Colegio de Postgraduados

Perception of moronga consumption through food neophilia and food neophobia

Ortega-González, Carla I.[1]; Molina-Castillo, Stefany[2]; García-Rodea, Luis Felipe; González-Gutiérrez, Beatriz[1]

[1] Tecnológico Nacional de México / Tecnológico de Estudios Superiores de Tianguistenco. Carretera Tenango - La Marquesa Santiago Tilapa, Km. 22, C. P. 52650, Santiago Tianguistenco, Estado de México, México.
[2] Universidad Autónoma del Estado de México, Instituto de Ciencias Agropecuarias y Rurales. El Cerillo Piedras Blancas, Toluca, Estado de México, México. C. P. 50090.
[3] Universidad Autónoma del Estado de México, Facultad de Turismo y Gastronomía. Cerro de Coatepec s/n, Ciudad Universitaria, C. P. 50100, Toluca, Estado de México, México.
* Correspondence: carla_og@test.edu.mx

ABSTRACT

Objective: This study aims to analyze consumers' perceptions of moronga consumption through food neophilia and food neophobia.

Design/methodology/approach: An online questionnaire was administered to 276 consumers over 18 years of age. To analyze perceptions of moronga, the Free Word Association (FWA) technique was employed, and the results were organized into categories and dimensions. Likewise, the Food Neophobia Scale was applied to segment participants according to their level of neophilia or neophobia toward new foods. The data obtained were analyzed using the chi-square test. Finally, socioeconomic variables were incorporated, which were also evaluated with a chi-square test to identify perceptual differences between generations.

Results: Seven categories and twelve dimensions were obtained, revealing consumers' perceptions of moronga, the most representative being: gastronomic connections, dislike and mistrust, and animals. Although no significant differences were found between the groups, perceptions vary according to sociological generation. The results provided insights into perceptions of moronga and broadened the understanding of this food.

Limitations on study/implications: The study provides an empirical basis for informed decision-making regarding the marketing and promotion of traditional foods that may initially be rejected, highlighting the importance of considering generational differences in food perceptions.

Findings/conclusions: This study is original in its application of the theoretical framework of food neophilia/neophobia and the Free Word Association technique to a traditional food such as moronga, a topic rarely addressed in academic research. Its main value lies in revealing consumers' deep perceptions and segmenting them according to generational profiles, thereby offering an accurate diagnosis.

Keywords: Moronga, neophobia, neophilia, consumers, perception.

Citation: Ortega-González, C. I., Molina-Castillo, S., García-Rodea, L. F., González-Gutiérrez, B. (2026). Perception of moronga consumption through food neophilia and food neophobia. *Agro Productividad*. https://doi.org/10.32854/05xry044

Academic Editor: Jorge Cadena Iñiguez
Associate Editor: Lucero del Mar Ruiz Posadas
Guest Editor: Daniel Alejandro Cadena Zamudio

Received: March 20, 2026.
Accepted: April 30, 2026.
Published on-line: June 26, 2026.

Agro Productividad, 19(5). May. 2026. pp: 263-274.

INTRODUCTION

In the context of globalization, contemporary food systems are characterized by increasing dietary homogenization driven by the food industry, which has displaced the consumption of numerous traditional and local foods. This phenomenon has eroded the

cultural and culinary value of these products, a process accelerated by factors such as intense competition with new ultra-processed foods, the lack of effective promotion of traditional alternatives, and the emergence of consumer-related psychological barriers, particularly food neophobia.

Food neophobia, defined as the rejection of or distrust toward new, unfamiliar, or infrequently consumed foods (Dovey *et al.*, 2008), functions as a perceptual filter influenced by learned eating practices and sensory expectations. This rejection has been documented in relation to a wide range of products, from wild edible mushrooms (Molina-Castillo *et al.*, 2022) and insects (Ramírez-Rivera *et al.*, 2025) to, most notably, offal and animal by-products (Bearth *et al.*, 2021).

