

Locals versus foreigners' emotion-motivational responses towards traditional and non-traditional food

Locals versus
foreigners

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Abstract

Purpose – The purpose of this paper was to study responses to traditional food of a country, focusing on emotion-motivational responses by locals and foreigners.

Design/methodology/approach – Through an experimental design study, Portuguese and Foreign participants were exposed to both traditional and nontraditional food pictures of a country and asked to evaluate their emotional and motivational responses while physiological responses of electrodermal activity were being continuously recorded. Predisposition factors of body dissatisfaction, food neophobia and food involvement were also evaluated given their potential role in predicting the responses to the visualization of the food pictures.

Findings – This study found that local traditional food received a higher positive evaluation than nontraditional food with locals evaluating it even higher than foreigners. Higher feelings of arousal and desire as well as willingness to try in response to traditional food were also found as well as higher feelings of pleasure by locals. However, interestingly, and contrary to expectations derived from previous literature, emotion-motivational responses were not significantly different between locals and foreigners.

Originality/value – To the best of the authors' knowledge, this research addressed an identified research gap in the literature, being the first one evaluating the autonomic responses of consumers to traditional food

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by exploring how local and foreign consumers respond to traditional food versus nontraditional food using psychophysiological measures of emotion.

Keywords Traditional food, Food neophobia, Food attributes, Food involvement, Body dissatisfaction, Emotion-motivational response

Paper type Research paper

Respuestas emocionales-motivacionales DE los locales frente a los extranjeros hacia LA comida tradicional Y no tradicional

Resumen

Objetivo – El objetivo principal de esta investigación fue estudiar las respuestas a la comida tradicional de un país, centrándose en las respuestas emoción-motivación de los locales y los extranjeros.

Diseño/metodología/enfoque – A través de un estudio de diseño experimental, los participantes portugueses y extranjeros fueron expuestos a imágenes de comida tradicional y no tradicional de un país y se les pidió que evaluaran sus respuestas emocionales y motivacionales mientras se registraban continuamente las respuestas fisiológicas de la actividad electrodérmica. También se evaluaron los factores de predisposición de la insatisfacción corporal, la neofobia a la comida y la implicación en la comida, dado su papel potencial en la predicción de las respuestas a la visualización de las imágenes de comida.

Resultados – Encontramos que la comida tradicional local recibió una evaluación positiva más alta que la comida no tradicional, con los locales evaluándola incluso más alto que los extranjeros. También se encontraron mayores sentimientos de excitación y deseo, así como la voluntad de probar en respuesta a la comida tradicional, así como mayores sentimientos de placer por parte de los locales. Sin embargo, curiosamente, y en contra de las expectativas derivadas de la literatura anterior, las respuestas emocionales-motivacionales no fueron significativamente diferentes entre los locales y los extranjeros.

Originalidad/valor – Esta investigación abordó una brecha de investigación identificada en la literatura, siendo la primera que evalúa las respuestas autonómicas de los consumidores a la comida tradicional al explorar cómo los consumidores locales y extranjeros responden a la comida tradicional frente a la no tradicional utilizando medidas psicofisiológicas de emoción.

Palabras clave Comida tradicional, Respuestas emoción-motivación, Atributos alimentarios, Neofobia alimentaria, Implicación alimentaria, Insatisfacción corporal

Tipo de artículo Trabajo de investigación

本地人与外国人对传统和非传统食物的情绪动机反应

摘要

目的 – 本研究的主要目的是研究本地人和外国人对一个国家的传统食物的情感动机反应。

设计/方法/途径 – 通过实验设计研究, 葡萄牙人和外国参与者会看到一个国家的传统和非传统食物图片, 并被要求评估他们的情绪和动机反应, 同时连续记录皮肤电活动的生理反应。考虑到其他变量在预测对食物图片可视化的反应方面的潜在作用, 还评估了身体不满、食物恐惧症和食物参与的易感因素的影响。

研究结果 – 研究发现, 当地的传统食物比非传统食物得到了更高的积极评价, 且当地人对它的评价甚至比外国人更高。当地人对传统食物的表现出更高的唤醒、欲望和尝试意愿, 以及更高的愉悦感。然而, 有趣的是, 与以往文献的预期相反, 当地人和外国人之间的情绪动机反应并没有呈现出明显差异。

原创性/价值 – 这项研究填补了现有文献中的研究空白, 它是第一个通过使用心理生理学的情绪测量方法来探索本地和外国消费者对传统食物与非传统食物的反应, 从而评估消费者对传统食物自主反应的研究。

关键词 传统食物, 情绪动机反应, 食物属性, 食物恐惧症, 食物参与, 身体不满

文章类型 研究型论文

1. Introduction

International organizations are making continuous efforts to discover new tourism products that attract more tourists and provide new market opportunities. One of such offers relies on gastronomy (Japutra *et al.*, 2022; Meneguel *et al.*, 2019) because food is an important element of the “environmental bubble” that surrounds most tourists on their travels. Gastronomy tourism is a powerful tool to promote destinations, with food, wine and dining being considered key products of the tourist experience (Ottenbacher and Harrington, 2013).

Many countries have been able to set their gastronomy as strongly connected to a specific country and culture (Miocevic and Mikulic, 2021). For example, tourists who have not visited countries such as Italy, Spain, France, Hungary, Germany and England are probably able to identify specific food products of those countries, such as pizza, paella, escargot, goulash, bierwurst and roast beef, respectively (Vázquez-Martínez *et al.*, 2019). Thus, food products have an important economic and touristic value, being part of the country’s identity (Hall *et al.*, 2003).

For countries to be able to stimulate this tourism segment with economic value, a country’s gastronomy must be seen by foreign tourists as of high gastronomic value, in addition to the recognition of its traditional role and authenticity (Antón *et al.*, 2019). This aspect makes it possible for a country’s typical dish to be internationalized and recognized as such worldwide (Otengei *et al.*, 2017).

Several countries are still struggling to achieve such differentiation in terms of their key traditional dishes around the world (Fibri and Frøst, 2019). One such example is Portugal, where tourists do not readily perceive the dishes of this country unless they have a high involvement with its gastronomy or if they have spent time in a variety of Portuguese regions (Hall *et al.*, 2003). Hence, it is of interest to understand the gastronomic value that locals versus foreigners assign to local traditional versus nontraditional dishes to better understand their emotion-motivational responses to food stimuli.

