

Analysis of emotions in the hotel destination choice: using a valence and arousal affective space

Guillermo Calahorra Candao¹

María José Martín de Hoyos²

¹PhD student, Faculty of Economics and Business Studies (Marketing), University of Zaragoza, Spain, E-mail: guillermocalahorra@gmail.com

²PhD, Business Administration (Marketing), Senior Lecturer, Department of Marketing and Market Research, University of Zaragoza, Spain

Received: 07/07/2020

Accepted for Publication: 27/07/2020

Published: 30/07/2020

Abstract

This paper explores emotional perceptions extracted from online consumer reviews posted on TripAdvisor. More specifically, the study analyzes valence and arousal using the Affective Norms for English Words and a database of 10,000 comments in two languages (English and Spanish) on budget and premium hotels on a worldwide scale. An emotional analysis of tourist comments allows us to summarize the features highlighted by customers, identifying those which are more important for hotels aiming to offer better services. The results are presented in four linguistic categories to allow a closer focus on the emotional value of tourist reviews. The categorization shows a general use of words with high valence and arousal, allowing a classification within a dimensional affective space. The use of positive, negative, and exciting words is discussed, explaining the importance of a cohesive transmission of emotion depending on hotel category.

Keywords: Online Consumer Reviews, Valence and Arousal, OCR, Categorization

Purpose

This paper explores emotional perceptions extracted from online consumer reviews posted on TripAdvisor. More specifically, the study analyzes valence and arousal using the Affective Norms for English Words and a database of 10,000 comments in two languages (English and Spanish) on budget and premium hotels on a worldwide scale.

Design/methodology/approach

An emotional analysis of tourist comments allows us to summarize the features highlighted by customers, identifying those which are more important for hotels aiming to offer better services. The results are presented in four linguistic categories to allow a closer focus on the emotional value of tourist reviews.

Findings

The results are presented in four linguistic categories to allow a closer focus on the emotional value of tourist reviews. The categorization shows a general use of words with high valence and arousal, allowing a classification within a dimensional affective space.

Originality/value

The study analyses emotions of reviews word by word, avoiding a dichotomic classification of comments. This offers a brand-new approach into touristic reviews, knowing what clients really pays attention to.

1. Introduction

Would any traveler book a hotel room without looking at the comments previously written? At a time when the travel industry contributes 10.4% of all global economic activity (WTTC, 2019), the use of social commerce websites (e.g., TripAdvisor, Booking) in relation to hotel ratings has been increasing, since travelers rely on OCR to plan trips before any purchase (Filieri et al., 2015). In fact, there are two variables that travelers take into consideration in the decision-making process: the volume of reviews and their valence (Park & Nicolau, 2015; Yang et al., 2018).

Valence, as the value of an emotion (Bradley et al., 1999), has received mixed and inconclusive attention within the OCR literature. While some studies have pointed out the effects of valence in OCR on businesses (Kim et al., 2015; Mudambi & Schuff, 2010), others have found no such correlation (Forman et al., 2008; Liu, 2006). Even within each of these positions, there is no consensus. While some researchers have found a relation between positive emotions and OCR (Park & Nicolau, 2015), others have argued the opposite (Wilson et al., 2017), and neither of these studies considered the managerial benefits that emotional variables might bring. Furthermore, there has been a tendency to consider valence in terms of a general status for a whole review, despite the findings that each word has its own affective value (Bradley et al., 1999; Stadthagen-Gonzalez et al., 2017).

Valence and arousal have been the foundations of emotion research (Lang, 1994). The adoption of a dimensional perspective allows both variables to be used in a scale (Lang et al., 1990), and they have also been an important part of research related to the effect of word of mouth on sales, especially in terms of reviews and comments on social commerce websites (Chevalier & Mayzlin, 2006).

The aim of the present study is to analyze the affective value (valence and arousal) of the most popular words in a group of 10,000 TripAdvisor reviews employing a non-participant observation technique. The analysis of the most used words will offer a strategic and managerial vision concerning the emotional status behind a review. Two worldwide popular languages, English and Spanish, are included in order to find out possible differences between them.

In terms of theory, this study presents an analysis of a group of reviews, analyzing their affective status individually. Previously, the methodology has been based on a categorization of comments according to the point of view of the authors. In this paper, valence and arousal are the tools used to arrive at a classification of the emotions behind the reviews. In terms of practice, this article clarifies how this kind of analysis can be a marketing tool and identifies the potential benefits.

2. Online consumer reviews

Electronic word of mouth (E-WOM) is “any positive or negative statement made by (...) consumers about a product or company, which is made available (...) via the Internet” (Hennig-Thurau et al., 2004, p. 39). OCRs are considered the most accessible type of E-WOM, influencing choices and decisions in tourism because of the nature of travel services (Park & Nicolau, 2015). They allow consumers to share their experiences online by writing comments about the products and services (Wang et al., 2019), thereby developing an associated image and reducing uncertainties about their characteristics (Filieri, 2016). OCRs are considered an important source of information for travelers, since it is difficult for people to estimate the quality of hospitality services before purchasing them (Park & Nicolau, 2015). The characteristic of this buying process imply that customers experience some uncertainty over the choices they make and, thus, that they require “substantial information” to reduce the perceived risks (Yang et al., 2018).

The volume of OCRs that customers face in the decision-making process leads them to reduce decision-making costs by focusing on specific variables: volume and valence (Yang et al., 2018). Thus, those who read multiple reviews are more likely to pay attention not only to the volume of those comments but also the emotions transmitted by them.

Affective values have received considerable attention within the OCR literature (Purnawirawan et al., 2015). However, most of the findings about the role of valence have been inconclusive. Liu (2006) found that the volume of reviews was correlated to sales but that their valence was not. Forman et al. (2008) found no connection between valence and sales; while, Chevalier and Mayzlin (2006) found that negative valence reviews hurt sales. Mudambi and Schuff (2010) found that moderate reviews were more useful than extreme ratings, whereas Park and Nicolau (2015) found that consumers consider extreme reviews more useful than moderate ratings.