A psychological construct closely related to food neophobia is food-related disgust sensitivity, understood as the tendency to experience aversion toward specific food-related cues (Egolf *et al.*, 2018). This factor constitutes one of the most powerful barriers to the consumption of certain foods, as products that are unpleasant in appearance, smell, or taste are unlikely to be accepted (Fischler, 1995; Harris, 2011). In this context, edible animal by-products, or offal, represent an emblematic case of this process of displacement and stigmatization (Bearth *et al.*, 2021). Historically, their consumption was associated with the need to make full use of available resources, minimize waste, and value the animal in its entirety, a practice deeply rooted in diverse cultures and social groups (Harris, 2011). However, in modern Western societies, these products have become progressively less popular and increasingly unfamiliar (Henchion *et al.*, 2016). Bearth *et al.* (2021) further confirmed that the willingness to consume such products is negatively associated with high levels of food neophobia and disgust sensitivity. Their findings also indicate that consumers perceive by-products from adult animals (beef cattle) more negatively than those from younger animals (veal), associating them with greater risks and stronger feelings of disgust, despite the fact that animal age is not necessarily related to food safety. Within this broad group of foods, moronga emerges as a paradigmatic product for study. This sausage embodies the tension between its value as a culturally rooted food and the rejection driven by negative associations and primary sensory aversions. This duality, in which a product is simultaneously perceived as a "delicacy" and as an "undesirable" food, has been widely examined in food anthropology (Harris, 2011). Such rejection can be understood through psychological mechanisms such as the "law of contagion" (Rozin *et al.*, 1987), whereby the essential properties associated with blood and viscera are perceived as being transferred to the food itself. This tension between tradition and modernity, as well as between the sacred and the taboo, makes moronga an ideal subject for analyzing the psychosocial factors that shape food consumption within a context of modern "gastro-anomie" (Fischler, 1995).

Therefore, the aim of this study was to analyze the reasons underlying the acceptance and rejection of moronga consumption among consumers, based on their sensory, emotional, and cultural perceptions. The study employed the Food Neophobia Scale as its main analytical framework while also considering the crucial role of disgust sensitivity and previous experiences. This research seeks to contribute to the understanding of the factors that determine the survival or decline of traditional foods within the modern food landscape.

MATERIALS AND METHODS

This exploratory study collected data through a questionnaire distributed via social media platforms (Espinoza-Ortega *et al.*, 2021). The instrument remained available for responses between February and April 2025. The questionnaire targeted Mexican individuals over 18 years of age with internet access. More than 70% of the Mexican population lives in urban areas and has access to the internet (INEGI, 2024). The questionnaire was divided into two sections. In the first section, the Free Word Association (FWA) technique was used to identify participants' perceptions of moronga. This qualitative and projective method employs an inducing term to elicit participants' immediate and spontaneous reactions (Guerrero *et al.*, 2010). The technique has proven to be effective and reliable for analyzing consumers' perceptions, attitudes, and opinions, which explains its widespread application in food-related research (Sánchez-Vega *et al.*, 2021; Rojas-Rivas *et al.*, 2022). Participants were asked to mention the first three words that came to mind when reading the word "moronga." In the second section, the Food Neophobia Scale proposed by Pliner and Hobden (1992) and adapted by Molina-Castillo *et al.* (2022) was used. This scale allows the analysis of consumers' willingness to accept or reject innovative, unfamiliar, or infrequently consumed foods (Pliner & Salvy, 2006). Responses were evaluated using a five-point Likert scale, where: 1=never; 2=almost never; 3=indifferent; 4=sometimes; and 5=always (Table 1).

Data analysis

The words obtained through the FWA technique were grouped into categories according to their similarity and synonymy, regardless of whether they had been mentioned by the same participant, and were subsequently regrouped into dimensions (Guerrero *et al.*, 2010; Rojas-Rivas *et al.*, 2019).

