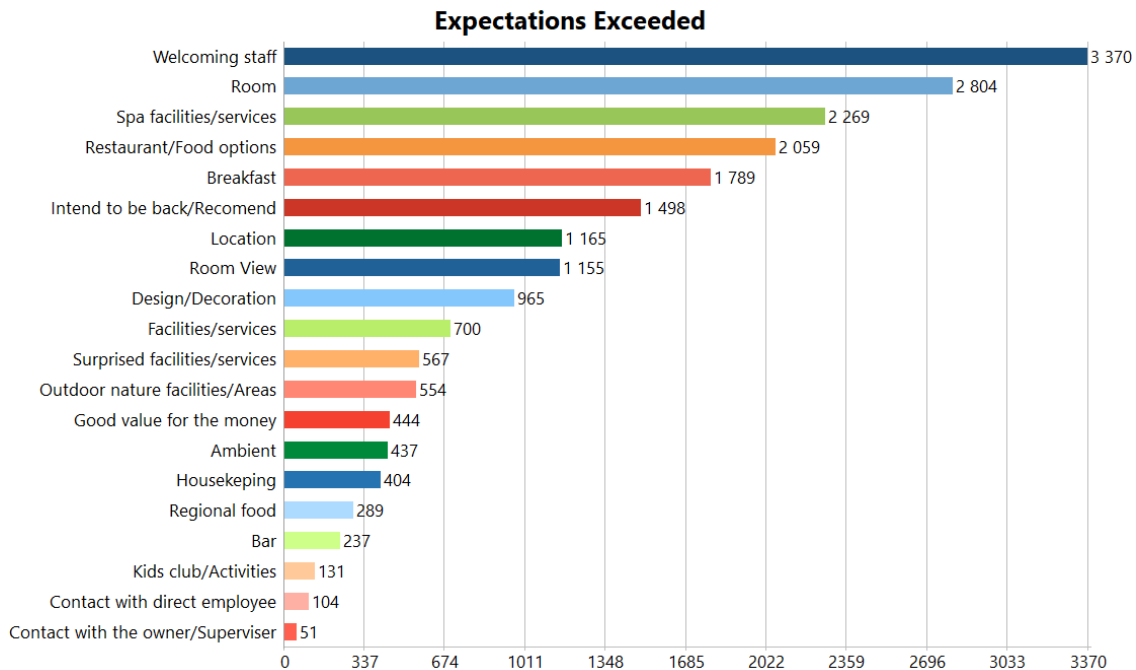


Figure 4-20 - Category - Expectations Exceeded

Similar to Zhou, Ye, Pearce, and Wu (2014), which classified twenty-three specific hotel attributes, we have also identified specific hotel attributes. In detail, twenty codes were identified to customers with expectations exceeded. In order of importance, the most coded segment, therefore, the most essential and popular code to the satisfied customers, the ones that the expectations ended exceeded, is first, the "welcoming staff", and second, the "room". Consequently, our results are in line with the discoveries of Guo, Barnes, and Jia (2017), which identified room experience and service quality as the most critical dimensions since those core products deal precisely with what the customer receives from the acquisition and how the customer receives from the acquisition (Xiang, Schwartz, Gerdes, et al., 2015).

Then, the most popular code is "pools & spa facilities/services". The importance of this category during the analysis stands out due to their diverse, relevant results (see the above mentioned Table 4-1), each extends the emphasis on the importance of this category. This outcome result is aligned with the study of Matzler, Renzl, and Rothenberg (2006), who also indicates the wellness areas as a critical determinant in hotel satisfaction. The growing trend of wellness activities is not exclusive to the mountain tourism destination, and Stukkin, Chang, and Bicksler (2018) also argue that spa and health tourism activities represent a valuable market segment in the global tourism sector. Similarly, Ahania et al. (2019) defend that the development of the tourism activity-based has grown in alignment with spa tourism's popularity, rather than destination-specific travel.

However, Matzler, Renzl, and Rothenberg (2006) study were based on data taken from twenty-five hotels of a wellness interest group in Austria. Their sample selection was bias, and evident, resulting in the importance of wellness areas as a determinant of core business strategy. On the contrary, if our results support wellness areas as an essential determinant, our sample resulted from unbiased selection once each member of a population is equally likely to be chosen, representing the population as a whole.

Conceivable, as a brand, a mountain destination has its unique, distinctive tourism segment. The destination's most distinctive attributes differ depending on the segment and explain tourists' satisfaction and behaviors (Truong et al., 2018). Therefore, the destination's overall image is a mediator between its brand associations and tourists' future behaviors (Qu et al., 2011). In accordance, the study of Cherapanukorn and Charoenkwan (2018), which concerns customers of a hotel in Chiang Mai, a city in the mountainous north of Thailand, shows us that the swimming pool is also the priority for foreign customers. Accordingly, we assume that mountain tourists' satisfaction and behaviors are closely associated with swimming pool activities and wellness activities. Therefore, this determinant attribute is undeniable from the mountain hotel satisfaction experience and one of the core values of this hotel category.

The three core services to customers of mountain hotels are the staff, the room, and pools & spa facilities/services, as previously identified. Then, the next essential determinants are, at number four, the "restaurant", at number five, the "breakfast", and number six, the "location".

Restaurant and breakfast as the four and five most important determinants of customer satisfaction are estimated results, considering that food is positively related to satisfaction (Khoo-Lattimore & Ekiz, 2014; Lin & Mattila, 2010). Not surprisingly as well, location is the six most crucial determinant to customer satisfaction. These are also estimated results because, according to the study by Kandampully and Suhartanto (2000), location is a critical dimension of hotel image attributes, and as a consequence, one of the essential factors considering customer intention to repurchase, recommend, and exhibit loyalty. To Chaves, Gomes, and Pedron (2012), this term is also the most frequently used to qualify customer satisfaction concepts regarding hotels.

Then, impressively, the code "room view" stands out, being the eight most popular. According to Liu et al. (2013), the room attribute also involves many criteria, as room view, but are other criteria as "room decoration", "room amenities", "design", "brightness", and "size of the room". However, we have found that mountain hotel customers highlight the room view as the most essential from the previous term attributes. An outcome results in line with Khoo-Lattimore and Ekiz (2014) discovery, which also states that hotel managers should use the "view" as a potential promotion point. This is in accordance with the accelerated urbanization that has been accompanied by a contraction in the green spaces (Wolch et al., 2014), resulting in a decrease of accessible urban green spaces, and quickly travelers have begun to turn to alternative areas for their recreational needs (Rupprecht & Byrne, 2014). Accordingly, once these localized mountain regions offer nature tourism, and the beauty and attractiveness of this systems are what makes the tourist offer appealing (Buffa et al., 2018), a delightful room view is

a determinant of great importance, and therefore a determinant highly connected to customers with expectations exceeded.

Following the core determinants that customers of mountain hotels express as essential to accomplishing their expectations, our analysis has also identified more than twelve codes that also drive customers to exceed expectations. The last number of codifications far exceeds the following codifications (see the above mentioned Figure 4-20). Therefore, the previous codifications significantly exceed the importance of the following.

At number nine, the code "design and decoration" shows it is also one determinant of most significant interest. Following Saleh and Ryan (1992), which defend the hotel's aesthetics, interior, and exterior are of specific concern to customers. At number ten were identified the code "facilities/services", a common determinant who are mostly documented and defined by Qu, Ryan, and Chu (2000) as "variety & effective services", "business-related services" or by Zhou, Ye, Pearce, and Wu (2014) as "hotel public facilities" and Gu and Ryan (2008) as "condition of facilities". At number eleven, the code "surprised facilities and services", ahead of codes as "housekeeping" or "bar", perhaps because those determinants are expected as standard services. In the highlight of this evidence, we show mountain hotel managers that they should deposit value in the concept of new and unexpected services and experiences once the association between customer experience and satisfaction is strong. Therefore those two domains of consumer behavior are inherently connected Xiang et al. (2015). At number twelve, the code "outdoor nature facilities" was also positively identified by customers as a significant determinant to drive mountain hotel customers to exceed expectations. Not surprisingly, once mountain hotels are usually inserted in protect mountain areas due to national or regional parks, natural reserves, and valuable natural sites (Paunović & Jovanović, 2017) which the tourism demand has been increasing in recent years (O'Neill et al., 2010).

At number thirteen, the code "good value for the money", an unavoidable determinant of customer satisfaction in several studies (Zhou et al., 2014), as Choi and Chu (2001) unveil as one of the most prevalent factors. Therefore, the price plays a significant role in shaping customers' perceptions regarding the worth and quality of the hospitality product they are consuming (Matzler et al., 2006). At number fourteen, the code "ambient", a determinant also identified by Choi and Chu (2001) as the 'comfortable ambiance of the hotel'. At number fifteen, the code "housekeeping", a determinant also unveiled in the study of Xiang et al. (2015), who found this factor ("clean") as the second most discussed determinant attribute, while in our study, this determinant is less critical. However, their study sample was derived from the 100 largest U.S. cities, and therefore the housekeeping work is a lot different. Once in urban cities, the hotels have numerous rooms that make the housekeeping much strenuous comparing with generally the few rooms in mountain hotels. At number sixteen, the code "regional food", this code is not regularly identified in other studies, although, accordingly with the region where the hotels are located, we find high quality endogenous products (Estrela Aspiring Geopark, 2017). Therefore, this determinant becomes vital in association with the brand image of the place.

At number seventeen, the code "bar" was also identified according to Radojevic, Stanistic, and Stanic (2015), who claims that a bar located within the hotel area has significant positive associations with customer satisfaction. At number eighteen, "kids club", also

shows it is a determinant that leads mountain hotel customers to exceed expectations. At last, the codes “contact with employee” and “contact with owner/supervisor” allow us to understand better the service quality organized by the staff and promoted by the owner. This last code implies that those customers are positively influenced by the presence of the owner or the supervisor.