Even though the conclusions of previous studies are far from straightforward, they share a common approach: they understand valence as a concept applying to a whole review, instead of analyzing individual stimuli in each word, as proposed previously (Bradley et al., 1999).

Fig. 1 illustrates a hotel review extracted from TripAdvisor categorized as “good”. The review is considered to be a positive one, but some of the words used by the authors are the opposite: “bad,” “tired,” and “horrible.” Although the authors did not use these words to point out anything negative about the hotel, they used them nonetheless, and readers will process these words (Frost et al., 1987).

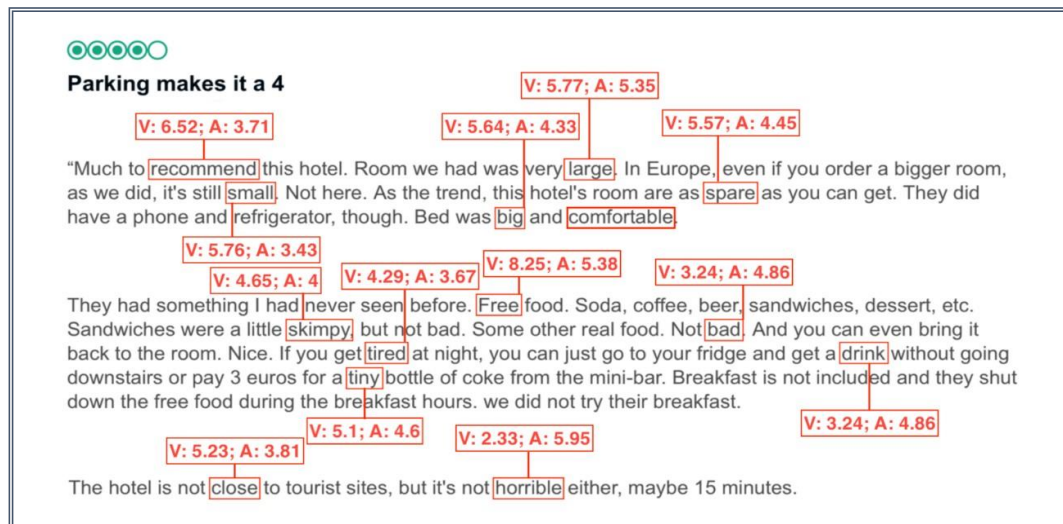


Figure: 1

Previous studies (Park & Nicolau, 2015; Wilson et al., 2017), have categorized the emotional value of OCRs using only valence as a variable. These studies tried to determine whether a review was positive or negative without taking into account other affective variables or the individual valence value of each word. Furthermore, although consumers usually share content when it contains useful information, the emotion behind an online review is an important indicator, since it is based on different variables.

3. Affective variables

The two main theoretical accounts of the affective space are the discrete emotion approach and the dimensional perspective. Discrete emotion theories assume that there are a limited number of emotions that they adopt binary classification techniques or multi-class classifications (Ekman, 1992). On the other hand, the dimensional approach characterizes the affective state in terms of continuous variations on a few dimensions (Ferré et al., 2017), with valence and arousal the most significant dimensions (Bradley et al., 1999). Since research on emotions began, valence and arousal have been among the main concepts in the classification of affective responses (Wundt, 1912), as both affective states define the structure of an emotion (Lang, 1994).

Valence indicates the value of an emotion, ranging from pleasant to unpleasant, whereas arousal indicates its degree of activation, ranging from active to quiet (Bradley et al., 1999). Most studies of affective variables have been conducted in English, for which the most influential set of affective

norms is the Affective Norms for English Words (Bradley & Lang, 1999) and its extension (Warriner et al., 2013). To our knowledge there have been a variety of studies in Spanish. (Redondo et al., 2007) adapted the ANEW into Spanish, and Stadthagen-Gonzalez et al. (2017) produced the largest set of emotional for Spanish words available to date.

In addition, the literature regarding affective variables has been increasing in recent years. Some studies have indicated that the presence of these affective variables has a negative effect on WOM (Chevalier & Mayzlin, 2006; Wilson et al., 2017). Other studies, however, have suggested that their presence affects WOM positively (Kim et al., 2015; Purnawirawan et al., 2015). Whether the effect is positive or negative, there is agreement in the literature that affective variables have a strong impact on E-WOM. The present study sets out to analyze reviews and comments from a non-judgmental perspective, avoiding any categorization of the opinions they express.

Drawing on this review of the literature concerning the importance of the most important affective variables in a social commerce environment, we propose the following research questions:

1. Can a review be emotionally analyzed in terms of words? What is the general emotional state of reviews and their location within a valence–arousal theoretical space?
2. What information can be extracted from tourist reviews? Are there any specific goods or services that reviewers typically point out?
3. Does the content of a hotel review depend on the category of the hotel? Are there any goods or services whose inclusion depends on the hotel category?
4. Is there any significant emotional difference between Spanish and English in the language of reviews? Are they emotionally different enough to determine a booking decision?

4. Methodology

The aim of the study is to identify the most commonly used words and their affective value in tourist reviews on TripAdvisor, through a passive observation technique. Therefore, both studies present here are classified as non-participant observation studies. The research process is summarized in Fig. 2.