Once the scale had been completed, the scores for items 1, 4, 6, 9, and 10 were reverse-coded. Subsequently, the assigned values were summed to obtain a total score ranging from 10 to 50 points, following the procedure established by Pliner and Hobden (1992).

Table 1. Items of the Food Neophobia Scale.

Items	
1.	I am constantly trying new and different foods (I)
2.	I am suspicious of foods that are unfamiliar to me
3.	If I don't know a food, I reject it
4.	I would like to try foods from different cultures (I)
5.	Food from other cultures looks strange to eat
6.	If I have the opportunity, I try new foods (I)
7.	I am afraid of eating things I have never tried before
8.	I'm very picky about the foods I eat
9.	I am able to eat almost anything (I)
10.	I would like to eat foods that are different from what I usually eat (I)

Source: Author's own elaboration based on Molina-Castillo *et al.* (2022) and Pliner and Hobden (1992).
Note: (I)=Inverted.

Likewise, quartiles were identified to classify consumers according to their level of food neophobia (Molina-Castillo *et al.*, 2025). The lower quartile included consumers with neophilic attitudes, the middle quartiles included consumers with intermediate attitudes, and the upper quartile included consumers with neophobic attitudes.

Once the consumer groups had been identified, the associations that each group established with moronga were analyzed based on the dimensions and categories derived from the FWA technique. The dimensions were analyzed according to neophilic, intermediate, and neophobic attitudes using the cell chi-square test, with the significance level set at 5% (Field, 2013). The results of the category analysis by consumer group were presented through correspondence analysis.

Subsequently, the chi-square test, Z-test, and Bonferroni method were used to identify statistically significant differences among the groups regarding socioeconomic characteristics, with the significance level established at 0.05. The information obtained was entered into an Excel database, and the statistical analyses were subsequently performed using SPSS version 24 and XLSTAT software.

RESULTS AND DISCUSSION

A total of 300 questionnaires were completed, of which 24 were excluded because the respondents were under 18 years of age. Therefore, the final sample consisted of 276 consumers aged between 18 and 67 years. Most participants were women (65.9%), belonged to Generation Z (59.4%), and had an undergraduate degree (67.8%).

Classification of neophilia and neophobia. The first stage of the study consisted of identifying the levels of food neophilia and food neophobia among participants. Consumers' responses regarding food acceptance or rejection were used to determine their position on the neophilia-neophobia scale, where the lowest score was 10 and the highest was 49.

Three groups of consumers were identified according to their levels of food neophobia. The first quartile (scores from 10 to 25) included neophilic consumers, representing 27.2% of the sample. The second quartile (scores from 26 to 32) comprised consumers with intermediate neophobia (50.7%), while the third quartile (scores from 33 to 48) included consumers with the highest levels of food neophobia (22.1%).

Free Word Association analysis

In the FWA task, a total of 728 words were mentioned, which were grouped according to synonymy, resulting in 12 categories linked to seven dimensions (Table 2). The most prominent dimensions were "Gastronomic Connections" (61.7%), "Dislike and Distrust" (13.0%), and "Animals" (9.5%) (Table 2).

The dimension "Gastronomic Connections" encompasses aspects such as culinary use, preparation methods, culinary identity, and ingredients, reflecting that consumers seek not only to satisfy a biological need, but also to establish a cultural and emotional connection with food (Brillat-Savarin, 1825).

The dimension "Dislike and Distrust" reveals consumers' aversion toward moronga, as well as their perception of it as an unfamiliar food, expressed through concepts such as disgusting, unpleasant, ugly, unknown, unusual, and strange. This rejection can be

Table 2. Associations Related to Moronga.

