Food Experiences: The Oldest Social Network…

Teresa Tiago, Francisco Amaral and Flávio Tiago

Abstract Tourists are placing their trust increasingly in users who upload comments on sites such as TripAdvisor, where they are encouraged to evaluate and describe their own vacation experiences. This phenomenon has led to a loss of importance of Opinion Makers, which has, traditionally, rated services and destinations based on tourism experiences. This work represents a more in-depth examination of the content of textual reviews of restaurants, classified by TripAdvisor "Top 10" in two different cities. A qualitative/quantitative analysis of information contained in these reviews was performed to identify references to dimensions of the DINESERV model and its variants. From this process, some traditional factors were identified. Additionally, a new one has been proposed, extending the conceptual model of institutional DINESERV. TripAdvisor profiles are calculated through a system of points that are assigned according to the number of contributions that users make to the system. However, this system does not take advantage of the richness and utility of textual reviews. This study proposes a new profile system, calculated from the DINESERV factors obtained from an analysis of the reviews; this system reflects with more consistency the real characteristics of users, since their feelings and experiences are taken into consideration in the profiles proposed. This new approach is not exclusive to the TripAdvisor system since the core model features online reviews about restaurants; thus, with minor changes, it can be adapted to other user-generated content sites, allowing the creation of a social knowledge management tool to help restaurants develop successful business strategies.

Introduction

Social networks have considerable impact in the tourism sector, creating a global and massive phenomenon that has changed tourists' behaviors and business strategies. From companies' point of view, social networks are new and direct

T. Tiago (✉) · F. Amaral · F. Tiago
University of the Azores, Rua da Mae de Deus, 9501-801 Ponta Delgada, Portugal
e-mail: teresa.tiago@gmail.com

A. Kavoura et al. (eds.), *Strategic Innovative Marketing*, Springer Proceedings in Business and Economics, DOI 10.1007/978-3-319-33865-1_54

marketing channels for obtaining important feedback from customers about the quality of service provided (Belch and Belch 2014). From the perspective of tourists, social networks provide ease for sharing information globally with other clients about their experiences and opinions regarding tourism services. Clients share their consumer experiences willingly to facilitate the decision-making process of other tourists; additionally, they provide feedback to tourism enterprises. Their reviews may include explanations of different aspects of an offer or critiques of tourism experiences with a view toward satisfaction level and quality of service (Yan et al. 2013).

Traditional restaurants are slow to take advantage of information and communication technology (ICT) because their staffs are not comfortable with the technology and consider the investment costly. Social networks are cost-effective and help small restaurants in their efforts to promote good quality and a customer-oriented perspective. Further, they gives these businesses global visibility (Koutroumanis 2011). One way to gauge the quality service of restaurants is through the DINESERV model and its variations. These frameworks collect data through questionnaires disseminated to restaurant clients. Fundamental components of social networks are reviews in which tourists and locals write about their experiences. Qualitative and quantitative data are analyzed as they apply to the reviews. In this study, DINESERV dimensions were used to describe tourists in terms of their food preferences and prioritized values. The resulting model permits incorporating rich information into customer relationship manager (CRM) systems or improved social CRM software systems.

Theoretical Background

Tourism has been a dynamic sector of the global economy with rapid growth in terms of numbers of tourists in traditional and emerging destinations. This development was enhanced by global Internet use and the continuing evolution of ICT, which has made our society dependent on knowledge and information (Daniela and Adina-Gabriela 2014). This last referenced work reports that 49 % of tourists consult online reviews when planning their holidays, and 16 % post online reviews after their vacations. Clearly, tourism enterprises have additional challenges dealing with tourists through this new channel.

