Development of the destination food image scale (DFIS) and examination of measurement invariance by gender

Hakan Görür
Department of Culinary, Istanbul Gelisim Vocational School, Istanbul Gelisim University, Istanbul, Turkey, and
Cem Oktay Güzeller
Department of Gastronomy and Culinary Arts, Faculty of Tourism, Akdeniz University, Antalya, Turkey

Received 24 May 2020
Revised 2 October 2020
Accepted 8 November 2020

Abstract

Purpose – The main purpose of this study is to create a reliable and valid scale to assess the destination food image perceived by the tourists regarding the food in Turkey within the cognitive and affective image component framework. In line with this purpose, both scale development and scale adaptation studies are conducted, and measurement invariance of the scale for gender is analyzed.

Design/methodology/approach – This study uses the survey model among quantitative research methods. Scale development processes are used to assess the cognitive image; the construct validity is analyzed with exploratory factor analysis ($n = 328$), confirmatory factor analysis ($n = 425$) and convergent and discriminant validity. Scale adaptation processes are followed to assess the affective image, and construct validity is tested with confirmatory factor analysis ($n = 425$). The reliability of both scales is investigated with Cronbach's alpha. Cochran–Mantel–Haenszel (CMH) analysis is conducted for measurement invariance for gender.

Findings – Construct validity and reliability provided the desired values in all processes. Measurement invariance results proved that the scale does not change according to genders.

Research limitations/implications – The data obtained in this study have geographical limitations, and the data represent tourists visiting Antalya, an important tourism destination in Turkey.

Practical implications – The scale will provide concrete information about the destination food image and help practitioners to test the model and develop future strategies for the destination.

Originality/value – This study presents an integrated approach to understanding the destination food image and expands theoretical and empirical evidence by creating a scale that measures both cognitive and affective image component. Scale-invariant shows that there is no item bias for analyzed gender and contributes to generalizability.

Keywords Scale, Scale development, Scale adaptation, Measurement invariance, Cognitive image, Affective image, Destination food, Destination food image

Paper type Research paper

1. Introduction

Image concept represents "a visual representation" (Pearce, 1988) and forms a cluster of meanings for an object that is known, described, remembered and connected by an individual. The meaning cluster is formed by the interactions of the beliefs, ideas, emotions, expectations and impressions of an individual about an object (Chon, 1990). In this sense, the image can reclaim this impression set created by the individual and facilitate assessments (MacKay and Fesenmaier, 1997). After these assessments, individuals tend to prefer and purchase products with similar images to these results (Hunt, 1975). Image is defined as a social phenomenon as it is shared by similar individuals socially creating the same image

Funding: This study was supported by Akdeniz University, Scientific Research Projects Coordination Unit (BAP). Project number: SYL-2019-4263.

British Food Journal
Vol. 123 No. 5, 2021
pp. 1681-1704

0007-070X
DOI 10.1108/BFJ-05-2020-0428

(Dann, 1996). At this point, the image affects and is affected by the attitudes and behaviors of the individual. Since individuals are unable to pre-test and experience the tourism product before visiting and need subjective judgments rather than objective measurements (Tapachai and Waryszak, 2000), the image concept has an important role for various destinations and tourism researchers to create tourism strategy (Baloglu, 1997).

Food is an affective component in the tourism product. Furthermore, food plays an important role for a unique travel experience or to support that travel experience. The majority of the dynamic-structured destinations in the tourism industry uses food as an "attraction factor" for tourists (McKercher *et al.*, 2008). The connection between food and tourism can be formed in various ways (Henderson, 2009). Food represents a destination culture and adds value to the core tourism product (Hegarty and O'Mahony, 2001). Food is regarded as a fundamental motivation for tourists who intentionally want to participate in the food activities and food experience (Jones and Jenkins, 2002). Food is regarded as a strategic management tool that creates or contributes to the main destination image (Cohen and Avieli, 2004; Kivela and Crotts, 2006).

While food is regarded as one of the properties that influence the general destination image such as the scenery, nature, cultural activities, nightlife and entertainment, shopping activities, sports activities, transportation, accommodation, price, climate, security and social interactions, various studies show the importance of food image for the destination (Ab Karim and Chi, 2010; Lertputtarak, 2012; Chi *et al.*, 2013; Lai *et al.*, 2017; Seo *et al.*, 2017). For destinations, creating a food image is considered as a differentiation element. According to Rozin and Rozin (1981), fundamental foods differentiate the cuisine of a destination from others in terms of cooking techniques and taste. With the development of local and regional cuisine, this differentiation grew further and destinations started to focus on food as the fundamental tourism product (Ab Karim and Chi, 2010). While the local food symbolizes the location and culture, destination food has become an important component of tourism. This is because food reflects the culture, identity, communication and status of a destination (Frochot, 2003). While the unique food indicates local character, this situation might lead for the destination to gain international fame (Seo and Yun, 2015). As the unique food or cuisine increases the destination image, they can turn this destination into an important attraction center (Long, 2004). At the same time, this approach might encourage the destination to protect individuals' characteristics and culture (Seo *et al.*, 2017).

Various destinations regard foods and beverages as fundamental tourism resources and use these elements as a differentiating image element for the tourist (Nelson, 2016b). In today's competitive environment, creating and managing a unique food image with a suitable positioning and differentiation has a critical importance for success (Chi *et al.*, 2013). For example, the image of France as a tourism destination is often related to culture, fashion, romanticism and primarily with gastronomy and wines (Frochot, 2003). Food can be a key for successfully introducing a destination and for creating an image. Food is regarded as an important source for marketable image and experience in tourism (Quan and Wang, 2004). Food is an inseparable part of a country, and it forms the most important elements of creating added value. In recent years, creating an image by using food and cuisine has been frequently applied by the destinations because food and cuisine can directly or indirectly affect the destination image character.

Destinations have different characteristics by creating food images. It is important to study how tourists perceive the destination food to develop a positive image with destination food, impact the food consumption of the tourists with this positive image, create motivation for traveling, contribute to the general destination image, influence destination selections and influence destination satisfaction and behavioral intentions. The image has a complex, multidimensional, relative and dynamic structure (Gallarza *et al.*, 2002). This shows that food has unique properties for each destination. Studies to reveal unique properties should be

conducted to create positive image activities. In line with the main purpose of this study, scale development study to assess cognitive image perception assessment of the tourists toward destination food and scale adaptation study to assess affective image perception were conducted. These two subscales were collected under one construct and to create a scale to assess destination food image perception of the tourists. This study aims to investigate the scale invariance for gender to show the structure is the same across different groups.

2. Literature review

2.1 Food and tourism destination relationship: Turkey

Food is an important element in tourism production and consumption (Boyne *et al.*, 2002). In tourism experience, food consumption is first seen as "non-elective" (Hall and Ve Sharples, 2003) physiologic need (Frochot, 2003). Food consumption can meet the affective and social needs of the tourists beyond physiologic needs (Hjalager, 2002). In addition to playing a supportive role in today's world, food might form the main traveling motivation for some potential tourists (Ab Karim and Chi, 2010). Within this context, food consumption can support the tourism experience and might be the most memorable and impressive elements of the visit.

Since food and beverage is the significant portion of tourism spending in tourism activity, it became an important marketing tool for the destinations (Boyne *et al.*, 2002). Unique foods are emphasized as resources to create destination identities or to develop the existing identity (Scarpato *et al.*, 2002). Various destinations follow promotion and positioning efforts to emphasize local cuisine and local food. Frochot (2003) showed the regional success of the different promotion and positioning strategies in France.

Turkey has one of the oldest cuisines with rich product variety in seven regions with different cuisines. Turkey has become popular with developing and enriching cuisine as the country is located in the "Fertile Crescent" and influenced by various civilizations that lived on this land (Cömert and Özkaya, 2014). The studies show that one of the most important reasons for tourists to visit Turkey is the cuisine and to experience the cuisine culture. However, the studies emphasize that Turkish cuisine is not well known as a tourism destination and should be promoted (Çakıcı and Eser, 2016).

In recent years, Turkey has put efforts to emphasize the food as one of the important cultural attraction elements. TÜRSAB (2012) conducted a comparative assessment, published "Gastronomy Tourism Report" and provided recommendations to contribute to gastronomy tourism. "Taste Map Turkey" was created in 2008 with the efforts of Ankara Chamber of Commerce and Ankara Patent Office. Gaziantep, Hatay and Afyonkarahisar are listed as "UNESCO Creative Gastronomy Cities" (UNESCO, 2020). The Republic of Turkey Ministry of Culture and Tourism (2020) included projects to develop as a gastronomic destination in "2023 Tourism Strategy Program." Within this context, it can be seen that Turkey aims to globalize and become one of the largest international cuisines.

2.2 Destination food image

In the tourism literature, food is considered to be one of the elements of the cultural destination that form the destination image (Echtner and Ritchie, 1993; Beerli and Martín, 2004b). In other words, food forms the component that makes the destination image. However, various academic studies emphasize the importance of food as an important indicator of the destination image (Frochot, 2003; Ab Karim *et al.*, 2009; Ab Karim and Chi, 2010; Horng and Tsai, 2010; Leong *et al.*, 2010; Lertputtarak, 2012; Peštek and Merima, 2014; Seo and Yun, 2015; Nelson, 2016a; Lai *et al.*, 2017; Seo *et al.*, 2017; Tsai and Wang, 2017; Choe and Kim, 2018; Lai *et al.*, 2018).

Seo *et al.* (2013) defined food image as "visual and psychology impressions of foods representing the cultural identity of a society, region or country." In this sense, Lin (2006)

argued that food image should be analyzed in terms of local food and cuisine as it reflected the uniqueness of a certain destination.

Unique food and food habits might be in the memories of a certain society or destination. For example, pasta and pizza recall Italy, or Italy as a tourism destination might be related to pasta and pizza by the individuals (Horng and Tsai, 2010). Differentiating characteristics of the destination food play an important role in emphasizing the destination identity (Lin *et al.*, 2011). Even a certain part of the concrete characteristics of destination food that increase a food image for the destination is of great importance as these characteristics reflect the destination uniqueness. For example, Hjalager and Corigliano (2000) stated that Italy emphasized the health-related properties of Mediterranean-style food as food image elements and attracted potential tourists to the destination. Destination foods can be used as a strategic management tool to create or contribute to an existing destination image to attract potential tourists to the destination (Cohen and Avieli, 2004; Kivela and Crotts, 2006).

