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Destination Image Semiotics: Evidence from Asian and European Upscale Hospitality Services

Estela Marine-Roig

Department of Economy and Business, University of Lleida, 25006 Lleida, Catalonia, Spain; estela.marine@udl.cat

Abstract: Given the importance of semiotics and destination image (TDI) in the field of tourism and hospitality marketing, this study proposes a conceptual model that integrates Peirce’s semiotic triad, Grönroos’s quality service model, and Morris’s semiotic trichotomies in the TDI formation circle. The new framework aims to measure the contribution of quality hospitality services to online TDI formation. Using scaled comparisons of homogeneous big data, this framework was empirically tested with all two- and three-star Michelin restaurants and a sample of 100 four- and five-star hotels, all located in Asia and Europe, reviewed in 317,979 online travel reviews (OTRs) hosted on TripAdvisor. The results showed that three-star restaurants and five-star hotels are more popular in terms of the number of OTRs, but diners and guests are more satisfied with and loyal to two-star restaurants and four-star hotels. This big data finding contradicts previous survey-based research on quality services. Instead, the results confirm that consumer satisfaction positively affects consumer loyalty. The new approach to the TDI from a semiotic perspective—destination image semiotics—can represent a paradigm shift in the analysis of TDI through user-generated content (UGC). The proposed conceptual framework integrates several sound theoretical models to extract maximum insights from UGC.

Keywords: tourism marketing; destination image semiotics; quality service; Michelin-starred restaurant; luxury hotel; user-generated content; big data; natural language processing; Asia; Europe

1. Introduction

The digital economy has meant a paradigm shift in the management of industries, especially in the field of tourism and hospitality, since the demand in this market sector is sensitive to innovation. However, tourism companies have little capacity for modernization due to the structure of the industry [1]. The main challenge facing the sector is the direct and immediate access of users to information through the internet. Due to digitization, prospective tourists have access to information not only from destination marketing and management organizations (DMOs) but also from user-generated content (UGC) shared on social media [2]. Internet search engines and social networks [3] are the most common sources for obtaining information about the next vacation spot. A recent survey revealed that about half of the respondents were inspired by social media to develop their travel plans [4]. Such tourists can even directly book trips, activities, attractions, and services online. Therefore, the image projected online significantly influences the process of choosing a tourist destination. The digitization of tourism has forced intermediary companies, such as tourist offices, travel agencies, and tour operators, to adapt to the new circumstances, and online travel agencies (OTAs) are booming.

In the context of UGC [5], the content generated by travelers and shared on social media (i.e., “tourist-generated content”, TGC) is an agent for forming the tourist destination image (TDI) because it is part of the projected and perceived images [6]. To analyze TDI, the authors have used different social media sources such as travel blogs [7], travel-related pictures [8], and travel vlogs [9], but online travel reviews (OTRs) are the source of TGC that provide the most information about TDI [10]. The travel-related platforms that host...
the most OTRs are TripAdvisor in the hospitality [11] and tourism [12] industry and Airbnb [13,14] in the peer-to-peer accommodation sector.

Due to the wealth of comments and pictures that visitors share on social media, some researchers [15–18] have initiated the semiotic analysis of textual and visual TGC to explicate aspects related to TDI. Semiotics is the study of the meaning and use of signs and symbols. Signs are universally applicable [19]. For example, photos of dishes from an upscale restaurant do not show simple ingredients but rather represent the distinctiveness and sophistication of haute cuisine. In this area, computerized image recognition and analysis techniques (i.e., image analytics) have advanced significantly in recent years [20].

Moreover, perceived service quality affects and is affected by the corporation’s image [21]. In tourism and hospitality, service quality and customer satisfaction have been two of the most discussed topics in the 21st century [22]. Quality services positively impact the TDI [23] and the luxury hospitality segment encompasses a prestigious image and superior service quality [24]. Upscale restaurants and luxury hotels represent this segment [16] and therefore contribute to the TDI formation.

Social media has a particular impact on the luxury travel sector [25], especially through platforms that host OTRs [26]. DMOs and other stakeholders aspire to attract luxury tourism as opposed to mass tourism. Additionally, luxury travel remains buoyant today and demonstrates its resilience by being one of the tourism segments to recover first from the SARS-CoV-2 pandemic [4]. For these reasons, luxury experiences arouse great interest among researchers [27], both in the tourism field [28,29] and in the hospitality sector [24,30].

The main criticism of the use of UGC, shared on social networks, as a source of research data, was the lack of theoretical foundations [31]. In addition, given the importance of TDI, semiotics, service quality, and social media in the field of tourism and hospitality marketing, as well as the absence of literature that relates these concepts, this study proposes a conceptual framework that integrates two consolidated models—service quality [21] and semiotics [19,32]—in the TDI formation circle [33] to measure the contribution of quality services to the overall online TDI. The framework is applied to the case study of upscale hospitality in Asia and Europe. Social media data consist of valid OTRs, written in English, hosted on TripAdvisor (N = 317,979), corresponding to all two- and three-star Michelin restaurants and a sample of 100 four- and five-star hotels. The volume and valence of the OTRs collected, organized by property location and visit date, allow measuring the contribution of the different services to TDI. Services are classified by region (i.e., Asia and Europe), type (i.e., hotel and restaurant), and class (i.e., star rating). Scaling the data between 0 and 100 facilitates comparisons between data sets of different volumes.

2. Theoretical Background

Studies on TDI date back to the mid-20th century. Since then, research on TDI has been ongoing [34–36]. However, due to the proliferation of social networks over the past ten years, the data source has evolved from surveys of a few hundred respondents to TGC shared on social media by thousands of visitors [37]. For instance, recent TDI studies use big data from TGC as a primary source of information [38].