In this new global world where competitiveness is a critical factor for tourism, businesses survey the adoption of technological advances that are fundamental to gains in terms of cost, efficiency, quality of service, and customer satisfaction (Neuhofer et al. 2013). Social networks, with global audience and low costs, have revolutionized tourism, permitting independent restaurants to connect to major consumers and receive feedback—services that were not available previously (Koutroumanis 2011). Several works emphasize the advantages of social networks for restaurants, including advertising the nature of the cuisine before actual consumption and services can be evaluated; clearly, ewe can be an asset for

independent restaurants (Hansen 2014). However, low-cost tool can create a nightmare if not applied correctly—even leading to the closing of a restaurant. Various examples exist, including reiteration of an owner's rude response to a customer's constructive criticism that forced the closure of the business. Despite such misuse of social networks, a good and active utilization of these networks in a global and competitive market can enhance a restaurant's value (Kim et al. 2015).

Before local people go to a different restaurant, they usually request the opinions of family members, friends, or coworkers who have been there to get their perspective about eating in that space (Tiago et al. 2014; Baksi and Parida 2013). With user-generated content (UGC), everybody has an opportunity to share their experiences, suggestions, and feelings about products or services through reviews, causing a reduction in uncertainty (Yan et al. 2013).

Some works suggest that tourists who share information are egoists and altruists (Andaleeb and Caskey 2007). Egoists expect to be recognized socially as contributors and as persons who share their knowledge with the others. The altruist assumes that people should contribute to the general welfare of others without any reward (Huang et al. 2010; Andaleeb and Caskey 2007). However, authors of these studies conclude that tourists share information via social networks based on three functional motives: (i) obtaining travel information is the most important, increasing trust in peers, reducing uncertainty and risks, and enhancing the quality of planned trips; (ii) disseminating information through social networks, acting as journalists or traditional opinion makers, and giving power to tourists because firms analyze the reviews posted and correct aspects of services as needed (i.e., if reviews are negative); and (iii) documenting personal experiences, permitting the tourist to have an online persona (Huang et al. 2010).

Reviews posted by tourists tend to earn more trust than those written by managers or professional opinion makers; however, the content of reviews is especially important (Amaral et al. 2014). If a review is vague, readers do not view it as credible or important (Ayeh et al. 2013). However, if the review is specific with helpful content and supporting evidence (e.g., photos), the review is viewed as more trustworthy, even if specific comments are posted by managers (Sparks et al. 2013). Specific reviews must exhibit quality information that depends on one or more of the following factors: (i) logical information that can be read easily and interpreted; (ii) relevant information that is useful and applicable for the reader; (iii) accurate reflections about actual consumption experiences; and (iv) valuable information that shows an understanding of readers' needs for knowledge (Filieri and McLeay 2014).

TripAdvisor provides UGC dedicated to tourism; it is considered a successful business model with users from all over the world that employs gamification on its website for user tasks and a Facebook application with an open graph. Both designs adopt a user-centered philosophy (Sigala 2015). Game mechanics for a system of points and tourist levels used by TripAdvisor were recently changed. Before, users were classified by the number of reviews; now, users earn points for reviews (100 points) and posted pictures or videos (20 points each). This system give more emphasis to comments, thus attributing value to tourists who produce quality

information, which is complemented with photos and videos to provide visual information of tourism experiences (TripAdvisor 2015). Important concepts of this system include the following: taste is viewed as the most important factor; presentation, texture, color, shape, and size are the elements to be taken into consideration; freshness is evaluated to determine the state of the food; offering of food variety is an important item related to food quality; and, nutritional value is associated with healthy options.

The concept of quality in service industry is tightly connected to theories of customer satisfaction and product quality. And, therefore, most research established a direct relation between customer satisfaction and firm profitability (Gagić et al. 2013). A strong relationship between quality perception and customer satisfaction is also identified (Namkung and Jang 2008). Most studies on service quality in foodservice have focused on well-established theoretical frameworks such as SERVQUAL or a driven scale, such as the DINESERV (Stevens et al. 1995). Dinserv measures quality through five dimensions: reliability, assurance, tangibles responsiveness, and empathy (Stevens et al. 1995). However, service quality can be determined by other characteristics such as the behavior of managers, chefs, and employees; four characteristics are specific to service: (i) inseparability, which means that production and consumption occur simultaneously and cannot be separated; (ii) intangibility, which is difficult to measure because services cannot be tasted, smelled, or touched, unlike tangible signals such as cleanliness, décor, and panorama; (iii) perishability, which means that something cannot be given back or resold, even if a tourist dislikes the service; and (iv) variability, which refers to the fact that provided services are not exactly the same because customers are not the same and may have different experiences and expectations, just as restaurant staffs do not exhibit the same levels of performance every day (Gagić et al. 2013). Price and value are other dimensions; a suitable price is within the range that the tourist wants to pay to obtain a product or service, whereas value refers to the sum of perceived benefits and costs to the consumer, or a combination of price, service, and product quality, whereby value increases with quality and service and decreases with price.

