Key Attributes of Michelin 3-star Restaurants’ Experiences: Evidence from TripAdvisor

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Abstract
Consumers can share User Generated Content on social media sites like TripAdvisor, which allows customers to track their contentment and displeasure. These activities are an important form of electronic word-of-mouth that might affect other customers' purchasing decisions. Hence, utilizing User Generated Content from an online platform, this study attempts to investigate guest' experiences in Michelin 3-star restaurants in the United States. Broadly speaking goal of the study was to identify the key aspects of Michelin 3-star restaurant experiences and see if they differed depending on the age and nationality of the traveler. Content analysis approaches were used to examine a sample of 1,032 customer online reviews. After computer-assisted qualitative data analysis identified the dominant themes, subsequent qualitative analysis identified the important narratives connected with Michelin 3-star restaurant experiences using Leximancer software. The findings show that customers are exceedingly pleased with their Michelin 3-star dining experiences. "Food," "chefs," "restaurant," "wine," "staff," and "price" are the major motives that run across the dominant narratives. The findings provide valuable perspectives into guests' overall experiences based on social media data and make it easier to identify the primary themes associated with the guests' gender and nationality.
INTRODUCTION

Online reviews, which are the most prominent kinds of User-Generated Content (UGC), have allowed guests to express his/her views for services as well as post their restaurant experiences (Nilashi et al., 2021; Sulu et al., 2022). In the tourism and hospitality industry, online reviews are commonly utilized to measure guest’s perception (Arasli et al., 2021; Brochado et al., 2019). Many studies on customer perception have been undertaken, with the majority of them focusing on quantitative ratings offered by internet users on social networking sites (Yadegaridehkordi et al., 2021).

However, it is critical to employ advanced language analysis approaches to extract the dimensions of satisfaction from online evaluations, since this will allow researchers to derive useful meanings from users' remarks to aid decision-making and improve service quality (Sulu et al., 2022). As a result, various machine learning approaches have been used to undertake data analysis in the tourism and hospitality literature (Nilashi et al., 2021). These methods have demonstrated that machine learning may be used to extract customer perception and their satisfaction metrics from big datasets. In example, unlike statistical approaches for survey-based approach, machine learning algorithms can automatically detect customers' preferences from social large datasets in real time (Arici et al., 2022; Sulu et al., 2022). Individuals see “electronic word of mouth” (eWOM) posted via consumers as credible (Brochado et al., 2019). Messner (2017) demonstrated that favorable company recommendations are associated to higher ratings shared online through web-based podiums. Although customers’ positive behavioural intentions have been connected to perceived service quality, the existing literature is still uncertain about which service attributes create a better picture (Arasli et al., 2020b).

This study enhances the state of the art in the investigation of customer perceptions of Michelin 3-star restaurants in the United States using naturally generated content. Surprisingly, the current restaurant knowledge base lack evidence about the service perception of Michelin 3-star restaurants from the viewpoint of customers. Hence, our research fills in this lacuna by uncovering and extracting dominant themes of Michelin 3-star restaurant experiences from the online platform data. While content analysis is commonly recognized as the most effective tool for identifying salient concepts from web-based platforms (Arasli et al., 2021), there is no evidence that it was used to investigate Michelin 3-star restaurant guest’s perception. In addition, our research responds to Brochado et al.’s (2019) call who suggested to explore whether the main themes of guests’ overall experiences vary according to individual’s profiles, both gender and nationality. In response to this call, our research looked into the prominent themes of guests’ overall experiences differed depending on their origin and gender, which could provide more insight into Michelin 3-star restaurants’ market segmentation.

