



Turkish Customers' Perceptions of Dining Experience in Asian Restaurants in Istanbul

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Abstract

This paper analyzes the perceptions of Turkish customers regarding their experiences at Asian restaurants in Istanbul. Within the scope of the study, 1,348 online reviews written in Turkish on TripAdvisor for Asian restaurants operating in Istanbul were analyzed with the latent Dirichlet allocation (LDA) algorithm and sentiment analysis. As a result of the analysis nine dimensions affecting the experiences of Turkish customers at Asian restaurants were determined, four of which were specific to the restaurant (view, staff, place, order) and five of which were related to food (real taste, food, sauce and spice, sushi, flavor). It was found that flavor and food are the main dimensions that positively affect Turkish customers' Asian restaurant experiences. Order was found to be the most important dimension that negatively affects them. To my knowledge, this is the first study interpreting the perception of Turkish customers' experiences of Asian restaurants through online reviews in Turkish.

Keywords

Restaurant experience, Asian restaurant, LDA, sentiment analysis, Istanbul

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Introduction

As places of intercultural exchange, ethnic restaurants can be thought of as micro-spaces designed for contact with an exotic place, another place, different people and cultures (Turgeon & Pastinelli, 2002). Ethnic restaurants are defined by diversity (Arvela, 2013) and provide the opportunity to taste different flavors and to experience exotic cultures from distant places (Turgeon & Pastinelli, 2002). Although these flavors have become a part of daily life, consumers' interest in restaurants offering flavors from different countries is increasing (Sloan, 2001). This situation has led to an increase in the popularity of ethnic cuisines, which in turn has given way to a rise in the number of such restaurants, allowing customers to cross ethnic boundaries and partake in the consumption of food offered by different ethnic communities (Van den Berghe, 1984).

Customers of ethnic restaurants serving cuisine from a different country (Ebster & Guist, 2004) seek unique cultural experiences through atmosphere and exotic cuisine (Ha & Jang, 2010). In the words of Van den Berghe (1984), the easiest way to experience another culture by proxy is to share food. The fact that consumers visit ethnic restaurants in their own neighborhood by making a trip vicariously enables them to have this experience (Germann Molz, 2007). The attraction of experiencing novel ethnic cuisine is associated with novelty and variety (Warde, 2000). However, people typically respond to new foods in two different ways: neophilia and neophobia (Rozin & Vollmecke, 1986). Neophobia is defined as the reluctance to try novel foods, and neophilia is defined as the overt willingness to try novel foods (Raudenbush & Capiola, 2012). Although these two responses are opposite to each other, they complement each other (van Trijp & van Kleef, 2008).

Restaurant services are experiential, and certain food-related attributes provide concrete clues which help customers evaluate the restaurant experience (Ponnam & Balaji, 2014). Food quality, service, physical environment, and price are defined as the four basic elements of restaurant experience (Nakayama & Wan, 2019). In addition, the dining experience includes the surprise and delight of a decorated and artistically presented meal which goes beyond the simple experience of eating at home (Arora & Singer, 2006). Since consumer attitude towards a dining experience can be measured by the difference between restaurant performance and customer expectations, dining experience studies from a customer perspective are considered together with restaurant characteristics (Johns & Pine, 2002). According to the Five Aspects of Meal Model—FAMM developed by Gustafsson (2004), the dining experience is based on five elements: room, meeting, product, atmosphere, and management control system.

Through experience, the world of human awareness is shaped and assumptions about the nature of the universe become almost a priori components in the perceptual

process itself (Hallowell, 1955). Culture and the social context in which we live are important factors in evaluating the dining experience (Gustafsson et al., 2006). While culture changes, influenced by our experiences rather than our genes (Hofstede et al., 2010), one of the most obvious areas where this change can be seen is cuisine (Lu & Fine, 1995). The local people's acquaintance with the cuisines of different cultures can affect their lives and cause the change and transformation of the local cuisine (Polat & Aktas-Polat, 2020). Therefore, I think that the ethnic restaurant experience should be emphasized in order to understand the connection between culture and cuisine.

Analysis of food-related memories shows that individual memory of experiences is not only the subjective property of individuals, but is also part of a shared cultural experience (Lupton, 1994). Online reviews are one of the main ways to share experience and to learn first-hand about the experiences of others (Nakayama & Wan, 2019). Analyzing customer sentiments with user-generated content allows researchers to predict customer attitudes towards a product, service or brand (Park et al., 2016). Knowing the perceptions of consumers can also be a way for businesses to gain competitive advantage (Jang et al., 2009). Every day, new reviews are added to the reviews written about restaurants. Making sense of these reviews, which have become a useful source of information (Guo et al., 2017) for businesses that care about consumer demands, has become an important element in today's consumption research.