Next, from conducting a word count process within these codes, we mention some of the words more frequent or combinations of words that, in the case of the last word count process, were stemming, reducing words to a single root word (e.g., “feelings” is reduced to “feel”), and the resulting sentences are constituted by more than one word (Calheiros et al., 2017). This overview brought additional knowledge into the corpus analysis (see Appendix A for more details).

First, in the code “welcoming staff” we have found that the most frequent words are “friendly”, “attentive”, or “professional”. In the code “room”, we found words as “comfortable”, “spacious”, “clean”, “view”, “modern” or “decorate”. An outcome in accordance with S. Liu et al. (2013) study, previously highlighted. In the code “pools and spa facilities/services”, beyond the common words “pool” and “spa”, we found “indoor and outdoor pool”, “sauna”, “heated”, “gym”, “jacuzzi”, “turkish bath” or “hot”. As Matzler et al. (2006) describe, which also highlight determinants as “arrangement and composition of wellness area” as well as the “competence of employees in the wellness area”. In the code “restaurant”, we have found that customers expect “a lot of variety”, “quality” and the word “buffet” is a trendy term too. Notwithstanding, in the code “breakfast”, the customers with expectations exceeded anticipate, “variety”, “complete”, “fresh”, or “cheese” as the terms of much frequency in reviews. In light of these statements, it is safe to recommend that hotel managers should provide a wide variety of selections when it comes to food (Khoo-Lattimore & Ekiz, 2014). Lee and Whaley (2019) study has also highlighted the importance of food quality, food flavor, and server efficiency in dining satisfaction.

In “location”, the terms that stand out are “mountain”, “close”, or “access” and we have also perceived customers' satisfaction to be in a hotel “very close to the Serra da Estrela” or “close to the top of the mountain”. A context similar to some of the twenty-three attributes which Zhou et al. (2014) assume influence hotel customer satisfaction, as “location close to attractions”, “close to city center”, and “accessibility”. In the code “room view”, the words that stand out are “beautiful”, “mountains”, and “stunning”. Terms expected once the complex universe of a mountain destination is undeniably connected with nature.

In “facilities/services”, the terms that stand out from the others are “parking”, “free”, “areas,” or “car”, as Xiang et al. (2015) identified in their study. In “surprised facilities”, the words that stand out are “water”, “afternoon”, “activities”, “tea”, and “available”. Here, we have also observed context sentences as “include in the price”, “available in the afternoon”, or “hot tub on the” room (see Appendix A). In the “outdoor nature facilities”, customers reveal to be happy “in the middle of the” “gardens”. In “good value for the money”, the words that stand out are “worth” and “price”. In accordance, customers' general expectation is that a higher price should yield a higher service (Matzler et al., 2006).

In "ambient", the most frequent sentences are "place to relax" by the "pools" and "mountains", or the "calm and relax atmosphere" are the determinants that drive customers to exceed expectations. In "housekeeping", the outcome permits us to conclude that beyond what customers want from the housekeeping (clean or hygiene), they want them, preferably in the "rooms" and "facilities". In "bar", the essential association is "a drink by the pool". Therefore, the conclusion is that the pool and bar are strongly associated. In "kids club", we found words as "games", "room", "activities", or "animation". In "contact with employee", the terms that stand out are "staff", "friendly" or "restaurant", highlighting customers' long and direct experiences with the staff are emerging. In the "contact with owner/supervisor", the terms that stand out were "owners", "director", "friendly" or "manager".

Generally, the past studies expose an amalgam of larger or smaller determinants depending on the scope they intend to analyze. However, those determinants are very most similar, and room quality and attributes, clean facilities, efficient staff, service and facilities quality, as well as location and food and beverage quality, are somehow generally the most top influential determinants identified (Guo et al., 2017; Xiang, Schwartz, Gerdes, et al., 2015; Xu & Li, 2016). Although, results may vary, resulting in different importance attributed to each determinant. This can depend on the sample analyzed as understood by the Matzler et al. (2006) study, which has attributed spa services as an essential determinant to lead hotel customers to satisfaction. Nevertheless, other generalized samples from Khoo-Lattimore and Ekiz (2014) and Saleh and Ryan (1992) also assume that pools and spas are essential to hotel customers.

Considering that our study's sample and scope was to understand what most satisfies mountain hotel customers, we have found specific determinants that past studies of generalized hotel customers have not identified or describe at a different level. Therefore, this study's particular determinants are, first, the pool services and spa facilities. This determinant tends to be explained by the hotel's location, once the "beach", a determinant described by Berezina et al. (2016) is not in an offer on those hotels. The other determinant is the room's view, the scenarios of great dismemberment from the hotel. This determinant is of significant influence to lead satisfaction to this customer and, particularly, dispose of the room.

The other determinant that is not generally found in past studies and increases satisfaction to this specific customer is the unique hotel ambient and the hotel's outdoor natural facilities and spaces. Those results support the idea defended by the study of Walls, Okumus, Wang, and Kwun, (2011), who assume that hotel guest experiences constitute both physical environment and the human interaction dimensions. Therefore, a hotel environment's physical natural setting evokes the expected experience and long lasting memories in the customers' minds. Regional food is also one of the particular determinants exclusively influential to those hotel customers. This may result from tourists' tendency in rural environments to seek to purchase local food, once the food is a significant part of the total rural tourism (Skuras et al., 2006).

At last, the kids club is also a particular influential determinant of satisfaction to mountain hotel customers. Tourism supply has become increasingly family tourism orientated. Therefore, the growing magnitude of family tourism has implied changes to tourism.

Children have, thus, become a separate category of consumers who have their own needs, and these needs should be addressed by hotel managers (Schänzel & Yeoman, 2015). Therefore, the quality of interaction available to children and the provision of family-oriented programs in hotels is an essential factor (Khoo-Lattimore et al., 2015).

4.3.2. Unmet Expectations

This section presents the main findings into the category of unmet expectations (Figure 4-21).

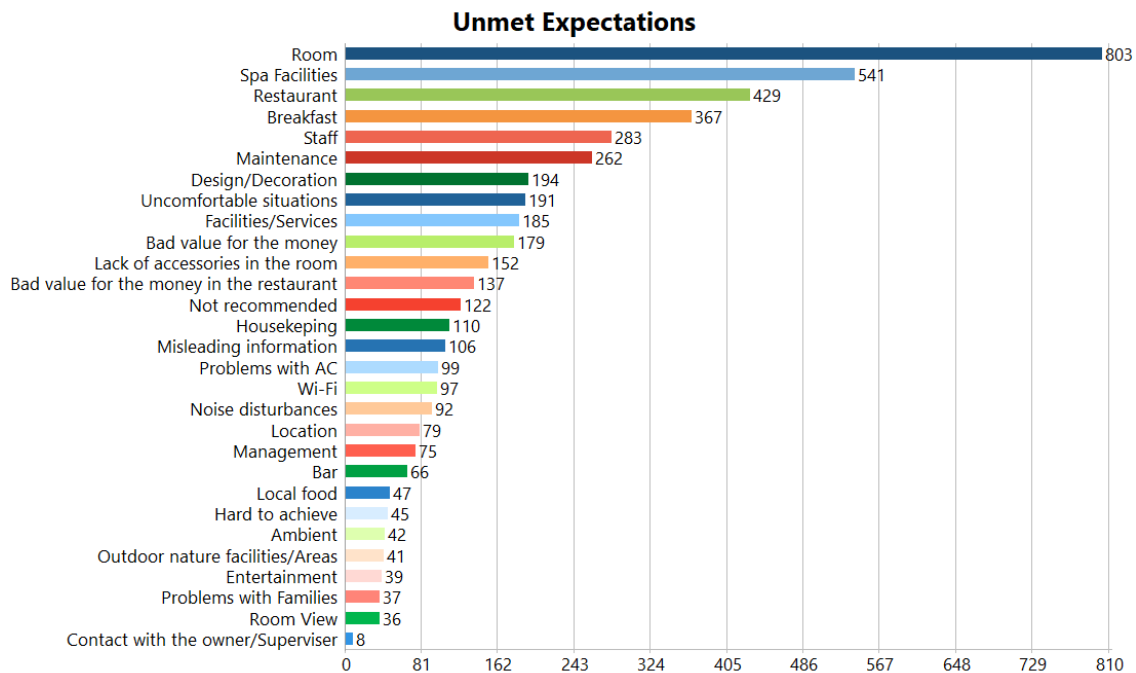


Figure 4-21 - Category - Unmet Expectations

The most popular segmented codes among dissatisfied customers with unmet expectations are not too different from the satisfied customers who have found their expectations exceeded. From the most important codes, just a few of them diverge in their importance. In summary, code categorization showed several categories common for positive and negative reviews. However, some differences were found in the categories and frequencies (Berezina et al., 2016). Therefore, as Xu and Li (2016) find, the determinants that create either customer satisfaction or dissatisfaction toward hotels can be different.

Accordingly, in addition to the twenty codes within the category expectations exceeded, nine new codes come out because went recognized to the customers with unmet expectations and were not to customers with expectations exceeded, e.g., “misleading information”, “maintenance”, or “problems with air conditioning in the room. The absence of these nine codes in the category expectations exceeded shows that these determinants are not factors that lead those customers to exceed expectations. However, when these determinants are triggered, they lead customers to unmet expectations.