Destination image can be intentionally created by the destinations to convey certain messages (offering new ideas, encouraging and strengthening certain food consumption) to potential tourists via information resources (Fisher *et al.*, 2012). Encouraging positive image of foods as an important element of the local culture by destinations can ensure the food to be a strong symbol and contribute to the potential tourists' preference for the destination (Seo and Yun, 2015). For example, Chuang (2009) expressed that promotion by the tourism industry and the government by using information sources greatly contributed to the development of cuisine tourism in Taiwan. Within this context, it is important to understand the food image creation process in detail to realize positioning and repositioning efforts to create a positive food image in a destination.

Perceived food image is formed by tourist perceptions and referred to as "belief, attitude, and emotions developed for the destination foods by stimulating the minds of the tourists." With the projected image by the destinations, perceived image is formed by a dynamic structure affected and based on tourists' own requirements, traveling motives, travel experiences, preliminary knowledge and personal characteristics. Accordingly, every tourist forms an image for the destination in their mind based on their personal perceptions (Beerli and Martín, 2004b).

While there are various perspectives in the literature on the image components, the image concept in the tourism literature has different yet gradual, interconnected, multidimensional structures, including cognitive and affective image components (Gartner, 1994; Dann, 1996; Chen, 2001; Pike and Ryan, 2004). The studies on the food image support the same view (Fisher *et al.*, 2012; Lai *et al.*, 2017; Seo *et al.*, 2017). Figure 1 shows the cognitive and affective image components of the perceived food image and the relationships between them.

Since tourism products cannot be tested prior to the visit, the image is mainly based on touristic perceptions. The cognitive component of the image is represented as "assessing the product characteristics firstly by focusing on concrete and physical characteristics than to the total of beliefs and information of the individual about the product" (Gartner, 1994). When

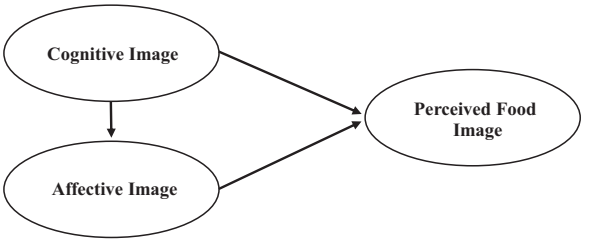

Figure 1.
Conceptual model of perceived destination food image

the individual is assessing the product, a belief cluster is structured based on the knowledge about the product and forms a cognitive component for the image. Since food image is created by understanding and assessing the destination-related food characteristics, the cognitive image of the food plays an important role in consumer assessment (Seo *et al.*, 2017).

The affective component of the image is related to individual motives on the selection and represents what the individuals want to obtain from the object that affects objective assessment (Gartner, 1994). Affective image is "the result of assessing the general or specific characteristics of a product" (Seo and Yun, 2015) and represents "emotions." The feelings of an individual to a product might be positive, negative or neutral (Pike and Ryan, 2004). An affective image perceived about the food of a destination can especially play an important role or more important role than cognitive image properties in destination selection (Seo *et al.*, 2017). Peštek and Merima (2014) suggested that affective image is one of the most effective structures to assess food image.

Although cognitive and affective images are two different components, it can be seen that these components are related. Assessing both the cognitive and affective characteristics of a product leads to creating the image (Luque-Martínez *et al.*, 2007). Studies argue that affective image is linked to cognitive image and affective image emerged as a function of the cognitive image (Baloglu and McCleary, 1999; Wang and Hsu, 2010). At the same time, since cognitive does not always create a positive affective image, it is argued that cognitive and affective image should be measured separately (Son and Pearce, 2005).

3. Methodology

A detailed study and scale development is necessary to identify the destination food image perceptions of the tourists. It is suggested different destinations to develop scales specific to their characteristics to understand the images perceived by the tourists (Chen *et al.*, 2015). The scope of the scale uniqueness may vary based on different factors such as dimensions, environment or universe (DeVellis, 2012). Foods are only considered as a part of the entire destination image, and it is argued that food image studies have insufficient care and interest (Leong *et al.*, 2010). This is proven by the limitation of scale development studies for cognitive image of the food with one study (Seo and Yun, 2015). However, this study has a limitation from various aspects. First, the scale in the study was tested based on the perception of three foreign tourist groups (USA, Japan and China). This limits the applicability and generalizability of the scale. Additionally, during perceived food image measurement, tourists' past travel experience and destination food eating experiences were not considered. Studies show that these two factors affect image perception (Dann, 1996; Baloglu and McCleary, 1999; Beerli and Martin, 2004b; Ji and Wall, 2015; Tsai and Wang, 2017). Previous food image studies were conducted on tourists that previously experienced destination food and measured real food image; however, there are no studies to understand the perception of the tourists without previous destination food experience (Lai *et al.*, 2017). Therefore, cognitive scale development efforts for the destination food by considering the gaps and limitations of the previous studies are explained in Phase I.

To assess destination food image perceived by the tourists, affective image components that express their emotions toward destination food should be assessed with cognitive image. Affective image in the literature is based on a conceptual basis (Russel, 1980; Russel and Pratt, 1980). Therefore, "The Affective Destination Food Image Measurement" subscale developed by Seo and Yun (2015) fits this conceptual basis. The scale application study for cultural adaptation and analysis of the reliability and validity results are explained in Phase II.

A scale that defines a certain structure should provide similar to the same measurement results under different observation and study conditions (Mark and Wan, 2005; Putnick and

Bornstein, 2016). To eliminate the negative effects, measurement invariance of the scales should be investigated (Crocker and Algina, 1986). Analysis of measurement invariance might prevent psychometric errors due to various factors. Therefore, to determine the bias level of items related to developed and adapted scales, measurement invariance of the answers of the tourists visiting the destination by gender is explained in Phase III.

This study was designed with a general survey model among quantitative scientific research models. The survey model is conducted by collecting information related to the group to identify certain characteristics in the group, and the purpose is to identify the views, attitudes, interests, skills and abilities of the participants regarding that topic (Kumar, 2011; Leavy, 2017; Creswell and Creswell, 2018).

3.1 Study groups

Since past experiences shape and change the image (Seo *et al.*, 2017), the study included international tourists visiting the destination for the first time due to more neutral food image perception without previous food experience, and two different groups were used. In this study, purposive sampling among non-random sampling methods was adopted as the individuals included in the study groups must meet certain criteria (Patton, 2002; Given, 2012). Since 300 or more participants were considered to be a good sample size in factor analysis studies (Tinsley and Tinsley, 1987; Nunnally and Bernstein, 1994; Comrey and Lee, 2013), this study was conducted with a total of 753 participants where the first study group included 328 (53.7% male, 46.3% female) and second study group included 425 (50.6% male, 49.4% female) participants. The first study group was used to refine the items in the scale, identify the number of hidden numbers and determine the interpretable factors under the items. The second study group was used to show the data analyzed after the first implementation was not coincidental and to confirm the relationship pattern. The data from the second study group were used for measurement invariance analysis.

3.2 Data collection

According to tourism general statistics data of the Republic of Turkey Ministry of Culture and Tourism (2020), Antalya was the most visited destination in 2018 when all entrance borders were considered for foreign tourists (31.50%). This shows that Antalya is an important destination that can represent the food image of Turkey. Therefore, the data were collected from international tourists between October 2018 and May 2019 via tourism agencies in Antalya.

For two implementation processes, the survey was used as the data collection tool. In the first implementation, 393 participants received survey forms; 65 forms were excluded from the analysis due to missing, incorrect and random answers, and 328 survey forms with 83.4% usability ratio were analyzed. In the second implementation, 472 participants received survey forms; 47 forms were excluded from the analysis due to missing, incorrect and random completion, and 425 survey forms with 90.0% usability ratio were analyzed.

3.3 Data collection tool

A survey form was used to create the scale, and the form was designed in three sections. The first section included "the demographic properties of the participants," the second section included the "cognitive image scale for destination food (CISDF)" and the third section included the "affective image scale for destination food (AISDF)."

3.3.1 Phase I – The cognitive image scale of destination food (CISDF). Figure 2 shows the general processes applied to develop the "cognitive image scale for destination food (CISDF)." Since the steps and processes change based on the study purpose (Netemeyer *et al.*, 2003),

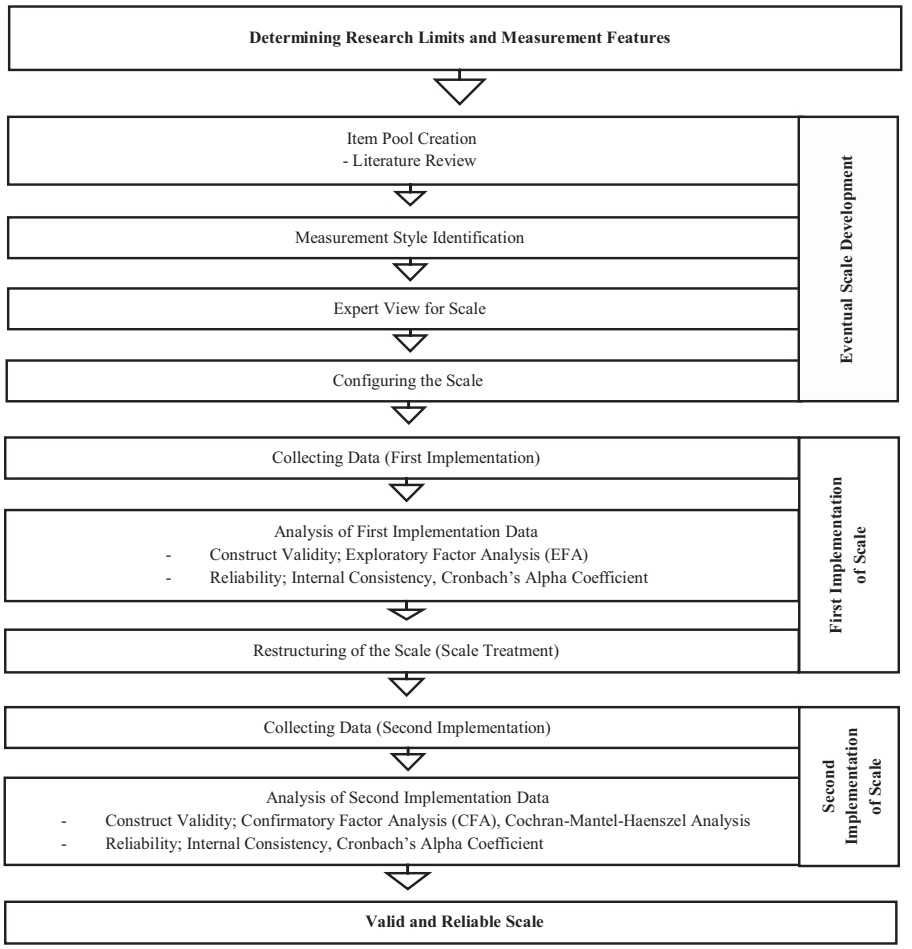

Figure 2.
The cognitive image scale of destination food (CISDF) development process

a five-stage scale development process that includes this study was created after analyzing the scale development studies (Churchill, 1979; DeVellis, 2012) in line with the purpose of this study.