The most frequent core words in TDI definitions, such as “impression”, “perception”, “belief”, and “idea” [39], confirm the subjectivity of the perceived TDI. From this subjective perspective, the TDI is a mental representation of the destination’s resources [40]. Taking the online information into account, the TDI is formed mainly from the addition of narratives, comments, ratings, and pictures, shared online by visitors, about tourist spots, attractions, activities, products, and services, which collectively constitute the online TDI as a whole [6]. In contrast to Gartner’s model of TDI formation [41], induced agents (i.e., DMOs and other tourism stakeholders) now have lower market penetration than organic agents (i.e., visitors) due to the electronic word-of-mouth (eWoM) TDI dissemination [42].
2.1. Semiotics

Scholars attribute the founding of modern semiotics to the American philosopher and semiotician Charles Sanders Peirce [19]. According to this author, Peirce’s reflections start from a simple notion: a sign is something that represents something else and is understood by someone or has a meaning for someone. From it, Peirce’s triad of sign-object-interpretant is deduced. Regarding the relationships between signs and objects, Peirce divides signs into (1) icons that have a resemblance to the object, e.g., a picture or a diagram; (2) indices that relate in some real way to the object, e.g., a signpost, the symptom of an illness; (3) symbols that have no similarity or physical connection to the object, e.g., a flag or a swastika. These sign categories are not mutually exclusive [19].

For the purposes of this case study, although Peirce’s triad is useful to substantiate the relationships between the image projected by the agents, the tourism resource, and the image perceived by tourists (Figure 1), there are two issues related to the interpretant that need further explanation and development: How does the visitor value the information (right side of the triangle) in contrast to his or her experience (base of the triangle)? What is the visitor’s behavior? The semiotic trichotomies of the American philosopher and semiotician Charles William Morris, who argued for the resolution of the problems posed by the sign–behavior relationship [32], help answer these questions. This semiotician was clear that all human action is unthinkable without processing and evaluating signs, just as Peirce stated that all thought is in signs. Both considerations lead to the universal applicability of semiotics [19,43].

![Figure 1. Destination image semiotic triangle. Derived from Peircean triad.](image)

Morris proposed semiotics as the science of all signs to include nonlinguistic and even nonhuman sign processes and defined semiotics as syntactics, semantics, and pragmatics and their interrelationships. Syntactics covers relationships between signs, including the rules of the sign system; semantics covers the meaning of the sign in relation to its object; and pragmatics refers to the origin, use, and effects of signs [44]. Syntactics is not included in the scope of the present study. Semantics is divided into three aspects: designative, appraisive, and prescriptive, but these three modalities of signification can co-occur. Finally, pragmatics comprises three uses: informative, valuative, and incitive [32].

2.2. Destination Image Semiotics

Studies on semiotics in the field of tourism and hospitality were rare at the end of the last century [45] and are still scarce today [16], despite the fact that some authors directly correlated tourism with the theory of signs [46]. For instance, tourists gaze at places that they have already consumed in image form. Gazing is constructed through signs, and tourism entails the collection of signs [47]. This sight-as-sign idea, derived from MacCannell, was criticized by another author [48] who considered that the cases examined
by MacCannell were special and, therefore, it could not be generalized that other sights constituted signs without careful substantiation.

The concept of “destination image semiotics” aims to typify, from a semiotic perspective, the close relationship between the projected image, the designated tourism resources, and the perceived image. Figure 1 shows the TDI based on Peirce’s semiotic triad of sign-object-interpretant. Destination agents—whether induced, autonomous, or organic—project (mostly online) an image of tourist and hospitality resources. But from a marketing perspective, what truly counts is the image perceived by tourists or visitors. That is, the most important thing is the interpretation in the mind of the recipient. Therefore, this study proposes to expand Peirce’s triadic model with Morris’s semiotic trichotomies that allow the assessment of the contrast between the images projected and perceived through the experience, as well as the behavior of visitors.

2.3. Conceptual Model

Aligned with the semiotic triangle (Figure 1), the top of the model in Figure 2 shows the online TDI formation circle [33] bound by the projected and perceived images [49]. The induced, autonomous, and organic agents project an image of the service based on its technical (What?), functional (How?), and environmental (Where?) quality [21]. This information reinforces the motivations and generates expectations in prospective clients. The perceived service quality is the result of the comparison between expectations and the service received [21]. Perceived quality produces (dis)satisfaction, which influences (dis)loyalty. The circle is closed when customers share their experiences and opinions on social media through eWoM communication [50].

![Figure 2. Conceptual framework derived from previous work [6,17].](image-url)
The bottom of the model in Figure 2 represents the aspects and dimensions of the service image that contribute to the TDI formation. The framework is derived from previous work [6,17] that develops Morris’s semiotic trichotomies. Semantic semiotic aspects are associated with pragmatic aspects. The designative aspect has an informative use that allows for measuring the popularity of the resource, activity, or service located in time and place. The appraisive aspect has a valuative use of the experience that determines customer satisfaction. The prescriptive aspect represents the customer’s reaction to previous stimuli and translates into a service recommendation (attitudinal loyalty) or their intention to return to the place (behavioral loyalty).

As can be seen in the diagram at the bottom of Figure 2, there is a hierarchical relationship between the three semantic aspects [51]: “a kind of rudimentary hierarchy of effects in which prescriptive modes of signifying depend on appraisive modes which, in turn, draw upon designative modes” (p. 6).

2.4. Hypotheses Development

Figure 3 shows the main constructs and observable variables derived from the conceptual framework in Figure 2: service quality, establishment’s online popularity, customer satisfaction, and customer loyalty. Quality and popularity form part of the projected image and designative aspect (informative use), while satisfaction (appraisive use) and loyalty (incitive use) are part of the perceived image. In addition to the constructs (i.e., latent variables) and their interrelationships (i.e., hypotheses), Figure 3 shows some dimensions or observable variables whose comparison can be useful for extracting insights from the data.