This research results show that “room” appearing first and “pools and spa facilities” at second increase the idea that the hotels' core value in mountain destinations are these determinants. Notwithstanding, this category's primary determinant was "room" and not "welcoming staff", as we unveil at the category of customers with expectations exceeded. Given these results, customers with expectations exceeded attribute more importance to the staff than the customers with unmet expectations. Those results are in line with Berezina et al., (2016) studies, which have unveiled that happy customers commit to their hotel stay's intangible viewpoints, such as staff members, more frequently than unsatisfied customers. In contrast, dissatisfied customers often mention the hotel's tangible elements. Additionally, in this respect, the elements (e.g., room, spa facilities, restaurant, breakfast, or staff), that provide expectation exceeded have also potential to drive unmet expectations, as Kuhzady and Ghasemi (2019) defends.

In the sixth place appears the first new code, "maintenance". Therefore, from all new codes that went recognized in unmet expectations and that went not in expectations exceeded, the code maintenance is the most impacting to mountain hotel customers. A similar outcome to the Xiang et al. (2015) findings suggests that those hotels that failed to satisfy customers do so mostly with issues related to maintenance and cleanliness-related factors. Then per order, the most impacting new codes are “uncomfortable situations”, “lack of accessories in the room”, “bad value for the money in the restaurant”, “misleading information”, “problems with air condition”, “wi-fi”, “noise disturbances”, “location hard to achieve”, “entertainment” and finally, “problems with families”.

One of the new codes comes from codifying the code "bad value for the money" because we have identified an interesting aspect in the restaurant. As Xu and Li (2016) did regarding wi-fi or noise disturbance as a negative determinant to customer satisfaction. Therefore, we create the code "bad value for the money in the restaurant". Surprisingly, this code counts 137 frequencies, indicating that the restaurant prices are a sensitive subject in this market, considering that the general hotel code "bad value for the money" counts 179 times.

Based on the code's position in Figure 4-20 and Figure 4-21, customers with expectations exceeded are most likely to recommend the stay to others positively, then customers with unmet expectations negatively recommend the visit to others. We also conclude that the “room view” is a significant determinant to exceed customers' expectations, but not so substantial to lead customers to unmet expectations. Finally, we have also concluded that both codes “outdoor nature facilities” and “ambient”, are more significant determinants to exceed expectations than to drive customers to unmet expectations. Those are three of the codes most singular to these customers. Then, it represents that they are more connected with satisfaction than with dissatisfaction.

Next, from conducting a word count process within these codes, we mention some of the words or combinations of words due to the additional knowledge it brought into the corpus analysis (see Appendix B).

Our results (see Appendix A and Appendix B) support the idea that the terms found in reviews from customers with expectations exceeded are significantly different from the terms found in the same code from the opposite pole category.

In the code “room” we found words as "small", "bathroom", "bed", "noise", "shower", "air conditioning", or “in need of refurbishment”. From these terms, the most common determinant in various studies is the “size of room” (Gu & Ryan, 2008; Matzler et al., 2006; Xu & Li, 2016). Similarly, in the code "pools and spa facilities", "small" represents the spaces' size problem again. Besides, the words that stand out in this code are also "water", "cold", and "the sauna and turkish bath", this last one, present in both categories (expectations exceeded and unmet expectations).

In the code “restaurant”, the term “dinner” is the most frequent. Therefore, it is the most important meal, and between “buffet” and “menu”, the most negatively impacting is the buffet. However, the same code is determinant to lead positive views into customers with expectations exceeded. Therefore, we conclude that buffet, despite very popular, is also a sensitive service that hotel managers should rethink. In the code “breakfast”, we find terms as “coffee”, “fruit”, and “juices”, terms in absence to the category of customers with expectations exceeded. Therefore, these determinants are not essential to lead customers to exceed expectations. However, these terms are linked determinants to drive customers to unmet expectations.

In the code "welcoming staff", the terms that stand out are "check-in", "friendly because of obligation", or "the only person at the". An outcome in line with He et al. (2017) discoveries, which defends that one of the determinants that customers complain about is check-in and check-out. In the code "maintenance", the most frequent term is "pool", "room", "bathroom", and "the air condition". Those terms allow us to understand where maintenance is required, i.e., pool, room, bathroom, and what the object requires repair (the air condition).

In the code "design/decoration", the words that stand out are "old", "dark", or "corridors". In "uncomfortable situations" the most frequent words are "pool", "noise", "room", "children", or "spa". These terms allow us to understand the terms most related to uncomfortable situations to customers with unmet expectations. Therefore, problems regarding noise provoked by children in the pools, spa, and rooms are concerns to refine.

The code "lack of accessories in the room" is an attribute found in Zhou et al. (2014) study, and for them, “amenities in the room” influence hotel customer satisfaction. Although our study only recognized this determinant at customers with unmet expectations when customers lack accessories or amenities in the room. Therefore, our results support that lack of accessories in the room drives unmet expectations, although “amenities in the room” do not drive customers to exceed expectations. In this code we have also found terms as "channels", "lighting", "tv", "shower gel", "coffee maker", "minibar" or "electrical outlet".

In the code "bad value for the money", the terms that stand out are "little", and again the term “buffet” shows it might be a sensitive subject to customers, leading them to judge this subject as expensive. As Xu and Li (2016), we have also unveiled wi-fi as a determinant factor of customer dissatisfaction, and they define it as “low signal, slow speed, or connection issue”. Our outcome result is similar ("weak", "signal", "free", "access", "for one device"), and supports that it is a determinant that drives unmet expectations to customers. In "housekeeping", we found words as "dirty", "room",

"balcony", "floor", or "the carpet in the". Those terms permit us also to understand where the customers are most likely to connect housekeeping needs ("room", "balcony", "floor", or "the carpet in the").

In "misleading information" the words "reservation", "booking", "asked", "website", "reception", or "pay" in accordance with one of the dimensions identified by Guo et al. (2017), "poor communication". Therefore, communication among clients is an essential factor in creating perceptions in the hotel online booking context. In "problems with air condition in the room", the most frequent words beyond "air condition" are "hot", "temperature", "night", "noise", or "cold". It is also perceived that the problems with air condition in the room are highly connected with noise disturbances. In addition, to Li et al. (2013), the air conditioning has lower satisfaction levels, following our results, once we have not defined this determinant to drive customers to exceed expectations. Although they also defend that higher performance in this determinant improves customer satisfaction.

In the code "noise disturbances" the terms more frequent are "room", "pool", "soundproofing", "heard", "night" and "the air condition". As Li et al. (2013) highlight, the term sound insulation is also one of the more attention by customers, giving a broader view of customer satisfaction factors. In fact, we have not identified sound isolation as a determinant that leads customers to exceed expectations but once found it here, and we conclude that poor sound isolation leads customers to unmet expectations. In the code "location", the words that stand out are "far", "car", "isolated", "away", "far from the center", or "far from the city". We can assume that mountain hotel locations far from attractions are a determinant that leads customers to unmet expectations. Therefore, it can negatively influence customer satisfaction if the destination is not "close to attractions", "close to city center", or easy to access. Accordingly, the actual hotel's site is an essential factor, and therefore, location influences the hotel's costs and revenues, impacting hotel profitability (Ben Aissa & Goaid, 2016). However, we have to consider that a suitable location can be subjective, considering different people prefer proximity to different amenities (Khoo-Lattimore & Ekiz, 2014).

In the code "management", we found the words "restaurant", "buffet", "food", "the lack of" or "be no one" "at the reception". Accordingly, and not surprisingly, the term buffet comes out as a term connected to bad management, and some of the remaining terms "restaurant" and "food" are also related to this service. It becomes clear that despite popularity, some arrangements in this service are in deeper need. In the code "bar", we see terms like "service be also rude" and that "service takes a little time" for "a 4-star hotel", "pool", or "prices". In highlighting these results, we can understand that the service and price negatively influence customers in the bar.

Following the code "location", we have defined a sub-code named as "location hard to achieve", and the terms that stand out are "road", "to get to", "difficult to find", "way", or "GPS". Khoo-Lattimore and Ekiz (2014) defend that hotel marketers should note that a great location means being in "walking distance" rather than "driving distance" to amenities. In the highlight of our results, we suggest that hotel managers assure customers of better road assistance methods.

In the code "ambient", the most frequent words are "pool", "people", "bar", "full of a child", "in the pool" or "noise". Those results permit us to understand where the ambient is most disturbing and whoever causes it. Notwithstanding, in the code "problems with families", the word "children" is the most impacting, also an expected result. In the code "regional cuisine", the highlight goes to the terms "in a region" or "so rich in" the "land of cheese", and "area no mountain cheese". Therefore, we can observe that customers recognize tourism cultural food but not perceived this determinant's quality. In the code "entertainment", we found the sentences "nothing to do" or "animation at night". Therefore, the highlight to hotel managers is to apply more value to those determinants once customers expect more than what has been offered.

In conclusion, analyzing all of the determinants and comparing those determinants influence with the determinants of past studies, we understood that variety of shops, outlets, and business-related meeting rooms, that was found by Berezina et al. (2016) and Choi and Chu (2001) as influential, are not meant to mountain hotel customers, once they were not significantly identified in our study.

Price and value are a current topic in several studies (Guo et al., 2017; Matzler et al., 2006). However, we have also added in this study that most customers who are dissatisfied with value and price express this dissatisfaction regarding the restaurant's food and service. However, value and price are also a feverish topic of discussion in the restaurant experience (Lee & Whaley, 2019), and therefore, pleasurable to expect that, when food is perceived as having high quality, customers' perceived price fairness of food will be increased (Konuk, 2019).

One of the other determinants that went scrutinized, as Choi and Chu (2001), is the air condition that mountain hotel customers also define with more evidence. Those problems become evident in those regions because of the high range of temperatures. Noise disturbances are also among the other determinants found by Xiang, Schwartz, Gerdes, and Uysal (2015) and Guo et al. (2017). Following our results, once tourists of mountain hotels attribute more significant value to good ambient and that most of them travel to be relaxed or to have a peace of mind. Therefore, this determinant becomes more influential to these customers.