Literature Review

User-generated Content of Restaurants

The study of internet restaurant evaluations is crucial because they now play a significant influence in how customers choose where to eat (Bilgihan et al., 2018). Customers' interactions with the hospitality business have changed dramatically because to online social media, which now allows them to read other user's opinions (Oguzbalaban, 2020). TripAdvisor, Zomato, Expedia, and Yelp are just a few of the consumer-generated content websites that have recently acquired popularity among potential customers. Although the accuracy of such online
evaluations has indeed been criticized in the previously (Baker & Kim, 2019), they have been proven to be a great source of information for assisting customers in his selection. These reviews not only assist customers in determining which services to consume, but they also assist managers in developing techniques and strategies to strengthen their market position (Gebbels et al., 2021). The online platform “TripAdvisor” is a game-changer in the travel and tourism sector, having grown to become the largest online travel guide in just a few years, with 411 million monthly users accessing over 700 million travel reviews (Filieri et al., 2020; Khorsand et al., 2020).

While most past hospitality research has focused on hotel as well as other domain of hospitality reviews (e.g., Arasli et al., 2021; Arasli et al., 2020a; Arıcı et al., 2022; Sulu et al., 2022), several studies have looked at how consumers use TripAdvisor to make restaurant decisions (Gebbels et al., 2021). Customers choose eateries according to factors for instance food quality (Abdullah et al., 2018), restaurant ambience (Yi et al., 2018), location (Robinson et al., 2018), pricing, value, and service (Thielemann et al., 2018), selections as well as richness of food, and consumers’ “culture” (Gebbels et al., 2021). Scholars also found that innovation (Arman, 2021; Bayram & Arıcı, 2021) and cutting-edge technologies (Özaydın & Güzeller, 2021; Şahingöz & Yalçın, 2021) have a potential to affect customers’ service quality perception and satisfaction. Indeed, “tangible” and “intangible” components of restaurant attributes influence restaurant choice (location, price, setting) (Nguyen et al., 2018).

Although data as well as reputation regarding “restaurant choice” is essential, it is indeed a void within current research as to how consumers evaluate as well as evaluate different types of restaurants. While some earlier studies have found that the restaurant's location and proximity influence choice (e.g., Tuncer et al., 2021), Michelin starred restaurants have rarely been studied. Consumers might give a synopsis of his/her familiarity, describe the “type”, “date”, and “purpose of their visit”, “propose specific food”, and “upload images” of their dining experience in addition to their numerical assessment of these four categories overall. Beyond simply both numerical as well as written comments can provide more detailed views of users’ feelings in this way (Gebbels et al., 2021).

Methodology

Data Collection

The restaurants chosen for data collection came from the TripAdvisor list of fine dining restaurants in USA. Because of its enormous website traffic, which accounts for a tenth of all online travel traffic, TripAdvisor, the largest travel community in the virtual world, was chosen as the data source (Saydam et al., 2022; Percin & Yigit, 2020). In addition, TripAdvisor receives an average of 490 million monthly visitors and over 730 million reviews and comments (TripAdvisor, 2019). TripAdvisor was chosen as the best source of data for this study because of its vast coverage and notoriety (Chiu & Cho, 2021). Restaurants constituting the sample of the study were selected from guide.michelin.com. Based on the guide.michelin.com, there are fourteen Michelin 3-star restaurants available in the United States. Only English-language reviews were considered, and restaurants with few or no reviews were eliminated from the scraping process. Longer reviews were favored in every situation (Arasli et al., 2021; Cassar et al., 2020). Finally, the sample included 1,302 textual post-experience reviews from guests of fourteen three-Michelin-star restaurants across the United States, which were acquired from the TripAdvisor website. The “convenience sampling” was employed to ensure that the number of user-generated content required to use the software was met. Existing hospitality literature used the same method to match our “sample size” and apply the
program as we did. For example, Arasli et al. (2022) analysed 1,250 reviews, Brochado et al. (2019) used 1,250 reviews, Saydam et al. (2022) collected 1,030 user-generated content.

