

**HOW TOURISTS PERCEIVE TWO ISLAND DESTINATIONS WITH IDENTICAL
CULTURE, BUT DIFFERENT DEMOGRAPHIC CHARACTERISTICS, THROUGH
SOCIAL NETWORKING SITES? – THE CASE OF MADEIRA AND BERMUDA**

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ABSTRACT

This thesis is focused and aimed at exploring how tourists perceive two island destinations with identical culture, but different demographic characteristics, through *Social Networking Sites*. The islands of *Madeira* and *Bermuda* were chosen as the ones to be studied.

In order to provide a trustful answer, it was conducted two different methodologies that complete each other: *Netnography* and *Text Mining*. Eight codings were used when creating the database, based on the literature studied: *Rating*, *Categories*, *Membership Level of reviewers*, *Language type*, *Tourism Experience Model*, *Content*, *Symbology* and *Positive/Negative information*. In the first methodology, all of these codings were studied, while in the *Text Mining* one, only three were considered: *TEM*, *ML* and *categories*.

The database was created after an extensive extraction process, which included in the end 1783 reviews – 1148 from *Madeira* and 635 from *Bermuda*, extracted from the *TripAdvisor* platform regarding *August of 2017*.

The results indicate an overall positive customer satisfaction regarding both islands, but slightly superior in the *Madeira's* case. The reviewers were, globally, *low ranked reviewers* and their favorite type of language was *literal* (vs *figurative*). The negative content was similar in both cases and the positive one as well. Based on the literature it was perceived that the reviews extracted are capable of persuading readers, and increase their booking intention. Also, both islands were perceived as destinations where tourists are able, through *Recreational Activities*, to get closer with their existential being. *Lifestyle and Leisure* and *Tourism, Travel and Commuting* were the main themes found to being mentioned by the reviewers. It was perceived that reviewers from *Madeira* can highly influence potential tourists into becoming real ones, in comparison with *Bermuda*. In both cases, reviewers were found to be engaged with the destinations, and the “re-purchase” scenario is highly probable.

Keywords: Online Reviews, Tourism Experience Model, Netnography, Text Mining

JEL Classification System: M31

RESUMO

O objectivo desta tese é explorar de que forma o turista percebe dois destinos insulares com cultura idêntica, mas características demográficas distintas, através das *Redes Sociais*. Para o efeito, as ilhas da *Madeira* e da *Bermuda* foram escolhidas para ser objecto de estudo.

Para obter uma resposta fidedigna foram estabelecidas duas metodologias diferentes, com vista a complementarem-se: *Netnografia* e *Mineração de Dados*. Com base na literatura estudada, foram utilizados oito critérios aquando a criação da base de dados: *Classificação*, *Categorias*, *Nível dos utilizadores*, *Tipo de linguagem*, *Tourism Experience Model*, *Conteúdo*, *Simbologia* e *Informações Positivas/Negativas*. Na primeira metodologia, todas os critérios foram utilizados, enquanto na segunda foram considerados apenas três: *TEM*, *Nível dos utilizadores* e *Categorias*.

A base de dados foi criada após um longo processo de extracção, que culminou no final com 1783 avaliações – 1148 referentes à *Madeira* e 635 relativos à *Bermuda*, retiradas da plataforma *TripAdvisor*, referentes a *Agosto de 2017*.

Os resultados indicam uma satisfação geral positiva dos *utilizadores* em relação a ambas as ilhas, mas ligeiramente superior no caso da *Madeira*. Estes eram, globalmente, caracterizados com baixo nível de *membership*, e predomina a linguagem literal (vs figurativa). A quantidade de conteúdo negativo é similar em ambos os casos, bem como a informação positiva. Com base na literatura, foi concluído que as avaliações extraídas são capazes de persuadir os leitores e aumentar as suas intenções de reserva para com os destinos estudados. Além disso, ambas as ilhas foram percebidas como destinos onde os turistas podem, por meio de *Atividades Recreacionais*, aproximar-se do seu *ser existencial*. “*Lifestyle and Leisure*” e “*Tourism, Travel and Commuting*” foram os principais temas de conversa mencionados pelos *utilizadores*. Foi concluído também que as avaliações extraídas da *Madeira* têm maior capacidade para tornar potenciais turistas, em turistas reais do destino (comparativamente à *Bermuda*). Em ambos os casos, verificou-se *engagement* positivo, e o cenário de “recompra” é altamente possível.

Palavras-Chave: Online Reviews, Tourism Experience Model, Netnografia, Mineração de Dados

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1. INTRODUCTION

The development of technology, especially in the last decades, allowed the possibility of huge changes in the businesses' way of creating new products, demanding higher quality requirements, prospect financial growth, mass produce and communicate internally and especially with their customers. Nowadays, it is unquestionable the presence and importance of technology in the modern and dynamic world that we live in, as it has created unlimited possibilities. Unlimited possibilities as the progress of the *Web 2.0* that made possible for online users to choose new word-of-mouth alternatives as online reviews. Those are defined as ways of consumers expressing their thoughts and opinions towards any type of product or service in an online community (Kem *et al.*, 2014).

Online reviewing became one of the key factors on the pre-purchase decision, as for instance, nowadays 63.6% of consumers check online reviews on *Google* before deciding whether to buy/visit a product/destination. More, other platforms as *Yelp* and *TripAdvisor* became multimillion dollar companies, due to this need for consumers to obtain information before taking any decision. The first, for instance, has more than 186 million users posting 150 million reviews online monthly, about the most varied subjects (ReviewTrackers, 2018). The *TripAdvisor* platform itself has 455 million users, which have written more than 661 million reviews since it's' foundation – it accounts with 7.5 million accommodations, restaurants and attractions. From those, over 1.2 million are hotels, 4.7 million are restaurants, and 975 thousand are attractions. The extension of these firms is worldwide, and the numbers show the importance of this platform to the online community (Smith, 2018).

These comments have gained such importance that every industry is dependent on it, and the tourism one is no exception. According to Schuckert *et al.* (2015:608) “71% of independent travel related bookings are done online, while 36% of all package tours are booked online”. Moreover, 65% of travellers looking for leisure activities or vacations will pursuit for information online before deciding to take the travel, and “69% of their plans are determined by online travel reviews” (Fang *et al.*, 2016:498).

Having cleared out the importance of online reviewing, and online communities, globally and particularly in the tourism industry, it is time to state what this thesis is aiming at. The literature has studied online reviews and the tourism industry in multiple and different ways, since the effects of the first in the hotel booking intentions (Cheng *et al.*, 2017), the effect of the user's membership level ranking on the consumer's decision making (Chen, 2015) or even trying to predict future trends based on past stats (Schuckert *et al.*, 2015). A

gap in the literature was found, when using online reviews to compare how tourists perceive two different destinations, and this is the theme that this thesis proposes to study.

The first destination was chosen based on its importance to the country that means the world to me: *Portugal. Madeira* has a *GDP* of 5,244 million Euros (data for 2017), and its significance to the world is gradually being recognized - it was awarded as *Best Island Destination* by the *World Travel Awards* in 2017 and *Mankind Heritage* by *UNESCO*, in the same year. The second one was chosen based on the first, meaning that it had to be an island destination with cultural similarities so that the purpose of this study made sense. After an extensive research, *Bermuda* was selected to be the second destination to be studied.

Furthermore, having defined the gap in the literature that this thesis proposes to study, as well as which destinations it will be aimed at, a clear and explicit research question had to be formulated: “How tourists perceive two island destinations with identical culture, but different demographic characteristics, through *Social Networking Sites*?”; To answer to the research question it will be used a mixed approach combining two different study methods: *Netnography* and *Text Mining*. It is believed that such combination is capable of providing suitable and relevant information to deliver a trustful and appropriate answer to the announced question. In order to do what was mentioned before, the project must be structured. This dissertation will be monitored under the following structure (see *Figure 1*):

1. *Introduction* – it is in this chapter that the theme being studied is introduced, as well as its relevance to the existing literature and the structure that this thesis will follow;
2. *Literature Review* – it will be analysed pertinent themes to the final goal (*Customer Experience, Online Engagement, Loyalty and Satisfaction, Social Media and Online Reviews, Tourism Experience and Sentiment Analysis*);
3. *Methodology* – it will be presented the methodological process of the two types of studies conducted in this thesis: *Study 1 - Netnography* and *Study 2 - Text Mining*;
4. *Results* – chapter intending to share the results obtained regarding both studies;
5. *Findings/Notes* – notes taken from the *Results* with a minority of *Literature* included;
6. *Conclusions and Implications* – Based on the *Literature Review* and the *Results* obtained, this chapter will include a *Discussion* with conclusions, *Theoretical and Managerial Implications* and *Limitations and Future Research*;
7. *References* – Presentation of the references used across the entire dissertation;
8. *Annexes* – Chapter containing the annexes from the entire thesis.

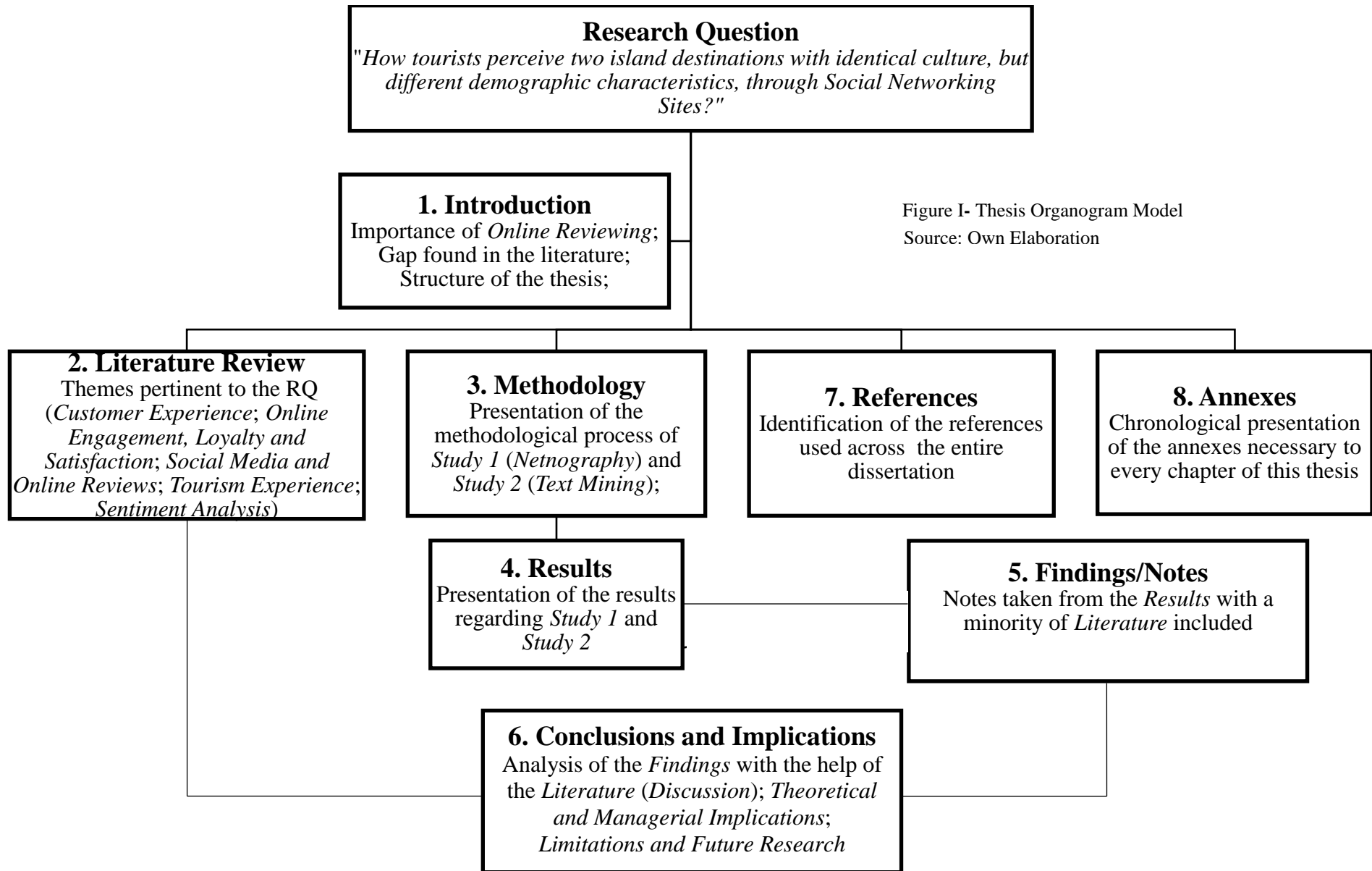


Figure I- Thesis Organogram Model
Source: Own Elaboration

2. LITERATURE REVIEW

The following chapter intends to give a clear theoretical background of the constructs that are important to be studied to the research field, such as *Customer Experience*, *Tourism Experience*, *Online Engagement*, *Social Media and Online Reviews* and *Sentiment Analysis*. The content hereby mentioned results of an extensive research and aims at being a preponderant help in obtaining new insights and breakthroughs in the *Marketing* field.

2.1. CUSTOMER EXPERIENCE

The concept of *Customer Experience* has been considered in multiple and different ways (Hirschman and Holbrook, 1982; Gilmore and Pine, 2002; Thompson *et al.*, 1989).

According to Lemon and Verhoef (2016) there are seven relevant theoretical literature findings across the years that led to the progress of the concept of *Customer Experience*.

The first one – “*Customer buying behavioural process models*” (Lemon and Verhoef, 2016), goes back to the 1960s-1970s when for example, Howard and Sheth (1969) created the “*Theory of Buyer Behaviour*” that consisted in a diagram flow where the buyer dependent on significant, symbolic and social environment inputs, along with exogenous variables decides on a certain purchase behaviour, and correspondent evaluation. Moreover, recent studies have indicated that those inputs and exogenous variables can be classified according five factors: *Cultural, Social, Personal, Psychological and Economical* (Ramya and Ali, 2016). It was also during the 1960s that the famous *AIDA* model regarding advertising was created (Lemon and Verhoef, 2016), and nowadays continues to be a tool used by marketers, and keeps getting improved along the recent years – see *Figure II* below.

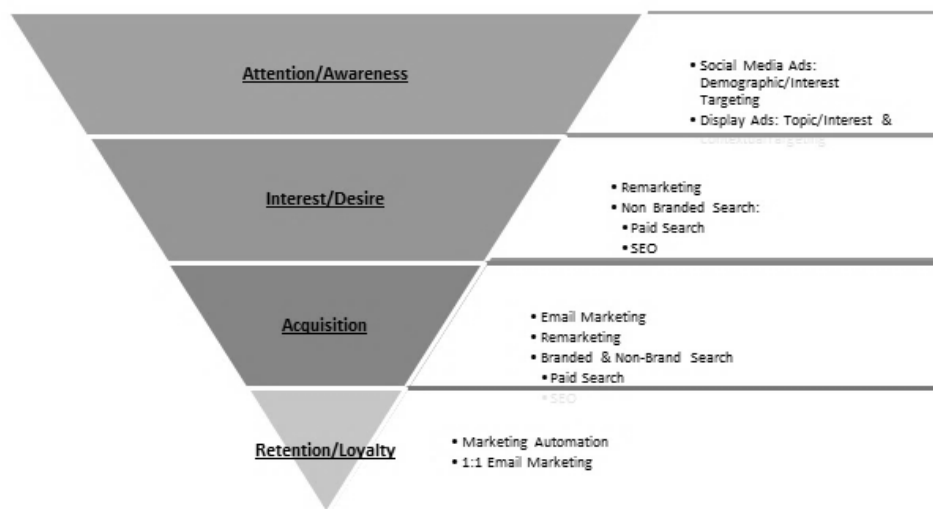


Figure II – AIDA Model
Source: (Castro, 2013)

The theories concerning the buying process are crucial to understand the efforts that the firms need to have considering the customer experience (Pucinelli *et al.*, 2009; Verhoef *et al.*, 2009), and most of the early ones are still considered as the basis for the true construct of the customer experience (Lemon and Verhoef, 2016).

The second one – and one of the most important aspects for this research, is a topic that continues, nowadays, to be studied and it respects to the “*Customer satisfaction and loyalty*” (Lemon and Verhoef, 2016). There are multiple studies and researches towards this theme, and one of the most important aspects respecting this, is studies identifying the drivers and outcomes of the customer’s satisfaction (Bolton and Drew, 1991; Bolton, 1998). “Customer satisfaction measurement has become a rather standard practice within marketing, although other assessments and metrics have gained traction over time” (Lemon and Verhoef, 2016:72).

The third relevant finding is “*Service Quality*” and it brought “the focus on (1) the context in which experiences arise and (2) the journey mapping and measurement/assessment aspects of customer experience” (Lemon and Verhoef, 2016:72). It was through this subject that the worldwide known SERVQUAL model was created (see *Figure III*) – it calculates the gap between customer’s expectations and perceptions - it can be regarding products or services (Mont and Plepys, 2003).

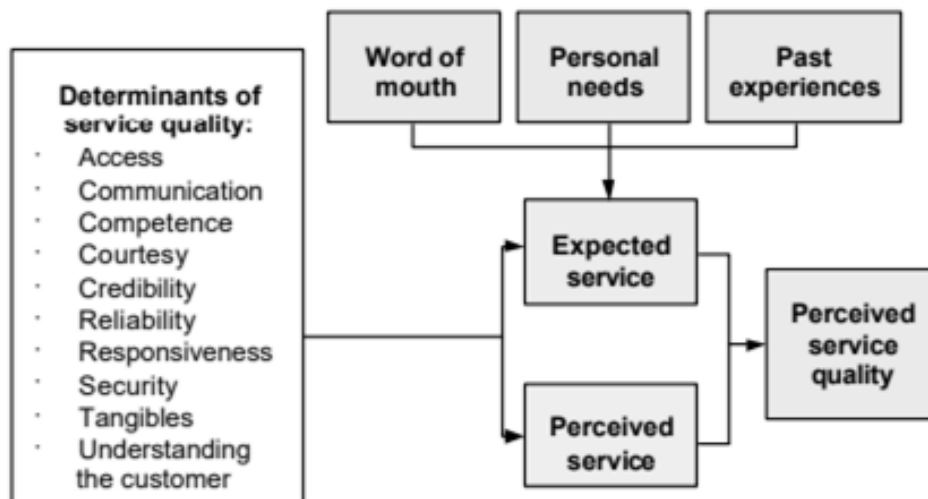


Figure III – Service Quality Model

Source: (Mont and Plepys, 2003)

The fourth literature finding that was important for the development of *Customer Experience* concerns “*Relationship Marketing*”. It was during this period that most of the research regarding B2B channels was designed (Geyskens *et al.*, 1998), but also B2C (Sheth

and Parvatlyar, 1995; Perterson, 1995). Relationship Marketing has allowed to understand in a more meaningful way the relationships with the customer, increasing the range of the previous concepts analysed, by including emotions and cognitive perceptions (Lemon and Verhoef, 2016).

The fifth one concerns “*Customer Relationship Management*” (Lemon and Verhoef, 2016), also known as *CRM* – “is the activity which is interested in the main customers of the organization, in the efficiency of the organization and in the customer knowledge management, with the aim of enhancing the effectiveness of the organization decisions related to customers, leading, therefore, to the improvement of the marketing performance in particular and the organizational performance in general” (Soliman, 2011:167), and its contributions to the customer experience literature, concentrates on the relation of determined elements with each other and the firm’s results (Lemon and Verhoef, 2016).

The sixth one refers to “*Customer Centricity and Customer Focus*” (Lemon and Verhoef, 2016), and it concerns on strategic attitudes being projected, applied and discussed during the 2000s, focusing on the customer as the centre of the marketing strategies of the firms (Sheth *et al.*, 2000). It was during this time that the so called *ideal customer* was created, based on benchmarking and the firm’s data on real clients, which enhanced the customer experience design (Lemon and Verhoef, 2016; Herskovitz and Crystal, 2010). All in all, it can be said that this centricity in the customer allowed firms to processing all the customer experience in their viewpoint, instead of the firm’s angle.

The seventh and final one, is “*Customer Engagement*” (Lemon and Verhoef, 2016), which is also quite important for future notes in this dissertation. “Customer engagement is connected to customer value management through its objective, namely, to maximize the value of firm’s customer base” (Bjornholt *et al.*, 2010: 341). A definition of this concept was given, stating that customer engagement manifests itself through complex behaviours fitting the brand, going outside the spectre of the purchase itself (Verhoef *et al.*, 2010; Doom *et al.*, 2010).

Having concluded which findings served as background and that led to the appearance of the *Customer Experience* concept, it is now time to study this subject.

Some researchers see this concept as autonomous of its form (Schmitt *et al.*, 2015), which ultimately means that it is a holistic concept, believing that it englobes five different customer’s parts: *cognition*, *emotions*, *socialization*, *sensations* and *spiritualism*, which all connected form a response according to the different interfaces with a brand/firm (Lemon and Verhoef, 2016). Other definition states *Customer Experience* as “encompassing every aspect

of a company's offering – the quality of customer care, of course, but also advertising, packaging, product and service features, ease of use, and reliability. It is the internal and subjective response customers have to any direct or indirect contact with a company” (Meyer and Schwager, 2007:118).

As it is possible to see there are several definitions, but some of them are more accepted than others. For instance, Schmitt (1999) identified in his studies five different varieties of experiences: “sensory (sense), affective (feel), cognitive (think), physical (act) and social-identify (relate) experiences”, a definition also congruent with Verhoef *et al.* (2009). A different, yet similar, conceptualization was created by Brakus *et al.* (2009) – their work englobes two main domains: internal responses - such the ones already mentioned: sensations, feelings and cognitions; and behavioural responses induced by stimulus related with the brand's design.

Globally academics have come to agree that this definition involves the following variety of dimensions: cognition, emotions, behaviour, senses and social constructs (Schmitt, 1999; Verhoef *et al.*, 2009), that respond “to a firm's offerings during the customer's entire purchase journey” (Lemon and Verhoef, 2016:74).

On a particular universe, the retailing one, Grewall *et al.* (2009) stated that *Customer Experience* is able to be categorized along concepts related with the retail mix (e.g. price experience). The *Online Customer Experience* has also gained a tremendous importance along the recent years, Rose *et al.* (2012) stated that the feeling of having full authority needs to be full comprehended by e-retailers, because it influences the emotions present in an online transaction. The same was concluded by Berry *et al.* (2002) saying that firms need to understand that the emotional component of the customer experience needs to be managed within the same seriousness they carry regarding their products and services functionalities.

On a tourism level, authors have shown that there are travellers who keep progressively researching for vacations, accommodations (such as hotels), restaurants, or just recreation activities/experiences online (Loureiro, 2015; Sreejesh and Ponnampalath, 2017). The choices of these travellers often pass through platforms such as *TripAdvisor* or *Booking*, which aim at providing as much information as possible regarding travel logistics matters (Bilro, 2017). As seen before, the experience that the traveller sets in refers to the holistic view of an experience (Bilro, 2017; Lemon and Verhoef, 2016; Schmitt, 1999), but the online world “offers different stimuli in some features, such as aesthetics/design, information and interaction” (Bilro, 2017:83), involving mostly the cognition and emotions fields (Sreejesh and Ponnampalath, 2017). If the experience motivates the customers through those stimuli, they will

have tendency to become more involved with the brand and the experience itself. “Indeed, a strong sense of motivation, involvement and a positive response to online stimuli may generate online engagement” (Bilro, 2017:83). In the case of positive engagement, it “can promote the creation of an emotional tie between a firm’s brand and its customers which in turn enhance customer loyalty” (Gentile *et al.*, 2007:404).

2.2. ONLINE ENGAGEMENT, LOYALTY AND SATISFACTION

Starting from the conventional definition of *Engagement*, already seen in the previous subchapter – Doom *et al.* (2010) stated engagement as a behavioural process in form of a customer attitude towards a firm, going beyond a simple purchase, driven from motivation variables (Bilro, 2017). According to Bowden (2009) and Fernandes and Esteves (2016), customer engagement starts with the customer satisfaction and prior attitudes, like cognitive and emotional ties with the brand, and involvement. If these factors are considered positives, it leads at the end in engaged and loyal customers.

One aspect that seems to be fundamental to several authors is the role that consumers must have in order to feel fully engaged, concluding that it must be active and most of all co-creational (Brodie *et al.*, 2011; Kumar *et al.*, 2010). This interaction between the firm and the customer is according to Brodie *et al.* (2011:14) crucial and the basis of the definition of this concept – “a psychological state that occurs by virtue of interactive, co-creative customer experiences with a focal agent/object (e.g., a brand) in focal service relationships”.

This concept is nowadays seen as a way of firms taking benefit from, and along the years literature has brought different branches of this tree, as for example *Customer Engagement Measurement* (Hollebeek *et al.*, 2014) and the study of its value (Kumar *et al.*, 2010), among others.

Moving to the online world, the internet allowed firms to develop their own communities online, both through their website and SNS (Zheng *et al.*, 2015) – SNS (*Social Networking Sites*), which allowed the creation of another branch of the tree, with the development of *Online Engagement*.

Making the passage from the conventional definition to the online environment, Bilro (2017:84) states that “the online engagement construct goes far beyond purchasing behaviour, is stimulated by motivational drivers (such as involvement, external stimuli operationalized as the atmospheric cues in stores, customer-generated media or other online contexts), and is supported by interaction, the exchange of information and messages”. Moreover, and following the same logic, previous studies by Doom *et al.* (2010) found that in a society that

is clearly more interactive nowadays (with more firms-customers and customers-customers relationships) – through SNS and others, the non-purchasing behaviour generated through the previous referred stimuli, is now a critical point.

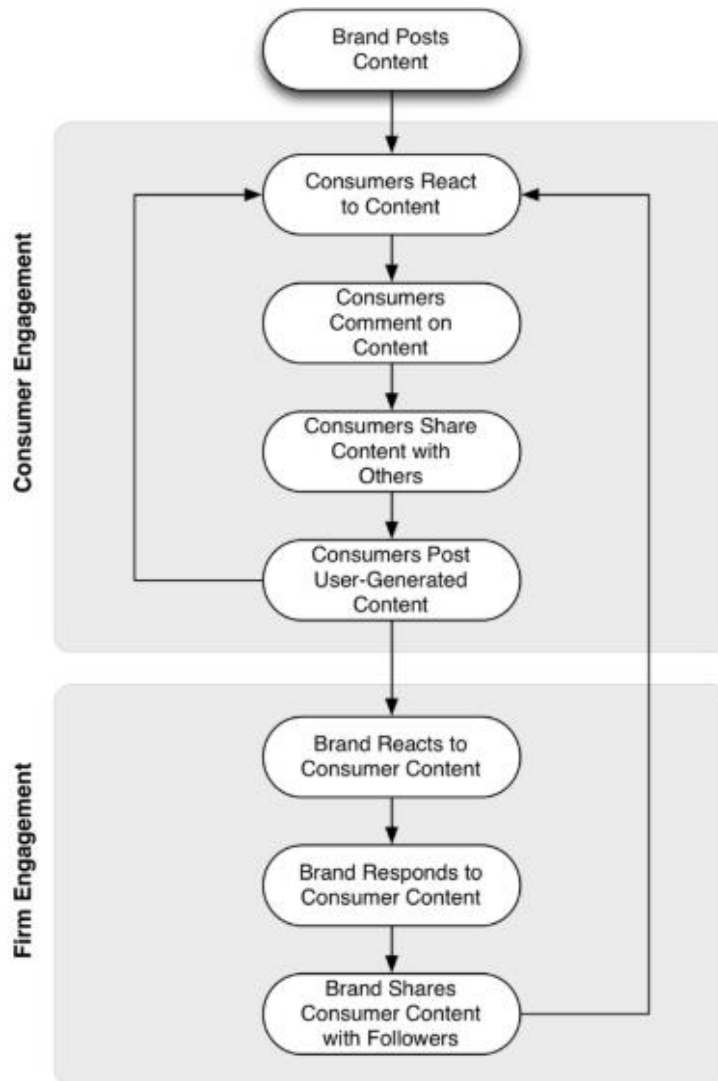


Figure IV– Consumer and Firm’s Engagement based on SNS
Source: (Barger *et al.*, 2016)

The *Figure IV* presented above shows a diagram that represents the process of engagement in the consumer and firm’s point of view, through *Social Networking Sites*. As it is possible to see engagement on consumers may occur due to the online brand’s content created, but also through other consumers. The diagram shows therefore the use importance of the participation of brands in this SNS (Barger *et al.*, 2016).

It is undeniable that *Engagement* and *Loyalty* are interconnected and only through the first it is possible to reach the second. Making a parallel with the online world, *Online*

Engagement is the bridge to achieve *e-Loyalty*. According to Zheng *et al.* (2015) findings, brand loyalty is truly directly influenced by user's engagement, and indirectly through their communities. Adding to that, e-marketers should pay close attention to their online strategies in order to achieve engagement.

According to Srinivasan *et al.* (2002:41) "customization, contact interactivity, care, community, convenience, cultivation, choice, and character" are significant components of e-loyalty, and thus firms should pay close attention when structuring the consumer buying experience process. Also e-loyalty is defined as the positive attitudes towards the e-retailer shown by the customer that will ultimately result in a repeated purchase (Srinivasan *et al.*, 2002; Islam *et al.*, 2012).

Moreover, e-loyalty can be perceived as customers being interested in recommending their experiences to others, and spreading positive information regarding the firm. The higher the positivity expressed, more expected the customers are to re-purchase/re-experience and spread positive e-WOM (*Word-of-Mouth*) (Islam *et al.*, 2012; Zeithaml *et al.*, 1996).

Finally, one important aspect regarding e-loyalty concerns e-satisfaction and e-trust as drivers of it. According to Ribbink *et al.* (2004:453) "a significant positive effect of e-trust on loyalty was demonstrated, while assurance was shown to affect loyalty positively both via customer satisfaction and via e-trust", which translates into, the higher the satisfaction, the higher the probability of a customer becoming loyalty to the firm, thus increasing the re-purchases (Chang *et al.*, 2009; Ribbink *et al.*, 2004).

This last paragraph brings us another concept - *Customer Satisfaction*, which was described by Chang *et al.* (2009) as the capacity of the experience creating a positive feeling in the customer. More, the same study refers that a positive satisfaction may increase the re-purchase factor. Additionally, other positive outputs might come with positive satisfaction, such as diminishing switching opportunities and positive e-WOM (Anderson and Srinivasan, 2003).

2.3. SOCIAL MEDIA AND ONLINE REVIEWS

As it is possible to see from the previous subchapter the online world assumes a preponderant factor in both firms and customers strategies. Former articles showed that the customer online engagement will ultimately generate e-WOM (Islam *et al.*, 2012; Zeithaml *et al.*, 1996; Anderson and Srinivasan, 2003), and it is this way of spreading information in the world that this chapter will deal with.

The rapid development of technology allowed users to have the possibilities of opting around different word-of-mouth alternatives, “such as online user reviews and professional reviews, during online decision making” (Zhou and Duan, 2016:202). These user reviews contain the opinions, thoughts and the significance attributed regarding certain services or products to the ones who wrote them (Zhang *et al.*, 2014), and can be found in media, firm’s websites, forums, blogs, social networking sites and specific online reviews sites (Cheung *et al.*, 2008; Lee and Youn, 2009). From those it is possible to find two different e-WOM types: e-commerce WOM and social media e-WOM (Yan *et al.*, 2016).

Online reviews belong to social media e-WOM, and assume preponderant helpfulness for fellow users in two main features: stand out the most important information regarding a product/service and the possibility of evaluation of those same products/services (Zhou and Duan, 2016). The same should happen for experiences and activities, once according to Pan *et al.* (2007) e-WOM also influences the tourism industry, and for that reason it makes online reviews a key source of data for travellers.

Moreover, “often consumers do not follow the expert reviews and look for user reviews that provide view of people who experienced the products in their day to day life” (Gobinath and Vidyapeetham, 2016:412), the same happening in the tourism industry as travel reviews are more fun, and provide more reliable and useful information compared with the one posted by travel agencies (Ye *et al.*, 2009).

Another factor that brings possible customers to use online reviewing as a source of information is the cost of search - “the advantage of online reviews is that they reduce this search cost and provide variety of information for the consumers to aid them in their decision making” (Gobinath and Vidyapeetham, 2016:413).

The decision making is therefore, influenced in large scale by the information that it is available online written by reviewers (e-WOM), and it makes the purchase decision making sturdily influenced by it (Goldenberg *et al.*, 2001).

Some researchers have studied the reasons that bring users to go online and present their opinions towards their customer experience. Zhou and Duan (2016:208) showed that the one thing that drives reviewers to share opinions online is due to the concept of self-enhancement - “defined as user’s emotional desires to gain attention and enhance their images among others”. Other authors refute that, stating that it is not the only driver, as social benefit and economic incentives are also reasons that might explain the motivation behind reviewer’s behaviour (Yoo *et al.*, 2013).

The previous mentioned authors also reveal that “customer’s reviews participation has a significant impact on site identification building” (Yoo *et al.*, 2013:676). It can be assumed that online reviewing is, therefore, a co-creational experience, and for that reason one driver of users feeling engaged with the firm/product/service (Brodie *et al.*, 2011; Kumar *et al.*, 2010; Yoo *et al.*, 2013), and potentially leading to customer retention due to e-loyalty creation (Zheng *et al.*, 2015).

To understand the importance of online reviews in the tourism sector, since 2015 data have shown that “71% of independent travel related bookings are done online, while 36% of all package tours are booked online” (Schuckert *et al.*, 2015:608), also Fang *et al.* (2016:498) got to some additional results “65% of leisure travellers will search online before deciding on a travel destination, and 69% of their plans are determined by online travel reviews”. Peng and Chen (2013:282) have no doubts “as a source of travel information, the impact of social media on online booking is obvious”.

Another booking experiences or services, using as base trustworthy platforms – like *TripAdvisor*, turns customers less worried with fraud schemes, the motive being reviewers posting good but also bad experiences (Schuckert *et al.*, 2015; Zhong and Leung, 2013). This was perceived by (Kusumasondjaja *et al.*, 2012) as negative reviews being observed as more credible, nonetheless positive satisfaction reviews increase customer’s booking intention, while the contrary might reduce it (Cheng *et al.*, 2017). Liu and Park (2014) found that a positive review achieves a higher usefulness on customers than a negative one. Other studies confirm that - such as the conclusions presented by Schuckert *et al.* (2015), stating that a different valence of reviews, have a profound impact on readers and their purchase decision. Moreover, consumers are believed to read a set of positive and negative reviews before taking any decision (Purnawirawan *et al.*, 2012).

Moreover on the same subject, Chen (2015:1259) found in his studies that “positive information encourages consumers to buy products and negative information presents the problems of products, which will reduce the credibility”. Nevertheless, a negative review can be a good source of information for a firm, which may use it to spot product or service malfunctions, and be that way able to change the strategies (Chen and Tseng, 2011; Cheng *et al.*, 2017). The literature also indicates that partial negative information inside a review does not mean that the reviewers are not disposed on recommending, and promoting, the firm (Bilro, 2017).

Moving on to text characteristics of online reviews, according to Fang *et al.* (2016) reviews that have a clear and explicit writing style are perceived as more useful, as well as

reviews expressing uttermost sentiments. Perceived usefulness was observed by academics as a cognition process dependent on accepting or not the existent technology (Mou et al., 2017), being reflect in consumer's behaviours (intention) regarding purchasing from an online source (Ashraf *et al.*, 2016).

The writing style can be perceived as the language style, and according to Wu *et al.* (2017) it is a very important step in the pre-purchase evaluation, and sometimes it is dependent on the reviewer's expertise level. In their studies, they mention "recent marketing research demonstrates that figurative language is more appropriate to express hedonic (vs utilitarian) consumption experiences" (Wu et al., 2017: 591), and Moore (2015) adds that for hedonic products (such as travels) explaining reactions is preferable, rather than explanations.

In certain platforms such *TripAdvisor* – already mentioned, it is possible to differentiate the different levels of membership of reviewers. In this case this platform makes it on a scale from 0 to 6, and according to Chen (2015:1258) "different membership levels often have different attitudes towards online reviews" and according to him, the ones considered as high ranked reviewers will normally receive, in a higher probability, the information, but will also reject it with a higher chance.

Again, making the parallel with the tourism world, findings indicate that "consumers actually exhibit lower levels of attitude and reservation intention if the review is written in figurative (vs literal) language" (Wu *et al.* 2017:590). The importance of the language is reduced when the review is written by a high expertise reviewer. This information is quite useful, because firms may use it as a company's strategy to encourage low expertise into becoming high ones, and promote the already high ranked reviewers (Chen, 2015).

2.4. TOURISM EXPERIENCE

This chapter is dedicated on literature regarding the *Tourism Experience* and defining a model already created by other authors that will serve as background for future studies in this dissertation.

According to Otto and Ritchie (1996) the tourism experience may be defined as mental state defined by the participants feelings, while products and services are tangible and intangible – respectively, "experiences represent events that commit people in a particular manner and, as such, are memorable" (Mendes *et al.*, 2010:112). Moreover, Pine and Gilmore (1999) mentioned that the tourism experience starts previously of the arrival to the endpoint and finishes with memories and intentions for visiting it in the future.

As it was seen during the *Customer Experience* chapter, the experience itself is a holistic concept (Schmitt *et al.*, 2015; Schmitt, 1999; Verhoef *et al.*, 2009), the same happens in the *Tourism Experience*, where “regardless of specific quality assessments and perceptions, tourists evaluate the tourism experience as a whole” (Mendes *et al.*, 2010:112). This experience process is quite complex and involves a certain number of players in the act (Uriely, 2005), it consists “of a continuous flux of related and integrated services which are acquired during a limited period of time, often in different geographical areas” (Mendes *et al.*, 2010:112).

The tourists’ satisfaction factors are more of a “combination of inherent factors and associated satisfaction in terms of acquired and consumed services during the holistic tourism experience” (Mendes *et al.*, 2010:113) rather than a direct relation with acquiring a specific product or service. The term *Service Quality* by itself it is quite subjective, but when applying the *Tourism* concept, it gets even more subjective. The context outlines the hedonic characteristics of travels, and the tourism itself (Ritchie and Crouch, 1997).

Tourists’ expectations to acquire benefits – satisfaction included, are dependent on operation, symbolic and life experiences gathered on the activities done or services procured during the tourism experience (Vega *et al.*, 1995). The concept of satisfaction, on a tourism level, has been defined several times. For example, the broader definition sees it as a cognitive view of the reaction (satisfied/not satisfied) of a customer on the post-purchase moment (Mendes *et al.*, 2010). It was also defined as the fulfilment obtained by the pleasure provided by a product/service, or one of its’ features (Oliver, 2010). According to Bosque and Martín (2008:553) satisfaction may be perceived as “an individual’s cognitive-affective state derived from a tourist experience”, which ultimately means that it results from both decisions and emotions occurred during the touristic experience (Bigné and Gnoth, 2005).

Having seen a brief past of the literature towards the *Tourism Experience*, including its definition and the relation with satisfaction, it is now time to explore a model that will be used further on in this dissertation – the *Tourism Experience Model* (Gnoth and Matteucci, 2014).

According to Deans and Gnoth (2012) “the *Tourism Experience Model (TEM)* pulls together our insights into experiences and experiencing in tourism so as to be able to locate tourists in a commonly understood grid of references”, meaning that it allows destinations to understand what their position is, in the tourist’s experiences. Positive memories are fundamental being linked to the destinations otherwise tourists may easily switch destinies for any other amusing experiences.

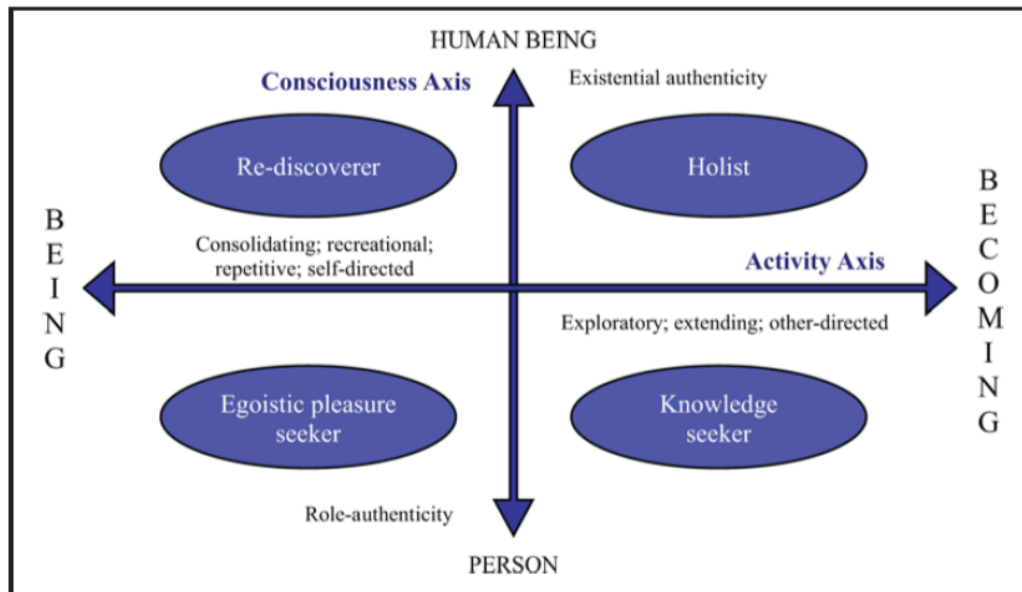


Figure V– Tourism Experience Model (TEM)
Source: (Gnoth & Matteucci, 2014)

The model – that can be seen in *Figure V* above, consists in an axial representation regarding two different sides. The vertical axis corresponds to the *Consciousness* – “relates to the style of how tourists receive their experience of the destination” Deans and Gnoth (2012:n.d).

According to Gnoth and Matteucci (2014:6) awareness has been processed that it leads to the experience of the object as its outcome”. The vertical axis comprises two different domains; the upper side comprehends “*Human Being*” and it relates with “finding ourselves as human beings while stripping ourselves of the socially induced values, habits and stereotypes to get close to our existential being as felt in moments of or similar to flow and peak experiences” (Deans and Gnoth, 2012:n.d), meaning that it is relating with experiences that go beyond the stereotypes and dogmas of society, where tourists are able to be themselves. The lower size relates to the “*Person*” and to roles constructed by society as socially accepted, or in other words “consciousness here receive experiences as guided by role-expectations” (Deans and Gnoth, 2012:n.d), meaning that the higher the tourist’s behaviour according the usual standards expected by society, the higher the role-authenticity is.

The horizontal axis – *Activity* one, comprehends two different kinds of experiences that tourists usually engage in, and it is on the principle that in order to experience tourists have to automatically move from one place to a destination, basically they are actives. The

left side of the axis relates with *Recreational Activities*, while the right one *Exploratory Activities* (Deans and Gnoth, 2012; Gnoth and Matteucci, 2014).

Starting with the left side of the axis, that comprehends *Recreational Activities*: according to Deans and Gnoth, (2012:*n.d*) it deals with activities that are performed and a result of “habit, training and repetition (...) have their place in helping people regain their balance, their strength, or their self-esteem, or all of these together”. It involves the type of activities that are connected with entertainment, rather than changing the inner-self of the person, not going beyond of where they are right now. Some examples are enjoying a good hotel, its pools and decoration (Deans and Gnoth, 2012; Gnoth and Matteucci, 2014). The right side is quite different, as it involves the *Exploratory Activities*. In this type of activities tourists are found to explore new visions, understandings, body experiences and feelings, opposite to the *Recreational* ones that were a result of repetition and routine activities. The new insights are categorized by being challenging and a new way perspective of obtaining knowledge and skills. The tourists living such experiences are not thinking about the fun, but on “finding explanations for the phenomenon within its own” (Deans and Gnoth, 2012:*n.d*).

As it is possible to see in *Figure V*, the authors have identified four different modes of experiencing, in the two main dynamics: *Experiencing as Being* and *Experiencing as Becoming*. *Experiencing as Being* includes two experiences (left side of the axial representation): *Pure Pleasure* and *Re-Discover*; and *Experiencing as Becoming* includes also two other experiences: *Knowledge Seeker* and *Holist* (Gnoth and Matteucci, 2014).

Starting with the first one – Pure Pleasure, the authors defined it as “predominantly role-authentic and expectations marked by the rituals and customs, fads and fashions of everyday life” (Gnoth and Matteucci, 2014:9). Being connected with the left side of the axis it involves activities that are considered useful, but already performed in another situations – and therefore, a result of repetition. Tourists experiencing this do it so in activities that involve no hard challenges, and the benefits are entirely to themselves. Due to being so stereotyped activities, the tourists tend to pay slight or no consideration to the environment that surrounds them, by the way their behaviour also indicates that the experience itself is full of allusions to the tourists’ country (e.g.: eating food they would normally eat at home), which ultimately indicates that the culture of the destination country is seen as an outsider (Gnoth and Matteucci, 2014). Another characteristic of such experience is looking for activities that involve “lazing by the poolside, casual sports, or socialising and catching up with friends while enjoying culinary delights” (Gnoth and Matteucci, 2014:10). Re-visitation of a favourite spot of holidays is also another trait of this experience, due to tourists seeking to

repeat previous senses in order to “recover from the stresses and strains of every-day-life” (Gnoth and Matteucci, 2014:10).

The second experience, also on the left side of the axial representation is *Re-Discover*. In this type of experience tourists are looking for “goal-oriented activities that require some focus and possibly effort. After a period of relaxation has taken hold in the holiday-maker he/she now begins to seek to re-invent herself, to recreate” (Gnoth and Matteucci, 2014:10). Tourists seek to remember their past through the activities they are doing, but also hoping for better and brighter ones in the future. Repeating activities is linked with the past memories but also are able to make tourists explore new circumstances, some activities more than others (Russell and Levy, 2012). Literature also points out that the hunt for the existential being is characterized by activities that involve families (Wang, 1999) and family reunions (Gnoth and Matteucci, 2014). Often these groups of people travelling are looking to improve their socially learned traditions and behaviours facing the fresh journeys they are living. For many tourists getting closer with their existential being involves sports activities, and in that case travelling might be useful for rebuilding their skills and gaining new strengths. In such experience, leisure activities are commonly categorized by tourists spending time, money or skills – or all of those together (Gnoth and Matteucci, 2014; Stebbins, 2007).

The third experience – and already in the right side of the axial representation in *Figure V*, relates with *Experiencing as Becoming* and is named *Holist* – being defined as “experiencing therefore relates to a form of exploratory activity of the authentic self that is marked by an experience of ongoing self-change” (Gnoth and Matteucci, 2014:13). Traits of such experience involve tourists being connected intrinsically with the environment that surrounds them, as well as living each moment as unique. Cohen (1979) stated that tourists seeking for *Existence* – as this ones (see *Figure V*), often believe that living somewhere abroad of their home nations would be more significant and happy for them, inclusive they think about moving to those places in a long-lasting base. Moreover, the same author reveals that experiential activities often come with emotional ties to romance and nostalgia connected with the destination’s culture – also reinforcing the relationships with others. Other characteristics found in the literature, across the years, says that a “deeper self-transformation gave rise to new life trajectories; whereby adopting alternative lifestyles or undertaking new careers” (Gnoth and Matteucci, 2014:13). There are some types of experiences that are common in experiencing *Holist*: spiritual tourism, authentic tourism, transformative travel, volunteer experiences, adventure tourism, nature-based sports, independent travels and religious tourism (Gnoth and Matteucci, 2014) – authors that based this inference with other

literature papers (Cohen, 1979; Norman, 2012; Turner, 1973; Lean, 2012; Zahra and McIntosh, 2007; Duffy and Overholt, 2013; Humberstone, 2011; Wilson and Harris, 2006).

The fourth, and last, experience of the *TEM* is *Knowledge Seeker* – defined as “pre-meditated outcomes often again determined by society, and fulfilling such socially derived needs as esteem, authority, influence, or power, that come with the acquisition of new knowledge, financial wealth, and the image of having been to certain places, actually seen certain things, and learned from them in some form or another” (Gnoth and Matteucci, 2014:14). This experience is highly connected with some type of tourism categories, such as: museums tourism (McIntosh, 1999), cities tourism (Maitland and Ritchie, 2009), dark tourism (Biran and Hyde, 2013), rubbish-dump and slum tourism (Biran *et al.*, 2011). Furthermore, other characteristics of this experience are the fact that tourists seek to visit galleries and shows, but never forgetting sports appearances. The emotional component also has an important role here as some tourists, dependent on the type of tourism chosen, seek for “a desire for emotional involvement and the construction of identities” (Gnoth and Matteucci, 2014:14).

2.5. SENTIMENT ANALYSIS

The advancements in the technological world have created the possibility to produce big flows of information (*Big Data*) and consume it at a speed higher than ever before. Nowadays, there is an interested in running these data through “machine learning methods in natural language processing” (Bilro, 2017:104). The same happens in the tourism industry – seen “as an industry where customer experience is crucial for its growth and reputation, has mainly adapted to the evolving technology and the availability of new data sources” (Alaei *et al.*, 2017:2), meaning that tourists are nowadays able to access information from multiple sources, create their own content in multiple ways and spread it with the entire world at any time (e.g. social media), making them one of the most influencing sources to other travellers.

As we have seen earlier in *Chapter 2.2*, positive satisfaction is a variable half way through in converting possible travellers in real customers of a destination (Chang *et al.*, 2009; Ribbink *et al.*, 2004). Wang (2017) goes deeper, and explores the positive emotions demonstrated in user-content generated and states that in the tourism industry such emotions are crucial and destinations depend on it. Collecting the data of such vast travels thoughts and opinions was mostly done, in the past, through the form of interviews and surveys – which would most of the times, collect answers with positive bias (Dodds *et al.*, 2015), and was very dispendious in time and budget.

To fight such expenditure of resources, researchers and firms started to develop new ways of storing data and analyse it, referring to it as *Big Data analytics* (Kirilenko *et al.*, 2017).

One of those methods is called *Sentiment Analysis*, which consists in a “computational study of people’s opinions, appraisals, attitudes, and emotions toward entities, individuals, issues, events, topics and their attributes” (Liu and Zhang, 2012:1), and it aims at studying the polarity of a certain text script (e.g. review, blog text or any user-generated content), being able to characterize if such excerpt is positive, neutral or negative. It is quite useful in the tourism industry, because polarity may influence further travellers (Alaei *et al.*, 2017). Sentiment analysis will also, through the selected text, be able to analyse if the excerpt is based on subjective or objective premises. For instance, subjective reviews have as ground opinions and stereotype bias – reviewers let themselves be influenced by their feelings, beliefs and opinions given by others, while objective ones are accurate and based on concrete proofs and determinate interpretations (Feldman, 2013).

The *Figure VI*, shown below, schematizes the, so-called, general process of a *Text Mining* operation. As it is possible to see, the process begins with the selection of data that will be used in the study, as well as its collection – generally, this information is provided from unstructured text sources (like reviews, blogs, forums, etc.). The process then continues with the processing of the data, through a certain algorithm, which will culminate in the final output with the pretended results (Shaikh and Deshpande, 2016).

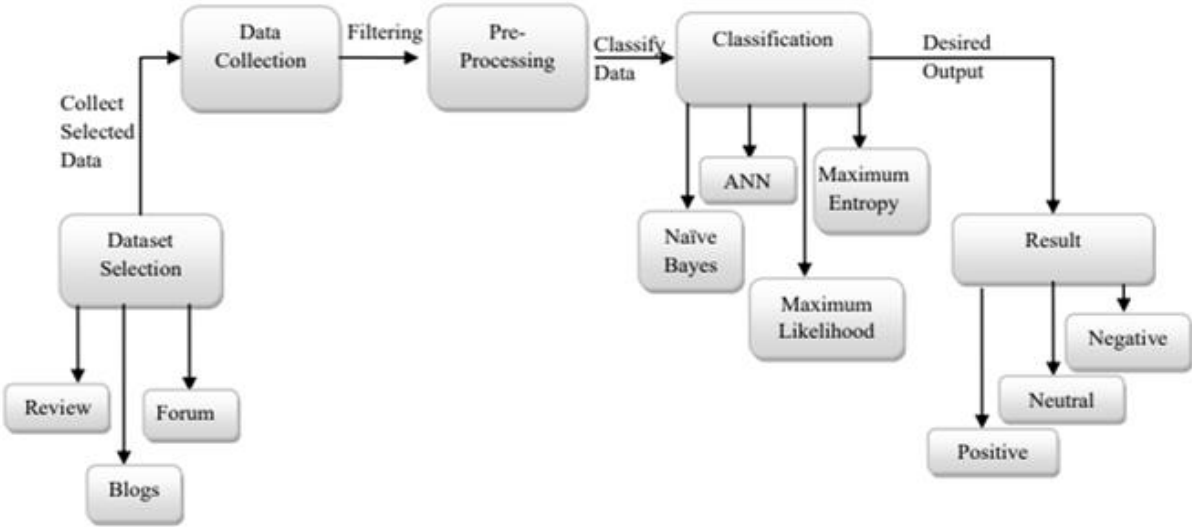


Figure VI – General *Text Mining* Process
 Source: (Shaikh and Deshpande, 2016)

As it was mentioned before company's strategies can often be influenced by the data that they retrieve from user-content generated sources, and in this case *Sentiment Analysis* technique is capable of providing information “of their products or services influence on customers' satisfaction, and which can help to create or change the focus of companies/brands' strategies” (Bilro, 2017:104). Furthermore, according to Valdivia *et al.* (2017) *TripAdvisor* is a suitable source for such type of study, as it is a text source with a high number of reviews, covering firms for all over the globe. The reviews of such platforms, especially relating travels, are written with a good grammar (Kirilenko *et al.*, 2017) and are usually tremendously positive – such specifications along with full sentences rather than short ones and use of slang or abbreviations are more suitable for this type of methodology (Lu and Stepchenkova, 2012).

3. METHODOLOGY

On this chapter there will be a full description of the methodology process that best responds to the research question. To do so it is intended to use a mixed approach composed by two different studies.

The first study (*Study 1*) will be performed under a netnographic perspective which intends to answer my questions merely on a qualitative level. The conducting process will be done through the scientific method of *Robert V. Kozinets* – considered the *father of Netnography* – and the process described in his book. Netnography is an already known and well-established approach to qualitative research, which combines together *Internet* and *Ethnography*, and can be used by multiple researchers and scholars, through online marketing research techniques, to best explain the free behaviour of individuals on diverse cultural worlds (Kozinets *et al.*, 2014).

The second one (*Study 2*) will be done through the form of *Text Mining* - which is a process used by researchers and professionals to analyse big volume of stored information (*Big Data*) through “machine learning methods in natural language processing” (Bilro, 2017:104). There are multiple platforms that are able to do such analysis, but the one selected to this study is *Meaning Cloud*. A platform that can be used in *Social Networking Sites*, through *Social Media Analytics* – “leverages semantic technology to automatically “understand” the structure and meaning of news and social conversations (far beyond a simple aggregation of mentions) and extracts the most actionable bits of information” (LLC, 2018).

Through the analysis of both studies it is believed that it is possible to have a significant and meaningful result to answer to the research question – established in the upcoming chapters. Along with both techniques it will be used important scientific articles to compare with the information gathered from *study 1* and *study 2*.

3.1. STUDY 1 - NETNOGRAPHY

Netnography as previously mentioned, results from a combination between *Internet* and *Ethnography* and its’ process results of a combination between the methodologies used in the study of cultural anthropology, applied to the online communities (Eastin *et al.*, 2011).

According to Bowler (2010) stating Kozinets (2010) it follows six steps of ethnography: research planning, entrée, data collection, interpretation, ensuring ethical standards, and research representation.

Having in mind the previously mentioned book, it is possible to obtain a simplified flow of a netnographic research project that includes all of those six steps, which will be the procedure used from now on.