The modeled relationships between service quality, satisfaction, and loyalty coincide with what most authors who have analyzed those constructs have suggested. For example, in the research on tourism, service quality and tourist satisfaction are thought to be the chief antecedents of destination loyalty [52,53]; both tangible and intangible service quality are thought to influence satisfaction and to jointly influence loyalty [54]; and, in all studies, the most popular antecedent of satisfaction is service quality, and the most popular consequent is loyalty [55,56]. Unlike in the aforementioned studies, the proposed model incorporates the construct of “Popularity” online to represent the quantity and quality of social media posts referring to the establishment.

2.4.1. Service Quality

For a star rating system for this case study, we had two-star Michelin restaurants and four-star GIATA hotels represent the observable variable “HighClass” and the three-star Michelin restaurants, and five-star GIATA hotels represent “TopClass”. The “Quality” construct comprised the variables “HighClass” and “TopClass”: such luxury hotels and upscale restaurants provide their clients with products, attentive services, and sophisticated environments of excellent quality [57]. Comparing establishments of the same type (i.e., hotel or restaurant), by definition, the “TopClass” services, have higher quality facilities and amenities than the “HighClass” services.
A major motivation behind luxury consumption is the intention to gain social status [57,58]. By the same token, such a “need for status” refers to the intention to improve one’s social position through luxury consumption [59]. However, gaining social status requires displaying, showing off, or encouraging the consumption of luxury products and services among relatives, friends, and acquaintances. The most effective way for tourists to disseminate narratives about and assessments of experiences is through WoM and eWoM. Therefore, both patricians (i.e., low in need for status) and parvenus (i.e., high in need for status) can be expected to show the same probability of spreading positive WoM about luxury hospitality purchases [59]. Furthermore, service quality has a huge impact on creating WoM [60,61] and positively influences eWoM [62,63].

H1. TopClass properties receive more OTRs than HighClass properties.

The need for status is a significant predictor of expected satisfaction [59]. Regarding the relationship between service quality and customer satisfaction, scholars agree that the level of service quality positively affects satisfaction [64]. For example, in the context of mid-upscale hotels, service quality is paramount for customer satisfaction [65]. Other authors have highlighted the positive relationship between perceived service quality and customer satisfaction [66]. As for the valence of OTRs, most OTRs on TripAdvisor have positive polarity [67,68]; although all hotels benefit from positive feedback, high ratings are more important for top-tier hotels [69], and customers of luxury hotels rate hotels significantly higher than customers of mid-range and budget hotels [70].

H2. Service quality has a direct positive effect on customer satisfaction.

2.4.2. Establishment Popularity

The construct of “Popularity” reflects the number (i.e., volume) of OTRs received by establishments considering various spatial and temporal dimensions. Meanwhile, the “Location” variable represents the property’s region or country and the “Date” variable indicates the month of the tourist’s stay or visit.

Some authors have shown that eWoM affects business performance—for instance, the number of OTRs has a significant positive impact on the performance of restaurants [71], rural accommodations [72], and lower-tier hotels [69]. However, few studies have examined the relationship between volume (i.e., number) and valence (i.e., polarity of ratings) of OTRs. In terms of the volume of OTRs, there is a positive correlation between customer satisfaction and the number of customers’ comments about the restaurant’s offerings on TripAdvisor [73], and there is a certain linear relationship between the volume of hotel OTRs and ratings on TripAdvisor [74].

H3. Volume of OTRs has a direct positive effect on customer satisfaction.

2.4.3. Customer Satisfaction and Loyalty

With satisfaction being tourists’ overall evaluation of their total purchase and consumption experience [75], the “Satisfaction” construct represented the observable variables “AvgSc” (i.e., weighted average score) and “Feel” (i.e., feelings). Meanwhile, with tourist loyalty conceptualized as a composite loyalty formed by attitudinal and behavioral responses [76], the “Loyalty” construct represented the observable variables “Behav” (i.e., visit or revisit intention) and “Recom” (i.e., recommendation to others or intention to recommend).

There is a broad consensus among researchers that customer satisfaction is the principal antecedent of customer loyalty. Several literature reviews have examined published work on the relationships between customer satisfaction and loyalty, in the fields of marketing [64], tourism [55], and hospitality [77].
Customer satisfaction has a direct positive effect on customer loyalty.

3. Materials and Methods

This projected framework is applied in this study to two regions, Asia (AS) and Europe (EU). Each of these areas has its own distinct brand personality [12] and a prominent contrasting culture [78]. What they have in common is the significant economic impact that travel and tourism has on their gross domestic products (GDPs). Taking 2019 as a reference, the year before the outbreak of the SARS-CoV-2 pandemic, travel and tourism in Asia accounted for 9.8% of GDP and 9.9% of total employment, while in Europe they represented 9.2% of GDP and 9.9% of jobs [79]. In the hospitality industry, four- and five-star hotels and two- and three-star Michelin restaurants are the hallmarks of upscale services [16]. The methodology to extract useful information from TGC is based on text mining techniques [80] through natural language processing (NLP) [81].

3.1. Data Source

TripAdvisor is the leading travel-related platform hosting hotel and restaurant OTRs [80] and bills itself as the world’s largest travel guidance platform, hosting more than a billion reviews and comments and serving hundreds of millions of visitors each month. TripAdvisor provides multiple OTR classifications within each of its three main sections: Things to do (tourist attractions and activities), Restaurants, and Hotels.

The 2sR (two-star restaurants) and 3sR (three-star restaurants) in the Michelin Guide [82] are the most representative of upscale restaurants [83]. Regarding luxury hotels, there are disparate classifications at the regional level. According to TripAdvisor, the study uses the 4sH (four-star hotels) and 5sH (five-star hotel) classes recognized by GIATA (worldwide hotel mapping service), which indicate the general level of features, amenities, and services to expect.