Recent works suggest that restaurants that provide conditions for guests to socialize with each other and which facilitate mobility obtain higher levels of customer satisfaction (Duncan et al. 2015). The atmosphere dimension concerns the disposition of the dining room, the view, noise level, and other aesthetic elements. A pleasant atmosphere enhances the experience and, consequently, customer satisfaction (Kim et al. 2009). Recent works add social aspects associated with restaurants to this dimension. The convenience dimension refers to ease of doing or having something. In case of restaurants, it is measured by the time saved from walking, finding a parking space, and meal preparation (Hansen 2014). Some works argue that social media is an ideal tool for promoting the formation of virtual communities, where members have specific characteristics and post rich information about their experiences, being able to be subgroup according to their preferences (Kavoura 2014).

Framework and Results

It is clear that UGC on SNSs is an important source of research data and comprehensive reviews by which consumers express, without restrictions, their opinions about goods or services. The literature review suggests that the quality of information contained in reviews is a driver for user behavior; such information reflects customers' preferences, especially if they indicate satisfaction. In the case of a restaurant, the DINESERV model has variant models with different dimensions (Hansen 2014; Keith and Simmers 2011; Kim et al. 2009; Stevens et al. 1995).

A qualitative analysis is used frequently to examine the application of any theoretical framework to reviews. With a well-defined theoretical framework, which is a characteristic of DINESERV, it is possible to identify portions of text that relate to a particular dimension. The textual data are split into small sentences depending on their meanings, and they are assigned and linked to the correct dimensions of the theoretical framework, permitting the comparative study of different dimensions and respective interconnections. This type of analytical method can be extended to other researches (Kavoura and Bitsani 2014). Data in a text format not only contain qualitative information but also quantitative information, like frequency and spatial proximity. Thus, researchers can use both techniques with both data sets based on a hybrid method (Guercini et al. 2014). Therefore, the hypotheses to test the applicability of this method follow:

H1: DINESERV dimensions are shaped differently in the social context.
H2: Mindfulness of UCG generates different tourist expert profiles.

In an effort to understand the dimensions comment by tourists in TripAdvisor and to find the major tourist profiles, several procedures were conducted. To test the developed model, two regions with similar natural conditions, but very distinct tourist experiences were chosen: the Azores and Hawaii. Within each archipelago, the main town was chosen on Kailua Island and in S. Miguel Island, and TripAdvisor' top ten restaurants in each town were evaluated. Data was collected in each city between April 24 and 30, 2013. These two locals were selected to test the hypotheses in different cultural and economic environments and in different stages of the tourism life cycle. This selection was deemed appropriate given the nature of the study. Data analysis followed a mix method, starting with an exploratory research of qualitative data (Malhotra and Birks 2007) to study the information present in the online restaurant reviews. Afterwards a text analytics process was conducted, involving several steps: data preprocessing, domain identification/classification, and statistical association analysis (see Fan et al. 2006). Then data were converted and transposed to SPSS, where an exploratory factor analysis was conducted through an examination of principal components, to assess the presence of the five DINESERV dimensions on tourists' comments: Food quality (KMO = 0.532); Service (KMO = 0.521); Atmosphere (KMO = 0.645); Convenience (KMO = 0.545) and Price and value (KMO = 0.5).