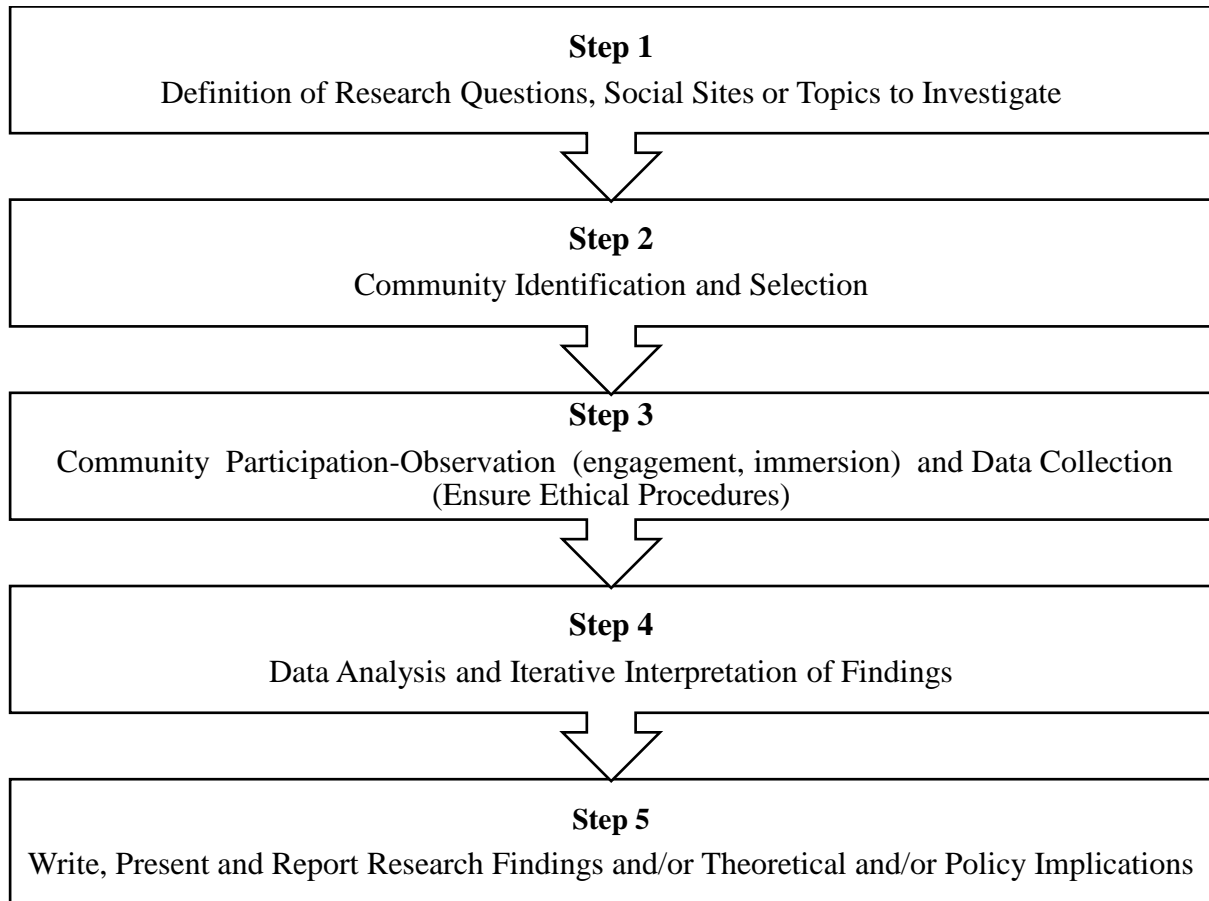


Figure VII – Simplified flow of a netnographic research project
Source: Kozinets (2010)

As it is possible to see in *Figure VII*, the netnographic research project used for *Study I* involves five different steps.

In *Step 1* it will be defined the *Research Question* – as in the purpose of the project research, as well as which *Social Sites* are more suitable for conducting the experiment and a small amount of *Topics* that serve as guidance to the final objective. In *Step 2* it will be done the identification of the communities that were chosen to be relevant to answer to the *Research Question*, along with a description of those communities. Regarding *Step 3* it will be explained if in *Study I* it is required a *Participation-Observation* phase, and the different stages of the *Data Collection*. Furthermore, in *Step 4* it will be explained how the information and results gathered will be represented (articles, books, reports, presentations, etc.), as well

as explaining some details about the *Data Analysis*. Finally, in Step 5 it will refer the implications of this project as well as where the Report Findings will be presented.

There is in fact, another process that is described in Kozinets (2015) – see *Annex 1* - but it is only meaningful for experiences that require a participant-observational phase, which means that the correct methodology for my research, which does not involve any participants is the one presented in Kozinets (2010).

3.1.1. STEP 1 – DEFINITION OF THE RESEARCH QUESTION, SOCIAL SITES OR TOPICS TO INVESTIGATE

According to Kozinets *et al.* (2014) research questions that are going to be studied through netnographic procedures may be related with a phenomenon that occurs both in offline and online worlds; that can be experienced solely virtually; or concerning the online world.

Furthermore, to identify online communities the researcher may address the investigation through online forums that will help answering the research question. It can be done through bulletin boards, chat rooms, play-spaces, virtual worlds, blogs, wikis, audio-visual sites, social content aggregators, and social networking sites (Kozinets *et al.* 2014).

In *study 1* the best online forum to conduct the experience is *social networking sites* due to the huge variety of interactions and available communities it possesses. Having in mind Kozinets (2010), social networking sites are a very good example of combining web-pages, private emails, blogs, forums and chat rooms. Moreover, it allows “the access to unbelievable number of consumers, at low costs, high speed and ease of applicability” (Zaglia, 2013:222).

Additionally, Kozinets (2010) says that in order for a site to be considered suitable for a netnographic study, it must be relevant, active, interactive, substantial, heterogeneous and data-rich.

Since my research is focused in the tourism industry and the analysis of how tourists perceive two island destinations with identical culture but different demography (such as island dimension, world region and population size) the best suitable social networking site is *TripAdvisor*.

In *TripAdvisor's* webpage it is possible to gather all the information that shows us why it is suitable for a study like this. It has more than 600 million reviews and opinions, and more than 7.5 million different accommodations, airlines, attractions and restaurants. Moreover, it is said to have more than 455 million monthly average unique visitors (TripAdvisor, 2017).

As mentioned before since this dissertation's goal is to answer to "How tourists perceive two island destinations with identical culture but different demographic characteristics, through *Social Networking Sites*?" the following topics will be addressed:

- A. Overall analysis of the tourists perception of *Island 1* experience according to *TripAdvisor's* reviews;
- B. Overall analysis of the tourists perception of *Island 2* experience according to *TripAdvisor's* reviews;

3.1.2. STEP 2 – COMMUNITY IDENTIFICATION AND SELECTION

In order to choose communities to be studied, Kozinets *et al.* (2014) states that scholars and researchers must take into consideration communities that are more relevant to answer to the research question; have a higher number of user's interactions; have a bigger number of reviews posted; more rich and useful data; large number of interactions between the users.

After researching island destinations across *TripAdvisor's* website, having in mind the previously mentioned characteristics for communities, it was chosen the *Madeira Island* and the *Bermuda Island* to apply this netnographic study.

In order to best compare the information displayed in the next two sub-chapters – a brief characterization of both islands – a summary comparison table has been created (see *Annex 2*).

3.1.2.1. MADEIRA'S DESCRIPTION

The archipelago of Madeira is a Portuguese region located in the Atlantic Ocean with a total area of near 800 square kilometres, composed by *Madeira Island*, *Porto Santo*, "*Ilhas Desertas*" and "*Selvagens*". *Funchal* is the capital of this archipelago where only the first two mentioned islands are habitable.

This region accounts with a population of 267 thousand people and has a GDP of 5.224 million Euros (Madeira, 2018).

It was an extraordinary year for the island's tourism industry since it reached an historical maximum of 1.4 million visitors (RTP, 2018). In 2017 the number of overnight stays reached 7.5 million performing a total of 407.4 million Euros and lodging revenues of 263.6 million Euros. Moreover, the annual rate of bed occupancy stood at 69.7% - more 0.5% than the previous year. Another interesting data is the fact that the number of cruise transit

passengers increased by 3.4% - totalizing 537 535 transit passengers (Direção Regional de Estatística da Madeira, 2017).

The position that it occupies geographically makes the region present a tropical climate, which can be seen by the average temperature of 19° Celsius and 25° Celsius during the summer months – June, July and August (Madeira, 2018).

Finally, it has gained a lot of awards in the former years, being the two most important ones: *Best Island Destination* by the renowned *World Travel Awards* and *Mankind Heritage* by *UNESCO* (Madeira, 2018).

Regarding *TripAdvisor*, Madeira's presence in this platform is quite expressive – with 364 178 evaluations and opinions spread across five different categories: hotels, flights, activities, restaurants and forum. Additionally, visitors have placed more than one thousand photos in this social networking site, regarding their experiences (TripAdvisor, 2018).

3.1.2.2. BERMUDA'S DESCRIPTION

Bermuda is an archipelago located in the North Atlantic Ocean composed by 138 islands, where eight of the main ones are connected through bridges. From all of these islands, only a dozen of them are inhabitable. It is a self-governing British territory that has as capital the land of *Hamilton*.

This region has a total area of 54 square kilometres and accounts with a population of near 70 thousand people. It has a GDP of \$5.20 billion (which exchanges to 4.231 million Euros) (WordAtlas, 2018).

According to the *Bermuda Tourism Authority (2018)*, in their annual arrivals report, Bermuda's economy was injected with \$431 million through their visitors in 2017. It represents a 20% increase regarding the previous year. Additionally another important fact occurred once there was an increase by 9% in the hotel occupancy – reaching 63.1% - in comparison with 2016.

Moreover, 2017 was a remarkable year for the Bermuda's tourism industry once it reached an historical record of 693 thousand visitors to the island. Furthermore, the Caribbean Tourism Organization (2018) revealed a total of 231 thousand overnight visitor arrivals – this data refers to the months of January until November (World Tourism Organization, 2017).

Another important aspect is the fact that there was an increase in the number of cruise passengers' arrivals totalizing 418 thousand visitors – 20 thousand more than the previous year. By cruise is, since 2006, the preferable transportation for visitors to get to the island (Bermuda Tourism Authority, 2018).

The climate of Bermuda is very humid, influenced by the Gulf Stream but not actually a tropical paradise once in the winter the precipitation can be very high. The temperature varies from 16° Celsius in January and 30° Celsius during the summer months – June, July and especially August (Forbes, 2018).

Regarding *TripAdvisor*, Bermuda has also a considerable presence in the platform with 86 765 reviews spread across six categories: hotels, holiday rentals, flights, things to do, restaurants and forum. There are nearly 1900 photos displayed in these commentaries uploaded by the reviewers (TripAdvisor, 2018).

3.1.3. STEP 3 – COMMUNITY PARTICIPANT-OBSERVATION AND DATA COLLECTION

In this stage Kozinets (2010) adds a participation-observation phase to evaluate and takes notes of the community being studied online. In *study 1* this stage is not required once there is enough information publicly exposed to answer my research question.

In consequence, this sub-chapter will only take into consideration the formulation of a strategy to collect the data.

In first place is necessary to mention that all the reviews being collected are withdrawn from the *TripAdvisor* website, and are aimed at responding to the research question. Secondly, due to the huge amount of reviews it is necessary to define the period-range of reviews being extracted – as seen before adding each island there are more than 450 thousand reviews.

Thirdly, identify the categories being studied as well as the number of elements in each category. Finally, and perhaps the most important, it is critical to establish the parameters in which the reviews are being studied.

3.1.3.1. DATA COLLECTION – PERIOD-RANGE OF REVIEWS

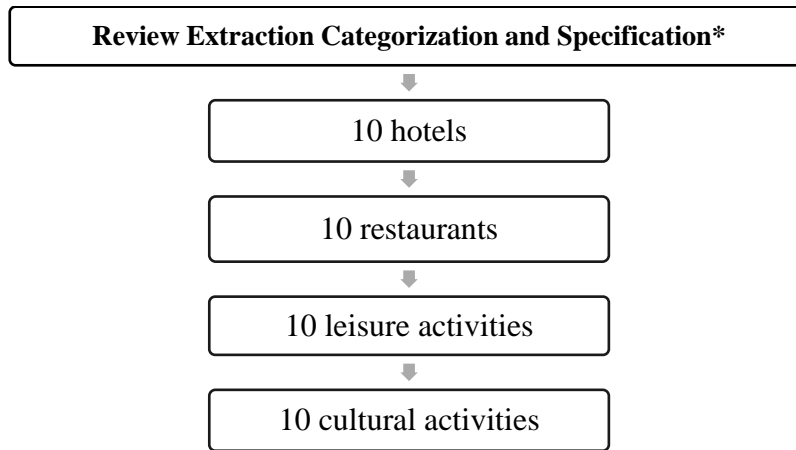
As seen in the *chapter 3.1.2*, there are nearly half a million opinions and reviews in the *TripAdvisor* platform regarding the islands of Madeira and Bermuda. In that sense, it is necessary to reduce this to a number in which the study can be carried on. To do so the information about the climate was considered - since both regions have the same summer months, it was chosen August of 2017 as the reference for the extraction of commentaries.

3.1.3.2. DATA COLLECTION – REVIEW EXTRACTION SPECIFICATION

Also seen in the *chapter 3.1.2* there are different categories in the *TripAdvisor* website for reviewers to place their opinions, photos and comments. To identify the total amount of reviews being collected it was chosen the categories that the platform has in common for both destinations: hotels, restaurants and activities.

In this way, in order to extract a considerable number of reviews, it will be selected the 10 elements of each category with the most comments available in English (note that only comments with a correct spelling are selected) during the month of August of 2017.

The category of *activities* has a special character, since it is possible to divide it into two different types – *Leisure* (such as rock climbing and walking) and *Cultural* (such as visits to museums, churches, monuments and others). There are also *Hotel* and *Restaurant*.



* Reviews to be taken from August 2017 in the *TripAdvisor* platform

Figure VIII – Review Extraction Categorization and Specification

Source: Own Elaboration

In *Annex 3* and *4* it is possible to find 8 schemes that represent the number of reviews to be taken from each hotel, restaurant, leisure activity and cultural activity. In the four categories there are a total of 117 724 reviews written in English – but only 1783 of those were written during *August of 2017* and in proper English – as shown in *Figure IX*.

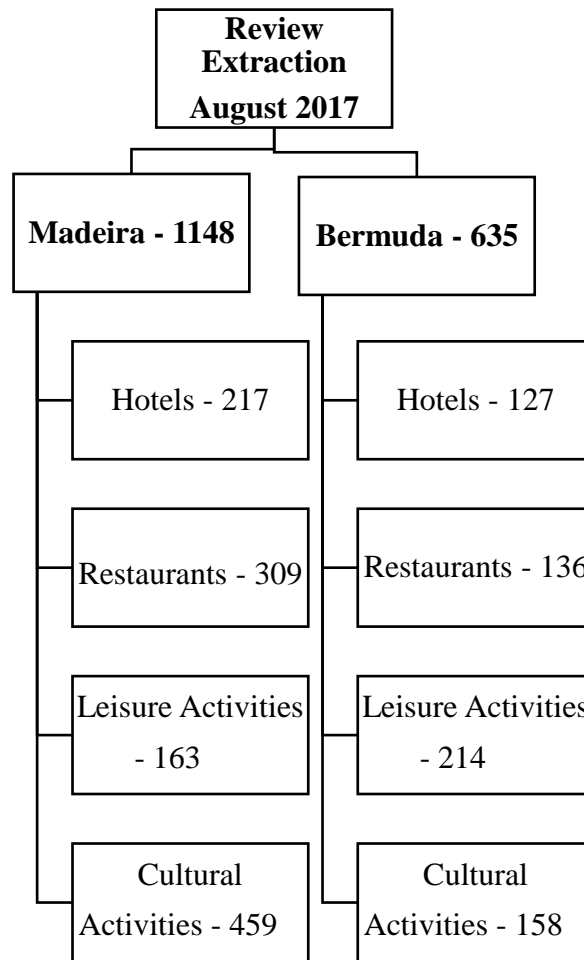


Figure IX – Reviews Extracted (Categories)

Source: Own Elaboration

3.1.3.3. DATA COLLECTION – CATEGORIZATION/CODING OF REVIEWS

Having established and explained the time frame of the extraction, as well as the number of categories and total number of reviews being analysed, the only step missing is the formulation of a strategy to study those reviews. According to previous research during the literature review, it was studied several authors and papers which are now important to the categorization, or coding, for the Kozinets (2010) process of studying the information.

In order to answer to the research question it will be assumed seven different codings in which the reviews will be analysed:

1. **Rating:** studying the rating of the reviews will allow the understanding of the overall satisfaction of each destination in the four mentioned categories, as well as serve as a comparison method between other strategies;
2. **Categories:** representing the place from where the review was extracted, in order to be able to understand overall which categories are most attractive for the reviewers;

3. ***High/Low membership level of reviewers***: it is a factor that was already studied by other authors, such as Chen (2015) that concluded that low membership levels will accept the information with a higher probability, while high membership levels will promote the growth of low membership levels. Hereupon, it is important to study the number of high vs low membership reviewers. *TripAdvisor* platform uses scale from 0 to 6 to classify the reviewers, and in this case the following scale will be used: 0-3 *Low Ranked Reviewer* and 4-6 *High Ranked Reviewer*;
4. ***Language Type***: according to Wu *et al.* (2017:590) “consumers actually exhibit less favourable attitudes and lower reservation intention after reading a figurative (vs literal) review posted by a low expertise level” while being high expertise reviewer attenuates this situation; Therefore, it is important to compare information between *language type vs high/low membership level* in each destination; For this matter if the review contains *slang*, any kind of *Symbology* (see in point 6), wrong use of *Punctuation*, or any other aspect that it is considered relevant, the language will be considered as *Figurative*. In any other case, it will be classified as *Literal*;
5. ***Tourism Experience Model (TEM)***: this framework was created by Juergen Gnoth and that can be found in Gnoth and Matteucci (2014) paper. It aims at providing future directions in the holiday tourism research. The model allows destinations to position themselves as to how they seek to serve the tourist – it permits visualizing where the destination fits according to the tourist’ experiences. It consists in two axes (*Consciousness* and *Activity*). The first one is related to how the tourists perceive their experience. In one end, the model presents the *Person* - it is based on the authenticity reflected in socially accepted role-performances. The other end of the dimension is related to the *Human Being* – finding ourselves as a human being in order to get close to our existential being. The second one works on the premise that tourists leave their homes in order to experience, which means that they are always active. On one end, there is the *Recreational Activities*, which are entertaining experiences merely done from the habit, training and repetition of the tourists’ lives. The other end of the axis brings us *Exploratory Activities*, where tourists seek new insights, understandings, social and bodily feelings, mainly characterized by challenges, learning and knowledge. There are 4 different tourism experience perspectives: *Re-Discover*, *Pure Pleasure*, *Holist* and *Knowledge Seeker*. The first two are connected with *Experiencing as being*, while the other two are related with *Experiencing as becoming*. In *Annex 5*, it is possible to find the

axial figure representing the model as well as the parameters which allow distinguishing the tourists' experiences;

6. **Content:** it will be used to be able to understand what type of subjects and words are relevant for the reviewers, in a global way – to do so the platform *Wordle* will be used as an output of the final results;
7. **Symbology:** in here it will be studied the *emojis* and *emoticons* used by the reviewers – in each case trying to understand if it has a positive or negative connotation;
8. **Positive/Negative information:** another important aspect considering the perception of each tourist in each destination is the positive/negative information the reviewers express in *TripAdvisor* - as well as compare this information with others already mentioned. According to Chen (2015), “positive information encourages consumers to buy products and negative information presents the problem of products, which will reduce its' credibility” – it is necessary to have in consideration that travels are considered *hedonic* products. As well as the *Content* code, the platform *Wordle* will be used as an output of the final results;

These are the seven strategies established in order to understand what is the perception of tourists regarding the experiences lived in *Madeira* and *Bermuda*.

3.1.4. STEP 4 – DATA ANALYSIS AND INTERACTIVE INTERPRETATION OF FINDINGS

According to Kozinets (2010) this phase is the one where the data collected is transformed into a research representation such as, articles, books, presentations or reports.

Since this is a master thesis dissertation, the representation of the findings will be done through the form of a written report and an oral presentation afterwards.

The data for the overall analysis of both islands was collected from *November of 2017* until *February of 2018*, and as it was mentioned before, the reviews are evaluated according to their *rating*, reviewer's membership level, language type, *tourism experienced*, *content*, *symbology* and *positive/negative information*.

The comparison between each island is done through the form of a qualitative interpretation of the findings, having in consideration the results presented for each destination.

3.1.5. STEP 5 – WRITE, PRESENT AND REPORT RESEARCH FINDINGS AND/OR THEORETICAL AND POLICY IMPLICATIONS

As it was just mentioned in the previous chapter, this dissertation is a partial requirement for the conferral of the *Master in Marketing* at ISCTE Business School, and in this sense it will be conducted a written dissertation thesis, as well as an oral presentation where the results are explained.

Both theoretical and policy/managerial implications will be exposed in the chapter of *Conclusion* – and are a consequence of an interpretation along with the results shown in the respective chapter.

3.2. STUDY 2 – TEXT MINING

The conventional definition of *Text Mining* states that it “is the discovery by computer of new, previously unknown information, by automatically extracting information from different written resources. A key element is the linking together of the extracted information together to form new facts or new hypotheses to be explored further by more conventional means of experimentation” (Hearst, 2003). Its appearance was due to the increase in large-scale of information being stored in a given database (such as online information), given birth to the so called *Big Data*.

The *Text Mining* process results of a technologic development that is capable of analysing big sequences of unstructured text, such as the ones found stored online, and recognize important phrases and the relationships between them (Fan *et al.*, 2006). This system allows manipulating those sequences of text through *categorization*, *clustering* and studying the *sentiment* attributed by the ones who wrote it (Srivastava *et al.*, 2009).

Internet technology has given power to people that did not feel they had that before (Alaei *et al.*, 2017), which is reflected in the travel tourism industry as travellers commonly create e-WOM through social networking sites as *Facebook*, *Instagram*, *TripAdvisor* and others. These users are not just looking to improve their travelling wisdom, but also to collect experiences, feedbacks and recommendations from fellow travellers (Ye *et al.*, 2009). It leads to a large volume of information being available and stored online at an outstanding speed that can be used by scholars and researchers to study the attitudes and experiences of tourists (Alaei *et al.*, 2017).

As it was mentioned before in *subchapter 3.1.1*, the main goal of this dissertation is to answer to “How tourists perceive two island destinations with identical culture but different demographic characteristics, through Social Networking Sites?” and it is believed that a *Text*

Mining processes might be useful to answer to it, as it allows reading and examining unstructured text – as the ones presented in online reviews.

3.2.1. STEP 1 – DEFINITION OF A TEXT MINING TOOL

According to Spinakis and Chatzimakri (2005) there was an increase of the diversity of text mining tools and techniques that researchers and scholars now possess in order to perform text mining analysis.

The literature was able to identify three categories of text mining tools (*Figure X*): *Proprietary Text Mining Tools* – which are tools that companies or firms own, and it is mandatory a certain fee in order to use them; *Open Source Text Mining Tools* – tools that can be obtained at zero cost and used at free will; and *Online Text Mining Tools* – which are programmes that can be managed from their own website, but commonly their functionality is partial (Kaur and Chopra, 2016).

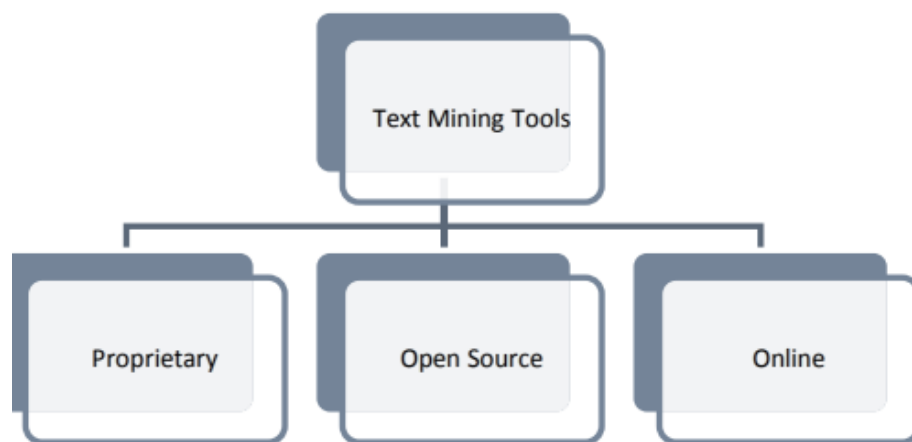


Figure X – Categorization of the Text Mining tools

Source: (Kaur and Chopra, 2016)

Along with two experienced specialists in the field of the *Marketing* area, it was decided that the best tool to obtain real results towards the research objective is *Meaning Cloud* (a *Proprietary Text Mining Tool*) – which is a *Text Analytics* platform that can be downloaded and added to the *Excel*.

Meaning Cloud is described by the company as the “easiest, most powerful and most affordable way to extract the meaning of all kind of unstructured content: social conversation, articles and documents” (LLC, 2018). It is a tool commonly used by scholars and academics that allows extracting the texts sentimental polarity, select a particular set of text and sentimentally study it, text clustering and theme and topics identification (Bilro, 2017).

The main features of the software outcome from a complex coding that allows, for example, users to use their own linguistic dictionary, easily incorporate the software into *Excel* with a simple installation, and availability to work in numerous languages (*Portuguese, Italian, English, French* or *Spanish*). It also allows the analysis of unstructured material from almost every source of information (*Emails, Inquiries* and *Surveys, Social Networking Sites*, and others) (LLC, 2018).

It is this last piece of information that makes the software suitable to help answering to the research question, once *Social Networking Sites* are the key solution to the main objective in this dissertation. These social sites (such as blogs, online forums or even newspapers) do not present a clear text structure, most of the data is dispersed or the text is not orderly. *Meaning Cloud* is capable of using *Social Media Analytics*, a tool able to “understand the structure and meaning of news and social conversations (far beyond a simple aggregation of mentions) and extracts the most actionable bits of information. All this returns more consistent results than human analysis at infinitely greater speed and volumes” (LLC, 2018).

According to its’ website, *Social Media Analytics* is suitable for finding discussions between customers in social media, supervise those same conversations by discovering threats to the company, information to do the most varied analysis and trace users’ behaviour (LLC, 2018).

3.2.2. STEP 2 – RESEARCH SOCIAL SITES, COMMUNITY SELECTION AND SAMPLE IDENTIFICATION

In this chapter it will be identified the *Social Networking Sites* to be used in the experience, as well as the type of analysis that it will be used with the *Meaning Cloud* software.

In *chapter 3.1.1 (Step 1)* it was identified the characteristics of *TripAdvisor* on being the best suitable social networking site focused in the tourism industry capable of providing data to, together with literature and the analysis performed, answer to the research question. As *Study 2* serves as a complement to *Study 1*, it only makes sense that in order to provide the most complete and plausible response towards understanding how tourists perceive two island destinations with identical culture but different demographic characteristics through social networking sites, that not only *Study 2* is performed under reviews extracted from *TripAdvisor*, but also maintain the same sample extracted in *Study 1 (Chapter 3.1.3.1 and 3.1.3.2)* so that the analysis performed are done under the same patterns and conditions of text.

Therefore, the only aspect worth investigating in this chapter is, understanding if *TripAdvisor* is a suitable platform to work under the *Meaning Cloud* software. As it was already seen, in the *Literature Review Chapter* and in the previous *Chapter 3.2*, a *Text Mining* process is able to analyse big sequences of text classified as unstructured, such as the ones found online (Fan *et al.*, 2006), also “millions of visitors exchange content on popular platforms for mutual benefit, such as social networking (e.g., *Facebook*), content sharing (e.g., *Reddit*), blogging (e.g., *LiveJournal*), micro-blogging (e.g., *Twitter*), multimedia sharing (e.g., *YouTube*), location sharing (e.g., *FourSquare*), review forums (e.g., *TripAdvisor*), and other sites” (Kirilenko *et al.*, 2017:1), which enlarges the creation of e-WOM (*Electronic Word-of-Mouth*) (Confente, 2015), mainly in an unstructured way.

In order to analyse such big volume of information in the tourism industry, on the platforms mentioned before, new techniques had to be developed and literature shows the importance of text mining tools in studying social networking sites data, defining that such applications resulted in huge developments in collecting, cleaning, processing and evaluating data (Alaei *et al.*, 2017) of the e-WOM *Social Media* data gathered (Hippner and Rentzmann, 2006; Schmunk *et al.*, 2014).

Finally, having in mind the literature already mentioned that defines *TripAdvisor* has one of the platforms where it is possible to find e-WOM, as well as a large amount of data volume to extract, being that data considered as unstructured and therefore suitable for *Text Mining* tools (as *Meaning Cloud*), it is possible to conclude that the sample extracted to perform the *Netnographic* study (*Study 1*) – *Chapter 3.1.3.1* and *3.1.3.2*, can also be used to perform a *Text Mining* analysis (*Study 2*).

3.2.3. STEP 3 – DATA COLLECTION, PROCESS AND ANALYSIS

In this chapter it will be mentioned the characteristics of the sample collected – something already done during *Chapter 3.1.3.1* and *3.1.3.2*, but this time on a briefer way. As well as, the type of analysis that will be performed under the *Meaning Cloud* scope, together with how the results will be worked on, and displayed to this dissertation.

Regarding the sample, as seen before, during the months of *November*, *December* and *January*, it was collected 1783 reviews from *TripAdvisor* in order to analyse them with the ultimate objective of collecting enough information to properly answer to the research question.

The reviews that were extracted relate to the month of *August of 2017* and were extracted from the ten most reviewed elements in *TripAdvisor*, according to four different

categories – *Hotels, Leisure Activities, Cultural Activities* and *Restaurants*. Based on those premises it was possible to collect 1148 reviews to analyse the *Madeira Island* – 217 from *Hotels*, 309 from *Restaurants*, 163 from *Leisure Activities* and 459 from *Cultural Activities*, and 635 reviews to study the *Bermuda Island* – 127 from *Hotels*, 136 from *Restaurants*, 214 from *Leisure Activities* and 158 from *Cultural Activities*. Moreover, in *Chapter 3.1.3.3* it is explained the creation of the strategies and the coding in which the reviews would be studied – *Rating, Categories, High/Low Membership Level of Reviewers, Language Type, Tourism Experience Model (TEM), Content, Symbology* and *Positive/Negative Information*.

For the *Text Mining* process only three of the codings were selected to be studied: *Categories, Tourism Experience Model* and *High/Low Membership Level of Reviewers* – see *Figure XI* shown below.

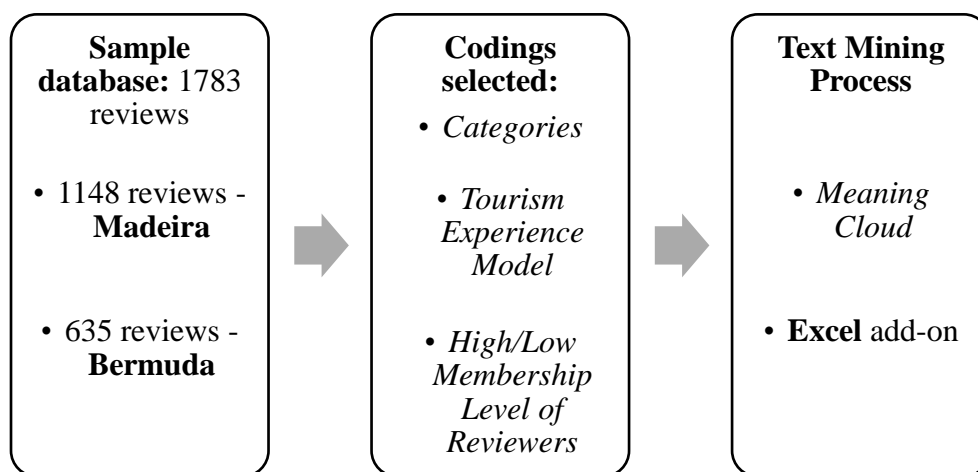


Figure XI – *Text Mining* Framework I

Source: Own elaboration

The three codings, selected to be studied, outcome from a discussion of ideas with the thesis supervisor, since studying all the possible codings created in the database through a *Text Mining* process would be a very long process, and only those three were considered. The rest of the codings may be studied in future research.

The next step was to define the type of tests and analysis that would be done with the *Meaning Cloud* software. Along with a specialist in the field it was decided to perform three types of tests: *Text Classification, Topics Extraction* and *Sentiment Analysis*. All of these processes were performed via *Excel* and done for both island’s reviews. A new and better framework can now be developed, and it will be on those premises that the *Text Mining* analysis will be focused on – see *Figure XII*, below.

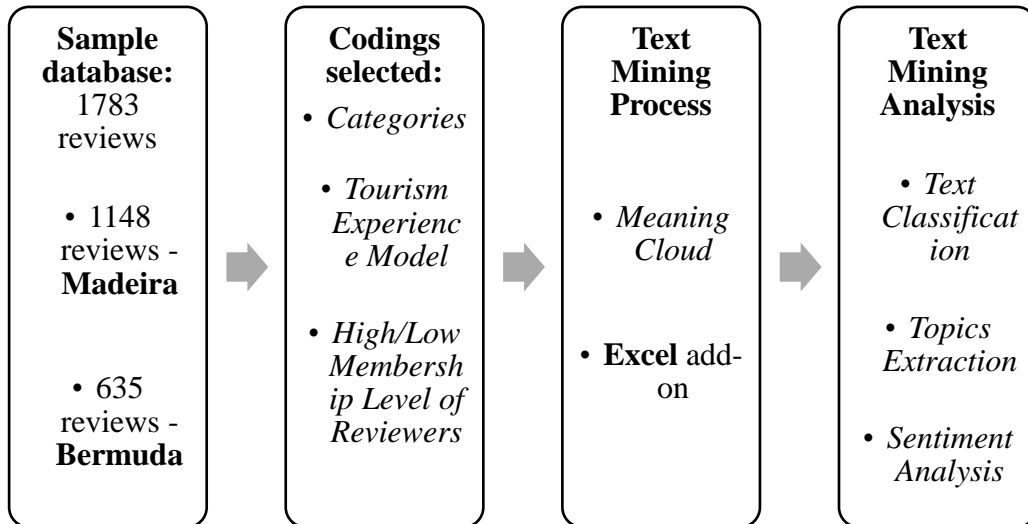


Figure XII – *Text Mining Framework II*

Source: Own elaboration

The first one – *Text Classification*, is capable of analysing big segments of text from social media reviews, creating several categories or groups, to more easily understand which are the themes the reviewers are mentioning the most. Those groups are built based on the content of each review and are a result of a complex algorithmic analysis (LLC, 2018). This study is performed both for *Madeira* and *Bermuda*, and the results will be analysed in four different chapters, according to two different perspectives:

1. *Global Text Classification Results*: from all the text groups presented as an output according to the *Meaning Cloud*, the results will be worked with the help of a specialist in the field, and select those that have the highest/most significant presence in relation to all the others;
2. *Text Classification applied to TEM/High Low Membership Level of Reviewers/Categories*: this type of analysis will be applied to each of the three coding selected, and through the *Excel* the text groups will be worked on so that they can be presented in the dissertation, again according to its' significance in comparison with the others.

It is important to refer that each coding is different, and there is not a percentage that defines the ideal significance, which means that it will result of an opinion-based analysis. In case of existing reviews that the software is not able of identifying the correspondent text groups or labels, the same shall not be considered but still worth mentioning in the results section.

The second analysis is a *Topics Extraction* one. This type of analysis performed by *Meaning Cloud* goes through each sentence of each segment of text presented – in this case goes through each sentence in each review, and extracts element by element its meaning. The elements can be: concepts, entities, time or money expressions, quantifiable expressions, relations and quotes (LLC, 2018). Again, this process comes from a complex algorithmic analysis, and the same procedure regarding the previous analysis will be applied:

1. *Global Topics Extraction Results*: in this analysis, due to the amount of reviews analysed, there will be an extensive list of topics being extracted by *Meaning Cloud*, meaning that it will be impractical to study them. In this sense, it will only be presented the 20 concepts or entities with the higher significance (the ones that the software identified more times);
2. *Topics Extraction applied to TEM/High Low Membership Level of Reviewers/Categories*: again, this type of analysis will be applied to each of the three coding selected, and through *Excel* the results will be worked on to be presented. Due to the high amount of elements being displayed by the *Meaning Cloud* outputs, the amount of elements being mention will differ from coding to coding, to a maximum of 20 elements.

The third and final analysis is named *Sentiment Analysis*, and as seen in the *Literature* chapter it is a “computational study of people’s opinions, appraisals, attitudes, and emotions toward entities, individuals, issues, events, topics and their attributes” (Liu and Zhang, 2012:1). It performs a “detailed multilingual sentiment analysis for texts from different sources (...) identifies the positive, negative, neutral polarity in any text, including comments in surveys and social media” (LLC, 2018). The *Sentiment Analysis* results in two different studies: a *Global Sentiment Analysis* and a *Topics Sentiment Analysis*.

The first one – *Global Sentiment Analysis* aims at studying several aspects:

1. *Polarity*: the first step is to transform the outputs in a quantitative level: 1 (N+) – strong negative; 2 (N) – negative; 3 (Neu or NONE) – neutral; 4 (P) – positive; 5 (P+) – strong positive; according to the review that it refers to. Also, it will be studied the number of reviews according to each polarity and its’ average;
2. *Agreement*: it analyses if the sentiment between the different elements in each review is in accordance (agreement) or not (disagreement). It will be counted the number of reviews in agreement/disagreement, as well as the average polarity of each type of reviews;

3. *Subjectivity*: studies if the reviews were influenced by prior bias or stereotypes based on the reviewer's personal feelings, taste or opinions. Again, it will be analysed the number of reviews subjective/objective, as well as the average polarity of each type of reviews;
4. *Irony*: it analyses the degree in which reviewers were being ironic or not with their opinions. It shall be accounted the number of ironic/non-ironic reviews, as well as the average polarity of each of those types of reviews.

The four enlisted steps above mentioned shall be studied in a global and general way, and applied to each of the three coding selected.

The second one – *Topics Sentiment Analysis* studies the polarity of the elements (concepts or entities) that it refers to, grouping those forms of text according to their types. Due to the high amount of types that may appear, because of the very high amount of concepts being analysed, with the help of a specialist in the field, it will be developed a strategy to decrease them, and only 21 text groups will be analysed in the following way:

1. Analyse the average polarity of the final 21 text groups;
2. Analyse the average polarity of each coding according to the 21 text groups existent;
3. Analyse the average polarity of each text group according to each coding.

4. RESULTS

In this chapter it is located all the compilation of data collected as well as the data interpretation of both island destinations: *Madeira* and *Bermuda*. The collection of the data was based on the utility that it could have to answer to the research question. *Study 1* is based on a netnographic process by Kozinets (2010) and *Study 2* is based on a text mining process, using *Meaning Cloud*, in order to obtain a more rigorous analysis – *Text* and *Topics Extraction*, as well as *Sentiment Analysis*.

The results will be displayed and analysed in the following order: 1) Analysis of both netnographic studies regarding the islands of Bermuda and Madeira; 2) Analysis of the text mining results regarding both destinations, as well.

- *Note 1: for rounded values, two decimal places will be used throughout the chapter.*
- *Note 2: due to having limited amount of pages to consider in this dissertation, the results regarding Study 1 (Symbology, Content, Positive/Negative Information) – Annexes 6.11, 6.12, 6.13, 6.14, 7.11, 7.12, 7.13 and 7.14 and Study 2 (Topics Extraction and Topics Sentiment Analysis) – Annexes 8.5, 8.6, 8.7, 8.8, 8.28, 8.29, 8.30, 8.31, 9.5, 9.6, 9.7, 9.8, 9.28, 9.29, .30 and 9.30 will only be presented in the annexes, not in this chapter.*

4.1. RESULTS STUDY 1 - NETNOGRAPHY

As mentioned before, the data collection of the netnographic process was made having in consideration 8 different codes: *rating, categories, high/low membership level of reviewers, language type, Tourism Experience Model, content, symbology* and *positive/negative information*.

The following results were extracted from the database of reviews created through the elaboration of pivot tables.

4.1.1. RESULTS STUDY 1 - MADEIRA

An overview over the dataset shows us that 1148 reviews were collected in the *TripAdvisor* platform regarding the opinions and evaluations of tourists in *August of 2017* in *Madeira*. From those, 217 were taken from hotels, 309 from restaurants, 163 from leisure activities and 459 from cultural activities – see *Annex 6.1*. Through this information it is immediately possible to draw a reading that the tourism of *Madeira* has a higher

preponderance of *Cultural Activities* than *Leisure Activities* – since there is a considerable discrepancy between those two numbers of reviews.

4.1.1.1. GENERAL RATING AND CATEGORIES

Keeping on a general level, the overall average rating of reviews was 4.59 (from 0 to 5), which is a very good rating level considering the total amount of reviews, and shows us that overall the reviewers are extremely satisfied regarding the activities and establishments that they attended during their stay. Moreover, in *Annex 6.2*, it is shown the average rating of each hotel, restaurant, leisure activity and cultural activity extracted to this part of the research.

Only 3 items have achieved the maximum rating average – *Madeira Fauna & Flora*, *True Spirit* and *Venture Nature Emotions – Day Tour*, and curiously all of them belong to the category of *leisure activities*. It is also easily seen that the two lowest average ratings belong to *Mercado dos Lavradores* (3.53) and *Palheiro Gardens* (3.57), both of them *Cultural Activities*.

This information takes the research to study the average rating per categories in general, as can be seen in *Annex 6.3*. Although all the categories have a very high average rating (for example, none of them have an average rating inferior to 4), which shows us the already mentioned general satisfaction of the reviewers, it can be concluded that there are two categories in which the reviewers present a higher satisfaction: *leisure activities* (4.81) and *restaurants* (4.77).

4.1.1.2. MEMBERSHIP LEVEL OF REVIEWERS

Regarding the *Membership Level of Reviewers* there is a majority of *Low Ranked Reviewers (LRR)* versus *High Ranked Reviewers (HRR)* – 61.15% *LRR* (702 reviews) and 38.85% *HRR* (446 reviews). This information can be consulted in *Annex 6.4*.

To further compare the differences and similarities between *LRR* and *HRR*, it is important to study how the two types of reviewers rate their experiences in the island – *Annex 6.5*. It shows the average rating of reviews according to the membership level of reviewers – *HRR* (4.53) and *LRR* (4.63), which shows a slight more satisfaction on the *LRR* experiences in the island, in comparison with the *HRR*.

4.1.1.3. LANGUAGE TYPE

Another aspect agreed to study how tourists perceived the touristic island of *Madeira* was the type of language used by reviewers to express their opinions and commentaries regarding their experiences – in this case *literal language* vs *figurative language*. In *Annex 6.6*, it is shown that there is a clear difference between the numbers of reviews written in *literal language* versus *figurative language*. The *literal language* is the most used by the reviewers with 910 reviews (representing 79.27% of the total sample) vis-a-vis the figurative one with only 238 reviews (representing the other 20.73% of the total sample).

The average rating of people with the different written language type is also not significant, since both have very similar values – 4.56 for the *figurative language* and 4.60 for the *literal* one – see *Annex 6.7*.

The dataset also allows to combine these two last codes, that can be perceived as important to answer to the research question, and obtain the number of reviews using *literal/figurative* language according to the *membership level of the reviewers* – see *Annex 6.8*. In this case the results show that 59.78% of the *literal* reviews are expressed by the *LRR*, while the other 40.22% by the *HRR*. The case is slightly different in the *figurative* language type, since 33.61% of these were wrote by *HRR*, while the rest (66.39%) were made by *LRR*.

4.1.1.4. TOURISM EXPERIENCE MODEL

Once studied the average general rating, the categories, as well as the membership level and the language type, it is now time to understand what experiences were lived by the tourists according to the chosen model – *Tourism Experience Model (TEM)*.

As explained during the *Methodology*, the *TEM* is a model that allows destinations to position themselves as to how they seek to serve the tourist – or in another words, it permits a graphic representation of the destination according to the tourist's experiences.

In *Annex 6.9*, it is shown the number of experiences lived by tourists during their stays in the island. It is clear that there are two experiences that are undoubtedly more present in their stays: *Re-Discover* and *Pure Pleasure*. From the 1148 reviews extracted, 595 are identified as experiencing *Re-Discover*, 379 perceived as experiencing *Pure Pleasure*, 138 experiencing *Knowledge Seeker* and only 36 perceived as experiencing *Becoming*. In terms of percentage, the results show that experiencing *Re-Discover* represents more than half of the reviews (51.83%), *Pure Pleasure* nearly 33.01%, *Knowledge Seeker* representing 12.02% and finally *Holist* indicating 3.14%.

According to *Annex 6.10*, the *Holist* experience is the one which the reviewers consider as the most satisfying (4.78 out of 5), followed by *Knowledge Seeker* (4.62) and *Re-Discover* and *Pure Pleasure* (both with 4.58). All in all, only the *Holist* experience is evaluated a little higher than the others, while the rest does not show a considerable difference – all of them are very close and represent the general satisfaction seen previously by the reviewers.

4.1.2. RESULTS STUDY 1 - BERMUDA

Studying the dataset obtained from the *TripAdvisor* platform it is possible to see that it was obtained 635 reviews regarding the opinions and evaluations of tourists in August of 2017 in *Bermuda*. From those, 214 were taken from leisure activities, 158 from cultural activities, 127 from hotels and 136 from restaurants – see *Annex 7.1*.

Contrary to what was concluded in the previous chapter, the results in the *Bermuda Island* show that there is slight preponderance for tourists to attend more leisure activities than cultural ones – although the gap between them is smaller than in *Madeira*.

4.1.2.1. GENERAL RATING AND CATEGORIES

The overall average rating of reviews was 4.43 (from 0 to 5), which is ultimately a very good rating level for such significant amount of reviews, and tells us that most part of the reviewers consider as very satisfying their experience in this destination.

In *Annex 7.2* it is shown the average rating of each category item, meaning the average rating of every *hotel*, *restaurant*, *leisure activity* and *cultural activity* analysed. It is possible to see that there are several items with the maximum average rating – which can be explained due to the high satisfaction towards that item or the low number of reviews extracted from it. For example, *Fourways Inn* presents an average rate of 5 but only one review was considered suitable in *August of 2017* to be extracted – being too skewed, it is not possible to draw any conclusions. Additionally, *Bermuda Fun Golf*, *Hartley's Undersea Walk*, *KS Watersports Tours & Rentals* and *Mad Hatters* also present an average rating of 5 – and here it is possible to say that there is a very high satisfaction regarding *leisure activities* (since the first three correspond to this type of activity).

On the opposite way, *Barracuda Grill*, *Hog Penny*, *Pickled Onion*, *Portofino Restaurant*, *Elbow Beach Bermuda* and *Royal Naval Dockyard* are the items with the lowest

average rating – considered the ones with an average rating below 4. From these, four of them correspond to *restaurants*, one to *hotel* and one to *cultural activity*.

Moreover, in *Annex 7.3* it is shown that even though all the categories have an average rating above 4 (out of 5), which is extremely positive and demonstrates the general satisfaction felt by the tourists in this destination, the *leisure activities* are the ones that satisfy the reviewers the most – with an average rating of 4.71. The second category with the highest average rating is *hotels* (4.52), followed by the *cultural activities* (4.23) and finally *restaurants* (4.13).

From this information it is possible to outline that the *leisure activities* and the *hotels* are considered the most satisfying and relevant categories in the tourists' holidays.

4.1.2.2. MEMBERSHIP LEVEL OF REVIEWERS

Concerning the *Membership Level of Reviewers*, in the database set to study the island of *Bermuda*, there is a majority of *LRR* (360 reviews) compared to *HRR* (275) – it leads to a percentage of 56.69% and 43.31% respectively – *Annex 7.4*.

Moreover, in *Annex 7.5* it is shown the average rating of reviews per *Membership Level*, or in other words, the average rating given by the two types of reviewers in the experiences/activities they had in the island.

In view of such results, it can be seen that there is a small difference between how both membership level reviewers evaluate their experiences in *Bermuda*. *LRR* evaluate slightly higher (4.56) when compared to *HRR* (4.24) - a difference of 0.32 amongst each other. It is fair to say then, that *LRR* tend to higher evaluate their experiences in the island – having in consideration the reasonable amount of reviews extracted.

4.1.2.3. LANGUAGE TYPE

As seen before, another aspect that was studied was the type of language used by the different reviewers in order to express their feelings and opinions – *literal* vs *figurative* one.

In *Annex 7.6*, it can be seen that there is a massive difference between the numbers of reviewers using *literal* vs *figurative* language type. 80.31% (510 reviews) of reviewers used *literal language* to write their commentaries and opinions regarding *Bermuda*, while only 19.69% (125 reviews) were written using a *figurative* context.

The average rating of both language types is quite similar – and can be found in *Annex 7.7*. The reviewers using *literal language* type gave an average rating of 4.41 and the ones

using *figurative language* were slightly more satisfied (4.50). Nonetheless, the results are very close and show the reviewers' satisfaction already mentioned.

As seen in the previous subchapter, the dataset permits to combine the two last mentioned codes: *membership level of reviewers* and *literal/figurative language* used by reviewers. In *Annex 7.8*, it is shown a graphic representation of the number of reviews using a specific language type according to the membership level of the reviewers.

The results show that from the 275 *HRR* – 82.18% are using *literal language* to express their opinions regarding *Bermuda* (corresponding to 226 reviews), while only 17.82% (49 reviews) were written in a *figurative* type of way. Regarding the *LRR* the case is quite similar – 78.89% of the reviewers (284 reviews) used *literal language*, while only 21.11% (76 reviews) wrote their commentaries using *figurative language*.

4.1.2.4. TOURISM EXPERIENCE MODEL

After studying the number of reviews, rating, membership level of reviewers and the language used by the reviewers, it is time to understand what experiences were lived by the tourists that visited *Bermuda* and expressed their thoughts and feelings in *TripAdvisor* about it – using the *Tourism Experience Model* (TEM).

The number of experiences, according to the *TEM* is shown in *Annex 7.9*. From the graphic representation it is clear that the *Re-Discover* experience is undoubtedly the one most handled by the reviewers – corresponding to 392 reviews (61.73%) of the total number of experiences. The rest was identified as: 135 perceived as experiencing *Knowledge Seeker* (21.26%), 90 perceived as experiencing *Pure Pleasure* (14.17%) and 18 as experiencing *Holist* (2.84%).

Furthermore, in *Annex 7.10*, it is possible to see that the *Holist* experience is the one that makes reviewers evaluate with the higher rating (4.72 out of 5), while the three categories remaining present a very close average satisfaction rating: *Pure Pleasure* (4.49), *Re-Discover* (4.41) and *Knowledge Seeker* (4.40). Being noticed that, the *Holist* experience is completely detached from the rest.

4.2. RESULTS STUDY 2 – TEXT MINING

As previously mentioned in the methodology chapter, a text mining study was conducted in order to have a clear and more objective analysis of what themes, concepts and

words are being used by the reviewers in their opinions. The text mining is performed by software that can be added to *Excel*, called *Meaning Cloud*.

The text mining process, in this study, consists in 3 different types of analysis:

1. *Text Classification* analysis – which will give us a certain number of labels (Themes) that are being exposed online by the *TripAdvisor* users in their reviews;
2. *Topics Extraction* analysis – which is more detailed than the previous study, and results in collecting a series of entities and concepts being mentioned by the reviewers (presented in *Annexes*);
3. *Sentiment Analysis* – which results in two separate studies: a *Global Sentiment Analysis* and a *Topics Sentiment Analysis* (presented in *Annexes*); the first one allows us to study the polarity, agreement, subjectivity, confidence and irony of the reviews; the second one is more related to being able to study the average polarity according to the entities and concepts mentioned by the reviewers.

4.2.1. RESULTS STUDY 2 – MADEIRA

4.2.1.1. RESULTS STUDY 2 – TEXT CLASSIFICATION

4.2.1.1.1. GENERAL TEXT CLASSIFICATION RESULTS

The results of the general data regarding the analysis of the *Text Classification* on *Madeira's* extracted reviews indicate a wide variety of themes being mentioned: *Lifestyle and leisure, Tourism, travel and commuting, Art and culture, Environment, weather and energy, Social issue, Economy and Finances, Sport, Science and Technology, Crime, law and justice, Disaster and accident, Labour, Health, Politics, Greeting and Thanks, Education, Unrest, conflict and war and Religion and belief.*

Some of these themes have no significant expression and for that reason, only a few of them were considered as critical for the results. The most important ones were gathered and can be found in *Annex 8.1*.

As it is easily seen, according to the different amount of reviews in the themes that were identified, it can be created three separate groups.

The first group contains the themes with the highest amount of reviews, and it includes *Lifestyle and Leisure* present in 379 reviews and *Tourism, travel and commuting* counting 285. Together this group is responsible for 664 reviews (57.84% of the total amount of reviews).

The second group of themes comprises also two subjects: *Art and Culture* accounting 91 reviews and *Environment, weather and energy* found in 88 reviews. Combined both themes are responsible for 179 reviews (15.60% of the total amount of reviews).

The third, and final group, is composed by the themes with the smallest amount of reviews and it embraces three distinct subjects: *Social* that was found in 46 reviews, *Finances* totalling 46 reviews as well and *Sports* with 40 reviews. This last group, summing all the reviews, gathers 132 reviews (11.50%).

As it can be summed up, the total amount of percentage of the three groups formed to simplify the analysis is 84.94%. It is also important to refer that 119 out of the 1148 reviews extracted were unable to be analysed by the software, which ultimately results in 10.37% of the reviews not being properly studied. This information leads to a total of 95.31%, being that the remaining percentage is distributed across all the other themes mentioned in the first paragraph.

4.2.1.1.2. TEXT CLASSIFICATION APPLIED TO TOURISM EXPERIENCE MODEL

It is possible to distinguish the themes most mentioned by the reviewers according to the experiences that they lived during their stays in the island. The results can be found in *Annex 8.2*

In that table are shown the themes that have a bigger significance in each experience. For instance the *Holist* experience contains two major themes: *Environment, weather and energy* counting 13 reviews and *Tourism, travel and commuting* with 11 reviews. Together they are responsible for 66.70% of the total amount of reviews, being the rest spread across several other themes.

The *Knowledge Seeker* experience presents four major themes on the final results. *Lifestyle and leisure* with 35 reviews, as being the theme most significant, followed by *Tourism, travel and commuting* counting 33 reviews. *Art and culture* comes next summing 29 reviews, and finally *Environment, weather and energy* totalling 15 reviews. Summing it all up, it leads to a total of 81.16% of the total amount of reviews.

The *Pure Pleasure* identified reviews comprise 5 major themes: *Lifestyle and leisure* being by far, the most important one with 195 reviews, followed by *Tourism, travel and commuting* with 54 and *Art and culture* with 26. *Finances* and *Social* come next with 15 and 13 reviews, respectively. Together it sums up to 80.00% of the total amount of reviews.

The *Re-Discover* experience is the one that comprises the most variety of themes with significant relevance. *Tourism, travel and commuting* is the highest one with 187 reviews,

followed by *Lifestyle and leisure* totalizing 144 reviews. After those appears *Environment, weather and energy* with 51 reviews and *Art and culture* counting 34. *Finances* and *Social* both show the same amount of reviews – 30, and lastly *Sports* totalling 25 reviews. These themes are responsible for 84.20% of the total amount of reviews.

4.2.1.1.3. TEXT CLASSIFICATION APPLIED TO CATEGORIES

It is possible to distinguish the themes most mentioned by the reviewers according to the categories of each review when extracted. The results can be found in *Annex 8.3*.

The reviews extracted from the *Cultural Activities* comprise six major themes: *Tourism, travel and commuting* as the one with the highest amount of reviews (158), *Environment, weather and energy* with 64 reviews, *Art and culture* counting 45 reviews, *Lifestyle and leisure* summing 39 reviews, *Sports* totalizing 26 reviews and finally, *Finances* with 23 reviews. Summing it all up it corresponds to 77.34% of the total amount of reviews.

The *Hotel* category shows a far less variety of themes, with only two subjects being significant to be mentioned: *Lifestyle and leisure* with 159 reviews and *Tourism, travel and commuting* counting 37 reviews. It leads to a total of 90.32% of the total amount of reviews.

The *Leisure Activities* appear in this table with three major themes. *Tourism, travel and commuting* as being the most important one, with 71 reviews, followed by *Lifestyle and leisure* with 48 reviews and finally, *Environment, weather and energy* totalling 15 reviews. Together these themes are responsible for 82.21% of the total amount of reviews.

The *Restaurant* extracted reviews include as most important themes: *Lifestyle and leisure* with 133 reviews, *Art and culture* accounting 34, *Finances* totalizing 22, *Tourism, travel and commuting* summing 19 reviews and finally *Social* including 18 reviews. Those are responsible for 73.14% of the total amount of reviews.

4.2.1.1.4. TEXT CLASSIFICATION APPLIED TO MEMBERSHIP LEVEL OF REVIEWERS

In *Annex 8.4* it is possible to find the results of the *Text Classification* analysis according to the *Membership Level of Reviewers* code.

The *High Ranked Reviewers* in their opinions and thoughts regarding *Madeira* are mentioning four big themes, which can be separate into two different groups. The first group comprising the two themes with the highest amounts of reviews, being: *Lifestyle and leisure* with 141 reviews, followed by *Tourism, travel and commuting* counting 111 reviews. The

second group containing: *Environment, weather and energy* with 40 reviews and *Art and culture* totalling 36 reviews. These themes lead to 73.54% of the total amount of reviews.

The *Low Ranked Reviewers* include six major themes that can also be separate according to the number of reviews, but this time in three separate groups. The first group, being the one with the themes most mentioned, includes *Lifestyle and leisure* with 238 reviews and *Tourism, travel and commuting* with 174 reviews. The second group comprises *Art and culture* with 55 reviews followed by *Environment, weather and energy* with 48 reviews. Finally, the third group embraces *Social* with 32 reviews and *Finances* totalling 31 reviews. Together, these are responsible for 82.34% of the total amount of reviews.