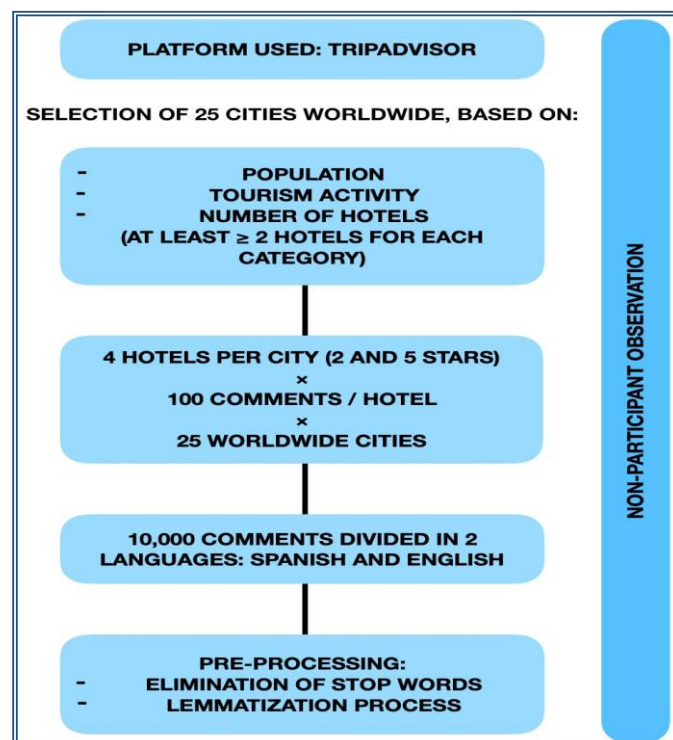


Figure : 2

Prior to the selection of OCRs, a list of the most popular cities on TripAdvisor was drawn up. The decision was taken to select only two-star and five-star hotels, to accentuate the possible differences between them. The hotel selection process depended entirely on the TripAdvisor algorithm. Each hotel needed at least 100 published comments, and in order to analyze English and Spanish reviews, comments in both languages were included.

Using a spreadsheet, a pre-processing procedure was applied to the data (elimination of stop words and lemmatization) using a VBA function created to analyze the dataset (Fig. 3 illustrates part of the function). Results were grouped by language and category, and the words were ordered by frequency and assigned values according to the affective studies discussed in Section 3.

```

1 Option Explicit
2
3 Sub Count_Words()
4   Dim ws As Worksheet
5   Set ws = ThisWorkbook.Sheets("Sheet1")
6   Dim WordCount As Object
7   Set WordCount = CreateObject("Scripting.Dictionary")
8
9   Dim word, CleanWord As String
10  For Each word In ws.UsedRange.Cells
11    CleanWord = LCase(AlphaNum(word.Value))
12    If Len(CleanWord) > 0 Then
13      If WordCount.exists(CleanWord) Then
14        WordCount(CleanWord) = WordCount(CleanWord) + 1
15      Else
16        WordCount.Add CleanWord, 1
17    End If

```

Figure: 3

A nine-point scale is used to measure each word. In terms of valence, the closer to 9 on the scale, the more pleasant the word. The same applies to arousal: the closer to 9, the more exciting the word. Using these numerical and objective measures, we can identify what travelers are most interested in when they read reviews and whether the words used are positive or negative.

We developed two separate studies. The first study covers all the Spanish comments, categorized into groups. The second study analyzes English comments for an overall view and to draw a comparison between the two languages. Both studies present the words that are used most frequently. There is no judgmental aspect to the analysis of the results; the context in which the word is written is omitted. The word “happy” scores 8.47 on the valence scale, but its use in a sentence can be negative, as in “*I wasn’t happy with...*”. Only the individual words used in the reviews are presented, instead of the whole comment, which is omitted.

5. Study 1

The purpose of Study 1 was to analyze comments in Spanish, answering research questions 1, 2, and 3. The results are presented in table form to differentiate between budget and premium hotels. The frequency of each word according to the category of the hotel is shown next to its valence and arousal values. The results are presented in four categories for better dissemination and analysis:

- Hotel services.
- Room services.
- Adjectives.
- Extra nouns and verbs.

In the first category, a possible difference between hotel categories comes into play, since the services offered by a premium hotel might be different to those offered by a budget one. Table 1 summarizes the results.

BUDGET HOTELS	V	A	PREMIUM HOTELS	V	A
SERVICE (<i>servicio</i>)	5.35	4.75	SERVICE (<i>servicio</i>)	5.35	4.75
LOCATION (<i>ubicación</i>)	5.35	4.70	LOCATION (<i>ubicación</i>)	5.35	4.70
BREAKFAST (<i>desayuno</i>)	7.40	3.70	BREAKFAST (<i>desayuno</i>)	7.40	3.70
CLEANING (<i>limpieza</i>)	5.85	3.75	RESTAURANT (<i>restaurante</i>)	7.08	5.03
PRICE (<i>precio</i>)	4.40	5.65	CLEANING (<i>limpieza</i>)	5.85	3.75
RELATIONSHIP (<i>trato</i>)	5.90	4.90	PRICE (<i>precio</i>)	4.40	5.65
PARKING	4.90	5.55	RELATIONSHIP (<i>trato</i>)	5.90	4.90
RECEPTION (<i>recepción</i>)	5.65	4.70	RECEPTION (<i>recepción</i>)	5.65	4.70
FACILITIES (<i>instalaciones</i>)	5.40	4.75	DECORATION (<i>decoración</i>)	7.50	4.75
DECORATION (<i>decoración</i>)	7.50	4.75	CAFETERIA (<i>cafetería</i>)	6.10	3.95

Table: 1

There is a similarity between the two categories, even though the services offered by both are different. Every detail offered by hotels in the budget category is highlighted by the users, with positive words such as “breakfast” (V: 7.40), “decoration” (V: 7.50), “cleaning” (V: 5.85), and “facilities” (V: 5.40). In the premium category, however, the hostelry service stands out. “Breakfast” (V: 7.40), “restaurant” (V: 7.08), and “cafeteria” (V: 6.15) are highly positive. The value of these words used to describe experiences implies that a great service or breakfast might impact positively the experience of the user. However, an insufficient offering of those services might lead to negative critiques, and these may translate into negative reviews. Given the nature of the category, positive and repeated use of the words “restaurant” and “cafeteria” might attract potential customers for those services.