The food quality dimension was redefined, creating three factors: plate layout factor, which includes visual appeal and food preparation; plate balance, for which the main constructors are healthy options and composition of food products; and confection, which includes taste and freshness of food. These factors explain 59.19 % of the food dimension, which conforms with the work of Williams et al. (2012), who refer to studies in which this value is acceptable if between 50 and 60 %.

In respect to the service dimension, a new factor concerning chef and manager empathy has been defined; these distinct persons offer services. The proficiency factor refers to a helpful team, and descriptive menus are constructors. The team efficacy factor applies to a staff that provides prompt and efficient service and which quickly corrects anything that goes wrong (customer complaints). Staff empathy is also a factor of service. These four factors account for 67.94 % of the service dimension, and they are consistent with related studies (Williams et al. 2012). The price and value dimension in terms of DINESERV's tourism application involves only the value for the money, with two strong constructors. The atmosphere dimension changes according to the surroundings/layout factor, which includes exterior visual appeal, a panoramic view (a new constructor), and visual appeal of the dining room. Cleanliness of the dining room is a factor related to comfort. A new factor of atmosphere that was not considered in the established DINESERV model is socialization. Tourists give importance to restaurants where they can initiate informal conversations with other people, including locals, other tourists, and their guests. For the social factor, romantic ambience is a constructor. Surroundings and layout account for 24.90 % of the atmosphere dimension, followed by cleanliness, comfort, and the social aspect, respectively. All factors account for 65.90 % of the atmosphere dimension, and this finding are conformed to Williams et al. (2012). Factors of the convenience dimension include walking convenience (identified in previous studies); thus, the principal constructor is a convenient location. Although a new factor was identified by tourists regarding tourists' mobility capacity (i.e., vehicle convenience) refers to a restaurant's parking conditions and the ease in finding a restaurant. These factors account for 63.71 % of the variance of the convenience dimension.

The results suggested that the DINESERV model must be redefined when applying it to tourism social networks, so *H1* is support.

The factors identified through the exploratory factor analysis were used to determine tourist cluster profiles, using k-means clusters. The ANOVA results validate the use of these variables in the clustering process. Applying the aforementioned methodology of cluster analysis, four groups were obtained (Table 1).

The smallest cluster named "Clean" and with 17 elements is different from other groups because individuals in the cluster positively value the cleanliness factor (high score); also important, but with small scores, are team empathy, social atmosphere, and employee proficiency. In relation to other variables that tend to influence tourist behavior, no significant differences among the clusters were find. The "Convenience" group has 40 elements distinguishable from other groups because individuals in this cluster strongly and positively value vehicle

Table 1 Clusters final solution

	C1	C2	C3	C4
Cleanliness factor	6.21829	−0.12130	−0.15609	−0.14005
Vehicle convenience factor	0.25254	−0.17573	−0.24286	3.62665
Team empathy factor	−0.22541	−0.59080	1.14057	−0.02253
Social atmosphere factor	0.22320	−0.18906	0.35330	−0.05710
Team efficacy factor	0.15735	−0.10936	0.21434	−0.10958
Walk convenience factor	−0.09912	−0.08899	0.08410	0.59218

convenience and, to a smaller degree, walking convenience; the team empathy factor is less important. The "Exquisite (special beauty or charm of ambience)" group with 259 tourists is the second largest group, and factors valued are team empathy, followed by social atmosphere, suggesting that this group appreciates genteel social environments. The major group (n = 492), "Couldn't Care Less," differs from other tourist groups because members had a bad experience with a team, in the sense that a staff was not adequately attentive. Regarding the other factors, the results achieved are consistent with the findings of previous works.

From a qualitative and quantitative analysis of TripAdvisor reviews, it was possible to identify DINESERV dimensions and factors. These factors—including some already present and others proposed for the new model—can be used to identify users' profiles; thus, *H2* is supported.

For centuries food has congregated people around a table socializing. Duncan et al. (2015) suggested that restaurants that provide conditions for guests to socialize with each other would obtain higher levels of customer satisfaction. However, the results suggested that the social atmosphere factor is important, but not the higher valued dimensions what commenting and sharing concerns, for restaurant encounter experience. So, the oldest social network seems to be changing.