Online consumer reviews, in the extant literature, have been studied for purposes such as determination of the issues that are important in restaurant reviews (Huang et al., 2014; Jo & Oh, 2011), identification of the main topics used to describe the meal (Onorati & Giardullo 2020), satisfaction (Jia, 2020), the authenticity dimensions that are of value to customers in dining experiences (Le et al., 2021), exploring perceptions of Asian restaurants (Fanelli & Di Nocera, 2018; Park et al., 2016), and exploring cultural differences in online reviews (Nakayama & Wan, 2019). These studies focused mainly on reviews written in English (Huang et al., 2014; Jo & Oh, 2011; Le et al., 2021; Park et al., 2016) but some focused on the limited studies in different languages like Chinese (Jia, 2020) and Japanese (Nakayama & Wan, 2019). However, there is a huge gap in the extant literature of studies which examine the way in which customers from different cultures or countries perceive ethnic restaurants (Josiam et al., 2007).

Asian cuisine has become one of the most popular cuisines in the world in recent years (Ferdman, 2015) and the number of restaurants serving dishes from this cuisine has gradually increased in global food markets (Tey et al., 2018). In parallel with this, scholars have also begun to show an interest in this increase and have started

conducting studies on the perception of Asian cuisine mostly through the eyes of American customers (Jang et al., 2009; Lee et al., 2012; Liu & Jang, 2009; Ma et al., 2011; Sukalakamala & Boyce, 2007), local Australian customers (Min & Han, 2017), and of other ethnic origin customers living in Malaysia (Josiam et al., 2007). However, despite the rising popularity of studies in this field due to differences in the texture and flavor of Asian food, more studies are needed in order to understand Asian cuisine, to identify its consumers, and to reveal the dimensions of consumers' experiences in the hospitality industry (Jang & Ha, 2009). This study focused on determining the perception of Turkish customers' experiences at Asian restaurants operating in Istanbul. In this study, it is assumed that the driving force behind the customers' visits to these restaurants is their neophilia tendency or their desire for novelty and variety as they seek alternative concepts (Warde, 2000). Within the scope of the study, seven research questions (RQs) were determined:

RQ1: What are the main dimensions that affect Turkish customers' experience of Asian restaurants?

RQ2: What is the sentiment polarity of the customers towards the basic dimensions that affect the experience?

RQ3: Which algorithm is the most powerful for sentiment classification in the context of customer ratings?

RQ4: What is the order of importance for the main dimensions that determine the customers' experience?

RQ5: Which dimensions have the most positive and most negative valence determining customers' experience?

RQ6: What are the most and least salient terms in online customer reviews?

RQ7: What are the most positive and negative terms in online customer reviews?

Method

Topic modeling, sentiment analysis, and a combination of dimensional and lexicon salience and valence analysis were used. In the context of the research questions, Figure 1 shows the processing map followed in the study.

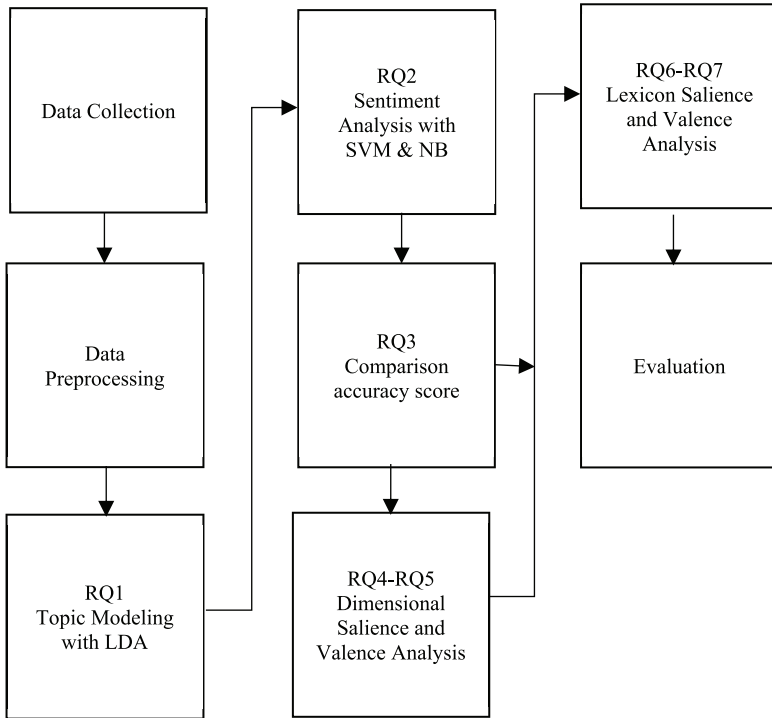


Figure 1. The Processing Map

Data Collection and Preprocessing

Online reviews, which provide a richer data source than traditional survey methods (Sutherland et al., 2020), were used in this study. The data set of the research consists of 1,348 manually collected Turkish reviews written on TripAdvisor during the period 2011–2021 (March) for 92 Asian Restaurants operating in Istanbul.