Emotionally, most of the words used have a valence that exceeds the average for the scale, which implies a positive feeling when they are read. In terms of arousal, services have above-average values. This is decisive for the establishment if those words are used in positive contexts. In negative contexts, words with high arousal values, such as “price” (V: 4.40, A: 5.65) might damage the hotel’s reputation. This word is important in both hotel categories, not because of its valence but because of its arousal value. On the other hand, “breakfast” and “cleaning” are the perfect examples of services that a hotel needs to improve and to perform well on in order to elicit positive use of the corresponding words in client reviews. This is because of their high valence value and low arousal value, which imply a relaxed attitude and a positive feeling.

BUDGET HOTELS	V	A	PREMIUM HOTELS	V	A
BATHROOM (<i>baño</i>)	6.93	3.75	BATHROOM (<i>baño</i>)	6.93	3.75
BED (<i>cama</i>)	7.98	2.88	BED (<i>cama</i>)	7.98	2.88
NOISE (<i>ruido</i>)	3.30	7.05	NOISE (<i>ruido</i>)	3.30	7.05
JACUZZI (<i>hidromasaje</i>)	7.90	3.27	PILLOW (<i>almohada</i>)	7.58	1.80
SILENCE (<i>silencio</i>)	5.75	2.00	SILENCE (<i>silencio</i>)	5.75	2.00
PILLOW (<i>almohada</i>)	7.58	1.80	BATHROBE (<i>albornoz</i>)	6.00	3.95
CLOSET (<i>armario</i>)	5.25	4.50	JACUZZI (<i>hidromasaje</i>)	7.90	3.27
BATHROBE (<i>albornoz</i>)	6.00	3.95	CLOSET (<i>armario</i>)	5.25	4.50

Table: 2

Table 2 shows the most used words for room facilities. The “calmness” sensation is even clearer in the group of words related to the room itself, apart from “noise” (A: 7.05), which should be avoided in the comment section because of its negative perception and high arousal, which might lead to a negative perception. The same words are present in both categories, including extra services such as “Jacuzzi”. The emotional state in both categories can be classified as positive and relaxed. “Bathroom” (V: 6.93, A: 3.75), “Jacuzzi” (V: 7.90; A: 3.27), and “bathrobe” (V: 6.00, A: 3.95) are the elements belonging to the same part of the room with similar characteristics (high valence and low arousal), which implies that a great service offered by the hotel might lead to positive feedback in

reviews. “Bed” (V: 7.98, A: 2.88), “silence” (V: 5.75, A: 2.00), and “pillow” (V: 7.58, A: 1.80) can be grouped together in terms of their associations with tranquility. Because of their high valence and low arousal values, their appearance in reviews may be the key to a positive communication strategy in relation to the rest and comfort of reviewers.

BUDGET HOTELS	V	A	PREMIUM HOTELS	V	A
GOOD (<i>bueno</i>)	8.15	3.90	GOOD (<i>bueno</i>)	8.15	3.90
KIND (<i>amable</i>)	8.50	3.63	EXCELLENT (<i>excelente</i>)	8.45	5.75
DOWNTOWN (<i>céntrico</i>)	–	–	BIG (<i>grande</i>)	5.85	5.60
EXCELLENT (<i>excelente</i>)	8.45	5.75	KIND (<i>amable</i>)	8.50	3.63
BIG (<i>grande</i>)	5.85	5.60	BEST (<i>mejor</i>)	7.70	4.95
CLOSE (<i>cercano</i>)	7.35	4.05	DOWNTOWN (<i>céntrico</i>)	–	–
BEST (<i>mejor</i>)	7.70	4.95	PLEASANT (<i>agradable</i>)	8.00	2.80
PLEASANT (<i>agradable</i>)	8.00	2.80	PERFECT (<i>perfecto</i>)	7.75	4.70
PERFECT (<i>perfecto</i>)	7.75	4.70	THOUGHTFUL (<i>atento</i>)	7.05	5.70
RECOMMENDABLE (<i>recomendable</i>)	6.15	4.75	CHEAP (<i>barato</i>)	–	–

Table: 3

Table 3 summarizes the adjectives used to describe services, rooms, and the hotels themselves. The most remarkable aspect of the use of these adjectives is how positive they all are. Adjectives such as “good” (V: 8.15), “kind” (V: 8.50), and “excellent” (8.45) appear in both hotel categories, and they are close to the maximum value of the scale. This is a positive way to describe a hotel’s services. Even when those words are used to describe negative situations, there is a positive effect in the semantic and lexical processing of words (Vinson et al., 2014). Regarding arousal, the average value of both categories is in the middle of the scale (4.45 and 4.62 for budget and premium categories, respectively). Figure 5 explains the meaning and importance of locating words on a valence–arousal coordinate plane.

BUDGET HOTELS	V	A	PREMIUM HOTELS	V	A
COMFORT (<i>confort</i>)	8.04	3.56	COMFORT (<i>confort</i>)	8.04	3.56
QUALITY (<i>calidad</i>)	7.33	4.75	QUALITY (<i>calidad</i>)	7.33	4.75
TO COME BACK (<i>volver</i>)	6.10	5.80	DETAIL (<i>detalle</i>)	6.98	4.73
ATTENTION (<i>atención</i>)	6.25	5.10	ATTENTION (<i>atención</i>)	6.25	5.10
FAMILY (<i>familia</i>)	7.88	4.25	TO COME BACK (<i>volver</i>)	6.10	5.80
TO SLEEP (<i>dormir</i>)	7.90	1.60	LUXURY (<i>lujo</i>)	7.20	5.40
TO REPEAT (<i>repetir</i>)	5.30	5.20	TRANQUILITY (<i>tranquilidad</i>)	7.80	1.75
TRANQUILITY (<i>tranquilidad</i>)	7.80	1.75	PITY (<i>pena</i>)	1.90	5.85
DETAIL (<i>detalle</i>)	6.98	4.73	TO ENJOY (<i>disfrutar</i>)	8.60	5.25
PITY (<i>pena</i>)	1.90	5.85	EXPERIENCE (<i>experiencia</i>)	6.90	5.60