Table 1. The profile of review contributors

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Number (N = 1,302)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Female</td>
<td>522</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>780</td>
<td>60</td>
</tr>
<tr>
<td>Region</td>
<td>Europe</td>
<td>420</td>
<td>32.3</td>
</tr>
<tr>
<td></td>
<td>Middle East</td>
<td>109</td>
<td>8.4</td>
</tr>
<tr>
<td></td>
<td>Asia</td>
<td>124</td>
<td>9.5</td>
</tr>
<tr>
<td></td>
<td>Australia</td>
<td>110</td>
<td>8.5</td>
</tr>
<tr>
<td></td>
<td>America</td>
<td>539</td>
<td>41.3</td>
</tr>
</tbody>
</table>

According to the data gathered, 522 reviews were written by females (40%) and 780 by males (60%; see Table 1). Around 32.3% of the reviews were posted by European guests, 8.4% by travelers from Middle Eastern countries, 9.5% by tourists from Asia, 8.5% by tourists from Australia and 41.3% by Americans. A total of 1,302 Web reviews were collected.

**Analysis Tools**

Leximancer software (Version 5.0) was used to conduct the study, which uses a “Bayesian statistical theory-based” technique to guide fragmented pieces of data into logical clusters (Arasli et al., 2020a, b; Ozturen et al., 2021). Leximancer is a program that uses a coding technique to evaluate collections of natural language texts and extract pertinent data in an electronic format (Chiu & Cho, 2021). A machine learning method is used to identify these data based on the frequency of their lexical co-occurrence (Dambo et al., 2020; 2021). The software then groups these notions into themes depending on how often they appear together in a text (Wu et al., 2014; Sulu et al., 2022). After all, Leximancer software generates visual map. This form of diagram allows scholars to understand what is hidden in the bulk of data by “three-part method” (Sulu et al., 2022) (Figure 1).

**Figure 1.** Basic representation of semantic pattern extraction. Adopted from Leximancer.

Leximancer has a high level of reliability since it avoids bias and allows researchers to interpret textual information. The analysis is carried out automatically, and the visual results are presented in the form of concept maps that resemble clustered bubbles (Arici et al., 2022).

**Results**

**RQ1:** “What are the main themes in online narratives shared by guests and, more specifically, those preferring Michelin 3-star restaurants in the USA”.

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The qualitative approach of the 1,032 comments was conducted using a qualitative method, and the results are reported in this section. The software began by performing a “qualitative content analysis” to determine the primary “themes” as well as “concepts”. Following that, each theme was given a narrative description. "food," "chefs," "restaurant," "wine," "staff," and "pricing" are the primary topics identified (Figure 2). The food theme contains the concepts of food (count = 1,952; relevance = 100 per cent), service (851; %41), delicious (421; %31), fish (239; 20 per cent), course (260; %14) and main (191; %11). A typical review reads, “Never have we experienced such an amazing meal. It was my birthday and I felt like the star of the show. The service was impeccable, especially our Sommelier Brendan. Every server was outstanding. Now on to the food. What else can I say but the food tasted as beautiful as it looked”. Another guest wrote, “The food was outstanding and so beautifully put together and every course was delicious. The service was attentive and knowledgeable as you would anticipate”. A third reviewer stated, “Food is absolutely fantastic! Chef Eric Ripert has been crowned as the Master of seafood for decades”.

![Figure 2. Concept Map](image)

The chef theme includes the concepts of quality (710; %31), perfect (321; %21), creativity (180; %20), innovative (173; %19) and wonderful (81; %18). A typical review describes chef theme as: “I learned that Humm’s cuisine is focused on the locally sourced ingredients (nearby New York), with great emphasis on simplicity, purity, and seasonal flavors. Besides that, references were that his cooking is: "clever, innovative and a little whimsical, robust and delicate when needed" ...and it’s the variety and depth that really sets him into the small group of great chefs that works artistry in the kitchen to be served with innovation...like we found later on in our evening”. Another review added, “We were in awe that Eric Ripert, Executive and very creative Chef Eric Gestel, and their team succeeded in coming up with new creations and improving on dishes like ones we had previously enjoyed a month or so ago. This meal was truly exceptional!”. Another review included that, “Opted for the chef’s menu which was 225 USD. As a
person who normally opts for steak, I was pleasantly surprised with the seafood courses. Very innovative and creative. Attentive service, well deserving of its 3 Michelin Stars. I am quite shocked that Le Bernardin was behind Cosme on World’s Best. Le Bernardin is clearly superior”.