The data set was made ready for analysis by preprocessing with Zemberek TurkishTokenizer. All transactions in the research were done with Knime (the Konstanz Information Miner) Analytics Platform 4.4.0.

Topic Modeling with LDA

Topic modeling was used to determine the basic dimensions of the perception of Turkish customers' experiences of Asian restaurants. The data set, which was preprocessed for RQ1, was analyzed with a parallel LDA node. LDA is a widely used algorithm for topic modeling from unsupervised learning approaches (Alghamdi & Alfalqi, 2015). The basic idea of LDA is to represent documents as random mixes on confidential issues (Blei et al., 2003).

LDA reduces the complexity of customer reviews to a small number of simple probability steps and determines a probability distribution over all possible documents

(Griffiths & Steyvers, 2004). Thus, LDA enabled us to model the data set of customer reviews consisting of many words by reducing them to a smaller number of topics (Blei & McAuliffe, 2007). Each topic produced with LDA could be considered as a shopping experience or a specific feature of the product expressed by customers in product reviews (Wang et al., 2018). LDA enables researchers to identify the dimensions that affect customers' experiences with minimal bias (Taecharungroj & Mathayomchan, 2019). The LDA algorithm is an algorithm used for dimension extraction in research on online restaurant reviews (Aktas Polat & Polat, 2022; Huang et al., 2014; Jia, 2020; Jo & Oh, 2011; Onorati & Giardullo, 2020).

The LDA algorithm has three parameters α (α), β (β), and topic number (T), which have an effect on the results (Griffiths & Steyvers, 2004). In this study, the elbow method was used for T . The elbow method, which is a method that looks at the percentage of variance explained as a function of the number of clusters, can be performed using the k -means algorithm (Bholowalia & Kumar, 2014). The elbow point for T was determined by running the K -means algorithm with a Counting Loop Start node as loops 10 (maximum iteration). In the LDA added to the stream after the topic number was determined, the alpha (α) value 0.1 and the beta (β) value for the word distribution per topic were set to 0.001 (Hua et al., 2020).

Although recurring sets of terms are automatically identified by topic modeling, topic naming is based on manual intervention by researchers (Hindle et al., 2013). During the topic naming phase, the most frequently repeated words within the topic (Guo et al., 2017) and reviews associated with each topic were examined as a suggested approach for naming (Debortoli et al., 2016).

Sentiment Analysis with Machine Learning Algorithms

Sentiment analysis, one of the text mining methods, was carried out based on machine learning in order to determine the sentiments for the dimensions that shape the perception of Turkish customers' experience of Asian restaurants. This method had already been applied to restaurant samples in previous studies (Jo & Oh, 2011; Park et al., 2016). Sentiment analysis is a method that numerically deals with opinion, sentiment, and subjectivity in the text (Pang & Lee, 2008). Sentiment analysis can be performed at document level, sentence level and aspect-based level in three different ways (Feldman, 2013). In this study, sentiment analysis was performed on the basis of a supervised learning approach (Feldman, 2013), which assumes that training data is available for each class at the document level. In this context, on the basis of customer ratings, 1, 2, and 3-star reviews are labeled as negative, 4 and 5-star reviews as positive (Aktas-Polat & Polat, 2022; Taecharungroj & Mathayomchan, 2019) and the semantic orientation of the text (i.e. positive and negative) was detected (Lin & He, 2009).

In this study the Support Vector Machine (SVM) and Naïve Bayes (NB) algorithms, which are the most used supervised machine learning algorithms in the field of tourism, were used (Kirilenko et al., 2018). The SVM and NB performances were compared by cross-validation. For cross validation, leave-one-out cross-validation (LOO-CV) was used. LOO-CV is recommended to obtain a reliable estimate of accuracy for a classification algorithm when the number of instances is small (Wong, 2015).

The performance of the algorithms was compared with the accuracy score which measures the ability of an estimator to accurately identify all examples, regardless of whether they are positive or negative (Jiao & Du, 2016) and it is the most commonly used in binary classification (Chicco & Jurman, 2020).

Dimensional and Lexicon Saliency and Valence Analysis

In this study, Dimensional Saliency-Valence Analysis (DSVA) developed by Taecharunroj and Mathayomchan (2019) was used for RQ4 and RQ5, while Lexical Saliency-Valence Analysis (LSVA) was used for RQ6 and RQ7. LSVA, in the previous studies, was used for identifying factors that affect customer experiences (Taecharunroj et al., 2021), key words in online reviews and their impact on overall experience (Mathayomchan and Taecharunroj, 2020), and tourists' local experiences (Sangkaew & Zhu, 2020).