Dimensions	Categories	Main Words	Value (%)
Gastronomic connections			61.7
	Culinary use	Food, tacos, stew, rellena (mexican dish)	29.8
	Ingredients	Blood, tripe, meat, fat	25.0
	Methods of preparation	Sausage, cooking, frying	4.0
	Culinary Identity	Tradition, butchery, Mexico	2.9
Dislike and distrust			13.0
	Dislike	Disgusting, unpleasant, ugly	10.7
	Unknown	Unknown, unusual, curiosity, strange	2.3
Animals			9.5
	Links to animals	Pig, animal, sheep, offal	9.5
Sensory			4.7
	Color	Brown, black, red	3.3
	Flavor	Flavor, tasteless, insipid	1.4
Hedonic			4.7
	Taste	Tasty, flavorful, delicious	4.7
Others			4.3
	Others	Nothing, nickname	4.3
Blood			2.2
	Plasma	Clot, curd	2.2

explained through the theory of "culturally learned food aversions" (Rozin & Fallon, 1987), which proposes that individuals develop aversions toward certain foods primarily for symbolic and cultural reasons rather than for biological or sensory ones. Likewise, Hartmann and Siegrist (2018) highlight the impact of disgust and repulsion toward certain foods, ranging from basic human avoidance behaviors, such as food neophobia, to social norms in which certain foods, particularly those derived from blood or viscera, generate rejection for symbolic rather than sensory reasons (Fischler, 1988).

The dimension "Animals" refers to participants' perceptions of moronga through concepts such as pig, animal, sheep, and offal. Vialles (1994) argues that the symbolic distance between the animal and the food is key to cultural acceptance. The use of terms such as viscera reflects what Douglas (1966) described as "matter out of place," whereby certain animal parts generate rejection because they transgress cultural boundaries regarding what is considered appropriate for consumption.

The dimension "Sensory" refers to intrinsic attributes of moronga, such as flavor and color, with prominent associations including flavor, tasteless, and insipid. In this regard, Rozin and Fallon (1987) mention that some foods are rejected or accepted primarily because of their sensory characteristics, such as taste, smell, and appearance, as well as previous learning experiences and cultural contexts (Spence, 2017). According to Tan *et al.* (2016), flavor is an important predictor of food consumption; however, sensory liking alone is not sufficient for the acceptance of a novel food (Roininen *et al.*, 1999).

The dimension "Hedonic" includes pleasant associations expressed by consumers through concepts such as tasty, flavorful, and delicious. According to Hirschman and Holbrook (1982), hedonism is defined as the sensory, imaginative, and affective dimension that characterizes a person's interaction with a product.

The dimension "Others" encompasses residual concepts such as nothing and nickname. Schmitt (2017) states that meanings vary according to cultural context, which may also be associated with foods.

The dimension "Blood" refers to plasma-related concepts such as clot and curd. According to Fiddes (2004), blood as food evokes religious and biological taboos, which influence its ambivalent perception.

Once the associations that participants had regarding moronga were identified, the associations of each group were analyzed according to their levels of food neophobia (Table 3).

It was observed that the Neophilic group primarily associated moronga with the dimension "Hedonic" and less frequently with the dimensions "Dislike and Distrust" and "Others." The Intermediate group mainly associated it with the dimension "Others," whereas the Neophobic group primarily linked moronga with the dimension "Dislike and Distrust." These findings were corroborated through correspondence analysis (Figure 1), which showed that the Neophilic group was more closely associated with the category "Pleasantness" and less associated with "Others," in contrast to the Intermediate group, whereas the Neophobic group showed greater proximity to the category "Disgust."

Socioeconomic characteristics of the identified groups

The statistical analysis established that there were no significant differences in any of the socioeconomic characteristics among the identified groups (Table 4).

However, a greater presence of Generation Z consumers was observed among the Neophilic and Neophobic groups, whereas Millennials were more prevalent in the Intermediate group. In this regard, Rabadán and Bernabéu (2021) identified that levels of food neophobia tend to increase from middle age onward. Regarding gender, a slightly higher presence of women was observed in the Neophilic group. In this sense, several

Table 3. Cell Chi-Square Analysis of Dimensions by Consumer Group.