3.3.1.1 Item pool creation and measurement style identification. The researchers emphasized that after determining the construct to be measured, a candidate item pool to be finally added to the scale is necessary (DeVellis, 2012). Since Lin (2006) argued that food image should be considered within local food and cuisine as the food image reflects the uniqueness of the destination, national (Özdemir and Kınay, 2004; Şanlıer, 2005; Albayrak, 2013; Eren and Çelik, 2017) and international (Verbeke and López, 2005; Lambden *et al.*, 2007; Jang *et al.*, 2009; Seo and Yun, 2015; Björk and Kauppinen-Räisänen, 2016) literature investigating the tourists' attitude toward local food was included in the literature review. After a comprehensive literature review, the in-depth interview revealed properties for destination food image. Eighty-nine final items were produced in eight subdimensions: sensory attributes of destination food (10 items), attractiveness of destination food (18 items), content characteristics of destination foods (13 items), destination food culture (12 items),

preparation and cooking methods of destination foods (8 items), healthiness and nutritiousness of destination foods (18 items), price of destination foods (3 items) and sociocultural benefits of destination foods (7 items). When the item pool was created, the number of items had wide coverage to act as a precaution against internal consistency, and long-item structures were avoided to prevent the confusion and increase clarity.

The tools that measure views, beliefs and attitudes commonly used Likert scale (Johnson and Morgan, 2016). Since cognitive image perception toward the destination food was formed by the total of intrinsically accepted beliefs and attitudes toward the destination food and because of the characteristics of the measurement variables, item measurement that represents the construct was determined as a 7-point Likert-type scale (1 - completely disagree, 7 - completely agree).

3.3.1.2 Expert view for scale. To assess the item pool, the next step for the scale development process was to consult the expert view with the knowledge and expertise on the field of measured content (DeVellis, 2012; Netemeyer *et al.*, 2003). The expert views aimed to maximize the content validity by showing the sufficiency level of the items in the scale to measure the desired constructs in qualitative and quantitative terms (Rusticus, 2014). Forms were prepared for expert assessments, and expert views were collected from 9 academic members experienced in the tourism field and in the culinary sector by using face-to-face interviews and e-mail.

The statistical method was applied, and the content validity ratio (CVR) and content validity index (CVI) for the expert assessments were calculated (Taherdoost, 2016). The statistical results generally met the criteria expressed in the dimensions, and it was seen that the content validity was within acceptable limits (CVI > 0.80). At the end of the evaluation, four items with inadequate CVR were excluded from the final scale form (SVR < 0.548; $p = 0.05$) (Ayre and Scally, 2014). Based on expert views, one item was divided into two different item structures and three new items were added to the final scale. As a result, after changing the statement and sentence structures, the final scale was structured with 8 subfactors and 89 items.

3.3.2 Phase II – the affective image scale of destination food (AISDF). The affective image, which is another main dimension to create the food image, "is created as a result of assessing the general or specific characteristics of a product" (Seo and Yun, 2015) and represents the "emotions" (Seo *et al.*, 2017). The emotions of an individual toward food can be positive, negative or neutral. By combining the cognitive image and affective image components of the destination food, the structure that represents the destination food image is created (Baloglu and Brinberg, 1997; Baloglu and McCleary, 1999; Wang and Hsu, 2010).

It is interpreted to be more reliable to adapt an existing scale in the literature rather than developing a new scale (Heggestad *et al.*, 2019). The scale consisting of 5 items was adapted to evaluate the affective image (Seo and Yun, 2015). Validity and reliability results were examined. It is not possible to argue that the scale structures and parameters will give the same results in different samples and cultures without testing (Borsa *et al.*, 2012).

In the scale adaptation process, necessary permissions from the researchers who developed the unique scale were collected as indicated by other researchers (Hambleton and Patsula, 1999; Ægisdóttir *et al.*, 2008). Statements for the scale and measurement style were analyzed with previous studies (Russell and Pratt, 1980), assessed in semantic terms and found to represent the constructed to be measured.

3.4 Data analysis

To test the construct validity of the data in the cognitive image scale (CISDF) for destination food development process, exploratory factor analysis (EFA) was applied on the first study

group to refine the items and derive factor structures, and confirmatory factor analysis (CFA) was applied on the second study group to confirm the relationship patterns. In the factorizing process, the maximum likelihood method was selected as this method is strongly based on formal statistical basis compared to other methods, and "varimax" orthogonal rotation method as factor rotation method was used to analyze the correlation relationships between the factors (DeVellis, 2012). When analyzing the construct validity for multidimensional scales, discriminant and convergent validity were considered within the analysis as these are important in the analysis (Netemeyer *et al.*, 2003).

Since the reliability and validity study of the cognitive image for destination food scale (AISDF) was conducted by the researchers (Seo and Yun, 2015), the data of the second study group were tested with CFA to confirm the factor construct of the scale and to test the theoretically proved structure (Hair *et al.*, 2010). For both scales, reliability was assessed by using internal consistency Cronbach's alpha coefficient.

To determine the item bias levels for destination food image scale (DFIS) including two subdimensions and, at the same time, to increase the quality of the results obtained for the measured characteristics (Osterlind and Everson, 2011), the distribution of answers of the tourists visiting the destination for gender was tested with differential item functioning (DIF) and Cochran–Mantel–Haenszel (CMH) analysis.

The "*R*" package data program was used for analysis in this study. The analysis was conducted with "*R* package program and psych" (Revelle, 2017), "Splus" (Bernaards and Jennrich, 2005), "Itm" (Rizopoulos, 2006) and "lavaan" (Rosseel, 2012) package extensions. CMH used "Jmetrik" package data program for the analysis (Meyer, 2014).

4. Results

4.1 Phase I – the cognitive image scale of destination food (CISDF)

4.1.1 Construct validity results. 4.1.1.1 Exploratory factor analysis ($N = 328$). To determine the number of hidden variables related to cognitive image for destination food scale and to refine the items, EFA was applied to first implementation data. The suitability of the data set for the factor analysis was investigated, and it was found that Kaiser–Meyer–Olkin (KMO) value was 0.949, which was above the desired (KMO>0.90) value and interpreted as perfect, and the Bartlett sphericity test ($\chi^2 = 460.63$; df = 50; $p = 0.000$) was significant and consistent (Comrey and Lee, 2013). In the factorizing process, maximum likelihood method was selected as this method has a strong statistical basis and "varimax" orthogonal rotation was used as factor rotation method. For each item, 0.40-factor load was selected as the cutoff. At the same time, to prevent the overlapping problem, items with factor load of 0.10 and below were excluded from the scale (DeVellis, 2012). The analysis based on these criteria was repeated four times until meeting the construct validity criteria. After scale refinement, the number of factors was determined with the remaining 51 items. Analysis results indicated that there were a total of 7 factors that explained 75.96% of the total variance and with eigenvalues greater than one. The variance explained by the factors varied between 0.50 and 0.62. The composite reliability (CR) varied between 0.90 and 0.92 (Fornell and Larcker, 1981; Hair *et al.*, 2010; Malhotra and Dash, 2011). Analysis results showed that the average variance extracted for 7 factors was at desired values (Kline, 2014; Tabachnick and Fidell, 2012). It can be seen that internal consistency Cronbach's alpha coefficient (α) for each factor constructs exceeded the generally accepted value of ($\alpha > 0.70$) (DeVellis, 2012) and ranged between 0.83 and 0.97 (Table 1).

4.1.1.2 Confirmatory factor analysis ($N = 425$). To confirm the predicted relationship pattern of the scale consisting of 7 factors and 51 items obtained from the EFA, CFA was applied to the data obtained from a similar study group ($n = 425$). While there is no agreement on which indexes should be used in model fit index assessment (Hu and Bentler, 1998), this

Table 1.
The destination food image scale (DFIS), sample one (n = 328) and sample two (n = 425) factor analysis results

Factors / Items	Mean	Factor loading	t	CR	Cronbach's α
The cognitive image subscale of destination food					
Factor A: sensory attributes of destination foods [eigenvalue: 1.773; AVE: 0.58]				(0.91)	0.96 (0.96)
A1. Destination foods are delicious	4.63 (4.59)	0.77 (0.84)	(20.58)		
A2. Destination foods are aromatic	4.56 (4.51)	0.80 (0.84)	(20.44)		
A3. Destination foods have a strong taste	4.50 (4.34)	0.72 (0.69)	(15.61)		
A4. Destination foods smell nice	4.67 (4.56)	0.79 (0.84)	(20.70)		
A5. Destination foods are nice-looking	4.84 (4.61)	0.74 (0.86)	(21.22)		
Factor B: attractiveness of destination foods [eigenvalue: 23.873; AVE: 0.50]				(0.96)	0.97 (0.97)
B1. Destination foods are natural	4.60 (4.53)	0.71 (0.78)	(19.17)		
B2. Destination foods are clean	4.66 (4.69)	0.71 (0.80)	(19.60)		
B3. Destination foods are organic	4.55 (4.53)	0.71 (0.83)	(20.85)		
B4. Destination foods are fresh	4.74 (4.60)	0.71 (0.85)	(21.82)		
B5. Destination foods are quality	4.65 (4.63)	0.74 (0.88)	(23.12)		
B6. Destination foods are interesting	4.86 (4.73)	0.69 (0.87)	(22.35)		
B7. Destination foods are popular	4.77 (4.64)	0.73 (0.86)	(22.00)		
B8. Destination foods are modern	4.58 (4.65)	0.74 (0.80)	(19.80)		
B9. Destination foods are authentic	4.70 (4.52)	0.73 (0.72)	(17.08)		
B10. Destination foods are unique	4.50 (4.53)	0.75 (0.77)	(18.64)		
B11. Destination foods are well-known	4.66 (4.68)	0.59 (0.77)	(18.81)		
B12. Destination foods are appetizing	4.74 (4.81)	0.75 (0.81)	(20.01)		
B13. Destination foods are satisfying	4.81 (4.76)	0.73 (0.82)	(20.52)		
B14. Destination foods are easy to find everywhere	4.60 (4.65)	0.62 (0.74)	(17.64)		
B15. Destination foods are different from food that other cuisines have	4.75 (4.62)	0.66 (0.73)	(17.17)		