3.2. Data Collection

Within the TripAdvisor Restaurants section, the current study collected all the OTRs written in English on all two- and three-star Michelin restaurants located in Asia and Europe. Considering the large number of luxury hotels located in both regions, the study drew a sample of all OTRs written in English of the 25 four-star and 25 five-star hotels best rated by TripAdvisor in each region. The TripAdvisor best value hotels criteria represent the properties that are ranked using exclusive TripAdvisor data, including traveler ratings, confirmed availability from partners, prices, booking popularity, location, and personal user preferences. In total, 317,979 valid OTRs, from inception to 2022, were downloaded and processed (Table 1).

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>AS2sR</td>
<td>116</td>
<td>11115</td>
<td>1</td>
<td>1104</td>
<td>96</td>
<td>186</td>
<td>3.35</td>
<td>12.26</td>
</tr>
<tr>
<td>AS3sR</td>
<td>40</td>
<td>5942</td>
<td>1</td>
<td>761</td>
<td>149</td>
<td>205</td>
<td>1.63</td>
<td>1.80</td>
</tr>
<tr>
<td>AS4sH</td>
<td>25</td>
<td>40753</td>
<td>215</td>
<td>5192</td>
<td>1630</td>
<td>1431</td>
<td>1.25</td>
<td>0.71</td>
</tr>
<tr>
<td>AS5sH</td>
<td>25</td>
<td>50647</td>
<td>16</td>
<td>8820</td>
<td>2026</td>
<td>2390</td>
<td>1.82</td>
<td>2.93</td>
</tr>
<tr>
<td>EU2sR</td>
<td>305</td>
<td>61281</td>
<td>1</td>
<td>5104</td>
<td>201</td>
<td>525</td>
<td>6.46</td>
<td>49.3</td>
</tr>
<tr>
<td>EU3sR</td>
<td>87</td>
<td>35429</td>
<td>4</td>
<td>3068</td>
<td>407</td>
<td>582</td>
<td>2.56</td>
<td>7.36</td>
</tr>
<tr>
<td>EU4sH</td>
<td>25</td>
<td>52185</td>
<td>47</td>
<td>7213</td>
<td>2087</td>
<td>1910</td>
<td>1.25</td>
<td>1.05</td>
</tr>
<tr>
<td>EU5sH</td>
<td>25</td>
<td>60627</td>
<td>314</td>
<td>6034</td>
<td>2425</td>
<td>1662</td>
<td>0.48</td>
<td>−0.69</td>
</tr>
</tbody>
</table>

Note: Codes: AS = Asian; EU = European; s = star; R = restaurant; H = hotel. Measures: Std. dev = standard deviation; Skew. = skewness; Kurt. = kurtosis.

3.3. Data Arrangement

Once the OTRs were downloaded, the next step was to extract and store the useful information in a comma-separated values (CSV) file because it can be manipulated with a
plain text editor and is compatible with spreadsheets. Data extraction from OTRs included textual data (title and body) [84], paratextual data (codes, dates, scores, etc.) [85], and HyperText Mark-up Language metadata (HTML meta-tags) [86] elements.

3.4. Content Analysis

The content analysis was based on NLP algorithms that were considered artificial intelligence methods to support research on TDIs [87]. Hermeneutic content analysis can be carried out at different levels: words, phrases, documents, etc. This study considered the terms defined in the following section as the minimum unit of analysis. Therefore, it was necessary to have a lexicon of terms for each category. The knowledge extraction procedure consisted of two main phases.

3.4.1. Term Frequency Analysis

Scholars agree that the most frequently used keywords represent the aspects that most concern customers [88]. The first phase consists of extracting significant terms from OTRs using an algorithm developed in previous work [6]. The term [84] “is the minimum unit of content analysis, understood as a single keyword (e.g., Barcelona, distressed, wonderful, and pickpocket) or as a group of consecutive words that together mean what the words alone do not (e.g., New York, never disappoints, not so nice, and off-putting)” (p. 566).

The parser algorithm [6] first extracts, counts, and stores terms composed of two or more consecutive words. Then, if the remaining words are not in the stop word list, they become keywords. Finally, it extracts, counts, and stores these keywords. To compare results, the term frequency is normalized through percentages. As shown, in Figure 3, the observable variables “Feel”, “Behav”, and “Recom” consist of the percentage of related terms included in lexicons, in relation to the total number of words including stop words. The final percentage resulted from subtracting the terms with negative polarity from the terms with positive polarity. The variable “AvgSc” is based on the scores given by reviewers to tourist attractions, activities, or services. In the case of OTRs on TripAdvisor, reviewers represent scores with bubbles (1* . . . 5*) that can be converted to a scale ranging from 0 to 100 using the following formula [84]: 5* (Excellent) = 100; 4* (Very good) = 75; 3* (Average) = 50; 2* (Poor) = 25; and 1* (Terrible) = 0. The scaling of the data gives reliability to the comparisons. A search and replace function using regular language patterns normalized some data according to the standards of the International Organization for Standardization (ISO). Thus, the “Date” appears in the YYYY-MM-DD format according to ISO-8601, while “Location” is denoted by the two-letter country code ISO-3166-1. Therefore, the result of this phase is a CSV file with three columns: term, frequency, and percentage (Tables 2 and 3).

Table 2. Key terms used most frequently in hotel OTRs.