The theme of restaurant theme has been frequently mentioned with the concepts such as experience (421; %30), recommendation (210; %21), expensive (203; %20) and time (173; %19). One review stated that, “What can I say about a 3-michelin restaurant other than wow? This was our second visit here. The first was 2 years ago. And it did not disappoint. While you can order a la cart, if you are going to splurge, I would recommend the tasting menu with wine accompaniment. One of the best I have ever had. Every course was fantastic. The food is sourced extremely well as are the wines”. Another still reads, “Quite simply the best restaurant I have ever eaten in. The environment, service and food are just exceptional. Went with wine pairings which really added to the experience, as did the ginger cocktail I had to start. Taking my friends daughter into the kitchen at the end of the meal just made the whole thing more special. Would recommend to anyone!”.

The theme of wine comprised concepts such as course (181; %19), selection (98; %14) and list (56; %12). A typical comment defines this wine theme as follows: “What makes this a top 5 for me. It had the best wine paring to match the food that I've had in a long time. The food was fantastic, our service was fantastic, but the overall experience is what took it to a top 5”. Another customer shared his views, “Every course went with the wines and the waiters and sommelier will explain every course and wine, which I love and makes it taste that much better. The service is top notch. The lighting and ambiance was perfect”. Another customer mentioned that, “Every course and every wine pairing were top notch. There were no options for the menu but this didn't matter as all three of us enjoyed each and every course immensely”.

The theme of staff was another noticeable theme mentioned by customers. A customer shared online: “All of the staffs are friendly and attentive that make them the best in their profession They provide a great service”. One guest included that, “The staff was uniformly friendly, knowledgeable and attentive (but not intrusive). I was very pleasantly surprised to get a "pre-visit email" from Maitre d' Annelise inquiring about any special circumstances for our visit”. Another customer mentioned that, “The staff were friendly, warm and very courteous. The food was outstanding and really lived up to the 3 Michelin stars it has been awarded. As I had dietary requirements as part of my pregnancy, the staff really went above and beyond to ensure dishes were altered to meet my requirements. I didn't have to worry at all which was so lovely”.

The theme of price also mentioned frequently by customers. A customer shared his review: “Dining in fine restaurants has always been an anti patel, great experience. Yet, other than the price this was nothing great or special”. One guest added that, “I am conscious that in the menu price, the work of the dishes preparation has to be taken into consideration and if NY people are fine with spending more than $ 1k (for two) in such a restaurant, fair enough but unfortunately, we were particularly disappointed on that point (but again not the quality)”. Another guest shared her review, “The poached salmon was also excellent. It was an expensive meal almost $800 for two. I had a half bottle of champagne. My friend was not drinking alcohol. Truly a remarkable experience. Worth the price”.

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**RQ2:** What are the dominant themes shared by males and females about their experiences with Michelin 3-star restaurants in the USA?

The current paper’s next study objective was to find out what female and male guests are sharing about their experiences with Michelin 3-star restaurants in the USA. In order to respond aforesaid research question two “tags” were composed that describe the guests’ gender: female and male. Eventually, research revealed that “staff” and “food” are the most important “themes” and “concepts” for both categories.

![Image](path_to_image)

**Figure 3.** The dominant themes shared by males and females.

Females also frequently share narratives about the concepts of presentation, creativity, innovative, fish and atmosphere. Males are more prone to sharing narratives about the dinner, price, expensive, wine, list, course, dessert and service (Figure 3).

**RQ3:** What are the dominant themes shared by different nationalities about experiences of Michelin 3-star restaurants in the USA?