(*continued*)

Factors / Items	Mean	Factor loading	t	CR	Cronbach's α
Factor C: content characteristics of destination foods [eigenvalue: 2.889; AVE: 0.54]				(0.90)	0.93 (0.93)
C1. Destination foods are salty	4.44 (4.02)	0.75 (0.73)	(16.91)		
C2. Destination foods are sugary	4.39 (4.12)	0.67 (0.67)	(14.85)		
C3. Destination foods usually consist of cereal products	4.47 (4.15)	0.72 (0.74)	(16.91)		
C4. Destination foods consist highly of meat products	4.63 (4.23)	0.65 (0.74)	(17.17)		
C5. Destination foods have too much fat	4.46 (4.28)	0.83 (0.85)	(20.82)		
C6. Destination foods have too much tomato paste	4.39 (4.29)	0.80 (0.79)	(18.45)		
C7. Destination foods have too much water	4.80 (4.15)	0.72 (0.75)	(17.46)		
Factor D: destination food culture [eigenvalue: 3.126; AVE: 0.57]				(0.92)	0.91 (0.91)
D1. Destination foods are homemade	4.49 (4.16)	0.84 (0.72)	(16.89)		
D2. Destination foods are served in the local way	4.41 (4.26)	0.87 (0.83)	(20.68)		
D3. Destination foods are served in big portions	4.34 (4.34)	0.86 (0.88)	(22.80)		
D4. Destination foods are served with various garniture	4.52 (4.43)	0.83 (0.91)	(23.97)		
D5. Destination foods are shared at the table with others	4.36 (4.22)	0.80 (0.83)	(20.65)		
D6. Destination has a great variety of foods	4.75 (4.55)	0.51 (0.77)	(18.56)		
D7. Destination foods have a long historical background	4.83 (4.68)	0.48 (0.70)	(16.07)		
Factor E: preparation and cooking methods of destination foods [eigenvalue: 1.311; AVE: 0.61]				(0.94)	0.83 (0.83)
E1. Destination foods are cooked with various cooking methods	4.47 (4.24)	0.58 (0.88)	(22.74)		
E2. Destination foods are cooked with local cooking methods	4.70 (4.41)	0.87 (0.97)	(27.06)		
E3. Destination foods are cooked with traditional cooking methods	4.74 (4.34)	0.86 (0.91)	(24.12)		

(*continued*)

Table 1.

Table 1.

Factors / Items	Mean	Factor loading	*t*	CR	Cronbach's α
Factor F: healthiness and nutritiousness of destination foods [eigenvalue: 4.174; AVE: 0.58]				(0.92)	0.96 (0.96)
F1. Destination foods are good for immune system	4.20 (4.48)	0.80 (0.77)	(18.32)		
F2. Destination foods are easy to digest	4.28 (4.38)	0.81 (0.77)	(18.32)		
F3. Destination foods are nutritious	4.47 (4.52)	0.78 (0.78)	(18.68)		
F4. Destination foods support healthy diet.	4.41 (4.28)	0.78 (0.71)	(16.31)		
F5. Destination foods support balanced diet.	4.52 (4.40)	0.74 (0.75)	(17.66)		
F6. Destination foods are high in energy content	4.68 (4.60)	0.72 (0.89)	(23.24)		
F7. Destination foods are high in nutritive value	4.65 (4.66)	0.77 (0.83)	(20.81)		
F8. Destination foods are high in calorie content	4.63 (4.64)	0.70 (0.77)	(18.52)		
Factor G: sociocultural benefits of destination foods [eigenvalue: 1.626; AVE: 0.52]				(0.94)	0.92 (0.92)
G1. Destination foods provide social togetherness	4.44 (4.47)	0.72 (0.80)	(19.54)		
G2. Destination foods provide a cultural experience	4.67 (4.47)	0.66 (0.86)	(22.16)		
G3. Destination foods increase the feeling of sharing	4.54 (4.48)	0.78 (0.91)	(24.33)		
G4. Destination foods contribute to cultural knowledge	4.62 (4.52)	0.75 (0.92)	(24.76)		
G5. Destination foods strengthen the status and prestige	4.39 (4.53)	0.71 (0.83)	(20.69)		
G6. Destination foods reinforce communication with people	4.53 (4.57)	0.73 (0.80)	(19.58)		
H: The Affective Image Sub-Scale of Destination Food					
When I eat destination food, I feel very					
Factors / Items				(0.97)	(0.98)
H1. Unhappy - Happy	(5.09)	(0.91)	(24.39)		
H2. Dissatisfied - Satisfied	(5.04)	(0.94)	(25.93)		
H3. Displeased - Pleased	(5.03)	(0.98)	(27.97)		
H4. Uncomfortable - Comfortable	(5.03)	(0.95)	(26.33)		
H5. Gloomy - Excited	(5.08)	(0.91)	(24.45)		

Note(s): *Mean:* average value*; AVE:* average variance extracted; *CR:* composite reliability
Note: Sample one (n = 328), Sample two (n = 425). Confirmatory factor analysis (CFA) results for the second study (n = 425) group are expressed in parentheses

study evaluated the most commonly used fit indexes in model confirmatory studies (χ^2/df, RMSEA, SRMR, NNFI/TLI, CFI) (Schumacker and Lomax, 2010; Kline, 2014). Model fit index results are given in Table 2.

CFA results (Table 2) before modification showed that the model fit index was not at the desired level nor significant. To explore and edit the non-fit models, modification indexes (MI) and expected parameter changes (EPC) between the items were investigated (Whittaker, 2012). By analyzing the results, the correlations between the high modification indexes (MI) and expected parameter values (EPC) (A2 ~ A1; A5 ~ A4; B2 ~ B1; B3 ~ B1; B4 ~ B2; B4 ~ B3; B5 ~ B4; B10 ~ B9; B11 ~ B10; B13 ~ B12; B14 ~ B13; B15 ~ B13; B15 ~ B14; C2 ~ C1; C3 ~ C2; C5 ~ C3; C6 ~ C5; C7 ~ C6; D2 ~ D1; D7 ~ D6; F2 ~ F1; F5 ~ F4; F8 ~ F7; G2 ~ G1; G6 ~ G5) were set free and CFA was applied again.

When the model fit indexes after the modification (Table 2) were analyzed, it was seen that the chi-square (χ^2) value to degree of freedom (df) ratio ($\chi^2 = 4294.79$, df = 1,178, χ^2/df = 3.64, $p = 0.000$) was within acceptable limits and significant. Analysis results showed that RMSEA (0.079) and SRMR (0.055) values were below the acceptable value 0.10 and NFI (0.97), NNFI/TLI (0.98) and CFI (0.98) values were above the acceptable level 0.90. As a result, the general assessment indicated a fit between the data set and model (Hu and Bentler, 1998; Hair *et al.*, 2010).

Analysis results showed that standardized factor loads were higher than the desired 0.40 lower boundary level and ranged between 0.67 and 0.97. At the same time, t values were analyzed to determine whether the items had a significant effect and values were between 14.85 and 27.04 at 0.01 significance level (DeVellis, 2012). Obtained analysis results indicated that the construct validity was consistent and significant.

4.1.1.3 Convergent validity. Convergent validity shows that the variables are related to each other and the factors they collected. For convergence validity, each factor construct of the scale must be evaluated separately and construct reliability value ($\alpha > 0.70$) should be larger than average variance extracted (AVE>0.5) (Fornell and Larcker, 1981; Bagozzi and Yi, 1988). Convergent validity results are given in Table 3.

When Table 3 was analyzed for the convergent validity of the scale, it was seen that internal consistency (Cronbach's alpha) coefficients ranged between 0.909 and 0.965 and AVE changed between 0.567 and 0.857 values. When the convergent validity for the scale (CISDF) was evaluated in general, it was seen that each factor construct fits the desired criteria and values.

4.1.1.4 Discriminant validity. Discriminant validity represents that variables should have values to be less related to the factors they are listed under than the other factors (Hill and Hughes, 2007). To evaluate the discriminant validity, correlation matrix analysis for the dimensions and the square root of the AVE are given in Table 4.

Model fit index type	Fit index	Before modification	After modification
	Chi-square (χ^2)	23424.95	4294.79
	df	1,176	1,178
	p	0.000	0.000
Absolute fit index	χ^2/df	19.91	3.64
	RMSEA	0.097	0.079
	SRMR	0.056	0.055
Incremental fit index	NNFI (TLI)	0.788	0.98
Parsimonious fit index	CFI	0.801	0.98

Note(s): df: degrees of freedom; RMSEA: root mean square error of approximation; SRMR: standardized root mean square residual; NNFI/TLI: non-normed fit index/Tucker–Lewis index; CFI: comparative fit index

Table 2. The cognitive image subscale of destination food, model fit index results ($n = 425$)

The lower horizontal and vertical factor values on the matrix than the square root of AVE shows that the discriminant validity of the construct is supported (Fornell and Larcker, 1981). When Table 4 is analyzed, discriminant validity for the construct was significant.

4.1.2 Reliability results. The values for the reliability of the scale indicate the real status of the variables, and as the correlation between the variables increases, the internal consistency of the scale increases (DeVellis, 2012). Internal consistency with Cronbach's alpha (α) reliability coefficient was analyzed to test the reliability of the second scale (CISDF) adaptation, and the results are shown in Table 5.