Saliency can be used to identify the important factors determining customers' selection of a restaurant (Rhee et al., 2016) and to make inferences about customer awareness (Vermeulen & Seegers, 2009). In the present study, saliency expresses the prominence of certain elements experienced at Asian restaurants in the memory of customers (Alba & Chattopadhyay, 1986). The following formula for Dimensional saliency analysis was used (Taecharunroj & Mathayomchan, 2019):

$$\text{Dimensional Saliency} = \frac{\text{Dimension Reviews}}{\text{Total Reviews}} \quad (1)$$

Valence is defined as the hedonic quality of an emotional experience (Barrett, 1996). For example, the term stress is low valence; the terms joy and elation are modeled as high valence (Stickel et al., 2009). In this study, dimensional valence analysis was used to determine the hedonic quality of dimensions that affect customer experience. Dimensional valence was calculated with the following formula based both on the observation of and on the expectation of positive reviews value obtained as a result of cross-tabulation analysis of the data set labeled on the basis of customer ratings for sentiment analysis (Taecharunroj & Mathayomchan, 2019):

$$= \frac{\text{Dimensional Valence}}{\text{Observation No of Positive} - \text{Expectation No of Positive}} \quad (2)$$

$$\text{Total Reviews of Dimension}$$

For LSVA, firstly, the term salience was calculated by taking the logarithm of the term frequency of ten terms assigned to each topic, with the suggestion of Taecharungroj and Mathayomchan (2019). For the term valence, the average value of the relevant category (positive or negative) of each term was calculated using the results of the most successful machine learning algorithm. This calculation was made with the following formula:

$$x = \frac{1}{n} \sum_{i=1}^n xi \quad (3)$$

where x represents the term, and n represents the number of online reviews. With this process, the ratio of the number of repetitions of the relevant term in the reviews assigned by the algorithm for each category (positive and negative) to the number of reviews assigned to the relevant category was calculated. For example, the SVM algorithm labeled 217 reviews as negative and 1,123 reviews as positive. If the term is exemplified over the term quality, the term quality is included in 36 negative reviews and 158 positive reviews. The negative mean of the quality term was 0.17 (36/217), while the positive mean was 0.14 (158/1123). After calculating the positive and negative averages of the terms under each dimension, the valence value of each term was calculated with the formula given below (Taecharungroj & Mathayomchan, 2019).

$$\text{Term Valence} = \frac{\bar{x}POS - \bar{x}NEG}{\bar{x}POS + \bar{x}NEG} \quad (4)$$

where x represents the term, $\bar{x}POS$ shows the positive mean of the term, and $\bar{x}NEG$ shows the negative mean of the term.

Findings

The data set was composed of 1,348 online reviews written during the period 2011–2021 (March). The ratings were 57.3% 5-star, 23.4% 4-star, 9.1% 3-star, 4.5% 2-star, and 5.7% 1-star. As a result of the preprocessing, the most frequently repeated five words in the data set were flavor (n = 610), food (n = 601), service (n = 414), nice (n = 371), and place (n = 370). The Word Cloud is presented visually in Figure 2.