At last, we face that the hotel location close to an airport is not crucial to mountain hotel customers, as Guo et al. (2017) describe. These because mountain hotel customers anticipate that an airport must be relatively far from the hotel due to the tourism region's physical conditions. However, our results add that a location hard to achieve is a significant concern to these customers.

5. Conclusions

The research problem that guided our work has asked what satisfaction is perceived through online reviews from customers in mountain hotels. The answers to this question fulfilled what our four objectives were:

- Establish the expectations of this specific customer;
- Understand how customers perceived mountain hotels;
- Unveil the reasons for the satisfaction/dissatisfaction of these customers;
- Bring advanced insights into future improvement applications.

Presenting mountain hotel customers' perspective, the present study extended the current body of knowledge in the hospitality industry and filled the gap in the limited number of empirical researches to understand those customers' satisfaction and dissatisfaction. The present work also brought advanced insights into future improvement applications raising new discussions about this type of client.

This study's theoretical implications imply the following contributions. First, this study makes successful use of SA to capture the influence of reviewers' most salient features, and overall, the results confirmed that the variables extracted (date of stay, hotel category, sex, nationality, and online travel experience) directly influence the customer's sentiment. A direct contribution to establishing the expectations of this specific customer.

Regarding the first variable, we have confirmed that the sentiment score presents a slight increase compared with the past ($2012 = 0.40 < 2019 = 0.44$). Besides, the results imply that, on average, the months with higher sentiment are October, January, July, and February. Therefore, customers were more satisfied during the winter (0.42) than in the summer (0.40), confirming the relation of dependency to snow conditions and contrasting to the tourism demand, once August and February were the most visit months. This results because of what the hotel offers and defines as the hotel product's branding image makes tourists satisfied in the winter, makes them satisfied in the summer. However, it is far different, and endorsing this factor is an application insight to mountain hotel industries present the following improvements. First, deliver better services in the months with the lowest sentiment and high demand because of the vast number of travelers. Second, analyze the reason for satisfaction in the months with the best rates among other months to expand it to additional months (Khorsand et al., 2020). Third, hotel operators must attribute a high level of importance to hiring a full-time executive artistic manager in the top management team to engage in innovation, combining local culture and the natural environment to design the service of the customers' needs (Cheng et al., 2016).

Regarding the hotel category, the hotel that guarantees the highest sentiment is Rural Hotels, which is also the hotel category with fewer reviews. The next hotel category with the highest sentiment score is Spa Hotels, then Standard Hotels, and at last, Thermal Spa Hotels. By documenting those hotel categories sentiment scores, we found that except for the Standard Hotels, the fewer customers they have lodged in the house, the higher the sentiment. Therefore, hotel managers must be precautious in balancing supply and demand to contribute to a more holistic experience. Besides, since rural tourism and

mountain tourism definitions are closely perceived, mountain hotel customers are nearby expecting facilities following rural tourism expectations. Accordingly, we encourage mountain hotels to design the hotel experience into the expectations of a rural tourism experience and better accomplish customers' expectations by depositing as well attention to the pool and spa services once it is an emerging service to compete in the hotel industry in particular in mountain hotels.

Regarding nationality, our results demonstrate that 24.59% of the reviews are from foreign nationalities, and therefore, 75.41% are Portuguese. The foreign nationalities most influential to this market is Brazil, Spain, the United Kingdom, and France. Besides, we have found that the Europeans (0.42) are the travelers with the higher sentiment score, then the North & South Americans (0.38) are second-most happy, then Asia (0.33), Africa (0.27), and at last Oceania (0.24). These results support Gao et al. (2018) discoveries, which found that cultural factors as nationality play an essential role in influencing online tourist ratings. Facing the diverse continents, we have also documented that the continents at a higher distance are the ones with the lowest sentiment. By reporting varied score sentiments from the customers' numerous regions, we support as well that the diverse cultural background and languages can produce different behaviors following which product and service (Chen et al., 2012). However, we encourage the next studies to individually analyze each country and compare results from the diverse nationalities to improve the outcomes once the sample is derived in most part from domestic customers.

Regarding the sex, males (46%) are the most presented sex in the reviews, females (30%) the least, and the undetermined sex is present in 24% of the reviews. Besides, the female sentiment is lower than the males ($0.4212 < 0.4266$), but those with undetermined sex (0.4082) tend to have a significantly lower sentiment than males and females. During the peak seasons (August and February), females have higher sentiment than males. In contrast, males tend to have higher sentiment in months adjacent to the low season (October or March). Those results support the insight that hotel managers should assess needs based on their customers' sex to help them design a compelling product mix (Franco et al., 2016). We have also supported those findings by confronting that females' sentiment is lower in the months of Easter and Christmas because of the correlation, which found that the quality of food, prices, and buffets is more influential among females.

Regarding the online travel experience, our results show that the tendency is to have lower sentiment dependent on the more interactions the customer has online. Therefore, this observation supports Yu et al. (2017) conclusions, which defend that travelers rank their experiences distinctively because they have varying background experiences.

Regarding the second objective, we have analyzed how customers perceived mountain hotels' dependent on the terms found in the word frequency that enabled extracting the most frequent words used in the reviews, reflecting the diverse collection of amenities, attributes, and service determinants shaped by those niche hotel customers' unique expectations. This analysis's findings allow us to understand how customers perceived mountain hotels' specific characteristics to reporting managerial insights.

The theoretical implications of our results support the findings of Sparks & Browning (2011), which concludes that most of the hotel reviews are either about the core functions of the hotel (e.g., rooms features) or customer service (e.g., interactions with staff). Although out of the box terms derived from this word frequency test and confronting the

core functions, we have identified the pools and spa facilities/services as the most significant. This determinant derives from the numerous and most frequent terms, "pools", "spa", "water", and "swimming". Within this box of terms, we distinguished from past studies terms that are illustrious regarding this specific customer, as "view", "mountain" as well as "outdoor". This outcome reveals more than what customers perceive from a hotel but reveals what they perceive as the mountain hotel experience. Consequently, it supports the previous managerial implications that encourage hotel managers to adapt their strategy to the rural experience and wellness activities.

Regarding the third objective, we have explored the satisfaction and dissatisfaction from splitting review sentiments into categories of customers with expectations exceeded and customers with unmet expectations and broaden the perspective of the study by including two theoretical dimensions: (1) Customer verbal evaluation of the experience and (2) Expression of possible future actions.

The first theoretical dimension results are the following: We have documented that the central hotel features providing exceeded expectations can also provide unmet expectations. Correspondingly, the central determinants from customers of mountain hotels might differ in their significance depending on both expectations. For instance, the influential primary determinant of the category of unmet expectation was the code "room", and not "staff", as found at customers with expectations exceeded.

The qualitative analysis has permitted the discussion between both negative and positive perceptions regarding a determinant. For instance, concerning the most important feature of mountain hotels, the room, the most important terms on this determinant impacting customer positively are "comfortable", "spacious", "clean", "large", "beds", "bathroom", "view", "modern" and "decorated". As contrary, "small", "bathroom", "bed", "air conditioning", "little", "shower" and "noise" are the most important components that impact them negatively. Regarding the pools and spa facilities/services, "indoor", "outdoor", "sauna", "heated", "gym", are the most important components that impact them positively. As contrary "indoor", "small", "cold", "little", "outdoor" and "swimming", are the most important components that impact customers negatively. Therefore, this analysis scrutinizes both perceptions of the determinants in the satisfied and the dissatisfied customers' view.

Still, into the objective of unveiling the reasons for the satisfaction and dissatisfaction of this customer, the qualitative analysis results have highlighted that some of the determinants analyzed are more relevant to mountain hotels' customers than to general hotel customers. Those determinants are the pools and spa facilities/services because there is no beach as a complement to the tourist offer. Then, the room view because of the natural setting that those customers are motivated to travel. In accordance, the outdoor natural facilities and spaces are an additional area of significant influence to this specific customer. Then, regional food was also documented as a distinguished determinant because of those regions' cultural environment. Besides, the kids club was also a particular determinant.

What satisfaction is perceived through online reviews from customers in mountain hotels?

Within the qualitative analysis of customers with unmet expectations, we have also created more ten categories ahead of the standard categories shared in both expectations. Those categories are "maintenance", "uncomfortable situations", "lack of accessories in the room", "bad value for the money in the restaurant", "wi-fi", "misleading information", "problems with the air condition in the room", "noise disturbances", "bad management" and "problems with families". Correspondingly, those determinants absent in the category of expectations exceeded support that they cause unmet expectations but did not cause customers to exceed expectations. Besides, confronting our results with past studies (Berezina et al., 2016; Guo et al., 2017), we observe that business rooms and a location close to the airport are not an influential determinant because it was not documented in our study. This results from the physical environment where mountain hotels have a particular dimension.

Regarding additional factors, we have also highlighted the influence of the price and the value of the food services on these customers. Though there are more determinants with impact and with evidence, air condition in the room is also highlighted as a sensitive determinant. The other is noise disturbances and hotel ambient. In accordance, problems with children are a converging determinant of much influence. At last, a hotel location hard to achieve was also a determinant distinguished in those hotel customers.