4.2.1.3. RESULTS STUDY 2 – GLOBAL SENTIMENT ANALYSIS

The *Sentiment Analysis* results in two different studies: a *Global Sentiment Analysis* and a *Topics Sentiment Analysis*. As mentioned before the first one studies subjects like the polarity, agreement, subjectivity, confidence and irony of the reviews, while the second one is more related with studying what topics were mentioned by the reviewers, along with understanding the polarity of the topics.

4.2.1.3.1. GLOBAL SENTIMENT ANALYSIS GENERAL RESULTS

The first thing that it was chosen to study, is the *polarity* – this corresponds to a positive/negative sentiment of the element it refers to, in this case it is referring to the amount of reviews itself and can be found in *Annex 8.9*. The scale was constructed in the following way: 1 – *strong negative*; 2 – *negative*; 3 – *neutral*; 4 – *positive*; 5 – *strong positive*.

The results show that there is clearly more reviews containing positive opinions and thoughts regarding *Madeira*, than the opposite. The scale *positive* is the one most found in the reviews, counting 780 reviews. Then, the one with the highest number of reviews is *strong positive* with 254 reviews. Only in the two mentioned scales, there are a total of 1043 reviews, nearly 90.07% of the total number of reviews. This shows the huge positive polarity in which the reviewers expressed their outbursts in *TripAdvisor*. Moreover, 74 reviews were considered as having a *neutral* polarity, 39 reviews were accounted to *negative* polarity and only 1 review was considered as *strong negative*.

The average polarity according to the reviews that were extracted was 4.86 – which is very good and shows the positive sentiment, happiness and satisfaction in the elements that the reviewers debated their thoughts.

The next thing being studied is the *agreement* – this one corresponds to the agreement between the sentiments detected in the text, having two possible meanings: agreement – same polarity between the different elements in the review; and disagreement – different polarity between the different elements in the review.

As it is possible to see in *Annex 8.10*, there is only a small difference between the number of reviews that were considered as having all the elements in agreement versus the ones in disagreement. For instance, 611 reviews were classified as *agreement* – corresponding to 53.22% of the total reviews, while 537 were classified as in *disagreement* – corresponding to the remaining 46.78%.

It might also be interesting to analyse the average of polarity according to the reviews in agreement/disagreement. In *Annex 8.11* those results are shown. As it is possible to see, from the reviews that were considered in *agreement* the average of polarity is 4.36, while the ones in *disagreement* is 3.77. This means that the reviews in which the elements have the same polarity are more positive, than the ones in which the elements do not.

Another aspect to be studied is the *Subjectivity*. It is the degree in which the reviews when written were influenced by the reviewer's personal feelings, taste or opinions. If it was influenced by any of that, it is considered *subjective*, if it was not it is *objective*.

The results in *Annex 8.12* show that there is a vast majority of reviews that were considered *subjective* – 1089 reviews, corresponding to 94.86% of the 1148 reviews extracted. The number of *objective* reviews stood in 59, corresponding only to 5.14%. From this it can be taken that the vast majority of reviewers uses their personal feelings, taste or opinions to influence their commentaries online.

Again, it might be interesting to explore the *positive/negative sentiments* of the reviews that were considered *objective* and *subjective*. In *Annex 8.13* it is possible to find that, and the results show that there is a slight difference in the two types of reviews. For instance, the reviews considered *subjective* have a higher average of *polarity* than the *objective* ones – 4.10 and 3.81 (out of 5) respectively. It can be said that the reviewers when being subjective show more positive sentiments, than when being objective.

As previously mentioned, the software allows the results to be studied according to the degree of *irony* of the reviews. In *Annex 8.14* it is possible to analyse that there is a clear preponderance of *non-ironic* reviews, in comparison with *ironic* ones – 1101 reviews versus 47. These outcomes lead to 95.91% of the reviews being considered as not having ironic marks, and only 4.09% having.

The average *Polarity* according to the *Irony* can be found in *Annex 8.15* – and from there, it is possible to see that there is only a really small difference between the average polarities of both elements. The *non-ironic* reviews present an average of 4.09, which is higher when compared to the *ironic* reviews – 3.96. Nonetheless, it means that the *non-ironic* reviewers show a highest positive sentiment in their reviews, in comparison with the *ironic* ones.

In the following sub-chapters it will be presented the results regarding the same codes explained in this chapter but according to the *TEM*, *Category* and *Membership Level*.

4.2.1.3.2. GLOBAL SENTIMENT ANALYSIS APPLIED TO TOURISM EXPERIENCE MODEL

As it was already done using previous techniques (example: *Text Classification* and *Topics Extraction*) the study is applied to the different codes. In this sub-chapter it will be analysed the results referring to the application of the *Global Sentiment Analysis* to the *TEM – Tourism Experience Model*.

In *Annexes 8.16*, *8.17*, *8.18* and *8.19*, it is possible to find the results of the software analysis, hereby expressed in this chapter.

In *Annex 8.16* it is presented the results regarding the average polarity according to *TEM*. As it is possible to see, the activities and places connected with the *Knowledge Seeker* experience (4.18) were the ones, from the reviews extracted, that created in the reviewers the most positive sentiment, followed by *Pure Pleasure* (4.16) and *Holist* (4.08). The *Re-Discover* experience was the one where the reviewers felt the least positive sentiments.

Moreover, in *Annex 8.17* it can be seen the number of reviews according to *TEM* and *Agreement*, and it can be said that from the reviews in *Agreement*, the *Pure Pleasure* reviews were the ones detected as having the most positive sentiments (4.49), while the *Holist* one was the one containing the least positive sentiments (4.28). In relation to the reviews classified as in *Disagreement*, the *Knowledge Seeker* experience was the one that conducted reviewers to be more satisfied and having positive feelings (3.92), and on the opposite side can be found *Re-Discover* (3.69).

Furthermore, in *Annex 8.18* can be seen the results regarding the same aspects but in accordance with the *Subjectivity*, instead of *Agreement*. From the reviews considered as *Objective*, it can be stated that the reviews containing *Pure Pleasure* experiences were the ones motivating reviewers to better positive sentiments (4.18), while the *Re-Discover* one the opposite (3.55). In relation with the reviews considered *Subjective*, the most positive

sentiments came from the reviewers experiencing Knowledge Seeker (4.19), and the opposite from Re-Discover (4.04).

Finally, in *Annex 8.19* the results regarding the Global Sentiment Analysis according to TEM and Irony are presented. From the reviews classified by the software as Ironic, the experience that made the reviewers feel the most positive sentiments was Re-Discover (4.05), and the least positive sentiments was Knowledge Seeker (3.60). Regarding the Non-ironic reviews, the most positive sentiments were found in the reviews containing Knowledge Seeker experiences (4.20), and the opposite in reviews containing Re-Discover experiences (4.02).

4.2.1.3.3. GLOBAL SENTIMENT ANALYSIS APPLIED TO MEMBERSHIP LEVEL OF REVIEWERS

The same aspects shall now be analysed according to the *Membership Level of Reviewers*. In *Annexes 8.20, 8.21, 8.22 and 8.23* can be found all the results regarding this subject. In *Annex 8.20* it is presented a graphic representation of the average *polarity* according to high/low ranked reviewers. The results are very close, with the *low ranked reviewers* being just a little bit more positive in the elements that constitute their reviews in comparison with the *high ranked ones* – 4.12 versus 4.03, respectively. This means that the LRR showed more positive sentiments regarding the island than the HRR.

Moreover, in *Annex 8.21* it can be found the results of the *Global Sentiment Analysis* according to the *Membership Level of Reviewers and Agreement*. From the reviews in *Agreement*, it can be said that the LRR were the ones that experienced the most positive sentiments in comparison with the HRR (4.38 vs 4.33, respectively). In relation with the reviews in *Disagreement*, the results are the same, the LRR showed a better sentiment towards their stays in the island than the HRR (3.79 and 3.75, respectively).

Furthermore, in *Annex 8.22* it can be seen the same results as before but according to the *Subjectivity*. From the reviews considered *Objective*, it can be stated that the LRR were the ones that felt a better positive sentiment (3.92), in comparison with the HRR (3.64). Additionally, from the *Subjective* reviews, it can be stated the same - LRR 4.13 vs HRR 4.05.

At last, in *Annex 8.23* can be analysed the results according to the *Irony*. From the reviews classified as *Ironic*, again the LRR were the ones that had the best sentiments towards their stays (4.04), when compared with the HRR (3.88). In relation with the *Non-ironic* the results are about the same – LRR 4.12 and 4.04 HRR.

4.2.1.3.4. GLOBAL SENTIMENT ANALYSIS APPLIED TO CATEGORIES

In *Annexes 8.24, 8.25, 8.26 and 8.27* it can be found the average *polarity* according to the different categories which the *TripAdvisor* allows to segment and the codes of the *Global Sentiment Analysis*.

In *Annex 8.24* it is presented the results regarding the average polarity according to the different types of *Categories*. It can be said that the *Restaurant* category, from the reviews extracted, is the one that aroused the best positive sentiments (4.30) in the reviewer's experiences. Moreover, it can be found *Leisure Activities* (4.15), *Hotel* (4.04), and finally the category that aroused the most negative sentiments in the reviewers were *Cultural Activities* (3.94).

Moreover, in *Annex 8.25* it can be seen the results regarding the *Global Sentiment Analysis* according to *Categories* and *Agreement*. From the reviews considered as in *Agreement*, it can be said that the *Restaurant* category (4.52) is the one that manifested the most positive sentiments in the reviewers stays, and the most negative sentiments were felt by the reviewers in *Cultural Activities* (4.21). In relation with the reviews considered in *Disagreement*, the results are the same – *Restaurant* being the category with the most positive sentiments (3.94) and *Cultural Activity* with the most negative ones (3.58).

Additionally, in *Annex 8.26* the same results can be analysed but according to the *Subjectivity* instead of *Agreement*. From the reviews classified as *Objective* it can be stated that the most positive sentiments aroused from *Leisure Activities* (4.57), and the most negative ones from *Cultural Activities* (3.66). Furthermore, from the reviews analysed as *Subjective*, the most positive sentiments aroused from *Restaurants* (4.31), while the most negative ones from *Cultural Activities* (3.97).

At last, the same results but according to *Irony* can be found in *Annex 8.27*. From the *Non-ironic* reviews, the *Restaurant* category (4.30) was the one arousing reviewers the best sentiments, while the *Cultural Activity* (3.95) the worsts. In relation to the *Ironic* reviews, the same conclusions are applied, *Restaurant* category (4.23) as being responsible for the most positive sentiments, while *Cultural Activities* (3.68) responsible for the most negative ones.

4.2.2. RESULTS STUDY 2 – BERMUDA

4.2.2.1 RESULTS STUDY 2 – TEXT CLASSIFICATION

4.2.2.1.1 GENERAL TEXT CLASSIFICATION RESULTS

The results of the general information regarding the analysis of the *Text Classification* on the *Bermuda's* extracted reviews include a variety of themes being mentioned by the reviewers, particularly 16 different ones. The most important ones were gathered in *Annex 9.1*, and culminate in 5 major themes that are really preponderant in the total number of reviews extracted – corresponding to 87.60%.

It is possible to create two separate groups according to the number of reviews where each theme was found, by looking at the graphic representation

The first group includes two themes: *Lifestyle and Leisure* (176 reviews) and *Tourism, Travel and Commuting* (165 reviews). These themes are responsible, together, for 341 reviews.

The second group of themes comprises three subjects: *Art and culture* (55 reviews), *Social issue* (48 reviews) and *Sports* (41 reviews). These themes are responsible for 144 reviews.

It is also important to refer that 81 out of the 635 reviews extracted were unable to be analysed by the software, which ultimately results in 12.76% of the reviews not being properly studied.

4.2.2.1.2 TEXT CLASSIFICATION APPLIED TO TOURISM EXPERIENCE MODEL

The results of the *Text Classification* according to the *Tourism Experience Model* regarding *Bermuda* can be found in *Annex 9.2*.

The *Holist* experience includes only two major themes preponderant: *Lifestyle and Leisure* (5 reviews) and *Art and Culture* (3 reviews).

The *Knowledge Seeker* comprises three major themes being mentioned. *Lifestyle and Leisure* with 35 reviews, *Tourism, travel and commuting* counting 29 reviews and *Art and Culture* summing up to 24 reviews.

The *Pure Pleasure* comprises two most important themes: *Lifestyle and Leisure* (37 reviews) and *Tourism, travel and Commuting* (21 reviews).

Finally, the *Re-Discover* experience includes four major themes: *Tourism, travel and commuting* with 113 reviews, *Lifestyle and Leisure* counting 99 reviews, *Social Issue* with 33 reviews and *Sports* accounting 31 reviews.

4.2.2.1.3 TEXT CLASSIFICATION APPLIED TO CATEGORIES

It is possible to differentiate the themes most mentioned by the reviewers according to the categories of each review when extracted, using a *Text Classification* analysis. The results can be found in *Annex 9.3*.

The *Cultural Activity* category englobes three major themes: *Tourism, travel and commuting* (49 reviews), *Art and culture* (27 reviews) and *Lifestyle and leisure* (24 reviews). The *Hotel* category includes *Lifestyle and leisure* (48 reviews) and *Tourism, travel and commuting* (45 reviews). The *Leisure Activity* comprises *Tourism, travel and commuting* (60 reviews), *Lifestyle and leisure* (31 reviews) and *Sport* (26 reviews). Finally, the *Restaurant* category comprises only one major theme – being that, *Lifestyle and leisure* (73 reviews).

4.2.2.1.4 TEXT CLASSIFICATION APPLIED TO MEMBERSHIP LEVEL OF REVIEWERS

In *Annex 9.4* it is possible to find the results of the Text Classification analysis according to the *Membership Level of Reviewers* code.

The *High Ranked Reviewers* in their reviews were found to be mentioning three major themes: *Lifestyle and Leisure* (80 reviews), *Tourism, travel and commuting* (79 reviews) and *Art and Culture* (27 reviews).

The *Low Ranked Reviewers* present a little more diversity and show five themes in the most important ones: *Lifestyle and Leisure* (96 reviews), *Tourism, travel and commuting* (86 reviews), *Social issue* (34 reviews), *Art and culture* (28 reviews) and *Sport* (28 reviews).

4.2.2.3 RESULTS STUDY 2 – GLOBAL SENTIMENT ANALYSIS

4.2.2.3.1 GLOBAL SENTIMENT ANALYSIS GENERAL RESULTS

The first thing being studied is the polarity. From the results achieved it is possible to see that the average polarity is 4.10, which means that globally the sentiment of the reviewer's towards their experiences and activities in the island was positive. Moreover, the information above can be proved in *Annex 9.9*, where it can be seen clearly that the result “positive” – 4, was the one most experienced (406 reviews).

The second thing being studied is the agreement (*Annex 9.10*) – which, as seen before, studies the polarity between the different elements in the same review. From the 635 reviews, it is possible to see that 355 of the total reviews were considered in agreement, while 280 were classified as in disagreement. Moreover, and in a more important matter, the average polarity of each type of review can be found in *Annex 9.11*. The sentiment of the reviews in agreement is fairly more positive than the ones in disagreement - 4.35 and 3.79, respectively.

Furthermore in *Annex 9.12*, the number of reviews according to the Subjectivity can be found – also as seen before, the subjectivity is the degree in which the reviews when written were influenced by the reviewer’s personal feelings, taste or opinions. It is possible to see that there is clearly more reviews considerate subjective (575), while only 60 considered objective. Moreover, in *Annex 9.13* the results show that the reviews considered subjective are a little more “sentiment positive” than the ones classified as objective (4.11 and 4.05, respectively).

At last, the results of the *Irony* can be found in *Annexes 9.14* and *9.15*. The first one states that from the 635 reviews, almost the total was categorized as *non-Ironic* (621 – corresponding to 97.80%), while only 14 were considered *ironic* (2.20%). The second one refers to the sentiment of the reviewers when using irony or not. It can be seen that when the reviewers used irony to express their reviews the sentiment that they were feeling was more positive than when not using irony.

In the following sub-chapters it will be presented the results regarding the same codes but applied to *TEM*, *Category* and *Membership Level of Reviewers*.

4.2.2.3.2 GLOBAL SENTIMENT ANALYSIS APPLIED TO TOURISM EXPERIENCE MODEL

In *Annex 9.16* it can be seen the average polarity regarding each type of experience felt by the reviewers in their stays. The *Re-Discover* experience was the one that created a better positive sentiment in the reviewers (4.12), followed by the *Knowledge Seeker* experience (4.10) and *Pure Pleasure* one (4.09). Clearly, in a not so positive sentiment the *Holist* experience with 3.83, was the one that the reviewers were not so satisfied about.

Moreover, in *Annex 9.17* it is possible to see the *Average Polarity* according to both *TEM* and *Agreement*, and understand that from the reviews in *Agreement*, the ones gathered from reviewers who were experiencing *Holist* are the ones that the sentiment was more positive (4.60), but from the ones in *Disagreement* this experience was the one that manifested the most negative sentiment among the reviewers. Furthermore, from the reviews

in *Disagreement*, the reviewers who showed a more positive sentiment were the ones experiencing *Knowledge Seeker*, while on the opposite side this experience showed to be the most negative sentiment-related in the reviews in *Agreement*.

In *Annex 9.18* it is possible to do the same analysis but regarding the *Subjectivity*, instead of *Agreement*. It can be said that from the *Objective* reviews, the *Holist* experience was the one that had the most positive sentiment (5.00) in the reviewer's stays and on the opposite side can be found the *Knowledge Seeker* experience (3.94). Furthermore, from the reviews considered *Subjectivity* reviews the *Re-Discover* experience was the one where the reviewers had a bigger positive sentiment (4.13), contrary to the *Holist* (3.76).

Finally, in *Annex 9.19* the same analysis can be done according to *TEM* and *Irony*. From the reviews classified as ironic, it is possible to state that the reviewers experiencing *Pure Pleasure* were the ones with the most positive sentiment (4.50), the most unhappy were the ones experiencing *Holist* and *Knowledge Seeker* (4.00, both of them). Moreover, from the non-ironic reviews, the ones with a most positive sentiment were the ones experiencing *Re-Discover* (4.12) as well. On the opposite side, it can be found the reviewers experiencing *Holist* (3.82).

4.2.2.3.3 GLOBAL SENTIMENT ANALYSIS APPLIED TO CATEGORIES

In *Annex 9.20* the results show that the category which created the most positive sentiment in the reviewer's experiences in the island was the *Hotel* category (4.18), and the one that was the most negative experience was the *Restaurant* category (4.01).

Moreover, in the *Annex 9.21* it is possible to see the *average polarity* according to *Categories* and *Agreement*. The results show that from the reviews in agreement the ones that urged a more positive sentiment in reviewers were the ones connected to *Hotel* category (4.39), while the opposite can be found in the *Restaurant* category (4.28). In the *Disagreement* classified reviews, the most positive was the ones from *Restaurant* category (3.80), and the most negative sentiment was seen in both *Hotel* and *Cultural Activity* (3.77, respectively).

Furthermore, in the *Annex 9.22* it is shown the results according to *Categories* and *Subjectivity* regarding *Bermuda*. From the results gathered in the reviews considered *Objective* the category that urged the most positive sentiments in the reviewers was the *Hotel* (4.21), and the opposite was the *Leisure Activity* ones (3.89). From the reviews considered *Subjective*, again the *Hotel* category was the one in which the reviewers felt the most positive

sentiments (4.18), on the other end the *Restaurant* category (4.02) was the one where the reviewers experienced the most negative sentiments.

Finally, in *Annex 9.23* it can be seen the results according to *Categories* and *Irony* regarding *Bermuda*. It can be said that, from the reviews considered *Ironic*, the category that urged the most positive sentiment was *Hotel* (4.33), and the most negative ones were *Cultural Activity* and *Restaurant* (4.00). From the reviews classified as *Non-Ironic*, again the *Hotel* category was the one in which the reviewers felt the most positive sentiments (4.18), and the *Restaurant* (4.01) was the one in which the reviewers felt the most negative sentiments.

4.2.2.3.4 GLOBAL SENTIMENT ANALYSIS APPLIED TO MEMBERSHIP LEVEL OF REVIEWERS

In *Annex 9.24* can be seen that the *Low Ranked Reviewers* showed a more positive sentiment in their opinions and thoughts regarding the activities done and places visited in the reviews extracted (4.12), in comparison with the *High Ranked Reviewers* (4.08).

Moreover, in *Annex 9.25* it is shown the results of the Global Sentiment Analysis according to the Membership Level of Reviewers and the Agreement. It can be stated that from the reviews classified as in Agreement and Disagreement, it was the Low Ranked Reviewers (versus the High Ranked ones) who experienced the island with a best positive sentiment (Agreement - 4.36 LRR vs. 4.34 HRR and Disagreement – 3.81 LRR vs 3.75 HRR).

Furthermore, in *Annex 9.26* it can be seen the same results but in accordance with the Subjectivity, instead of the Agreement. The results show that again the LRR were the ones experiencing the most positive sentiments in the island, in comparison with the HRR (Objective – 4.06 LRR vs 4.03 HRR and Subjective – 4.12 LRR and 4.09 HRR).

Finally, *Annex 9.27* shows the same results but in accordance with the Irony instead of Subjectivity or Agreement. It can be said that the same results are applied, both in *Ironic* and *Non-Ironic* reviews, it was the LRR that showed the most positive sentiments (*Ironic* – 4.22 LRR vs 4.20 HRR and *Non-Ironic* – 4.11 LRR vs 4.08 HRR).

5. FINDINGS/NOTES

This chapter shows some conclusions that were taken after the *Results*, indicated in the last chapter, and the *Literature*, and it will serve as a support for the *Discussion* chapter coming next.

5.1 MADEIRA (Study 1)

Based on the results of *Study 1* - the first aspect to be mentioned is that the amount of *Cultural Activities* regarding *Madeira*, is far superior than the *Leisure Activities* one (459 and 163 reviews, respectively), which indicate that the activities that are done by the tourists in the island are more related with culture than leisure.

Moreover, the average rating (4.59) calculated based on the reviews extracted, indicates that generally the reviewers are truly happy and satisfied with the activities, accommodations and places attended during their stays. Although this fact, from the four categories in which the reviews were extracted, it is possible to say that there are two of them that got an average rating slightly superior, being *Leisure Activities* and *Restaurants* the favourite ones according to the reviewers.

Another interesting fact is that although reviewers tend to do more *Cultural Activities* than *Leisure* ones, the average rating of the second is higher than the first (4.81 - *Leisure Activities* and 4.45 – *Cultural Activities*).

In relation to the *Membership Level of Reviewers* code, it is possible to say that since the vast majority of reviewers are *Low Ranked*, according to Chen (2015) different membership levels have different attitude towards the information, and *LRR* will accept the information in a higher probability while *HRR* have higher change of receiving the information but less probability to accept it, it is fair to say that the higher the number of *LRR* the best the information exposed publicly will be received and accepted. Following that same logic, it can be said that since the majority of reviewers of the *Island of Madeira* throughout the *TripAdvisor* platform are *Low Ranked Reviewers*, they are more likely to accept the information online than the opposite.

Another conclusion towards the *Membership Level of Reviewers* is that there was no significant difference between how the two types of reviewers rate their experiences in the island.

As far as it concerns the *Language type* code, it was obtained that the reviewers mostly used *Literal* language in detriment of the *Figurative* one. The difference of the average rating between reviews expressed in the two different language types was also not significant.

What may be interesting to conclude regarding this coding, is that from the information gathered there is a significant percentage of *LRR* using *Figurative* language type, and according to Wu *et al.* (2017:590) “consumers exhibit less favourable attitudes and lower reservation intention after reading a figurative (vs literal) review posted by a low expertise level”. The 22.51% (almost a quarter) of *Low Ranked Reviewers* using *Figurative* language may be therefore a threat to the *Tourism of Madeira*.

Regarding the results of the application of the *Tourism Experience Model* according to the reviews that were extracted, it is possible to conclude that more than half of the reviews (51.83%) were found to have reviewers experiencing *Re-Discover*, which is quite dominant. Nonetheless, that one was the experience with the lowest average rating given by the reviewers, along with *Pure Pleasure*. The *Holist* experience was the one best rated according to the reviews extracted.

To take any conclusions regarding this topic it is necessary to have in mind, the framework, and how the reviews are spread across the *TEM* graphic representation. The next figure – *Figure XIII*, analyses the figure in a horizontal way and expresses the total percentage of reviews per experience that were extracted to study *Madeira*.

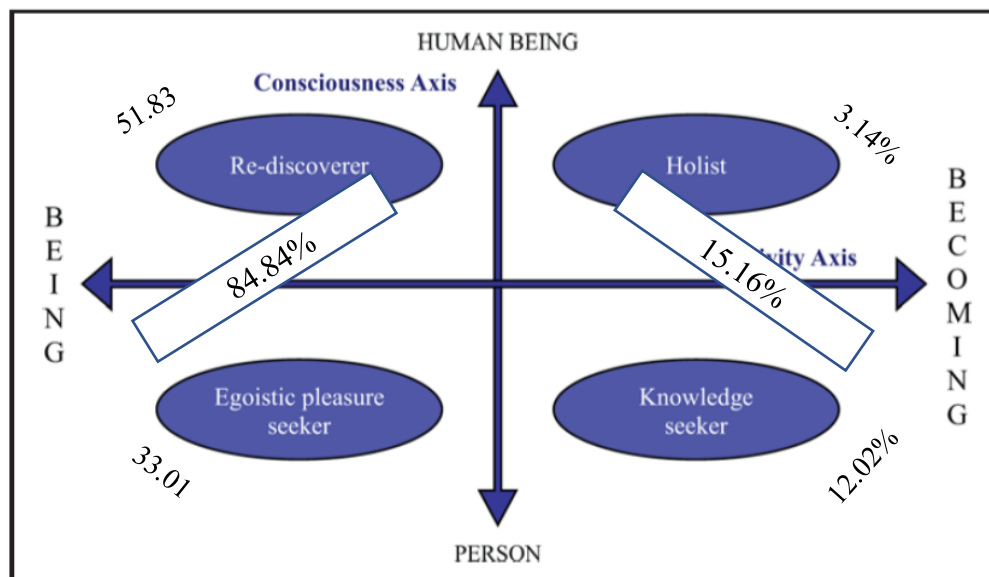


Figure XIII – *TEM* based on *Madeira*'s results (Horizontal perspective)

Source: Own Elaboration

As it is possible to see there is a clear discrepancy in the results obtained. 84.84% of the reviews are presented with tourists perceiving their experiences as *Pure Pleasure* or *Re-Discover*.

This last data is quite important to understand that there is a side of the graphic that is way more important than the other. As mentioned in the *Methodology* chapter, the horizontal axis – *Activity axis* - comprises two domains. The left side corresponds to the *Recreational Activities* and the other one *Exploratory Activities* – known for tourists looking for new sensations and understandings, as well as gain knowledge and transform themselves through the activities practiced (Gnoth and Deans, 2012). By the perception of the graph, it is easily recognizable that the *Madeira Island* is experienced, through the four categories studied, by the reviewers as a destiny of *Recreational Activities* rather than *Exploratory*.

Recreational Activities are experiences that the visitors engaged before and are a result of habit, training and repetition. Those activities are held as supporting people into regaining stability in their lives, as well as improve their self-esteem (Gnoth and Deans, 2012). These activities are normally considered entertaining and as shown in *Figure XIII* are related with *Being* rather than *Becoming* - modifying the inner self of the person.

After analysing the horizontal axis it is necessary to study the vertical one as well – *Consciousness Axis* – deals with how the experiences are received by the tourists (Gnoth and Deans, 2012).

As it was seen before, this axis comprises two domains. The upper side corresponds to the *Human Being* – as in people forgetting the stereotypes and dogmas of society and concentrate on their inner selves (Gnoth and Deans, 2012). The lower side corresponds to *Person* – as receiving the experience as guided by role-expectations. The higher the authenticity the more role-authentic the person is.

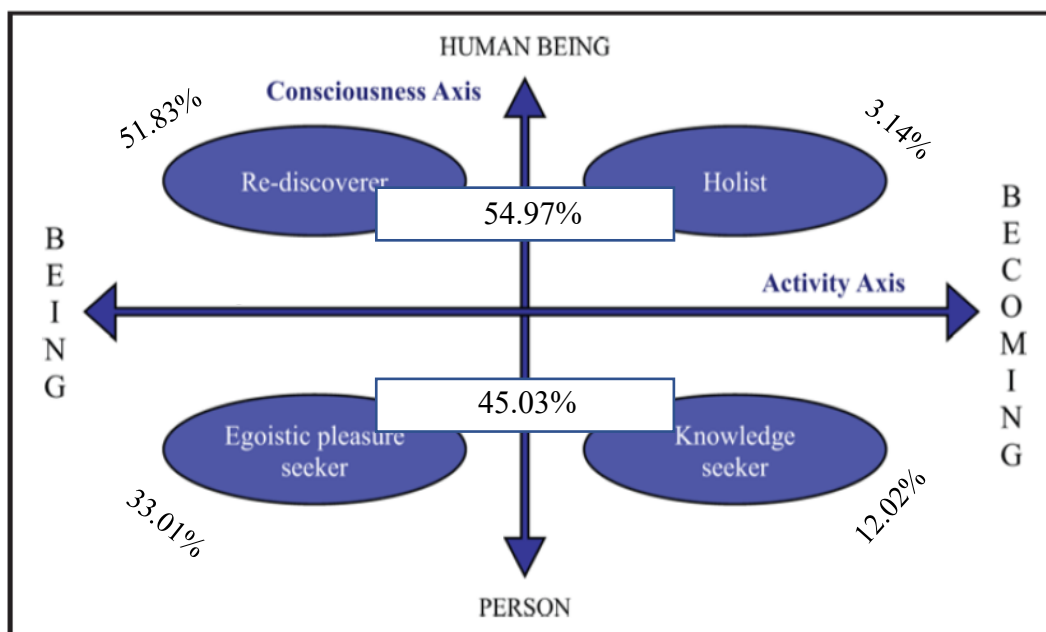


Figure XIV – TEM based on Madeira's results (Vertical perspective)

Source: Own Elaboration

In *Figure XIV*, it is possible to see the percentage of experiences according to the vertical axis. The upper side of the axis, which wraps the *Human Being*, comprises 54.97% of the experiences lived by the tourists, while the *Person* one comprises the remaining 45.03%.

According to the literature studied and the results obtained, *Madeira* is therefore perceived consciously more as a place where people are able to forget, or move away, from the entrenched dogmas, stereotypes and values of society and get closer to what they really are – their inner self.

Combing the two results obtained, from the last two figures and the studies scientifically accepted that were already mentioned, *Madeira* can be seen as a destiny where people especially through *Recreational Activities* are able to get closer with their existential being.

In relation with the *Symbology* code, it can be said that there is a minimum percentage of reviewers using any kind of *emojis/emoticons* (only 3.48%). The positive thing that can be outlined is the fact that almost all those reviewers used symbols in a positive way (39 out of 40).

Moving on to the *Content* code, it can be said that there are some themes that are more important for the reviewers to mention in their reviews than others. For example, it was very important for reviewers to mention certain words related with *gastronomy*, *accommodation* and *activities* frequented/experienced in the island. There are just a few words (and in a small scale) that appear as a negative connotation, which highlights that generally the content referred by the tourists writing reviews is quite positive. For the *Tourism of Madeira* it is also important to refer that reviewers are inviting other possible tourists to visit this destination – that can be explained by the appearance of “*recommendation*” in so many reviews and in the final *Wordle* output.

The *Positive aspects* mentioned by the reviewers showed a load of adjectives, which is normal once the reviewers used them to classify whatever they were referring to. Other important aspect is the appearance of words connected with all of the four categories, of the extracted reviews, in the final *Wordle*. This means that globally there was a dispersion of the positive content across all the accommodations, restaurants, leisure and cultural activities experienced by the tourists. This information also significate that there words linked with all of the *TEM* experiences, which serves as a complement to the already mentioned satisfaction

shown by the reviewers on all categories/experiences. Again it appears to be important for reviewers to “*recommend*” other possible tourists to have the same experiences that they had.

Still about the same subject, according to Chen and Tseng (2010) and Cheng *et al.* (2017) positive reviews are capable of encouraging readers to buy a product/service, which shows the importance of the positive content hereby analysed. Adding to this, to the fact that from the *Wordle* results of the *Content* code there is a vast majority of words with a positive connotation and the fact that in the final database 98.78% of the total amount of reviews contain positive information, it is therefore believed that overall, the opinions expressed online regarding the island of *Madeira*, as a destination, are positively persuading potential tourists to choose to visit the island.

At last, the *Negative aspects* also show a bunch of adjectives in the final output, which again is normal, as the reviewers used them to express and classify the subjects that they were referring to. From the results it is possible to say that the majority of words with a negative connotation are linked with the left side of the *TEM* (*Re-Discover* and *Pure Pleasure*), meaning that there were more negative things to say regarding *Recreational Activities* than *Exploratory* ones. It is also important to refer that 33.45% of the total amount of reviews contain at least a piece of negative information – more than one third of the reviews extracted, which is quite significant.

According to Chen (2015) negative information is capable of presenting the problems of products (such as hedonic ones – like travel destinations), which will ultimately decrease the trustworthiness of the same. This is fact that the *Tourism of Madeira* has to deal with, due to the significant amount of negative information circulating online. Nonetheless, this data is important because the responsible entities are now aware of the fact and can modify their strategies in order to correct the situation.

5.2 MADEIRA (Study 2)

Starting by the first analysis that was performed under the *Meaning Cloud* scope – *Text Classification*, it is possible to say that from the 17 different themes that it was able to identify, there are two that are undoubtedly more presents in the reviews than the others: *Lifestyle and Leisure* and *Tourism, Travel and Commuting*. This means that the reviewers are interested in expressing their thoughts towards the life they had during their stays in the island, but also locations and transports they caught while they were experiencing the Island. This information can be confirmed by the *Topics Extraction* analysis that was done, in which

from the 20 major concepts extracted; almost all of them are linked with the two themes above mentioned:

1. *Lifestyle and Leisure*: “Hotel”, “Room”, “Staff”, “Pool”, “Snooker”, “Restaurant”, “Food”, “Wine”, “Breakfast”;
2. *Tourism, Travel and Commuting*: “Madeira”, “Location”, “Funchal”, “Car”, “Driver”, “Trip”.

From the 20 concepts extracted as the ones most mentioned by the reviewers, 15 can be included in both of themes, showing the importance of these subjects for the reviewers.

Getting back to the *Text Classification* results, it can be seen that in all of the four categories *TripAdvisor* allows to segment the reviews, it can be found the same two themes already mentioned. There are afterwards themes that appear in two of those categories, and are also important to characterize the perception of the reviewers towards the island of *Madeira*, such as: *Environment, Weather and Energy, Art and Culture* and *Finances*. Through the *Topics Extractions* results it is possible to see that it complements this information, as the main concepts obtained for each category can be included in the themes analysed by the *Text Classification*. For instance:

1. *Cultural Activities* appear to be more connected with *Tourism, Travel and Commuting* - “Car”, “Madeira”, “Funchal”, “Location”, “Monte”, “Trip” and more;
2. *Leisure Activities* involve *Environment, Weather and Energy, Travel, Tourism and Commuting*, but also *Lifestyle and Leisure* – “Madeira”, “driver”, “trip”, “road” , “dolphin”, “location”, etc.;
3. *Hotel* respects more *Lifestyle and Leisure* and *Tourism, Travel and Commuting* – “Room”, “breakfast”, “pool”, “hotel”, “location”, “snooker”, “restaurant”, etc.;
4. *Restaurant* category involves more *Lifestyle and Leisure, Art and Culture* and *Tourism, Travel and Commuting* – “Food”, “Restaurant”, “Service”, “Steak”, “Wine, “Atmosphere, “Location” and “Madeira”.

On the *Tourism Experience Model* application, the results of the *Text Classification* obtained something close to what was already mentioned. *Tourism, Travel and Commuting* is the theme that the reviewers mention in all of the four experiences, followed by *Lifestyle and Leisure, Environment, Weather and Energy, Art and Culture* - appearing in three of the four experiences. On the *Topics Extractions* results it is possible to find:

1. *Holist* appears to more connected with Tourism, Travel and Commuting and Environment, Weather and Energy – “garden”, “Funchal”, “Madeira” and “Location”;
2. *Knowledge Seeker* more involved with Tourism, Travel and Commuting, Lifestyle and Leisure and Art and Culture – “Madeira”, “driver”, “Wine”, “guide”, “trip”, etc.;
3. *Pure Pleasure* indicates clearly more words related with *Lifestyle and Leisure* and *Art and Culture* – “Room”, “Pool”, “Hotel”, “Food”, “Breakfast” and “Restaurant”;
4. *Re-Discover* one is linked in a higher level with *Tourism, Travel and Commuting, Lifestyle and Leisure* and *Environment, Weather and Energy* – “Madeira”, “Funchal”, “Location”, “Car”, “garden”, “trip”, “staff”, “room” and so on.

Finally, regarding the two types of reviewers based on their *Membership Level*, there is not a huge difference, except the fact that *low ranked users* seem to give more importance to *Social Issues* and *Finances* than the *high ranked users*. On a *Topics Extraction* level it can be seen exactly that, by the results showing almost the same exact concepts.

All in all, the results of the two analysis hereby mentioned – *Text Classification* and *Topics Extraction*, serve as a complement to each other, and what it is important to refer is that going coding by coding, or in a general level, the themes that matter the most, and for that reason the ones most mentioned by the reviewers in their reviews regarding *Madeira* are *Lifestyle and Leisure, Tourism, Travel and Commuting, Environment, Weather and Energy* and *Art and Culture*. These four themes are the base of the *e-WOM* that it is being created online in *TripAdvisor* regarding *Madeira*.

The next step is to discuss the results obtained in the *Sentiment Analysis* performed – *Global Sentiment Analysis* and *Topics Sentiment Analysis*.

Starting with the *Global Sentiment Analysis*, on a general level, the average polarity is a very important indicator, because it indicates the average general sentiment attributed by the reviewers in the *e-WOM*. A score of 4.86 is extremely positive, and it shows that the globally the reviewers felt profound positive sentiments in their stays and experiences in the island. Such result can be perceived as online reviewers being positively engaged with the island spreading positive information about it, thus increasing the possibility of re-experience or new customers to experience (Islam *et al.*, 2012; Zeithaml *et al.*, 1996). Other studies corroborate the same conclusion, as a score close to the maximum scale (4.6 out of 5) may also outcome

in those reviewers becoming loyal to the destiny (Chang *et al.*, 2009; Ribbink *et al.*, 2004), which will ultimately enhance re-visiting it (Chang *et al.*, 2009).

Keeping on a general level, the reviewers when in agreement with everything they are mentioned tend to be more positive, than when in disagreement – *Agreement* (4.36) and *Disagreement* (3.77). Moreover, when the reviewers write their reviews based on their personal feelings and dogmas they show more positive sentiments, than the opposite – *Subjective* (4.10) and *Objective* (3.81). Finally, the reviewers when not being ironic showed more positive sentiments in their reviews, than when being ironic – *Ironic* (3.96) and *Non-Ironic* (4.09).

Moreover, regarding the *Category* coding it is important to refer that on a general level, the *Restaurant* was the one with the higher average polarity (4.30) and for that reason the one which urged in the reviewers the best positive sentiments. On the opposite side it can be found the *Cultural Activities* (3.94), with the most negative sentiments. The *Restaurant* was in fact the category with the highest positive sentiments in almost every aspect – *Agreement*, *Disagreement*, *Subjectivity*, *Irony* and *Non-Irony*, only *Objective* got *Leisure Activities* has having the most positive sentiment reviews. On the opposite side, *Cultural Activities* was the one found having the reviews where the reviewers showed the least positive sentiments, in all tests. Regarding the *Tourism Experience Model*, on a global way the *Knowledge Seeker* experience was the one in which the reviewers felt more positive sentiments – that could also be seen in the reviews in *Disagreement*, *Subjectivity* and *Non-Ironic*. The *Re-Discover* experience was, globally, the one found creating the most negative impact in the reviewer's sentiments – also the most negative in reviews in *Disagreement*, *Objective*, *Subjective* and *Non-Ironic*. Finally, the last coding in the *Global Sentiment Analysis* tell us that the *Low Ranked Reviewers* obtain more positive experiences, and more positive sentiments, in every possible angle when compared with the *High Ranked Reviewers*.

Moving on to the last analysis performed – *Topics Sentiment Analysis*, indicate that the reviewers selected the topics of *Hotel*, *Services* and *Gastronomy* as the ones most positive. The topics with the most negative sentiments score was *Measures* – involving distances, prices, etc., *Tourism* and *Weather and Meteorology*. Although being the most negative topics, these last three topics are still above the neutral score, meaning that globally it can be found more positive sentiments than negative ones.

Regarding the *Category* coding, the most important aspect to refer is that *Restaurant* was the category with the highest positive sentiments and *Cultural Activities* the one with the most negative ones – as has happened in the *Global Sentiment Analysis*. Moreover, the

Tourism Experience Model coding tells us that the *Pure Pleasure* experience was the one containing the topics that the reviewers felt more positive sentiments, while the contrary happens in the *Knowledge Seeker* experience. The last coding – *Membership Level of Reviewers*, tells us that the *Low Ranked* reviewers tend to have their best experiences related to *Social Events, Services* and *Hotels*, while the *High Ranked* ones with *Hotels, Services* and *Gastronomy*. As it is possible to see the results are close between them.

5.3 BERMUDA (Study 1)

The first thing to be mentioned is that contrary to *Madeira*, in *Bermuda* there is a slight preponderance for the tourists to attend more *Leisure Activities* than *Cultural* ones – although the gap between them is not as significant as in the *Madeira's* case (214 and 158 reviews, respectively).

Furthermore, the average rating (4.43) that was calculated based on the 635 reviews extracted, indicate that globally the reviewers manifest happiness and satisfaction with the accommodations, activities and places attended during their stays. There is one category in particular that is distinguished by having an average rating (4.71) superior than all the others, together with the fact of being the one with the highest amount of reviews, which reinforces the strong happiness towards the *Leisure Activities*. Moreover, the *Restaurant* category was considered by the reviewers as the most negative among all the others.

Moving on to the *Membership Level of Reviewers* it was seen that there was a majority of LRR (56.69%) in comparison with the HRR (43.31%), which according to Chen (2015) means that the majority of reviewers of the *TripAdvisor* platform regarding Bermuda are more likely to accept the content displayed online by other reviewers.

One thing that has to be taken into account is that contrary to the conclusions taken about *Madeira's* case, in *Bermuda* is possible to say that *LRR* tend to better evaluate their activities and experiences in the island in comparison with the *HRR* – 4.56 and 4.24 average rating, respectively.

In relation to the *Language type* used by the reviewers it is quite evident that there is a massive preference for using *Literal* language (80.31%), in detriment of the *Figurative* one (19.69%). Also, as has happened in the previous case, the average rating difference between each *Language type* is quite similar and therefore not significant to take any major conclusions.

Again, what is important to refer is that both *HRR* and *LRR* prefer the use of *Literal* language which is very positive because according to Wu *et al.* (2017) *figurative* language

can cause less favourable attitudes, and lower booking intent, by potential readers when written by *LRR* - the same does not happen when you are talking about *HRR*, since the language effect is attenuated. Although this result there is still an amount of reviewers that should concern the entities of the *Tourism of Madeira*, by the fact that 21.11% of the *LRR* are using *Figurative* language, which may cause potential tourists to drop their intentions to visit the island.

Regarding the results of the *Tourism Experience Model*, it can, again, be concluded that the vast majority of tourists lives experiences of *Re-Discover* – 61.73%, which is a percentage quite expressive. Yet again, despite being the most “lived experience” it had one of the lowest average ratings (4.41), only overtaken by the *Knowledge Seeker* experience, which was the one evaluated as more negative by the reviewers (4.40). The *Holist* experience was the one with the highest average rating.

As done in the previous chapter, it is now necessary to have in mind the *TEM* framework, and how the four different experiences are spread across its’ graphic representation. The next figure – *Figure XV*, represents the percentage of the experiences taken from the reviews.

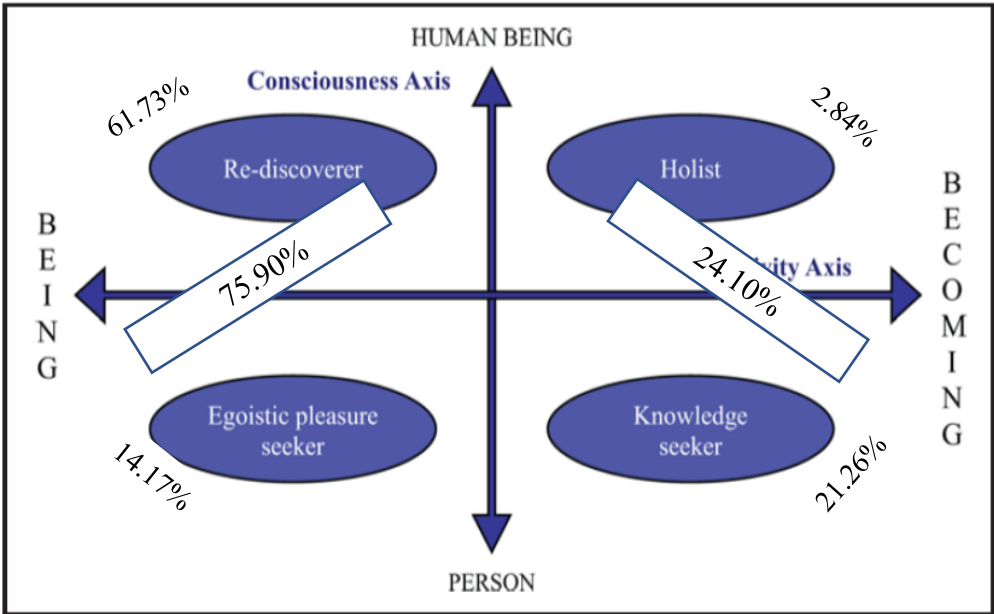


Figure XV – *TEM* based on *Bermuda*’s results (Horizontal Axis)

Source: Own Elaboration

On a horizontal point of view, it is clear that the left side of the axial representation is way more important than the right one. 75.90% of reviewers either experienced *Re-Discover* or *Pure Pleasure*, while only 24.10% experienced *Holist* or *Knowledge Seeker*.

The left side of the axis, as seen before, comprises the *Recreational Activities*, which means that reviewer’s activities in *Bermuda* are often a result of habit, training and repetitive actions. People are helped through those activities to regain their balance, strength and self-esteem (Gnoth and Deans, 2012).

One thing that can be immediately concluded is that, through the four mentioned experiences, reviewers perceived the island of *Bermuda* as a destiny of *Recreational Activities* rather than *Exploratory*.

The vertical axis (see *Figure XVI*) shows a higher difference in the percentage of reviews in the upper/lower side of the graphic compared with *Madeira*. 64.57% of the reviewers either experienced *Re-Discover* or *Holist* – as seen also in the *Madeira*’s results but in a smaller gap.

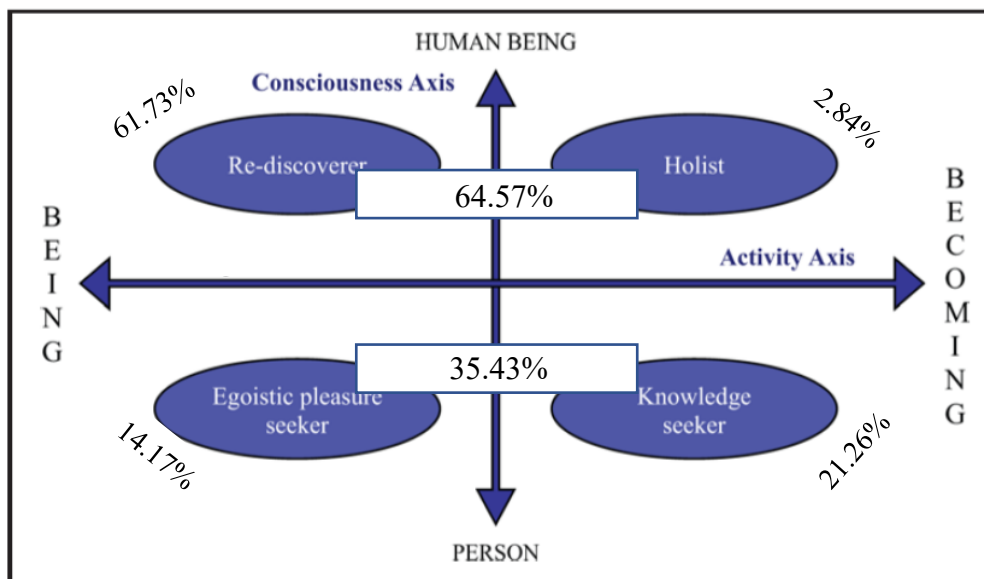


Figure XVI – TEM based on *Bermuda*’s results (Vertical Axis)

Source: Own Elaboration

The conclusions reflected in the previous chapter may also be considered in this case. *Bermuda* can be seen as an island destination where people are capable of being closer to their existential being – being able to forget about the induced values and stereotypes of society.

Doing a combination between the results taken from *Figure XV* and *Figure XVI*, it is possible to say that *Bermuda* is perceived as a destiny where people, especially through recreational activities are able to get closer with their existential being.

Advancing to the *Symbology* code, the results show a minimum use of such emojis/emoticons in their reviews – only 1.10%, which tells us that perhaps such amount of reviews is not sufficient to study this code and more reviews would be needed. Nonetheless 71.43% of the emojis/emoticons found were used in a positive way, which is ultimately a good outcome.

The next conclusions to be taken are related with the *Content* code. Again, some of the major themes being referred by the reviewers in their reviews are related with words linked to *gastronomy*, *activities* done, *places* visited and certain leisure words that are connected with *accommodation* services. On a smaller size it is also possible to find words linked with *culture*. Therefore, it is possible to say that the results show a spread of words across all the *Categories*, and consequently all the *TEM* experiences.

Again, there are some words that are mentioned with a negative connotation, one of them in a relatively big size – “price”, meaning that globally the reviewers did not enjoy the prices that were practiced in the different island activities/experiences.

Other thing worth mentioning is again the appearance of words related with reviewers inviting other possible tourists to enjoy the same experiences that they had – words like “*recommendation*”.

In relation with the *Positive* aspects being stated by the reviewers in the amount of reviews that were extracted, the results showed once again the appearance of a lot of adjectives that were used by the reviewers to classify whatever they were talking about. As has happened in the *Madeira’s* case, the *Bermuda’s Wordle* reflects words linked with *accommodations*, *restaurants*, *leisure* and *cultural* activities – which imply that all the experiences that the *TEM* is concerned, are represented as well. It is also important to refer that, as mentioned in the *Content* considerations, due to the high average satisfaction shown by the reviewers the appearance of the word “*recommend*” pops up in a relatively big size.

According to Chen and Tseng (2010) and Cheng *et al.* (2017) positive opinions from other reviewers may influence others to purchase a product – including *hedonic products*, such as *travel destinations* (Chen, 2015). Since that in 96.70% of the reviews it is possible to find positive information, together with the conclusions taken by other articles like the ones presented, it can be inferred that the reviews written online in the *TripAdvisor* platform regarding *Bermuda*, are able to positively persuade potential tourists to choose the island as a travel destination.

To end this chapter, the considerations about the *Negative* aspects regarding *Bermuda* shall be pointed out. Again, as normal a load of adjectives were found to be a part of the final

output as a way of reviewers to classify whatever concept they were mentioning. From the results it can be stated that the majority of concepts that pops out are related with the left side of the *TEM (Re-Discover or Pure Pleasure)*, standing out the fact that the island is more of a place of *Recreational Activities* than *Exploratory* ones. The last information worth mentioning is the 32.28% of negative information being referred across the 635 reviews extracted, which again is quite significant.

According to the same article used in the last chapter towards the *Negative* aspects code, Chen (2015) states that negative information about hedonic products (such as travel destinations) will shrink the reliability of the same in the reader's perspective. This is a fact that the responsible entities of *Bermuda* shall have in consideration, due to the tourism problems that it might create.

5.4 BERMUDA (Study 2)

Doing the same analysis as in the last chapter, but this time regarding the results of *Bermuda's* text mining process, it is possible to say that from the 16 themes that the *Meaning Cloud* under the *Text Classification* analysis, was able to identify, there are two of them that are far more present in the extracted reviews: *Lifestyle and Leisure* and *Tourism, Travel and Commuting*. Doing a parallel connection with the results obtained from the *Topics Extraction*, it is possible to see that the major 20 concepts can be framed into the two mentioned themes:

1. *Lifestyle and Leisure*: “Beach”, “Service”, “Store”, “Food”, “Room”, “Restaurant”, “Hotel”, “Staff”, “Family” and “Dinner”;
2. *Tourism, Travel and Commuting*: “Bermuda”, “Hamilton”, “Place”, “Location”, “Island”, “Area”, “Cave”, “Boat” and “Cruise”.

From the 20 concepts considered as the major ones obtained by the *Topics Extraction*, all of them can be included as belonging to both themes, showing the importance of those in the total of reviews extracted.

The results of this analysis on the *Category* coding appear to be on the same page as the information mentioned before. *Lifestyle and Leisure* appears to be linked with all the categories studied, while *Tourism, Travel and Commuting* in three of the four categories. Moreover, it can be found *Art and Culture* linked with *Cultural Activities* and *Sports* with *Leisure Activities*. The information resultant of the *Topics Extraction* serves as a complement to the *Text Classification*:

1. *Cultural Activities*: appear to be connected with *Tourism, Travel and Commuting* and *Lifestyle and Leisure* – “Bermuda”, “Beach”, “Place” and “Room”;
2. *Leisure Activities*: again, the major topics extracted seem to be connected with *Tourism, Travel and Commuting* and *Lifestyle and Leisure* – “Bermuda”, “Food”, “Staff” and “Beach”;
3. *Hotel*: the same analysis as before – “Beach”, “Room”, “Bermuda” and “Place”;
4. *Restaurant*: besides *Lifestyle and Leisure*, it appears to be connected with *Environment, Weather and Energy* – “Beach”, “Cave”, “Hamilton” and “Dolphin”.

On the *Tourism Experience Model* level, the results of the *Text Classification* also maintain close results with what was presented before. *Lifestyle and Leisure* appears to be an important theme for all types of experiences, while *Tourism, Travel and Commuting* seem to be significant for three of them. *Arts and Culture* appears in two experiences, and *Sports* and *Social* in only one of them. It is possible to see that also with the major concepts found by the software for each experience:

1. *Holist*: was found to be linked with *Lifestyle and Leisure*, as well as *Art and Culture* – “Service”, “Dinner”, “Church” and “Town”;
2. *Knowledge Seeker*: more involved with *Tourism, Travel and Commuting* and *Lifestyle and Leisure* – “Bermuda”, “Place”, “Beach”, “Room” and “Hamilton”;
3. *Pure Pleasure*: indicates to be more connected with *Lifestyle and Leisure*, but also with *Tourism, Travel and Commuting* – “Room”, “Beach”, “Food” and “Bermuda”;
4. *Re-Discover*: linked with *Lifestyle and Leisure, Tourism, Travel and Commuting*, but also *Social* – “Beach”, “Bermuda”, “Staff”, “Food”, “Hamilton”, “Restaurant”, “Friendly”, “Room”, “Service” and “Location”.

At last, through the *Membership Level of Reviewers* it was possible to see that both types of reviewers tend to write about the same themes – *Lifestyle and Leisure, Tourism, Travel and Commuting* and *Art and Culture*, but the *Low Ranked* reviewers also include *Sports* and *Social* in their reviews.

From the result hereby analysed – *Text Classification* and *Topics Extraction*, it is possible to say that each coding seems to culminate in the same conclusions. The most important themes mentioned by the reviewers in their reviews on *TripAdvisor* about Bermuda, are related with *Lifestyle and Leisure, Tourism, Travel and Commuting*, and a little bit of *Art*

and Culture. These three themes are the base of the *e-WOM* that the reviewers are creating online regarding *Bermuda* and their experiences in the island.

The next discussion to be having is related with the results obtained from the *Sentiment Analysis* performed – *Global Sentiment Analysis* and *Topics Sentiment Analysis*.

Firstly, the general results of the *Global Sentiment Analysis* indicate that globally the reviewers were feeling positive when writing about their stays and experiences in the island, as an average polarity of 4.10 was obtained. A score like this indicates a positive sentiment towards the destination.

Moreover, on a general level it can be said when the reviewers are in agreement with the content they are mentioning, they are feeling more positive sentiments, than when they are in disagreement – *Agreement* (4.35) and *Disagreement* (3.79). Another interesting fact is that, when the reviewers are subjective – letting their personal feelings and ideas influence what they are saying, they also tend to be more positive than when being objective – *Subjective* (4.11) and *Objective* (4.05). Finally, the irony analysis indicates that when being ironic, the reviewers are also happier and feel more positive sentiments than when not being ironic – *Ironic* (4.21) and *Non-ironic* (4.10).