Table 1
The Main Dimensions of Asian Restaurants Experience

View			Real Taste			Food		
Turkish	English	Weight	Turkish	English	Weight	Turkish	English	Weight
yemek	Food	229.0	yemek	food	351.0	yemek	food	391.0
manzara	view	184.0	restaurant	restaurant	178.0	fiyat	price	376.0
fiyat	price	147.0	guzel	nice	144.0	kalite	quality	291.0
mekan	place	143.0	tavsiye	recommendation	113.0	lezzet	flavur	290.0
lezzet	flavor	86.0	lezzet	flavor	111.0	Japon	Japan	250.0
arkadaş	friend	83.0	mekan	place	96.0	restoran	restaurant	210.0
servis	service	81.0	zaman	time	52.0	servis	service	167.0
tercih	preference	79.0	uygur	Uighur	48.0	uzakdoğu	Far east	99.0
akşam	evening	73.0	gercek	real	46.0	lokanta	restaurant	98.0
kokteyl	coctail	71.0	servis	service	45.0	hizmet	service	79.0
Staff			Sauce and Spice			Sushi		
Turkish	English	Weight	Turkish	English	Weight	Turkish	English	Weight
restoran	restaurant	334.0	yemek	food	208.0	sushi	sushi	1231.0
zaman	time	165.0	lezzet	flavor	200.0	lezzet	flavor	219.0
yemek	food	159.0	tavuk	chicken	162.0	mekan	place	145.0
lezzet	flavor	124.0	çorba	soup	141.0	fiyat	price	93.0
hizmet	service	80.0	pilav	rice	119.0	tercih	preference	58.0
servis	service	73.0	tavsiye	recommendation	100.0	tavsiye	recommendation	55.0
tekrar	repeat	69.0	baharat	spice	85.0	balık	fish	53.0
teşekkür	thanks	66.0	karides	shrimp	77.0	servis	service	53.0
personel	staff	57.0	tatlı	dessert	76.0	başarı	success	43.0
deneyim	experience	55.0	dondurma	ice-cream	58.0	deneme	try	38.0
Flavor			Place			Order		
Turkish	English	Weight	Turkish	English	Weight	Turkish	English	Weight
lezzet	flavor	382.0	mekan	place	147.0	servis	service	254.0
tavsiye	recommendation	345.0	garson	waiter	134.0	sipariş	order	240.0
mekan	place	339.0	çeşit	sort	109.0	garson	waiter	134.0
servis	service	273.0	şarap	wine	107.0	yemek	food	96.0
personel	staff	150.0	akşam	evening	85.0	müşteri	customer	87.0
yemek	food	150.0	rezervasyon	reservation	70.0	hesap	bill	72.0
ortam	ambiance	104.0	kalabalık	crowd	48.0	lezzet	flavour	55.0
keyif	pleasure	92.0	içeri	indoor	46.0	paket	package	43.0
gülyüz	delicacy	85.0	yemek	food	35.0	vasat	mediocre	43.0
kalite	quality	75.0	teras	terrace	34.0	şekil	shape	35.0

In addition to the terms used to determine the dimensions affecting the perception of Asian restaurant experience, online customer reviews were also checked to determine how these terms were used by the customers. Nine dimensions affecting Turkish customers' Asian restaurant experiences were determined. Four of these nine dimensions (view, staff, place, order) were related to the restaurant itself, and five of them (real taste, food, sauce and spice, sushi, flavor) were related to the food served.

Sentiment Polarity of Dimensions

The sentiment polarity of all dimensions for the RQ2 was determined by labeling them as positive and negative according to customer ratings. Table 2 presents the sentiment polarity of each dimension.

Table 2
Sentiment Polarity of Dimensions

Dimensions	Review Count	Positive		Negative	
		<i>n</i>	%	<i>n</i>	%
View	137	119	86.9	18	13.1
Real Taste	155	131	84.5	24	15.5
Food	217	172	79.3	45	20.7
Staff	132	106	80.3	26	19.7
Sauce and Spice	135	106	78.5	29	21.5
Sushi	174	141	81.0	33	19.0
Flavor	226	202	89.4	24	10.6
Place	66	52	78.8	14	21.2
Order	101	56	55.4	45	44.6
Total	1343	1085	80.8	258	19.2

According to Table 2, 80.8% of the data set was labeled as positive and 19.2% as negative. The dimension with the highest positive sentiment ratio was flavor with 89.4% while the lowest was order with 55.4%. Therefore, the dimension with the highest negative sentiment rate was order with 44.6% followed by sauce and spice with 21.5% and place with 21.2%.

The classification performance for RQ3 was compared with the accuracy scores of NB and SVM algorithms. It is important to reach around 70% accuracy for the hospitality industry (Taecharungroj & Mathayomchan, 2019). As a result of the analysis, the accuracy score of NB was 75.8%, while the accuracy score of SVM was 81.3%. Accuracy score above 70% was taken for both algorithms, and the SVM algorithm achieved better accuracy than the NB algorithm. The algorithm results that gave the best results were used for the analyses made for RQ6 and RQ7.

The Salience and Valence of the Dimensions

Table 3 presents the DSVa results for RQ4 and RQ5.

Table 3
Dimensional Saliency and Valence

Dimensions	Total of Reviews	Positive Reviews		Valence (%)	Saliency (%)
		Observed	Expected		
View	137	119	111	5.8	10.2
Real Taste	155	131	125	3.9	11.5
Food	217	172	175	-1.4	16.2
Staff	132	106	107	-0.8	9.8
Sauce and Spice	135	106	109	-2.2	10.1
Sushi	174	141	141	0	12.9
Flavor	226	202	183	8.4	16.8
Place	66	52	53	-1.5	4.9
Order	101	56	82	-25.7	7.5

According to Table 3, flavor (16.8%) and food (16.2%) were the dimensions with the greatest saliency, while place (4.9%) was the least. Flavor (8.4%) had the highest positive valence, and order (-25.7%) had the highest negative valence. Figure 3 shows the saliency and valence values of each dimension.