2. Background and conceptual framework

Prior studies have explored consumers’ emotional responses to food (King and Meiselman, 2010), but not the role of traditional food specifically, and whether these responses might depend on the country of origin (COO) when presenting traditional dishes. Almil *et al.* (2011), for example, explored the attribute perceptions of traditional food among six different countries using self-reported measures, but emotional responses were not considered.

Our study is grounded in the dimensional theories of emotion and information processing frameworks which posit that our emotional responses are founded on two basic motivational systems, appetitive and defensive (Bradley and Lang, 2007), by guiding our attention, information processing and behavioral tendencies. In addition, based on the current consensual definition of emotion, we consider it important to address how people feel through both their self-reports and their reflexive physiology of emotions toward food pictures (Lang, 2010). Overall, emotions are known to shape food preferences and behavior (Chang *et al.*, 2022). To date, most studies on the role of traditional food have also been focused on using self-reported measures, such as surveys. Self-reported measures can be valuable tools for capturing feelings, but they are also at a disadvantage *vis-à-vis* objective indicators measuring directly observed autonomic responses. While previous studies explored how food affects the autonomic nervous system of consumers (Esteves *et al.*, 2010; Rita *et al.*, 2021), few studies have, to the best of the authors’ knowledge, evaluated the autonomic responses of consumers to traditional food. Consequently, the current study fills this research gap by exploring how *local* and *foreign* consumers respond to traditional food versus nontraditional food, including psychophysiological measures of emotion.

Food affects the way people feel (King and Meiselman, 2010). People's different food experiences during their lives affect their emotions (Sthapit *et al.*, 2021). Indeed, consuming food during travel experiences, for example, is known to elicit sensorial responses that help travelers better adapt to different cultures and local traditions (López-Guzmán and Sánchez-Cañizares, 2012). Accordingly, traditional food – dishes often associated with a particular country and culture – are meaningful experiences that can trigger relevant emotional responses (Cohen and Avieli, 2004).

According to Apil (2006), the COO influences purchase decisions and food consumption behaviors in foreign markets. The COO, corresponding to the country from where the food is originally produced, has been shown to affect consumers' evaluation of such products (Thøgersen *et al.*, 2017). Many studies have also shown that consumers tend to evaluate their own country's products more favorably than products from other countries (Apil, 2006). This preference may be due to familiarity and cultural identity. Because of this preference, in some countries, such as Chile, the country image is one of the most important information to be placed on a product label (Schmettler *et al.*, 2008). Therefore, the COO may have an important role in how people emotionally respond to, evaluate and consume their own and foreign gastronomy (Japutra *et al.*, 2021; Molinillo *et al.*, 2020).

Both neophobia and involvement are important predictors of the food experience because they are related to avoidance and approach responses (Fenko *et al.*, 2015). Food involvement has been shown to be a significant predictor of food tourism behavior (Bell and Marshall, 2003), including the intention to revisit a food festival (Chang *et al.*, 2018). Therefore, consumers with higher involvement with food are more likely to exhibit food tourism behavior. Furthermore, Lee and Kwon (2009) investigated food involvement and the behavioral intention of food tourists. Their findings showed that tourists portraying a high interest in local food revealed high involvement in food tourism.

In addition, the tourism behavior of gastronomists showing high food involvement was studied by Yoo and Seo (2009). They found that tourists enjoying gastronomy assigned a high value to food culture experiences in tourist destinations, thus presenting a positive relationship between gastronomic activity and intention to participate in gastronomic tourism. Finally, we also consider the level of dissatisfaction a person has with their body image because prior studies have shown that body dissatisfaction may bias the way people process food cues which in turn will impact their emotional and motivational responses to food (McNamara *et al.*, 2008).

3. Research hypotheses

Local food that elicits pleasurable memories tends to increase positive emotional responses, including memorable tourist experiences (Sthapit *et al.*, 2017). However, tourists' gastronomical interest in local food may vary as a function of the COO. For example, Akdag *et al.* (2018) compared tourists' gastronomic experiences in two culinary destinations in the Mediterranean region. Overall, they found that tourists in Hatay (Turkey) reported that the novelty in the food was one of the elements of the highest priority for their gastronomic experiences and evaluated the city's culinary image as very important. In contrast, tourists in Cordoba (Spain) considered the novelty in the food as the least relevant and the city's culinary image less critical. These results suggest that gastronomic motivation might not be one of the central priorities for some touristic destinations, even in countries with a similar diet, such as the Mediterranean. Portugal is also a country with a Mediterranean diet where most citizens follow a lifestyle characterized by the high consumption of fruit and vegetables and moderate consumption of animal protein, especially red meat. However, to the best of our knowledge, emotion-motivational responses to the traditional food of this

country have never been investigated. In addition, considering that some individuals may be more reluctant to try unfamiliar foods, it is possible that eating outside of their home country might be regarded as risky for some tourists (Cohen and Avieli, 2004), even leading to some anxiety and strain (Winkelman, 1994). Moreover, research suggests that regardless of the participant's prior tendency to approach or avoid novel or unfamiliar food, food familiarity is an important predictor of stronger positive food evaluation (Raudenbush and Frank, 1999) and emotional responses (Torrico *et al.*, 2019). Therefore, because locals tend to be more familiarized with the traditional food from their own country, we hypothesize that:

H1. Locals evaluate local traditional food more positively than foreigners.

Similar results can translate into a more detailed set of emotion-motivational responses that are often triggered by the visualization of food pictures. We expect that locals will experience higher arousal (through self-reporting and physiologically), pleasure and desire when exposed to traditional food from their own country. They will also report being more willing to eat traditional local food than foreigners. Hence, we hypothesize that:

H2a. Locals report stronger feelings of arousal toward traditional food than foreigners.

H2b. Locals show a greater magnitude of skin conductance responses in response to traditional food than foreigners.

H2c. Locals show more skin conductance responses in response to traditional food than foreigners.

H2d. Locals report feeling higher pleasure toward traditional food than foreigners.

H2e. Locals report feeling a stronger desire for traditional food than foreigners.

H2f. Locals report being more willing to try traditional food than foreigners.