Moving on to the *Category* coding, the overall results indicate that the *Hotel* category was the one with the biggest satisfaction associated, with an average polarity of 4.18, while the *Restaurant* one, was the most negative according to the results (4.01). The *Hotel* was actually the category with the most positive sentiments attributed across the several tests – *Agreement*, *Objective*, *Subjective*, *Ironic* and *Non-Ironic*. Only the *Restaurant* category got the highest average polarity under the reviews in *Disagreement*, but it was in fact the category with the most negative sentiments in the reviews in *Agreement*, *Subjective*, *Ironic* and *Non-Ironic*. Regarding the *Tourism Experience Model*, the *Re-Discover* experience was the one that globally contained the reviews with the most positive sentiments (4.12), while the *Holist* experience the most negative ones (3.83). This time it is possible find results more spread across the different aspects studied, but it is important to refer that again, even the sentiments considered more negative are still pretty positive in all experiences. Finally, the results of the *Membership Level of Reviewers* coding indicate that the *Low Ranked* reviewers obtained more positive sentiments in all of the aspects studied in comparison with the *High Ranked* ones.

At last, the *Sentiment Analysis* indicates that the reviewers in Bermuda were felt the most positive sentiments regarding matters of *Science*, *Technology* and *Services*, and the most negative ones related to *Religion*, *Travel* and *Measures*. One important fact is that even being

the most negative ones, these last three topics are still above the neutral score, and therefore are still positive.

Regarding the *Category* coding, the topics related with the *Hotel* category were the ones that the reviewers were more positive about (3.55) and the *Leisure Activities* the more negative ones (3.47). Moreover, the *Tourism Experience Model* tells us that the *Holist* experience is the one containing the most positive topics, while the *Knowledge Seeker* one the lowest. Finally, towards Bermuda the *High Ranked* ones obtained the most positive experiences in the island when in comparison with the *Low Ranked* ones. The most important topics for the *HRR* are *Lifestyle*, *Services* and *Technology*, and the least important are *Tourism*, *Religion* and *Travel*. The *LRR* obtained the best experiences in topics like *Sciences*, *Social Events* and *Technology*, and the most negative ones with *Travel*, *Weather and Meteorology* and *Measures*.

6. CONCLUSIONS AND IMPLICATIONS

The next chapter is structured in three different subchapters: *Discussion, Theoretical and Managerial Implications* and *Limitations and Future Research*. It is important to refer that, besides the *Literature* already studied, the *Discussion* was based on the chapter of *Findings/Notes*.

6.1 DISCUSSION

The literature has pointed out multiple times the importance of the online decision making, during a customer buying process, being influenced by *User Content Generated (UCG)* - namely *Online User Reviews (OCR)* (Zhou and Duan, 2016), as well as that content being an important source of information in the tourism industry for travellers (Pan *et al.*, 2007). The amount of reviews obtained in *August of 2017* in the *TripAdvisor* platform regarding *Madeira* and *Bermuda* indicates a strong commitment by the online community, and it has potential to impact on the online travel booking (Peng and Chen, 2013).

The first study (*Study 1*) lays down on a netnographic process and aims studying the reviews extracted from each island in eight different codings: *rating, category, membership level of reviewers, language type, tourism experience model, content, symbology* and *positive/negative information*.

Regarding the *Madeira's* results there are multiple data that shows how positive the reviewers have evaluated their stays in the island - average rating of 4.59, plus every category being classified over 4 and especially the fact that in 98.78% of the reviews it is possible to find positive information. Such facts are believed to persuade readers to purchase the destination by increasing their booking intention (Chen and Tseng, 2011; Cheng *et al.*, 2017). Moreover, the fact that negative information is present in 33.45% of the reviews can be a positive factor in enhancing the reviewers credibility (Schuckert *et al.*, 2015; Zhong and Leung, 2013), as well as firms being able to identify possible services or products imperfections (Cheng and Tseng, 2011).

The type of language mostly used by the reviewers is literal (vs figurative) – 79.27%, which is perceived by authors as being more useful for the readers (Fang *et al.*, 2016), thus increasing the purchase buying intention (Ashraf *et al.*, 2016). Also, the reviewers are mainly *Low Ranked* - 61.15%, which according to the literature indicates they are more willing to accept the information (Chen, 2015), but having *LRR* using figurative language – 22.51% of the reviews, may be a threat to the tourism of *Madeira*, once potential consumers tend to lower their booking intention against reviews with such characteristics (Wu *et al.*, 2017). The

results of the *Tourism Experience Model* indicate that it is a place where people tend to perform recreational activities in order to get closer to their existential being (Gnoth and Deans, 2012; Gnoth and Matteucci, 2014).

Concerning the *Bermuda's* results there are also numerous indicators that led us to believe the reviewers' experiences in the island was positive: an average rating of 4.43, all of the categories were evaluated with a rating above 4 and the fact of existing positive information in 96.70% of the reviews that were extracted. According to the literature studied these results point out that the *e-WOM* presented online in *TripAdvisor* is capable of persuading the readers in increasing the customer's booking intention (Chen and Tseng, 2011; Cheng *et al.*, 2017). Moreover, it was found negative information about *Bermuda* in 32.28%, which can be turned into a positive factor by increasing the reviewers' credibility (Schuckert *et al.*, 2015; Zhong and Leung, 2013), and allowing brands/firms to re-adjust their strategies based on the flaws presented (Cheng and Tseng, 2011).

The percentage of reviewers using literal (vs figurative language) was massive – 80.31%, growing the usefulness of the review in the eyes of the readers (Fang *et al.*, 2016), consequently intensifying the customer's buying intention (Ashraf *et al.*, 2016). The vast majority of reviewers were classified in the *TripAdvisor* platform as *Low Ranked* – 56.69%, which according to the literature states that the reviewers are more agreeable in accepting other's information (Chen, 2015). A problem might arise due to having 21.11% of the reviews written by *LRR* with figurative language, as the literature points out that it can reduce the customer's booking intention (Wu *et al.*, 2017). The results of the *Tourism Experience Model* were identical to the ones already mentioned in the *Madeira's* case. According to the literature studied and the results obtained, *Bermuda* is perceived as a destiny where people, especially through recreational activities tend to get closer to their existential being (Gnoth and Deans, 2012; Gnoth and Matteucci, 2014).

The second study (*Study 2*) contributes to the existing literature in a different scenario, as it results of a *Text Mining* process, and its' objective was to determine the main themes being mentioned by the reviewers – *Text Classification* and *Topics Extraction*, as well as studying their sentiments through the reviews extracted – *Sentiment Analysis*.

Relating to the *Madeira's* results, the *Text Classification* and the *Topics Extraction* showed very close results, as fifteen out of the twenty most important concepts analysed by the *Topics Extraction*, are appropriate in the two most important mentioned themes: *Lifestyle and Leisure* and *Travel, Tourism and Commuting*. The results of such finding have therefore made an important contribution to the literature, by highlighting the main themes of

conversation among reviewers, and their importance in the creation of *e-WOM* about the destination. The results of the *Category* and *Tourism Experience Model* among these analysis are also congruent with the information given above. It was concluded that there is no significant difference between the themes mentioned between *LRR* and *HRR*.

Moving on to the *Global Sentiment Analysis*, it is clear that the sentiments demonstrated by the reviewers are extremely positive: an average polarity of 4.68; even the reviewers who manifested *disagreement* showed positive sentiments; every score above 3 in every coding and component (*Agreement*, *Irony* and *Subjectivity*) studied. Such extreme sentimentalism demonstrated, outcomes in reviews considered as more useful (Fang *et al.*, 2016), influencing positively the customer's decision making (Ashraf *et al.*, 2016). A higher polarity influences, in a higher level, potential tourists of a destination (Alaei *et al.*, 2017), and having in mind that positive customer satisfaction is capable of transforming those potential customers in real ones (Chang *et al.*, 2009; Ribbink *et al.*, 2004), it can be inferred that the reviews extracted are capable of converting readers in customers of a destination. In fact, the literature also shows that in order to increase the booking intention, destinations are dependent of positive emotions being demonstrated in *UCG* (Wang, 1999), as happens in the *Madeira's* case. The findings also prove that despite reviewers express *disagreement*, they continue to recommend the destination and informing potential customers, has pointed out in the literature (Bilro, 2017).

It is also possible to say that these reviewers are engaged with the destination, by their role as active and co-creational members of this online community (Brodie *et al.*, 2011; Kumar *et al.*, 2010), as well as the customer satisfaction demonstrated (Chang *et al.*, 2009; Ribbink *et al.*, 2004). There are also indications of having loyal visitors of the island not only through the customer satisfaction or the co-creational role, but also by the fact that it is possible to find recommendations to others – e.g: *Study 1 – Positive Information Results*, spreading positive *e-WOM* (Islam *et al.*, 2012; Zeithaml *et al.*, 1996).

Lastly, the *Madeira's* results showed through the *Topics Sentiment Analysis* that the topics with the higher positive connotation – according to the reviewers, were: *Hotel*, *Services* and *Gastronomy*; while the most negative ones were: *Measures*, *Tourism* and *Weather and Meteorology*. As it was already mentioned, this analysis shows which aspects of the island are negatively impacting the tourists in a higher preponderance, and allows the responsible entities of the *Tourism of Madeira* to identify these imperfections and re-develop their strategies (Chen and Tseng, 2011). The results also showed that the *Restaurant* category contains the topics being most positively evaluated – sentimentally, while the *Cultural*

Activities the worst in terms of positive sentiments. This is also linked with the experiences lived by the reviewers, as *Cultural Activities* are more involved with *Knowledge Seeker* it makes sense that it arises as the experience with the least positive sentiments involved, while *Pure Pleasure* was the one containing the best topics experiences. Regarding the last coding, the results show that the *Low Ranked* reviewers appear to be more satisfied with the topics that they mention online (3.56), but the difference is not huge in comparison with the *High Ranked* ones (3.49).

Moving on to the *Bermuda's* results obtained in *Study 2*, the *Text Classification* and the *Topics Extraction* assume an even higher preponderance, as twenty out of twenty major topics analysed by the *Topics Extraction*, are suitable for the two most mentioned themes in the reviews extracted: *Lifestyle and Leisure* and *Travel, Tourism and Commuting*. These findings allow us to make a contribution to the literature, as it has identified the two major themes of discussion between reviewers online regarding *Bermuda*. Moreover, the results obtained in the *Category* and *Tourism Experience Model* codings appear to be on the same page as the general information, given that the two themes above mentioned are linked to all categories and almost every experience. The difference of themes being mentioned by the two types of reviewers is not significant, as the majority is the same.

The results of the *Global Sentiment Analysis* indicates that the reviewers felt positive sentiments: an average polarity of 4.10; the reviewers even manifesting *disagreement* in any part of their reviews showed sentiments above neutral; every score, generally, is above 4 except for *disagreement* (3.79). It is therefore possible to conclude that readers will find the reviews as more useful into making a decision (Fang *et al.*, 2016), which should be a positive one (Ashraf *et al.*, 2016). Also, has seen in the literature, the higher the average polarity score, more probable it is that the reviews will influence potential tourists of a destination, as well as the higher the probability of turning potential customers into real ones (Alaei *et al.*, 2017; Chang *et al.*, 2009; Ribbink *et al.*, 2004). It is possible to conclude that the reviews extracted, through the results obtained, are capable of acting as a positive mediator into bringing new tourists into the island. A positive score in the reviews considered as in *disagreement* (3.79) also confirms that despite not being 100% in favor of everything, the positive customer satisfaction makes reviewers continue to recommend the destination and spread information to potential customers (Bilro, 2017).

Furthermore, the results obtained – a clear positive customer satisfaction, together with the fact that reviewers play a part in an online community (as *TripAdvisor*) with an active and co-creational role, allows to conclude that the reviewers are engaged with this destination

(Brodie *et al.*, 2011; Kumar *et al.*, 2010; Chang *et al.*, 2009; Ribbink *et al.*, 2004). User engagement plays a crucial role in influencing the loyalty of a brand, especially through online communities – like *TripAdvisor* (Zheng *et al.*, 2015). A sign of e-loyalty is the recommendation of the destination to others, by spreading positive *e-WOM*, as it is verified in this analysis and *Study 1* (e.g: *Study 1 – Positive Information Results*) (Islam *et al.*, 2012; Zeithaml *et al.*, 1996)..

At last, the *Topics Sentiment Analysis* demonstrate that the topics being mentioned online showing the most positive sentiments were: *Sciences, Technology* and *Services*; while the most negative sentiments ones were: *Religion, Travel* and *Measures*. Such analysis allows the respective entities of the *Tourism of Bermuda* to take action into re-adapting their strategies and “repair” the topics causing less positive sentiments in the tourists (Chen and Tseng, 2011). The results of the *Category coding* states that *Hotel* is the category with the topics causing the most positive sentiments in the reviewers, while *Leisure Activities* the most negative ones. On the *Tourism Experience Model* level, the *Holist* experience contains the best topics while *Knowledge Seeker* the worst. Regarding the *Membership Level of Reviewers* the results were opposite to the *Madeira*, as *High Ranked* ones (3.52) felt highly satisfied than the *Low Ranked* ones (3.49).

This study also allows to perform a comparison between the results and conclusions obtained for both the islands of *Madeira* and *Bermuda*. The two following paragraphs are the last point of order of this *Discussion*:

Firstly, from the reviews extracted in *August of 2017* in the *TripAdvisor* platform regarding both islands, it was concluded that the netnographic process rised some common conclusions, as the set of both reviews extracted are able to persuade readers into increasing their purchase decision, as well as increase their booking intention. The negative content is similar and allows the respective entities of both islands to re-define their strategies if necessary. The type of language used is also similar in both cases, reviewers clearly have a tendency to use *literal* (vs *figurative*) language, as well as being *Low Ranked* (vs *High Ranked*), which may be a threat to both destinations as potential customers tend to lower their reservation intention after reading a *figurative* language review written by a *Low Ranked* reviewer. Also, both destinations position themselves identical in the *Tourism Experience Model* – top left quadrant, which indicates that these islands are perceived by the reviewers as places where they can get closer to their existential being through recreational activities. Given the amount of positive information obtained vs negative one, it was also possible to conclude that in both cases, reviewers are tending to promote positively the destinations, as

well as the brands and firms that operate in that industry. Lastly, regarding *emojis/emoticons*, it was clear that there is a clear preference to use them owing to positive content (vs negative), but its significance, in relation to the number of reviews, is practically non-existent.

To conclude, the text mining analysis under the *Meaning Cloud* platform through the *Text Classification* and *Topics Extraction* processes indicate that there are two themes that are clearly under the scope of the reviewers when mentioning each island in the online community: *Lifestyle and Leisure* and *Tourism, Travel and Commuting*. In the *Bermuda's* perspective all of the 20 major topics extracted fit in one of those themes (or both), while in the *Madeira's* results 15 of the 20 major topics are suitable in one, or both, of those themes. Other themes assume an important secondary role, in the *Madeira's* case it is important to refer *Art and Culture* and *Environment, Weather and Energy*, while in *Bermuda's* reviews *Art and Culture*. The results of the *Global Sentiment Analysis* in both islands were quite positive, but in the *Madeira's* reviews the sentiment attributed by the reviewers was higher. According to the literature studied it was possible to conclude that both set of reviews can be considered useful for potential customers. In the *Madeira's* case, and having in mind that the results achieved a higher average polarity, it can be stated that the set of reviews extracted in this case is capable of influencing in a higher level potential tourists of a destination into becoming real ones, in comparison with *Bermuda*. Moreover due to the extreme sentimentalist obtained in the *Madeira's* reviews, and following the same logic, the customer booking intention is higher, when compared with *Bermuda*. A common ground was obtained when *Disagreement* reviews are concerned, as reviewers despite showing reluctance in a determined subject still continue to spread positive information, creating good content *e-WOM*. The reviewers, in both cases, were perceived as being engaged with the destinations, which together with the customer satisfaction obtained, and their co-creational role in the *TripAdvisor* community indicates having “loyal customers” – inducing that the strategies of “customer re-purchases”, performed by the entities responsible for the tourism of both destinations, are being correctly done.

6.2 THEORETICAL AND MANAGERIAL IMPLICATIONS

This chapter intends to transmit clearly which are the implications given by this study on a theoretical and managerial level. Relating the first, it will follow a structure of new methodologies used; extension of the literature that it reached; and application of existing literature on a new perspective. Regarding the second, it will give directions to the responsible entities of the tourism of both destinations based on the results obtained.

Theoretically, and on a first basis, this study has given a unique perspective on studying together, both the islands of *Madeira* and *Bermuda* on a reviewer's perspective. Combining the *Kozinets* netnographic process – with a set of unique codings as: *rating, category, membership level of reviewers, language type, tourism experience model, content, symbology* and *positive/negative information*; with a text mining process (namely, *Text Classification, Topics Extraction* and *Sentiment Analysis*) was also a new approach to the existing literature.

Secondly, the *Tourism Experience Model* created by Deans and Gnoth (2012), was used in a unique way, as this study is able to provide an innovative approach in characterizing the two island destinations according to the different experiences proposed by the model.

Thirdly, the structure of this study can be used for further research using any set of destinations, as well as it is a flexible methodology, which allows, for instance, to change the codings according to the objective of the project.

Managerially speaking, this thesis – based on the results obtained, is capable of providing useful and suitable insights for the tourism entities of both destinations.

The first advice given is to promote *Low Ranked Reviewers* into *High Ranked* ones, due to the fact that the language effect is attenuated when reviews are written by the second (Wu *et al.*, 2017) – this strategy might overcome lowering the customer's booking intention caused by *LRR* using figurative language. It could be done through a partnership between the referred entities of each island and the firms responsible for the *Social Networking Sites*.

Secondly, based on the results of the *Text Classification* and *Topics Extraction*, it is important that the communication/promotion strategies of the destinations (and the firms and brands that operate in the tourism industry) are based on *Lifestyle and Leisure* and *Tourism, Travel and Commuting*. Other themes might also play an important secondary role in these campaigns, such as *Art and Culture* and *Environment, Weather and Energy*.

Thirdly, one consideration when promoting the islands should include the type of experiences that the island is known and sought by. The fact that both islands are mainly experienced through their *Recreational Activities*, makes it a key element when promoting it to potential tourists.

In fourth, and last place, this study permits firms to recognize the negative information circulating through the *TripAdvisor* online community regarding a destination, which allows to re-define strategies into turning that negative information into positive. On the other hand, the already positive information being mentioned, can also be analysed to reinforce the strengths of the destinations.

6.3 LIMITATIONS AND FUTURE RESEARCH

The last subchapter of the *Conclusions and Implications* concerns *Limitations and Future Research*. In a strategic point of view it is possible to say that the limitations are avenues for future investigation. The following enlisted topics present the current limitations of this study, as well as possible future researches associated:

1. This study was limited to a certain amount of reviews presented in *August of 2017* in the *TripAdvisor* platform, which provide a limited amount of data (1783 reviews). In future research the sample obtained, for Madeira and Bermuda, may be enlarged to provide more accurate results;
2. The conducted study aimed merely two island destinations, in order to obtain more complete and rigorous results, the amount of island destinations should be increased;
3. This study based its' results using only one online community – *TripAdvisor*, which may or may not have skewed the results. In future research, more than one *Social Networking Site* should be used, to provide a comparison between the results obtained in each one of them;
4. In future research, the methodology used can be applied to any destinations that are intended to be studied – which means that it is possible to study any destinations presented in the *TripAdvisor* platform using this methodology;
5. Lastly, the methodology of this study was limited to two different techniques: *Netnography* and *Text Mining*. In future research further techniques may be used to confront the results – e.g: questionnaires, interviews, etc., as well as form a new set of techniques to study these islands, or other destinations.

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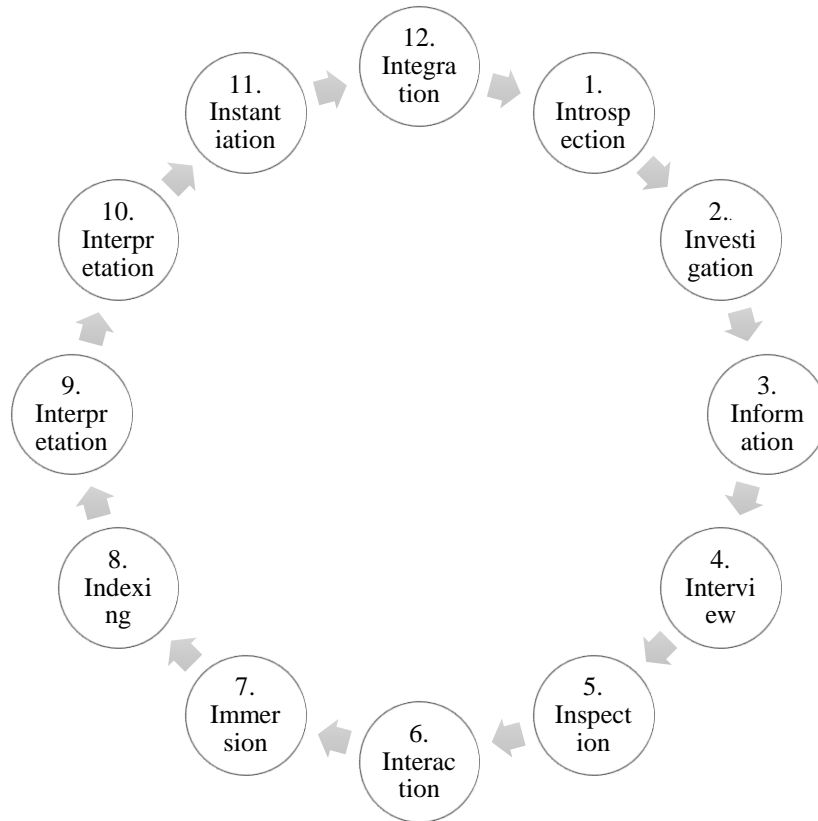
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8. ANNEXES

ANNEX 1 – 12 PHASES OF NETNOGRAPHY



The 12 phases of Netnography
Source: Kozinets 2015

The different phases in the diagram can be found, fully described, in Kozinets (2015).

ANNEX 2 – COMPARISON BETWEEN MADEIRA AND BERMUDA

Comparison	<i>Madeira</i>	<i>Bermuda</i>
Island size	800 km ²	166 km ²
Country	Portugal	North America
Capital	Funchal	Hamilton
Summer Months	June, July and August	June, July and August
Average temperature (Summer)	19°-25° Celsius	30° Celsius
Population (2016)	267 000	65 331
TripAdvisor Presence	Yes	Yes
Number of TripAdvisor Reviews (2017)	364 178	86 762
Number of photos in TripAdvisor approx. (2017)	1000	1900
Number of visitors approx. (2017)	1 400 000	693 000

Comparison between Madeira and Bermuda Islands
Source: Own elaboration

ANNEX 3 – NUMBER OF MADEIRA’S REVIEWS EXTRACTED

	Until 19.11.2017	August 17'
	Number of Reviews	
Hotels	All languages	English
Hotel The Cliff Bay	3008	30
Porto Mare Hotel	2158	20
VidaMar Resort Hotel	2804	23
Melia Madeira Mare Resort & Spa	1846	19
Belmond Reid's Palace	1509	19
Pestana Carlton Madeira	2379	20
Pestana Casino Park	2943	29
Pestana Grand Premium Ocean Resort	1971	21
Porto Santa Maria Hotel	1915	17
The Vine Hotel	2279	21
Total of Reviews	22812	219

Data Collection – Number of Madeira’s reviews extracted from *Hotel*
Source: Own elaboration

	Until 19.11.2017	August 17'
	Number of Reviews	
Restaurants	All languages	English
La Vaca Negra	1254	41
Sabor na Índia	1619	27
Armazem do Sal	3005	26
Leeno's Bar & Restaurant	2237	37
Beef & Wines	1932	31
Restaurant Mozart	2242	31
Restaurante do Forte	2639	25
Restaurante Goya	1560	25
Cris's	1435	29
Casal da Penha	1279	37
Total of Reviews	19202	309

Data Collection – Number of Madeira's reviews extracted from *Restaurant*
Source: Own elaboration

	Until 19.11.2017	August 17'
	Number of Reviews	
Leisure Activities	All languages	English
Up Mountain Madeira	858	24
VMT Madeira - Viagens de Catamarã	1149	19
Green Devil Safari	483	24
Magic Dolphin	531	16
Harmony in Nature	373	21
Discovery Island Madeira	335	11
True Spirit	387	20
Lido Tours	384	17
Ventura Nature Emotions - Day tour	214	7
Madeira Fauna & Flora	150	5
Total of Reviews	4864	164

Data Collection – Number of Madeira's reviews extracted from *Leisure Activities*
Source: Own elaboration

	Until 19.11.2017	August 17'
	Number of Reviews	
Cultural Activities	All languages	English
Pico do Arieiro	4716	63
Teleférico do Monte	11213	184
Monte Palace Tropical Garden	6577	79
Jardim Botânico da Madeira	4811	47
Mercado dos Lavradores	2090	26
Colégio dos Jesuítas do Funchal	429	5
Blandy's Wine Lodge	2458	35
Igreja de Nossa Senhora do Monte	1142	6
Palheiro Gardens	905	7
Presidential Palace Garden	798	6
Total of Reviews	35139	458

Data Collection – Number of Madeira's reviews extracted from *Cultural Activities*
Source: Own elaboration

ANNEX 4 – NUMBER OF BERMUDA'S REVIEWS EXTRACTED

	Until 06.02.2018	August 17'
	Number of Reviews	
Hotels	All languages	English
Fairmont Southampton	4156	37
The Reefs	1129	9
Cambridge Beaches	1157	12
Elbow Beach Bermuda	958	5
Newstead Belmont Hills Hotel	895	14
Royal Palms Hotel	850	8
Fourways Inn	213	1
Hamilton Princess & Beach Club	783	26
Coco Reef Resort Bermuda	984	6
Pompano Beach Club	1439	9
Total of Reviews	12564	127

Data Collection – Number of Bermuda's reviews extracted from *Hotels*
Source: Own elaboration

	Until 06.02.2018	August 17'
	Number of Reviews	
Restaurants	All languages	English
Ascots Restaurant	615	10
Waterlot Inn Restaurant	927	16
Mad Hatters	593	7
Barracuda Grill	744	11
Flanagan's Irish Pub	796	19
Swizzle Inn	1177	10
Wahoo's Waterside Bistro & Patio	1042	15
Hog Penny	1057	17
Portofino Restaurant	612	13
Pickled Onion	1272	18
Total of Reviews	8835	136

Data Collection – Number of Bermuda’s reviews extracted from *Restaurants*
Source: Own elaboration

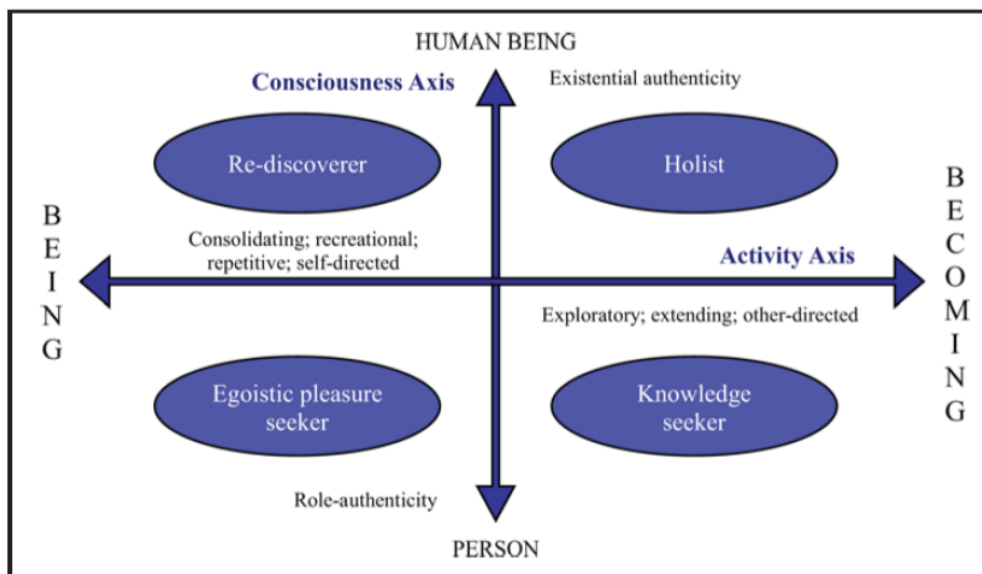
	Until 06.02.2018	August 17'
	Number of Reviews	
Leisure Activities	All languages	English
Horseshoe Bay Beach	2926	70
Dolphin Quest	627	41
Rising Son Cruises	605	17
Ks Watersports Tours & Rentals	343	17
Elbow Beach	480	8
Tobacco Bay	720	20
Hidden Gems of Bermuda Ltd	431	15
Hartley's Undersea Walk	272	8
Bermuda Fun Golf	335	7
Somerset Bridge Watersport	719	11
Total of Reviews	7458	214

Data Collection – Number of Madeira’s reviews extracted from *Leisure Activities*
Source: Own elaboration

Cultural Activities	Until 06.02.2018	August 17'
	Number of Reviews	
	All languages	English
Gibbs Hill LightHouse	979	21
St. Peter's Church	444	6
Crystal & Fantasy Caves	1557	31
Bermuda Aquarium, Natural History Museum & Zoo	781	20
National Museum of Bermuda	408	18
Royal Naval Dockyard	1342	32
Front Street	563	19
Cathedral of the Most Holy Trinity	219	1
Fort Hamilton	242	2
Unfinished Cathedral	315	8
Total of Reviews	6850	158

Data Collection – Number of Madeira's reviews extracted from *Cultural Activities*
Source: Own elaboration

ANNEX 5 – TOURISM EXPERIENCE MODEL REPRESENTATION AND GUIDELINES



Tourism Experience Model
Source: Gnoth and Matteucci (2014)

studies:

Re-Discover:

1. Goal oriented activities that require focus and effort;
2. Past memories and/or hoping for future;
3. Focusing on family get-togethers;
4. Refine socially acquired customs and habits;
5. Re-establishing skills (e.g. sports);
6. Exploring new strengths;
7. Increase involvement, skill, time and money on certain leisure activities;
8. Concentration on the present moment;
9. Merge action and awareness, loss of self-consciousness, sense of personal control;
10. Distortion of temporal experience, experience intrinsically rewarding;

Pure Pleasure:

1. No details or appreciation of the environment;
2. References to its own home/culture;
3. Locals and culture seen as outgroup;
4. Privilege of senses instead of challenges;
5. Mention of pool and casual sports;
6. Socialization and friends;
7. Relaxation;
8. Re-visitation of a favourite spot;
9. Recover from stress and strains of the day life;
10. Playful, arousal seeking activities.

Becoming:

1. Exploratory activity by an experience of on-going self-change;
2. The human being relates all her existence to the environment, moment-by-moment;
3. Live happier and more meaningful lives elsewhere;
4. Going native;
5. Relocate to other places, sometimes on a permanent basis;
6. Romantic and nostalgic associations;
7. Strengthen relationships with the others;

8. New life trajectories, adopting alternative lifestyles, new careers;
9. Spiritual tourism, authentic tourist, transformative travel, volunteer experiences, adventure tourism, nature-based sports, independent travel, religious tourism;
10. Sense of self-efficacy, self-discover, personal growth, sense of well-being.

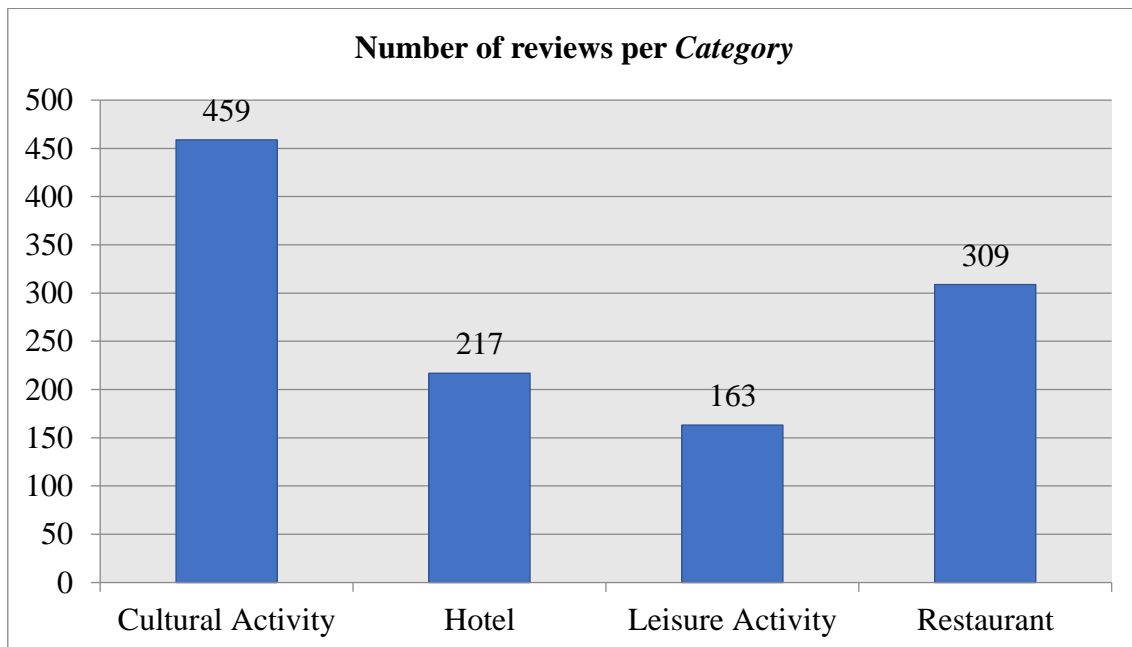
Knowledge Seeker:

1. Pre-meditated outcomes, need of esteem, authority, influence, power;
2. Acquisition of knowledge, financial wealth, image of having been certain places, seen certain things and learned from them;
3. Museum tourism, city tourism, dark tourism, rubbish dump tourism, slum tourism;
4. Target new experiences, visit galleries, exhibitions but also sports events;
5. Desire for emotional involvement and construction of identities;

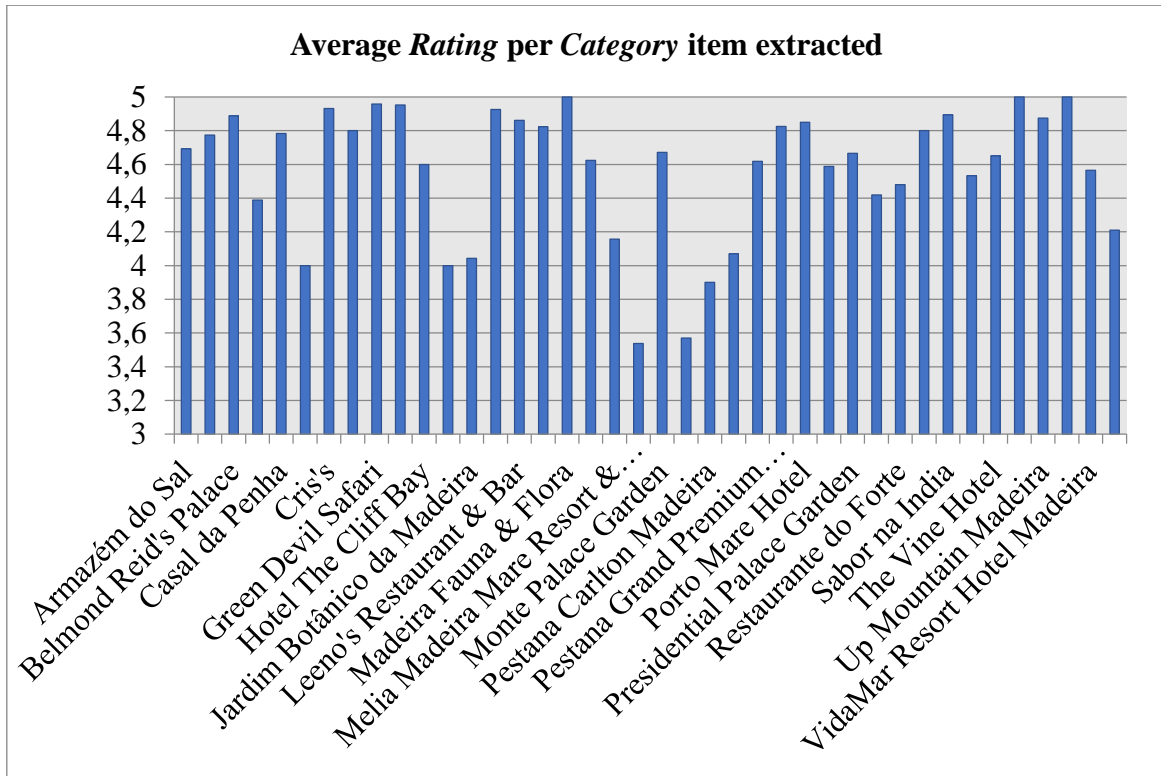
ANNEX 6 – MADEIRA’S NETNOGRAPHY RESULTS

- **Every *Figure* or *Table* displayed in this chapter was own elaborated.**

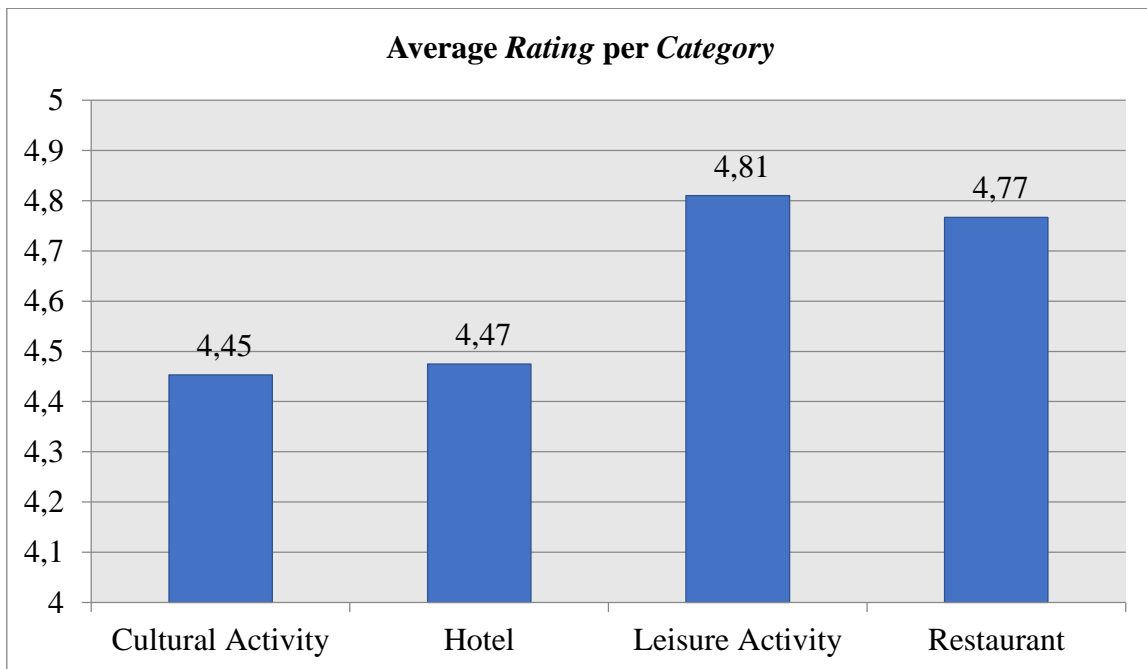
ANNEX 6.1 – NUMBER OF REVIEWS PER *CATEGORY*



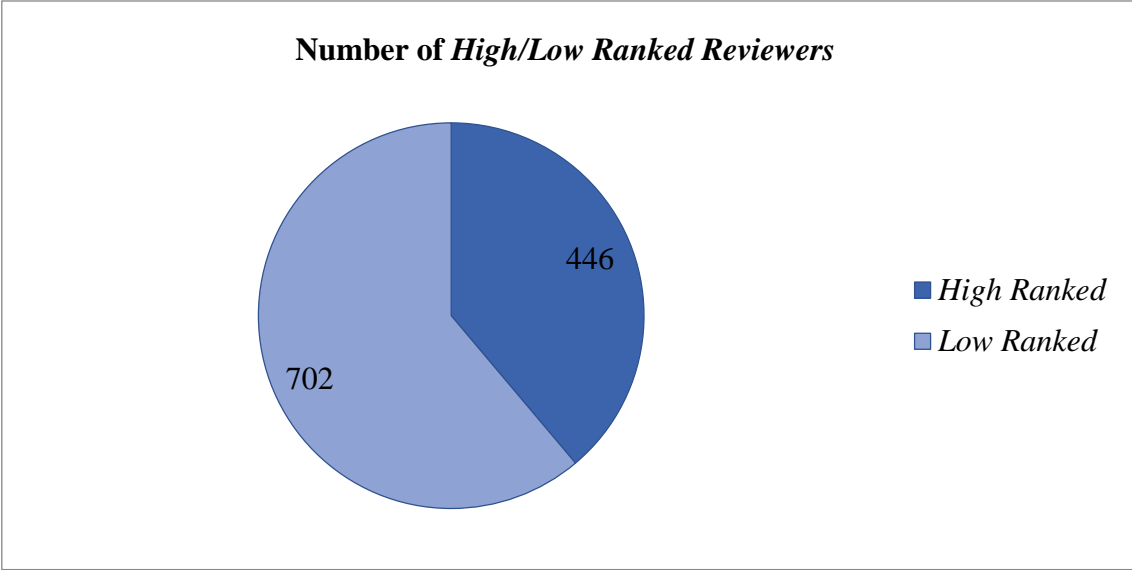
ANNEX 6.2 – AVERAGE RATING PER CATEGORY ITEM EXTRACTED



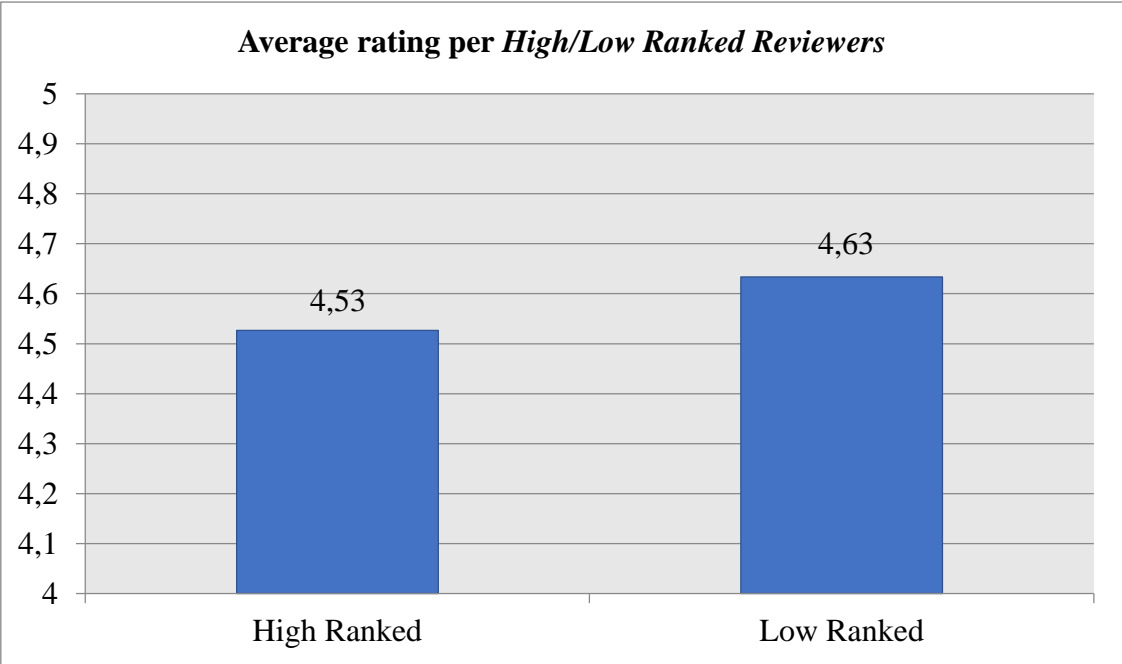
ANNEX 6.3 – AVERAGE RATING PER CATEGORY



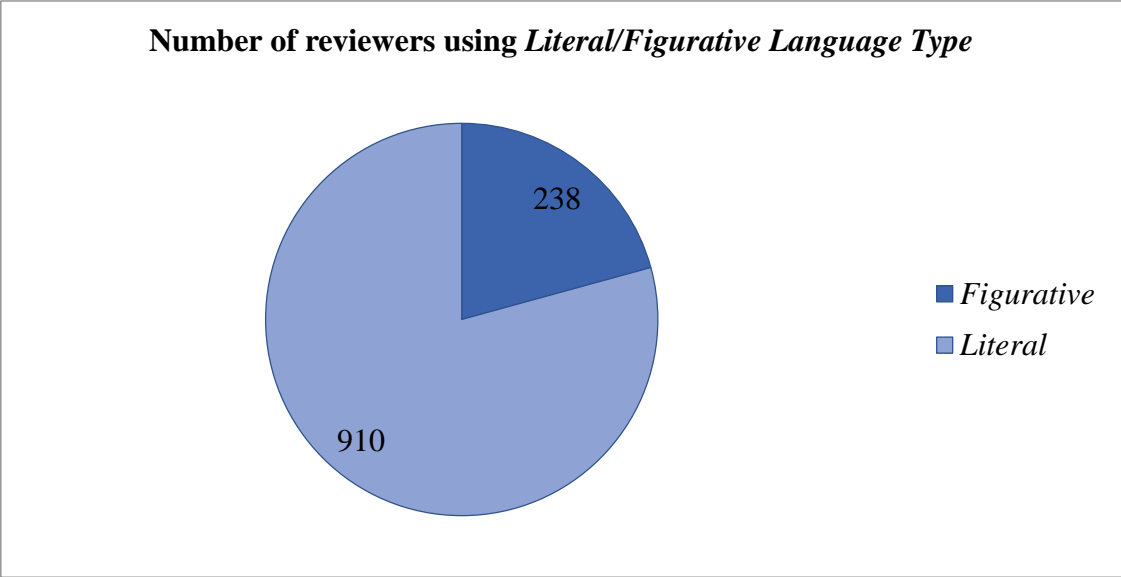
ANNEX 6.4 – NUMBER OF *HIGH/LOW RANKED REVIEWERS*



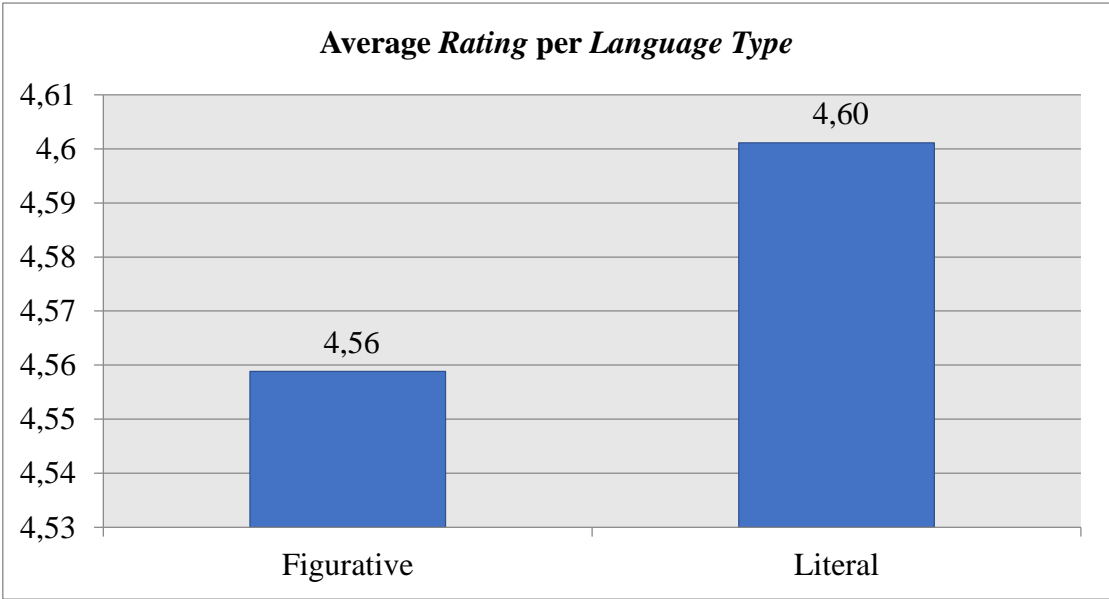
ANNEX 6.5 – AVERAGE RATING PER *HIGH/LOW RANKED REVIEWERS*



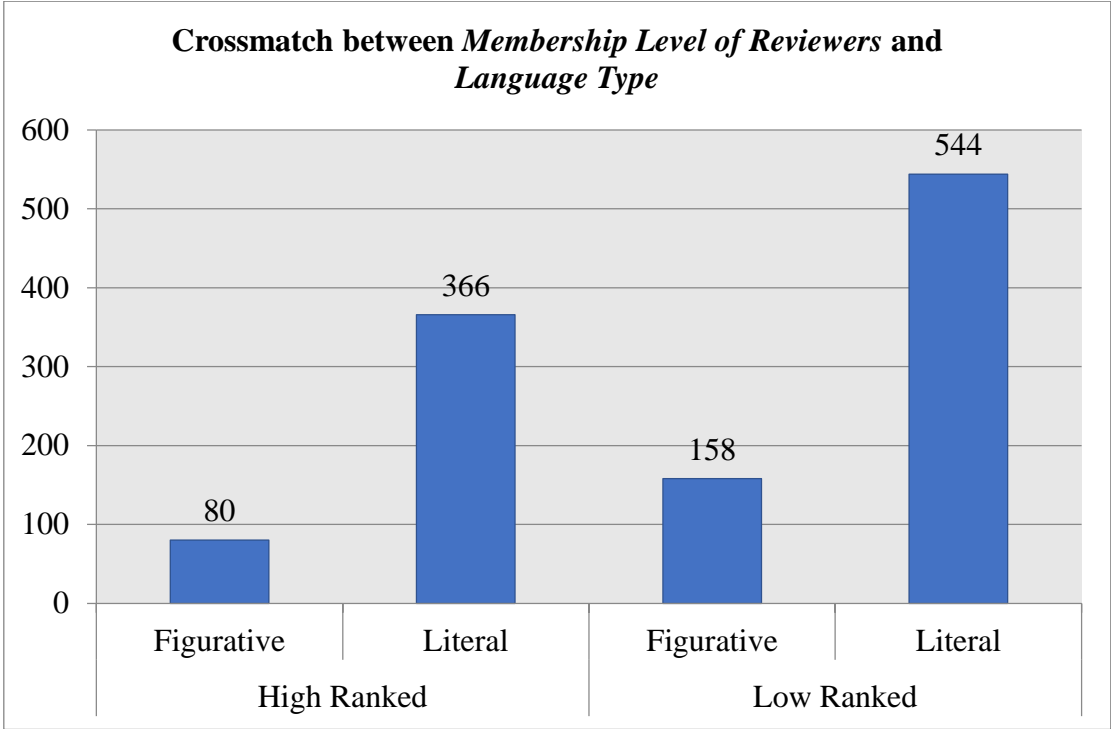
ANNEX 6.6 – NUMBER OF REVIEWERS USING LITERAL/FIGURATIVE LANGUAGE



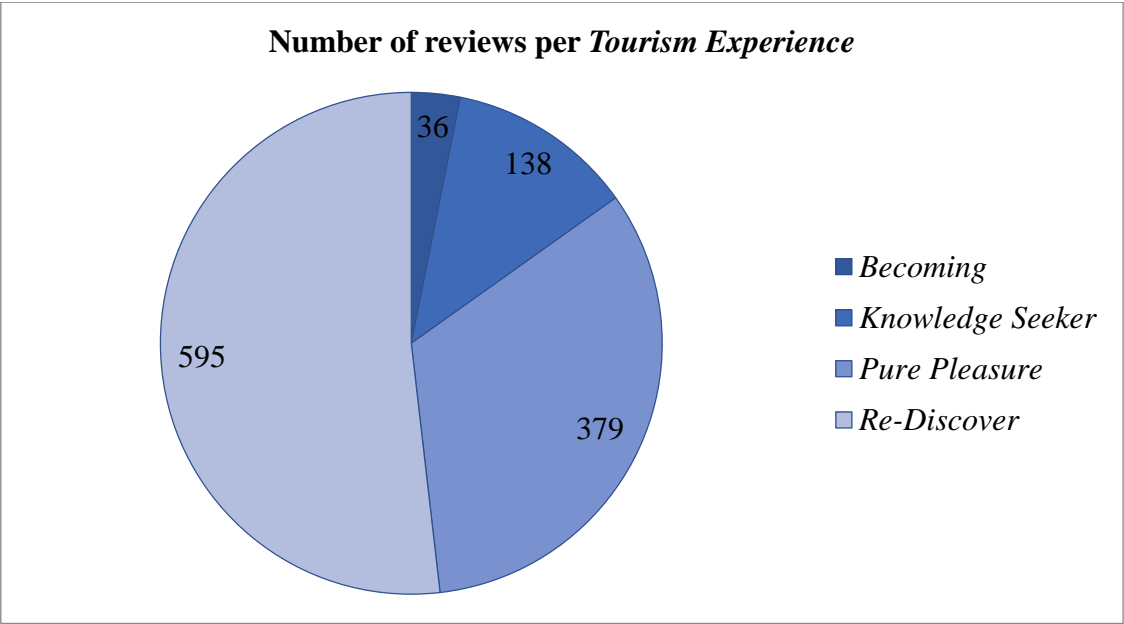
ANNEX 6.7 – AVERAGE RATING PER LANGUAGE TYPE



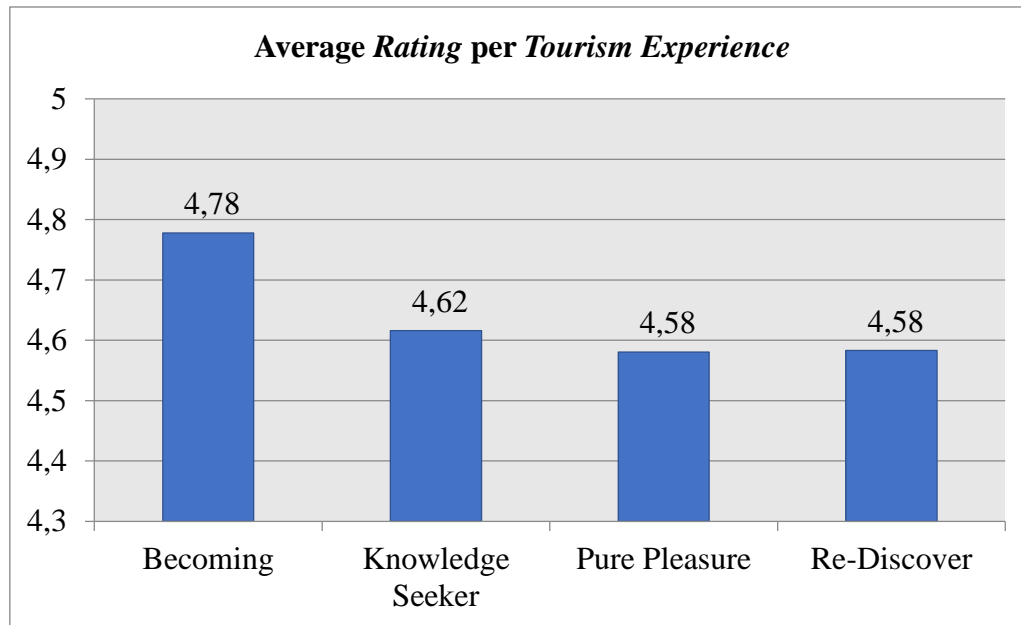
ANNEX 6.8 – CROSSMATCH BETWEEN MEMBERSHIP LEVEL AND LANGUAGE TYPE



ANNEX 6.9 – NUMBER OF REVIEWS PER TOURISM EXPERIENCE



ANNEX 6.10 – AVERAGE RATING PER TOURISM EXPERIENCE



ANNEX 6.11 – ANALYSIS OF THE SYMBOLOGY RESULTS

In this subchapter it will be studied the number of *emojis/emoticons* used by the reviewers in their commentaries in *TripAdvisor* regarding *Madeira*: which ones are used, as well as trying to understand if they have a positive or negative connotation.

Firstly, it is necessary to understand that *emoticons* and *emojis* are slightly different things. It is referred that *emoticons* are punctuation marks, letters and numbers that are used to create or display an emotion, such as “:)” or “:(”. *Emojis* are pictographs of faces, objects or symbols, such as “🙄” – winking face, or “😍” – smile indicating to love something/someone.