Final Considerations

The UGC portals have changed the way tourists and industries perceive the market; the former have a chance to identify the opinions of other tourists, which are useful for planning vacations (Aspasia and Ourinia 2014). Thus, peer reviews, rather than the traditional opinion makers, influence tourism decisions. The tourism industry is exploring new horizons with social networks, as these sites offer cost-effective, direct, and quick ways to communicate with end customers—allowing on one hand, the creation of new enhancements, new products, or tourism services, and on the other, feedback related to tourism experiences (Filieri and Mcleya 2014).

In the interest of providing added value and services to restaurants that are relatively low in cost, sites that present UGC dedicated to tourism facilitate the

development of a social knowledge management tool. Accordingly, restaurant managers, who know the preferences of their customers—what they like and what they view as negative—can take corrective measures that will be reflected in reducing the number of negative comments and improving a restaurant's ranking.

Expressions and terms used by diners on social networks may determine the creation of imaginary communities and respective subgroups according to their food preferences (Kavoura 2014); thus, indexes and clusters proposed in this work, which were extracted from tourists' comments, identify profiles of tourists on TripAdvisor and other social networks, facilitating the creation of trust and interaction between tourists. These resources greatly improve the decision-making process of tourists. Improved confidence stems from the fact that, traditionally, these sites (particularly TripAdvisor) have defined profiles based on the number of comments posted, a system that does not give much information about user preferences compared with profiles proposed in this work.

We may conclude that the overall objectives of this work were reached, since it was possible to identify different dimensions of quality assessment and distinctive segments based on the comments contents post. First, it clearly identifies dimensions that need to be incorporate in an enlarged DINESERV model, considering the eWoM create by tourists. Also, this work reinforces the idea that not all tourists value the same dimension. Therefore, the four distinctive segments require a specific communicational approach. The results of this research provide some insights to restaurant managers and even policymakers, planners, and tourist players regarding tourist behavior on social media and valued dimensions during a restaurant experience. Existing textual knowledge in comments can be extracted and transformed into new DINESERV model dimensions—DINESERV 3.0, as suggested in this paper, allowing correct classifications of restaurant experiences. This methodology can be used in other contexts, presenting a research path for future research.

Future studies should include other tourist destinations and sectors to validate this approach and the tourist profiles proposed. These will also improve the actual dictionary and respective links regarding dimensions used to develop an automatic system that permits calculating the DINESERV index and user profiles. Related works could include more information in computation of profiles to include other kinds of information, such as number of cities and countries visited, user origin, sex, and age.

References

Amaral, F., Tiago, T., & Tiago, F. (2014). User-generated content: tourists' profiles on TripAdvisor. *International Journal on Strategic Innovative Marketing, 1*, 137–147.

Andaleeb, S. S., & Caskey, A. (2007). Satisfaction with food services: insights from a college cafeteria. *Journal of Foodservice Business Research, 10*, 51–65.

Aspasia, V., & Ourania, N. (2014). Social media adoption and managers' perceptions. *International Journal of Strategic Innovative Marketing, 1*(2), 61–73.

Ayeh, J. K., Au, N., & Law, R. (2013). "Do we believe in TripAdvisor?" examining credibility perceptions and online travelers' attitude toward using user-generated content. *Journal of Travel Research*, 0047287512475217.

Baksi, A., & Parida, B. (2013). Impact of green marketing on perceived image and behavioural intentions of consumers: empirical evidence from restaurant practices. *Tourismos, 8*(2), 233–258.

Belch, G., & Belch, M. (2014). The role of new and traditional media in the rapidly changing marketing communications environment. *International Journal of Strategic Innovative Marketing, 1*(3), 130–136.

Daniela, F., & Adina-Gabriela, C. (2014). Global tourism performance in relation to customer relationship management from the social media perspective. *Annals-Economy Series*, 405–411.