Although most of our hypotheses are related to the comparison between locals and foreigners to local traditional foods, we will also explore whether the emotional-motivational responses vary depending on the type of food (traditional vs nontraditional) for both locals and foreigners.

Finally, due to the potential role of food involvement, food neophobia and body dissatisfaction in predicting the outcomes (Fenko *et al.*, 2015), we included these variables as covariates. These exploratory analyses allowed us to further test whether these covariates are predictors of our outcomes and if the relationship between these variables and the outcomes depends on the type of food, over and above the effects of our main predictors.

Figure 1 shows the conceptual framework of the relationships.

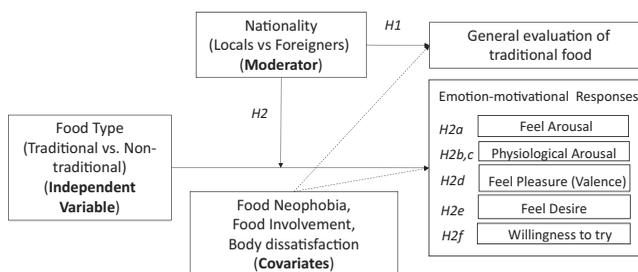


Figure 1.
Proposed model with the hypotheses

4. Method

4.1 Participants

A convenience sample of 100 participants was recruited for the main study in a Portuguese University (66 female and 34 male) aged between 18 and 65 years ($M = 26.8$, $SD = 8.9$). Most of them were studying, working or visiting the university campus. Portuguese participants (*locals*) accounted for 47% of the sample, while 53% were *foreigners* visiting the country. The *foreign* participants came from 21 countries (USA, Colombia, Argentina, Brazil, Cape Verde, Angola, Estonia, Croatia, Czech Republic, Netherlands, England, Spain, France, Germany, Italy, Belgium, Poland, Switzerland, Russia, India and Iran).

4.2 Stimuli and measures

4.2.1 Food stimuli. Fifteen pictures of traditional local food were photographed for the present study after being prepared by a professional Portuguese chef specializing in traditional Portuguese food (Modesto, 1984). A pilot study was conducted using a set of 45 pictures (30 nontraditional dishes taken from a food-pics data set and 15 traditional ones photographed for the present study) to select appropriate traditional and nontraditional local food pictures.

A convenience sample of 21 undergraduate students aged between 19 and 25 years ($M = 20.21$; $SD = 1.38$) from a Portuguese University was asked to evaluate several attributes of all 45 food pictures voluntarily. We asked participants to rate each food picture, considering “how much” they think the food depicted was a *traditional* dish in Portugal and a *nontraditional* dish in Portugal. We specifically mentioned Portuguese food in our survey because some nontraditional pictures might be considered “traditional” for some foreign countries (e.g. pizza for Italy; sushi for Japan) but not “traditional” for the local country in which this study was developed. In addition, we asked participants to label these pictures indicating the extent to which they found the images *familiar*, *healthy*, *arousing* and *pleasurable (valence)*. All these attributes were rated on a scale ranging from 1 (*not at all*) to 5 (*extremely*).

For the selection of the local traditional food, we chose the 14 pictures with higher scores on the subjective rating of “traditional Portuguese” (range 3.62–5.00) and low scores on “nontraditional Portuguese” (range 1.38–2.71). Then, 14 *nontraditional* dishes for Portugal were selected based on their high scores on *local nontraditional* (between 2.81 and 4.81) and low scores on *local traditional* food (between 1.05 and 3.05). The reference numbers of the selected 14 pictures taken from the food-pics data set are 0001, 0003, 0022, 0126, 0142, 0188, 0212, 0219, 0229, 0312, 0483, 0489, 0521 and 0564. These 28 pictures (14 for each food type) were statistically compared in all subjective attributes. As shown in Table 1, the two types of pictures were rated differently in subjective evaluations of *traditional*, *nontraditional* and *familiarity*, but similarly in *healthiness* and their affective hedonic proprieties (*valence* and *arousal*).

Detailed information about the picture properties (i.e. pictures’ physical appearance, such as complexity) is available in the Open Science Framework https://osf.io/mqnjy/?view_only=0dc258de0e9c4175900efc938aafdad3, including the local traditional food pictures that the authors created for this study using a script developed by Blechert *et al.* (2014).

4.2.2 Manipulation check. In the main study, we asked participants again to evaluate how each food picture is *traditional for Portugal* and *nontraditional for Portugal* as a *manipulation check* of our independent variable. We also asked how *familiar* they were with each food because we expected locals to be more familiarized with the food from their own country than foreigners, as indicated in the pretest. These three items were responded to on a scale ranging from 1 (Not at all) to 5 (Extremely).

Table 1.

Pretest evaluation of food pictures on food attributes perception

Attribute perception	Selected categories of food pictures	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	Cohen's <i>d</i>
Traditional food in Portugal	Local traditional	4.45	0.36	19.97	<0.001	4.36
	Local nontraditional	2.23	0.52			
Nontraditional food in Portugal	Local traditional	1.98	0.45	-14.51	<0.001	-3.17
	Local nontraditional	3.72	0.42			
Familiarity	Local traditional	4.63	0.41	3.75	0.001	0.81
	Local nontraditional	4.33	0.48			
Healthiness	Local traditional	2.89	0.51	<0.001	1.00	<0.001
	Local nontraditional	2.89	0.36			
Stimulus valence (<i>pleasurable</i>)	Local traditional	3.95	0.44	1.73	0.100	0.38
	Local nontraditional	3.66	0.58			
Stimulus arousal	Local traditional	3.77	0.49	1.78	0.090	0.39
	Local nontraditional	3.46	0.54			

Notes: *N* = 21 participants. All attributes were rated on a scale ranging from 1 (not at all) to 5 (Extremely). All *p*-values are two-tailed

4.2.3 Emotion-motivational responses. Measures of *subjective emotional responses* to food pictures included two dimensions: *arousal* (intensity) and *valence* (pleasure–displeasure) by using the Self-Assessment Manikin (SAM) proposed by Bradley and Lang (1994). We chose SAM because it is often used to measure emotional responses to affective pictures and is considered language- and culture-free because it uses pictorial single-item scales. For *valence*, the pictorial ratings ranged from 1 (very unpleasant) to 9 (very pleasant), with 5 being neutral. For *arousal*, the ratings ranged from 1 (very calm/low arousal) to 9 (very excited/high arousal). We added two items to capture the motivational-behavioral system more explicitly by asking participants to indicate how much they *desired* the food and were *willing to try* the food after the study, both on a scale ranging from 1 (Not at all) to 5 (Extremely).