Table: 4

Table 4 shows the most used nouns and verbs. Concepts such as “comfort” (V: 8.04, A: 3.56) and “quality” (V: 7.33, A: 4.75) can reflect the ultimate emotional feeling that reviewers tend to appreciate when they stay at any hotel. Both words can be classified as positive and not particularly exciting. With the exception of “pity” (V: 1.90), the words are measured as emotionally positive. “Pity”, though, might be used as part of a positive or negative statement: “*What a pity to leave so soon!*” may be a positive use of the word, whereas “*It’s a pity that this place has odd management*” may be a negative use of the word. Lastly, looking at the words that are exclusive to each category, it is clear that the words used for the premium hotels can be classified into a hedonic group of goods and services. These words, such as “luxury” (V: 7.20), “to enjoy” (V: 8.60), and “experience” (V: 6.90) can also be classified as positive. In the same way, “family” (V: 7.88), “to sleep” (V: 7.90), and “to repeat” (V: 5.30) are the counterparts for the budget hotel category, also considered positive.

6. Study 2

The purpose of Study 2 is to analyze reviews written in English and draw comparisons with the results from Study 1. Research questions 3 and 4 will be addressed in the course of Study 2. First, all the reviews were grouped into a single category to identify any differences between hotel categories. To keep the study on a manageable scale, word classes were combined. Table 5 shows the first comparison between budget and premium hotels.

BUDGET HOTELS	V	A	PREMIUM HOTELS	V	A
STAFF	5.18	4.30	STAFF	5.18	4.30
GOOD	7.89	3.66	GREAT	7.50	4.14
LOCATION	5.77	4.58	SERVICE	6.83	2.95
GREAT	7.50	4.14	LOCATION	5.77	4.58
CLEAN	7.09	3.57	BREAKFAST	7.39	5.00
BREAKFAST	7.39	5.00	GOOD	7.89	3.66
FRIENDLY	6.79	4.29	RESTAURANT	6.95	4.19
NICE	6.95	3.53	NICE	6.95	3.53
HELPFUL	7.43	3.88	EXCELLENT	7.56	5.15

Table: 5

The results are quite similar between the categories. On average, the valence values of the words used in each category can be considered as medium–high positive. Looking at the exclusive words for each category, it appears that budget hotels are regarded as not detail-oriented. That would explain the exclusive use of the word “clean” (V: 7.09) in both contexts: “*The room was/wasn’t clean.*” However, “clean” does not appear frequently in the premium category, since cleanliness might be expected from a higher category hotel and its presence would not be a surprise. Premium hotels may be considered as more detail-oriented, and the exclusive use of the word “excellent” (V:7.56) may be an indication of this. Both categories, however, share most of the words used to describe them. There is no doubt that the use of words to describe budget and premium hotels is generally positive—among the words with high valence values used to describe them are “good” (V: 7.89) and “great” (V: 7.5)—and quite relaxing (the average arousal values for budget and premium hotel are 4.00 and 4.06, respectively).

BUDGET HOTELS						PREMIUM HOTELS					
ENGLISH	V	A	SPANISH	V	A	ENGLISH	V	A	SPANISH	V	A
STAFF	5.18	4.30	GOOD	8.15	3.90	STAFF	5.18	4.30	GOOD	8.15	3.90
GOOD	7.89	3.66	SERVICE	5.35	4.75	GREAT	7.50	4.14	SERVICE	5.35	4.75
LOCATION	5.77	4.58	BREAKFAST	7.40	3.70	SERVICE	6.83	2.95	BREAKFAST	7.40	3.70
GREAT	7.5	4.14	CLEANING	5.85	3.75	LOCATION	5.77	4.58	COMFORT	8.04	2.70
CLEAN	7.09	3.57	COMFORT	8.04	3.56	BREAKFAST	7.39	5.00	EXCELLENT	8.45	5.75
BREAKFAST	7.39	5.00	LOCATION	5.35	4.70	GOOD	7.89	3.66	BIG	5.85	5.60
FRIENDLY	6.79	4.29	KIND	8.50	3.63	RESTAURANT	6.95	4.19	BATHROOM	6.93	3.73
NICE	6.95	3.53	DOWNTOWN	–	–	NICE	6.95	3.53	KIND	8.50	3.63
HELPFUL	7.43	3.88	BATHROOM	6.93	3.73	EXCELLENT	7.56	5.15	BEST	7.70	4.95

Table: 6

Lastly, Table 6 shows the emotional value of the most frequently used words in both categories and both languages. The results in Spanish are given in English, but their valence and arousal values correspond to the Spanish words. “Downtown” was the only word without valence or arousal value. In both the Spanish and English reviews for budget hotels, concepts related to cleaning were expressed frequently, with words such as “clean” (ENG V: 7.09) and “cleaning” (SPA V: 5.85). In the higher category, the word “excellent” (ENG V: 7.56, SPA V: 8.45) was one of the most frequently used. None of these words appear among the most repeated in the opposite ranking. On average, there was a positive emotional use of words; the lowest valence belonged to “staff” (ENG V: 5.18), and the highest value belonged to “kind” (ENG V: 8.50). On the other hand, arousal value was

located more in the middle of the scale, as in “breakfast” (ENG A: 5.00), “location” (ENG A: 4.58), “service” (SPA A: 4.75), and “nest” (SPA A: 4.95). Even though the use of words was positive overall, there was slightly more positive emotional value in the Spanish category. This is not only because of the frequency with which certain words were used, but also because in most cases the Spanish values were more positive (higher valence) and more active (higher arousal). “Good” (SPA V: 8.15; ENG V: 7.89) and “excellent” (SPA V: 8.45; ENG V: 7.56) are two examples. However, although they are different words, we can group these words with others such as “friendly” (ENG V: 6.79), “nice” (ENG V: 6.95), “helpful” (ENG V: 7.43), and “great” (ENG V: 7.50) to emphasize the positive use of words in both languages and categories.