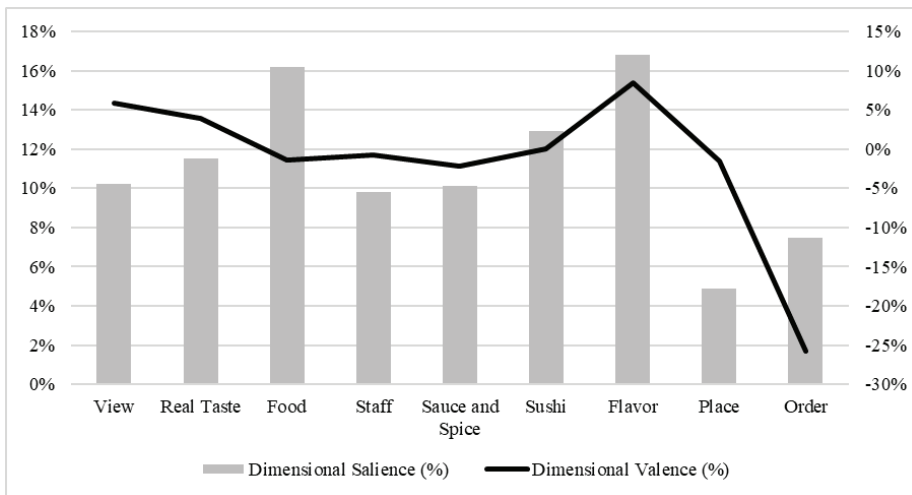


Figure 3. Dimensional Saliency-Valence Analysis of the Dimensions

According to the DSVAs results, it was found that Turkish customers focused more on flavor and food in their experiences at Asian restaurants, and the positive sentiment tone for the flavors they tasted was higher, but the negative sentiment tone was higher for orders.

The Saliency and Valence of Lexicon of the Dimensions

The LSVA for RQ6 and RQ7 provided an in-depth analysis of the DSVAs results performed in the previous stage, helping to identify possible terms that positively

and negatively affected the dimensions related to experience (Taecharungroj & Mathayomchan, 2019). Figure 4 illustrates the LSVA results with bubble charts. The bubble size of each term was calculated by dividing the term weights given in the LDA result table to the maximum weight of each topic, as suggested by Taecharungroj & Mathayomchan (2019). The English equivalents of each term given in Table 1 were used during the bubble chart display and the interpretation of the results.

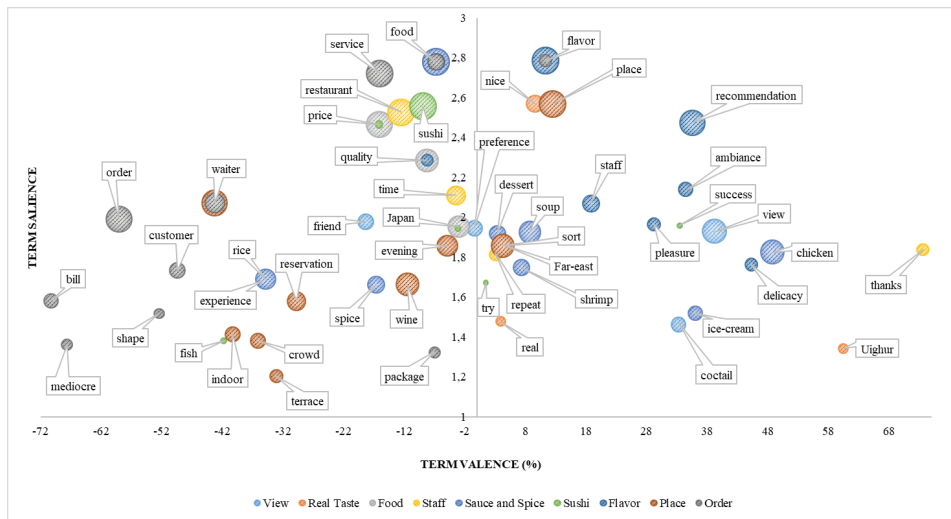


Figure 4. Valence and Salience of the Dimension Terms

According to the LSVA results, flavor was the term with the greatest salience and terrace was the term with the least. Flavor was the term with the highest salience in reviews assigned to dimensions other than place. In place, the term with the highest salience was food. However, the terms with the least salience were cocktail in view, Uighur in real taste, Far East in food, experience in staff, ice cream in sauce and spice, fish in sushi, delicacy in flavor, terrace in place, and package in order dimension.

The view dimension was supported with the highest valence by view followed by cocktail, place, and flavor. In the view dimension, the term with the lowest valence after price was friend which indicated the factors that caused the customer's negative thoughts. The real taste dimension was supported by the highest valence term Uighur, followed by terms such as recommendation, flavor, nice and real, while service, restaurant and food were negative terms for this dimension.