As a peripheral bodily signal of emotional arousal (Boucsein *et al.*, 2012), we recorded the participant's electrodermal activity (EDA) to the food stimuli to analyze the *skin conductance responses* (SCRs), which corresponds to the phasic responses of participants to the stimuli. SCRs reflect the activity of the sympathetic autonomous nervous system (Boucsein *et al.*, 2012). Because it is an involuntary and mostly an unconscious process, this physiological measure will complement the subjective evaluation of arousal to the food pictures. SCRs have been used to capture emotional responses to food pictures (Esteves *et al.*, 2010) and were recently investigated as arousal states to food pictures as a function of the COO of the food (Etzi *et al.*, 2022). The raw signals of each participant's EDA were recorded using the Biopac MP100 System, with the signal being sampled at 1,000 Hz. The EDA signals were band-pass filtered at 0.05 Hz, and trials showing artifacts (e.g. noise and movements) were removed from the analysis. SCRs were measured as the change in EDA from the prestimulus value to the peak 4–7 s, with onset between 1 and 4 s after a stimulus and an amplitude equal to or greater than 0.01 μ S. In cases of more than one SCR within this onset window, the amplitude with the largest SCR was selected. Trials with an amplitude less than the threshold of 0.01 μ S or beginning outside this window (1–4 s) were assigned a value of zero, indicative of a nonresponse. Following Boucsein *et al.* (2012), SCR magnitudes were computed, including the amplitudes of zero in the analysis, and a log (SCR + 1) transformation was applied, which were transformed into *z*-scores. The SCR magnitude has an average of 0 and an SD of 1. As a complement, we calculated the frequency of the SCRs to the pictures (values could range between 0 and 28). Overall, we had technical problems when

recording skin conductance data in nine participants, so those participants were excluded from the SCR analysis.

4.2.4 General opinion about the local traditional foods. Participants were asked to state how they describe the traditional food from Portugal on a five-point scale, anchored with 1 (“extremely negative”) and 5 (“extremely positive”).

4.2.5 Food neophobia. The level of *food neophobia* was measured using the Food Neophobia Scale (FNS; [Pliner and Hodben, 1992](#)). Ten items on a five-point scale with labeled endpoints ranging from 1 (strongly disagree) to 5 (strongly agree) were presented ([Barcellos et al., 2009](#)). After reversing the appropriate items, the scores were summed, resulting in a total FNS score for each participant, which could range between 10 and 50. Higher scores are indicative of greater *food neophobia*. The FNS proved to be reliable in our study (Cronbach’s $\alpha = 0.88$).

4.2.6 Food involvement. The Food Involvement Scale ([Bell and Marshall, 2003](#)) was used to measure the participant’s involvement with food-related activities (acquisition, preparation, cooking, eating and disposal). Participants were asked to respond to 12 items on a seven-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). The scores for all items were summed for each individual and could range between 12 and 84, with higher scores indicating higher food involvement. The reliability reached an acceptable score, with Cronbach’s $\alpha = 0.75$.

4.2.7 Body dissatisfaction. *Body dissatisfaction*, defined as the incongruence between the person’s actual and ideal image ([Valutis et al., 2009](#)), was measured using the nine body silhouettes developed by [Stunkard et al. \(1983\)](#). This measure has bodyweight representations distributed across the ectomorphic–endomorph continuum, ranging from 1 (smallest ectomorph or extremely underweight) to 9 (largest endomorph or extremely overweight). Participants were asked to indicate how they perceived their current body and ideal body size by selecting one body silhouette for each of these two questions. Body dissatisfaction was computed by calculating the absolute value of their current body perception from their ideal body size. Values could range between 0 and 8, with higher scores corresponding to greater body dissatisfaction. This scale has been used in previous studies in several countries, including Portugal ([Matos and Arriaga, 2012](#)).

4.2.8 Demographics, eating and smoking behaviors. We collected sociodemographic data on age, gender, education level, employment status and nationality. Participants also provided information about their eating style (vegetarian, vegan or omnivore), if they were currently following a specific diet, and whether they had food allergies. In addition, we asked them to indicate the last time they had consumed food and if they considered themselves nonsmokers or smokers. We requested information about the last time they had smoked for those who reported smoking. This information was collected because it may affect their appetite and, consequently, participants’ emotion-motivational responses and evaluations of food proprieties to try the food depicted in the pictures ([Audrain-McGovern and Benowitz, 2011](#)).

5. Procedure

Participants signed an informed consent form before the experiment and received a briefing explaining the procedure. Upon arrival at the laboratory, participants were asked to wash their hands and remove bracelets, rings and electronic devices, such as cell phones or watches ([Prokasy, 2012](#)). To collect SCRs, two 6 mm Ag/AgCl electrodes were filled with NaCl ([Boucsein et al., 2012](#)) and placed in the middle phalanges of the index and middle fingers of the nondominant hand. Participants provided information regarding their sociodemographic and eating/smoking habits. Then, they were asked to sit at a distance of 65 cm from the computer monitor and to move as little as possible. Instructions about the task were shown on the screen, indicating participants to state their emotional responses to each of the 28 food pictures and to evaluate their attributes.

Participants viewed each picture individually for 6 s. A fixation cross was located on the center of the screen before and after each stimulus presentation for 1 s to fixate participants' gaze at a predefined point before each picture presentation. All pictures were prepared to be displayed with the same size, resolution, and color depth (1024 × 768 pixels), with white as the background color. After exposure to the food pictures, participants answered questions related to body dissatisfaction, food involvement and food neophobia.

In total, the study lasted around 40–50 min per participant. After completion, participants were debriefed and thanked for their voluntary collaboration.

6. Results

6.1 Preliminary analysis

Table 2 contains descriptive statistics as well as group comparison (*locals* and *foreigners*) on several baseline measures, such as demographics, eating/smoking behaviors, food involvement, food neophobia and body dissatisfaction.