Dimension	Neophilics n=27.2%	Intermediate n=50.7%	Neophobic n=22.1
Gastronomic connections	64.8	63.0	55.1
Dislike and distrust	7.6 (−)	11.7	22.8 (+)
Animals	11.9	7.7	10.2
Sensory	3.8	5.4	4.2
Hedonic	8.6 (+)	3.7	1.8
Others	1.4 (−)	6.3 (+)	3.6
Blood	1.9	2.3	2.4

Note: (+) or (−) indicate that the observed values are higher or lower than those theoretically expected according to the Chi-square test per cell. Alpha value: 0.05.

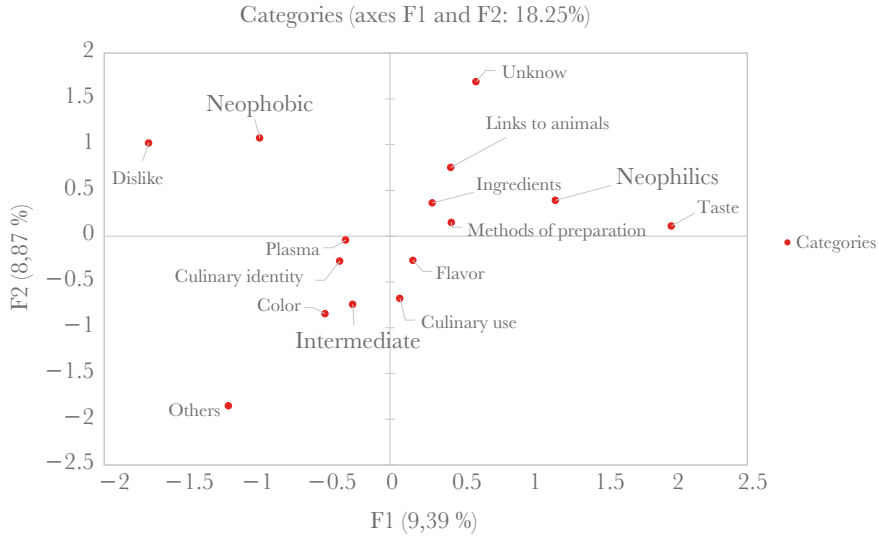

Figure 1. Correspondence Analysis of Groups and Categories.

Table 4. Socioeconomic Characteristics by Identified Group.

		Neophilics 27.2%	Intermediate 50.7%	Neophobic 22.1%	p
Gender					
	Male	32.0	35.0	34.4	.905
	Female	68.0	65.0	65.6	
Generation					
	Baby Boomer	1.3	1.4	0.0	.213
	Generation X	16.0	12.9	6.6	
	Millennial	17.3	31.4	29.5	
	Generation Z	65.3	54.3	63.9	
Education					
	Elementary school	1.3	1.4	0.0	.611
	Middle school	8.0	7.9	3.3	
	High school	16.0	21.4	13.1	
	College	70.7	62.9	75.4	
	Graduate school	4.0	6.4	8.2	
Marital status					
	Single	76.0	69.3	70.5	.686
	Married	24.0	28.6	27.9	
	Other	0.0	2.1	1.6	

Chi-square analysis: $p<0.05$ and Z-test with Bonferroni correction.

studies have reported that socioeconomic characteristics such as gender and age influence levels of food neophobia (Flight *et al.*, 2003).

Schnettler *et al.* (2008) mention that, in the case of meat consumption in southern Chile, sociodemographic characteristics determine differences in both the frequency and type of

meat demanded by consumers. However, this perspective, which assigns a determining role to sociodemographic factors, remains debated in the literature. Some studies, such as that of Verbeke and Vackier (2004), support this view by identifying variables such as age and gender as significant predictors of consumption behavior, whereas other studies suggest that the explanatory power of these variables may be limited.