<table>
<thead>
<tr>
<th></th>
<th>AS4sH</th>
<th>%</th>
<th>AS5sH</th>
<th>%</th>
<th>EU4sH</th>
<th>%</th>
<th>EU5sH</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>hotel</td>
<td>1.163</td>
<td>hotel</td>
<td>0.699</td>
<td>hotel</td>
<td>1.533</td>
<td>hotel</td>
<td>1.208</td>
</tr>
<tr>
<td>2</td>
<td>staff</td>
<td>0.762</td>
<td>room/s</td>
<td>0.680</td>
<td>room/s</td>
<td>0.999</td>
<td>room/s</td>
<td>0.727</td>
</tr>
<tr>
<td>3</td>
<td>stay/ed</td>
<td>0.749</td>
<td>stay/ed</td>
<td>0.588</td>
<td>staff</td>
<td>0.708</td>
<td>staff</td>
<td>0.546</td>
</tr>
<tr>
<td>4</td>
<td>great</td>
<td>0.725</td>
<td>great</td>
<td>0.523</td>
<td>stay/ed</td>
<td>0.660</td>
<td>stay/ed</td>
<td>0.485</td>
</tr>
<tr>
<td>5</td>
<td>service</td>
<td>0.555</td>
<td>great</td>
<td>0.466</td>
<td>great</td>
<td>0.572</td>
<td>great</td>
<td>0.410</td>
</tr>
<tr>
<td>6</td>
<td>service</td>
<td>0.478</td>
<td>resort</td>
<td>0.393</td>
<td>location</td>
<td>0.443</td>
<td>service</td>
<td>0.337</td>
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<tr>
<td>7</td>
<td>good</td>
<td>0.445</td>
<td>service</td>
<td>0.360</td>
<td>breakfast</td>
<td>0.401</td>
<td>good</td>
<td>0.306</td>
</tr>
<tr>
<td>8</td>
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<td>good</td>
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<tr>
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<td>0.315</td>
<td>service</td>
<td>0.272</td>
<td>amazing</td>
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<tr>
<td>10</td>
<td>nice</td>
<td>0.310</td>
<td>pool</td>
<td>0.294</td>
<td>friendly</td>
<td>0.271</td>
<td>nice</td>
<td>0.212</td>
</tr>
</tbody>
</table>

Note: AS4sH: Asian four-star hotel; AS5sH: Asian five-star hotel; EU4sH: European four-star hotel; EU5sH: European five-star hotel.
Table 3. Key terms used most frequently in restaurant OTRs.

<table>
<thead>
<tr>
<th></th>
<th>AS2sR %</th>
<th>AS3sR %</th>
<th>EU2sR %</th>
<th>EU3sR %</th>
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<tr>
<td>1 food</td>
<td>0.712</td>
<td>food</td>
<td>0.669</td>
<td>food</td>
</tr>
<tr>
<td>2 restaurant</td>
<td>0.520</td>
<td>restaurant</td>
<td>0.547</td>
<td>restaurant</td>
</tr>
<tr>
<td>3 service</td>
<td>0.493</td>
<td>service</td>
<td>0.496</td>
<td>service</td>
</tr>
<tr>
<td>4 dish/es</td>
<td>0.364</td>
<td>good</td>
<td>0.375</td>
<td>wine/s</td>
</tr>
<tr>
<td>5 good</td>
<td>0.348</td>
<td>dish/es</td>
<td>0.373</td>
<td>course/s</td>
</tr>
<tr>
<td>6 experience</td>
<td>0.347</td>
<td>experience</td>
<td>0.323</td>
<td>experience</td>
</tr>
<tr>
<td>7 great</td>
<td>0.313</td>
<td>menu</td>
<td>0.286</td>
<td>menu</td>
</tr>
<tr>
<td>8 course/s</td>
<td>0.286</td>
<td>great</td>
<td>0.262</td>
<td>dish/es</td>
</tr>
<tr>
<td>9 menu</td>
<td>0.275</td>
<td>course/s</td>
<td>0.258</td>
<td>good</td>
</tr>
<tr>
<td>10 wine/s</td>
<td>0.260</td>
<td>wine/s</td>
<td>0.247</td>
<td>great</td>
</tr>
</tbody>
</table>

Note: AS2sR: Asian two-star restaurant; AS3sR: Asian three-star restaurant; EU2sR: European two-star restaurant; EU3sR: European three-star restaurant.

3.4.2. Grouping of Terms by Categories

Categories are structures that allow key terms with similar meanings or connotations to be grouped together [88]. Categories should be mutually exclusive and, if possible, exhaustive. When the category must cover millions of words, as in this case study, it is virtually impossible to achieve completeness [84]. The textual categories correspond to the affective, attitudinal, and behavioral dimensions in Figures 2 and 3, while the paratextual elements nourish the spatial, temporal, and evaluative dimensions.

The study has six basic lexicons, three with positive polarity (+) and three with negative polarity (−), which list the terms corresponding to the three mentioned dimensions. An algorithm runs through each of the term frequency lists (Tables 2 and 3) obtained in the first phase and, aided by the lexicons, classifies and counts the terms of each dimension.

4. Results and Discussion

Table 1 displays the descriptive statistics of the sample, which comprises 100 hotels, 548 restaurants, and 317,979 OTRs. According to the Michelin Guide [82], Europe has twice as many restaurants as Asia. Considering that the average number of OTRs represents the popularity of establishments, Table 1 shows the following: the popularity of the selected hotels is much higher than that of the restaurants; in both regions, popularity is higher in three-star restaurants and five-star hotels; and the popularity is higher in Europe in all cases. Nonzero skewness and non-three kurtosis indicate that the samples do not have a standard distribution. This disparity of the samples does not allow for comparisons between the different establishments and regions. For this reason, the results are normalized through percentages.

Table 2 shows the most frequent key terms in hotel OTRs. In the first five positions of the ranking, the keywords coincide with ‘hotel’, ‘room’, ‘staff’, ‘stay’, and ‘great’), but there are significant differences between them because the five keywords are more frequent in four-star hotels. In the fifth position, the adjective ‘great’ stands out because it has a marked positive polarity. In parallel, the adjective ‘good’ is also more common in four-star hotels.

Table 3 shows the most frequent key terms in restaurant OTRs. As expected, in the first two positions of the ranking, the keywords coincide (‘food’, and ‘restaurant’). Two significant differences in the usage of terms stand out. The adjective ‘great’ is more frequent in two-star restaurants and the drink ‘wine’ is much more frequent in European restaurants.