Table 5 indicates that internal consistency with Cronbach's alpha coefficient (α) for each factor construct varied between 0.83 and 0.97, and, in general, total scale had high reliability (0.98) (Cortina, 1993).

Table 3.
The cognitive image subscale of destination food, convergent validity results

Factors	Cronbach's alpha (α)	% AVE
Factor A: sensory attributes of destination foods	0.917	0.709
Factor B: attractiveness of destination foods	0.965	0.693
Factor C: content characteristics of destination foods	0.909	0.567
Factor D: destination food culture	0.940	0.699
Factor E: preparation and cooking methods of destination food	0.931	0.857
Factor F: healthiness and nutritiousness of destination food	0.931	0.671
Factor G: sociocultural benefits of destination food	0.946	0.759

Note(s): AVE: average variance extracted; *α:* Cronbach's alpha coefficient

Table 4.
The cognitive image subscale of destination food, discriminant validity results

Factors	A	B	C	D	E	F	G
A	*0.84*						
B	0.83	*0.84*					
C	0.53	0.67	*0.75*				
D	0.59	0.58	0.52	*0.83*			
E	0.68	0.70	0.63	0.67	*0.92*		
F	0.62	0.75	0.64	0.57	0.72	*0.81*	
G	0.66	0.75	0.58	0.63	0.71	0.75	*0.87*

Note(s): Diagonal values of the matrix represents the square roots of the average variance extracted (AVE)
A: sensory attributes of destination foods; B: attractiveness of destination foods; C: content characteristics of destination foods; D: destination food culture; E: preparation and cooking methods of destination foods; F: healthiness and nutritiousness of destination foods; G: sociocultural benefits of destination foods

Table 5.
The cognitive image subscale of destination food, reliability results

Factors	Item number	(α)
Factor A: sensory attributes of destination foods	5	0.96
Factor B: attractiveness of destination foods	15	0.97
Factor C: content characteristics of destination foods	7	0.93
Factor D: destination food culture	7	0.91
Factor E: preparation and cooking methods of destination food	3	0.83
Factor F: healthiness and nutritiousness of destination food	8	0.96
Factor G: sociocultural benefits of destination food	6	0.92
Total reliability (CISDF)	51	0.98

Note(s): *α*: Cronbach's alpha coefficient

4.2 Phase II – the affective image scale of destination foods (AISDF)

4.2.1 Construct validity results. 4.2.1.1 Confirmatory factor analysis ($N = 425$). To assess the perceived affective image by the tourists toward food in Turkey, CFA was applied to explain the relationships between factor and variables (Hair *et al.*, 2010) of scale with one factor and 5 items developed (Seo and Yun, 2015). Model fit index results are given in Table 6.

When the values obtained before the model fit index modification (χ^2/df, RMSEA, NNFI/TLI) were investigated (Table 6), it was seen that this model was generally unfit and inconsistent. Therefore, as suggested by the researchers (Whittaker, 2012), MI and EPC values were analyzed. The correlations between H4 and H5 items and H1 and H2 items with high MI and EPC were set free for modification, and analysis (CFA) was repeated.

When the model fit indexes after the modification (Table 6) were analyzed, it was seen that chi-square (χ^2) value to degree of freedom (df) ratio ($\chi^2 = 4.78$, df = 3, χ^2/df = 1.6, $p = 0.000$) was significant. Model fit index analysis results showed that RMSEA (0.037) and SRMR (0.0034) values were highly under 0.10, and NNFI/TLI (1.00) and CFI (1.00) values were above 0.90 (Hu and Bentler, 1998; Hair *et al.*, 2010). CFI and NNFI/TLI values equal to CFI are acceptable but rare. This might be explained with the size of the study sample. These values are relatively affected by sample size and show better performance for small groups (Gerbing and Anderson, 1992; Ding *et al.*, 1995; Schermelleh-Engel and Moosbrugger, 2003). Results obtained after the modification indicated a fit between the data set and model.

The standardized factor load values for the items varied between 0.91 and 0.98. These values were higher than the desired value (0.40). At the same time, t values for the items varied between 24.39 and 27.97. These values were significantly higher than 0.01 level (Table 1). Obtained analysis results indicated that the values for the model were consistent and significant (DeVellis, 2012).

4.2.2 Reliability results. Measurement reliability can be defined as how reliable the scale measures the desired variable and at what level the results are free from errors. To test the reliability of the scale (AISDF), internal consistency (Cronbach's alpha) coefficient (α) was analyzed (Table 1), and analysis result showed that the adapted scale had high-level reliability (0.98) (Cortina, 1993).

4.3 Phase III – differential item functioning (DIF) by gender

The different results obtained by the implementation of the scale might be affected from variable characteristics of individuals as well as the scale itself (Cheung and Rensvold, 2002; Mark and Wan, 2005). A scale that defines a certain structure should provide similar to the same measurement results under different observation and study conditions. To eliminate the negative effects, measurement invariance of the scales should be investigated (Crocker and Algina, 1986). While the DIF is an element that needs to be analyzed for the reliability, it

Model fit index type	Fit index	Before modification	After modification
	Ki-sqaure (χ^2)	158.04	4.78
	df	5	3
	p	0.000	0.000
Absolute fit index	χ^2/df	31.60	1.6
	RMSEA	0.268	0.037
	SRMR	0.018	0.0034
Incremental fit index	NNFI (TLI)	0.911	1.00
Parsimonious fit index	CFI	0.955	1.00

Note(s): df: degrees of freedom; RMSEA: root mean square error of approximation; SRMR: standardized root mean square residual; NNFI or TLI: non-normed fit index, Tucker–Lewis index; CFI: comparative fit index

Table 6. The affective image subscale of destination food, model fit index results ($n = 425$)

also indicates a problem that must be prevented to increase the quality of the results related to the measured characteristic (Tyson, 2004; Meyer, 2014). Therefore, to determine the item bias level of developed (CISDF) and adapted (AISDF) scales, CMH analysis was applied to investigate the distribution of the answers by the tourists visiting the destination to the items for gender. Analysis results for the gender as male and female groups are shown in Table 7.

When the chi-square (χ^2) values of the items related to the scale obtained from the analysis were investigated, degrees of freedom, in general, were not significant (Table 7). In general, analysis results investigated for gender groups (male, female) showed that all items had "A" level negligible DIF, and these items must be in the scale (Meyer, 2014). However, "H4" item was in "B" group and had medium-level DIF in favor of the reference group. To express any item bias, an item must at least have C-level (high) DIF (Roussos and Stout, 1996; Osterlind, 2011). Therefore, the item characteristic curve for "H4" item was analyzed, and the difference for the differential item functioning (DIF) between the answers of male (focus) and female (reference) groups was at a low level. As a result, the scale (DFIS) showed similar results for male and female international tourists' groups and proved construct validity by showing insignificant-level DIF differences.

5. Discussion and conclusion

According to the World Tourism Organization (UNWTO, 2020) data, Turkey is among the important tourism destinations, ranking sixth around the world with 52.5 million visitors in 2019 and with a 14% increase to the previous year. In this study, a reliable and valid scale (DFIS) consisting of two subscales to assess the perceived destination food image by the related tourists toward food in Turkey under cognitive and affective image components was developed and measurement invariance for gender was investigated. An original scale was developed to assess the cognitive image perception of the tourists toward destination food, and an existing scale in the literature (AISDF) (Seo and Yun, 2015) was adapted to assess the affective image perception. As a result of this study, a reliable and valid scale (DFIS) consisting of two subscales was formed to evaluate the destination food image perceived by the international tourists under cognitive and affective image components. At the same time, measurement invariance for all scale items (DFIS) for gender enabled generalization of the results obtained from the related scale.

Items representing the construct in the development of the cognitive image scale (CISDF) for destination food was created after a literature review on food image and local food and cuisine covering a broader area. A scale that evaluates the cognitive image perception of the international tourists toward destination food was finalized with 7 factors and 51 items, and reliability and validity of the scale was statistically proven. Travel and food experience, which was not considered in the previous studies (Lertputtarak, 2012; Seo and Yun, 2015), were considered, and the scale was developed based on the perceptions of the tourists who never had a travel experience to that destination and experienced food in that destination as these individuals have more neutral food image perception. This situation enables more unbiased and consistent results.

It was seen that some studies in the literature (Jang *et al.*, 2009) analyzed items representing cognitive image of the food under one dimension and without categorizing. This study showed that Turkey as a tourism destination has a multidimensional cognitive image for food structure. Therefore, it can be seen that this situation might have potentially different meanings and interpretations by tourists to assess the cognitive image of destination food.

The image includes interrelated cognitive and affective image elements (Luque-Martínez *et al.*, 2007). It is argued that the affective image as a function of the image is linked with cognitive image (Baloglu and Brinberg, 1997; Baloglu and McCleary, 1999; Wang and Hsu, 2010). Therefore, to evaluate the affective image of the destination food perceived by the related tourists toward food in Turkey, a subscale developed by Seo and Yun (2015) was