Duncan, J. L., Josiam, B. M., Kim, Y. H., & Kalldin, A. C. (2015). Using factor-cluster analysis to segment patrons of casual dining establishments in the United States. *British Food Journal, 117*, 1377–1398.

Fan, W., Wallace, L., Rich, S., & Zhang, Z. (2006). Tapping the power of text mining. *Communications of the ACM, 49*(9), 76–82.

Filieri, R., & McLeay, F. (2014). E-WOM and accommodation an analysis of the factors that influence travelers' adoption of information from online reviews. *Journal of Travel Research, 53*, 44–57.

Gagić, S., Tešanović, D., & Jovičić, A. (2013). The vital components of restaurant quality that affect guest satisfaction. *Turizam, 17*, 166–176.

Guercini, S., Raich, M., Müller, J., & Abfalter, D. (2014). Hybrid analysis of textual data: Grounding managerial decisions on intertwined qualitative and quantitative analysis. *Management Decision, 52*, 737–754.

Hansen, K. V. (2014). Development of SERVQUAL and DINESERV for measuring meal experiences in eating establishments. *Scandinavian Journal of Hospitality and Tourism, 14*(2), 116–134.

Huang, Y., Basu, C., & Hsu, M. K. (2010). Exploring motivations of travel knowledge sharing on social network sites: an empirical investigation of US college students. *Journal of Hospitality Marketing & Management, 19*, 717–734.

Kavoura, A. (2014). Social media, online imagined communities and communication research. *Library Review, 63*, 490–504.

Kavoura, A., & Bitsani, E. (2014). Methodological considerations for qualitative communication research. *Procedia-Social and Behavioral Sciences, 147*, 544–549.

Keith, N. K., & Simmers, C. S. (2011). Measuring service quality perceptions of restaurant experiences: The disparity between comment cards and DINESERV. *Journal of Foodservice Business Research, 14*, 20–32.

Kim, W. G., Ng, C. Y. N., & Kim, Y.-S. (2009). Influence of institutional DINESERV on customer satisfaction, return intention, and word-of-mouth. *International Journal of Hospitality Management, 28*, 10–17.

Kim, S., Koh, Y., Cha, J., & Lee, S. (2015). Effects of social media on firm value for US restaurant companies. *International Journal of Hospitality Management, 49*, 40–46.

Koutroumanis, D. A. (2011). Technology's effect on hotels and restaurants: building a strategic competitive advantage. *Journal of Applied Business and Economics, 12*, 72–80.

Malhotra, N., & Birks, D. (2007). Marketing Research: an applied approach: 3rd European Edition: Pearson Education.

Namkung, Y., & Jang, S. (2008). Are highly satisfied restaurant customers really different? A quality perception perspective. *International Journal of Contemporary Hospitality Management*, *20*(2), 142–155.

Neuhofer, B., Buhalis, D., & Ladkin, A. (2013). A typology of technology-enhanced tourism experiences. *International Journal of Tourism Research, 16*(4), 340–350. doi:10.1002/jtr.1958.

Sigala, M. (2015). The application and impact of gamification funware on trip planning and experiences: The case of TripAdvisor's funware. *Electronic Markets*, 1–21.

Sparks, B. A., Perkins, H. E., & Buckley, R. (2013). Online travel reviews as persuasive communication: The effects of content type, source, and certification logos on consumer behavior. *Tourism Management, 39*, 1–9.

Stevens, P., Knutson, B., & Patton, M. (1995). DINESERV: a tool for measuring service quality in restaurants. *The Cornell Hotel and Restaurant Administration Quarterly, 36*, 5–60.

Tiago, T., Tiago, F., & Amaral, F. (2014). Restaurant quality or food quality: what matters the more? In *proceedings of International Network of Business and Management Journals*, Barcelona.

Williams, B., Brown, T., & Onsman, A. (2012). Exploratory factor analysis: A five-step guide for novices. *Australasian Journal of Paramedicine, 8*, 1.

Yan, X., Wang, J., & Chau, M. (2013). Customer revisit intention to restaurants: Evidence from online reviews. *Information Systems Frontiers, 17*, 645–657.