The food dimension was supported by the highest valence term flavor, while the lowest valence terms were service and price. The staff dimension, on the other hand, was supported by the terms thanks and staff with the highest valence terms. The lowest term valence of the staff dimension was experience. The sauce and spice

dimension was supported by the highest valence term chicken followed by ice-cream and recommendation, while the most negative term of this dimension was rice. The sushi dimension was supported by the highest valence terms recommendation and success. The most negative term of this dimension was fish which came after price and service, and this shed light on the reasons for the negative thoughts of customers.

The flavor dimension was supported by the highest valence term, delicacy, followed by the terms recommendation and ambiance. The terms with the lowest valence for this dimension were service and quality. While the place dimension was supported by the highest valence term place, the lowest valence term was the waiter which came after crowd, terrace, and reservation. This indicated the reasons for the negative thoughts of the customers. Finally, the term bill was the lowest valence in the order dimension, where the only term with positive valence was flavor coming after terms such as mediocre, order, shape, and customer. This provided clues about the factors that caused negative thoughts of the customers.

According to the LSVA results, it was determined that while the food term had negative valence, the flavor term had positive valence. It was found that Turkish customers generally had a more positive perception of flavor than food. It was determined that Turkish customers have a positive perception towards the chicken, ice-cream, cocktail, soup, shrimp, and dessert which they experienced in Asian restaurants. It can be stated that Turkish customers' approach to Uighur cuisine is positive, especially with the high positive valence attributed to the term Uighur. Regarding the restaurants visited in general, there was a positive perception towards elements such as staff, delicacy of the staff, view, ambiance, and place. In addition, it was clear from the study that the perception towards the Far East and the variety of menus of the restaurants was positive. Nevertheless, while customers were more positive about recommendation, they had a lower positive valence about revisit.

This study revealed that Turkish customers had a negative perception about sushi, wine, spice, rice, and fish. The negative perception about sushi coincides with the negative valence attributed to the term Japan. In addition, it became clear that customers had a negative perception of the terms quality, price, service, reservation, restaurant, crowd, waiter, customer. Although Turkish customers typically evaluated their experience as negative, our study revealed that they had a positive perception that such an experience was worth trying and that real flavors could be experienced. Finally, this study showed that Turkish customers were very sensitive about the timely and correct delivery of the order.

Discussion

Some scholars agree that the restaurant industry is a competitive one and that restaurateurs need to understand customer perception (Jang et al., 2009; Josiam et

al., 2007; Lee et al., 2012; Liu & Jang, 2009; Ma et al., 2011; Min & Han, 2017; Sukalakamala & Boyce, 2007). In this study, which investigates the perception of Turkish customers towards their experiences at Asian restaurants, nine dimensions that affect customer experience were identified. Of these dimensions, view and place overlaps with the view and location defined for the restaurant experience (Oh & Kim, 2020; Pezenka & Weismayer, 2020). The staff and order dimensions support previous research (Büschken & Allenby, 2016; Situmeang et al., 2020) as factors affecting the restaurant experience.

It can be stated that the emergence of sushi as a stand-alone dimension in the perception of Asian restaurants experience supports the idea that Japan has succeeded in globalizing sushi (Min & Han, 2017, p. 166). Some scholars place particular emphasis on food (Ma et al., 2011) and flavor or taste (Fanelli & Di Nocera, 2018; Sukalakamala & Boyce, 2007) in their perception of the Asian restaurant experience. The food and flavor dimensions presented in this study supported this idea. In addition, some researchers agree on the importance of authenticity in the perception of Asian restaurant experience (Lee et al., 2012; Liu & Jang, 2009; Ma et al., 2011; Min & Han, 2017; Sukalakamala & Boyce, 2007). This study supported this view with the real taste dimension. Sauce and spice, which this study reveals as another dimension that shapes the perception of experience, overlaps with studies that point to spicy food among the attributes that affect the perception of Asian restaurants experience (Fanelli & Di Nocera, 2018; Jang et al., 2009; Josiam et al., 2007; Liu & Jang, 2009; Min & Han, 2017; Sukalakamala & Boyce, 2007). This study, unlike previous studies, revealed that sauces also play an important role in the perception of Asian restaurants experience. In this context, this study has confirmed the idea of seeking exotic food and seeking cultural experience (Ha & Jang, 2010) with Turkish customers focusing on food and flavor along with sauces and spices.

As a result of the analysis, the fact that most salience dimensions are flavor and food in addition to being the most common terms in customer reviews shows that Turkish customers focus on taste. Although the study supports studies that identify the term food as the most frequently cited term in restaurant reviews (Pezenka & Weismayer, 2020; Situmeang et al., 2020), it differs from these studies with the term flavor.