The previous sections show clearly that a number of guests partake fluctuating opinions regarding experiences of Michelin 3-star restaurants in the USA? Interestingly, neither of the studies have used customer's home nation to segment the analyses when examining at Michelin 3-star restaurant experiences in the United States. Customer behavior is influenced by nationality, according to a similar line of research (Sulu et al., 2022). This section concentrates on goal three, which investigates the guest experiences of Michelin 3-star restaurants from various countries. As a result, some research have suggested that the origins of customers be investigated, as each region is unique (Sulu et al., 2022).
Figure 4. Different guest-origin groups’ evaluation of Michelin 3-star restaurants experience.

As depicted in figure 4, American and Asian guests mainly share narratives regarding the concepts such as chef, innovative and creativity. Elite cuisine chefs, according to Albors-Garrigos et al. (2013), are the forefront of culinary service innovation. Basic creativity is required for innovation, and it is founded on the creative objectives of the elite chef. The adoption and diffusion dimensions of innovation are impacted by broader gastronomic traditions and are based in the sphere of culinary services in a learning and networking process, as well as adoption and diffusion dimensions that are influenced by broader gastronomic traditions. Furthermore, Australian guests primarily shared narratives regarding food-wine pairings. Food pairings refer to the eating of a food and a beverage together, which results in sensory qualities that are distinct from either consumed separately (Kustos et al., 2020). Many theories on food and wine pairing exist in the culinary literature, with the most well-explained theories focusing on interactions between the key ingredients of food and wine (Harrington, 2007). The most generally reported principles, according to Kustos et al. (2020), were a balance of overall flavor intensities and taste balance between food and wine. Customers from the Middle East also gave their thoughts shared narratives on the restaurant, the time, the experience, and the recommendation. This group, like the others, was mostly satisfied and gave positive feedback. The stories in this group emphasized the importance of restaurant experiences. Because they were pleased, delighted Middle Eastern guests were more likely to suggest the restaurant. Last but not least, an internet platform was used by a European group to give their feedback. Friend(lines), staff, price, expensive, attentive, and service were among the
most common narratives expressed by Europeans. This group appeared to be the most price-sensitive. Furthermore, Europeans praised the staff as well as its distinguishing characteristics, such as attentiveness and friendliness.

Discussion and Conclusion

The present study's aim was to achieve three major goals, the first being to determine the critical motifs in online reviews regarding the Michelin 3-star restaurant experiences. Content analyses found six themes in descriptions of 3-star Michelin star restaurant experiences by including and containing reviews of fourteen restaurant’ content posted via social platform (TripAdvisor): "food," "chefs," "restaurant," "wine," "staff," and "price". The themes of "food", "chefs" and "restaurants" were found as dominant themes in our research, and these findings are congruent with those of Cassar et al. (2020), who revealed that "food", "chefs" and "restaurants" are the most commonly stated themes among guests. In our study, “wine” was another important theme. This finding also observed as an important theme by Brochado et al. (2021). In this study, the staff is linked through concepts like staff characteristics (e.g., friendly and attentive). The concept of “staff” is predominantly utilized positively. This result is corroborating with the recent study conducted by Sulu et al. (2022) as well as Arasli et al. (2021). Another important theme shown by our research was "price". This finding is corroborated by a recent study by Meek et al. (2021), which showed that guests frequently mentioned the concept "price". The existing papers’ next objective was to find out what female and male guests are sharing about their experiences with Michelin 3-star restaurants in the USA. In the findings, “staff” and “food” appeared as the most important themes and concepts for both groups (males and females). Females also regularly relate comments about “presentation”, “creativity”, “innovation”, “fish”, and “the atmosphere”. Males are more likely to narrate about “dinner”, including the” pricing”, how expensive it was, “wine”, “menu”, “course”, “dessert”, and “service”.