The practical implications of those theoretical findings imply the following insights:

- Provide alternative sports, e.g., ski-related sports, such as speed riding, skijoring, or non-skiing sports like snowshoeing, fat biking, and yooners. Provide alternative activities, e.g., spa or other aquatic centers, interactive nature trails, local sightseeing, cultural events. Modernize the tourists' experience by expanding services such as delivering ski passes and rented ski equipment directly at the accommodations (Favre-Bonte et al., 2019);
- Hotel managers should provide a wide variety of selections when it comes to food (Khoo-Lattimore & Ekiz, 2014) and care that customers' general expectation is that a higher price should yield a higher service (Matzler et al., 2006). At the same time, rethink the buffet concept because despite popular is somehow controversial (Skuras et al., 2006);
- Hotel managers should also apply appropriate family tourism-related products to meet customers' expectations of all members of the family (Gaines et al., 2004);
- Rethink the air conditioner's maintenance in the room once the object is more requirement for those specific customers;
- Refine the concerns regarding noise disturbances provoked by children in the pools, spa, and rooms;
- In the room's amenities, the recent significant concerns are the lighting absence and the disposed electrical outlets;
- Regarding housekeeping, removing carpets in the room is an easy way to improve customer satisfaction once it is negatively related to housekeeping concerns; The hotel's location should mean being within "walking distance" rather than "driving distance" to amenities (Khoo-Lattimore & Ekiz, 2014). Besides, hotels should ensure customers with better road assistance methods;
- The entertainment should be highlighted by applying more value to this determinant once customers expect more than what has been offered.

Complementing the previous insights, customers unveiled that the most enjoyable services are in general (see Appendix C - Table 1 for more details): hotel rooms equipped with background music, heated floors, fireplaces, pillow menus, or private Jacuzzis. Special services such as welcoming amenities at the check-in, complimentary amenities during the stay, picnic lunches, fitness instructors, yoga classes, bikes, kayaks, birthday amenities, welcome pets, and staff councils such as informing interactive nature trails, local sightseeing, and activities to contact with local communities and animals.

The second theoretical dimension results are the following: customers with expectations exceeded are most likely to recommend the stay to others positively than customers with unmet expectations negatively recommend the visit to others.

5.1. Contributions, limitations, and future works

Our investigation line accent in study mountain hotel customers, a neglected camp of research. Consequently, we achieved a new view of those hotels' customer management by bridging the gap in the lack of studies on mountain hotel customers' online reviews. Additionally, few studies have analyzed reviews in a qualitative method. An approach undervalued that we proved relevant to extract meaningful patterns from a larger sample that allowed us to understand, generalize, and visualize what mountain hotel customers most express about a topic, which ends up characterized for both satisfied and dissatisfied customers with expectations exceeded and unmet expectations, respectively.

This study also contributes to the existing literature by providing evidence that the reviews' sentiment went influenced by the date of stay, the hotel category, the nationality, the sex, and the online travel experience.

Regarding future improvement applications, this study brought to hotel managers and stakeholders two key insights. First, the customer relationship management focus should know their customers' expectations to meet them and exceed them whenever possible. To accomplish that, gathering online reviews in data analytics by contemplating the customers' engagement as a central basis for co-creation in the travel business is successfully supported by our findings and insights. Second, experts should be aware that different dates of stay, hotel categories, nationalities, sex, and online travel experiences raise different customers' expectations and diverse hotel feedback. Therefore, the backgrounds and services provided should be adapted to satisfy the expectations of their target audience and always adjusted as necessary to align feedbacks over their line of cultural business, to the real-time management and smart usage of big data provide means of creating value for tourism management of hotels in mountain destinations.

Despite the significant contributions of the present study to enlighten this specific customer, this study's findings must be seen in the light of some limitations to drive additional future improvements. The sample of this study might be considered limited once the sample considered is encircled to only one region of one country, concerning the environment of the NNGSE. Thus, a recommendation for future works is to consider broadening the sample to multiple mountain tourism destinations to obtain an extensive result and to understand whether the results hold in other regions of the world or not.

Although our sample resulted from unbiased selection, each member of a population is equally likely to be chosen, representing then a population as a whole. Therefore, despite the previous recommendation, we assume this sample is large enough to generalize results.

The prior research studies that provide the theoretical foundations for qualitative analysis over mountain hotels were limited, and during our work-investigation, while reviewing this area, we identified another emerging trend in the literature, the limited studies of Rural Hotels. So, succeeding studies into this hotel category will be a valuable market of investigation.

This study collected data from one single website, the TA. Consequently, it is only one source of information that may impair the observations obtained. Therefore, future studies can collect data from other SM websites (e.g., Booking, Airbnb, Expedia), or use other qualitative methods, such as interviews or focus groups, to validate the research findings. The sample of this study only comprises reviews from customers of hotels of four and five stars. To extend the findings for this specific hotel segment, future works must vary within the hotels' classification or conceivably raise the issue over analysis into the UGC within social communities of tourism agencies.

The demographic components should be considered well into the qualitative analysis, once this absence limited the ability to dig into a deeper degree of study. Therefore, another recommendation for future works is to launch the qualitative analysis only when all demographic results are workable to segment into the qualitative analysis. Besides, the use of the word count independently in each variable will also permit to compare what words are females most talking, what are the Brazilians concerns, what are the spa hotels most relevant terms, what is the terms more relevant in the summer, or what are the customers with higher online travel experience most worried. Therefore, taking those advances in the count, one of the prospects of this study is to profile mountain hotel customers' lifestyles to reveal different personas and from those types of segmentations assess beneficial achievements to conduct their customer journey maps.

Besides, considering these analysis results, other future research opportunities in this work may seek to conduct a quantitative study to validate an investigation model based on this qualitative study's findings. The additional chance that the study justifies could be developing a specific scale of sentiments to satisfy mountain hotel customers' satisfaction and dissatisfaction.

During the study, we have also broadened the investigation's perspective by including two more theoretical dimensions: (1) The context of customer experience, such as the purpose of stay; and (2) Customer complaints and suggestions. Thus, provide us the following knowledge: The most influential customer motivation to travel into mountain hotels is "to be in peace or relax". Then "to be in family context", "to visit the Serra da Estrela", "to experience nature", "to visit cultural regions/mountain areas", "to be in remoteness locations" and "to experience local food". Those categories allow us to establish new insights by segmenting this specific customer into two categories, (1) first, those who are not looking for outside activities, which value more determinants as room, ambient, pools & spa facilities/services. (2) second, those looking for outside activities, which value more the location, the outdoor nature facilities/areas, the ambient, and the room view. Regarding complaints and suggestions, "misleading information" is the code most likely to lead to "complaints", then "spa facilities", "staff", and "uncomfortable

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situations". On the contrary, "spa facilities" and "room" are the first and second codes most likely to lead suggestions. In summary, those findings are also an opportunity to further scrutinized an investigation to understand customers' motivation to travel to mountain hotels.

Finally, due to the COVID-19 pandemic, another research opportunity would be to understand how consumer behavior was affected by this event.

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Appendix

The presented attachments are regarded the categories coded in the expectations exceeded (Appendix A), and in unmet expectations (Appendix B). These outcomes are part of the results derived from the word frequency, word combination, and network code map of those categories in the qualitative analysis towards Maxqda. At last, Appendix C with customers' suggestions. These outcomes were derived from the sentiment analysis in the category coded "surprised facilities and services", which went performed towards R-Studio.

What satisfaction is perceived through online reviews from customers in mountain hotels?

Appendix A

Welcoming Staff		Room		Expectations Exceeded		Spa Facilities		Restaurant/Food options		Breakfast		Intend to be back	
Word	Freq	Word	Freq	Word	Freq	Word	Freq	Word	Freq	Word	Freq	Word	Freq
Staff	2006	Room	980	Hotel	2668	Pool	1484	Restaurant	954	Breakfast	1741	Recommen	433
Friendly	1264	Comfortable	897	Rooms	1650	Spa	687	Food	614	Varied	430	Return	221
Service	711	Spacious	512	Staff	1250	Indoor	633	Dinner	468	Quality	195	Repeat	219
Attentive	533	Clean	417	Pool	1086	Outdoor	335	Buffet	273	Buffet	131	Hotel	210
Helpful	387	Large	334	Breakfast	1037	Swimming	320	Quality	250	Dinner	106	Strongly	99
Friendliness	364	Beds	269	Services	809	Water	260	Hotel	211	Products	97	Definitely	96
Hotel	345	Bathroom	254	Restaurant	789	Sauna	211	Service	150	Food	70	Expirience	95
Employees	223	View	185	Friendly	753	Heated	198	Variety	141	Complete	69	Come	92
Reception	205	Modern	139	Room	746	Hotel	198	Breakfast	130	Delicious	59	Doubt	91
Professional	164	Decorated	121	Quality	591	Gym	164	Meals	116	Restaurant	45	Visit	74
Location		Room View		Design/Decoration		Facilities/Services		Surprised Facilities		Outdoor nature Facilities		Good value for the money	
Location	604	View	974	Decoration	366	Parking	166	Hotel	98	Gardens	179	Price	272
Located	341	Beautiful	166	Hotel	322	Facilities	146	Room	74	Surroundings	155	Quality	121
Hotel	335	Landscape	120	Building	141	Free	108	Pool	55	Outdoor	122	Value	88
Serra	151	Montains	165	Beautiful	133	Room	67	Water	36	Pool	118	Money	84
Close	129	Room	101	Modern	112	Areas	46	Afternoon	35	Hotel	96	Hotel	82
Estrela	126	Hotel	99	Design	103	Water	37	Activities	30	Beautiful	80	Ratio	64
Mountain	92	Magnificent	87	Architecture	95	Excellent	36	Tea	30	Space	79	Worth	35
Covilhã	84	Stunning	73	Old	88	Service	32	Available	29	Area	77	Affordable	30
Center	76	Wonderful	71	Sanatorium	62	Comfortable	28	Free	29	Pleasant	38	Cost	22
Beautiful	72	Serra	63	Space	45	Car	28	Children	26	Swimming	33	Reasonable	22
Ambient		Housekeeping		Regional Food		Bar		Kids Club		Contact with employee		Contact with owner/supervisor	
Hotel	120	Clean	186	Products	98	Bar	200	Children	69	Staff	16	Owners	29
Atmosphere	104	Cleanliness	125	Breakfast	90	Pool	34	Kids	40	Friendly	15	Director	11
Place	49	Cleaning	55	Cheese	86	Hotel	26	Games	38	Reception	13	Hotel	11
Environment	42	Hotel	49	Restaurant	65	Restaurant	26	Room	36	Restaurant	13	Staff	11
Mountain	42	Rooms	43	Food	58	Service	24	Club	23	Service	13	Friendly	10
Pools	38	Impeccable	26	Local	55	Area	20	Activities	21	Highlight	12	Manager	7
Beautiful	33	Facilities	15	Region	46	Drinks	19	Space	20	Attentive	11	Friendliness	5
Calm	28	Space	12	Regional	45	Pleasant	14	Entertainment	18	Helpful	11	People	5
Pleasant	28	Hygiene	10	Wine	39	Lunch	12	Animation	13	Especially	10	Present	5
Welcoming	25	Maintained	9	Quality	37	Prices	12	Hotel	10	Friendliness	10	Breakfast	4