Items	(χ^2)	p	n	Error	Lower limit	Upper limit	Level
A1	3.01	0.08	288	−0.20	−0.38	−0.01	AA
A2	1.37	0.24	283	−0.09	−0.29	0.10	AA
A3	3.45	0.06	280	−0.16	−0.37	0.05	AA
A4	0.16	0.69	285	−0.06	−0.24	0.13	AA
A5	1.07	0.30	280	−0.08	−0.28	0.12	AA
B1	0.03	0.87	262	0.02	−0.14	0.18	AA
B2	0.36	0.55	272	0.05	−0.12	0.22	AA
B3	5.96	0.01	274	0.20	0.03	0.36	AA
B4	4.53	0.04	281	0.17	0.00	0.34	AA
B5	3.03	0.08	285	0.13	−0.03	0.30	AA
B6	1.28	0.26	281	0.04	−0.13	0.20	AA
B7	0.55	0.46	285	0.04	−0.12	0.21	AA
B8	0.52	0.47	284	0.08	−0.11	0.28	AA
B9	0.87	0.35	285	0.12	−0.09	0.33	AA
B10	0.31	0.58	269	0.05	−0.14	0.23	AA
B11	0.03	0.86	276	−0.04	−0.22	0.13	AA
B12	0.05	0.82	278	−0.04	−0.24	0.15	AA
B13	0.19	0.66	277	−0.07	−0.24	0.11	AA
B14	0.77	0.38	269	−0.14	−0.34	0.06	AA
B15	0.09	0.77	272	−0.02	−0.24	0.20	AA
C1	1.27	0.26	280	0.15	−0.08	0.37	AA
C2	0.00	0.98	284	−0.00	−0.22	0.22	AA
C3	0.28	0.60	281	0.10	−0.11	0.30	AA
C4	1.42	0.23	281	0.08	−0.13	0.29	AA
C5	1.72	0.19	280	0.07	−0.12	0.27	AA
C6	1.19	0.28	279	0.14	−0.07	0.34	AA
C7	0.28	0.60	269	0.17	−0.05	0.39	AA
D1	1.11	0.29	278	−0.03	−0.22	0.16	AA
D2	0.67	0.41	270	−0.06	−0.25	0.12	AA
D3	0.06	0.80	261	−0.01	−0.19	0.17	AA
E1	0.14	0.71	281	0.11	−0.10	0.33	AA
E2	1.47	0.22	281	−0.03	−0.23	0.16	AA
E3	1.85	0.17	266	−0.04	−0.23	0.16	AA
E4	3.76	0.05	271	−0.12	−0.30	0.07	AA
E5	0.76	0.38	272	0.12	−0.06	0.29	AA
E6	0.00	0.99	291	0.00	−0.17	0.18	AA
E7	0.38	0.54	284	0.09	−0.11	0.28	AA
F1	0.00	0.98	284	0.01	−0.17	0.19	AA
F2	0.78	0.38	279	0.13	−0.04	0.30	AA
F3	2.19	0.14	278	−0.13	−0.32	0.05	AA
F4	1.14	0.29	274	0.16	−0.07	0.39	AA
F5	5.15	0.02	290	0.29	0.07	0.52	AA
F6	0.18	0.67	263	0.04	−0.15	0.23	AA
F7	0.39	0.53	277	0.04	−0.14	0.22	AA
F8	0.66	0.42	281	0.10	−0.09	0.28	AA
G1	1.46	0.23	274	−0.16	−0.36	0.04	AA
G2	0.34	0.56	277	−0.07	−0.25	0.12	AA
G3	0.94	0.33	280	−0.11	−0.28	0.06	AA
G4	1.24	0.27	282	0.09	−0.07	0.25	AA
G5	0.37	0.54	276	−0.05	−0.23	0.12	AA
G6	0.61	0.43	290	−0.14	−0.35	0.07	AA
H1	1.02	0.31	275	−0.17	−0.40	0.06	AA
H2	0.60	0.44	266	−0.13	−0.35	0.09	AA
H3	0.15	0.69	280	−0.09	−0.32	0.14	AA
H4	3.29	0.07	286	−0.30	−0.54	−0.07	BB–
H5	1.48	0.22	279	−0.23	−0.46	−0.00	AA

Note(s): *p:* significance; *n*: sample size
A: sensory attributes of destination foods; B: attractiveness of destination Foods; C: content characteristics of destination foods; D: destination food culture; E: preparation and cooking methods of destination foods; F: healthiness and nutritiousness of destination foods; G: sociocultural benefits of destination foods; H: the affective image sub-scale of destination foods

Table 7.
The destination food image scale (DFIS), differential item functioning (DIF) results by gender (n = 425)

adapted, and reliability and validity statistical analysis was proven and adapted to our culture as a semantic difference scale (AISDF) with one factor and 5 items.

In terms of theoretical implications, the results of this study contribute to the current literature about tourists' perceived destination food image. First, the proposed scale will provide a more comprehensive scale for future studies to investigate the destination food image. In contrast to destination food images that only focus on cognitive properties (Jang *et al.*, 2009; Lertputtarak, 2012), the proposed destination food image scale is created and verified with both cognitive and affective image components. Although previous studies (Seo and Yun, 2015) developed scales for destination food image, the role of past experiences in shaping the image was ignored. The proposed scale was tested by including international tourists that visit the destination for the first time and international tourists that have not experienced the destination food before. Therefore, additional and heuristic information is provided about the structure components and dimensions of destination food image. Additionally, the destination food image concept in this study provides a reliable and valid analytical tool to researchers and practitioners to assess the destination food image structure vital components and dimensions.

The findings of this study provide various practical insights for tourism policymakers and marketers. First, developed and verified destination food image scale provides a beneficial tool or criteria for destination managers to assess the strengths and weaknesses of the destination food properties from international tourists' perspective. These results might help destinations to plan and apply successful marketing and positioning strategies. Additionally, the development of a destination food image depends on reality. Otherwise, destinations fail to satisfy their guests, and this will have a negative effect in word-of-mouth image presented to other potential visitors (Beerli and Martin, 2004a). Therefore, the proposed destination food image scale might help destination marketers to develop marketing and promotion campaigns based on how international tourists perceive food in Turkey.

5.1 Limitations and future research

The data obtained in this study have geographical limitations and represent the tourists visiting Antalya, which is an important tourism destination in Turkey. Therefore, to obtain more reliable and valid results for destination food image in terms of food in Turkey, it is recommended that international tourists visiting other cities with different food images (Gaziantep, Hatay, etc.) should be included in the study. When analyzed from a methodological perspective, nomological validity forms one stage of the structural validity and conducted by associating (hypothesis building) the antecedent and successive variables forming the structure (Hair *et al.*, 2010; Lewis *et al.*, 2005). Accordingly, to ensure nomological validity, it is recommended to test antecedents of destination food image dimension (cognitive and affective image) such as consumption value, regional food attitude and successive variables, including food and/or destination recommendation or revisiting the destination. As recommended and analyzed by the researchers (Brady and Cronin, 2001; Choe and Kim, 2018), to express the good fit of the scale (DFIS), it is recommended to conduct a comparative analysis with model fit index values for the hierarchically structured model. At the same time, by using the developed scale (DFIS), it is recommended that future studies should evaluate destination familiarity level of the international tourists, national differences, visiting frequencies and changes in the temporal process. It is recommended to use the scale (DFIS) by considering the limitations of this study.

References

Ab Karim, S. and Chi, C.G.Q. (2010), "Culinary tourism as a destination attraction: an empirical examination of destinations' food image", *Journal of Hospitality Marketing and Management*, Vol. 19 No. 6, pp. 531-555.

Ab Karim, M., Chua, B.L. and Salleh, H. (2009), "Malaysia as a culinary tourism destination: international tourists' perspective", *Journal of Tourism, Hospitality and Culinary Arts*, Vol. 1 No. 3, pp. 1-16.

Ægisdóttir, S., Gerstein, L.H. and Çinarbaş, D.C. (2008), "Methodological issues in cross-cultural counseling research: equivalence, bias, and translations", *The Counseling Psychologist*, Vol. 36 No. 2, pp. 188-219.

Albayrak, A. (2013), "A study of determining foreign tourists opinion about Turkish cuisine", *Journal of Yasar University*, Vol. 30 No. 8, pp. 5049-5063.

Ayre, C. and Scally, A.J. (2014), "Critical values for lawshe's content validity ratio", *Measurement and Evaluation in Counseling and Development*, Vol. 47 No. 1, pp. 79-86.

Bagozzi, R.P. and Yi, Y. (1988), "On the evaluation of structural equation models", *Journal of the Academy of Marketing Science*, Vol. 16 No. 1, pp. 74-94.

Baloglu, S. (1997), "The relationship between destination images and sociodemographic and trip characteristics of international travellers", *Journal of Vacation Marketing*, Vol. 3 No. 3, pp. 221-233.

Baloglu, S. and Brinberg, D. (1997), "Affective images of tourism destinations", *Journal of Travel Research*, Vol. 35 No. 4, pp. 11-15.

Baloglu, S. and McCleary, K.W. (1999), "A model of destination image formation", *Annals of Tourism Research*, Vol. 26 No. 4, pp. 868-897.

Beerli, A. and Martín, J.D. (2004a), "Factors influencing destination image", *Annals of Tourism Research*, Vol. 31 No. 3, pp. 657-681.

Beerli, A. and Martín, J.D. (2004b), "Tourists' characteristics and the perceived image of tourist destinations: a quantitative analysis - a case study of Lanzarote, Spain", *Tourism Management*, Vol. 25 No. 5, pp. 623-636.

Bernaards, C.A. and Jennrich, R.I. (2005), "Gradient projection algorithms and software for arbitrary rotation criteria in factor analysis", *Educational and Psychological Measurement*, Vol. 65 No. 5, pp. 676-696.

Björk, P. and Kauppinen-Räisänen, H. (2016), "Local food: a source for destination attraction", *International Journal of Contemporary Hospitality Management*, Vol. 28 No. 1, pp. 177-194.

Borsa, J.C., Damasio, B.F. and Bandeira, D.R. (2012), "Cross-cultural adaptation and validation of psychological instruments: some considerations", *Paideia*, Vol. 22 No. 53, pp. 423-432.

Boyne, S., Williams, F. and Hall, D. (2002), "On the trail of regional success: tourism, food production and the isle of arran taste trail", in Hjalager, A.M. and Richards, G. (Eds), *Tourism and Gastronomy*, Routledge, New York, NY, pp. 91-114.

Brady, M.K. and Cronin, J.J. (2001), "Some new thoughts on conceptualizing perceived service quality: a hierarchical approach", *Journal of Marketing*, Vol. 65 No. 3, pp. 34-49.

Çakıcı, N. and Eser, S. (2016), "An assesment of Turkish cuisine by the view of foreign cuisine chefs", *Journal of Tourism and Gastronomy Studies*, Vol. 4 No. 1, pp. 215-227.

Chen, J.S. (2001), "A case study of Korean outbound travelers' destination images by using correspondence analysis", *Tourism Management*, Vol. 22 No. 4, pp. 345-350.

Chen, C.C., Lin, Y.H., Gao, J. and Kyle, G. (2015), "Developing a market-specific destination image scale: a nomological validation approach", *Tourism Analysis*, Vol. 20 No. 1, pp. 3-12.

Cheung, G.W. and Rensvold, R.B. (2002), "Evaluating goodness-of-fit indexes for testing measurement invariance", *Structural Equation Modeling*, Vol. 9 No. 2, pp. 233-255.