4.1. Designative Aspect (Informative Use)

In the previous section, information aspects such as the popularity of the establishments and the terms that most concern reviewers in the different cases have already been seen. The spatial and temporal dimensions are detailed below.

Spatial dimension: Table 1 details the contrast between the number of establishments and reviews in the two regions. At the country level, France in Europe and Japan in Asia
stand out for the quantity and quality of restaurants. The gastronomy of these countries was recognized by the United Nations Educational, Scientific and Cultural Organization [89]. Taking into account that the selection of hotels was made through TripAdvisor’s popularity ranking, the countries that stand out by the number of hotels and OTRs are Vietnam (AS4), Italy (EU4), Indonesia (AS5), and the United Kingdom (EU5).

Temporal dimension: Generally speaking, visits are more frequent during the third quarter in Europe and during the fourth quarter in Asia (Table 4). Figure 4 shows how the percentage of OTRs for the past five years has changed over time. Due to the COVID-19 pandemic, visits during the years 2020 and 2021 were limited by mobility restrictions. While visits to Asian and European Michelin-starred restaurants are slowly recovering, hotel stays are picking up quickly, to the point that five-star hotels in 2022 surpassed 2019 pre-pandemic occupancy levels.

Table 4. Monthly distribution of visits to Asian and European hotels and restaurants.

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>AS2sR</td>
<td>8.12</td>
<td>6.90</td>
<td>8.09</td>
<td>9.19</td>
<td>8.73</td>
<td>7.87</td>
<td>7.22</td>
<td>8.10</td>
<td>8.32</td>
<td>9.06</td>
<td>9.37</td>
<td>9.05</td>
</tr>
<tr>
<td>AS4sR</td>
<td>9.32</td>
<td>7.85</td>
<td>8.00</td>
<td>7.10</td>
<td>6.52</td>
<td>7.07</td>
<td>7.43</td>
<td>7.52</td>
<td>8.33</td>
<td>9.21</td>
<td>10.35</td>
<td>11.29</td>
</tr>
<tr>
<td>AS5sR</td>
<td>8.99</td>
<td>6.93</td>
<td>8.01</td>
<td>7.31</td>
<td>7.29</td>
<td>7.84</td>
<td>7.76</td>
<td>8.33</td>
<td>8.18</td>
<td>9.10</td>
<td>9.34</td>
<td>10.93</td>
</tr>
<tr>
<td>EU2sR</td>
<td>5.54</td>
<td>6.38</td>
<td>7.06</td>
<td>8.08</td>
<td>9.54</td>
<td>9.55</td>
<td>10.20</td>
<td>9.27</td>
<td>10.54</td>
<td>9.42</td>
<td>7.37</td>
<td>7.04</td>
</tr>
<tr>
<td>EU4sH</td>
<td>5.90</td>
<td>6.70</td>
<td>7.33</td>
<td>7.91</td>
<td>9.31</td>
<td>8.97</td>
<td>9.66</td>
<td>10.41</td>
<td>9.76</td>
<td>9.64</td>
<td>7.45</td>
<td>6.94</td>
</tr>
<tr>
<td>EU5sH</td>
<td>5.60</td>
<td>5.82</td>
<td>6.11</td>
<td>7.38</td>
<td>8.83</td>
<td>10.04</td>
<td>10.22</td>
<td>10.90</td>
<td>11.41</td>
<td>10.11</td>
<td>7.04</td>
<td>6.54</td>
</tr>
</tbody>
</table>

Note: Codes: AS = Asian; EU = European; s = star; R = restaurant; H = hotel.

Figure 4. Annual evolution of visits by the number of OTRs. Source: own elaboration.

4.2. Appraisive Aspect (Valuative Use)

Table 5 shows the percentages of the evaluative dimension (AvgSc)—scores given by clients—and the affective dimension (Feel)—polarity of the terms contained in the OTRs in relation to the total number of words, including stop words. In all cases in Table 5, except for one, both the evaluative and affective dimensions are more positive in two-star restaurants compared to three-star ones and in four-star hotels compared to five-star hotels. Both appraisal dimensions are more positive in hotels than in restaurants.
Table 5. Evaluative and affective dimensions of the appraisive aspect.

<table>
<thead>
<tr>
<th>Code</th>
<th>% 5*</th>
<th>% 4*</th>
<th>% 3*</th>
<th>% 2*</th>
<th>% 1*</th>
<th>AvgSc</th>
<th>Feel−</th>
<th>Feel+</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS2sR</td>
<td>69.87</td>
<td>16.80</td>
<td>6.70</td>
<td>3.45</td>
<td>3.18</td>
<td>86.68</td>
<td>0.47</td>
<td>4.04</td>
</tr>
<tr>
<td>AS3sR</td>
<td>66.69</td>
<td>18.07</td>
<td>8.80</td>
<td>3.58</td>
<td>2.84</td>
<td>85.55</td>
<td>0.50</td>
<td>3.85</td>
</tr>
<tr>
<td>AS4sH</td>
<td>88.46</td>
<td>7.44</td>
<td>2.07</td>
<td>0.95</td>
<td>1.08</td>
<td>95.31</td>
<td>0.33</td>
<td>5.53</td>
</tr>
<tr>
<td>AS5sH</td>
<td>80.67</td>
<td>13.18</td>
<td>3.62</td>
<td>1.32</td>
<td>1.22</td>
<td>92.69</td>
<td>0.43</td>
<td>4.93</td>
</tr>
<tr>
<td>EU2sR</td>
<td>73.99</td>
<td>13.08</td>
<td>7.03</td>
<td>3.38</td>
<td>2.53</td>
<td>88.15</td>
<td>0.56</td>
<td>4.24</td>
</tr>
<tr>
<td>EU3sR</td>
<td>77.67</td>
<td>11.30</td>
<td>5.77</td>
<td>2.91</td>
<td>2.35</td>
<td>89.76</td>
<td>0.52</td>
<td>3.97</td>
</tr>
<tr>
<td>EU4sH</td>
<td>84.80</td>
<td>12.65</td>
<td>1.80</td>
<td>0.48</td>
<td>0.27</td>
<td>95.30</td>
<td>0.29</td>
<td>5.36</td>
</tr>
<tr>
<td>EU5sH</td>
<td>83.06</td>
<td>11.38</td>
<td>3.40</td>
<td>1.17</td>
<td>0.99</td>
<td>93.59</td>
<td>0.44</td>
<td>4.71</td>
</tr>
</tbody>
</table>