Appendix A - Table 1 - Word Frequency - Expectation Exceeded

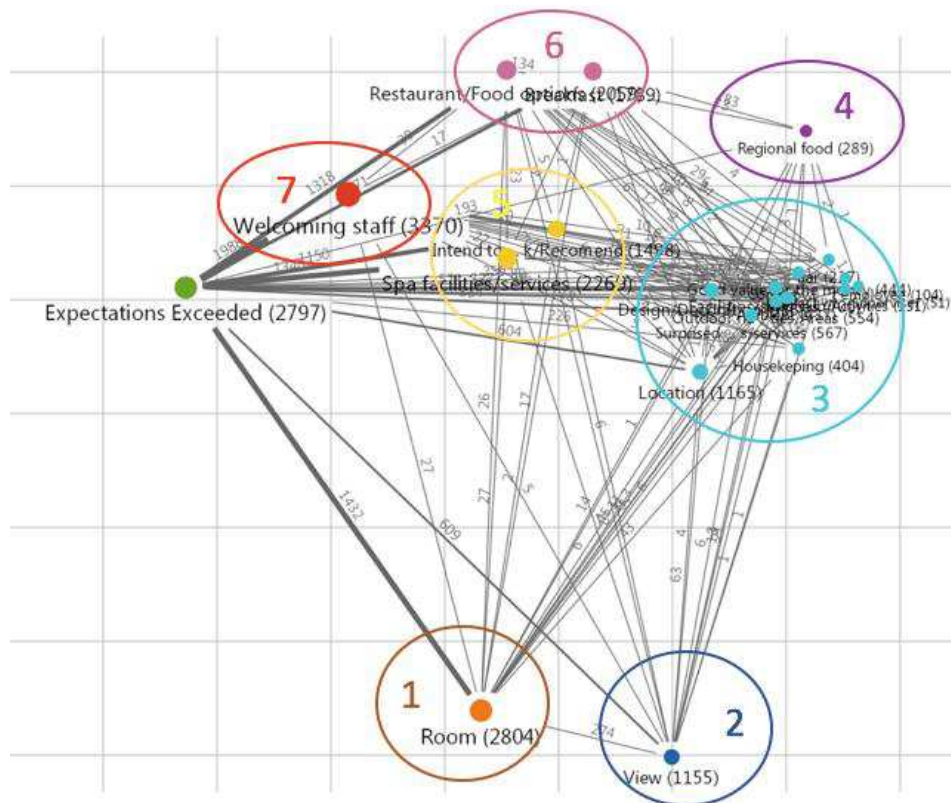
What satisfaction is perceived through online reviews from customers in mountain hotels?

Welcoming Staff		Room		Expectations Exceeded		Spa Facilities		Restaurant/Food options		Breakfast		Intend to be back	
Word	Freq	Word	Freq	Word	Freq	Word	Freq	Word	Freq	Word	Freq	Word	Freq
the staff be very friendly	98	comfortable room	200	the serra da estrela	143	indoor and outdoor pool	73	the hotel restaurant	46	a lot of variety	57	I strongly recommend it	38
the friendliness of the staff	61	spacious room	105	one of the well	77	the indoor pool be	64	and the food be	22	breakfast be vary	23	an experience to repeat	34
the staff be very attentive	44	clean room	96	in the middle of	61	the indoor pool be	39	dinner at the hotel	22	the breakfast buffet be	14	be back for sure	20
be very friendly and helpful	35	large room	80	the friendliness	52	the spa be very	20	the quality of the	21	the breakfast be excellent	12	repeat without a doubt	19
the staff be extremely friendly	30	comfortable bed	69	indoor and outdoor pool	51	have an indoor pool	19	a lot f variety	16	And of good quality	10	one of the well	17
Location		Room View		Design/ Decoration		Facilities/Services		Surprised Facilities		Outdoor nature Facilities		Good value for the money	
the serra da estrela	43	view of the mountain	55	good frame in the	18	indoor and outdoor park	15	include in the price	5	for that who want to	15	good value for the money	44
be very good locate	26	the serra da estrela	34	the architecture of the	18	free park free wifi	13	hot tub on the	4	in the serra da estrela	69	excellent value for Money	13
very close to the	22	beautiful view of the	23	of the build be	7	the facility be good	12	it be possible to	4	of the serra da estrela	64	the price-quality ratio	9
of serra da estrela	20	view over the mountain	17	the decoration of the	7	access to the floor of	4	arrival at the hotel	4	in the middle of the	62	Excellent price-quality ratio	7
close to the tower	14	a beautiful view of	14	the design of the	7	access to the internet	4	available in the afternoon	4	with a lot of variety	42	price-quality ratio be	7
Ambient		Housekeeping		Regional Food		Bar		Kids Club		Contact with employee		Contact with owner/supervisor	
At the same time	4	the cleanliness of the	12	a lot of variety	4	At the hotel bar	3	for child to play	3	and the whole team	3	can see the owner on	2
In the middle of	4	in term of cleanliness	8	it be possible to	4	A bar inside the	3	for the little one	3	a big thank you to	3	director of the hotel	2
Place to relax and	4	cleanliness of the room	7	serra da estrela cheese	4	A drink by the	3	a kid club for child	3	a part of me	3	on a daily basis	2
Atmosphere in the hotel	3	clean and good maintain	3	don t miss the	3	A great pool bar	2	activity for child and adult	2	make us feel at home	2	owner be always present	2
Calm and relax atmosphere	3	cleanliness of the hotel	3	product of the region	3	All kind of drink	2	all kind of activity	2	i don t remember	2	see the owner on a	2

Appendix A - Table 2 - Word Complex Combination - Expectation Exceeded

What satisfaction is perceived through online reviews from customers in mountain hotels?

Next, to better understand each code's context, the following is presented a clustering code map network used to.



Appendix A - Figure 1 - Clustering code map network - Expectations Exceeded

Appendix A - Figure 1 presents the clustering code map network that, in the semantic space, represents the customers' hospitality experiences that exceed expectations. From the semantic space, we can group seven different clusters.

- Cluster 1: Room
- Cluster 2: Room view
- Cluster 3: Location; Housekeeping; Design/Decoration; Surprised facilities/Services; Good value for the money; Outdoor nature facilities/Services; Bar; Contact with the employee; Ambient; Kids club/activities; Contact with the owner/Supervisor; Facilities/Services
- Cluster 4: Regional food
- Cluster 5: Spa facilities/services; Intend to be back/Recommend
- Cluster 6: Restaurant food/options; Breakfast
- Cluster 7: Welcoming staff

What satisfaction is perceived through online reviews from customers in mountain hotels?