Chi, C.G.Q., Chua, B.L., Othman, M. and Karim, S.A. (2013), "Investigating the structural relationships between food image, food satisfaction, culinary quality, and behavioral intentions: the case of Malaysia", *International Journal of Hospitality and Tourism Administration*, Vol. 14 No. 2, pp. 99-120.

Choe, J.Y.J. and Kim, S.S. (2018), "Effects of tourists' local food consumption value on attitude, food destination image, and behavioral intention", *International Journal of Hospitality Management*, Vol. 71, pp. 1-10.

Chon, K. (1990), "The role of destination image in tourism: a review and discussion", *The Tourist Review*, Vol. 45 No. 2, pp. 2-9.

Chuang, H.T. (2009), "The rise of culinary tourism and its transformation of food cultures: the national cuisine of Taiwan", *The Copenhagen Journal of Asian Studies*, Vol. 27 No. 2, pp. 84-108.

Churchill, G.A. (1979), "A paradigm for developing better measures of marketing constructs", *Journal of Marketing Research*, Vol. 16 No. 1, pp. 64-73.

Cömert, M. and Özkaya, F.D. (2014), "The importance of Turkish Cuisine in gastronomy tourism", *Journal of Tourism and Gastronomy Studies*, Vol. 2 No. 2, pp. 62-66.

Cohen, E. and Avieli, N. (2004), "Food in tourism attraction and impediment", *Annals of Tourism Research*, Vol. 31 No. 4, pp. 755-778.

Comrey, A.L. and Lee, H.B. (2013), *A First Course in Factor Analysis*, Taylor and Francis, New York, NY.

Cortina, J.M. (1993), "What is coefficient alpha? An examination of theory and applications", *Journal of Applied Psychology*, Vol. 78 No. 1, pp. 98-104.

Creswell, J.W. and Creswell, J.D. (2018), *Research and Design Qualitative, Quantitative and Mixed Methods Approaches*, SAGE, Thousand Oaks, California.

Crocker, L. and Algina, J. (1986), *Introduction to Classical and Modern Test Theory- Procedures for Estimating Reliability*, Harcourt Brace Jovanovich, New York, NY.

Dann, G.M.S. (1996), "Tourists' images of a destination an alternative analysis", *Journal of Travel and Tourism Marketing*, Vol. 5 Nos 1–2, pp. 41-55.

DeVellis, R.F. (2012), *Scale Development : Theory and Applications*, SAGE, New York, NY.

Ding, L., Velicer, W.F. and Harlow, L.L. (1995), "Effects of estimation methods, number of indicators per factor, and improper solutions on structural equation modeling fit indices", *Structural Equation Modeling: A Multidisciplinary Journal*, Vol. 2 No. 2, pp. 119-143.

Echtner, C.M. and Ritchie, J.R.B. (1993), "The measurement of destination image: an empirical assessment", *Journal of Travel Research*, Vol. 31 No. 4, pp. 3-13.

Erenve Çelik, R.M. (2017), "Online gastronomy image: a content analysis of trip advisor reviews of Turkey's restaurant", *Tourism Academic Journal*, Vol. 4 No. 2, pp. 121-138.

Fisher, H., du Rand, G. and Erasmus, A. (2012), "The power of food images to communicate important information to consumers", *International Journal of Consumer Studies*, Vol. 36 No. 4, pp. 440-450.

Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.

Frochot, I. (2003), "An Analysis of regional positioning and its associated food images in French tourism regional brochures", *Journal of Travel and Tourism Marketing*, Vol. 14 Nos 3–4, pp. 77-96.

Gallarza, M.G., Saura, I.G. and Garcia, H.C. (2002), "Destination image towards a conceptual framework", *Annals Of Tourism Research*, Vol. 29 No. 1, pp. 56-78.

Gartner, W.C. (1994), "Image formation process", *Journal of Travel and Tourism Marketing*, Vol. 2 Nos 2-3, pp. 191-216.

Gerbing, D.W. and Anderson, J.C. (1992), "Monte Carlo evaluations of goodness of fit indices for structural equation models", *Sociological Methods and Research*, Vol. 21 No. 2, pp. 132-160.

Given, L. (2012), *The SAGE Encyclopedia of Qualitative Research Methods*, SAGE Publications, New York, NY.

Hair, J.F., Black, W.C., Babin, B.J. and Anderson, R.E. (2010), *Multivariate Data Analysis*, Pearson Prentice Hall, New Jersey, NJ.

Hall, C.M. and Ve Sharples, C.M.L. (2003), "The consumption of experiences or the experience of consumption? an introduction to the tourism of taste", in Hall, C.M.L., Sharples, R., Mitchell, N.M. and Cambourne, B. (Eds), *Food Tourism Around the World: Development, Management and Markets*, Butterworth-Heinemann, Oxford, pp. 1-24.

Hambleton, R.K. and Patsula, L.N. (1999), "Increasing the validity of adapted tests: myths to be avoided and guidelines for improving test adaptation practices", *Journal of Applied Testing Technology*, Vol. 1 No. 1, pp. 1-13.

Hegarty, J.A. and O'Mahony, G.B. (2001), "Gastronomy: a phenomenon of cultural expressionism and an aesthetic for living", *International Journal of Hospitality Management*, Vol. 20 No. 1, pp. 3-13.

Heggestad, E.D., Scheaf, D.J., Banks, G.C., Hausfeld, M.M., Tonidandel, S. and Williams, E.B. (2019), "Scale adaptation in organizational science research: a review and best-practice recommendations", *Journal of Management*, Vol. 45 No. 6, pp. 2596-2627.

Henderson, J.C. (2009), "Food tourism reviewed", *British Food Journal*, Vol. 111 No. 4, pp. 317-326.

Hill, C.R. and Hughes, J.N. (2007), "An examination of the convergent and discriminant validity of the strengths and difficulties questionnaire", *School Psychology Quarterly*, Vol. 22 No. 3, pp. 380-406.

Hjalager, A.M. (2002), "A typology of gastronomy tourism", in Hjalager, A.M. and Richards, G. (Eds), *Tourism and Gastronomy*, Routledge, New York, NY, pp. 21-35.

Hjalager, A. and Corigliano, M.A. (2000), "Food for tourists—determinants of an image", *International Journal of Tourism Research*, Vol. 2 No. 4, pp. 281-293.

Horng, J.S. and Tsai, C.T. (2010), "Government websites for promoting East Asian culinary tourism: a cross-national analysis", *Tourism Management*, Vol. 31 No. 1, pp. 74-85.

Hu, L.T. and Bentler, P.M. (1998), "Fit indices in covariance structure modeling: sensitivity to underparameterized model misspecification", *Psychological Methods*, Vol. 3 No. 4, pp. 424-453.

Hunt, J.D. (1975), "Image as a factor in tourism development", *Journal of Travel Research*, Vol. 13 No. 3, pp. 1-7.

Jang, S.C., (Shawn), Ha, A. and Silkes, C.A. (2009), "Perceived attributes of Asian foods: from the perspective of the American customers", *International Journal of Hospitality Management*, Vol. 28 No. 1, pp. 63-70.

Ji, S. and Wall, G. (2015), "Understanding supply- and demand-side destination image relationships: the case of Qingdao, China", *Journal of Vacation Marketing*, Vol. 21 No. 2, pp. 205-222.

Johnson, R. and Morgan, G. (2016), *Survey Scales, A Guide to Development, Analysis, and Reporting*, The Guilford Press, New York, NY.

Jones, A. and Jenkins, I. (2002), "A taste of wales-blas ar gymru: institutional malaise in promoting welsh food tourism product", in Hjalager, A.M. and Richards, G. (Eds), *Tourism and Gastronomy*, Routledge, New York, NY, pp. 115-131.

Kivela, J. and Crotts, J.C. (2006), "Tourism and gastronomy: gastronomy's influence on how tourists experience a destination", *Journal of Hospitality and Tourism Research*, Vol. 30 No. 3, pp. 354-377.

Kline, P. (2014), *An Easy Guide to Factor Analysis*, Routledge, New York, NY.

Kumar, R. (2011), *Research Methodology : A Step-by-step Guide for Beginners*, SAGE, London.

Lai, M.Y., Khoo-Lattimore, C. and Wang, Y. (2017), "Food and cuisine image in destination branding: toward a conceptual model", *Tourism and Hospitality Research*, Vol. 19 No. 2, pp. 1-14.

Lai, M.Y., Khoo-Lattimore, C. and Wang, Y. (2018), "A perception gap investigation into food and cuisine image attributes for destination branding from the host perspective: the case of Australia", *Tourism Management*, Vol. 69, pp. 579-595.

Lambden, J., Receveur, O. and Kuhnlein, H.V. (2007), "International journal of circumpolar health traditional food attributes must be included in studies of food security in the Canadian Arctic", *Canadian Arctic, International Journal of Circumpolar Health*, Vol. 66 No. 4, pp. 308-319.

Leavy, P. (2017), *Research Design :Quantitative, Qualitative, Mixed Methods, Arts-Based, and Community-Based Participatory Research Approaches*, The Guilford Press, New York, NY.

Leong, Q.L., Ab Karim, M.S., Othman, M., Mohd, A.N. and Sridar, R. (2010), "Relationships between malaysian food image, tourist satisfaction and behavioral intention", *World Applied Sciences Journal*, Vol. 10 No. 10, pp. 164-171.

Lertputtarak, S. (2012), "The relationship between destination image, food image, and revisiting Pattaya, Thailand", *International Journal of Business and Management*, Vol. 7 No. 5, pp. 111-122.

Lewis, B.R., Templeton, G.F. and Byrd, T.A. (2005), "A methodology for construct development in MIS research", *European Journal of Information Systems*, Vol. 14 No. 4, pp. 388-400.

Lin, Y.C. (2006), *Food Images in Destination Marketing*, Purdue University, West Lafayette, Indiana.

Lin, Y.C., Pearson, T.E. and Cai, L.A. (2011), "Food as a form of destination identity: a tourism destination brand perspective", *Tourism and Hospitality Research*, Vol. 11 No. 1, pp. 30-48.

Long, L.M. (2004), "Culinary tourism: a folkloristic perspective on eating and otherness", in Long, L.M. (Ed.), *Culinary Tourism*, The University Press of Kentucky, pp. 20-50.