	Nationality			χ^2	<i>p</i>
	All <i>N</i>	Locals <i>n</i>	Foreigners <i>n</i>		
<i>Gender</i>				2.83	0.092
Female	66	35	31		
Male	34	12	22		
<i>Education level</i>				7.69	0.021
Secondary education	46	28	18		
Bachelor's degree	46	18	28		
Master's degree	7	1	6		
<i>Employment status</i>				5.84	0.016
Nonemployed (just studying)	51	30	21		
Employed (partial or full-time job)	49	17	32		
<i>Smoking behavior</i>				3.32	0.068
Smoker	37	13	24		
Nonsmoker	63	34	29		
<i>Time of consumption since the last cigarette</i>				1.51	0.220
Less 1 h	12	6	6		
1 h or more	24	7	17		
<i>Time of consumption since the last meal</i>				3.05	0.217
Less than 1 h	1	0	1		
Between 1 and 3 h	76	33	43		
More than 3 h	23	14	9		
<i>Eating style</i>				0.007	0.932
Vegetarian	2	1	1		
Omnivore	98	46	52		
Currently dieting ^a	6	5	1	3.83	0.066
Food allergies ^a	5	1	4	1.59	0.209
		<i>M</i> (SD)	<i>M</i> (SD)	<i>t</i>	<i>p</i>
Age	26.76 (8.90)	26.81 (10.90)	26.71 (6.77)	0.05	0.959
Food involvement (12–84)	58.98 (11.15)	58.89 (10.20)	59.06 (12.02)	−0.07	0.942
Food neophobia (10–50)	23.88 (7.62)	25.78 (7.61)	22.19 (7.29)	2.41	0.018
Body dissatisfaction (0 to 8)	0.81 (0.75)	0.85 (0.83)	0.77 (0.67)	0.52	0.618

Note: ^aReflects the number and percentage of participants answering “yes” to the question

Table 2. Participant's demographics and behavior as a function of their nationality groups

Although *locals* and *foreigners* presented similar characteristics concerning their age, gender, eating style, smoking behavior and time because they had last consumed food or smoked, there were statistical differences between *locals* and *foreigners* in education level and employment status.

6.2 Manipulation check

As a manipulation check for the *a priori* classification of the traditional local food versus nontraditional local food stimuli, we asked participants to rate the food pictures in these two dimensions and conducted two Analyses of Variance (ANOVAs) using a 2 (type of food: traditional local, nontraditional local) \times 2 (nationality: locals, foreigners) design. To evaluate how the food was perceived as traditionally local, the main effect for the type of food emerged, $F(1, 98) = 243.47, p < 0.001, \eta_p^2 = 0.71$, indicating that traditional local food pictures were perceived as being more *traditionally Portuguese* ($M = 4.04, SE = 0.08$) than the nontraditional local food pictures ($M = 1.82, SE = 0.10$). This difference was similar for both *locals*, $F(1, 98) = 87.39, p < 0.001, \eta_p^2 = 0.47$, and *foreigners*, $F(1, 98) = 164.68, p < 0.001, \eta_p^2 = 0.63$. For the perceived evaluation of *nontraditionally Portuguese* food, we also found the main effect for the food type, $F(1, 98) = 193.76, p < 0.001, \eta_p^2 = 0.66$, indicating that the nontraditional food pictures were perceived as higher for *nontraditionally Portuguese* ($M = 2.96, SE = 0.07$) than the traditional local food pictures ($M = 1.53, SE = 0.07$). The difference in this evaluation was also similar for *locals*, $F(1, 98) = 68.49, p < 0.001, \eta_p^2 = 0.41$, and *foreigners*, $F(1, 98) = 132.62, p < 0.001, \eta_p^2 = 0.58$. Thus, the results from these two manipulation checks indicate that the two types of food pictures were perceived as intended and are consistent with our pretest of the stimuli. Regarding familiarity the ANOVA showed an interaction between nationality and food type, $F(1, 98) = 42.08, p < 0.001, \eta_p^2 = 0.30$. The local traditional food pictures were perceived to be more familiar by the locals ($M = 4.63, SE = 0.08$) than by the foreigners ($M = 4.04, SE = 0.08$), $F(1, 98) = 29.30, p < 0.001, \eta_p^2 = 0.23$, whereas the nontraditional food pictures were rated relatively similar in familiarity by locals ($M = 4.35, SE = 0.06$) and foreigners ($M = 4.46, SE = 0.06$), $F(1, 98) = 1.60, p = 0.209, \eta_p^2 = 0.02$.

6.3 Hypothesis testing

Following recommendations from the literature (Schneider *et al.*, 2015), we conducted ANOVAs to test our main hypotheses and Analyses of Covariance (ANCOVAs) to further investigate the contribution of covariates. We first examined scatterplots and tested the assumption of the linear relationships between the covariate and the mean scores of the emotion-motivational responses (see Table 3). Because body dissatisfaction was not statistically related to any of the outcomes, it was not considered in further analyses. However, higher food neophobia was linked to lower feelings of pleasure, desire, arousal and motivational intention to try the food. In contrast, food involvement was only related positively to feelings of pleasure toward the food. These two variables – food neophobia and involvement – were used as covariates in the models predicting the outcomes to which they were correlated. These two predictors showed a moderate intercorrelation, $r(100) = 0.44, p < 0.001$, not compromising their inclusion in the model predicting emotional valence. These covariates were then centered, and the homogeneity of the regression slopes assumption holds for all the variables, given the nonstatistically interactions between the covariates and nationality for each outcome. Thus, the results of the comparison between locals and foreigners will not depend on the levels of the covariates. In all these analyses, we used Bonferroni corrections to adjust the *p*-values and reduced the risk of a type I error by using several statistical tests.

6.3.1 General opinion about the traditional foods. The overall opinion of traditional local food was very positive ($M = 4.5$). A one-way ANOVA showed that *locals* evaluated their own traditional food more positively ($M = 4.62$, $SE = 0.91$) than *foreigners* ($M = 4.30$, $SE = 0.91$), $F(1, 98) = 6.33$, $p = 0.013$, $\eta_p^2 = 0.06$, which supports *H1*. The ANCOVA also showed that food neophobia remained related to less positive evaluations of traditional food, $F(1, 97) = 11.10$, $p = 0.001$, $\eta_p^2 = 0.10$.