The third objective of this paper was to find out the “dominant theme” shared through different nationalities about experiences of Michelin 3-star restaurants in the USA. The findings showed that American and Asian guests mainly share narratives regarding the concepts such as “chefs”, “innovative” and “creativity”. Australian guests primarily shared narratives regarding food-wine pairings. Food pairings refer to the eating of a food and a beverage together, which results in sensory qualities that are distinct from either consumed separately (Kustos et al., 2020). Guests from the Middle East also shared their reviews on the “restaurant”, “time”, “experience”, and the “recommendation”. This group, like the others, was mostly satisfied and gave positive feedback. The stories in this group emphasized the importance of restaurant experiences. Because they were pleased, delighted Middle Eastern guests were more likely to suggest the restaurant. Last but not least, an internet platform was used by a European group to give their feedback. “Friend(lines)”, “staff”, “price”, “expensive”, “attentive”, and “service” were among the most common narratives expressed by Europeans. This group appeared to be the most price-sensitive. Furthermore, Europeans praised the “staff” as well as its distinguishing characteristics, such as “attentiveness” and “friendliness”.

Theoretical Implications

Based on internet reviews, this research provides useful insight into how guests perceive services given by Michelin 3-star restaurants. First, the analytical capabilities in Leximancer aided the researcher in identifying the offer new perspectives in guest' overall experiences with minimal human intervention.
Second, our paper advances knowledge by identifying the primary themes linked with male as well as female perspectives on Michelin 3-star restaurants. Certainly, the software (Leximancer) helped us to find out two guest categories use various explanations of 3-Michelin-star restaurant experiences in their narratives, indicating that the online reviews posted recently by the two groups has different “themes”.

Third, we sought to analyze whether the “dominant themes” of guest’ Michelin 3-star restaurant experiences differ according to guests’ ethnic group. In other words, the purpose of this objective was to see which themes the various country groups are most concerned about. By finding such themes, Michelin 3-star restaurants can offer additional understandings about “market segmentation” in the restaurant sector.

**Practical Implications**

The findings of our work highlight several implications for managerial practice. First, comprehending content shared by consumers can assist Michelin-star restaurants to pinpoint the key service elements vital to achieve affirmative attitudes as well as to diminish undesirable intents. Therefore, guests’ reviews not only provide a cost-effective method for Michelin-star restaurants to collect feedback from their guests but also an opportunity to discover ways to generate positive post-purchase intentions.

Second, Michelin-star restaurants should deliver both creative and innovative food and assure service quality in the restaurants where they operate to produce high customer ratings and favorable eWOM, which is suggested by previous studies (Arman, 2021; Özaydın & Güzeller, 2021; Şahingöz & Yalçın, 2021). The study also confirms that service, food quality, and wine quality are all highlighted in reviews among top-ranked restaurants. The value of an excellent wine list in top-rated restaurants is supported by this research. As a result, restaurant management should pay close attention to their wine list, as a great menu necessitates a great wine list (Cassar et al., 2020).

Last but not least, although the current study did not uncover a large number of negative customer reviews, managers should aim to recognize their customers’ online comments on a regular basis, with a focus on negative feedback.

**Limitations and Future Research**

There are various limitations to this study that must be considered. First, the sample for this study consisted of fourteen restaurants from the guide.michelin.com list, all of which were located in the United States. As a result, any generalization or inferences must be drawn with caution. Upcoming works might include more extensive and targeted samples from a variety of restaurant types across Europe, Australia, and Asia.

Second, this research only focused on three Michelin-starred restaurants. By comparing different types of Michelin-starred restaurants (e.g., 1 or 2 Michelin star restaurants vs. 3 Michelin star restaurants) and incorporating more restaurants in samples, future study could lead to a better understanding of the dominant narratives in guests' online reviews. Future research could use larger samples to see if there are any changes in the relationships between the primary themes of guests' Michelin star restaurant experiences. A comparative research analyzing potential differences between cultures and countries would also pay dividends.
Third, another question that has to be investigated further is whether the key themes of guests' overall experiences differ depending on the type of guests (e.g., solo, couple, family or business). This could give more information about market segmentation in the restaurant business.

Finally, the current study was limited to a single social media site, TripAdvisor. Further research might examine user-generated information from various social media platforms (e.g., Booking.com, Yelp, or Zomato) to see if it accords with the findings of this study.

Declaration

All the authors have equally contributed to the article. There is no conflict of interest to be declared by the authors.

REFERENCES