Luque-Martínez, T., Del Barrio-García, S., Ibáñez-Zapata, J.Á. and Rodríguez Molina, M.Á. (2007), "Modeling a city's image: the case of Granada", *Cities*, Vol. 24 No. 5, pp. 335-352.

MacKay, K.J. and Fesenmaier, D.R. (1997), "Pictorial element of destination in image formation", *Annals of Tourism Research*, Vol. 24 No. 3, pp. 537-565.

Malhotra, N.K. and Dash, S. (2011), *Marketing Research an Applied Orientation*, Pearson Publishing, London.

Mark, B.A. and Wan, T.T.H. (2005), "Testing measurement equivalence in a patient satisfaction instrument", *Western Journal of Nursing Research*, Vol. 27 No. 6, pp. 772-787.

McKercher, B., Okumus, F. and Okumus, B. (2008), "Food tourism as a viable market segment: it's all how you cook the numbers!", *Journal of Travel and Tourism Marketing*, Vol. 25 No. 2, pp. 137-148.

Meyer, P.J. (2014), *Applied Measurement with Jmetrik*, Routledge, New York, NY.

Nelson, V. (2016a), "Peru's image as a culinary destination", *Journal of Cultural Geography*, Vol. 33 No. 2, pp. 208-228.

Nelson, V. (2016b), "Food and image on the official visitor site of Houston", *Journal of Destination Marketing and Management*, Texas, Vol. 5 No. 2, pp. 133-140.

Netemeyer, R.G., Bearden, W.O. and Sharma, S. (2003), *Scaling Procedures : Issues and Applications*, Sage Publications, London.

Nunnally, J.C. and Bernstein, I.H. (1994), *Psychometric Theory*, McGraw-Hill, New York, NY.

Osterlind, S. (2011), *Test Item Bias*, SAGE Publications, London.

Osterlind, S. and Everson, H. (2011), *Differential Item Functioning*, SAGE Publications, London.

Özdemir, B. and Kınay, F. (2004), "Views of foreign visitors on Turkish cuisine: a study on German and Russian tourists visiting Antalya", *Gazi University Journal of Commerce and Tourism Education Faculty*, Vol. 5 No. 1, pp. 1-28.

Patton, M.Q. (2002), *Qualitative Research and Evaluation Methods : Integrating Theory and Practice*, 3rd ed., Sage Publications, London.

Pearce, P.L. (1988), *The Ulysses Factor : Evaluating Visitors in Tourist Settings*, Springer, New York, NY.

Peštek, A. and Merima, C. (2014), "Tourist perceived image of local cuisine: the case of Bosnian food culture", *British Food Journal*, Vol. 116 No. 11, pp. 1821-1838.

Pike, S. and Ryan, C. (2004), "Destination positioning analysis through a comparison of cognitive, affective, and conative perceptions", *Journal of Travel Research*, Vol. 42 No. 4, pp. 333-342.

Putnick, D.L. and Bornstein, M.H. (2016), "Measurement invariance conventions and reporting: the state of the art and future directions for psychological research", *Developmental Review*, Vol. 41, pp. 71-90.

Quan, S. and Wang, N. (2004), "Towards a structural model of the tourist experience: an illustration from food experiences in tourism", *Tourism Management*, Vol. 25 No. 3, pp. 297-305.

Republic of Turkey Ministry of Culture and Tourism (2020), "2023 tourism strategy program", available at: https://www.kuzka.gov.tr/dosya/turizm_stratejisi_2023.pdf (accessed 20 April 2020).

Revelle, W. (2017), "Psych: procedures for personality and psychological research", available at: https://cran.r-project.org/web/packages/psych/psych.pdf (accessed 20 April 2020).

Rizopoulos, D. (2006), "Itm: package for latent variable modeling and item response theory analyses", *Journal of Statistical Software*, Vol. 17 No. 5, pp. 1-25.

Rosseel, Y. (2012), "Lavaan: an *R* package for structural equation modeling", *Journal of Statistical Software*, Vol. 48 No. 1, pp. 1-36.

Roussos, L.A. and Stout, W.F. (1996), "Simulation studies of the effects of small sample size and studied item parameters on SIBTEST and Mantel-Haenszel type I error performance", *Journal of Educational Measurement*, Vol. 33 No. 2, pp. 215-230.

Rozin, E. and Rozin, P. (1981), "Culinary themes and variations", *Natural History*, Vol. 90, pp. 6-14.

Russell, J.A. (1980), "A circumplex model of affect", *Journal of Personality and Social Psychology*, Vol. 39 No. 6, pp. 1161-1178.

Russell, J.A. and Pratt, G. (1980), "A description of the affective quality attributed to environments", *Journal of Personality and Social Psychology*, Vol. 38 No. 2, pp. 311-322.

Rusticus, S. (2014), "Content validity", in Michalos, A.C. (Ed.), *Encyclopedia of Quality of Life and Well-Being Research*, Springer, pp. 1261-1262.

Şanlıer, N. (2005), "Opinions of foreign and Turkish tourists on Turkish cuisine", *Journal of Gazi Education Faculty*, Vol. 25 No. 1, pp. 213-227.

Scarpato, R., Hjalager, A. and Richards, G. (2002), "Gastronomy as a tourist product: the perspective of gastronomy studies", in Hjalager, A.M. and Richards, G. (Eds), *Tourism and Gastronomy*, Routledge, New York, NY, pp. 51-70.

Schermelleh-Engel, K. and Moosbrugger, H. (2003), "Evaluating the fit of structural equation models: tests of significance and descriptive goodness-of-fit measures", *Methods of Psychological Research Online*, Vol. 8 No. 2, pp. 23-74.

Schumacker, R.E. and Lomax, R.G. (2010), *A Beginner's Guide to Structural Equation Modeling*, Routledge, New York, NY.

Seo, S. and Yun, N. (2015), "Multi-dimensional scale to measure destination food image: case of Korean food", *British Food Journal*, Vol. 117 No. 12, pp. 2914-2929.

Seo, S., Kim, O.Y., Oh, S. and Yun, N. (2013), "Influence of informational and experiential familiarity on image of local foods", *International Journal of Hospitality Management*, Vol. 34 No. 1, pp. 295-308.

Seo, S., Yun, N. and Kim, O.Y. (2017), "Destination food image and intention to eat destination foods: a view from Korea", *Current Issues in Tourism*, Vol. 20 No. 2, pp. 135-156.

Son, A. and Pearce, P. (2005), "Multi-faceted image assessment: international students' views of Australia as a tourist destination", *Journal of Travel and Tourism Marketing*, Vol. 18 No. 4, pp. 21-35.

Tabachnick, B.G. and Fidell, L.S. (2012), *Using Multivariate Statistics*, 6th ed., Harper and Row, New York, NY.

Taherdoost, H. (2016), "Validity and reliability of the research instrument; How to test the validation of a questionnaire/survey in a research", *SSRN Electronic Journal*, Vol. 5 No. 3, pp. 28-36.

Tapachai, N. and Waryszak, R. (2000), "An examination of the role of beneficial image in tourist destination selection", *Journal of Travel Research*, Vol. 39 No. 1, pp. 37-44.

Tinsley, H.E.A. and Tinsley, D.J. (1987), "Uses of factor analysis in counseling psychology research", *Journal of Counseling Psychology*, Vol. 34 No. 4, pp. 414-424.

Tsai, C.T.S. and Wang, Y.C. (2017), "Experiential value in branding food tourism", *Journal of Destination Marketing and Management*, Vol. 6 No. 1, pp. 56-65.

TÜRSAB (2012), "Gastronomy tourism Report", available at: https://www.tursab.org.tr/dosya/12302/tursab-gastronomi-turizmi raporu_12302_3531549.pdf (accessed 21 April 2019).

Tyson, E.H. (2004), "Ethnic differences using behavior rating scales to assess the mental health of children: a conceptual and psychometric critique", *Child Psychiatry and Human Development*, Vol. 34 No. 3, pp. 167-201.

UNESCO (2020), "UNESCO creative gastronomy city", available at: https://en.unesco.org/creative-cities/creative-cities-map (accessed 20 April 2020).

UNWTO, (2020), "UNWTO World tourism barometer and statistical annex, January 2020", *UNWTO World Tourism Barometer*, Vol. 18 No. 1, pp. 1-48.

Verbeke, W. and López, G.P. (2005), "Ethnic food attitudes and behaviour among Belgians and Hispanics living in Belgium", *British Food Journal*, Vol. 107 No. 11, pp. 823-840.

Wang, C.Y. and Hsu, M.K. (2010), "The relationships of destination image, satisfaction, and behavioral intentions: an integrated model", *Journal of Travel and Tourism Marketing*, Vol. 27 No. 8, pp. 829-843.

Whittaker, T.A. (2012), "Using the modification index and standardized expected parameter change for model modification", *Journal of Experimental Education*, Vol. 80 No. 1, pp. 26-44.

Further reading

Seo, S. and Ryu, K.M. (2009), "Chinese customers' perception of Korean foods and satisfaction and revisit intentions to Korean cuisine restaurants - a focus on visiting experience and frequency of visits", *Korean Journal of Food Culture*, Vol. 24 No. 2, pp. 126-136.

About the authors

Hakan Görür – In 2017, Hakan completed his undergraduate education from the Department of Gastronomy and Culinary Arts, Nevşehir Hacı Bektaş Veli University. In 2019, he completed his master's degree from Akdeniz University, Institute of Social Sciences, Department of Gastronomy and Culinary Arts. He still continues his doctorate education at the same university. He has been working as a lecturer at Istanbul Gelisim University, Istanbul Gelisim Vocational School, Culinary Department. He continues his studies in the fields of gastronomy, tourism and hotel management, food and beverage management, management and organization research. Hakan Görür is the corresponding author and can be contacted at: hakangorur@windowslive.com

Cem Oktay Güzeller graduated from Gazi University, Department of Computer Teaching in 1993. In 1999, he received his master's degree from Cumhuriyet University, Department of Business Administration, and in 2005, he received his PhD from Hacettepe University, Institute of Social Sciences. He is still working as a professor at Akdeniz University, Faculty of Tourism. Her research interests focus on gastronomy, tourism, measurement and evaluation, and numerical methods.