From the dataset that was obtained it is possible to conclude that only a small minority of reviewers used smileys or emojis in their reviews - only in 40 reviews, from the 1148 total reviews (nearly 3.48%), can we find *emoticons* or *emojis*. From these, only 9 are *emojis* (corresponding to 22.5% of the reviews containing *emojis* or *emoticons*), while 31 contain *emoticons* (the others 77.5%).

Starting with the *emoticons*, there is one that was clearly the most used – “:)”, 19 out of the 40 reviews mentioned were using such *emoticon* to express their satisfaction or happiness regarding the things there were being told about. It is concluded, therefore, that all of the times this *emoticon* was used, was in a positive way. Furthermore, a similar one was

used 7 times – “:-)”, which means basically the same as the one before, exception being made with the use of a “nose”. Also other smiley faces were used with this exact same meaning, for example: “:))”, “=)” and “:D” – used one time only, in each case.

Two similar *emoticons* were used 3 times each, with a positive connotation, as a way of reviewers showing positive content in a slightly “kidding way” – these were “;)” and “;-)”. Those smiley faces both represent someone “winking” at something or someone, and the only thing that differs is the presence of a “nose”.

Lastly, the emojis used, as mentioned previously, are accountable at 9 – which do not really show how wide and extensive the pictographs are. Only one emoji was used more than once (2 times) - 😊, and it represents a happy smiley face, referring to a positive connotation about some experience or place the reviewer lived or mentioned about. Other *emojis* were used with a similar meaning such as: 😄 and 😁.

Continuing on positive *emoji* expressions, two different reviewers express their enormous satisfaction and happiness regarding their experiences in the island with the use of ❤️ - a heart, and 🏆 - meaning the experience was “top”.

On a negative side, there was a reviewer that did not enjoy his experience that much, and used a “sleepy” *emoji* to express his dissatisfaction - 😴.

Other interesting fact that occurred was a reviewer that used an *emoji* of a whale - 🐳, instead of mentioning the word. In this case, it was used to say that the reviewer have not had the chance to see whales while in the activity that was supposed to, and therefore it can be perceived as a negative thing.

All in all, it can be said that 39 out 40 *emoticons/emojis* were used in a positive way, and although the percentage of reviews containing it is reduced, it can be concluded that reviewers tend to use these when talking about positive experiences, rather than negative ones.

ANNEX 6.12 – ANALYSIS OF THE *CONTENT* RESULTS



Content Wordle display

To study the themes and subjects, as well as the positive and negative aspects, regarding the tourism of the *Madeira Island*, that were mentioned by the reviewers in a general way, a coding of *Content*, *Positive Aspects* and *Negative Aspects* was created. To display in a graphic way the results it was used the platform *Wordle*.

The results show that one of the major subjects is the gastronomy with words as “restaurant”, “food”, “wine”, “meal” or “steak” appearing in the outcome. The first two words are highlighted which means that subject is spoken more times than the rest. Other highlighted words are “hotel”, “staff”, “booking” and “service” which are directly connected with the accommodations and services that can be found in *Madeira* and experienced by the reviewers. As already said before, *Madeira Island* is known for its’ *Cultural* and *Leisure Activities*, and it is not surprising to see displayed the words “experience”, “teleférico”, “holiday”, “place”, “revisitation”, “cable car”, “gardens”, “trip”, “walk”, “environment”, “guide”, “trip” or “family”. These words can be related to the experiences that are linked with *Re-Discover* and *Pure Pleasure* – whether in hotels, restaurants, leisure activities or cultural activities. There are also words as “knowledge”, “information” and “atmosphere” that are more connected with culture and therefore more related with *Knowledge Seeker* or *Becoming*

The biggest words presented in the figure, correspond to two adjectives and two nouns. “Great” and “good” are the most common adjectives used by the tourists, possibly when describing their experiences with “food” and “staff”. Other positive adjectives that are used more or less in the same extent are: “excellent”, “lovely”, “beautiful”, “friendly”, “nice”, “amazing”, “fantastic”, “best” and “worth”.

Besides “food” and “staff”, the reviewers also mention “experience”, “view”, “cable car”, “tour”, “swimming”, “snorkelling” “hotel”, “guide”, “trip”, “Madeira”, “Funchal”, “garden”, “pool”, “room”, “location”, “holiday” or “breakfast” as positive factors in their stays while in *Madeira*.

Again, the mentioned positive aspects of the reviewers’ trips are connected with *Re-Discover* experiences – “cable car”, “tour”, “garden”, “trip”, as well as *Pure Pleasure* ones – “hotel”, “breakfast”, “holiday”, “room” and “pool”.

On a smaller scale it is also possible to find adjectives as “interesting”, “knowledgeable”, “professional” and “helpful” which were commonly used describing staff or guides, or even the “atmosphere” of a certain place: for example when visiting a wine tour – and in this case it would probably be a *Knowledge Seeker* experience.

“Recommend” is also a word that pops to the eye – and makes sense since it is obviously connoted as positive and as seen earlier in this chapter the reviewers use it to express the satisfaction felt with their experiences on the island, by inviting fellow tourists to experience it.

ANNEX 6.14 – ANALYSIS OF THE *NEGATIVE INFORMATION RESULTS*



Negative Information Wordle display

From the results of the final database it can be seen that there were 384 reviews containing negative aspects, which means that 33.45% of the total amount of reviews is containing negative information regarding a determined subject of the island.

The word that stands out the most of all is clearly “expensive” – or in other ways as “pricey”. Used immensely by tourists to describe the prices of the activities they did, as well as probably expressing numerous times that those activities do not have the expected price/quality relation. This word is commonly connected with “price”, “hotel”, “restaurant”, “booking”, “food” and “money” – words that can be found in the same figure.

The most used adjectives with negative connotation are: “bad”, “disappointing”, “difficult”, “terrible”, “small”, “poor”, “crowded”, “unhelpful”, “noisy” and “busy”. These are connected with “staff”, “pool”, “hotel”, “people”, “car”, “service”, “breakfast”, “restaurant”, “cable car”, “room” and “view” – which were the nouns most used in the *Negative Aspects*.

As seen before, the terms that were mentioned are somehow connected with *Recreational Activities or Pure Pleasure*, for example going to some kind of restaurant to try

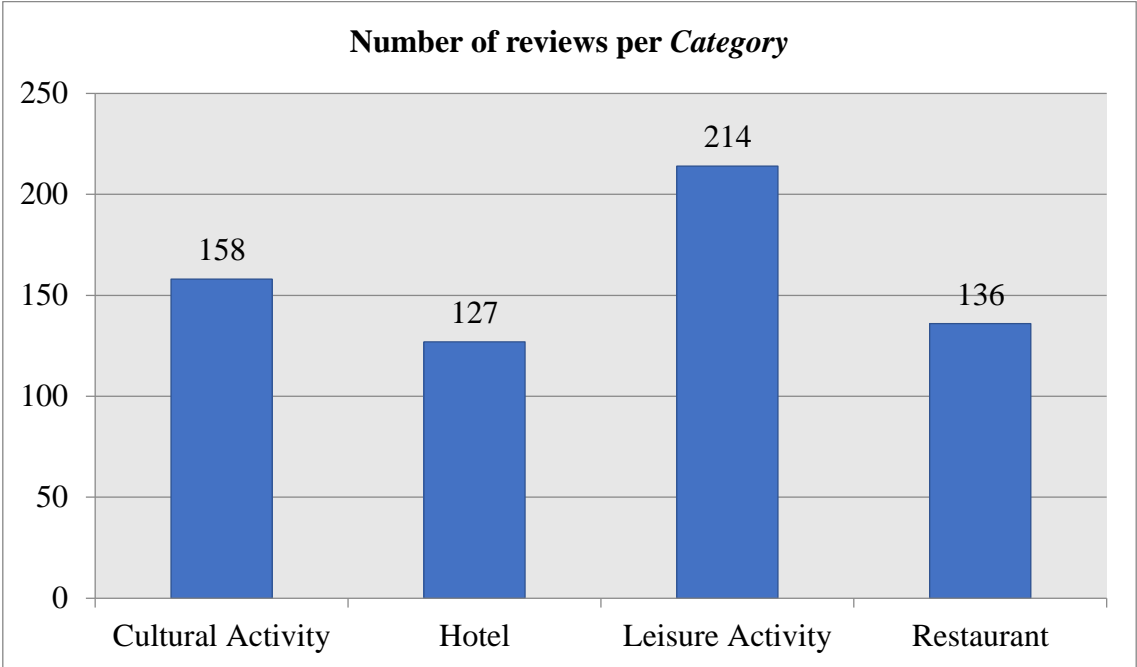
their food, spending the afternoon riding a cable car or staying lay down by the pool of the hotel – somehow these activities were perceived as a negative thing for the reviewers.

On a smaller scale it can be found a lot of other activities such as: “swimming”, “walking”, seeing “dolphins” or bike/boat “riding” – which did not turn the way the tourists wanted to and came out as negative experiences.

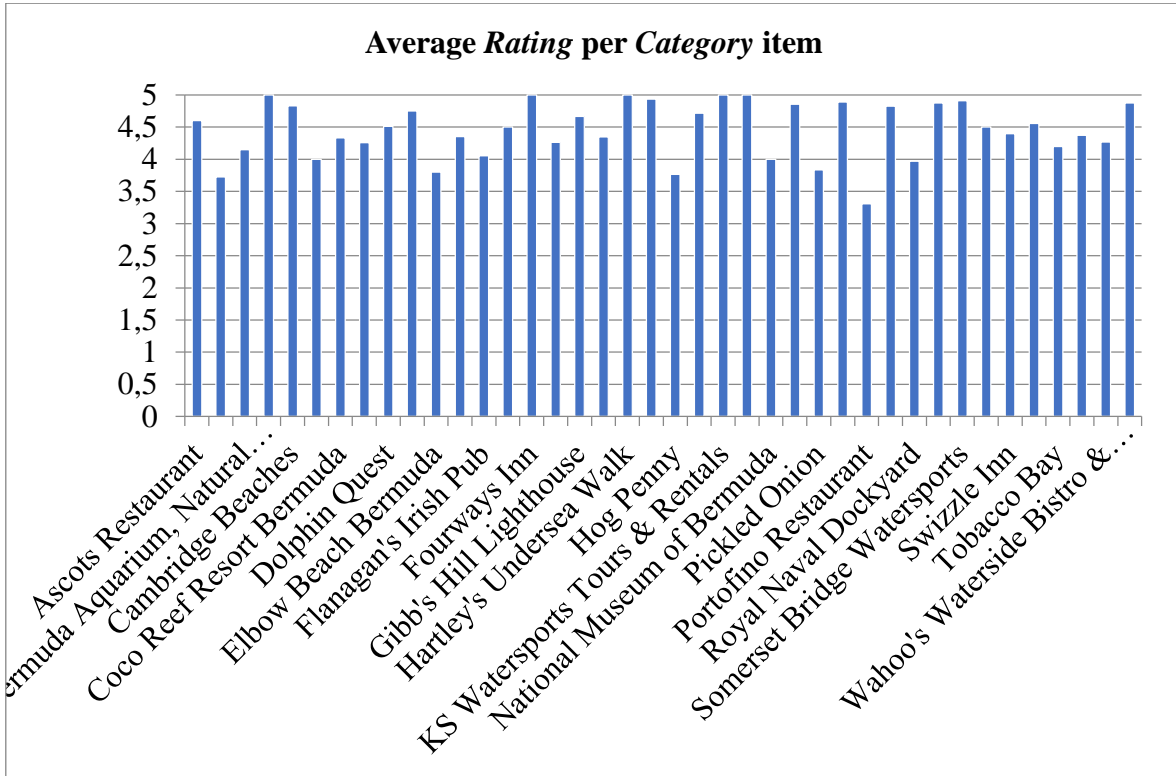
ANNEX 7 – *BERMUDA'S* NETNOGRAPHY RESULTS

- **Every *Figure* or *Table* displayed in this chapter was *own elaborated*.**

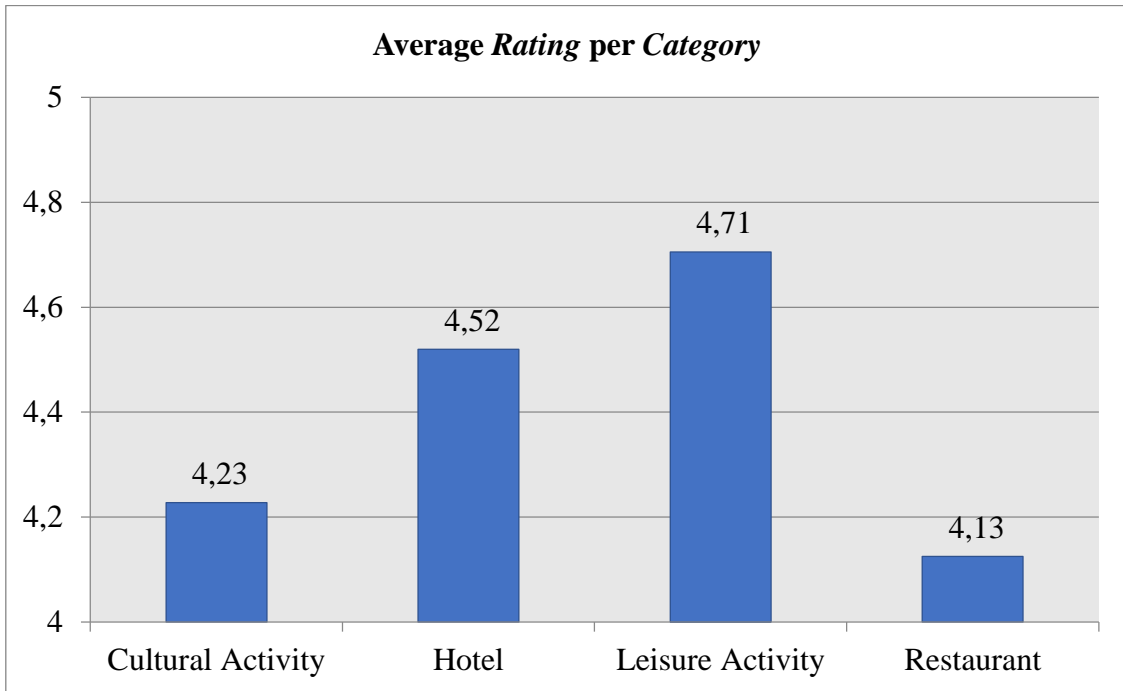
ANNEX 7.1 – NUMBER OF REVIEWS PER *CATEGORY*



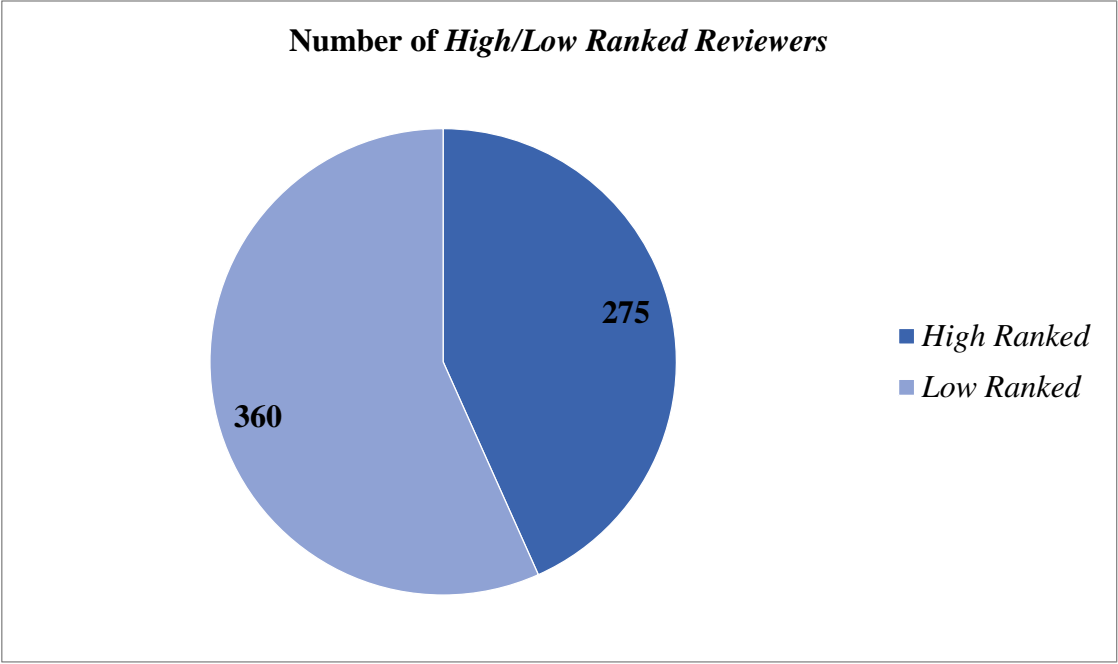
ANNEX 7.2 – AVERAGE *RATING PER CATEGORY* ITEM EXTRACTED



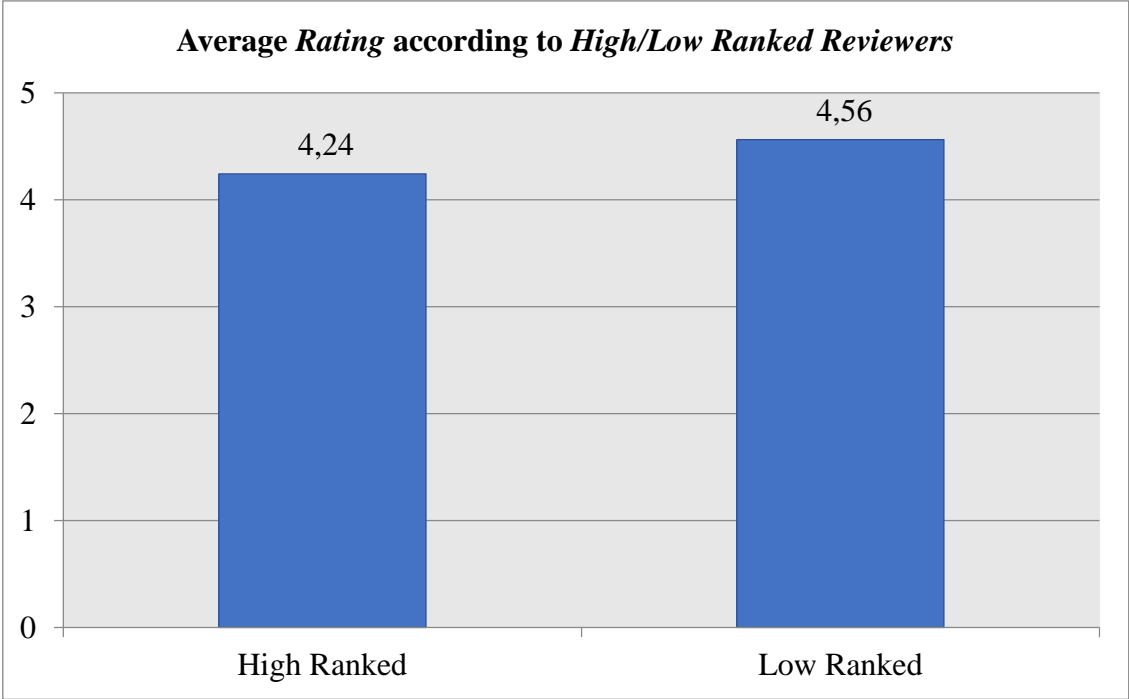
ANNEX 7.3 – AVERAGE *RATING PER CATEGORY*



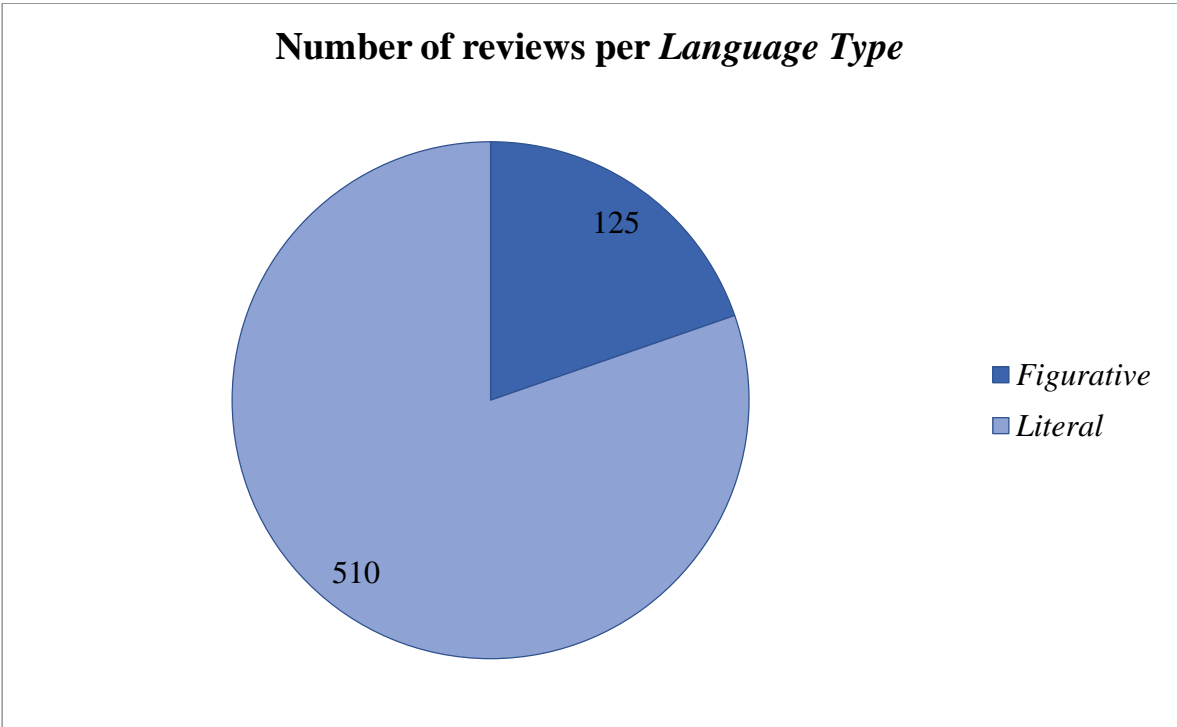
ANNEX 7.4 – NUMBER OF *HIGH/LOW RANKED REVIEWERS*



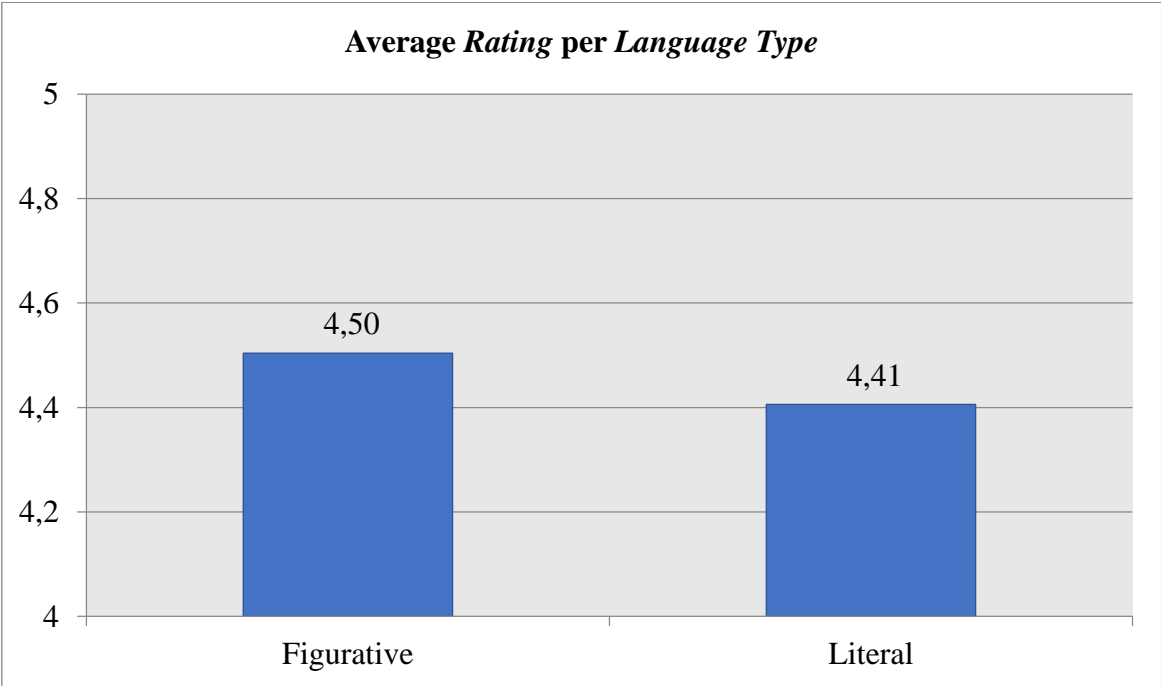
ANNEX 7.5 – AVERAGE RATING PER *HIGH/LOW RANKED REVIEWERS*



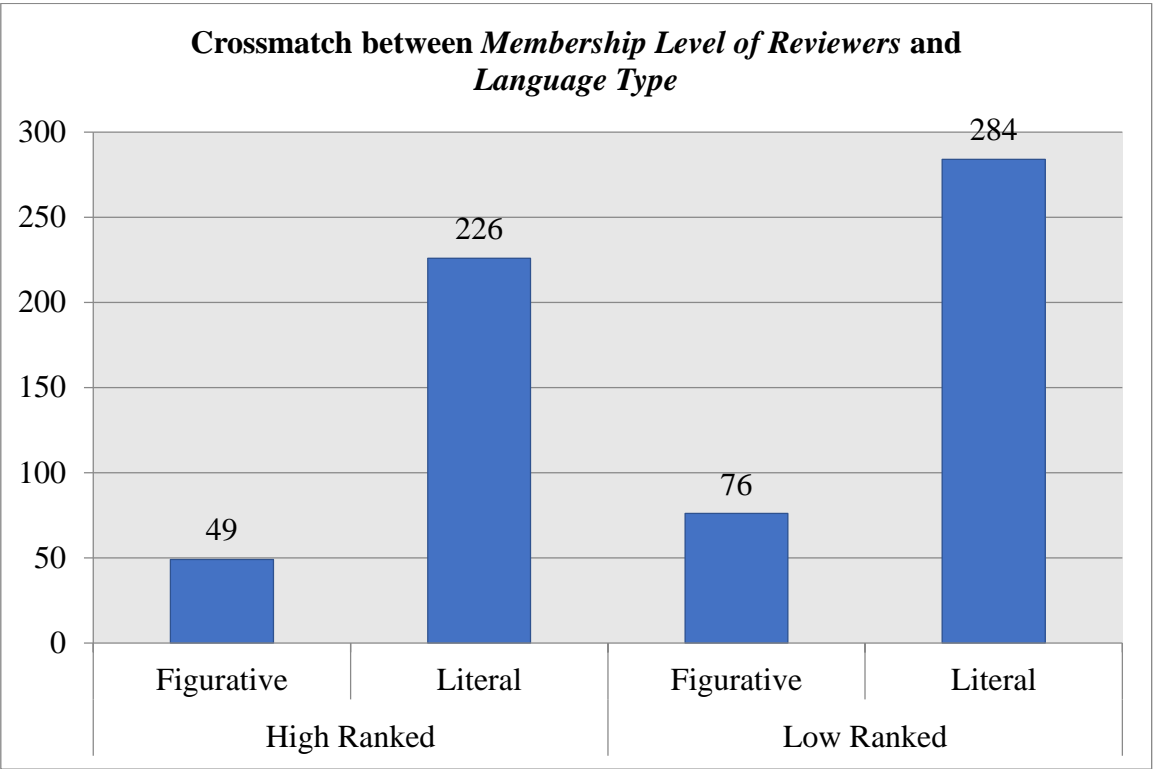
ANNEX 7.6 – NUMBER OF REVIEWS PER LANGUAGE TYPE



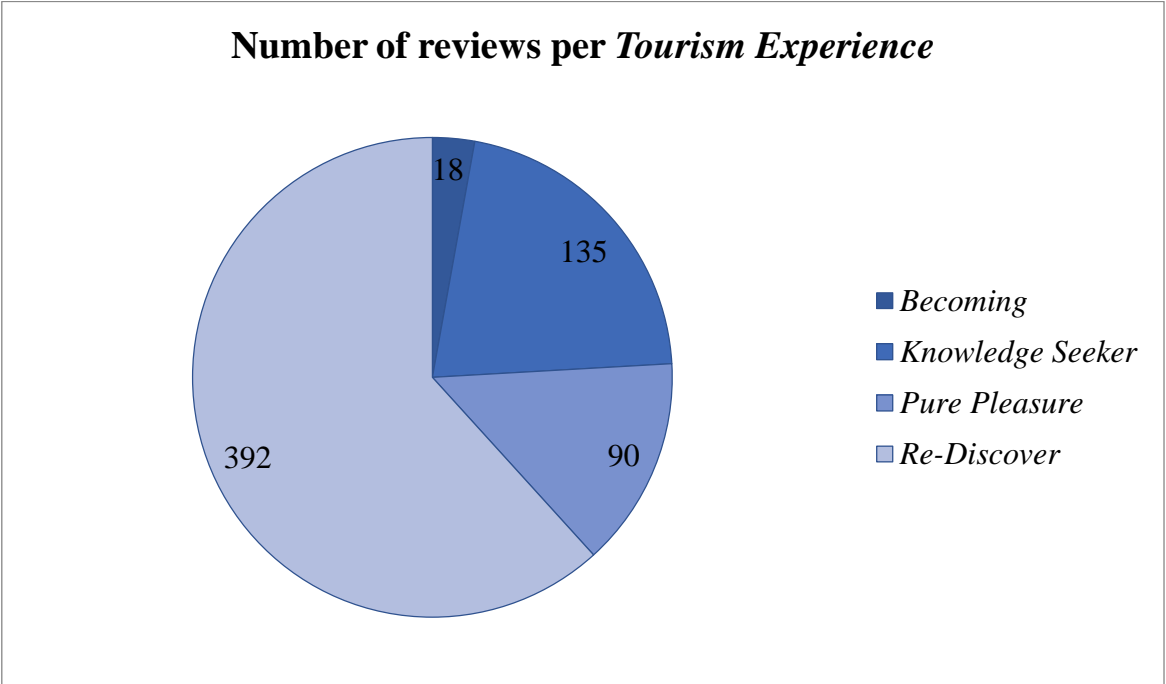
ANNEX 7.7 – AVERAGE RATING PER LANGUAGE TYPE



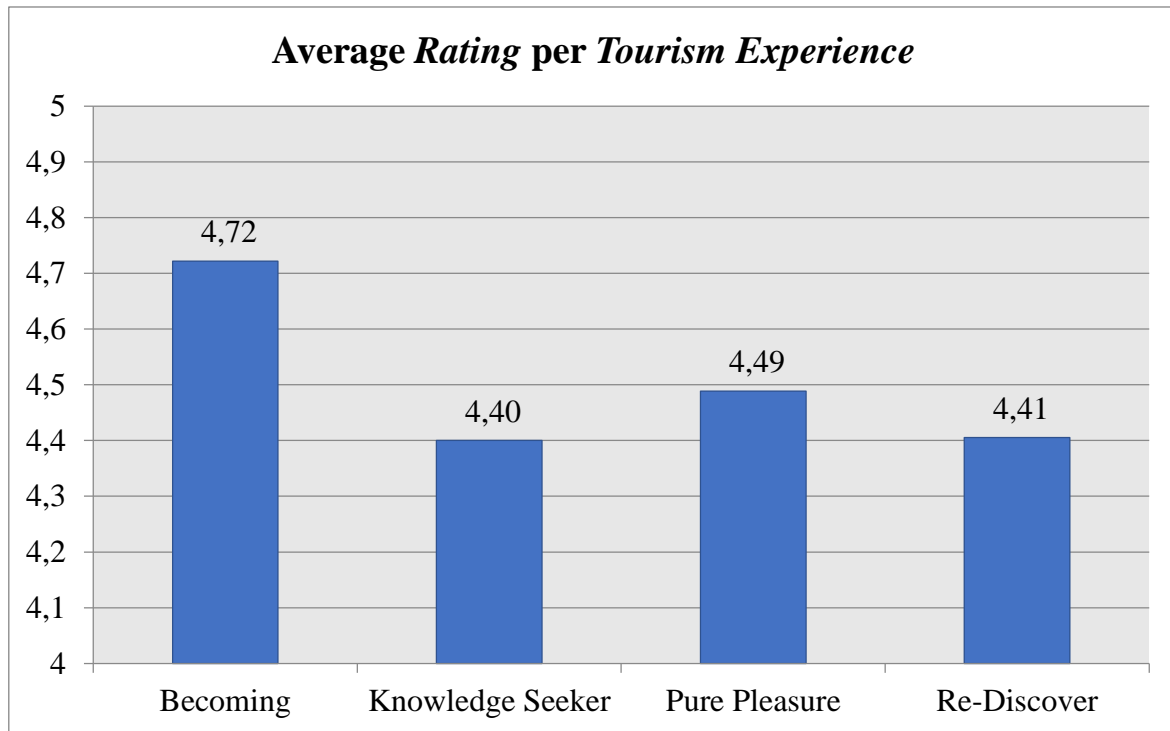
ANNEX 7.8 – CROSSMATCH BETWEEN MEMBERSHIP LEVEL AND LANGUAGE TYPE



ANNEX 7.9 – NUMBER OF REVIEWS PER TOURISM EXPERIENCE



ANNEX 7.10 – AVERAGE RATING PER TOURISM EXPERIENCE



ANNEX 7.11 – ANALYSIS OF THE SYMBOLOGY RESULTS

In this chapter it will be studied the number of *emojis/emoticons* used by the reviewers in their commentaries in *TripAdvisor* regarding *Bermuda*, as well as which *emoticons/emojis* were used, and trying to understand whether they were used in a positive or negative way.

From the dataset that was obtained regarding *Bermuda*, it is possible to conclude that the number of *emojis/emoticons* used by the reviewers in their commentaries is barely inexistent. Only 1.10% of the reviews studied (7 out of 635) were written making use of *emojis/emoticons* – and in this case, from those, 6 are *emoticons* (85.71%), while only 1 review was found to have *emojis* (14.29%).

The *emoticons* presented in the reviews are:

1. :) – a happy smiley face used 3 times by the reviewers, showing their happiness and satisfaction regarding a determined subject, activity or experience lived while their stay in the island. In all of the three cases it was used with a positive meaning;
2. ;-)- a “winking smile” used only one time to express happiness in a “kidding way”, also with a positive meaning;

Firstly it is mandatory to refer that from the 635 reviews that were extracted to study Bermuda, 614 show at least one positive aspect worth mentioning by the reviewers, meaning that in the total amount of reviews it is possible to find positive information in 96.70% of them.

Once again, in the *Positive Aspects* mentioned about *Madeira* it is quite perceptible visualizing adjectives. These were taken into account given the fact that they often demonstrate the magnitude of the satisfaction regarding whatever the reviewers were mentioning in their reviews.

The biggest word in the figure is by “great”, an adjective that represents the general amusement the tourists felt while their vacation’s experience or visit to the island of *Bermuda*. Secondly, “good”, “beautiful”, “nice” and “amazing” appear as synonyms of what was already said – characterizing the reviewers’ experiences. There are other positive adjectives that can be found, such as: “worth”, “awesome”, “helpful”, “delicious”, “incredible”, “excellent”, “wonderful”, “interesting”, “clean”, “fantastic”, “gorgeous” and “best”.

“Beach”, “experience”, “food” and “staff” are four nouns that appear reasonably at same size, and are the positive themes most spoken by the tourists. Additionally it can be found, concepts such: “service”, “view”, “water”, “swimming”, “history”, “dolphins”, “visit”, “fish”, “snorkelling”, “location”, “walk”, “time”, “family”, “hotel”, “vacation” and so many others.

It can be said that, the adjectives presented two paragraphs ago were used by the reviewers to characterize some of the themes that are presented in the last paragraph. For example: “helpful staff”, “delicious food”, “nice walk” or “fantastic history”.

Again, most of the themes are related with the left side of the *TEM* graphic representation, due to *Bermuda* being considered a destination of *recreational activities*, such as spending time with the family, swimming in the beach, spending time and money to develop new skills or just chill in the hotel pool – attachment 6.

As happened before, the *Knowledge Seeker* experience is mostly expressed by words like “information”, “knowledgeable”, “history” or “information”, which can be found in the figure – for example while visiting the “Bermuda Aquarium, Natural History Museum & Zoo”, the “National Museum of Bermuda, the “Cathedral of the Most Holy Trinity” or the “Unfinished Cathedral”.

At last, once again the word “recommend” appears as a manifestation of the satisfaction and happiness lived by the tourists in their experiences, recommending other future tourists to experience themselves.

ANNEX 7.14 – ANALYSIS OF THE *NEGATIVE INFORMATION* RESULTS



Negative Information Wordle display

The first aspect that shall be referred is the fact that 205 out of the 635 reviews contain at least a negative aspect according to the reviewers. This leads to being able to find negative information in 32.28% of the total amount of reviews.

Once again, the word that stands out the most is by far “expensive”- and it can also be found words that are a synonym of it, such as “pricey” or “overprice”. This has to do with fact that tourists consider that the activities and places visited (through the four categories) do not have the expected price/quality relation.

Other adjectives that appear on the image, and are perceived as negatives, are: “small”, “bad”, “disappointing”, “noisy”, “short”, “average”, “slow”, “overrated”, “steep” or “crowded”.

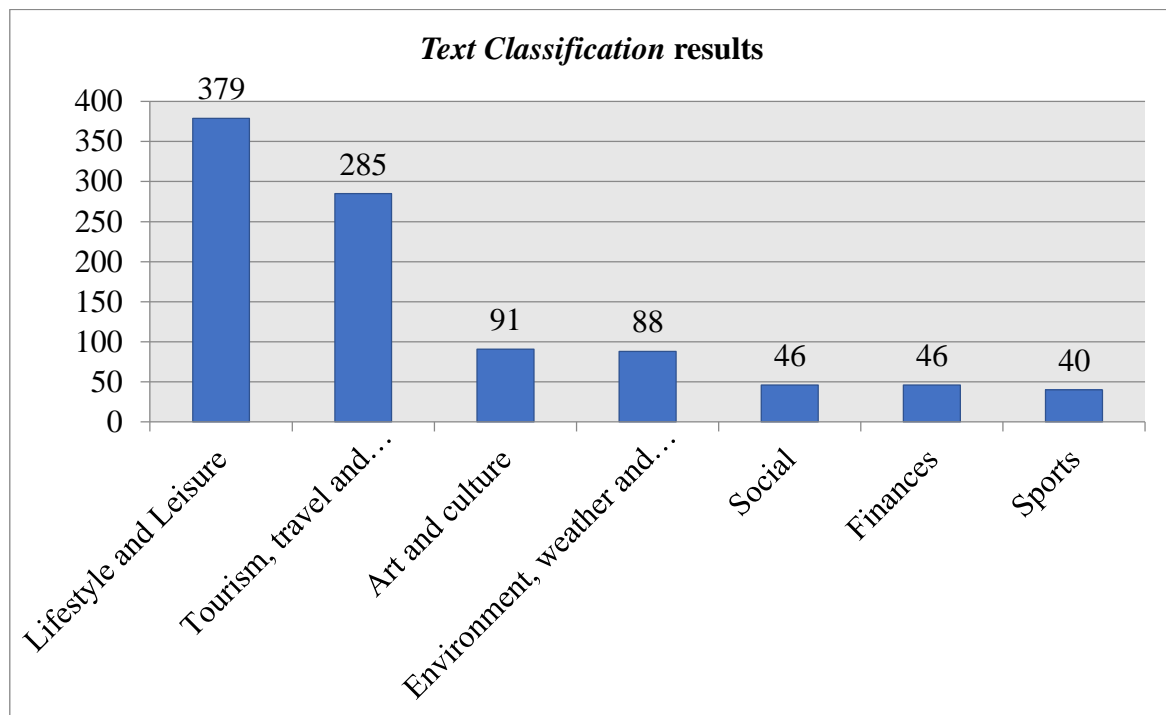
By looking at the figure it also pops to the eye words as: “food”, “experience”, “beach” or “service” – and this are perhaps the main themes mentioned by the reviewers that did not have to level their expectations. Other concepts like “pool”, “places”, “bar”, “cruise”, “restaurant”, “hotel”, “steps”, “room” and “drinks” are commonly negatively remarked by the tourists. These, are connected with the adjectives above mentioned to express the reviewers’ thoughts and experiences, for example: “expensive restaurant”, “disappointing food”, “crowded places”, “steep steps”, “slow service” or “overrated hotel”.

Again, these concepts are more frequently presented in experiences such as Re-Discover or Pure Pleasure – which are described by the TEM model as more Recreational Activities than Exploratory ones – for example: doing a cruise, spending time by the pool or visiting places located far away. Experiences like these, which were somehow perceived as negatives by the reviewers.

ANNEX 8 – MADEIRA'S TEXT MINING RESULTS

- **Every Figure or Table displayed in this chapter was own elaborated.**

ANNEX 8.1 – TEXT CLASSIFICATION RESULTS



ANNEX 8.2 – CROSSMATCH BETWEEN *TEXT CLASSIFICATION* AND *TEM*

TEM – Text Classification	Count
Holist	
Environment, weather and energy	13
Tourism, travel and commuting	11
Knowledge Seeker	
Art and culture	29
Environment, weather and energy	15
Lifestyle and leisure	35
Tourism, travel and commuting	33
Pure Pleasure	
Art and culture	26
Finances	15
Lifestyle and leisure	195
Social	13
Tourism, travel and commuting	54
Re-Discover	
Art and culture	34
Finances	30
Environment, weather and energy	51
Lifestyle and leisure	144
Social	30
Sports	25
Tourism, travel and commuting	187

ANNEX 8.3 – CROSSMATCH BETWEEN *TEXT CLASSIFICATION* AND *CATEGORIES*

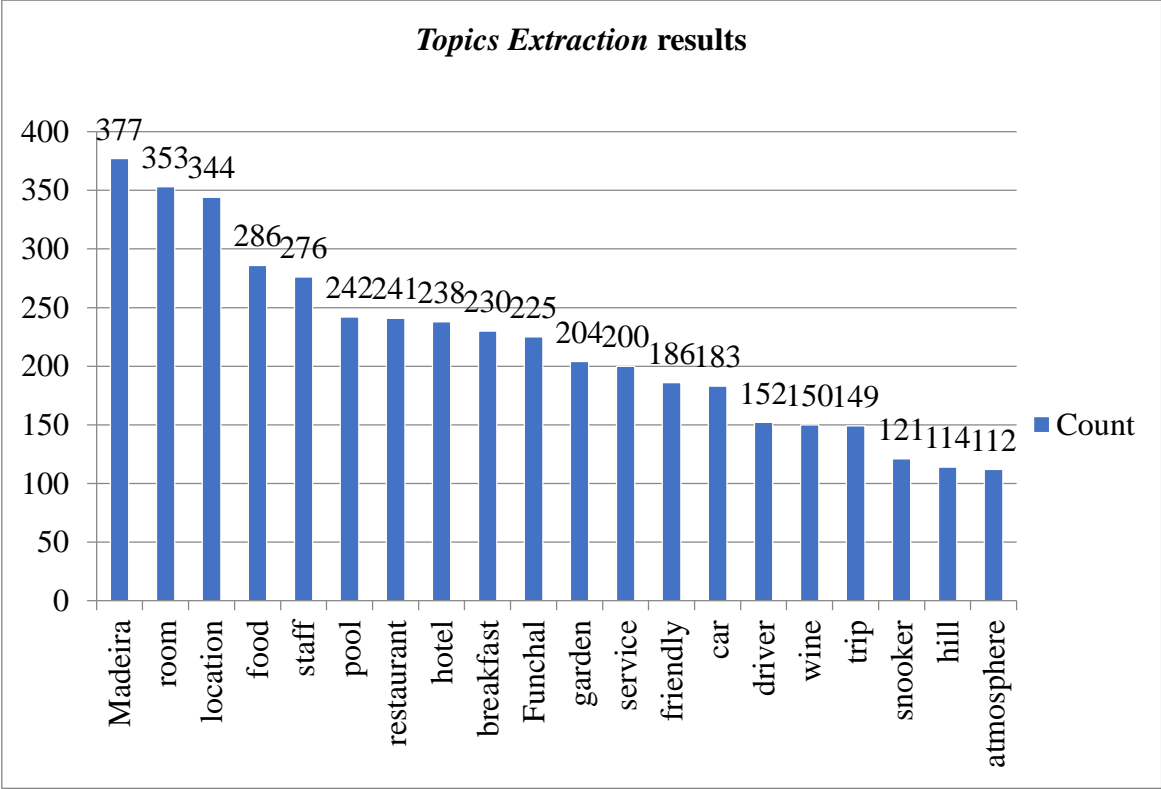
Categories – Text Classification	Count
Cultural Activity	
Art and culture	45
Finances	23
Environment, weather and energy	64
Lifestyle and leisure	39
Sport	26
Tourism, travel and commuting	158
Hotel	
Lifestyle and leisure	159
Tourism, travel and commuting	37

Leisure Activity	
Environment, weather and energy	15
Lifestyle and leisure	48
Tourism, travel and commuting	71
Restaurant	
Art and culture	34
Finances	22
Lifestyle and leisure	133
Social	18
Tourism, travel and commuting	19

ANNEX 8.4 – CROSSMATCH BETWEEN *TEXT CLASSIFICATION* AND *MLR*

Membership Level - Text Classification	Score
High Ranked	
Art and culture	36
Environment, weather and energy	40
Lifestyle and leisure	141
Tourism, travel and commuting	111
Low Ranked	
Art and culture	55
Finances	31
Environment, weather and energy	48
Lifestyle and leisure	238
Social	32
Tourism, travel and commuting	174

ANNEX 8.5 – TOPICS EXTRACTION RESULTS



The analysis of the *Topics Extraction* resulted in a total of 15,763 entities or concepts that were analysed that lead to 2411 different topics. The graphic representation shows the 20 most mentioned topics (topics counted more than 110 times), and therefore the most important ones, according to the reviews extracted.

The 20 different topics can be grouped in four different clusters, according to the number of counts, to facilitate the interpretation.

The first group comprises the topic most mentioned by the reviewers - “*Madeira*”, used 377 times in the reviews extracted from August of 2017 in *TripAdvisor*, as well as “location” – 344 times, used to express the opinions regarding certain places and “Funchal” used 225 times. The last one is linked, as being the capital of *Madeira* and the most known location of the island.

The second group is connected with accommodation. It involves topics as “hotel” used 238 times, as well as “room” mentioned 353 times and “staff” found 276 times. Moreover, appears topics as “service” which was accountable for 200 uses, “pool” used 242 times and “snooker” used 121 times. The last two are clearly activities that can be done in hotels, and

are considered recreational activities. Finally, there is the word “friendly”, an adjective that was used 186 times during the reviews, for example to characterize the staff of the hotel.

The third group corresponds to gastronomy and it includes words like “restaurant” mentioned 241 times, “food” used 286 times, “breakfast” accounted 230 times being used, and finally “wine” that was found to be referred 150 times during all reviews.

The fourth and final group consists in words related with environment, activities or travel. For instance, “car” and “driver” that were used 183 and 152 times, respectively, as well as “trip” used 149 times. “Garden” is linked with a lot of the activities that can be found in *Madeira* and for that reason was found to be used 204 times. Finally, “hill” and “atmosphere” were also included in this group because they represent all the environment of the island, with steep hills and lovely atmospheres – used 114 and 112 times, respectively.

ANNEX 8.6 – CROSSMATCH BETWEEN *TOPICS EXTRACTION* AND *TEM*

TEM	Number of topics
Holist	382
Knowledge Seeker	1660
Pure Pleasure	6579
Re-Discover	7142
Total	15763

Topics Extraction - TEM	Count
Holist	
garden	15
Funchal	10
Madeira	10
location	9
Knowledge Seeker	
Madeira	62
driver	52
wine	30
garden	30
guide	25
trip	24
Pure Pleasure	
room	239
staff	173
location	172
food	169
breakfast	166

pool	156
hotel	149
restaurant	144
service	119
friendly	101
Re-Discover	
Madeira	207
location	143
car	133
Funchal	118
garden	112
food	105
trip	100
staff	92
room	92
driver	92

It is important to understand that the bigger the amount of reviews in each experience, the higher the number of topics will be. This fact is important to understand that some experiences (especially the *Holist* one) with a smaller number of reviews will contain fewer topics.

It is possible to see that the *Re-Discover* experience was the one with the highest amount of topics analysed – 7142, followed by *Pure Pleasure* with 6579. Moreover, the *Knowledge Seeker* experience appears in third accounting 1660 topics, and finally *Holist* with 382.

The second table (Scheme 43) that can be found in the attachment comprises the most important topics according to each experience.

The *Holist* experience comprises 4 main topics: “garden” mentioned 15 times, “Funchal” and “Madeira” that are directly connected – 10 times each, and “location” which is also linked with all the others – used 9 times.

The *Knowledge Seeker* experience englobes 6 major topics: “Madeira” is the one most mentioned (62 times), followed by “driver” used 52 times and “wine” referred 30 times. Also 30 times appears “garden”, followed by “guide” and “trip” mentioned 25 and 24 times, respectively.

The *Pure Pleasure* experience includes 10 topics that were found to be the most important ones for this experience. In first place appears “room” used 239 times, followed by “staff” (173 times) and “location” (172 times). Linked with these topics can be found “pool”

(156 times), “hotel” (146 times), “service” (119 times) and “friendly” (101 times). Gastronomy also appears to be an important subject with words as “food” (169 times), “breakfast” (166 times) and “restaurant” (144 times).

Finally, in the *Re-Discover* experience the software was also able to identify 10 major topics. “Madeira” is the word most mentioned (207 times) and linked with this one it can be found “Funchal” (118 times) and “location” (143 times). Other topics that can be linked with each others are: “car” (133 times), “garden” (112 times), “trip” (100 times) and “driver” (92 times). A third final group can be created with topics like “food” (105 times), “staff” (92 times) and “room” (92 times).

ANNEX 8.7 – CROSSMATCH BETWEEN *TOPICS EXTRACTION* AND *CATEGORIES*

Categories	Count
Cultural Activity	3585
Hotel	6059
Leisure Activity	2313
Restaurant	3806
Total	15763

Topics Extraction - Categories	Count
Hotel	
room	327
breakfast	230
pool	230
hotel	192
location	165
staff	130
snooker	115
restaurant	100
friendly	84
food	82
Restaurant	
food	195
restaurant	131
staff	130
service	114
steak	95
wine	90
atmosphere	84

location	83
Madeira	73
friendly	69
Leisure Activity	
Madeira	118
driver	116
trip	78
guide	53
road	50
dolphin	35
west	33
location	27
street	27
friendly	24
Cultural Activity	
garden	170
car	154
Madeira	112
Funchal	103
hill	78
location	69
Monte	64
flower	62
ride	54
trip	49

The first table shows that the *Hotel* category is the one with the highest amount of topics analysed (6059). The second place belongs to *Restaurant* counting 3806 topics, followed by *Cultural Activity* with 3585 topics. In last place, appears *Leisure Activity* with 2313 topics analysed.

The most important things to be analysed can be found in the second table – the most important topics according to each category.

The *Hotel* category has as most mentioned topics the following list: “room” (327), “breakfast” (230), “pool” (230), “hotel” (192), “location” (165), “staff” (130), “snooker” (115), “restaurant” (100), “friendly” (84) and “food” (82).

The topics that matter in the *Restaurant* category can be found in the following order: “food” (195), “restaurant” (131), “staff” (130), “service” (114), “steak” (95), “wine” (90), “atmosphere” (84), “location” (83), “Madeira” (73) and “friendly” (69).

The Leisure Activity englobes the following list of most important topics: “Madeira” (118), “driver” (116), “trip” (78), “guide” (53), “road” (50), “dolphin” (35), “west” (33), “location” (27), “street” (27) and “friendly” (24).

Finally, the Restaurant category comprises: “food” (195), “restaurant” (131), “staff” (130), “service” (114), “steak” (95), “wine” (90), “atmosphere” (84), “location” (83), “Madeira” (73) and “friendly” (69).

ANNEX 8.8 – CROSSMATCH BETWEEN *TOPICS EXTRACTION* AND *ML*

Membership Level of Reviewers	Count
High Ranked	6520
Low Ranked	9243
Total	15763

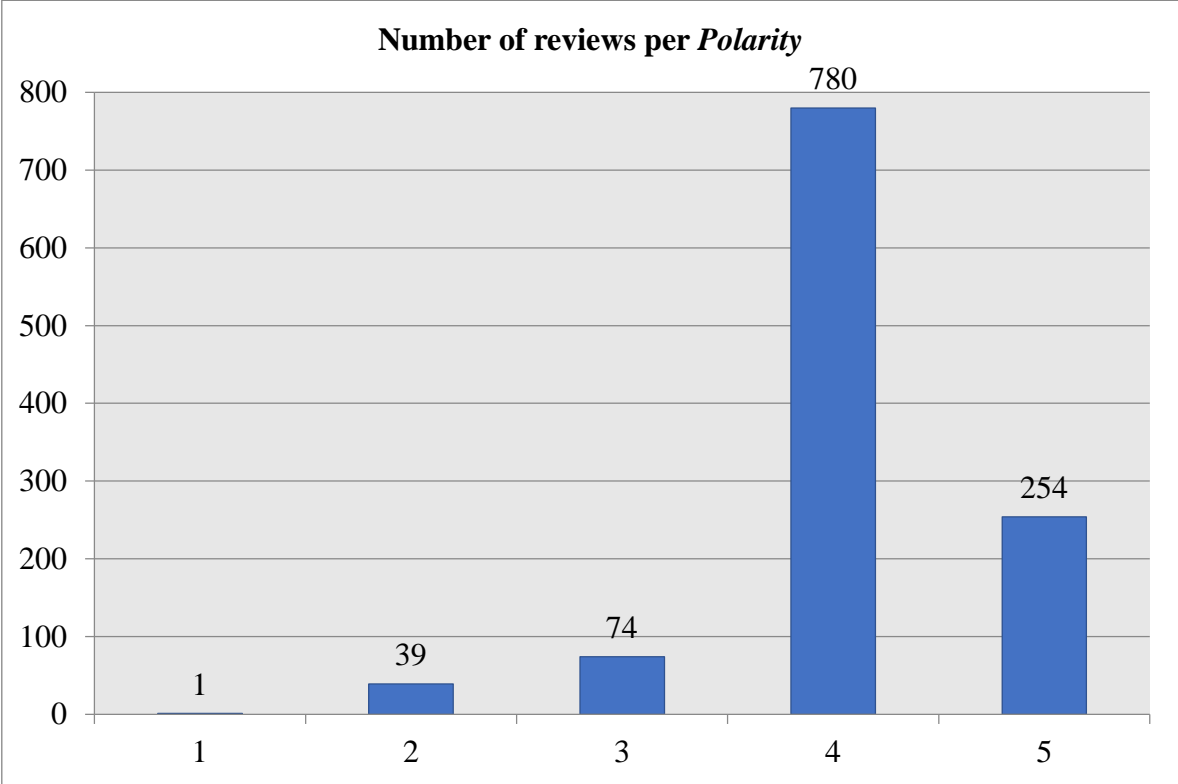
Membership Level of Reviewers	Count
High Ranked	
room	149
location	141
Madeira	132
breakfast	108
restaurant	102
food	101
pool	96
garden	93
staff	91
hotel	87
Low Ranked	
Madeira	245
room	204
location	203
staff	185
food	185
hotel	151
pool	146
Funchal	141
restaurant	139
service	130

The same aspects studied for *TEM* and *Categories*, are being studied in this chapter, but according to the membership level of the reviewers.