Note: Codes: AS = Asian; EU = European; s = star; R = restaurant; H = hotel; * = TripAdvisor bubble; AvgSc = weighted average score; −/+ = feelings’ polarity.

4.3. Prescriptive Aspect (Incitive Use)

Table 6 shows the frequency and percentage of terms, in relation to the total number of words, of the attitudinal dimension (Recom)—a recommendation or the intention to recommend the establishment—and the behavioral dimension (Behav)—the intention to return to the establishment. In all cases, positive intentions are higher in hotels than in restaurants. In parallel with feelings, attitudinal and behavioral intentions in both regions are more positive in two-star restaurants than in three-star restaurants, and in four-star hotels than in five-star hotels.

Table 6. Attitudinal and behavioral intentions, and summary of feelings.

<table>
<thead>
<tr>
<th>Code</th>
<th>Recom−</th>
<th>Recom+</th>
<th>Behav−</th>
<th>Behav+</th>
<th>Feel</th>
<th>Recom</th>
<th>Behav</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS2sR</td>
<td>0.0383</td>
<td>0.2471</td>
<td>0.0011</td>
<td>0.0365</td>
<td>3.5681</td>
<td>0.2088</td>
<td>0.0353</td>
</tr>
<tr>
<td>AS3sR</td>
<td>0.0389</td>
<td>0.2149</td>
<td>0.0020</td>
<td>0.0305</td>
<td>3.3529</td>
<td>0.1760</td>
<td>0.0285</td>
</tr>
<tr>
<td>AS4sH</td>
<td>0.0405</td>
<td>0.4343</td>
<td>0.0009</td>
<td>0.1256</td>
<td>5.1985</td>
<td>0.3938</td>
<td>0.1247</td>
</tr>
<tr>
<td>AS5sH</td>
<td>0.0438</td>
<td>0.3040</td>
<td>0.0017</td>
<td>0.0884</td>
<td>4.4923</td>
<td>0.2602</td>
<td>0.0867</td>
</tr>
<tr>
<td>EU2sR</td>
<td>0.0426</td>
<td>0.2620</td>
<td>0.0016</td>
<td>0.0302</td>
<td>3.6797</td>
<td>0.2194</td>
<td>0.0286</td>
</tr>
<tr>
<td>EU3sR</td>
<td>0.0429</td>
<td>0.2334</td>
<td>0.0015</td>
<td>0.0224</td>
<td>3.4846</td>
<td>0.1905</td>
<td>0.0209</td>
</tr>
<tr>
<td>EU4sH</td>
<td>0.0349</td>
<td>0.3733</td>
<td>0.0011</td>
<td>0.1272</td>
<td>5.0737</td>
<td>0.3384</td>
<td>0.1261</td>
</tr>
<tr>
<td>EU5sH</td>
<td>0.0427</td>
<td>0.2830</td>
<td>0.0018</td>
<td>0.0745</td>
<td>4.2715</td>
<td>0.2403</td>
<td>0.0728</td>
</tr>
</tbody>
</table>

Note: Codes: AS = Asian; EU = European; s = star; R = restaurant; H = hotel; −/+ = polarity of intentions.

4.4. Hypothesis Testing

Assuming that English-speaking tourists are not necessarily more likely to share their experiences in one destination than another on social media, Table 1 shows a noticeably higher average of OTRs per establishment in Europe, which is unreasonable. Nevertheless, the greater number of OTRs (Table 1) in hotels than in restaurants may be due to the promotion that hotels do by insisting that their clients post positive OTRs on social media [90]. This marketing strategy can also explain why, in all cases in Tables 5 and 6, guests staying in luxury hotels have more positive opinions than diners dining in upscale restaurants. Table 1 also shows that three-star restaurants and five-star hotels receive a higher average of reviews than two-star restaurants and four-star hotels receive. This circumstance may be due to the desire to improve social status or reputation. That is, reviewers prefer to share on social media that they ate at a high-end restaurant or stayed at a top-class hotel. Those results supported H1.

Comparing Table 5 with Table 6, there is a complete parallelism between the positive feelings that represent satisfaction and the positive attitudinal and behavioral intentions that represent customer loyalty, which confirms that customer satisfaction positively affects customer loyalty, as other authors demonstrated through surveys. Those results supported H4. However, feelings and intentions are more positive in two-star restaurants and four-star hotels. Considering that, by definition, three-star restaurants and five-star hotels offer superior quality services and that scholars agree that higher levels of perceived service
quality lead to greater consumer satisfaction, as demonstrated through surveys, there is a contradiction in these results obtained through TGC. This inconsistency may be due to other variables such as motivations and expectations [91] or the price–quality ratio [92]. These results lead to the rejection of H2. Likewise, comparing the data in Table 1 and the results in Table 5 reveals that the hotels and restaurants with the most OTRs were the worst rated by customers, which required H3 to be rejected as well.