According to the sentiment analysis result performed on the basis of customer rating, flavor was the most positive dimension, while order was the most negative dimension. In the performance test of this classification, the SVM algorithm achieved the best result with an accuracy score of 81.3%. As a result of LSVa performed on the basis of SVM prediction results, flavor was the most salience term and terrace was the least salience term. However, these terms do not have a high negative effect when compared to the terms bill, mediocre, and order, which have high negative

valence. It also does not have a highly positive effect compared to the terms thanks, Uighur, and chicken, which have high positive valence. The highly positive valence of the term Uighur supports the idea that the culture is reflected in customer reviews for the experience (Nakayama & Wan, 2019), and it can be evaluated with cultural proximity. Although cultural proximity is largely based on language, it can be attributed to cultural elements such as dress, ethnic types, gestures, body language, music traditions, religious elements (La Pastina & Straubhaar, 2005) and food, which is the finding of this study.

Theoretical Implications

The study showed that with topic modeling, the main dimensions that affect the customers' experience can be revealed and customers' perceptions of ethnic cuisines can be interpreted. Another contribution of the study is that the SVM algorithm performed 5.5% higher than the NB algorithm in polarity classification based on the customer ratings. In the study, it was also determined that flavor and food are the main dimensions affecting the perception of Asian restaurants experience. Therefore, it can be said that Turkish customers give more importance to the food itself and the taste of the food than other factors. In addition, it has been observed that Turkish customers pay attention to ordering in their dining experience related to a cuisine from a different culture or country. Finally, the study reveals that cultural proximity positively affects customers' food perceptions.

Managerial Implications

The topic of real taste, one of the findings of this study, and the flavor that customers especially focus on evokes the idea that ethnic restaurants will lose their originality to the extent that they try to appeal to the taste of foreigners (Van den Berghe, 1984). Although the customers' sentiments on the real taste for Asian restaurants operating in Istanbul have not yet turned into a negative direction (3.9%), the rate of positive valence is not high. The term flavor, which stands out in the analyses made on the basis of the term, has shown that the main reason for Turkish customers to go to Asian restaurants is flavor-oriented. Restaurant owners and managers should take into account that Turkish customers focus primarily on flavor and can be open to different experiences when customers' flavor expectations are met. Customers can set a number of criteria for encountering a different flavor and specify this in their orders. For this reason, it should not be ignored that if a common practice (e.g., a spice to be added to the food) for the staff working in these restaurants does not match the customer's expectation, the customer will be adversely affected by this experience. The business management should consider that the correct positioning of tables with a good view can be effective for the experience of the customers.

Limitations and future studies

The most important limitation of the study is that it only analyzes customer reviews written in Turkish for restaurants operating in Istanbul. For this reason, the number of online evaluations that make up the research data set was limited. Turkish customers' perceptions of Asian cuisine can be compared by analyzing the online Turkish reviews of the restaurants operating in other cities of Turkey or in other countries. In addition, the reviews written on different platforms other than TripAdvisor should be added to the analysis, so that Turkish customers' perception of Asian restaurants can be examined from a more holistic perspective. In particular, the negative reviews of customers contain important clues for the development of the business. In this context, only the detailed analysis of negative reviews will be able to determine the tolerance threshold for differences in restaurant experience. Finally, I think that the high number of restaurants serving Japanese, Chinese and Indian cuisines in the study, and accordingly the high number of online reviews, causes the cuisines of other Asian countries to remain in the background. I think that examining the cuisines of only one country or two countries for comparison purposes in future studies will be more beneficial in terms of homogeneity.

Conclusion

In this study, which focused on Turkish customers' perception of the experience of Asian restaurants operating in Istanbul, the dimensions that affect the experience were firstly determined with LDA. In the second stage, sentiment polarity for each dimension was determined on the basis of customer ratings, and classification performance was tested with machine learning algorithms. Flavor was the most positive dimension and order was the most negative dimension, while the SVM algorithm provided better accuracy. In the third stage, the dimensions that customers attach the most importance to and the hedonic quality of these dimensions were determined with DSVA. Accordingly, while flavor was the dimension with the highest salience in Asian restaurants experience, place was that with the least. While flavor was the dimension with the highest hedonic quality (the highest positive valence), order was the dimension with the lowest hedonic quality (the highest negative valence). At the last stage, the hierarchy of importance of the terms used in customer reviews and the hedonic quality of each term were determined with LSVA. Accordingly, the term flavor was that which had the most salience, and the term terrace was that which had the least. While the term with the lowest hedonic quality was bill, the term with the highest hedonic quality was thanks.

In conclusion, Turkish customers' perception towards the flavors they experience in Asian restaurants is positive. Turkish customers emphasize the restaurant attributes such as service, place, price, and quality in their reviews. Turkish customers are

affected by the negative issues they experience such as price, quality, reservation, order, and bill. Turkish customers pay attention to the correct delivery of order, especially in the experience they will have for a new flavor or dish from a different cuisine.

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