7. Implications

The main objective of the paper was to emotionally analyze tourist reviews and locate them within a valence–arousal space. The results have significant theoretical and practical implications. On the academic front, this paper contributes to the individual affective of reviews on one of the largest social commerce platforms. The findings of this paper suggest that exists a pattern in the profile of the traveler, regardless of the country where the hotel is located and pre-existing cultural barriers. This type of profile pattern is characterized by the use of high valence and low arousal words in both languages, as seen in both studies.

This paper also has implications at the managerial level. The business implications of this study show the opportunities offered by social commerce as a support platform for sales. The hotel sector is aware of these opportunities, and their awareness translates into the increased popularity of such platforms (Yang et al., 2018). As Wang et al. (2019) stated, OCR can be a powerful marketing tool. Knowing the affective value behind the message that we want to share may be crucial, depending on the emotion to be transmitted. Some of the most popular words and their affective values are provided here, enabling a person in charge of hotel communication to employ certain words to transmit particular emotions, depending on the philosophy of the hotel.

Because of their emotional value, some words project a positive and relaxed sensation to potential customers if used in positive contexts; these include “breakfast,” “clean,” “good,” “silence,” and even “location.” No matter the type of hotel, the information extracted from such words may prove decisive in attracting a traveler’s attention.

As well as being decisive factors in hotel selection, valence and arousal can be useful tools for customizing a hotel’s offer. Managers can analyze information from previous customers through their reviews. Websites like TripAdvisor offer the chance to detect failures that might not otherwise come to a manager’s attention. This information can be used to identify which aspects are most important for customers and to offer a better service, thereby increasing positive feedback. It is important to understand which words might stand out for the customers so that an appropriate communication strategy via social networks can improve customer opinion of the establishment. This kind of strategy can be used for any type of product or service, so these findings are likely to have a wide range of business applications.

8. Discussion

Previous studies have analyzed affective variables and OCRs globally (Kim et al., 2015; Purnawirawan et al., 2015) without taking into account the individual emotional values of words. There is a lack of studies analyzing the individual characteristics of words, although the literature acknowledges the importance of volume and affective values of OCR (Mudambi & Schuff, 2010; Yang et al., 2018). In terms of emotion and answering research question 1, two conclusions can be drawn from the data provided in Sections 5 and 6. The first thing to note is the generally positive use of words in both languages. Only three words out of the total can be categorized as not positive: “pity” (SPA V: 1.90), “noise” (SPA V: 3.30), and “price” (SPA V: 4.40). Most positive words appear frequently, implying a positive variety of individual words: “good” (ENG V: 7.89; SPA V: 8.15), “great” (ENG V: 7.5), and “comfort” (SPA V: 7.68). Generally, in individual terms, reviews in both languages were both affectively positive, which also goes some way to answering research question 4.

In terms of arousal, there is no clear pattern in the active sentiment in the use of words. Although travelers want to enjoy a nice stay in the hotel of their choosing, at the time of booking there may be no clear purpose for the trip. Some travelers may want to relax and are therefore attracted by words such as “tranquility” (SPA A: 1.70), “service” (ENG A: 2.95), or “sleep” (SPA A: 1.60). Others may want to be active and are therefore attracted by words such as “thoughtful” (SPA A: 5.70) and “experience” (SPA AR: 5.60). However, arousal values are not as high as valence values. This could imply a relaxing tendency and intention at the time of booking a room. These conclusions offer answers to research questions 1 and 2 and can be located on a coordinate plane (Fig. 4).

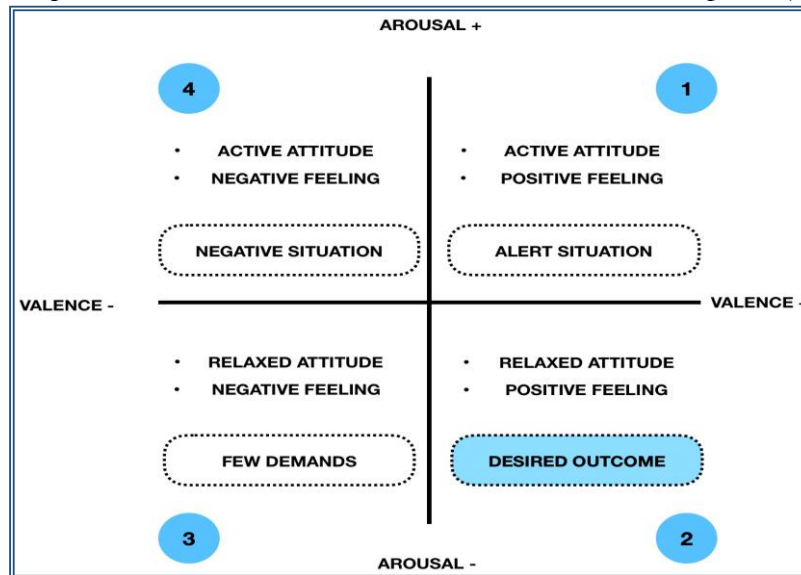


Figure: 4

Starting from the assumption that users will not book a hotel with emotionally negative reviews, quadrants 3 and 4 will contain only negative situations. In quadrant 1, where valence and arousal are greater than 4.5/9, reviews will reflect both a positive and active situation, in line with Bradley et al. (1999). Words in quadrant 2 reviews would also reflect a positive feeling, but this time the attitude would be relaxed. As (Frost et al., 1987) stated, affective variables influence visual word recognition. Therefore, depending on the attitude and intentions of the user, reviews from quadrants 1 and 2 should be considered essential.