Appendix B

Room		Spa Facilities		Restaurant		Breakfast		Unmet Expectations		Staff		Maintenance	
Word	Freq	Word	Freq	Word	Freq	Word	Freq	Word	Freq	Word	Freq	Word	Freq
Room	314	Pool	359	Restaurant	165	Breakfast	293	Room	530	Staff	82	Hotel	58
Small	192	Spa	141	Dinner	136	Variety	53	Hotel	490	Reception	62	Maintenance	41
Bathroom	122	Indoor	102	Food	110	Little	52	Pool	156	Service	49	Pool	40
Bed	85	Water	101	Buffet	67	Hotel	45	Breakfast	143	Hotel	45	Room	32
Air	83	Small	76	Quality	46	Quality	45	Restaurant	94	Room	44	Bathroom	28
Little	81	Hotel	66	Hotel	37	Coffe	32	Service	91	Pool	35	Needs	27
Conditioning	70	Cold	60	Little	36	Star	25	Staff	87	Little	31	Water	19
Hotel	64	Little	49	Service	32	Weak	23	Quality	83	Friendly	25	Work	18
Shower	60	Outdoor	49	Menu	28	Fruit	22	Star	77	Check-in	24	Broken	17
Noise	51	Swimming	48	Bad	28	Juices	22	Small	71	Employees	21	Old	15
Design/Decoration		Uncomfortable situations		Facilities/Services		Bad value for the money		Lack of accessories in the room		Bad value for the money in the restaurant		Wi-Fi	
Hotel	120	Pool	42	Hotel	47	Price	70	Room	34	Restaurant	66	Internet	45
Old	104	Hotel	40	Room	24	Expensive	43	Channels	17	Expensive	64	Wi-Fi	40
Decor	49	Noise	34	Pool	23	Hotel	37	Lighting	17	Dinner	40	Room	24
Room	42	Room	32	Parking	21	Quality	32	Tv	16	Price	40	Work	16
Dark	42	Children	29	Access	18	High	23	Shower	14	Quality	36	Signal	14
Decoration	38	Little	15	Little	12	Prices	23	Bathroom	12	Buffet	33	Device	13
Little	33	People	15	Service	12	Star	18	Lack	10	Food	26	Free	13
Pool	28	Time	15	Facilities	11	Room	15	Coffe	9	Little	25	Access	12
Reception	28	Spa	14	Children	10	Service	15	Minibar	9	Hotel	21	Password	11
Corridors	25	Night	13	Bad	9	Euros	14	Small	9	Offers	19	Weak	10
Not recommend		Housekeeping		Misleading information		Problems with AC in the room		Noise Disturbances		Location		Management	
Hotel	62	Room	35	Hotel	46	Air	64	Noise	36	Hotel	28	Restaurant	66
Stars	48	Cleaning	33	Room	36	Conditioning	55	Room	25	Location	27	Expensive	64
Recommend	12	Dirty	19	Pool	23	Room	28	Soundproofing	18	Center	24	Dinner	40
Again	10	Cleanliness	18	Spa	21	Hot	19	Hear	15	Far	24	Price	40
Never	8	Hotel	12	Reservation	16	Temperature	18	Little	15	City	21	Quality	36
Another	6	Cleaned	11	Booking	15	Night	15	Noisy	15	Car	16	Buffet	33
Intend	6	Little	10	Asked	10	Noise	13	Next	12	Located	9	Food	26
Little	6	Balcony	8	Website	10	Hotel	12	Pool	11	Town	9	Little	25
Return	6	Bathroom	8	Pay	9	Cold	11	Heard	10	Isolated	7	Hotel	21
Think	6	Floor	8	Reception	9	Little	10	Night	10	Away	6	Offers	19
Bar		Local food		Location hard to achieved		Ambient		Outdoor nature facilities		Entertainment		Problems with families	
Bar	51	Breakfast	19	Hotel	16	Hotel	11	Hotel	10	Hotel	13	Children	31
Service	16	Cheese	18	Road	12	Pool	11	Area	9	Children	9	Families	7
Hotel	11	Products	15	Difficult	10	People	7	Pool	7	Animation	8	Kids	7
Pool	9	Region	15	Way	10	Bar	6	Around	6	Little	8	Noisy	7

What satisfaction is perceived through online reviews from customers in mountain hotels?

Prices	8	Restaurant	12	Gps	8	Children	6	Little	6	Night	8	Spa	7
Expensive	6	Regional	11	Worth	8	Full	5	Outdoor	6	Activities	7	Hotel	6
Food	6	Hotel	10	Find	7	Noise	5	Surroundings	6	Entertainment	7	Pool	6
Time	6	Quality	10	Little	7	Room	5	Small	5	Games	5	Noise	5
Small	5	Food	8	Village	7	Area	4	Garden	4	Room	5	Relaxation	5
Coffe	4	Local	7	Arrived	6	Guests	4	Place	4	Bar	4	Indoor	4
Room view		Contact with the owner											
View	29	Hotel	8										
Room	14	Director	6										
Hotel	9	Complaint	3										
Rear	7	Manager	3										
Views	5	Old	3										
Facing	4	Owner	3										
Front	4	Decided	2										
Balcony	3	Department	2										
Trees	3	Especially	2										
Assigned	2	Man	2										

Appendix B - Table 1 - Word Frequency - Unmet Expectations

What satisfaction is perceived through online reviews from customers in mountain hotels?

Room		Spa Facilities		Restaurant		Breakfast		Unmet expectations		Staff		Maintenance	
Word	Freq	Word	Freq	Word	Freq	Word	Freq	Word	Freq	Word	Freq	Word	Freq
the room be small	16	the sauna and turkish bath	8	the quality of the	17	a 4 star hotel	10	The room be	38	1 hour walk they suggest	2	in need of	41
the room be a little	10	the water in the pool	8	much to be desire	8	the quality of the	7	The hotel be	36	a lady at the reception	2	in the room	20
soundproof of the room	8	pool be a little cold	7	the restaurant be close	7	breakfast can be well	6	A 4 star	18	a view of the valley	2	hotel in need of	10
a lot of noise	7	small for the numb of	7	i do not recommend	6	breakfast can be improve	4	The restaurant be	13	and friendly because of obligation	2	in poor condition	5
in need of refurbishment	6	water in the indoor pool	7	be good but not	6	variety for a 4	4	To be desire	13	and only person at the	2	the air condition	5
Design/Decoration		Uncomfortable situations		Facilities/Services		Bad value for the money		Lack of accessories in the room		Bad value for the Money in the restaurant		Wi-Fi	
the hotel be	16	the sauna and turkish bath	8	access to the	9	the price of the	7	shower gel	8	the restaurant be	16	in the room	22
in the room	6	the water in the pool	8	in the room	9	a 4 star hotel	6	coffee make	8	the price of	10	the wi fi	18
the decoration of the	6	pool be a little cold	7	of the hotel	8	too expensive for the	5	mini bar	7	the quality of	8	at the reception	6
a little dark	4	small for the numb of	7	to the pool	6	expensive for the quality	5	tv channel	7	expensive for the	7	for one device	6
hotel be old	4	water in the indoor pool	7	a lack of	5	for what it offers	4	electrical outlet	7	at the hotel	6	do not work	6
Not recommended		Housekeeping		Misleading information		Problems with AC in the room		Noise disturbances		Location		Management	
a 4 star hotel	9	the cleanliness of the room	5	it be not	6	the air condition in	7	a lot of noise	7	the hotel be	16	at the reception	6
i do not recommend	8	the carpet in the	5	a double bed	6	in the room be	6	the air condition	7	far from the	15	in the pool	6
not a 4 star	5	the room and bathroom	4	of the hotel	5	a lot of noise	5	in the corridor	6	from the center	9	the lack of	5
do not intend to	5	a 4 star category	4	give us a	4	air condition do not	5	soundproof of the room	6	the location be	5	be no one	4
intend to go back	5	be quite dirty not acceptable	3	a superior double	4	heat in the room	4	the next room	5	from the city	4	in the room	4
Bar		Regional cuisine		Location hard to achieved		Ambient		Entertainment		Outdoor nature facilities-areas		Problems with families	
a 4 star hotel	5	in a region	5	to get to	6	in the pool	6	in the hotel	4	there be no	5	the only downside	5
service be also rude	5	land of cheese	5	difficult to find	5	a lot of	5	nothing to do	4	area and the	4	a lot of noise	4

What satisfaction is perceived through online reviews from customers in mountain hotels?

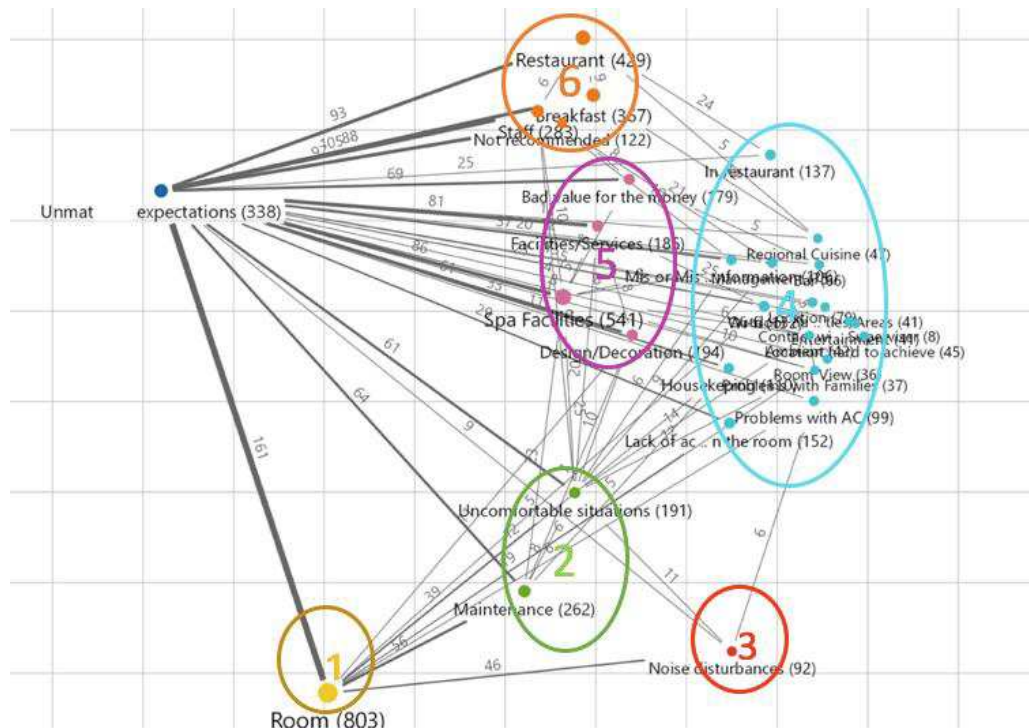
get in the way	4	so rich in	3	the road be	5	full of child	4	animation at night	4	around the hotel	3	so many children	4
service take a little time	4	area no mountain cheese	3	be difficult to	4	in a bathrobe	2	entertainment for child	3	next to the	3	the indoor pool	3
the bar service be also	4	cherry in the area	3	to the hotel	4	arrive at the	2	lack of animation	3	there be nothing	3	the spa be	3

Room View		Contact with the owner/Supervisor	
of the hotel	3	-	
view to the	2	-	
a balcony and	2	-	
and I be not assign	2	-	
i want a view	2	-	

Appendix B - Table 2 - Word Complex Combination - Unmet Expectations

What satisfaction is perceived through online reviews from customers in mountain hotels?