5. Conclusions

The criticism of the use of UGC as a data source was due to the lack of theoretical foundations for the research [31]. The current study develops a conceptual framework for measuring the contribution of quality tourism services to the online TDI via UGC. The framework is applied to a case study on luxury hospitality services through a large and sufficiently representative sample of visitors’ opinions to give reliability to the results [93]. Comparisons between regions with different cultures and climates (in this case, Asia and Europe) and luxury hospitality services (hotels and restaurants) allow useful conclusions to be drawn for stakeholders. Indeed, the results confirm that wine is a more popular drink in Europe than in Asia and that visits are more common in the third quarter in Europe and in the fourth quarter in Asia.

5.1. Theoretical Contribution

Since both the TDI and semiotics are basic elements in tourism and hospitality marketing strategies, the main theoretical or academic contribution is the coining and development of the term “destination image semiotics” to represent the close relationship between TDI and Peirce’s semiotic triad. Given that the recipients’ interpretation is the raison d’être of marketing campaigns [46], the Peircean triadic model is complemented by Morris’s semiotic trichotomies that allow an analysis of the valuation (appraisive aspect, valuative use) and behavior (prescriptive aspect, incitive use) of the people who receive the projected TDI (designative aspect, informative use). The proposed concept of “destination image semiotics” can be extended to other marketing fields, such as brand image [94] and place branding [95].

Regarding the empirical case of luxury hospitality services in Asia and Europe, the study proposes a solid conceptual model and methodological framework that allows for the measurement of the contribution of quality services to the online TDI. The conceptual model integrates the Peircean semiotic triad [19], the service quality model [21], and the semiotic trichotomies [32] in the TDI formation circle [33]. The methodological framework adapted from previous studies [84] facilitates the extraction of valuable insights from the UGC.

The most significant theoretical finding is that service quality is not a determinant of customer satisfaction and loyalty because these constructs were more positive in two-star restaurants and in four-star hotels compared to three-star restaurants and five-star hotels. This finding represents an obvious contradiction between previous results derived from a few hundred respondents and the results obtained in this study through the freely shared opinions of hundreds of thousands (big data) of visitors to Asian and European destinations. Instead, the results confirmed that consumer satisfaction positively affects consumer loyalty.

5.2. Managerial Implications

Practical implications for DMOs and other stakeholders follow from the proposed framework, which facilitates the measurement and comparison of various factors that affect TDI through UGC. The conceptual and methodological framework on quality tourism services (luxury hotels and upscale restaurants) is applicable to local and regional destinations and can be extended to other quality tourism resources, such as those recognized by UNESCO as world heritage sites, that have abundant visual and textual UGC shared by
visitors on social media. The comparisons of results between regions and luxury services resulted in numerous contrasts that stakeholders should consider:

- Hotels recover faster from the pandemic than restaurants.
- Customer satisfaction and loyalty are more positive in hotels in all cases.
- Popularity is highest in Europe in all cases.
- Popularity is higher in hotels than in restaurants.
- Popularity is higher in five-star hotels than in four-star hotels.
- Popularity is higher in three-star restaurants than in two-star restaurants.
- Diner satisfaction and loyalty are more positive in two-star restaurants than in three-star restaurants.
- Guest satisfaction and loyalty are more positive in four-star hotels than in five-star hotels.

5.3. Limitations and Future Work

Although the English language has few inflections, the main limitation of the methodology is that it is difficult to make the lexicon include all terms with positive and negative polarities. In addition to spelling errors, OTRs contain ambiguities that make it difficult to correctly classify key terms. Therefore, only univocal terms in the context of OTRs can be included in lexicons. Despite everything, many authors agree on the reliability of big data in the face of the limited size of survey samples [96].

In this case study, the direct quantitative analysis was sufficient for testing the hypotheses; however, other cases will require, for example, the use of compositional analysis [97], partial least squares, and structural equation modeling (PLS-SEM) techniques [68], and/or mixed methods [98]. Polarity lexicons can be specialized to measure other variables such as cleanliness and safety [6]. Regarding the findings of this study, it would be interesting to analyze in more detail other variables such as customer expectations and the quality-to-cost ratio (value for money) of luxury hospitality services. Finally, it would be illustrative to segment OTRs by reviewers’ region to confirm the cultural contrasts between Asian and European visitors [99].

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**Institutional Review Board Statement:** The ethical approval were exempt because (a) in accordance with the WMA (World Medical Association) Declaration of Helsinki “Ethical principles for medical research involving human subjects”, and in agreement with article 9.4, “Processing of special categories of personal data: European member States may maintain or introduce further conditions, including limitations, with regard to the processing of genetic data, biometric data or data concerning health” of Regulation (EU) 2016/679 of the European Parliament and of the Council on 27 April 2016 on “the protection of natural persons with regard to the processing of personal data and on the free movement of such data.” (b) Spanish legislation only requires the approval of the Research Ethics Committee for the processing of health-related data, genetic data, or biomedical data, according to the Seventeenth additional provision, the “Treatment of health data” of the consolidated text of Organic Law 3/2018, December 5, on the “Protection of Personal Data and guarantee of digital rights” (BOE 294, 6 December 2018).

**Informed Consent Statement:** Participant consent was waived because (a) the scientific research method is statistical, meaning there is no risk of the dissemination of personal data, in accordance with article 89, concerning “Safeguards and derogations relating to processing for archiving purposes in the public interest, scientific or historical research purposes or statistical purposes” of Regulation (EU) 2016/679 of the European Parliament and of the Council on 27 April 2016, concerning “the protection of natural persons with regard to the pro-cessing of personal data and on the free movement of such data.” (b) Spanish legislation only requires informed consent in the case of processing personal data, in accordance with article 6, “Treatment based on the consent of the affected person”, of the consolidated text of Organic Law 3/2018, 5 December, on the “Protection of Personal Data and guarantee of digital rights” (BOE 294, 6 December 2018).
Data Availability Statement: The original contributions presented in the study are included in the article, further inquiries can be directed to the corresponding author.

Conflicts of Interest: The author declares no conflicts of interest.

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