The emotional value of the most used words is positive. As stated in Section 4, context is everything; nonetheless, a positive word in a negative context is always preferable to a negative word in a positive situation. The same options apply for adjectives, nouns, verbs, and any type of word (Fig. 5).

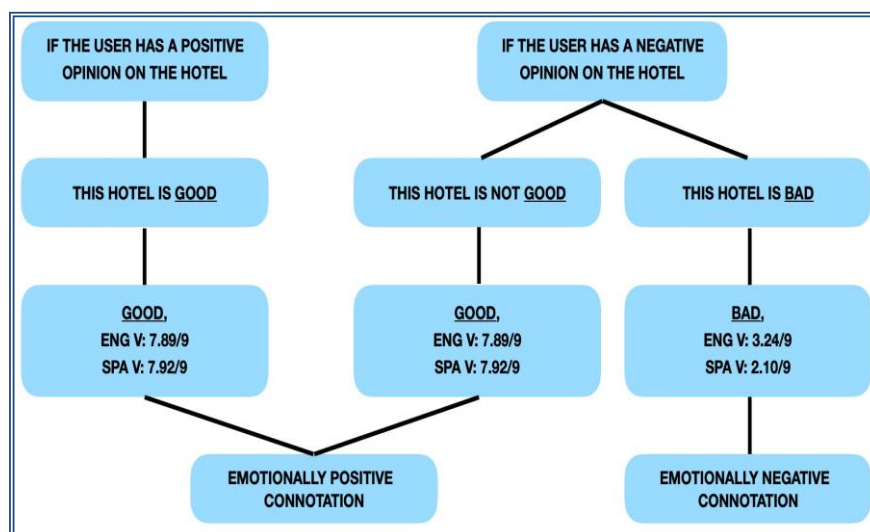


Figure: 5

If users have a positive perception of the hotel, it can be inferred that they will use positive words. If users do not have a positive perception of the hotel, they will use negative words, or they may use the form “denial + positive word.” Even if they want to say something negative, using a positive word in the sentence can change the valence of the whole sentence, so the use of positive and negative words can have different effects depending on the context. Premium hotel was positive. This indicates that regardless of whether users are describing a good or a bad experience, they will use positive words, which may influence the decisions of future customers (see Fig. 5).

The linguistic barrier does not imply the use of different words, even given that the valence of both languages differs slightly. No important differences were found between budget and premium hotels; the comments in both categories included words with high emotional content and positive valences, with only slight differences between them. Thus, allowing for the price–quality ratio, budget and premium hotels are very similar, and there is even a slight preponderance of positive words in reviews for budget hotels.

Research question 3 focused on possible differences between hotel categories. Some of the most popular words used for budget hotels referred to the utilitarian aspects of the hotel (e.g., “cleaning,” “location,” and “downtown”), and the words used for premium hotels referred to the hedonic aspects (e.g., “comfort” and “restaurant”). This makes sense in terms of the nature and definition of utilitarian and hedonic goods and services. However, there were no clear or important differences in the types of words used in each category.

9. Limitations

This study has two main limitations that suggest avenues for future research. First, the emotional feeling behind the words used in reviews to describe previous experiences is clear. However, the ultimate effect on the purchase decision remains unknown.

Therefore, it is necessary to analyze the correlation between valence/arousal and purchase decision. Future analysis will allow the classification of users in each of the quadrants.

Second, it was necessary to use previous studies to check valence and arousal values in order to analyze the affective value of different words. Despite the numerous databases, there were some words with missing values (e.g., “downtown” and “cheap”), and these words therefore appear in the present study with no value assigned.

Works Citation

- Bradley, M. M., Lang, P. J., Bradley, M. M., & Lang, P. J. (1999). *Affective Norms for English Words (ANEW): Instruction manual and affective ratings*.
- Brysbaert, M., Warriner, A. B., & Kuperman, V. (2014). Concreteness ratings for 40 thousand generally known English word lemmas. *Behavior Research Methods*, *46*(3), 904–911. <https://doi.org/10.3758/s13428-013-0403-5>
- Buhalis, D., & Law, R. (2008). Progress in information technology and tourism management: 20 years on and 10 years after the Internet—The state of eTourism research. *Tourism Management*, *29*(4), 609–623. <https://doi.org/10.1016/j.tourman.2008.01.005>
- Chen, P.-Y. S., Wu, S., & Yoon, J. (2004). The Impact of Online Recommendations and Consumer Feedback on Sales. *ICIS*.
- Chevalier, J. A., & Mayzlin, D. (2006). The Effect of Word of Mouth on Sales: Online Book Reviews. *Journal of Marketing Research*, *43*(3), 345–354. <https://doi.org/10.1509/jmkr.43.3.345>
- Ekman, P. (1992). An argument for basic emotions. *Cognition and Emotion*, *6*(3–4), 169–200. <https://doi.org/10.1080/02699939208411068>
- Ferré, P., Guasch, M., Martínez-García, N., Fraga, I., & Hinojosa, J. A. (2017). Moved by words: Affective ratings for a set of 2,266 Spanish words in five discrete emotion categories. *Behavior Research Methods*, *49*(3), 1082–1094. <https://doi.org/10.3758/s13428-016-0768-3>
- Filieri, R. (2016). What makes an online consumer review trustworthy? *Annals of Tourism Research*, *58*, 46–64. <https://doi.org/10.1016/j.annals.2015.12.019>
- Filieri, R., Alguezaui, S., & McLeay, F. (2015). Why do travelers trust TripAdvisor? Antecedents of trust towards consumer-generated media and its influence on recommendation adoption and word of mouth. *Tourism Management*, *51*, 174–185. <https://doi.org/10.1016/j.tourman.2015.05.007>
- Forman, C., Ghose, A., & Wiesenfeld, B. (2008). Examining the Relationship Between Reviews and Sales: The Role of Reviewer Identity Disclosure in Electronic Markets. *Information Systems Research*, *19*(3), 291–313.
- Frost, R., Katz, L., & Bentin, S. (1987). Strategies for visual word recognition and orthographical depth: A multilingual comparison. *Journal of Experimental Psychology: Human Perception and Performance*, *13*(1), 104–115. <https://doi.org/10.1037/0096-1523.13.1.104>
- Guasch, M., Ferré, P., & Fraga, I. (2016). Spanish norms for affective and lexico-semantic variables for 1,400 words. *Behavior Research Methods*, *48*(4), 1358–1369. <https://doi.org/10.3758/s13428-015-0684-y>
- Hennig-Thurau, T., Gwinner, K. P., Walsh, G., & Gremler, D. D. (2004). Electronic word-of-mouth via consumer-opinion platforms: What motivates consumers to articulate themselves on the Internet? *Journal of Interactive Marketing*, *18*(1), 38–52. <https://doi.org/10.1002/dir.10073>