Next, to better understand each code's context, the following is presented a clustering code map network used to group each code (Appendix B - Figure 1).



Appendix B - Figure 1 - Clustering code map network - Unmet Expectations

Appendix B - Figure 1 presents the clustering code map network that, in the semantic space, represents the customers' hospitality experiences that unmet expectations. From the semantic space, we can group six different clusters.

- Cluster 1: Room
- Cluster 2: Uncomfortable situations; Maintenance
- Cluster 3: Noise disturbances
- Cluster 4: Design/Decoration; Spa facilities/Services; Facilities/Services; Bad value for the money
- Cluster 5: Bad value for the money in Restaurant; Regional Cuisine; Room view; Management; Lack of accessories in the room; Problems with air condition in the room; Problems with families; Management; Housekeeping; Location hard to achieve; Outdoor nature facilities/areas; Wi-fi; Ambient; Entertainment; Bar; Misleading information; Contact with the owner/supervisor
- Cluster 6: Restaurant; Breakfast; Staff; Not recommended

What satisfaction is perceived through online reviews from customers in mountain hotels?

Appendix C

Next, we present sentences of “surprised facilities/services” in the category “expectations exceeded” that we have coded 567 times, and Appendix C - Table 1 brings the sentences from the top head of the sentiment (1.70 until 0.50 (positive)). There is an enormous number of sentences coded. Therefore, we used the sentiment analysis to present a better resume.

Sentence coded for the category “Surprised facilities/services”	Sentiment Score
Very interesting they accept dogs.	1.28598211496117
Possibility of a very good and generous picnic bag.	1.26
Very good indoor picnic.	1.215
The suite is wonderful, with an attractive private jacuzzi, very tidy and clean.	1.12049439637496
The warm floor gives you a very special comfort.	1.09666666666667
The entertainment after dinner is worthwhile, entertaining and allows for moments of relaxation and interaction.	1.07152539245072
I highlight the friendliness and kindness of all the staff, as well as a pleasant surprise for a treat for my birthday.	1.02336343850693
A very cozy bar that supports smokers.	1.02050407712491
The snack always available in the afternoon was a treat that we very much enjoyed.	0.981155781039212
The rooms in the cork area are spacious, clean and have a super comfortable bed as well as a pillow menu available.	0.959403223600247
I emphasize Tiago, fitness instructor, who proved to be an excellent professional, super empathetic, meeting the needs of customers.	0.952075295562831
Disco with very good music and variety of styles.	0.947523086789974
Free bikes and kayaks available - wine & food & sweets during the day - free dvds to watch in your room - free yoga classes in the beautiful garden looking at the incredible landscape.	0.92199963846703
Very generous apartments and a plus by the jacuzzi on the balcony.	0.909326673973661
Breakfast very well served and where we can enjoy it by the pool.	0.90693482082825
A first class restaurant and picnic lunches prepared to order, including the picnic blanket.	0.881962098311
Ah, breakfast is also divine and it's great to be able to have it in your robe, very relaxed and sophisticated at the same time.	0.87
Very good room including a fireplace if you want to look romantic.	0.845818144362802
The farm is very well looked after and accepts guests with pets.	0.831384387633061
For those who enjoy mountain biking or cycling the hotel is very well prepared.	0.825837237509391
Attentive to the celebration of our son's 2nd birthday, they even prepared us for a surprise (reaching the point of knowing João Tomás' passion for cars).	0.803174505144608
We stayed in an apartment with two very well structured rooms, the hydro massage bath on the balcony is top.	0.74684670448493
The family rooms are very good, spacious, comfortable, large TV for the little ones, exceptional bathroom (with background music and heated floor).	0.735542471426856
We can enjoy a walk through nature in the hotel's very pleasant facilities.	0.707242750187167
In the heart of Serra da Estrela, with the possibility of healthy walks, wonderful food, pure rest.	0.703353312605366
The large rooms are pleasant, especially the fireplace room, which in winter provide pleasant moments.	0.7
Afternoon snack available as a courtesy with natural juices, teas, nespresso coffee and sweets at will.	0.7
I loved being able to have breakfast in a robe, so practical and comfortable.	0.694879228972303

What satisfaction is perceived through online reviews from customers in mountain hotels?

The concept of the indoor pool being the same as the outdoor one is something original and very well accomplished. The spa area, with Turkish bath, sauna and areas with different temperatures is very pleasant.	0.692311399082526
I stayed in one of the two existing SPA rooms, with a wonderful and spacious spa bath, and a Turkish bath included in the bathroom.	0.69
Shared seating areas around hotel are great and there is a lap top available to anyone and loads of DVDs etc.	0.676475459731576
The hotel provides a voucher to visit the bread museum in Seia, a beautiful and friendly gesture, good proximity to visit the Serra da Estrela Nature Reserve.	0.66395280956807
Rooms and bathroom overlooking a relaxing horizon, with plenty of natural light, excellent cleanliness and comfort, bathroom with underfloor heating and radio.	0.660922220702392
Tranquility, well-being, gym, heated swimming pool with hydromassage, activities promoted by the animation team ...	0.658407168855261
At night the walks around the city organized by the hotel were really very exciting.	0.658407168855261
We were very well received and all employees are very friendly and attentive. They took us for a walk around the farms and the children loved being with the animals, which are very, very well cared for. We know the pastors, who are also very friendly.	0.656422913035345
Excellent customer service (including the cat).	0.653197264742181
Milking sheep, horses, dogs, cats and the whole relaxed rural environment, associated with extraordinary friendliness and excellent service.	0.648181216087669
While you're enjoying your dinner at the restaurant, the housekeeper takes care of your room (again), in preparation for a good night sleep.	0.632784850218988
The hydromassage tub in the bedroom is totally worth it for a romantic getaway.	0.624037720753383
The fact that dogs are allowed in the room allows you to enjoy an excellent family holiday.	0.618465843842649
I found the disco very fun for the little ones, made in their enclosure, my daughter loved.	0.594212281339016
I found the best system ever to keep out the daylight - the curtains have magnets, which adhere precisely to the magnetic rail fixed on the wall!! (EXCELLENT).	0.588252260812183
Wonderful pools with chairs in the water, lots of entertainment and a bar in the water that is top.	0.585010121369932
There are several rooms, small cozy corners, with a fireplace, books to read, movies you can watch right there or in the room, always with a very friendly atmosphere!	0.584940315257714
I recommend taking advantage of the natural environment (they have suggested walks of varying lengths in the mountains and can provide a picnic lunch and even backpacks for the ill prepared).	0.583717231587018
We stayed in the small house and was lovely even we ordered for dinner the picnic with local cheese and we ate it in the garden in the grass, kids love it.	0.583363094478902
I applaud the fact that the guest is encouraged to drop their clothes and walk in their bathing suits and robes all day, even in the restaurant - real relaxation!	0.575655548348861
The main factor was undoubtedly the silence in the hotel, very calm, perfect for those who want to rest.	0.573539334676404
The rooms with hydromassage bath on the balcony are ideal for a 2-person rest, or to delight a small child who ran the warm pools and was still "relaxing" in the bathtub when he got to the room.	0.567774973957669
Very nice gesture from the management that at 5pm serves free refreshments and cookies.	0.56659383285434
Funny experiences especially for those traveling with children, including milking the sheep.	0.565794200149734
It is a hotel where we always feel like returning, whether due to the well-cared for nature, the breathtaking landscapes, the happy animals and interacting with the visitors, or for the careful cultures of the various farms that make up the project, from which the magnificent vineyards stand out, that will later give place to tasty wine.	0.564617661296807
We loved strolling around the farm through the vineyards and orchards seeing the friendly cats, beautiful horses and the many rescued Serra da Estrela Mountain dogs.	0.549125178386915
At the end we received a bottle of wine, made locally to celebrate this event and everyone came back satisfied and glad we chose to stay there.	0.548482755730144
There was always some complimentary fruit to enjoy.	0.548007755419574

What satisfaction is perceived through online reviews from customers in mountain hotels?

The rooms are very well divided and furnished. The bathroom is clean, spacious and complete, including floor heating.	0.547069124792732
The trail route is very well done.	0.544268841133287
The fact that they offer a € 30 voucher for payments over € 250 is also a concern on the part of the hotel that I consider positive, with the advantage of encouraging a new visit to the hotel.	0.540898723026251
Welcome drink on arrival at the hotel with divine sangria in the spacious lobby.	0.534522483824849
It has an interesting lounge and we were greeted with hot chocolate on offer.	0.534522483824849
A spacious and well soundproofed room.	0.530722777603022
Added services and magnificent tourist recommendations.	0.530722777603022
The small details, like the heated towels on arrival, the mid-afternoon snack, the welcome hand massage, make us feel very good right away.	0.522408573970392
The rooms are very large and in very good condition for those who want to cook in the kitchen, the bathtub on the balcony is something extraordinary.	0.519615242270663
I took my dog, who was very well received with a bed kit, bowl and food.	0.518544972870135
The common spaces are well structured and very inviting, there are several books and films available to guests that allow them to occupy the dead hours.	0.517746596764806
We took a hike in the lovely hills surrounding the hotel before enjoying a cocktail at sunset.	0.509324812576299
I was delighted with the treatment and respect dedicated to animals. Highlight for the very interesting milking of the sheep in the evening.	0.507591764663265
Extremely child friendly staff, there is even a babysitter hired on some nights that stays with the children so that the parents can dine in peace, at no extra cost.	0.507556236621454
Thank you very much for the attention of the sparkling wine bottle in the room to mark the anniversary.	0.506511337337313

Appendix C - Table 1 - Sentences coded in Surprised Facilities/Services (1.7 > 0.5)