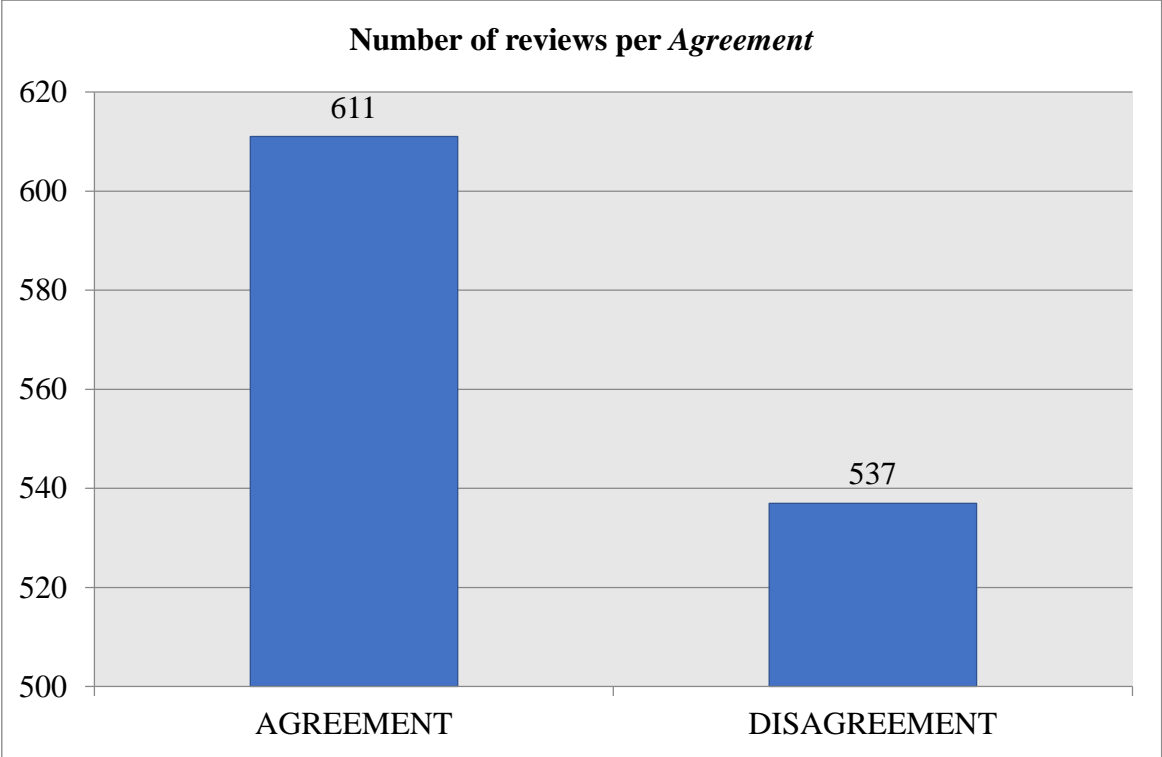
The first table (Scheme 46) tells us that there is a considerable difference between the amounts of topics that were found in the two types of reviews. The high ranked reviews contain 6520 topics to be analysed, while the low ranked reviews include 9243.

The second table (Scheme 47) contains the most important topics according to the two different types of reviewers. The *High Ranked Reviewers* englobe as the most mentioned topics: “room” (149), “location” (141), “Madeira” (132), “breakfast” (108), “restaurant” (102), “food” (101), “pool” (96), “garden” (93), “staff” (91) and “hotel” (87). The *Low Ranked Reviewers* include the following list of topics: “Madeira” (245), “room” (204), “location” (203), “staff” (185), “food” (185), “hotel” (151), “pool” (146), “Funchal” (141), “restaurant” (139) and “service” (130).

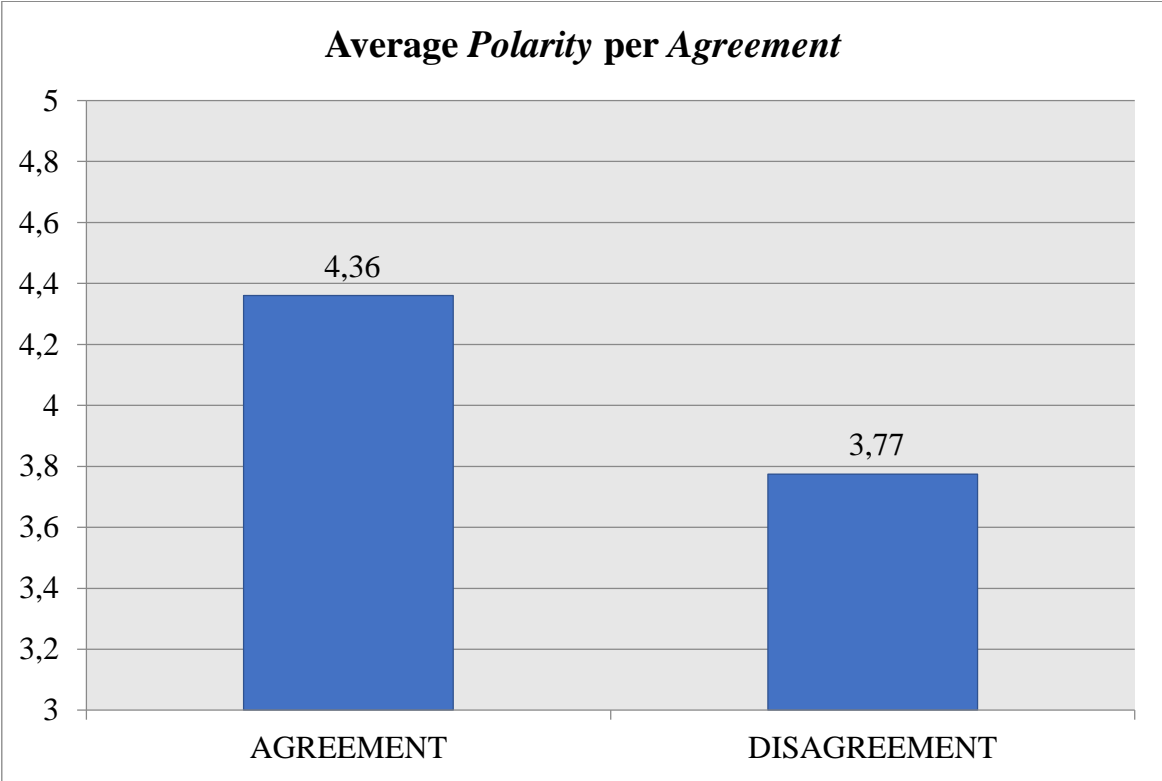
ANNEX 8.9 – NUMBER OF REVIEWS PER *POLARITY*



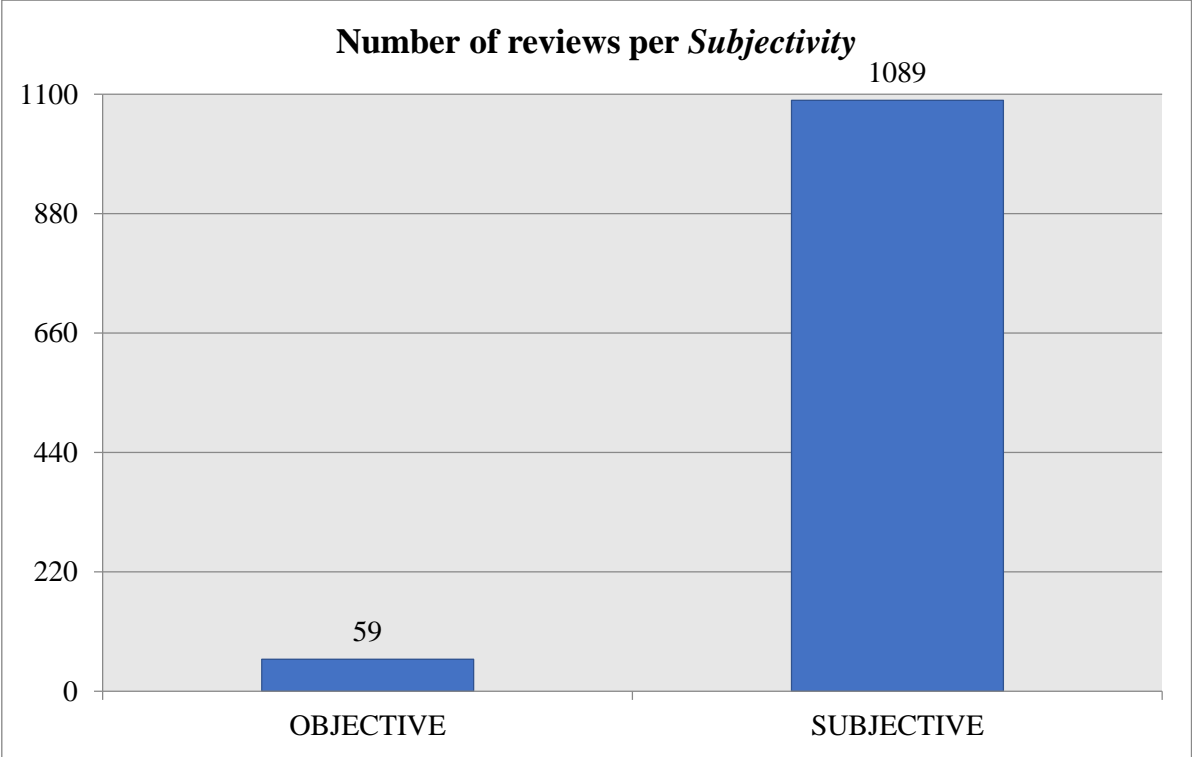
ANNEX 8.10 – NUMBER OF REVIEWS PER AGREEMENT



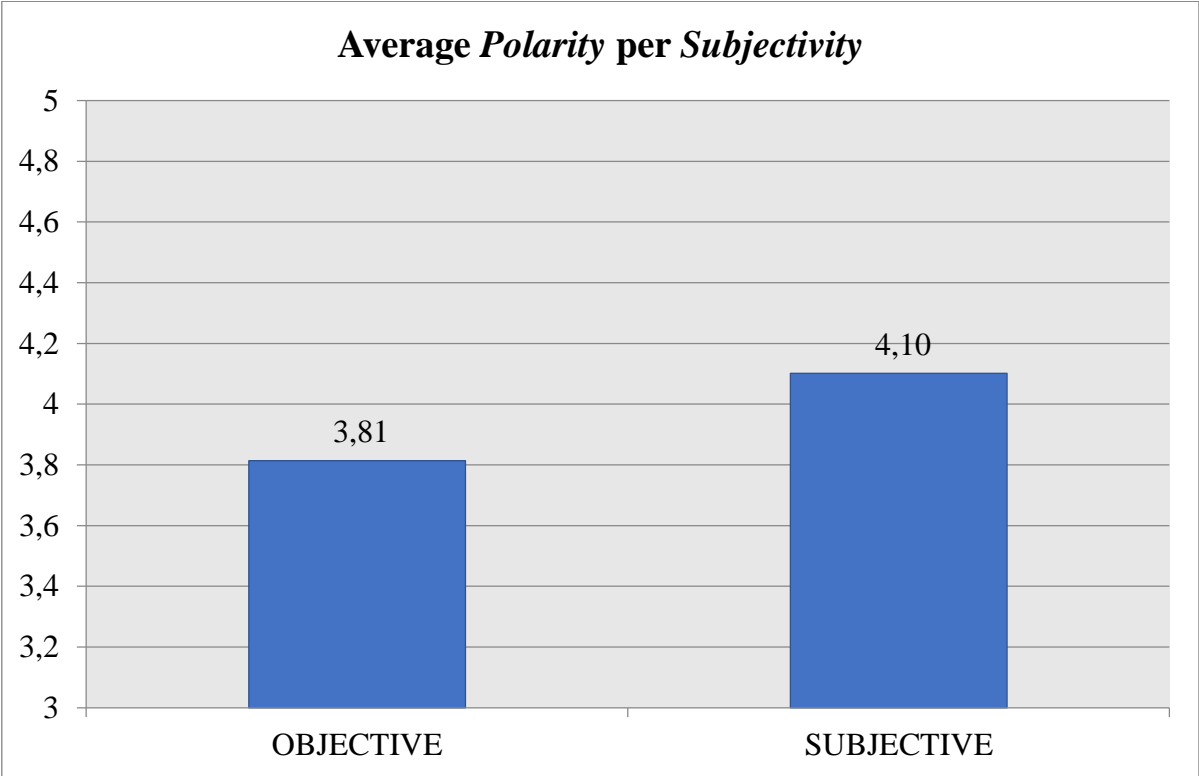
ANNEX 8.11 – AVERAGE POLARITY PER AGREEMENT



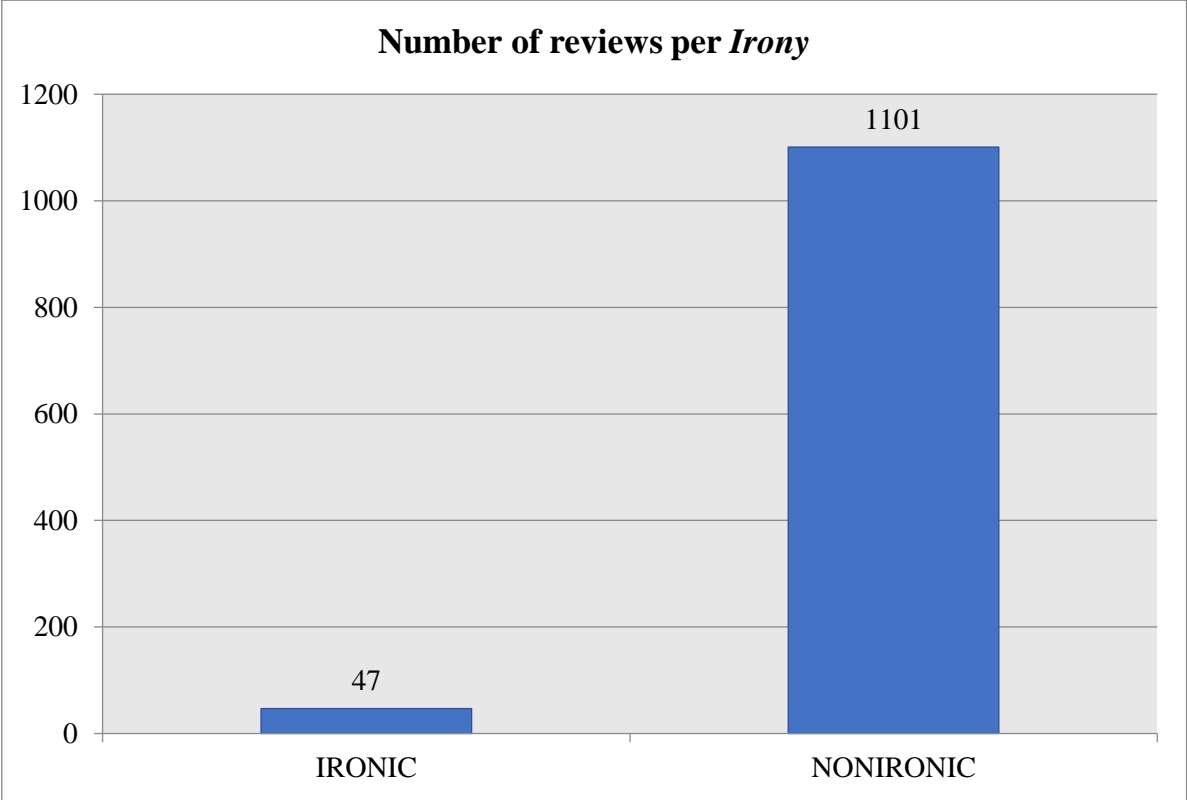
ANNEX 8.12 – NUMBER OF REVIEWS PER *SUBJECTIVITY*



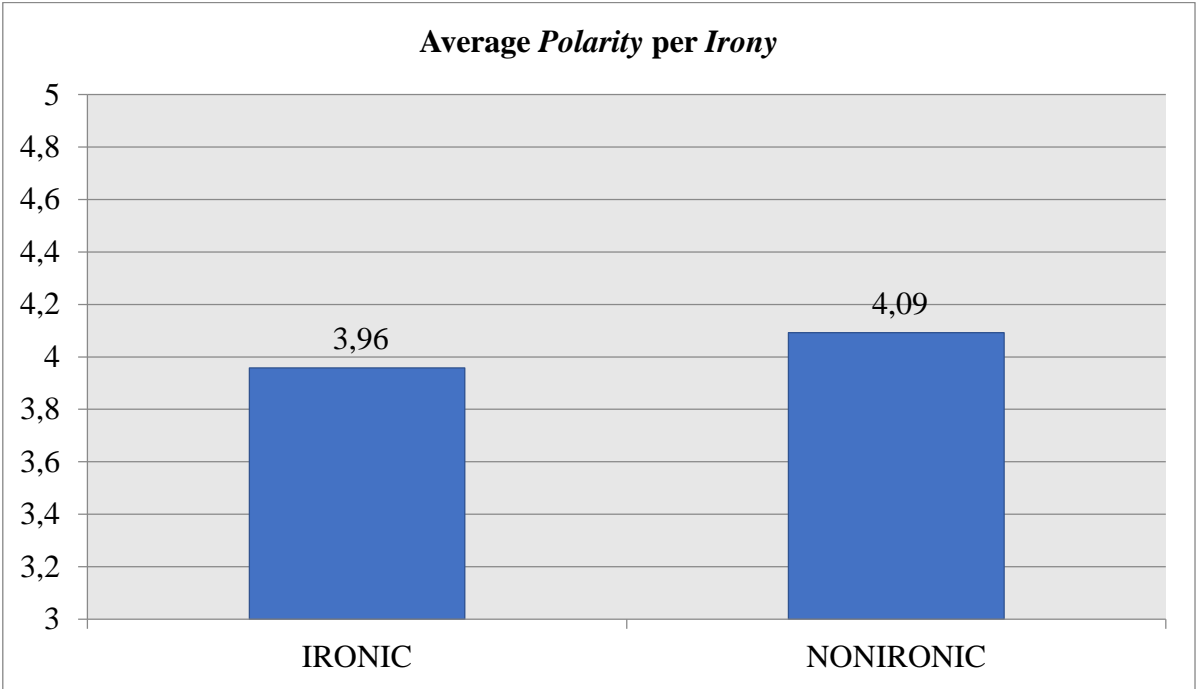
ANNEX 8.13 – AVERAGE *POLARITY* PER *SUBJECTIVITY*



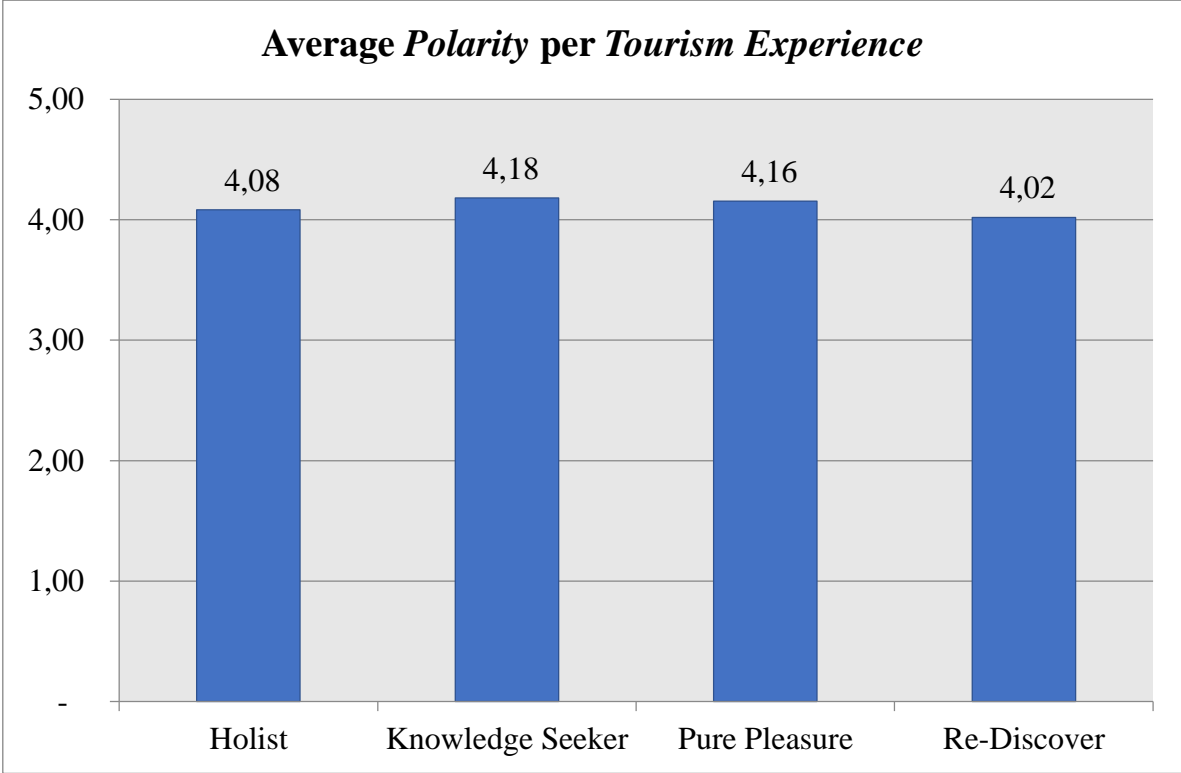
ANNEX 8.14 – NUMBER OF REVIEWS PER IRONY



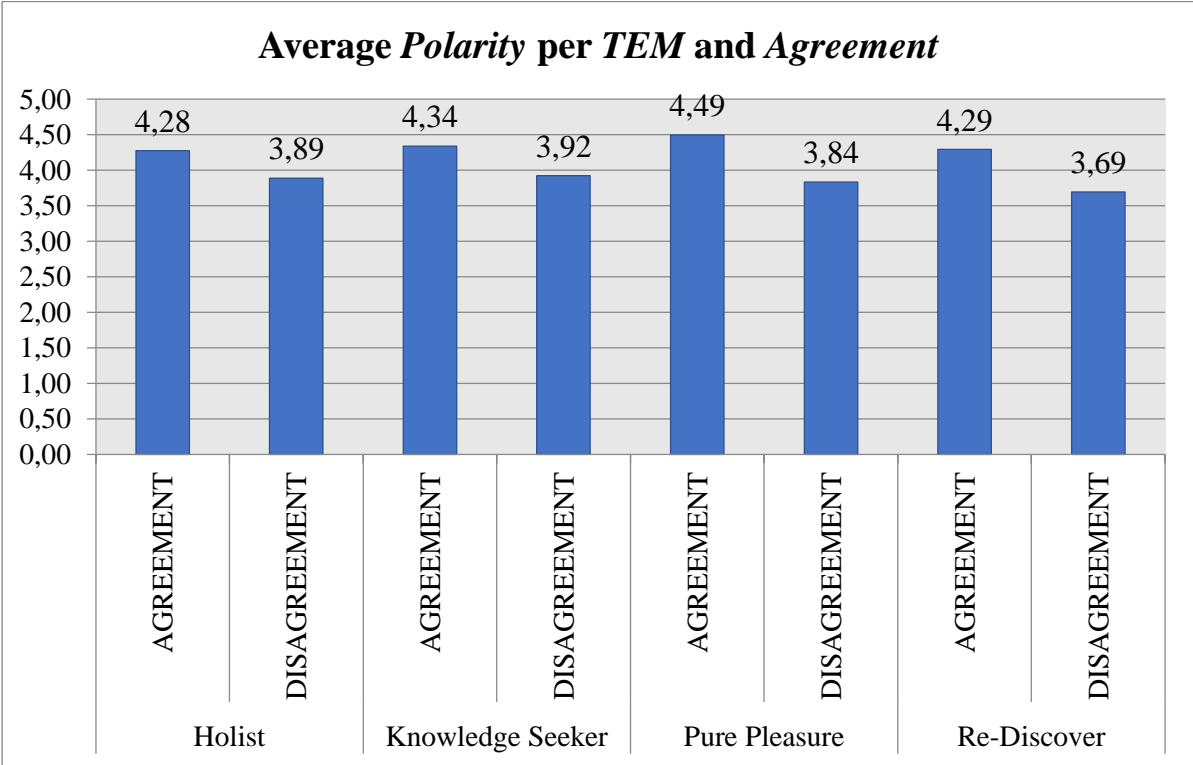
ANNEX 8.15 – AVERAGE POLARITY PER IRONY



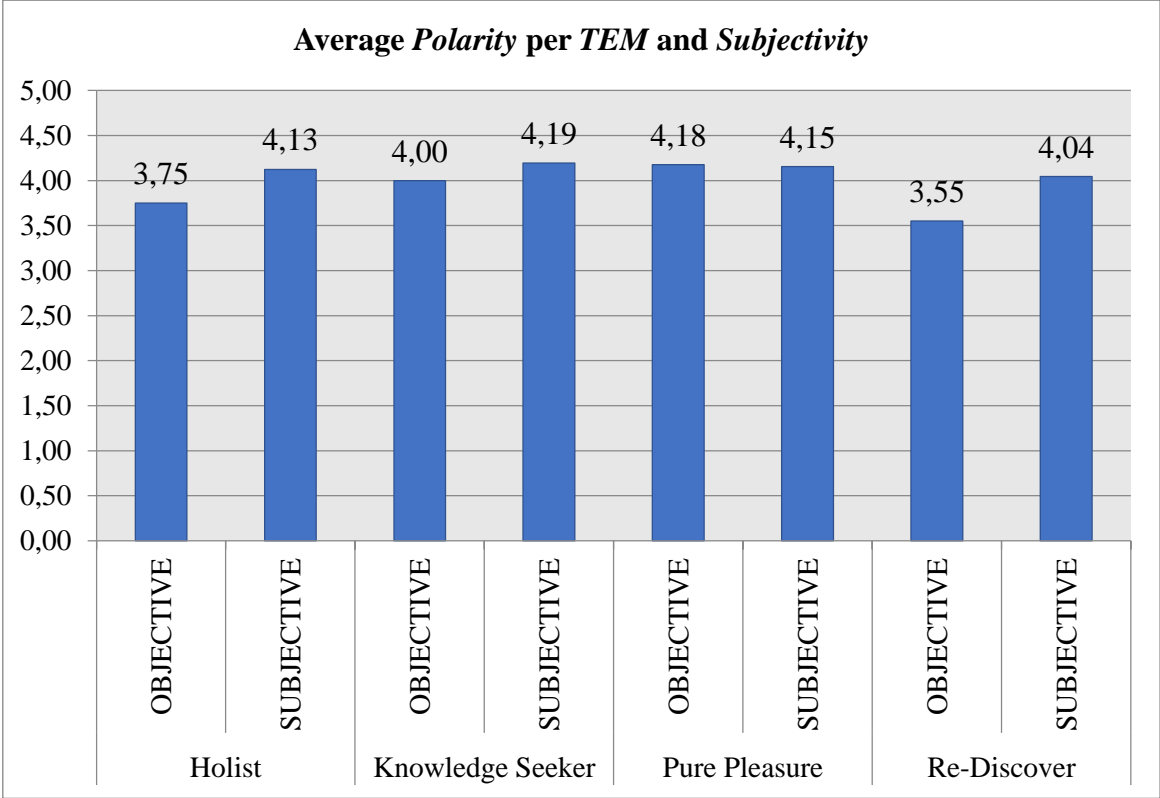
ANNEX 8.16 – AVERAGE POLARITY PER TOURISM EXPERIENCE



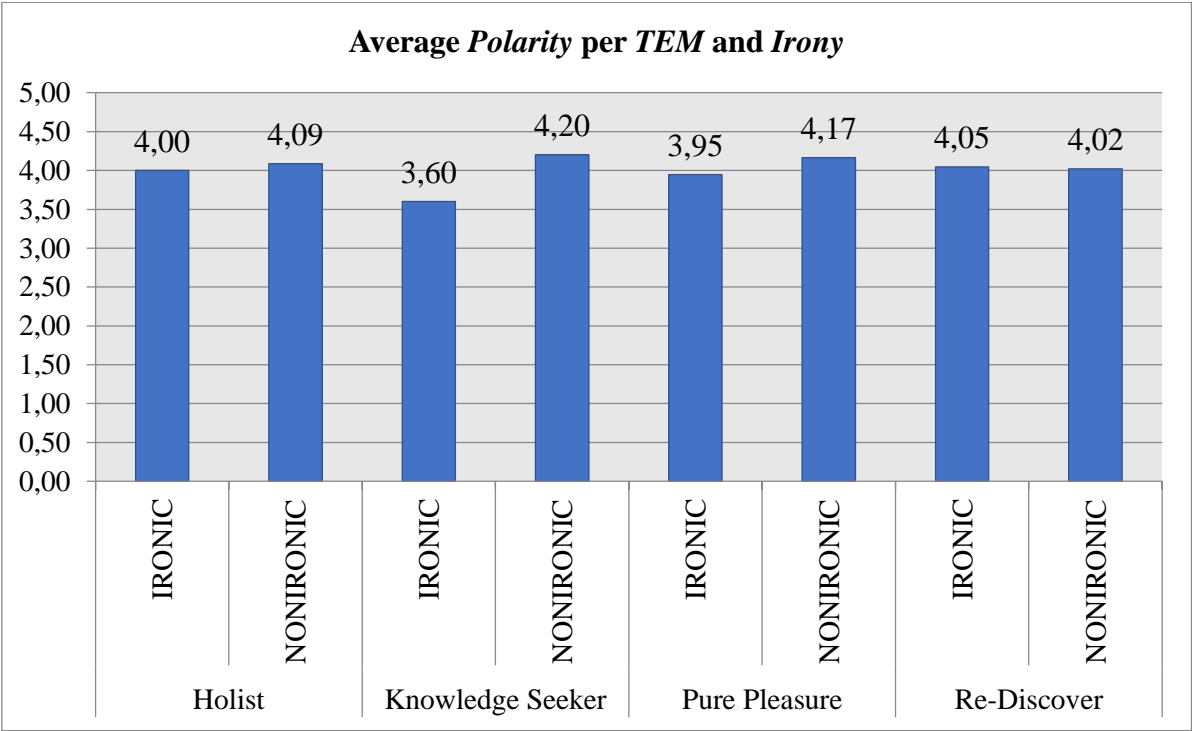
ANNEX 8.17 – AVERAGE POLARITY PER TEM AND AGREEMENT



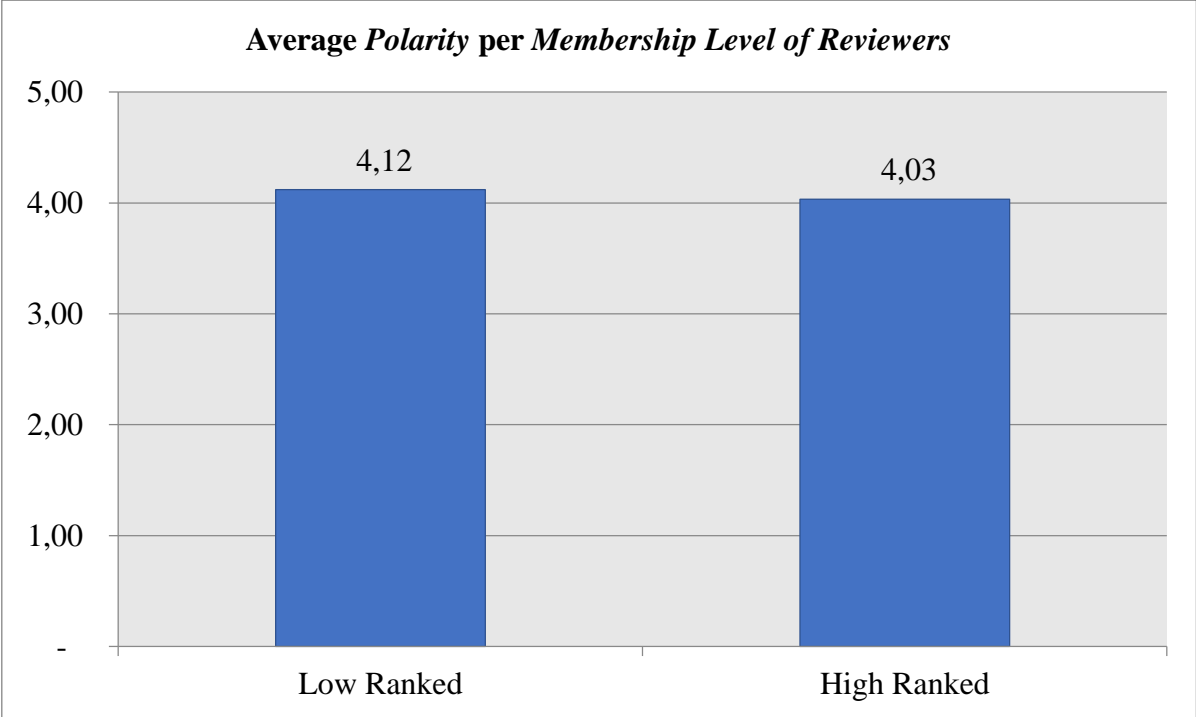
ANNEX 8.18 – AVERAGE POLARITY PER TEM AND SUBJECTIVITY



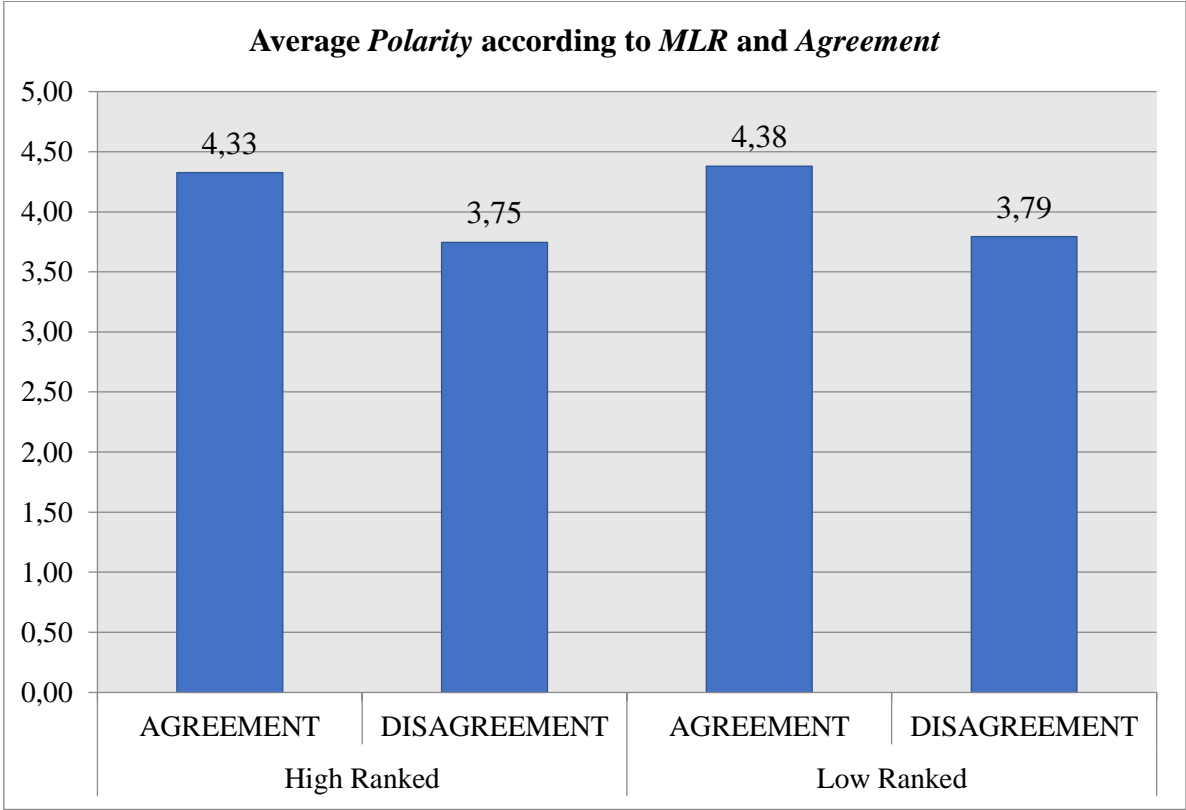
ANNEX 8.19 – AVERAGE POLARITY PER TEM AND IRONY



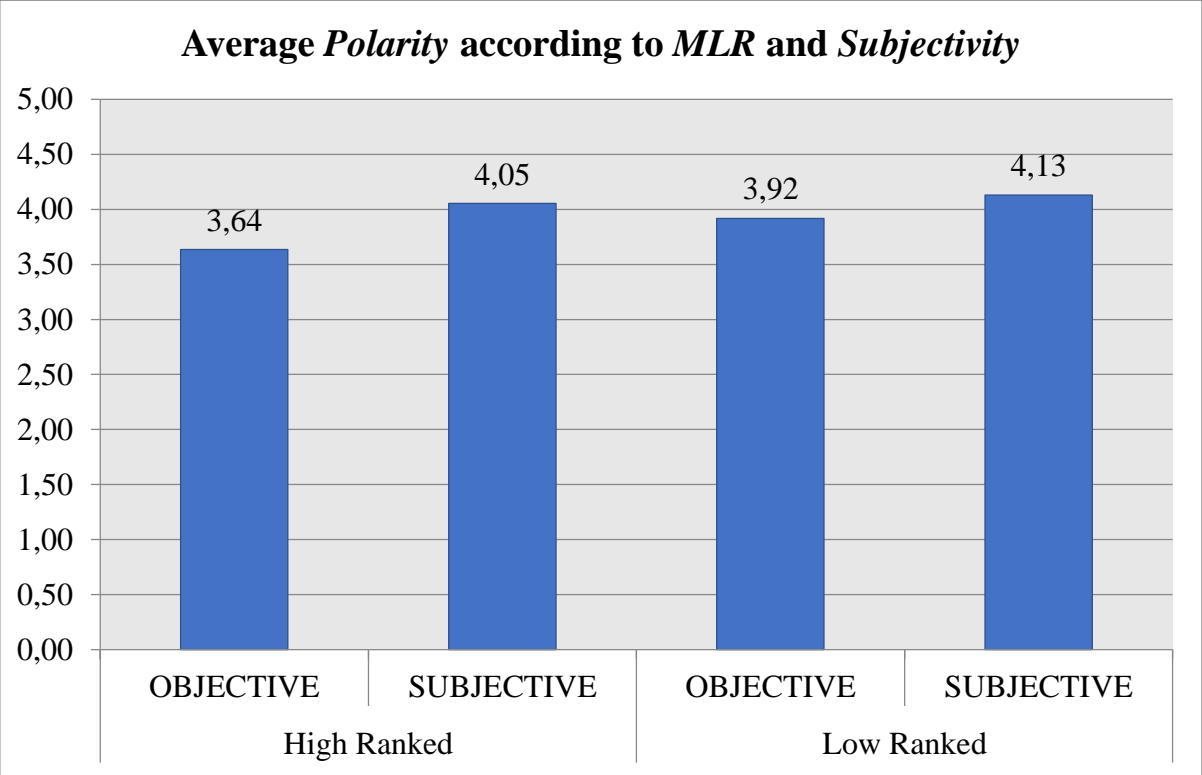
ANNEX 8.20 – AVERAGE POLARITY PER MEMBERSHIP LEVEL OF REVIEWERS



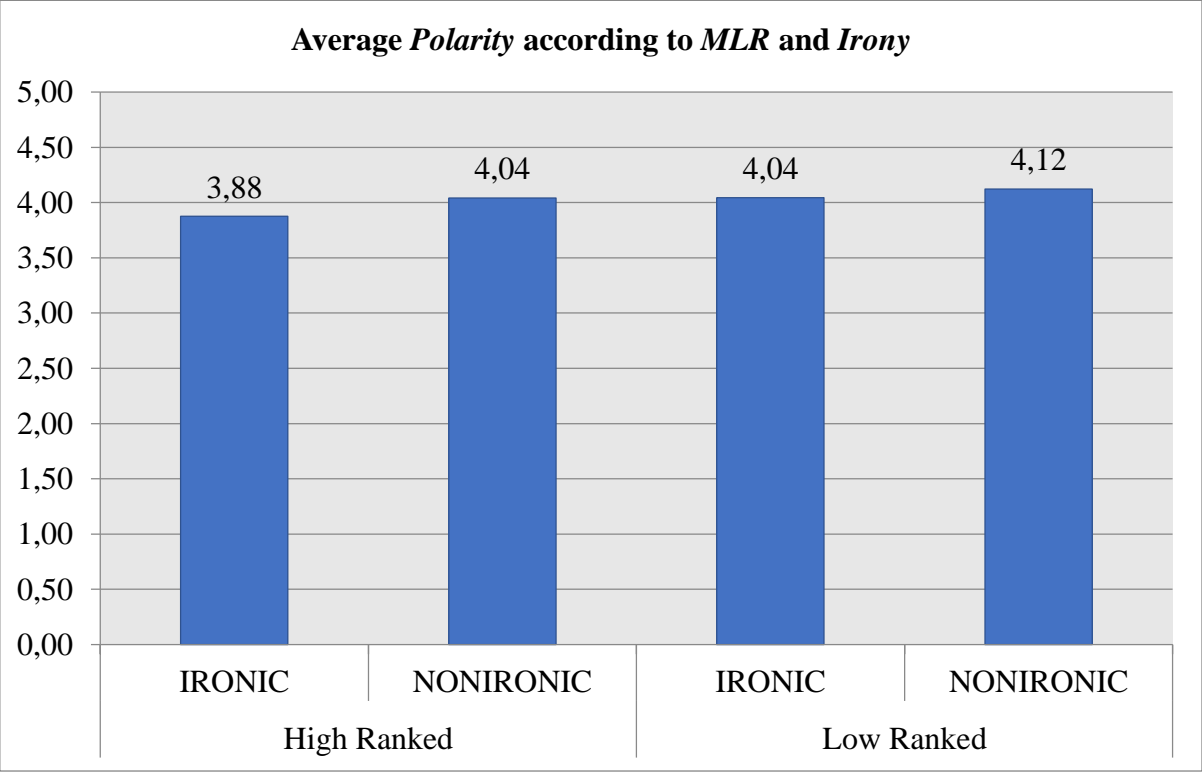
ANNEX 8.21 – AVERAGE POLARITY PER MLR AND AGREEMENT



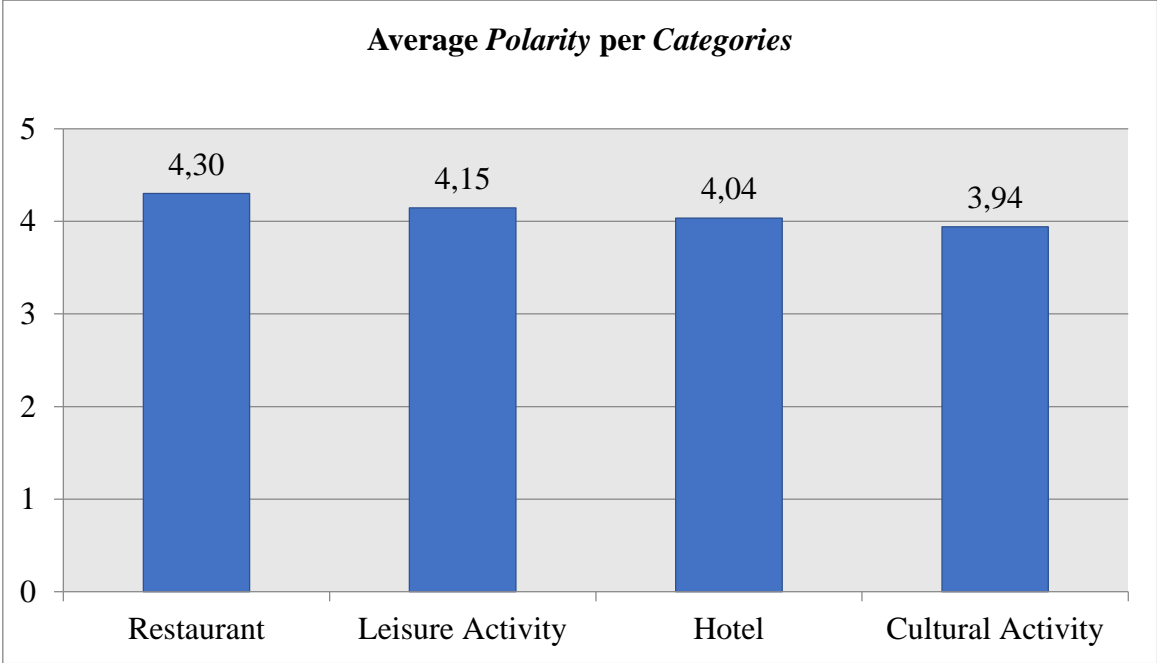
ANNEX 8.22 – AVERAGE POLARITY PER MLR AND SUBJECTIVITY



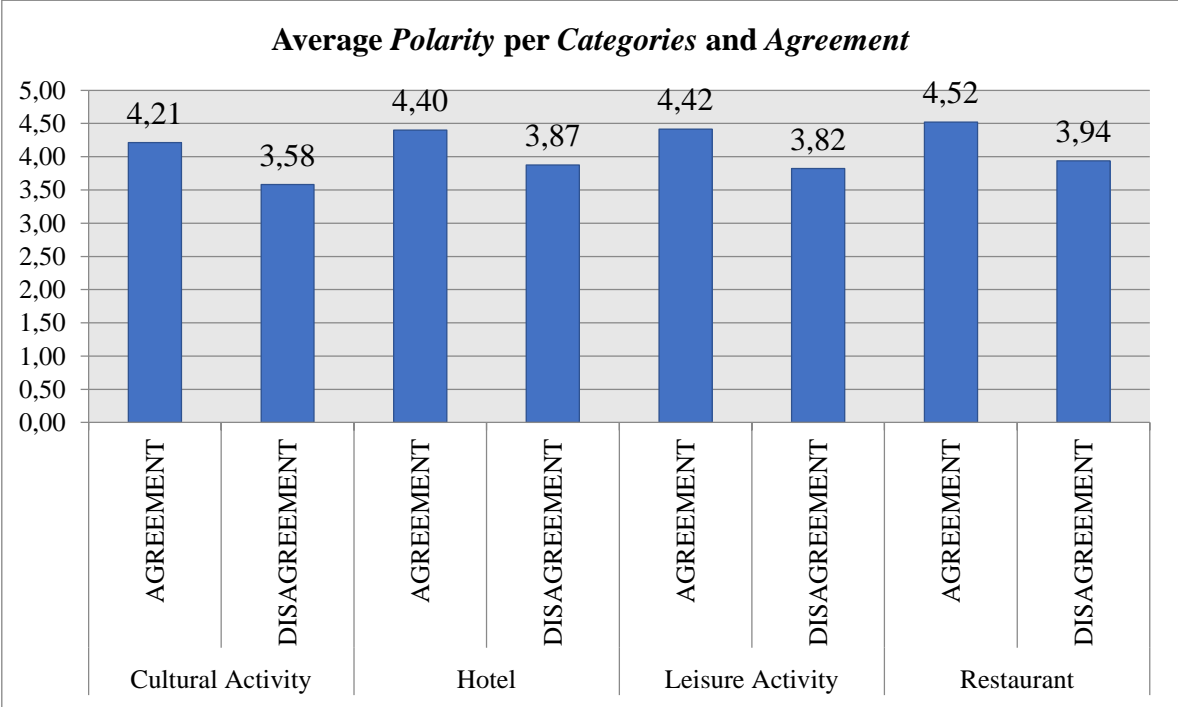
ANNEX 8.23 – AVERAGE POLARITY PER MLR AND IRONY



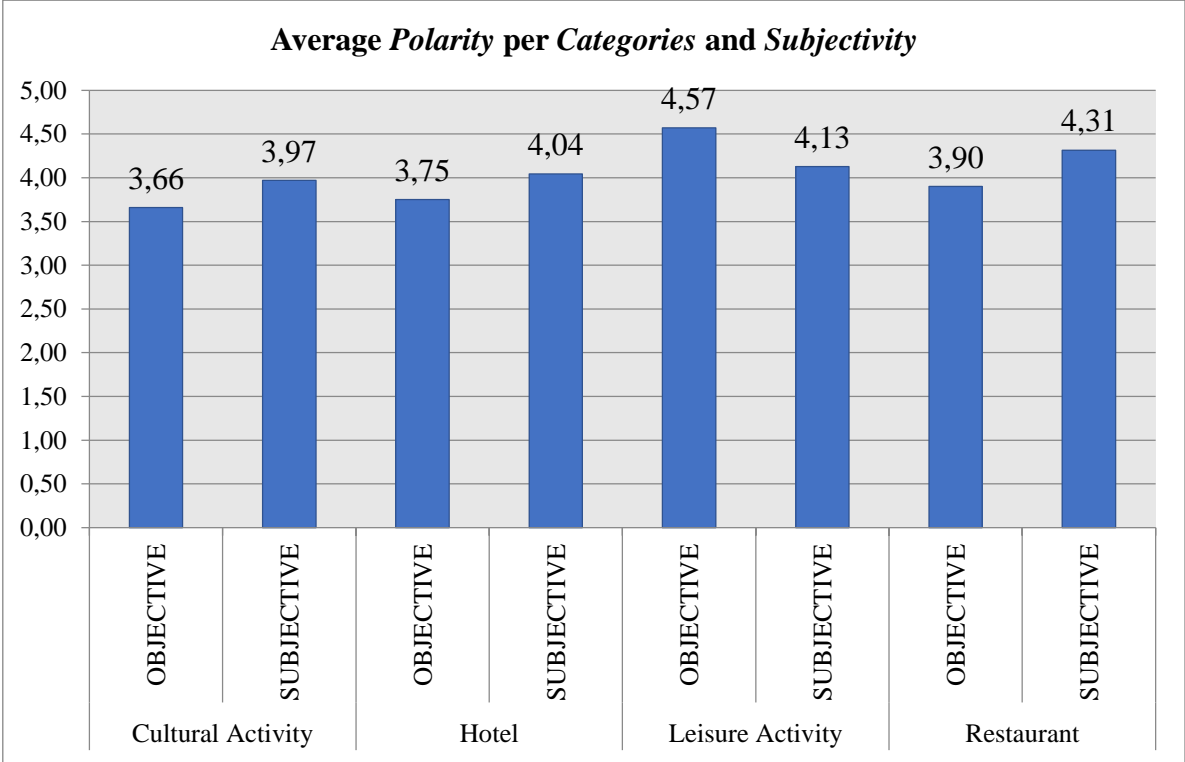
ANNEX 8.24 – AVERAGE POLARITY PER CATEGORIES



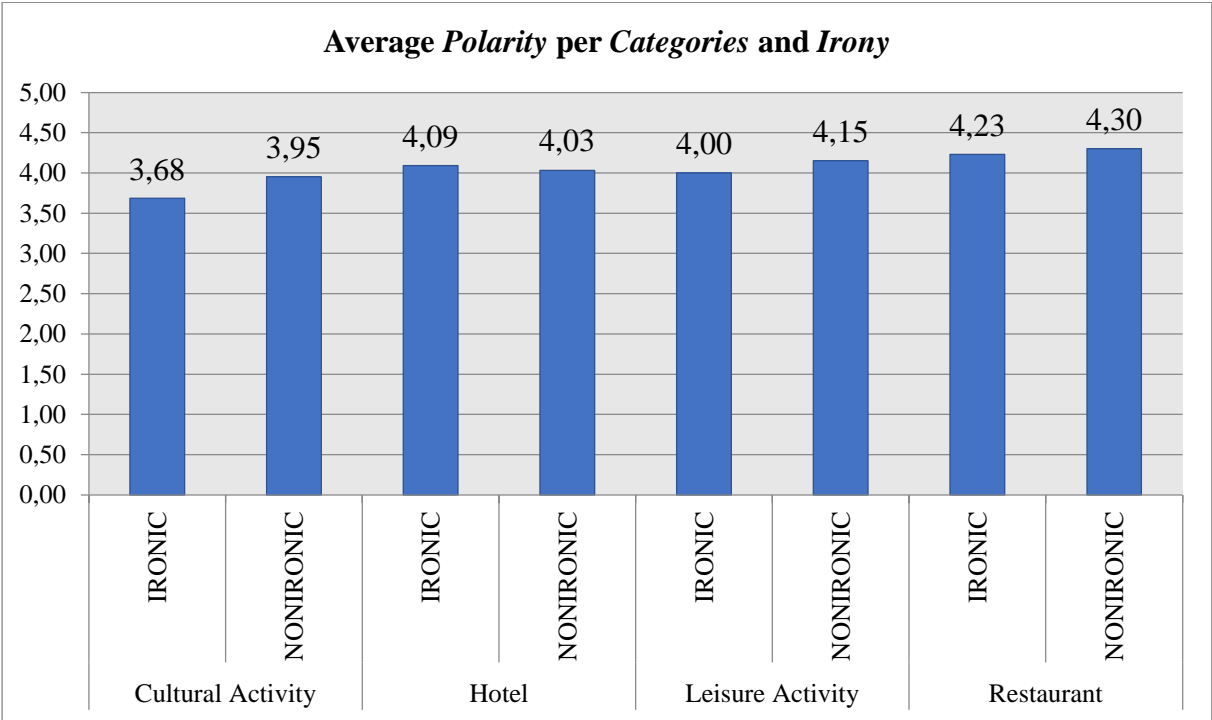
ANNEX 8.25 – AVERAGE POLARITY PER CATEGORIES AND AGREEMENT



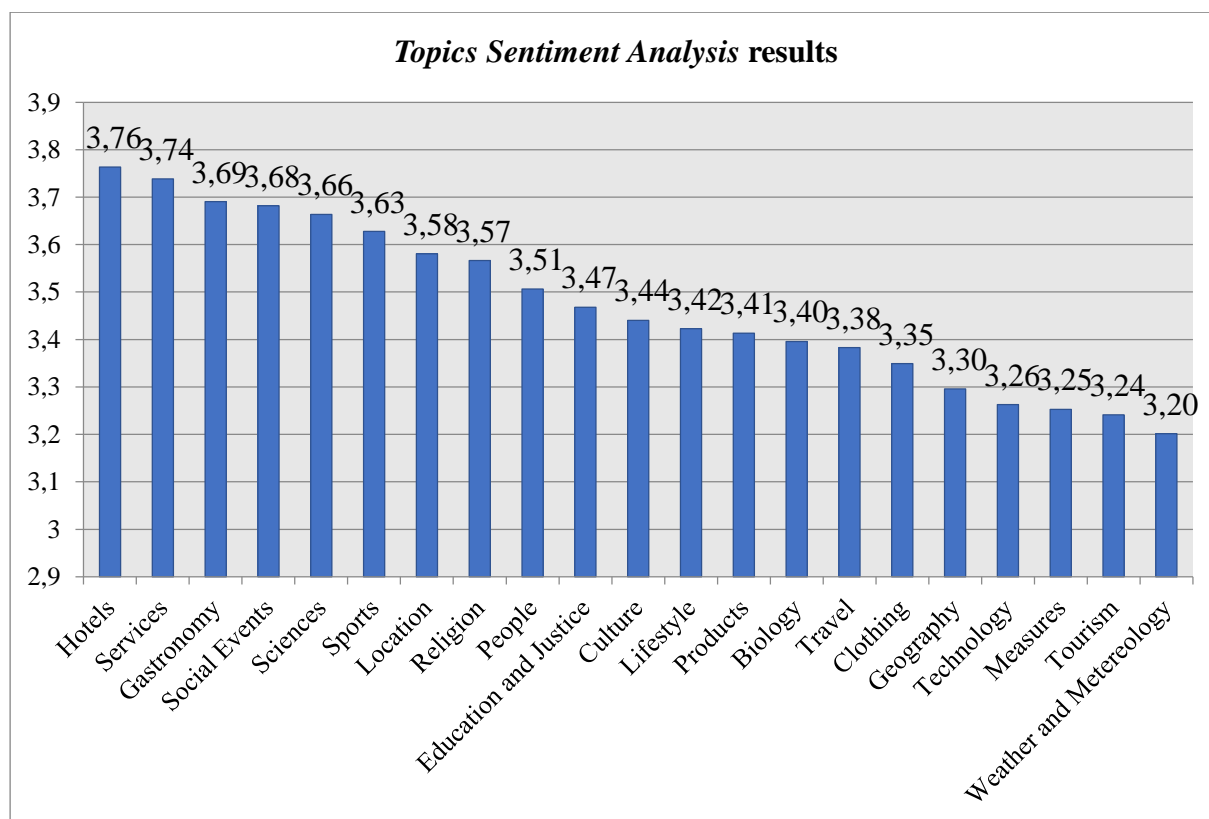
ANNEX 8.26 – AVERAGE POLARITY PER CATEGORIES AND SUBJECTIVITY



ANNEX 8.27 – AVERAGE POLARITY PER CATEGORIES AND IRONY



ANNEX 8.28 – TOPICS SENTIMENT ANALYSIS RESULTS



The results of the *Topics Sentiment Analysis* show a list of the most important and mentioned topics by the reviewers according to the software analysis, including a graphic representation about it.

Moreover it is important to refer that there were 1985 topics – corresponding to 13.72% of the total amount of topics, which the software was not able to identify the topic categories and therefore were not considered – meaning the following results were done using only the correctly identified topics.