- Hinojosa, J. A., Rincón-Pérez, I., Romero-Ferreiro, M. V., Martínez García, N., Villalba-García, C., Montoro, P. R., & Pozo, M. A. (2016). The Madrid Affective Database for Spanish (MADS): ratings of dominance, familiarity, subjective age of acquisition and sensory experience. *PLoS ONE*, *11*. <https://doi.org/10.1371/journal.pone.0155866>
- Kim, W. G., Lim, H., & Brymer, R. A. (2015). The effectiveness of managing social media on hotel performance. *International Journal of Hospitality Management*, *44*, 165–171. <https://doi.org/10.1016/j.ijhm.2014.10.014>
- Lang, P. J. (1994). The motivational organization of emotion: Affect-reflex connections. In *Emotions: Essays on emotion theory* (pp. 61–93). Lawrence Erlbaum Associates, Inc.
- Lang, P. J., Bradley, M. M., & Cuthbert, B. N. (1990). Emotion, attention, and the startle reflex. *Psychological Review*, *97*(3), 377–395.
- Lang, P. J., Greenwald, M. K., Bradley, M. M., & Hamm, A. O. (1993). Looking at pictures: affective, facial, visceral, and behavioral reactions. *Psychophysiology*, *30*(3), 261–273.
- Liu, Y. (2006). Word of Mouth for Movies: Its Dynamics and Impact on Box Office Revenue. *Journal of Marketing*, *70*(3), 74–89. <https://doi.org/10.1509/jmkg.70.3.074>
- Mudambi, S. M., & Schuff, D. (2010). *What Makes a Helpful Review? A Study of Customer Reviews on Amazon.com* (SSRN Scholarly Paper ID 2175066). Social Science Research Network. <https://papers.ssrn.com/abstract=2175066>
- Park, S., & Nicolau, J. L. (2015). Asymmetric effects of online consumer reviews. *Annals of Tourism Research*, *50*, 67–83. <https://doi.org/10.1016/j.annals.2014.10.007>
- Purnawirawan, N., Eisend, M., De Pelsmacker, P., & Dens, N. (2015). A Meta-analytic Investigation of the Role of Valence in Online Reviews. *Journal of Interactive Marketing*, *31*, 17–27. <https://doi.org/10.1016/j.intmar.2015.05.001>
- Redondo, J., Fraga, I., Padrón, I., & Comesaña, M. (2007). The Spanish adaptation of ANEW (Affective Norms for English Words). *Behavior Research Methods*, *39*(3), 600–605. <https://doi.org/10.3758/BF03193031>
- Sparks, B. A., & Browning, V. (2011). The impact of online reviews on hotel booking intentions and perception of trust. *Tourism Management*, *32*(6), 1310–1323. <https://doi.org/10.1016/j.tourman.2010.12.011>
- Stadthagen-Gonzalez, H., Imbault, C., Pérez Sánchez, M. A., & Brysbaert, M. (2017). Norms of valence and arousal for 14,031 Spanish words. *Behavior Research Methods*, *49*(1), 111–123. <https://doi.org/10.3758/s13428-015-0700-2>
- Vermeulen, I. E., & Seegers, D. (2009). Tried and tested: The impact of online hotel reviews on consumer consideration. *Tourism Management*, *30*(1), 123–127. <https://doi.org/10.1016/j.tourman.2008.04.008>
- Vinson, D., Ponari, M., & Vigliocco, G. (2014). How does emotional content affect lexical processing? *Cognition and Emotion*, *28*(4), 737–746. <https://doi.org/10.1080/02699931.2013.851068>

- Wang, W., Li, F., & Yi, Z. (2019). Scores vs. stars: A regression discontinuity study of online consumer reviews. *Information & Management*, 56(3), 418–428. <https://doi.org/10.1016/j.im.2018.08.002>
- Warriner, A. B., Kuperman, V., & Brysbaert, M. (2013). Norms of valence, arousal, and dominance for 13,915 English lemmas. *Behavior Research Methods*, 45(4), 1191–1207. <https://doi.org/10.3758/s13428-012-0314-x>
- Wilson, A. E., Giebelhausen, M. D., & Brady, M. K. (2017). Negative word of mouth can be a positive for consumers connected to the brand. *Journal of the Academy of Marketing Science*, 45(4), 534–547. <https://doi.org/10.1007/s11747-017-0515-z>
- WTTC. (2019). *Travel Tourism continues strong growth above global GDP | WTTC*. <https://www.wttc.org/about/media-centre/press-releases/press-releases/2019/travel-tourism-continues-strong-growth-above-global-gdp/>
- Wundt, W. (1912). *An introduction to psychology*. MacMillan Co. <https://doi.org/10.1037/13784-000>
- Yang, Y., Park, S., & Hu, X. (2018). Electronic word of mouth and hotel performance: A meta-analysis. *Tourism Management*, 67, 248–260. <https://doi.org/10.1016/j.tourman.2018.01.015>