6.3.2 Emotion-motivational responses. The results for emotion-motivational responses as a function of food type (nontraditional, traditional) and participants' nationality (locals, foreigners) were evaluated with a 2 (food type) \times 2 (nationality) design (see Table 4).

Regarding the *arousal feelings*, the two-way ANOVA revealed a main effect of food type, $F(1, 98) = 25.36$, $p < 0.001$, $\eta_p^2 = 0.21$, indicating that participants felt higher arousal toward the traditional food ($M = 5.22$, $SE = 0.15$) than the nontraditional ($M = 4.57$, $SE = 0.14$). However, the main effect of the nationality and the interaction between these independent variables were not significant (all $p < 0.05$) as predicted, not supporting *H2a*. These results indicate that both locals and foreigners reported feeling similar stronger arousal toward both types of food. The ANCOVA with the same two-way design with food neophobia as a

Outcomes	Food neophobia	Food involvement	Body dissatisfaction
Opinion on traditional food	-0.24*	0.10	0.05
<i>Emotion-motivational responses to food</i>			
Felt arousal	-0.25*	0.05	-0.01
Physiological arousal (magnitude SCRs)	0.03	-0.06	-0.04
Physiological arousal (number SCRs)	-0.02	-0.03	0.12
Felt pleasure (valence)	-0.36**	0.20*	0.09
Felt desire	-0.35**	0.17	-0.04
Willingness to try	-0.35**	0.12	-0.12

Notes: * $p < 0.05$; ** $p < 0.001$; SCRs = skin conductance responses

Table 3. Linear Pearson correlations between individual differences and the main outcomes

	Feel arousal	Magnitude SCR	No. SCR	Feel pleasure (valence)	Feel desire	Willingness to try
<i>Nontraditional Food</i>						
Locals M (SE)	4.44 (0.21) ^a	-0.39 (0.15) ^a	3.83 (0.49) ^a	5.69 (0.16) ^a	3.00 (0.07) ^a	2.75 (0.10) ^a
Foreigners M (SE)	4.69 (0.20) ^a	0.34 (0.13) ^b	6.68 (0.44) ^b	6.30 (0.15) ^b	3.29 (0.07) ^b	2.97 (0.09) ^a
<i>Traditional food</i>						
Locals M (SE)	5.23 (0.22) ^b	-0.21 (0.15)	4.63 (0.54) ^b	6.64 (0.15) ^b	3.38 (0.08) ^b	3.15 (0.10) ^b
Foreigners M (SE)	5.22 (0.21) ^b	0.19 (0.14)	6.28 (0.49) ^b	6.36 (0.14) ^b	3.43 (0.07) ^b	3.24 (0.09) ^b
F_{Food}	25.36***	0.04	0.75	15.06***	17.16***	26.93***
η_p^2	0.206	<0.001	0.008	0.133	0.149	0.216
$F_{Nationality}$	0.21	8.94**	11.70***	0.9	3.84	1.2
η_p^2	0.646	0.091	0.116	0.009	0.038	0.017
$F_{Food*Nationality}$	1.03	4.46*	6.67*	11.34**	3.67	0.97
η_p^2	0.010	0.037	0.070	0.104	0.036	0.010

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$, SCR: skin conductance response All the comparisons are two-tailed and used Bonferroni adjustments. Within a column, different superscript letters indicate statistical significance ($p < 0.05$)

Table 4. Descriptive statistics, and two-way ANOVA of food type and participants' nationality for the emotion-motivational responses toward the food pictures

covariate has shown that higher neophobia remained associated with lower arousal toward the food pictures, $F(1, 97) = 6.32, p = 0.014, \eta_p^2 = 0.06$.

Results from the *physiological arousal* triggered by the food pictures were measured by the SCR magnitude and frequency of these responses. The two-way ANOVA for the SCR magnitude displayed a main effect of nationality, $F(1, 89) = 8.94, p = 0.004, \eta_p^2 = 0.09$, and an interaction, $F(1, 89) = 4.46, p = 0.037, \eta_p^2 = 0.05$, indicating that the differences between *locals* and *foreigners* were dependent on the food type, and in particular in response to the nontraditional food, $F(1, 89) = 13.39, p < 0.001, \eta_p^2 = 0.13$, by showing that *locals* responded with lower SCR magnitude to the nontraditional food ($M = -0.39, SE = 0.15$) than *foreigners* ($M = 0.34, SE = 0.13$). However, no statistical differences emerged in SCRs magnitude toward the traditional food between *locals* and *foreigners*, not supporting *H2b*. Also, within the groups of *locals* and *foreigners*, no differences occurred when comparing traditional and nontraditional food. In relation to the number of SCRs, we found a main effect of nationality, $F(1, 89) = 11.70, p < 0.001, \eta_p^2 = 0.12$, and interaction between nationality and food type, $F(1, 89) = 6.67, p = 0.011, \eta_p^2 = 0.07$. Again, nontraditional food triggered a lower number of SCR among *locals* ($M = 3.83, SE = 0.49$) than among *foreigners* ($M = 6.68, SE = 0.44$), $F(1, 89) = 18.54, p < 0.001, \eta_p^2 = 0.17$; however, we also found that *locals* responded with a lower number of SCRs to the traditional food ($M = 4.63, SE = 0.54$) in comparison to the *foreigners* ($M = 6.28, SE = 0.49$), $F(1, 89) = 18.54, p < 0.001, \eta_p^2 = 0.17$, which does not support *H2c*. Nonetheless, it was interesting to find that for *locals*, the SCRs occurred more frequently in response to the local traditional food than to the nontraditional food, $F(1, 89) = 5.42, p = 0.022, \eta_p^2 = 0.06$, whereas *foreigners* responded with similar SCRs to both types of foods, $F(1, 89) = 1.63, p = 0.205, \eta_p^2 = 0.02$.