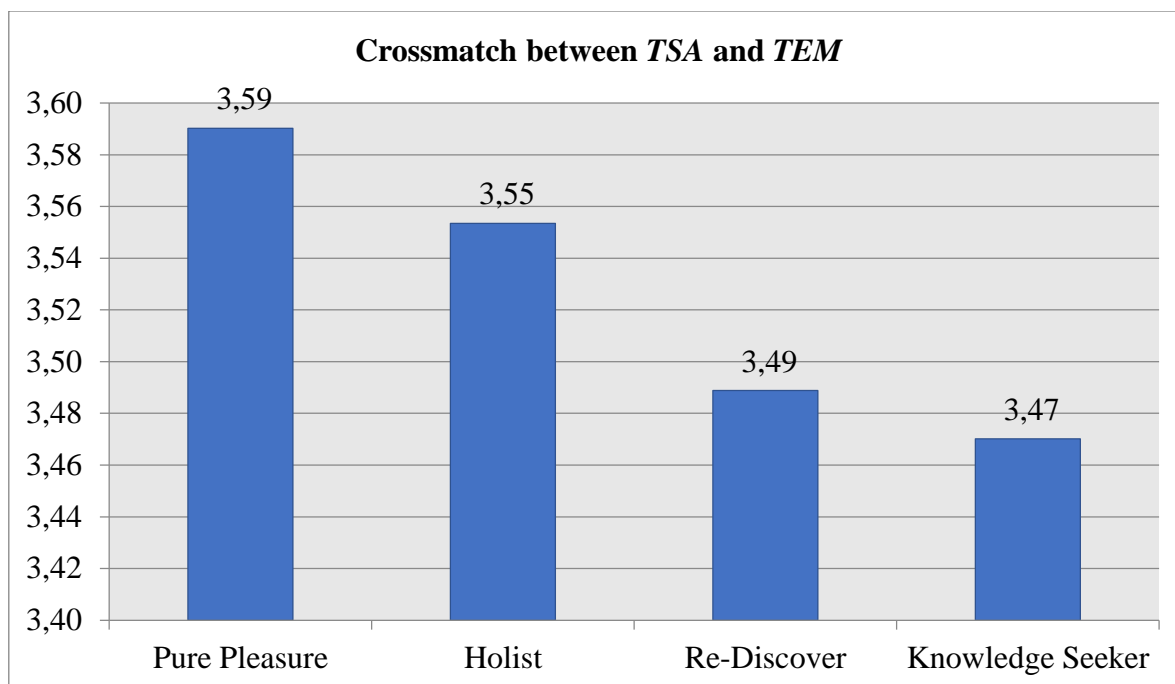
In the graphic it is possible to see that the “hotels” is the topic which shows the most positive sentiment in comparison with all the others – with a polarity of 3.76. It can be said that this is the most important topic for the reviewers. It is followed by “services” and “gastronomy” with 3.74 and 3.69, respectively.

From the fourth to the tenth place, it is possible find “social events” with 3.68, “sciences” with 3.66, “sports” with 3.63, “location” with 3.58, “religion” with 3.57, “people” with 3.51 and “education and justice” with 3.47.

Until the sixteenth place, it is possible to find: “culture” with 3.44, “lifestyle” with 3.42, “products” with 3.41, “biology” with 3.40, “travel” with 3.38 and “clothing” with 3.35.

At last, the final topics include “geography” with 3.30, “technology” with 3.26, “measures” with 3.25, “tourism” with 3.24 and “weather and meteorology” with 3.20.

ANNEX 8.29 – CROSSMATCH BETWEEN *TSA* AND *TEM*



From the results it is possible to see that the *Pure Pleasure* experience is the one with topics with a highest average polarity – 3.59. Therefore the reviewers which intended to visit the island with this purpose were the ones that left most satisfied.

The topics regarding the *Holist* experience come second, with an average polarity of 3.55, meaning that this experience is, although close to, less positive for the reviewers than the previous one.

The last two experiences are *Re-Discover* and *Knowledge Seeker*, with 3.49 and 3.47 average polarity. This means, that the *Knowledge Seeker* experience is the one with the most negative sentiment across the reviewers community.

Holist	Average Polarity
Sports	4,21
Education and Justice	4,00

Clothing	4,00
Hotels	3,71
Location	3,71
Gastronomy	3,65
Sciences	3,57
Social Events	3,56
Travel	3,54
Geography	3,53
Services	3,48
Biology	3,43
Culture	3,40
People	3,39
Products	3,36
Measures	3,33
Weather and Meteorology	3,25
Tourism	3,13
Religion	3,00

In the table above it is possible to find the average polarity of the 21 topics according to the *Holist* experience. The five that show the highest positive sentiment to the reviewers are: *Sports* (4.21), *Education and Justice* (4.00), *Clothing* (4.00), *Hotels* (3.71) and *Location* (3.71). The reviewer's sentiments towards these topics are far more positive than the ones occupying the last five spots, which include *Products* (3.36), *Measures* (3.33), *Weather and Meteorology* (3.25), *Tourism* (3.13) and *Religion* (3.00).

Knowledge Seeker	Average Polarity
Religion	3,79
Sciences	3,78
Social Events	3,72
Clothing	3,71
People	3,60
Location	3,57
Gastronomy	3,56
Sports	3,50
Services	3,45
Products	3,44
Travel	3,43
Hotels	3,43
Technology	3,38
Education and Justice	3,37
Weather and	3,35

Meteorology	
Biology	3,35
Culture	3,33
Tourism	3,29
Measures	3,27
Lifestyle	3,20
Geography	3,14

The table above allows seeing the average polarity of the 21 topics according to the *Knowledge Seeker* experience. The five topics in which the reviewers feel a more positive sentiment are: *Religion* (3.79), *Sciences* (3.78), *Social Events* (3.72), *Clothing* (3.71) and *People* (3.60). On the opposite side, the ones where the reviewers feel a less positive sentiment are: *Culture* (3.33), *Tourism* (3.29), *Measures* (3.27), *Lifestyle* (3.20) and *Geography* (3.14).

Pure Pleasure	Average Polarity
Hotels	3,80
Services	3,80
Social Events	3,71
Sciences	3,69
Gastronomy	3,69
Location	3,67
Sports	3,64
Education and Justice	3,57
Products	3,50
People	3,48
Biology	3,47
Lifestyle	3,42
Geography	3,38
Religion	3,33
Travel	3,33
Culture	3,32
Clothing	3,32
Technology	3,31
Tourism	3,26
Measures	3,21
Weather and Meteorology	3,04

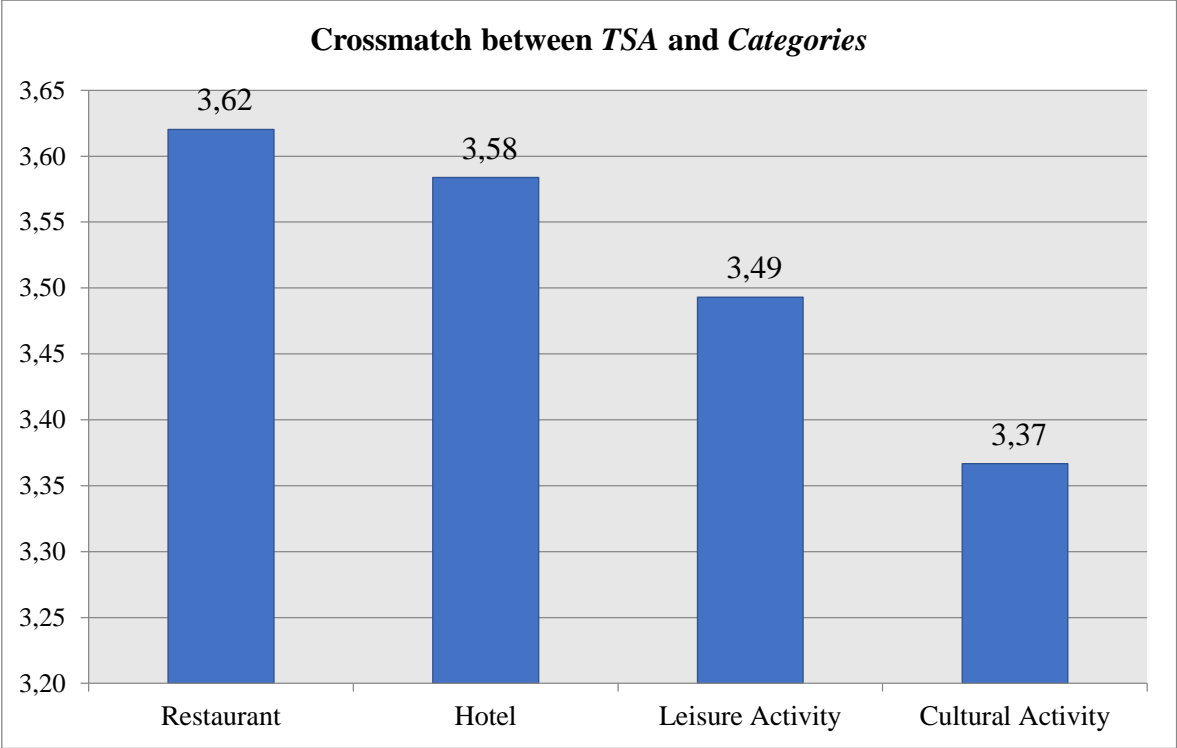
Additionally, in the table above can be found the same process but relative to the *Pure Pleasure* experience. The five topics which the reviewers show a more positive sentiment

towards are: *Hotels* (3.80), *Services* (3.80), *Social Events* (3.71), *Sciences* (3.69) and *Gastronomy* (3.69). On the opposite side, it can be found: *Clothing* (3.32), *Technology* (3.31), *Tourism* (3.26), *Measures* (3.21) and *Weather and Meteorology* (3.04).

Re-Discover	Average Polarity
Services	3,73
Gastronomy	3,72
Hotels	3,70
Social Events	3,65
Sciences	3,61
Culture	3,57
Sports	3,56
Lifestyle	3,56
People	3,51
Location	3,49
Education and Justice	3,44
Religion	3,42
Travel	3,38
Biology	3,37
Weather and Meteorology	3,35
Products	3,33
Geography	3,28
Clothing	3,27
Measures	3,27
Tourism	3,22
Technology	3,20

Finally, in the last table it is possible to obtain the same data but regarding the *Re-Discover* experience. The five topics which the reviewers showed a more positive sentiment are: *Services* (3.73), *Gastronomy* (3.72), *Hotels* (3.70), *Social Events* (3.65) and *Sciences* (3.61). On the contrary, it can be found *Geography* (3.28), *Clothing* (3.27), *Measures* (3.27), *Tourism* (3.22) and *Technology* (3.20).

ANNEX 8.30 – CROSSMATCH BETWEEN *TSA* AND *CATEGORIES*



From the results it can be seen that the *Restaurant* category is the one which the reviewers show the most positive sentiment towards – average polarity of 3.62. The topics regarding the *Hotel* category come second, with an average polarity of 3.58. The last two (and consequently the ones that the reviewers had the least positive sentiment towards) are *Leisure Activity* (3.49) and *Cultural Activity* (3.37).

Cultural Activity	Average Polarity
Hotels	3,92
Religion	3,59
Lifestyle	3,57
Gastronomy	3,50
Sports	3,47
Technology	3,46
Social Events	3,45
Location	3,44
Clothing	3,40
Services	3,40
Travel	3,38
Biology	3,38
People	3,38

Sciences	3,37
Culture	3,32
Products	3,30
Geography	3,30
Education and Justice	3,30
Tourism	3,19
Measures	3,17
Weather and Meteorology	2,98

It is possible to see, in the table above, the average polarity of the 21 topics regarding the *Cultural Activity* category. As it is easily seen, the five topics that urged the most positive sentiments in the reviewers were: *Hotels* (3.92), *Religion* (3.59), *Lifestyle* (3.57), *Gastronomy* (3.50) and *Sports* (3.47). The ones that triggered the least positive sentiments were: *Geography* (3.30), *Education and Justice* (3.30), *Tourism* (3.19), *Measures* (3.17) and *Weather and Meteorology* (2.98).

Hotel	Average Polarity
Sciences	3,77
Hotels	3,76
Services	3,74
Social Events	3,73
Gastronomy	3,68
Location	3,67
Sports	3,61
Biology	3,56
Products	3,51
Education and Justice	3,47
People	3,43
Geography	3,39
Clothing	3,37
Culture	3,35
Technology	3,33
Measures	3,32
Travel	3,31
Tourism	3,27
Lifestyle	3,22
Weather and Meteorology	3,02
Religion	3,00

Moreover, in the output shown above, it can be seen the same results but according to the *Hotel* category. In it, it is possible to see that the five topics that triggered the most positive sentiments were: *Sciences* (3.77), *Hotels* (3.76), *Services* (3.74), *Social Events* (3.73) and *Gastronomy* (3.68). On the opposite side, it can be found *Travel* (3.31), *Tourism* (3.27), *Lifestyle* (3.22), *Weather and Meteorology* (3.02) and *Religion* (3.00).

Leisure Activity	Average Polarity
Religion	4,00
Sciences	3,83
Sports	3,83
Social Events	3,80
Hotels	3,80
Gastronomy	3,67
People	3,63
Culture	3,60
Education and Justice	3,56
Location	3,49
Services	3,49
Travel	3,39
Tourism	3,37
Products	3,37
Biology	3,28
Weather and Meteorology	3,24
Geography	3,21
Clothing	3,20
Measures	3,19
Lifestyle	3,00
Technology	2,92

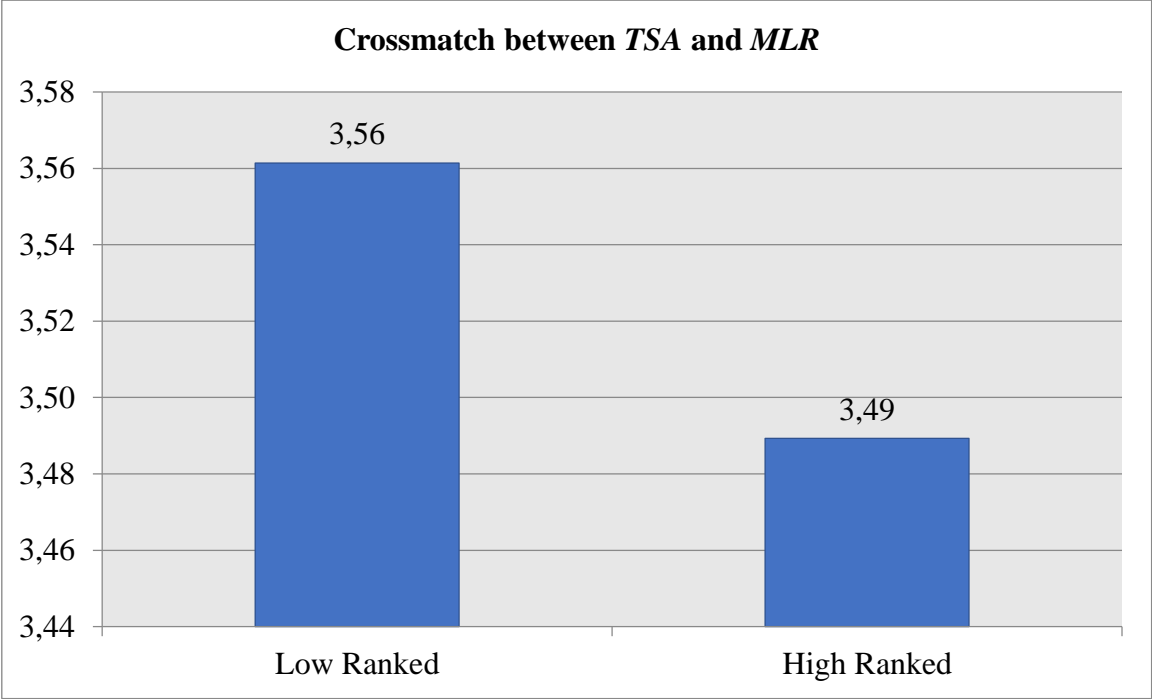
Additionally, in table presented above shows the average polarity of the 21 topics appears according to the *Leisure Activity* category. The five topics with the highest score are *Religion* (4.00), *Sciences* (3.83), *Sports* (3.83), *Social Events* (3.80) and *Hotels* (3.80). The five ones in the end of the table are *Geography* (3.21), *Clothing* (3.20), *Measures* (3.19), *Lifestyle* (3.00) and *Technology* (2.92).

Restaurant	Average Polarity
Sports	4,00
Services	3,93
Gastronomy	3,73

Lifestyle	3,71
Hotels	3,68
Social Events	3,67
Travel	3,65
Education and Justice	3,64
Location	3,62
Sciences	3,61
People	3,54
Culture	3,54
Weather and Meteorology	3,51
Biology	3,43
Clothing	3,43
Products	3,43
Measures	3,42
Technology	3,40
Geography	3,19
Tourism	3,16
Religion	3,00

Finally, it is possible to do the same analysis but regarding the *Restaurant* category (table above). The five topics that created a more positive sentiment in the reviewers were: *Sports* (4.00), *Services* (3.93), *Gastronomy* (3.73), *Lifestyle* (3.71) and *Hotels* (3.68). On the contrary, the five that were a “not so positive sentiment” were: *Measures* (3.42), *Technology* (3.40), *Geography* (3.19), *Tourism* (3.16) and *Religion* (3.00).

ANNEX 8.31 – CROSSMATCH BETWEEN *TSA* AND *MLR*



In *Scheme 78* it is possible to see that the topics concerning the *Low Ranked Reviewers* created a more positive sentiment (3.56) in the reviewer’s experiences in the island, rather than the topics involving the *High Ranked reviewers* (3.49).

High Ranked	Average Polarity
Hotels	3,82
Services	3,73
Gastronomy	3,68
Religion	3,67
Sciences	3,65
Sports	3,58
Lifestyle	3,55
Education and Justice	3,50
Location	3,48
People	3,46
Social Events	3,44
Technology	3,44
Clothing	3,38
Geography	3,36
Travel	3,35
Culture	3,34
Biology	3,33
Products	3,32

Weather and Meteorology	3,25
Tourism	3,20
Measures	3,17

Moreover, in the table above it can be found the average polarity regarding to the 21 topics according to the *High Ranked membership level of reviewers*. The five topics that for this type of reviewers create a more positive sentiment were: *Hotels* (3.82), *Services* (3.73), *Gastronomy* (3.68), *Religion* (3.67) and *Sciences* (3.65). The ones with a less positive sentiment are: *Biology* (3.33), *Products* (3.32), *Weather and Meteorology* (3.25), *Tourism* (3.20) and *Measures* (3.17).

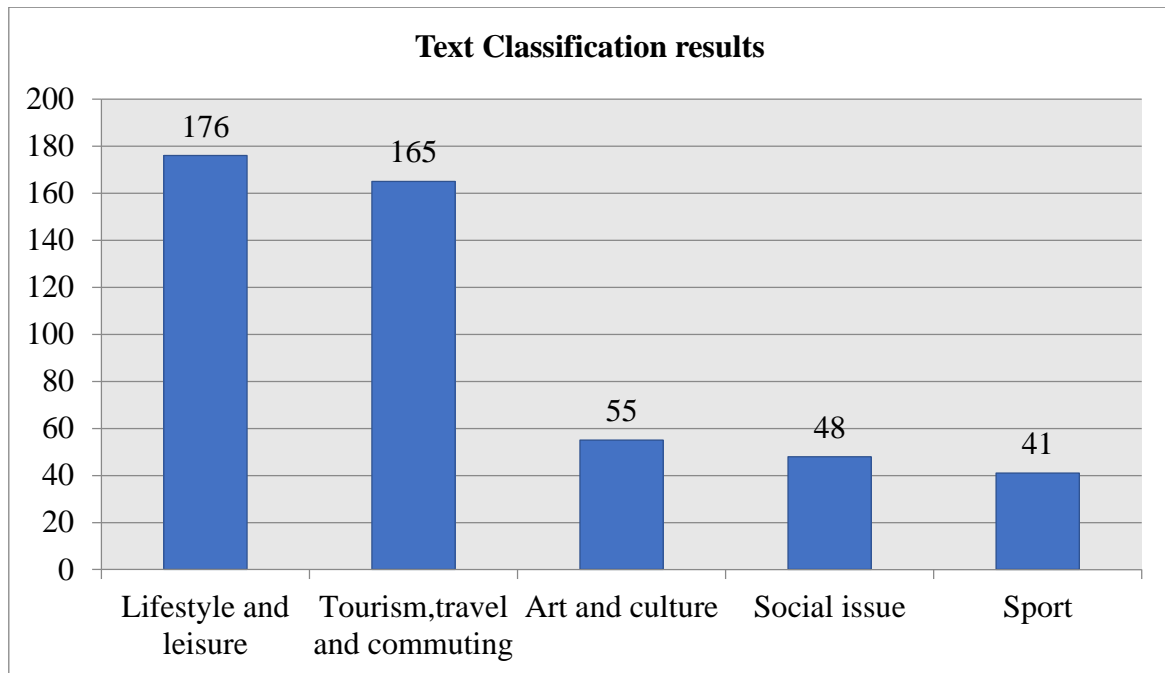
Low Ranked	Average Polarity
Social Events	3,75
Services	3,74
Hotels	3,73
Gastronomy	3,70
Sciences	3,69
Location	3,66
Sports	3,66
People	3,53
Culture	3,52
Religion	3,50
Products	3,48
Biology	3,47
Education and Justice	3,43
Travel	3,40
Lifestyle	3,33
Clothing	3,33
Measures	3,31
Tourism	3,26
Geography	3,25
Technology	3,14
Weather and Meteorology	3,13

To finalize, in the last table it can be found the same 21 topics but regarding the *Low Ranked reviewers*. The five topics which urged a more positive sentiment in the reviewer's experiences were: *Social Events* (3.75), *Services* (3.74), *Hotels* (3.73), *Gastronomy* (3.70) and *Sciences* (3.69). On the opposite side, appear *Measures* (3.31), *Tourism* (3.26), *Geography* (3.25), *Technology* (3.14) and *Weather and Meteorology* (3.13).

ANNEX 9 – *BERMUDA'S* TEXT MINING RESULTS

- Every *Figure* or *Table* displayed in this chapter was *own elaborated*.

ANNEX 9.1 – TEXT CLASSIFICATION RESULTS



ANNEX 9.2 – CROSSMATCH BETWEEN *TEXT CLASSIFICATION* AND *TEM*

TEM (Text Classification)	Count
Holist	
lifestyle and leisure	5
art and culture	3
Knowledge Seeker	
lifestyle and leisure	35
tourism, travel and commuting	29
art and culture	24
Pure Pleasure	
lifestyle and leisure	37
tourism, travel and commuting	21
Re-Discover	
tourism, travel and commuting	113
lifestyle and leisure	99

social issue	33
sport	31

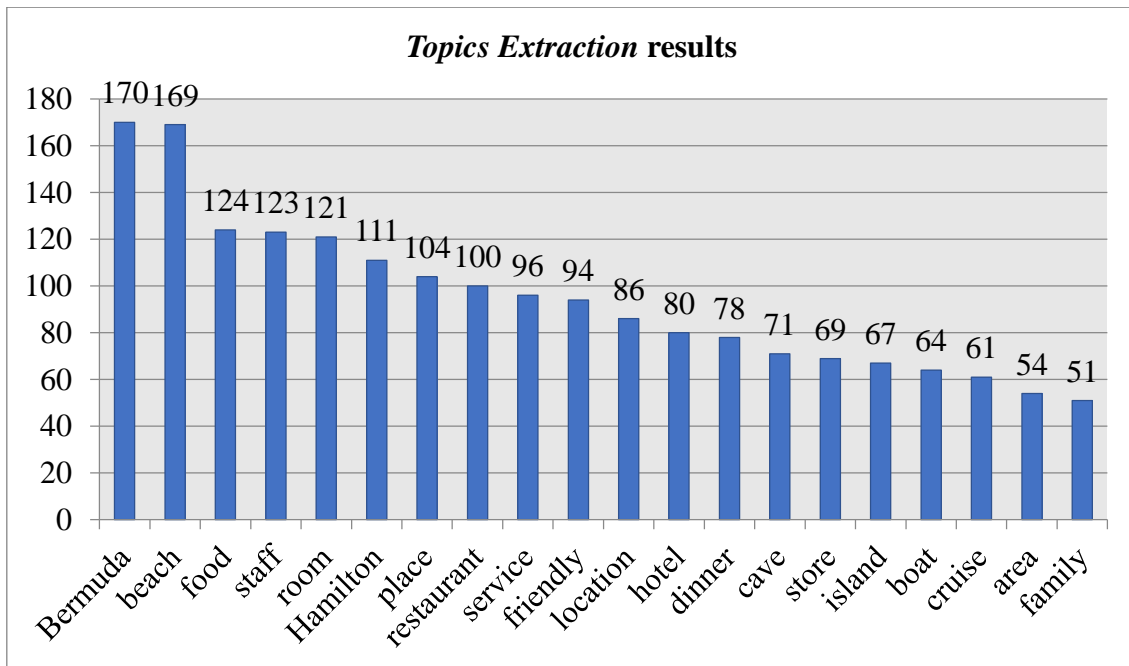
ANNEX 9.3 – CROSSMATCH BETWEEN *TEXT CLASSIFICATION* AND *CATEGORIES*

Categories (Text Classification)	Count
Cultural Activity	
tourism, travel and commuting	49
art and culture	27
lifestyle and leisure	24
Hotel	
lifestyle and leisure	48
tourism, travel and commuting	45
Leisure Activity	
tourism, travel and commuting	60
lifestyle and leisure	31
sport	26
Restaurant	
lifestyle and leisure	73

ANNEX 9.4 – CROSSMATCH BETWEEN *TEXT CLASSIFICATION* AND *MLR*

Membership Level Reviewers	Count
High Ranked	
lifestyle and leisure	80
tourism, travel and commuting	79
art and culture	27
Low Ranked	
lifestyle and leisure	96
tourism, travel and commuting	86
social issue	34
art and culture	28
sport	28

ANNEX 9.5 – TOPICS EXTRACTION RESULTS



The analysis of the *Topics Extraction* regarding *Bermuda* culminated in a total of 6906 topics – either entities or concepts, which were analysed. The results that can be found in attachment 46 (Scheme 85) show a graphic representation of the 20 most important and mentioned topics according to the reviews extracted.

To facilitate writing and analysing the graphic, the topics will be gathered according to four groups.

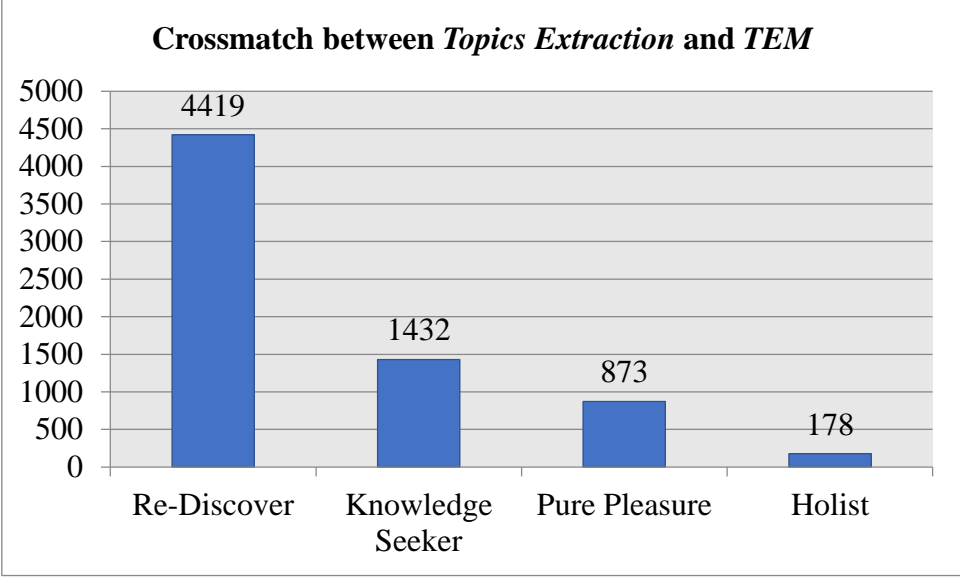
The first group comprises macro-locations, and there, it is possible to find the most mentioned topic “Bermuda” which was stated 170 times. Also it is possible to see “Hamilton” expressed 111 times, “place” found 104 times, “location” mentioned 86 times, “island” counting 67 times being expressed and “area” mentioned 54 times.

The second group deals with different types of activities, such as “beach” mentioned 169 times, “service” expressed 96 times, “cave” stated 71 times, “store” expressed 69 times, “boat” quantified in 64 uses and “cruise” stated 61 times.

The third group comprises accommodation and gastronomy, and it can find the following words: “food” (124 times), “room” (121 times), “restaurant” (100 times) and “hotel” (80 times).

The fourth group includes topics related with people, such as: “staff” mentioned 123 times, “friendly” mentioned 94 times and “family” counting 51 times.

ANNEX 9.6 – CROSSMATCH BETWEEN *TOPICS EXTRACTION* AND *TEM*



TEM (Topics Extraction)	Count
Holist	
service	4
dinner	4
side	4
church	4
town	4
Pure Pleasure	
room	32
beach	30
food	22
Bermuda	21
Knowledge Seeker	
Bermuda	39
place	27
beach	27
room	24
Hamilton	22
Re-Discover	
beach	109
Bermuda	108
staff	85
food	81
Hamilton	78
restaurant	67
friendly	67

room	65
service	62
location	58

The first scheme that appears shows the number of topics found by the software in the different categories extracted. As it is possible to see, the *Re-Discover* experience was the one with the highest amount of topics analysed – 4419, followed by *Knowledge Seeker* 1432. Moreover, the *Pure Pleasure* experience can be found in third place counting 873 topics, and finally *Holist* with 178.

The table that can be found above shows the most important topics according to each experience.

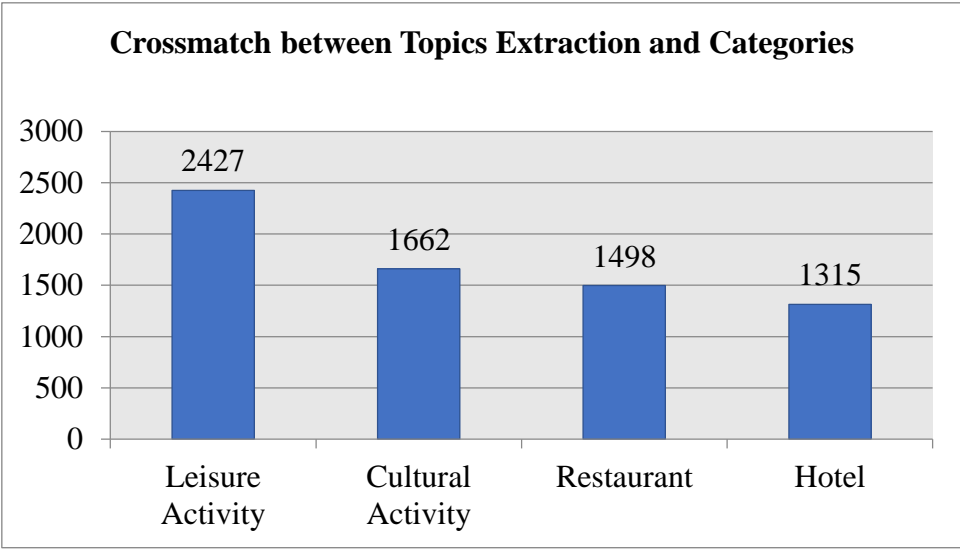
For instance, the *Holist* experience for having such a low number of topics studied has, as well, a low number on each of the most important topics. It was selected the topics that appear more often, respectively 4 times each, they are: “service”, “dinner”, “side”, “church” and “town”.

The *Pure Pleasure* experience contains four major topics, being “room” used 32 times the one with the highest score. Moreover, it can be found “beach” accounting 30 uses, “food” used 22 times and “Bermuda” written 21 times.

The *Knowledge Seeker* experience includes five main topics, they are: “Bermuda” used 39 times, “place” found 27 times, “beach” also found 27 times, “room” written 24 and “Hamilton” totalling 22 uses.

Finally, the *Re-Discover* experience was the one containing a higher number of topics with a significant preponderance. In the table it can be counted 10 topics, being: “beach” used 109 times, “Bermuda” written 108 times, “staff” with 85 uses, “food” totalling 81 times, “Hamilton” used 78 times, “restaurant” found 67 times, “friendly” totalizing 67 uses, “room” used 65 times, “service” found 62 times and finally, “location” with 58 uses.

ANNEX 9.7 – CROSSMATCH BETWEEN *TOPICS EXTRACTION* AND *CATEGORIES*



Categories (Topics Extraction)	Count
Cultural Activity	
Bermuda	41
beach	33
place	30
room	25
Hotel	
beach	37
room	32
food	31
Bermuda	28
place	26
Restaurant	
beach	45
cave	43
Bermuda	35
Hamilton	28
dolphin	26
friendly	26
Leisure Activity	
Bermuda	66
food	60
staff	57
beach	54

The figure shows the number of topics that were analysed by the software according to each category of reviews extracted. It is possible to see that the *Leisure Activities* were the ones that involved a higher number of topics with 2427 being found, followed by the *Cultural Activities* with 1662 topics. In third place can be found *Restaurant* accounting 1498 topics, and in last place *Hotel* with 1315 topics.

Moreover, in the table presented it can be found the topics with a significant preponderance regarding each category.

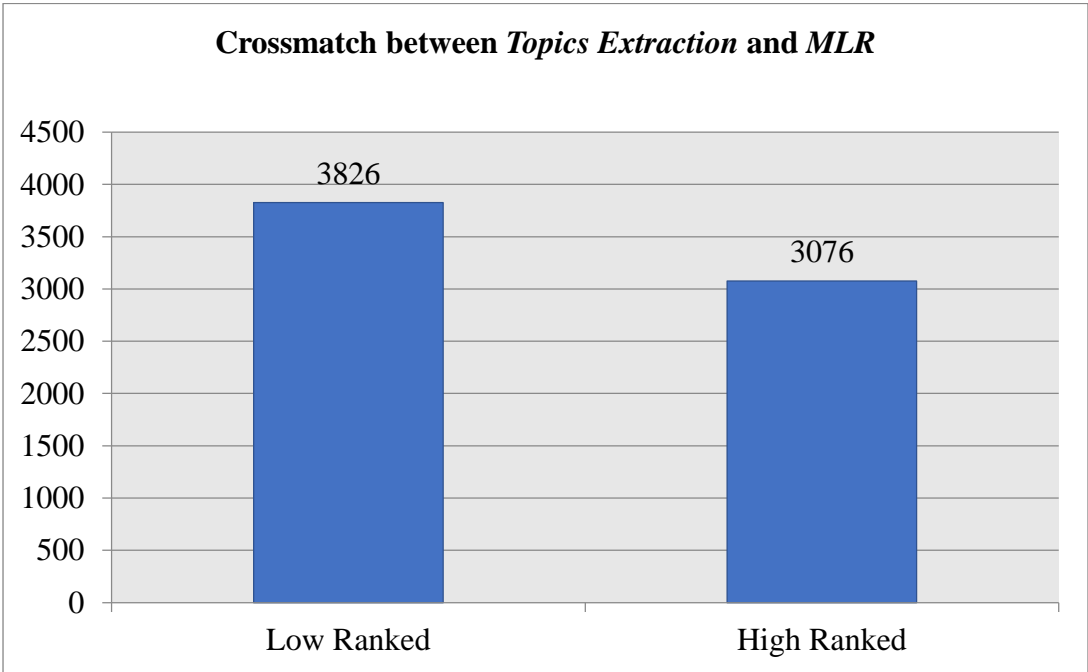
The Cultural Activity contains four major topics – “Bermuda” counted 41 times, “beach” used 33 times, “place” written 30 times and “room” mentioned 25 times.

Secondly, the Hotel category includes five major topics that can be found in the following order: “beach” mentioned 37 times, “room” used 32 times, “food” found 31 times, “Bermuda” used 28 times and “place” mentioned 26 times.

Furthermore, the Restaurant category was found to have six major topics: “beach” (45 times), “cave” (43 times), “Bermuda” (35 times), “Hamilton” (28 times), “dolphin” (26 times) and “friendly with the same amount as the previous one.

Finally, the Leisure Activity contains only four major topics, being: “Bermuda” used 66 times, “food” mentioned 60 times, “staff” accounting 57 times and “beach” totalling 54 times.

ANNEX 9.8 – CROSSMATCH BETWEEN TOPICS EXTRACTION AND MLR



MLR (Topics Extraction)	Count
High Ranked	
Bermuda	83
beach	76
staff	57
room	57
place	57
restaurant	44
food	44
Hamilton	44
service	37
hotel	37
Low Ranked	
beach	93
Bermuda	87
food	80
Hamilton	67
staff	66
room	64
friendly	61
service	59
restaurant	56
location	55

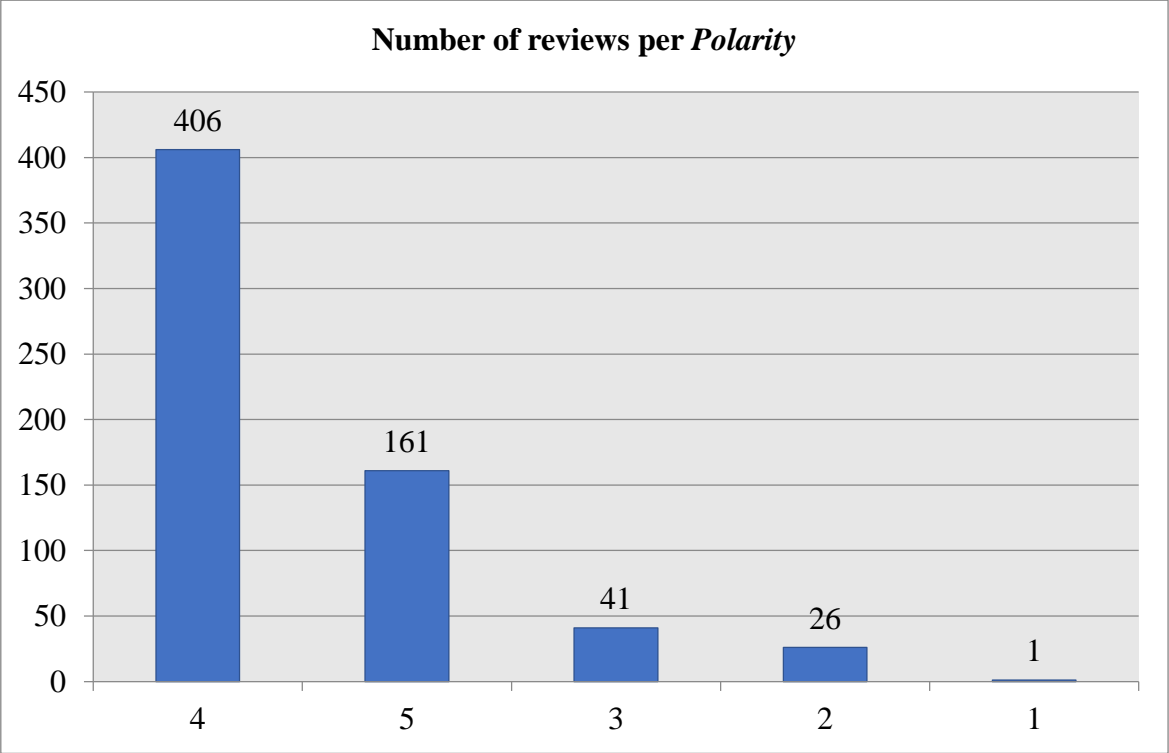
In the figure it can be found the amount of topics regarding the *high/low ranked reviewers* reviews. The *Low Ranked Reviewers* reviews were found to contain 3826 topics, while the *High Ranked* ones only 3076.

In the table it can be seen the most important topics according to each type of *membership level of reviewers*. For each type it was possible to select 10 topics with a significant preponderance.

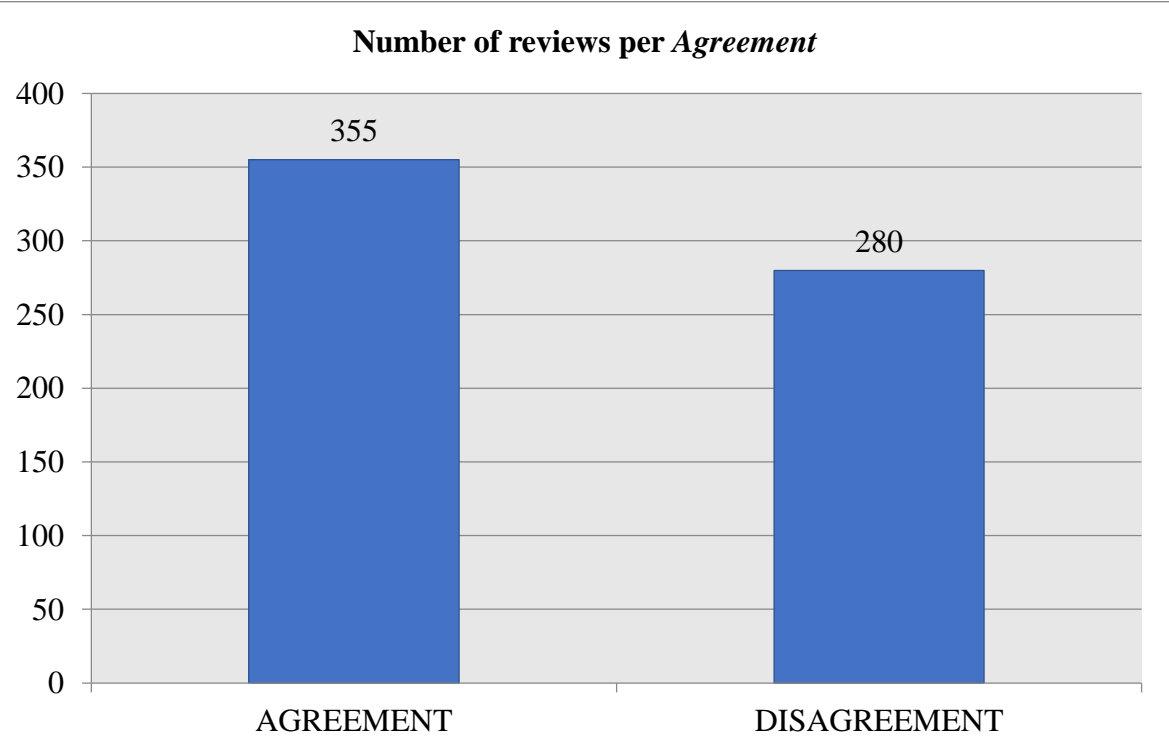
The *High Ranked Reviewers* contains the following major topics: “Bermuda” (83 times), “beach” (76), “staff” (57), “room” (57), “place” (57), “restaurant” (44), “food” (44), “Hamilton” (44), “service” (44) and “hotel” (37).

At last, the *Low Ranked Reviewers* contain: “beach” 93, “Bermuda” (87), “food” (80), “Hamilton” (67), “staff” (66), “room” (64), “friendly” (61), “service” (59), “restaurant” (56) and “location” (55).

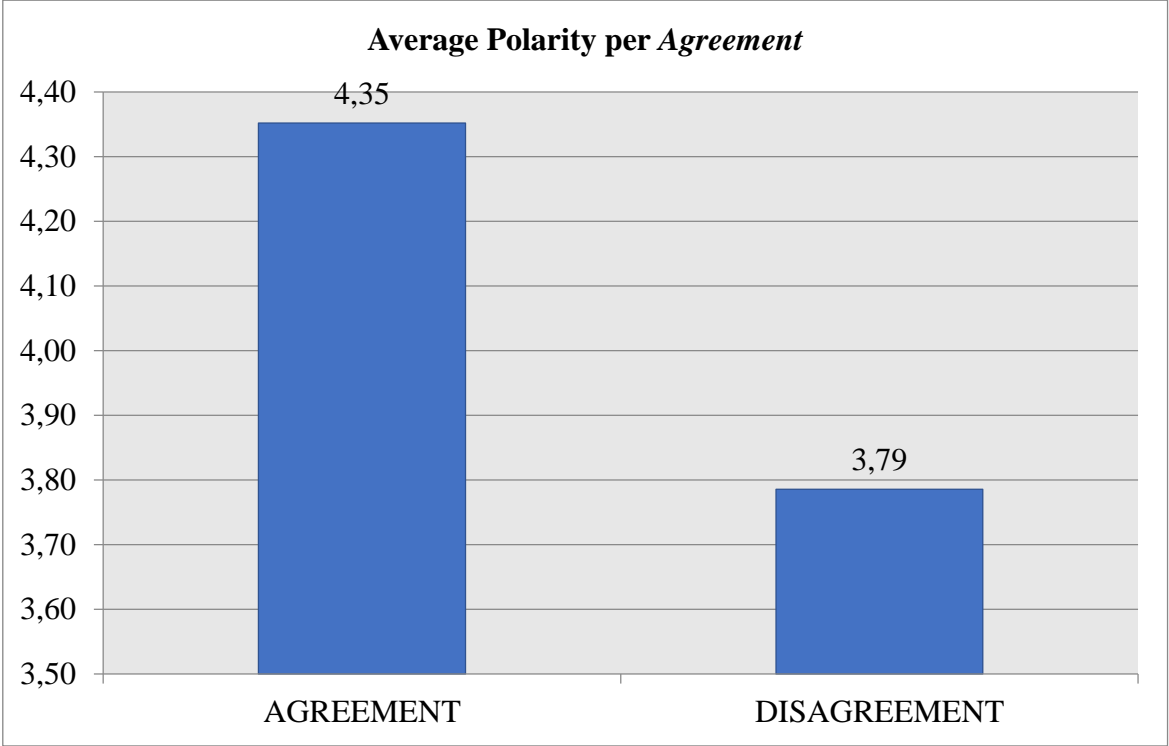
ANNEX 9.9 – NUMBER OF REVIEWS PER *POLARITY*



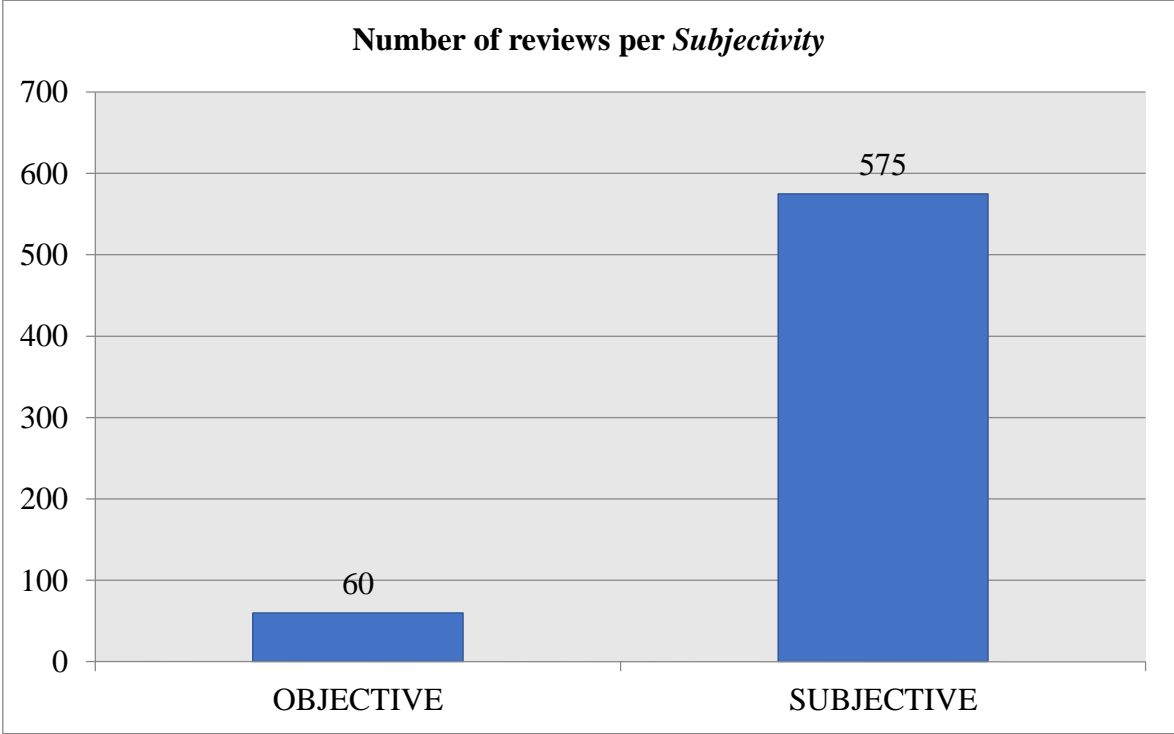
ANNEX 9.10 – NUMBER OF REVIEWS PER *AGREEMENT*



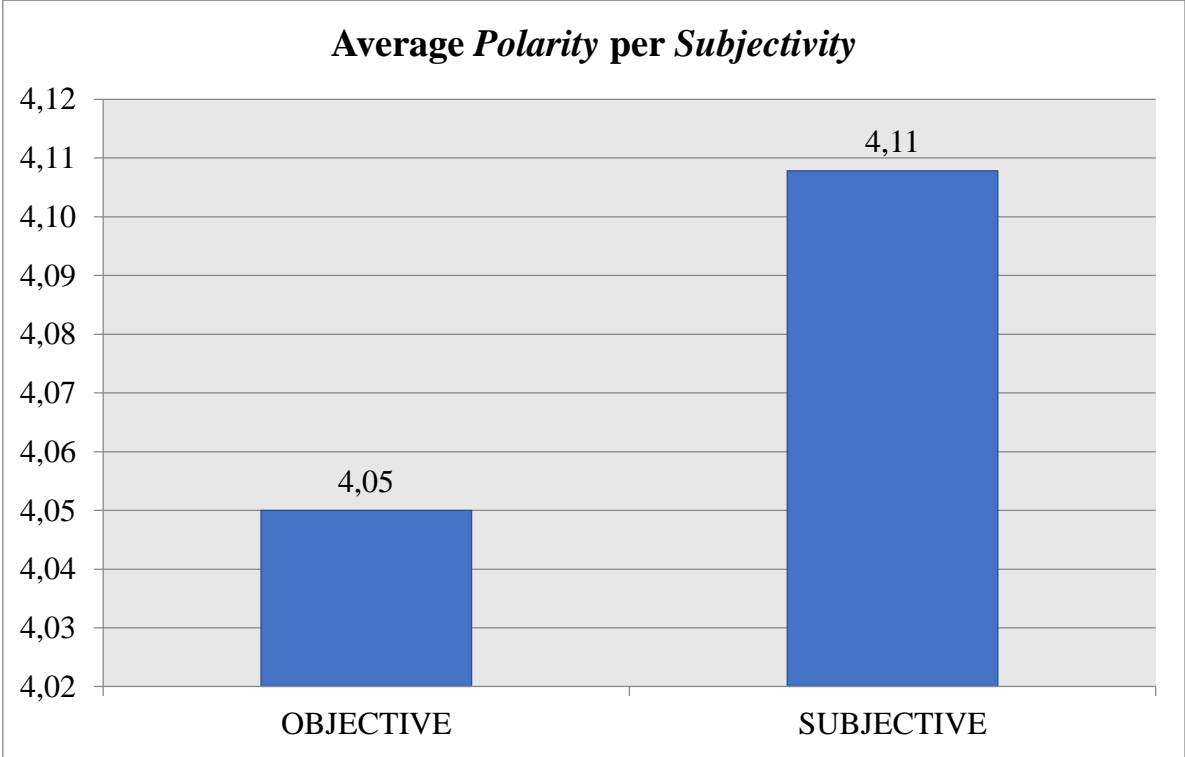
ANNEX 9.11 – AVERAGE POLARITY PER AGREEMENT



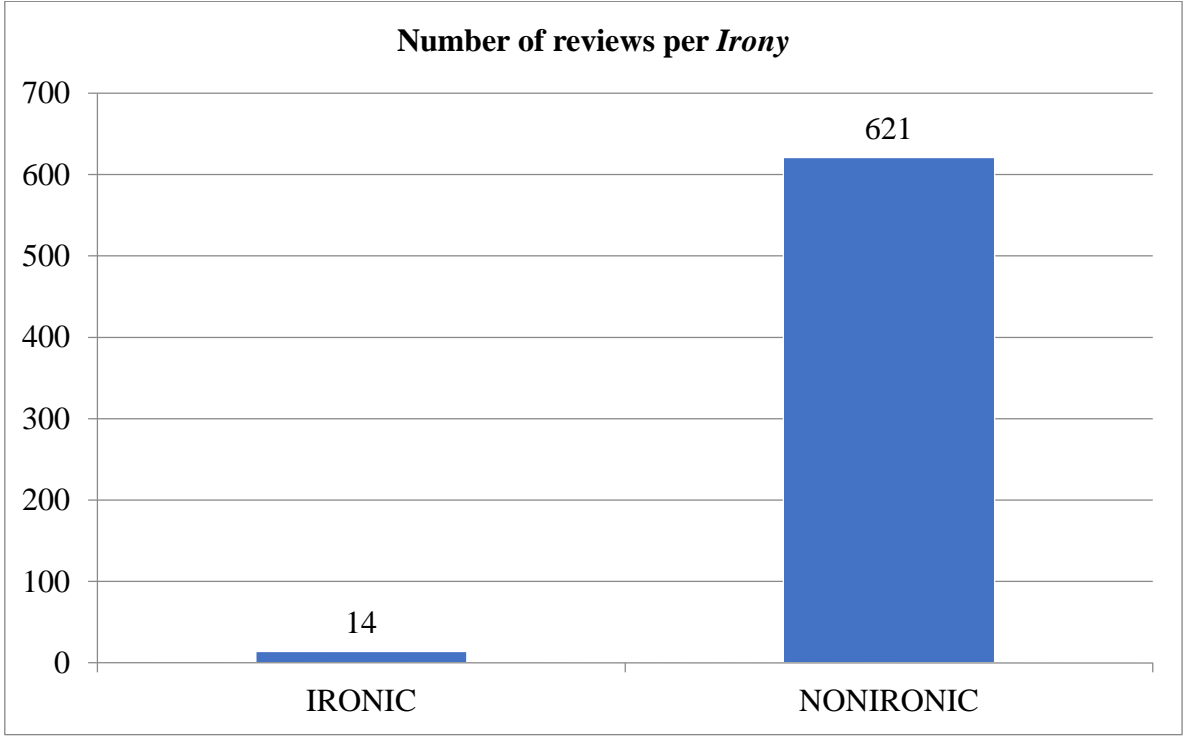
ANNEX 9.12 – NUMBER OF REVIEWS PER SUBJECTIVITY



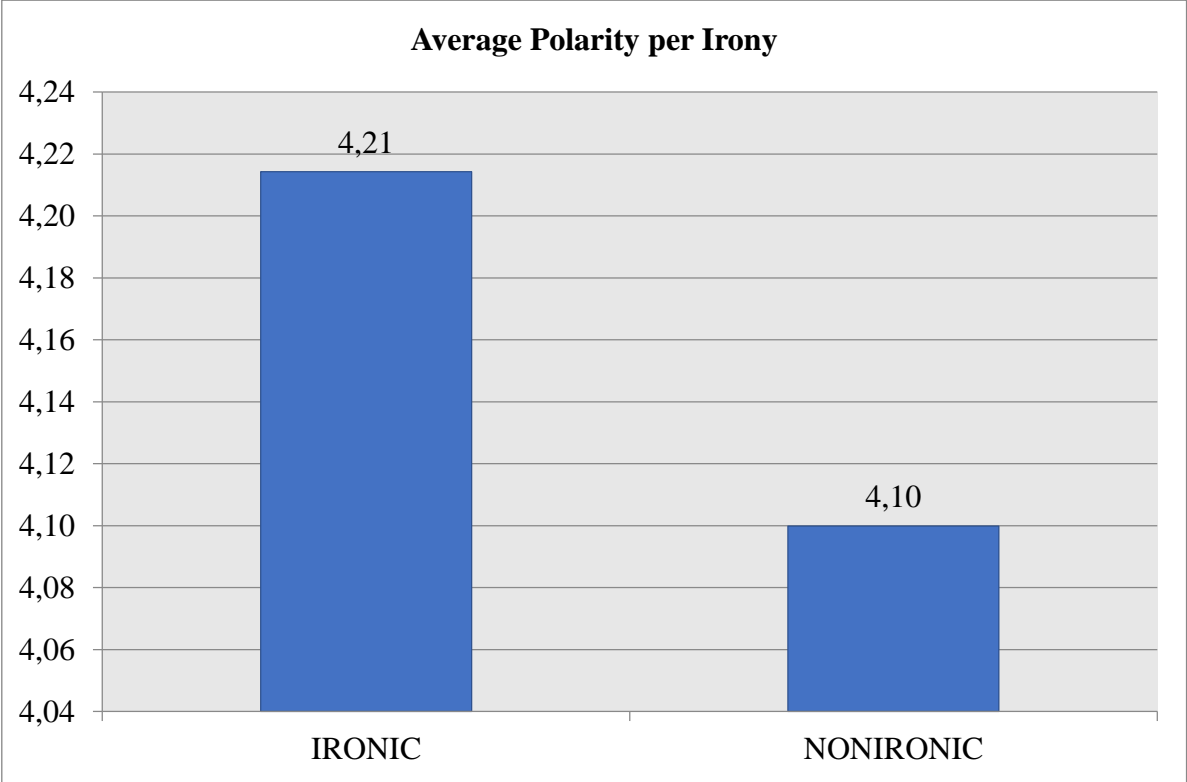
ANNEX 9.13 – AVERAGE POLARITY PER SUBJECTIVITY