For *emotional valence*, the ANOVA also showed a main effect of food type, $F(1, 98) = 15.06, p < 0.001, \eta_p^2 = 0.13$, and an interaction between food type and nationality, $F(1, 98) = 11.34, p = 0.001, \eta_p^2 = 0.10$. The simple effects of nationality within the food type revealed that *locals* reported lower pleasure toward the nontraditional food ($M = 5.69, SE = 0.16$) than *foreigners* ($M = 6.30, SE = 0.15$), $F(1, 98) = 7.33, p = 0.008, \eta_p^2 = 0.07$. However, in contrast with *H2d*, there were no differences between *locals* and *foreigners* in their feelings of pleasure toward the traditional food, $F(1, 98) = 1.75, p = 0.189, \eta_p^2 = 0.02$. In addition, simple effects of food type within each level of nationality revealed that only the *locals* reported feeling more pleasure toward the traditional food than to the nontraditional, $F(1, 98) = 24.78, p < 0.001, \eta_p^2 = 0.20$. For *foreigners* the feelings of pleasure toward both food type pictures were of similar magnitude ($p = 0.71$). The main effect of food type and the interaction between food type and nationality remained significant after including the covariates, although both covariates interacted with the food type. Correlational analyses within each food type indicated that higher food neophobia was related to lower pleasure toward the nontraditional pictures $r(100) = -0.41, p < 0.001$, whereas high food involvement was related to stronger pleasurable feelings toward the traditional food, $r(100) = 0.25, p = 0.011$.

The main effect of food was again statistically significant for the *feelings of desire*, $F(1, 98) = 17.16, p < 0.001, \eta_p^2 = 0.15$, indicating more desire for traditional food than nontraditional. Although the interaction was not statistically significant, $F(1, 98) = 3.67, p = 0.058, \eta_p^2 = 0.04$, we tested our hypotheses by analyzing the simple contrasts of nationality within each food type. Interesting, the results were similar to the pleasurable feelings: *locals* reported lower levels of desire toward the nontraditional food than *foreigners*, $F(1, 98) = 7.80, p = 0.006, \eta_p^2 = 0.074$, and again, in contrast with *H2e*, no differences were found between *locals* and *foreigners* in their desire toward the traditional food, $F(1, 98) = 0.18, p = 0.674, \eta_p^2 = 0.002$. Moreover, *locals* felt more desire for traditional food than nontraditional, $F(1, 98) = 17.31, p < 0.001, \eta_p^2 = 0.15$, whereas similar desire feelings were reported by

foreigners toward both types of foods ($p = 0.11$). The ANCOVA revealed a significant overall effect of food neophobia as a covariate, $F(1, 97) = 11.09, p = 0.001, \eta_p^2 = 0.10$, and the results reported above for the effects of the main variables remained similar.

Finally, the results for the motivational variable also showed a main effect of food type, $F(1, 98) = 26.93, p < 0.001, \eta_p^2 = 0.22$, indicating that participants were more *willing to try* the traditional food ($M = 3.19, SE = 0.07$) than the nontraditional food ($M = 2.86, SE = 0.07$). Simple effects indicated that both *locals* and *foreigners* expressed a higher motivation to try traditional than nontraditional food ($p < 0.01$). However, in contrast with *H2f*, no differences occurred between *locals* and *foreigners* in their willingness to try the traditional food, $F(1, 98) = 0.47, p = 0.495, \eta_p^2 = 0.01$. Again, the ANCOVA provided similar statistical findings for the effect of food neophobia as a covariate, $F(1, 97) = 11.59, p < 0.001, \eta_p^2 = 0.11$.

7. Discussion

In general, the overall opinion and the emotion-motivational responses toward the traditional local food were very positive for locals and foreigners alike. Both groups expressed higher levels of motivation to try the traditional food dishes than the nontraditional food.

We also discerned locals expressing a higher positive opinion regarding their local traditional food compared to foreigners, confirming our first hypothesis (*H1*). These results seem to be supported by prior research (Apil, 2006) showing that locals tend to evaluate local products more favorably. However, the emotion-motivational responses toward the two-food type of pictures (traditional vs nontraditional) showed no support for the hypotheses predicting that locals, in comparison to foreigners, would also report stronger arousal, both in terms of subjective feelings (*H2a*) and physiologically (*H2b* and *H2c*), higher pleasure (*H2d*), higher desire (*H2e*) and more willingness to try the traditional food (*H2f*). In contrast, our results indicated that the local traditional food pictures triggered relatively similar high emotion-motivational responses among both locals and foreigners, considering the subjective feelings of arousal, pleasure, desire, willingness to try the food and the magnitude of the SCRs.

We developed our initial hypotheses with the assumption that familiarity with the local traditional food would contribute to the differences between local and foreigner responses, based on prior findings emphasizing the role of familiarity in food evaluation and emotional responses (Raudenbush and Frank, 1999; Torrico *et al.*, 2019). However, this variable does not seem to explain our results because locals were more familiarized with the local traditional food than foreigners. However, both groups responded similarly in terms of emotion and motivations toward the local gastronomy. Nevertheless, we should also consider that the level of familiarity with both the traditional and nontraditional dishes was considerably high in both groups. It is possible that showing less familiar food stimuli in both categories of pictures might produce distinct findings.

However, we did find differences between locals and foreigners when comparing their responses to nontraditional local food pictures. Overall, local participants reported feeling less pleasure and less desire and showed a lower frequency of SCRs and lowered SCR magnitude toward the nontraditional food than foreigners. Moreover, among locals, the SCRs occurred less frequently in response to the nontraditional than to their own local traditional food. They also reported feeling less pleasure and desire toward the nontraditional food than the traditional. In contrast, foreigners seem to respond emotionally similarly to both types of food pictures, such as pleasure, desire and the frequency of their SCRs while exposed to the food pictures. These results seem to indicate that locals are less receptive to nontraditional food and have stronger emotional responses toward their

country's food. Because local participants were in their own country when the study took place, they might be less open to different experiences and sensations (Choe and Cho, 2011). Conversely, foreigners seem to be more open to different types of foods, which does not support the view that participants in this group might feel discomfort in experiencing the local dishes. Instead, it suggested that because they are in a different country and environment, foreigners are more exposed to experiences outside their comfort zone and possibly more open to new food stimuli (Choe and Cho, 2011). These positive emotions toward traditional products might also be explained by Usunier and Cestre (2007), who found that the more a consumer is interested in a given country, the higher their positive opinion of that country. Foreign participants were mainly international students studying in Portugal, more specifically in Lisbon, so they were in many ways connected and attracted to this country, and their responses to the stimuli might have been influenced by their involvement.

The results in relation to the individual differences were also relevant. Our initial results showed that locals reported higher neophobia than foreigners, which could have contributed to explaining why locals were less emotionally responsive toward the nontraditional food. However, our results also showed that the results for locals and foreigners remained similar over and above food neophobia. Thus, the statistical control of this disposition to avoid novel or less familiar food did not change our findings. Nevertheless, it is important to highlight that food neophobia was an important predictor of all subjective emotion-motivational responses. Indeed, higher neophobia remained a significant predictor of less favorable evaluations of traditional food, lower feelings of arousal and desire toward the food, and of less willingness to try the food after the session. In addition, food involvement contributed to predicting stronger pleasurable feelings toward the traditional food, above and below the other variables included in the model. Prior studies have related this variable to food tourism behavior (Bell and Marshall, 2003), with research indicating that high food involvement tends to correlate with a stronger interest in local food (Lee and Kwon, 2009; Yoo and Seo, 2009). Finally, participants' body dissatisfaction level was not related to any of our emotion-motivational variables in response to the traditional and nontraditional local food pictures.

8. Conclusion

8.1 Theoretical and methodological contributions

This study aimed to gain insights into consumers' responses toward traditional food products by examining both locals' and foreigners' emotion-motivational responses toward traditional gastronomy. We approached this question by asking these two groups their opinion of traditional local gastronomy and by exposing them to pictures of local traditional and nontraditional dishes while collecting distinct measures of emotions. Based on dimensional theories of emotion, we considered both valence and arousal through self-reporting and physiological indicators (Bradley and Lang, 2007; Lang, 2010), in addition to desire and willingness to consume the food. Although participants responded very positively to local foods, these two approaches yielded different results. Asking individuals' opinions were consistent with the prediction that locals would favor traditional food compared to foreigners; however, the pattern of emotional responses was similar for the two groups when exposed to pictures of local traditional food.

In contrast, for pictures of nontraditional local dishes, locals expressed less pleasure and desire and lower physiological arousal than foreigners. These findings suggest the importance of measuring emotions, in addition to collecting individuals' opinions about gastronomy, given their potential role in triggering consumers' behavior

(Chang *et al.*, 2022). Moreover, most earlier studies on food had relied on either food perceptions (Almil *et al.*, 2011) or subjective feelings (King and Meiselman, 2010). We believe adding other emotional indicators less subject to desirability effects, such as physiological responses, is very relevant in this area. It is also very challenging since subjective and physiological arousal patterns are sometimes inconsistent. Etzi *et al.* (2022), also using skin conductance, showed inconsistent findings between cognitive evaluations and physiological arousal to food products of distinct countries. In the authors' interpretation, skin conductance might be more able to capture valence effects to food pictures, which is aligned with our findings. Finally, our study also contributes to research on gastronomy by considering individual differences such as food neophobia and food involvement. Our findings highlight that food neophobia consistently predicts all the subjective emotion-motivational responses toward food pictures. Food involvement should also be taken into account when addressing consumers' pleasurable feelings toward traditional gastronomy.

8.2 Managerial implications

From a practical point of view, the findings suggest that food businesses should invest more in attracting foreign travelers to experience traditional dishes because traditional food elicits emotional arousal and pleasure. Similarly, our findings suggest that both locals and foreigners are more willing to try traditional than nontraditional food, which can open opportunities for creating restaurants tailored to promoting local cuisine for locals and foreigners. In fact, local traditional food could be emphasized on restaurant menus since it received a very positive general evaluation, with locals evaluating it even higher than foreigners. This rationale is strengthened by overall higher feelings of arousal and desire as well as the willingness to try in response to traditional food and higher feelings of pleasure by locals.

Table 5 summarizes the main conclusions as well as the theoretical and managerial implications.

8.3 Limitations of the study and future research

One of the limitations of the present study concerns the use of pictures instead of more ecological sensory food stimuli, such as the visualization of actual food in which the participants are exposed to the smell and potentially the taste of the dishes. Further studies should also include more direct behavior responses to the food stimuli instead of measuring motivations to try the dishes. Another limitation was the lack of knowledge of the level of involvement of the participants with the traditional food. Also, the current study was limited to 100 participants, mostly students. Although having a sample limited to a specific country is a limitation on the study's external validity of the investigation, foreign participants represented several countries.

Nevertheless, because the traditional food of other countries might trigger a distinct pattern of responses, it would be relevant to replicate and extend the present study to other countries around the world. In further studies, it would also be pertinent to include other physiological measures, not only related to arousal but to capture emotional valences, such as facial electromyography. Indeed, a multimodal approach to emotions may shed more light on the literature in this field. Finally, the inclusion of other individual differences, such as ethnocentrism (Shimp and Sharma, 1987), might be relevant as a potential predictor of consumers' emotions.

Table 5.
Conclusions,
theoretical,
methodological and
managerial
implications

Conclusions	Theoretical, methodological and managerial implications
<p>Traditional food is perceived very positively, with locals expressing a higher evaluation than foreigners</p> <p>Emotion-motivational responses were strong toward pictures of traditional food, but both groups responded consistently similarly in terms of arousal, pleasure, desire and willingness to consume the local food dishes</p>	<p>- Investing in making local traditional food available and informing consumers about their availability in the food business, should be considered because it is highly appreciated and evokes arousal and positive emotions in both locals and foreigners.</p> <p>- Local chefs should revamp traditional dishes, which may also contribute to increasing the country's repositioning and attracting foreign travelers to experience local dishes</p>
<p>Nontraditional local food evoked lower physiological arousal and fewer feelings of pleasure and desire among locals compared to foreigners</p> <p>Food neophobia and food involvement are important predictors of emotional responses toward food dishes</p> <p>Collecting consumers' opinions about traditional food produced different results compared to assessing emotional-motivational responses. Measuring subjective feelings and physiological arousal provided valuable and complementary information in capturing consumers' emotions toward food pictures</p>	<p>Making nontraditional local food available also seems to be important because it evokes positive responses, although less expressive to locals than to foreigners</p> <p>Food neophobia and food involvement should be measured when addressing emotional responses toward food gastronomy</p> <p>It is crucial to consider complement dimensions and indicators, such as physiological and subjective reports to capture consumers' evaluations and the complex and multimodal nature of emotions toward food</p>

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