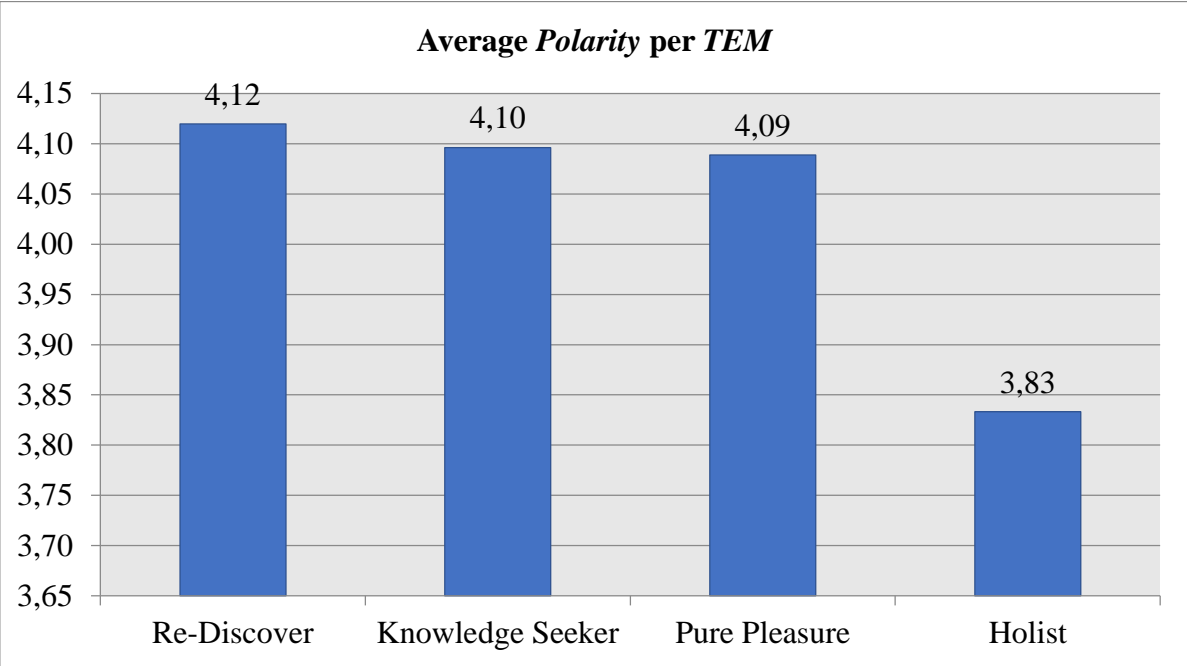
ANNEX 9.14 – NUMBER OF REVIEWS PER IRONY



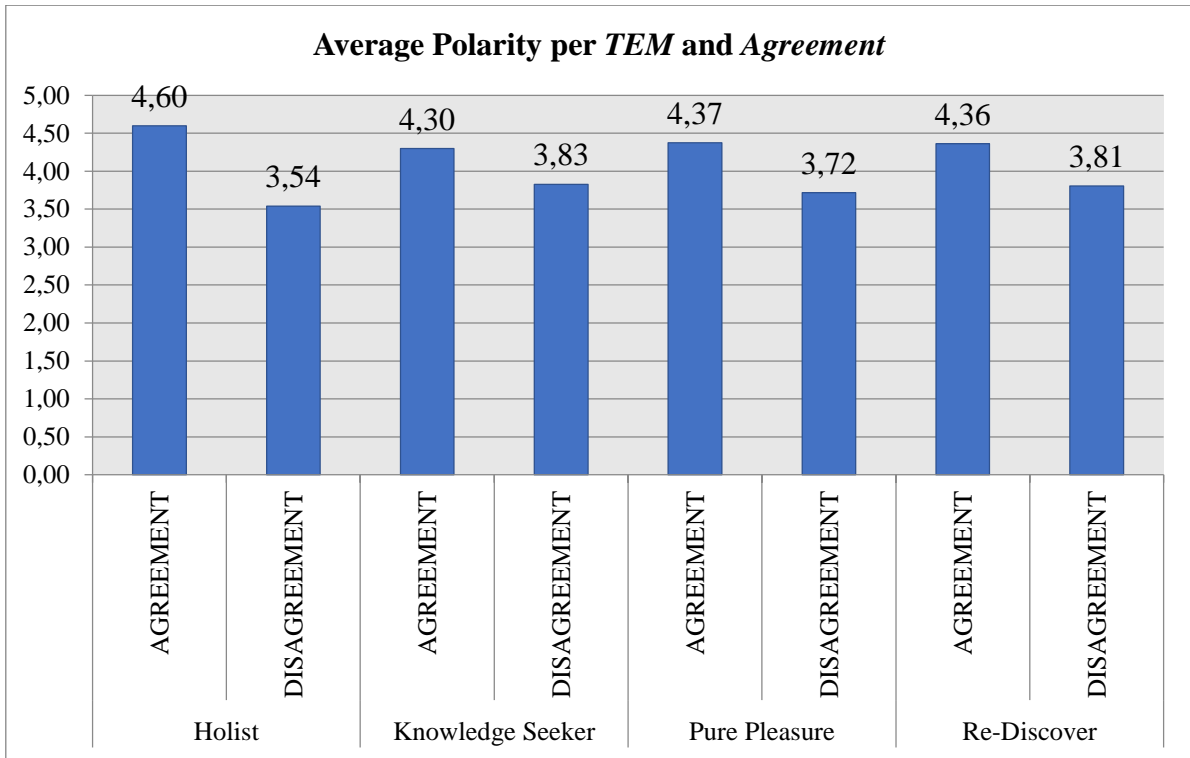
ANNEX 9.15 – AVERAGE POLARITY PER IRONY



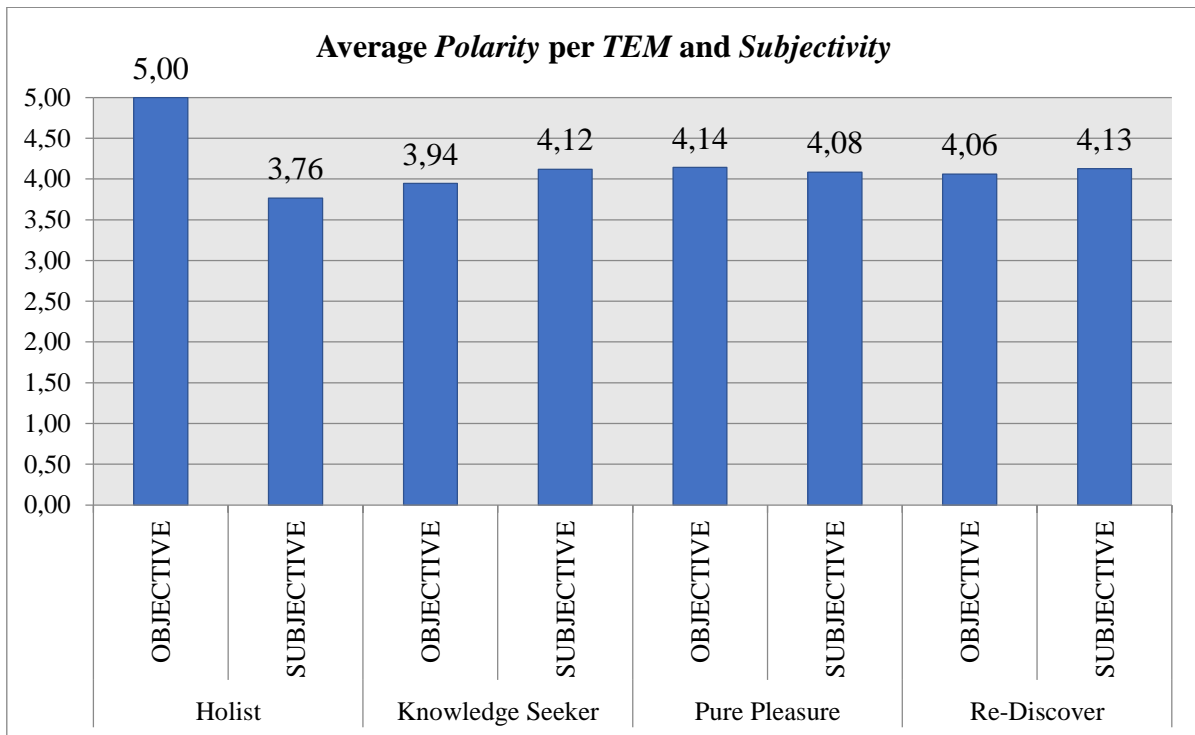
ANNEX 9.16 – AVERAGE POLARITY PER TOURISM EXPERIENCE



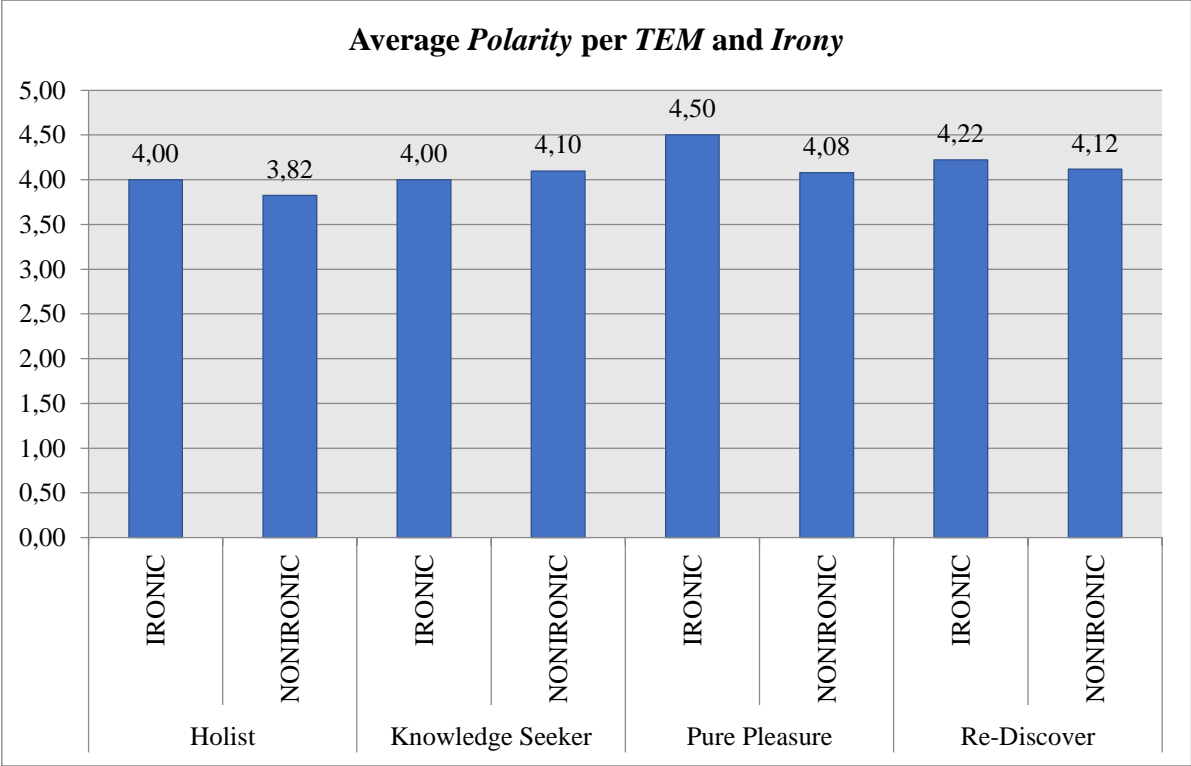
ANNEX 9.17 – AVERAGE POLARITY PER TEM AND AGREEMENT



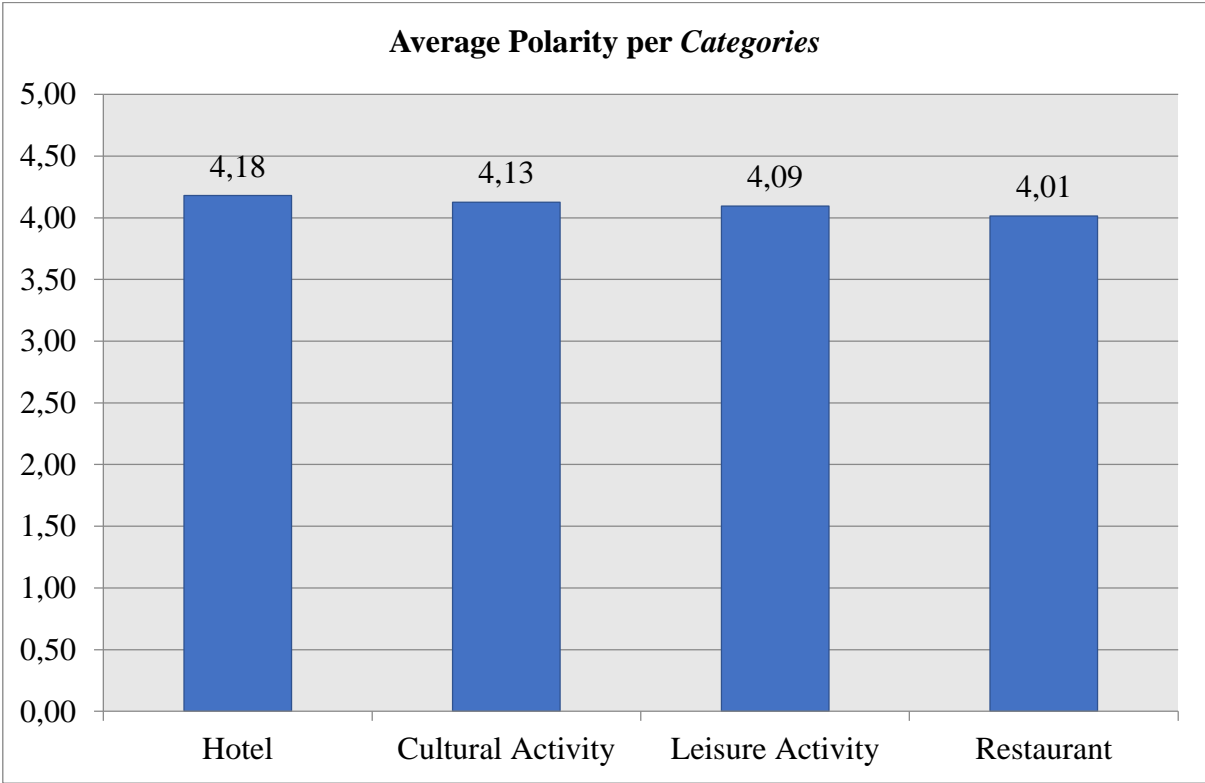
ANNEX 9.18 – AVERAGE POLARITY PER TEM AND SUBJECTIVITY



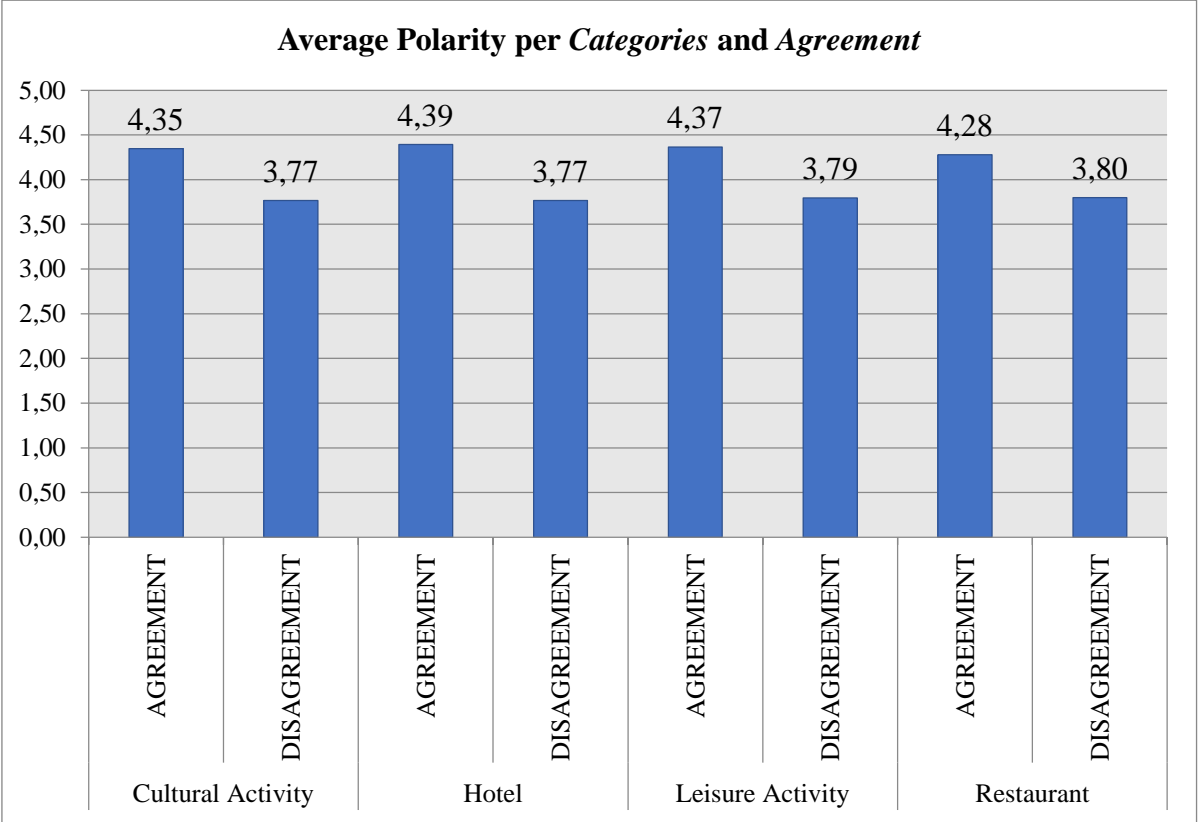
ANNEX 9.19 – AVERAGE POLARITY PER TEM AND IRONY



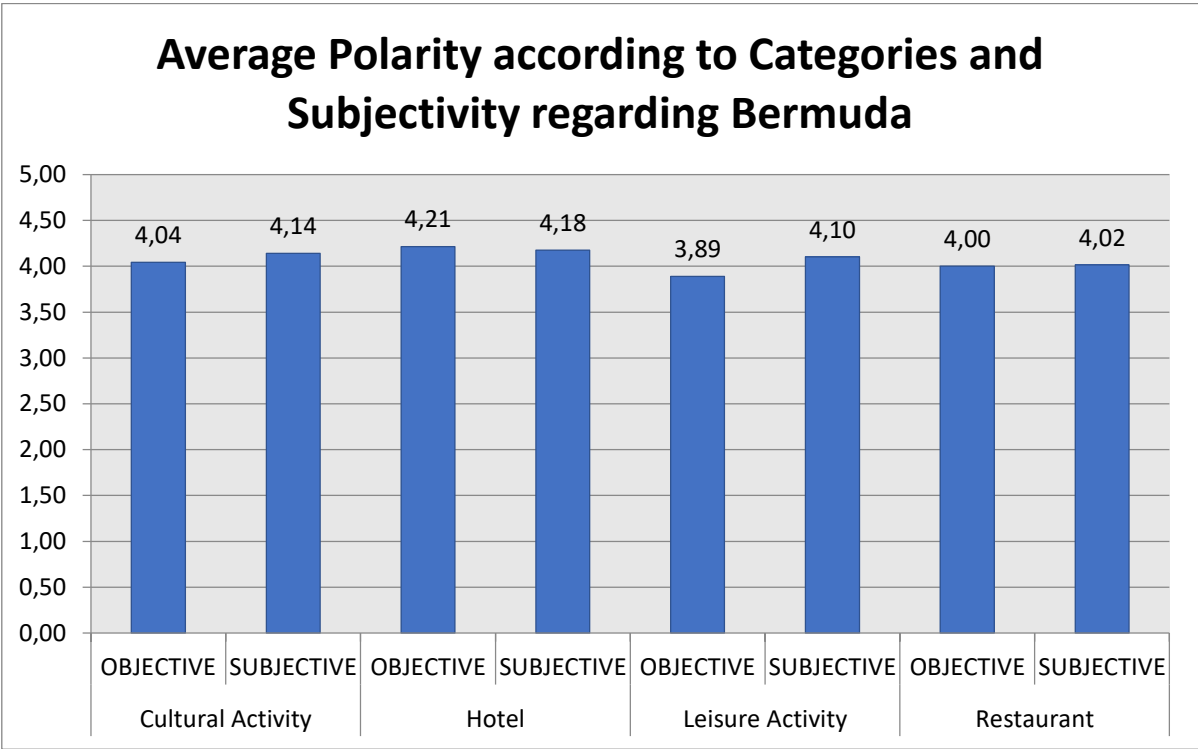
ANNEX 9.20 – AVERAGE POLARITY PER CATEGORIES



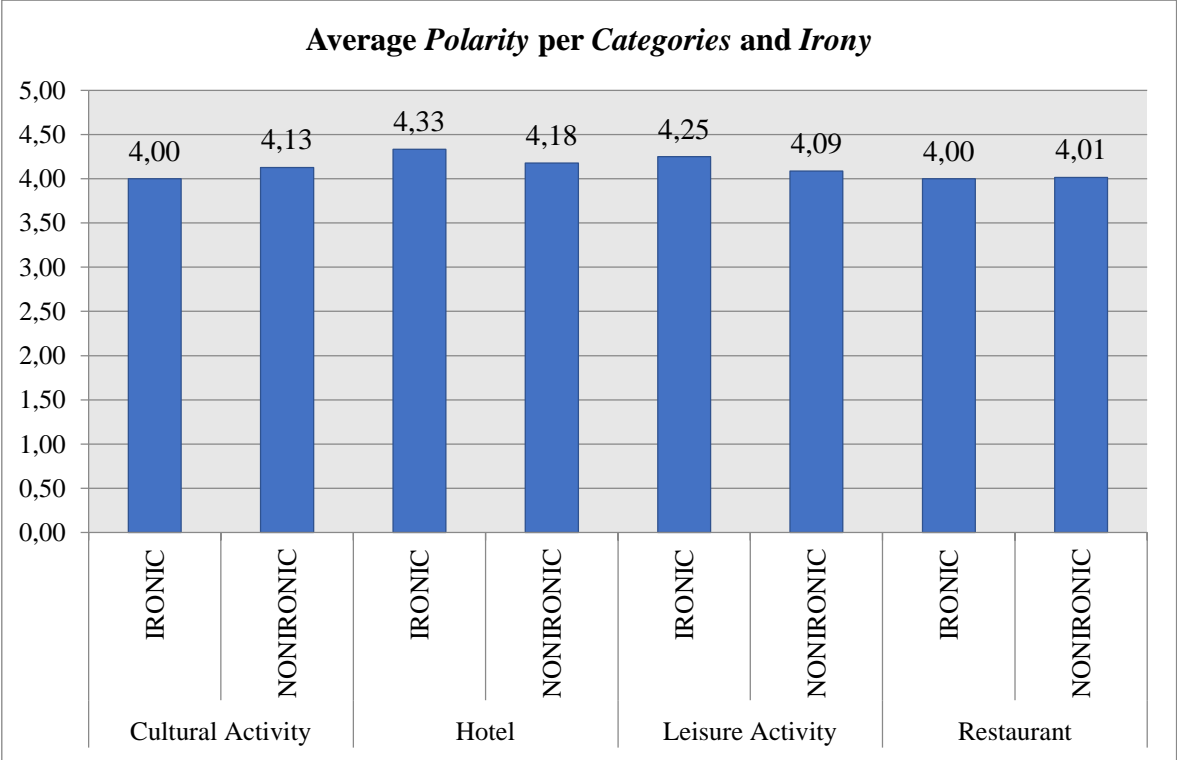
ANNEX 9.21 – AVERAGE POLARITY PER CATEGORIES AND AGREEMENT



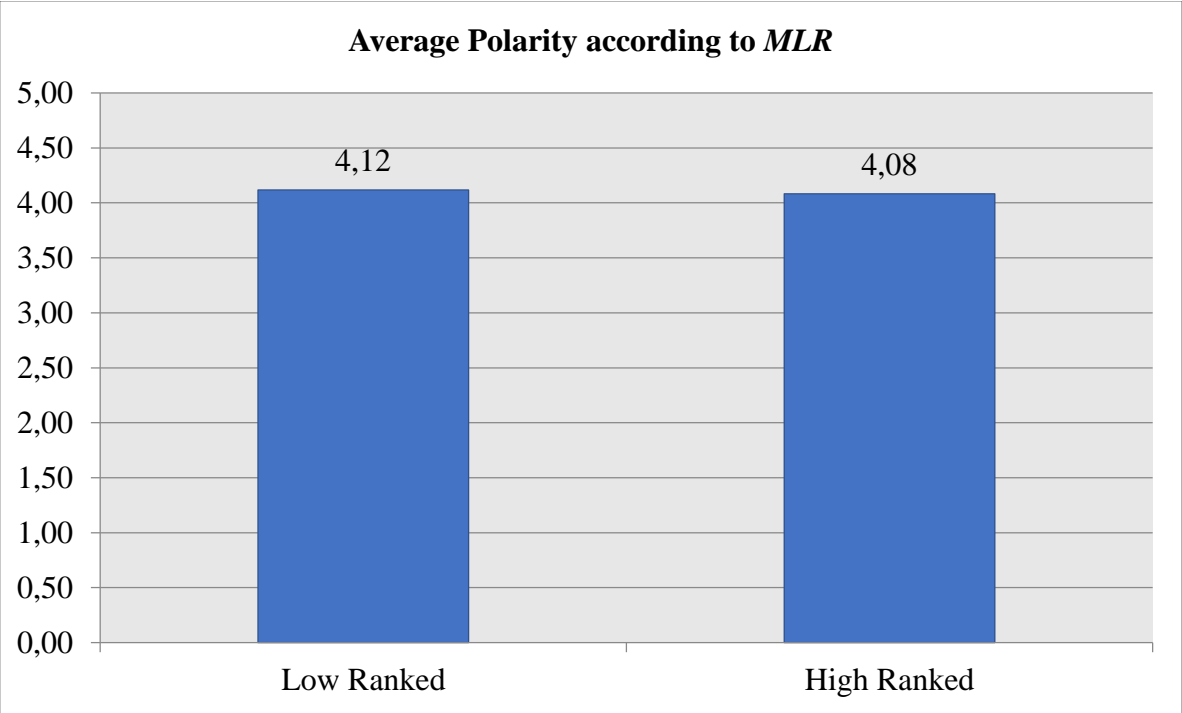
ANNEX 9.22 – AVERAGE POLARITY PER CATEGORIES AND SUBJECTIVITY



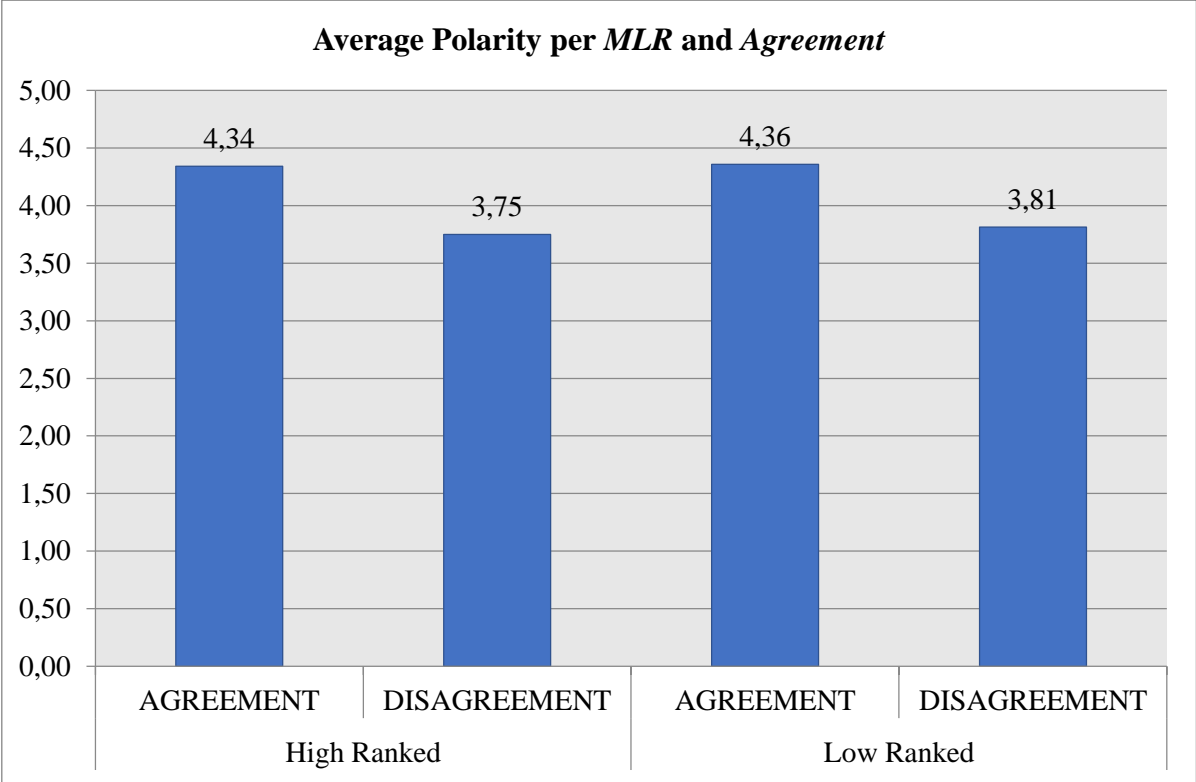
ANNEX 9.23 – AVERAGE POLARITY PER CATEGORIES AND IRONY



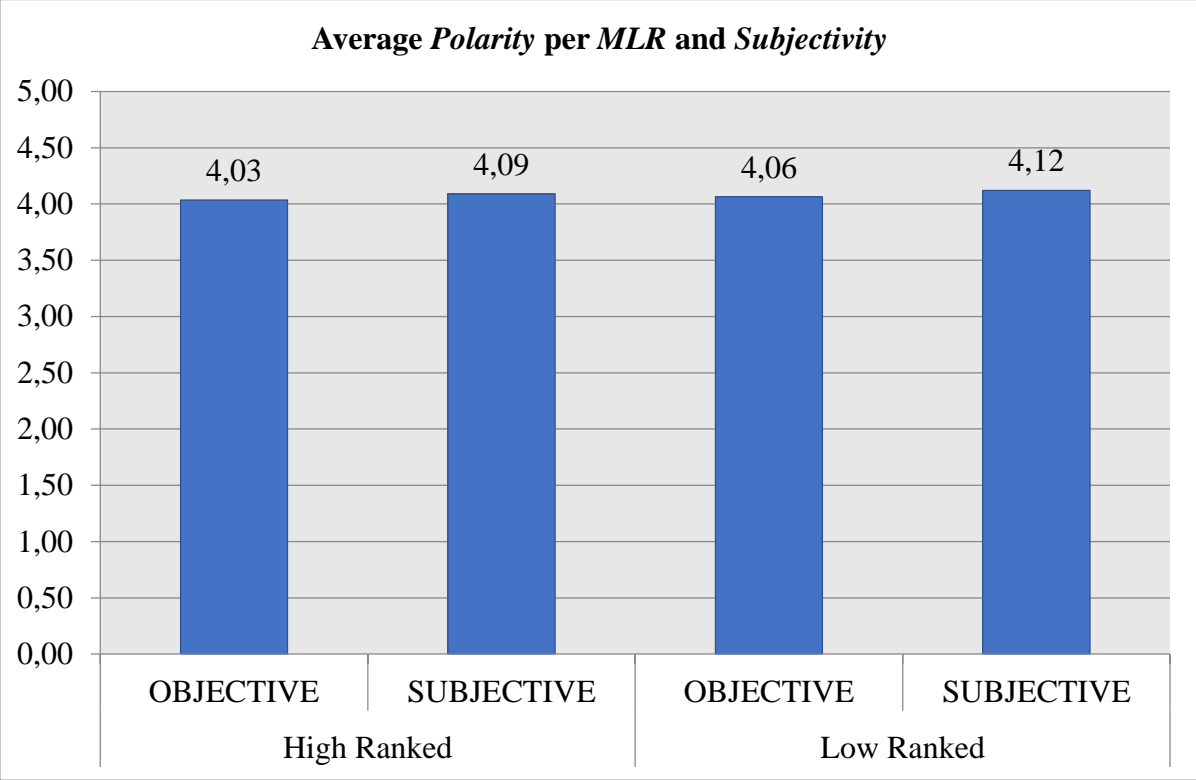
ANNEX 9.24 – AVERAGE POLARITY PER MEMBERSHIP LEVEL OF REVIEWERS



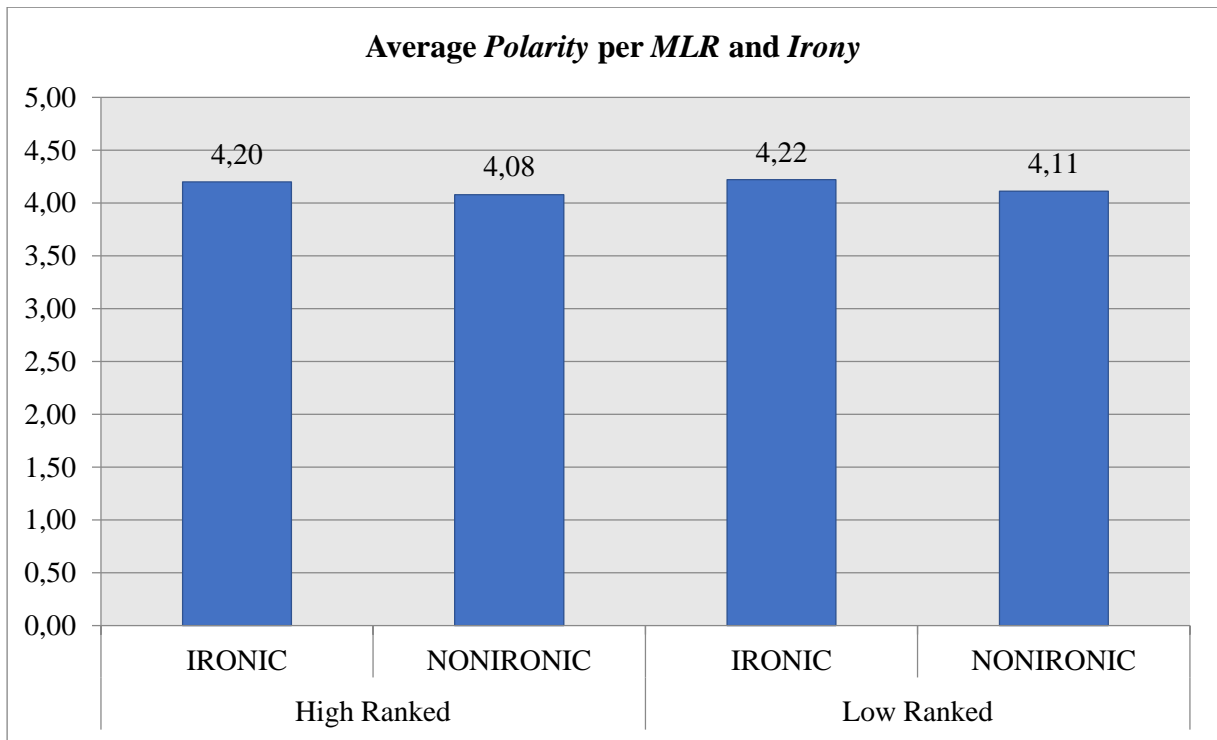
ANNEX 9.25 – AVERAGE POLARITY PER MLR AND AGREEMENT



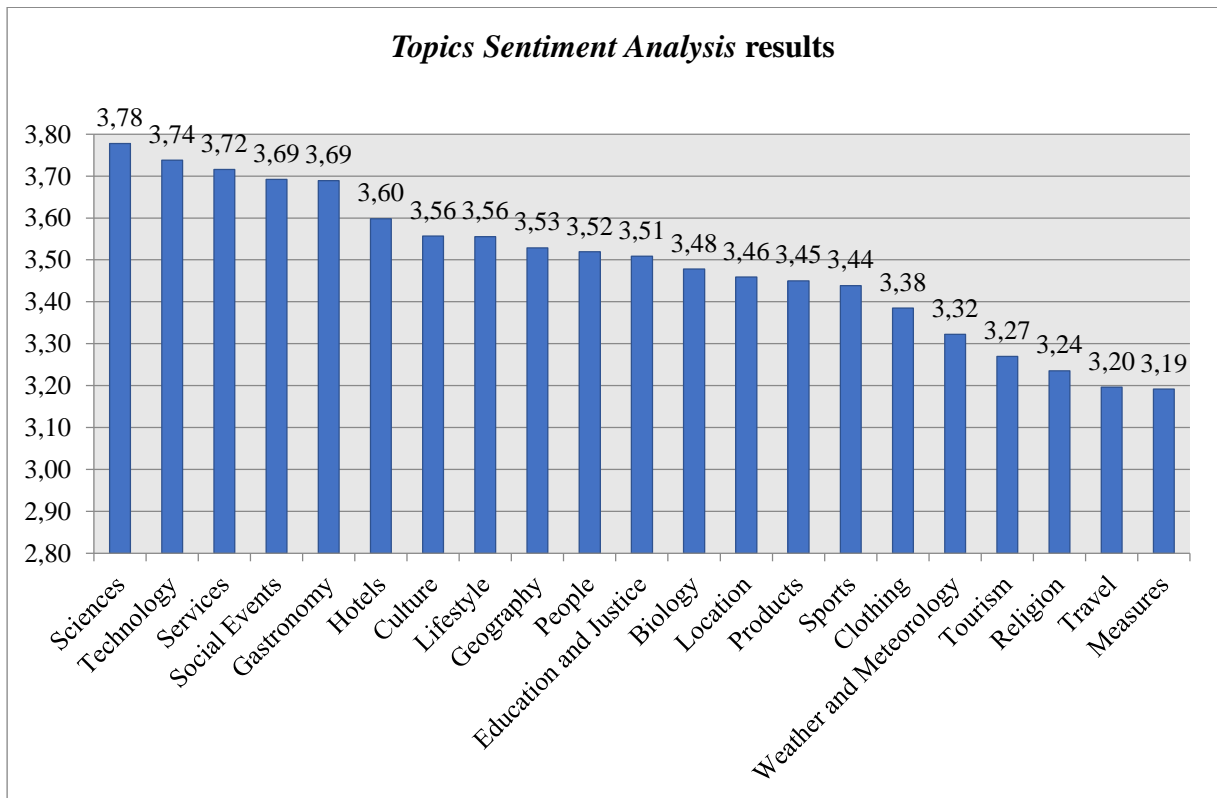
ANNEX 9.26 – AVERAGE POLARITY PER MLR AND SUBJECTIVITY



ANNEX 9.27 – AVERAGE POLARITY PER MLR AND IRONY



ANNEX 9.28 – TOPICS SENTIMENT ANALYSIS RESULTS



The graphic representation above shows a list of the most important and mentioned topics by the reviewers according to the software analysis, including a graphic representation about it.

Furthermore, one aspect that it is important to refer is that there were 893 concepts or entities – corresponding to 13.80% of the total amount of concepts, which the software was unable to identify to which topic category it would belong and therefore were not considered – meaning the results in attachment 57 were done using only the correctly identified topics.

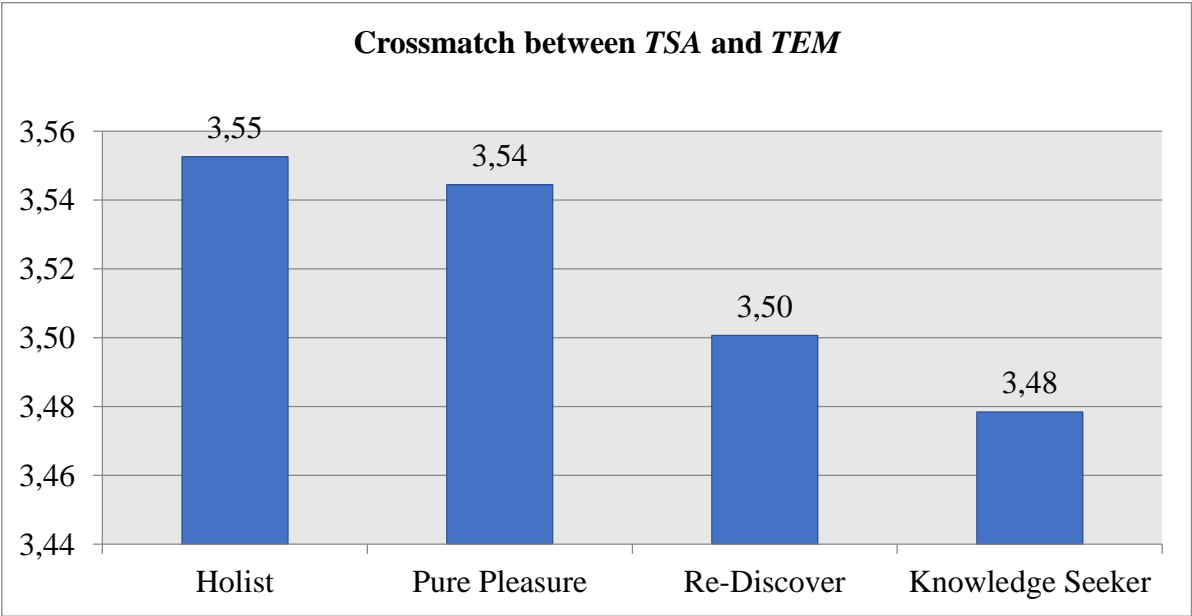
It is possible to see that “Sciences” was the topic that corresponded to the most positive sentiments lived by reviewers and mentioned on their reviews – average polarity of 3.78. It can be said that this topic was the most important one for the reviewers. It is followed by “Technology” and “Services” with 3.74 and 3.72, respectively.

From the fourth to the tenth place, it is possible to see “Social events” and “Gastronomy” both with 3.69, “Hotels” with 3.60, “Culture” with 3.56, “Lifestyle” with 3.56, “Geography” with 3.53 and “People” with 3.52.

Until the sixteenth place, it is possible to find: “Education and Justice” with 3.51, “Biology” with 3.48, “Location” with 3.46, “Products” with 3.45, “Sports” with 3.44 and “Clothing” with 3.38.

The last five topics, and therefore the five ones that the reviewers had the worst sentiment (from the ones that were presented) are: “Weather and Meteorology” with 3.32, “Tourism” with 3.27, “Religion” with 3.24, “Travel” with 3.20” and “Measures” with 3.19.

ANNEX 9.29 – CROSSMATCH BETWEEN *TSA* AND *TEM*



From the results it is possible to see that the *Holist* experience is the one with the topics with a higher average polarity (3.55), which means that the sentiments attributed from the reviewers to this type of experience were more positives than to the other ones. Although, it can be said that there are close results and the *Pure Pleasure* experience shows very similar positive sentiments – 3.54. These two are then followed by the Re-Discover experience with 3.50, and finally the experience which aroused the reviewers with the more negative sentiments was *Knowledge Seeker* (3.48).

Holist	Count
Social Events	3,70
Biology	3,51
Weather and Meteorology	3,37
People	3,00

Moreover, in the table above it is possible to find the average polarity of the topics found to be a part of the *Holist* experience. In this case, from the 21 topics already mentioned, only 4 were found to be mentioned by the reviewers. Social Events is the one with that aroused reviewers with the best positive sentiments (3.70), followed by Biology (3.51) and Weather and Meteorology (3.37). Finally, People was the topic that reviewers experiencing Holist found to create on them the most negative sentiments.

Pure Pleasure	Count
Hotels	4,00
Education and Justice	3,88
Services	3,81
Technology	3,69
Gastronomy	3,67
Clothing	3,67
People	3,60
Culture	3,58
Products	3,52
Location	3,48
Geography	3,43
Measures	3,31
Travel	3,29
Tourism	3,10
Weather and Meteorology	2,00

Furthermore, in the table shown above, it can be found the same results but according to the *Pure Pleasure* experience. The five major topics, the ones that aroused the reviewers with the most positive sentiments were: Hotels (4.00), Education and Justice (3.88), Services (3.81), Technology (3.69) and Gastronomy (3.67). On the opposite side, the ones that manifested the most negative sentiments on the reviewers were: Geography (3.43), Measures (3.31), Travel (3.29), Tourism (3.10) and Weather and Meteorology (2.00).

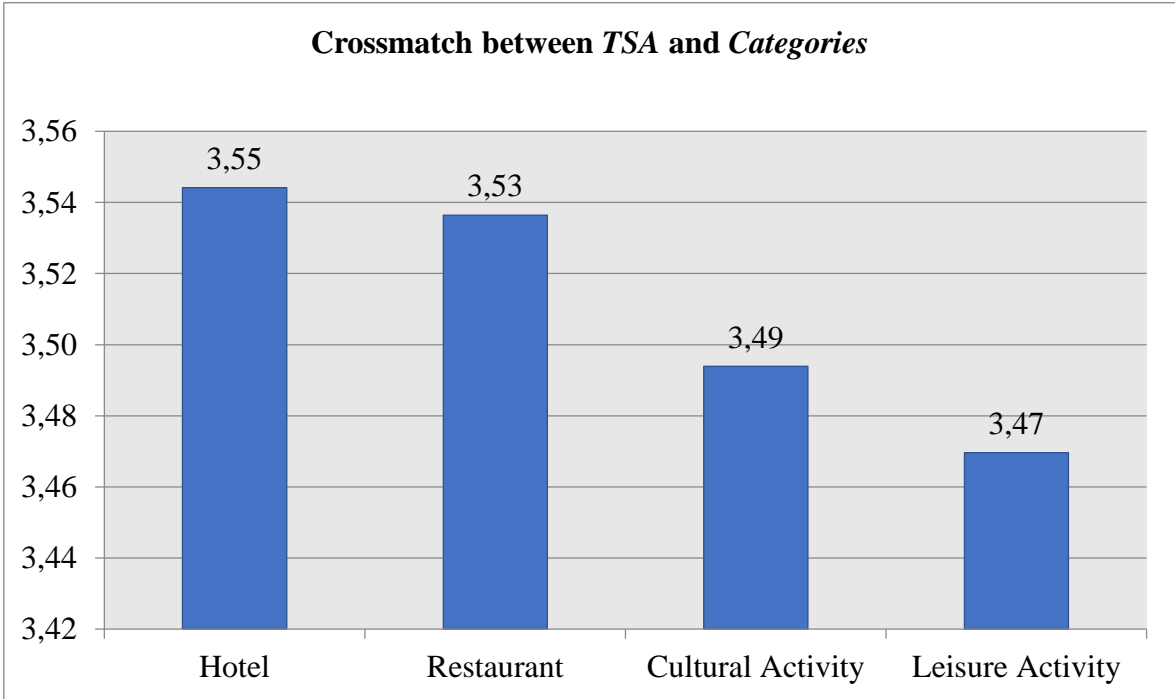
Re-Discover	Count
Social Events	4,00
Religion	4,00
Lifestyle	4,00
Sciences	3,81
Services	3,73
Technology	3,67
Gastronomy	3,66
Geography	3,65
Hotels	3,58
Culture	3,58
People	3,49
Weather and Meteorology	3,47
Location	3,47
Products	3,46
Sports	3,44
Education and Justice	3,34
Tourism	3,27
Clothing	3,22
Travel	3,19
Measures	3,11

Regarding the results about the Re-Discover experience, it can be found in the above table. The five topics that the reviewers had the most positive sentiments about were: Social Events (4.00), Religion (4.00), Lifestyle (4.00), Sciences (3.81) and Services (3.73). Moreover, the five topics that made the reviewers feel the most negative sentiments were: Education and Justice (3.34), Tourism (3.27), Clothing (3.22), Travel (3.19) and Measures (3.11).

Knowledge Seeker	Count
Technology	4,60
Clothing	4,00
Gastronomy	3,76
Hotels	3,71
Sciences	3,67
Services	3,61
People	3,57
Biology	3,44
Sports	3,44
Social Events	3,42
Location	3,40
Products	3,39
Measures	3,36
Tourism	3,30
Geography	3,24
Religion	3,19
Travel	3,19
Weather and Meteorology	3,18
Culture	3,00
Lifestyle	2,67

Finally, regarding the Knowledge Seeker experience, it can be said that the five topics that reviewers manifest the most positive sentiments were: Technology (4.60), Clothing (4.00), Gastronomy (3.76), Hotels (3.71) and Sciences (3.67). On the opposite side, the five topics with the most negative sentiments were: Religion (3.19), Travel (3.19), Weather and Meteorology (3.18), Culture (3.00) and Lifestyle (2.67).

ANNEX 9.30 – CROSSMATCH BETWEEN *TSA* AND *CATEGORIES*



It is possible to see on the graphic representation above presented, the four categories - Hotel, Restaurant, Cultural Activity and Leisure Activity according to their average polarity – the sentiments (from 0 to 5) attributed to each category in the reviewers perspective. There, it is possible to see that the Hotels are the category which the reviewers show the best positive sentiments to (3.55), followed by the Restaurant (3.53) and Cultural Activity (3.49). The category in Bermuda, that the reviewers consider as the one provoking less positive sentiments is Leisure Activity (3.47).

Hotel	Count
Sciences	4,00
Gastronomy	3,85
Services	3,79
Hotels	3,71
Weather and Meteorology	3,68
Social Events	3,67
Geography	3,66
Education and Justice	3,60
Products	3,59

People	3,55
Location	3,44
Biology	3,38
Tourism	3,37
Sports	3,31
Technology	3,25
Culture	3,25
Clothing	3,25
Measures	3,25
Travel	3,10
Religion	2,80

The results of the Topics Sentiment Analysis according to the Hotel category can be found above. There, it is possible to see that the five major topics that contributed to reviewers feeling positive sentiments were: Sciences (4.00), Gastronomy (3.85), Services (3.79), Hotels (3.71) and Weather and Meteorology (3.68). Moreover, on the opposite side it is possible to find: Culture (3.25), Clothing (3.25), Measures (3.25), Travel (3.10) and Religion (2.80).

Restaurant	Count
Clothing	5,00
Sciences	4,00
Social Events	3,96
Sports	3,78
Gastronomy	3,73
Hotels	3,70
People	3,67
Services	3,65
Biology	3,56
Culture	3,55
Products	3,52
Religion	3,50
Location	3,49
Geography	3,45
Technology	3,44
Education and Justice	3,40
Weather and Meteorology	3,36
Tourism	3,24
Travel	3,22
Lifestyle	3,00
Measures	2,77

In the last table presented, it is possible to see the same results as before, but in accordance with the Restaurant category. The most important topics, the ones that made the reviewers feel most positive were: Clothing (5.00), Sciences (4.00), Social Events (3.96), Sports (3.78) and Gastronomy (3.73). On the contrary it is possible to find: Weather and Meteorology (3.36), Tourism (3.24), Travel (3.22), Lifestyle (3.00) and Measures (2.77).

Cultural Activity	Count
Technology	4,05
Lifestyle	4,00
Culture	3,77
Services	3,75
Gastronomy	3,64
Biology	3,60
Sports	3,59
Social Events	3,57
Sciences	3,56
Education and Justice	3,52
Hotels	3,52
Clothing	3,50
People	3,45
Location	3,45
Religion	3,43
Products	3,43
Geography	3,38
Measures	3,33
Tourism	3,28
Weather and Meteorology	3,17
Travel	3,17

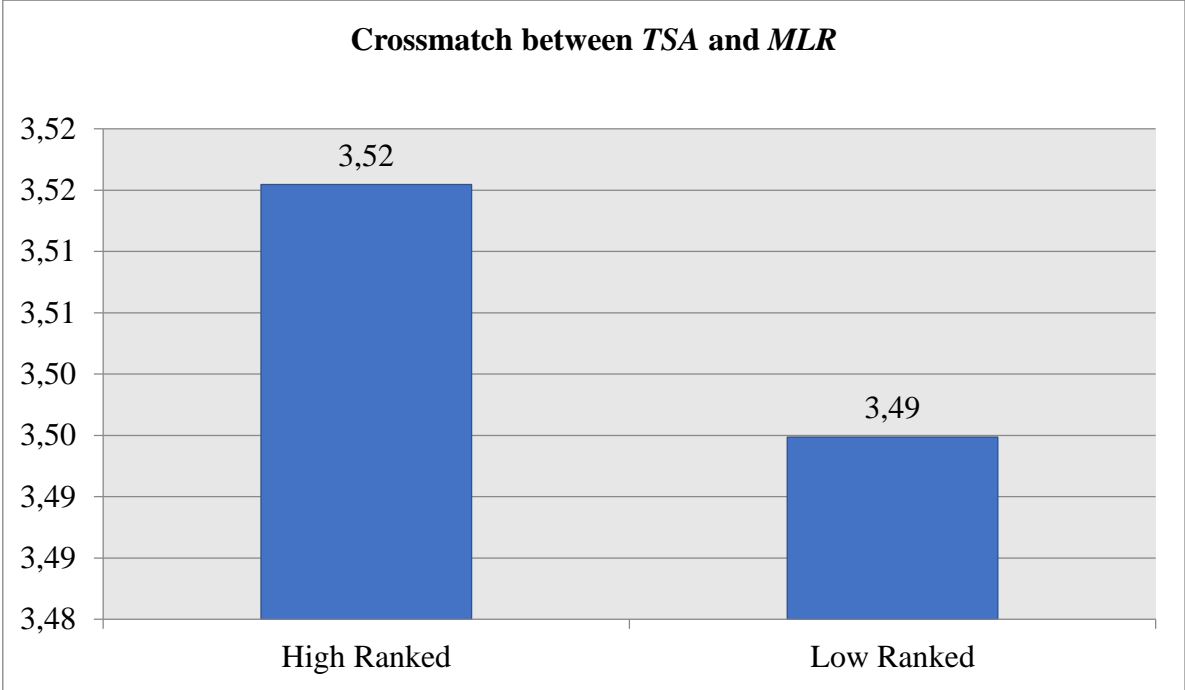
Continuing the analysis, Scheme 120 shows the same results but according to the Cultural Activity category. The topics that aroused the reviewers with the best positive sentiments were: Technology (4.05), Lifestyle (4.00), Culture (3.77), Services (3.75) and Gastronomy (3.64). On the opposite side, it can be found: Geography (3.38), Measures (3.33), Tourism (3.28), Weather and Meteorology (3.17) and Travel (3.17).

Leisure Activity	Count
Technology	3,88
Sciences	3,71
Services	3,70

Lifestyle	3,67
Social Events	3,66
Gastronomy	3,63
Hotels	3,54
Geography	3,53
Culture	3,52
Education and Justice	3,50
Location	3,46
People	3,44
Biology	3,38
Products	3,38
Religion	3,33
Measures	3,33
Sports	3,26
Tourism	3,23
Travel	3,23
Weather and Meteorology	3,22
Clothing	3,00

At last, the results regarding the Leisure Activity category can be found in the table presented above. The five topics with the best sentiments shown by the reviewers were: Technology (3.88), Sciences (3.71), Services (3.70), Lifestyle (3.67) and Social Events (3.66). In relation with the topics that created the most negative sentiments on the reviewers, it is possible to see: Sports (3.26), Tourism (3.23), Travel (3.23), Weather and Meteorology (3.22) and Clothing (3.00).

ANNEX 9.31 – CROSSMATCH BETWEEN *TSA* AND *MLR*



In graphic above shows the general results regarding the average polarity of each type of reviewer. As it is possible to conclude, the High Ranked Reviewers were the ones expressing the most positive sentiments (3.52) in their reviews, while the Low Ranked Reviewers showed not so positive ones (3.49).

High Ranked	Count
Lifestyle	4,00
Services	3,76
Technology	3,74
Sciences	3,73
Gastronomy	3,71
Culture	3,63
Hotels	3,59
Geography	3,58
Social Events	3,56
Education and Justice	3,55
Biology	3,51
Products	3,51
People	3,50
Sports	3,46
Location	3,46
Weather and Meteorology	3,43
Clothing	3,38
Measures	3,30

Tourism	3,29
Religion	3,17
Travel	3,14

Moreover, the Topics Sentiment Analysis was applied only to the High Ranked Reviewers. From the table above, it is possible to see that the principal five topics that caused the best positive sentiments in the reviewers, were: Lifestyle (4.00), Services (3.76), Technology (3.74), Sciences (3.73) and Gastronomy (3.71). On the opposite side, it can be found: Clothing (3.38), Measures (3.30), Tourism (3.29), Religion (3.17) and Travel (3.14).

Low Ranked	Count
Sciences	3,83
Social Events	3,82
Technology	3,74
Services	3,68
Gastronomy	3,68
Hotels	3,61
People	3,54
Culture	3,50
Geography	3,48
Location	3,46
Education and Justice	3,46
Biology	3,46
Sports	3,41
Products	3,41
Clothing	3,40
Religion	3,40
Lifestyle	3,33
Tourism	3,25
Travel	3,23
Weather and Meteorology	3,22
Measures	3,13

Finally, in the table above, the same analysis was applied to Low Ranked Reviewers and it is possible to see that the five major topics corresponding to the best positive sentiments that the reviewers felt were: Sciences (3.83), Social Events (3.82), Technology (3.74), Services and Gastronomy both with the same score (3.68). On the contrary it is possible to find topics like: Lifestyle (3.33), Tourism (3.25), Travel (3.23), Weather and Meteorology (3.22) and Measures (3.13).