On the other hand, studies such as that of Barrena and Sánchez (2012) argue that sociodemographic factors, although relevant, frequently act as mediating variables, and that psychological aspects such as risk aversion and variety-seeking behavior, as well as lifestyles and environmental factors, possess stronger predictive power regarding food choice and food neophobia. Therefore, although there is consensus that sociodemographic variables exert an influence, their central and exclusive role has been questioned, pointing instead toward a more comprehensive and multifactorial explanatory model of consumer behavior.

Consumer groups and their perceptions of moronga

Neophilic consumers

This group was the second largest in the study and was composed mainly of individuals with university-level education. These consumers primarily associated moronga with hedonic aspects related to liking, highlighting concepts such as "tasty," "flavorful," and "delicious," and to a lesser extent with the dimension "Dislike and Distrust." For this group, consuming moronga does not represent a threat to their health.

The perceptions of this group are consistent with the literature linking higher educational levels to lower food neophobia (Flight *et al.*, 2003), as education is often associated with greater cultural curiosity and exposure to a wider diversity of foods. However, the results invite a deeper discussion. The predominance of hedonic associations suggests that risk perception is not a determining factor for neophilic consumers, partially contradicting models that portray neophilia simply as the absence of perceived danger.

Authors such as Pliner and Hobden (1992) propose that the willingness to try new foods is more closely linked to sensation seeking and anticipated hedonic experience than to a rational evaluation of risk. Therefore, this group does not ignore risk, but rather overrides it with the expectation of a positive sensory reward.

Furthermore, the overrepresentation of individuals with university-level education may also reflect greater cultural capital (Bourdieu, 1984), whereby the consumption of traditional or unusual foods becomes a form of social distinction and cultural appreciation, further enhancing the hedonic experience beyond taste itself.

Intermediate consumers

This group comprised the largest proportion of respondents and was mainly represented by women with university-level and high school education. The associations within this group tended toward the dimension "Others," in which concepts such as nothing and nickname were mentioned. The predominant association with "nothing" or "nickname" suggests a profound cultural and cognitive disconnection from the product. For these respondents, moronga does not evoke a strong culinary, nutritional, or identity-related

meaning. The fact that it is perceived primarily as a "nickname" indicates that the term may persist in colloquial language while having completely lost its tangible referent and original gastronomic meaning.

The foregoing reflects a process of cultural erosion, in which a traditional food disappears from the practical and symbolic culinary horizon of a modern and educated segment of the population. The fact that this group is composed of individuals with higher education is particularly noteworthy. This distancing from local food traditions may exemplify how formal education and urbanization are correlated with a departure from certain culinary practices considered traditional or rural.

This finding contrasts with that observed in the other group studied, in which food neophobia (Tuorila *et al.*, 2001; Siegrist *et al.*, 2013) and active rejection associated with sensory characteristics such as blood (Bearth *et al.*, 2021; Llauger *et al.*, 2021) were the primary drivers of aversion. In this case, indifference predominates.

Neophobic consumers

This group, which represents the smallest proportion of respondents and is composed mainly of women, primarily associates moronga with disgust. Their perceptions are far removed from aspects such as culinary use or culinary identity. Furthermore, the presence of blood and raw meat is negatively associated with living animals and, therefore, generates rejection (Llauger *et al.*, 2021).

This disgust or rejection toward animal by-products, such as blood, is consistent with the findings reported by studies such as those of Bearth *et al.* (2021) and Llauger *et al.* (2021). This aversion may be partially explained by food neophobia, defined as the rejection of unfamiliar foods and associated with dietary and consumption choices (Tuorila *et al.*, 2001; Siegrist *et al.*, 2013).

The current context further reinforces this aversion. Edible animal by-products have become less popular and, consequently, more unfamiliar in the cuisines of Western societies; therefore, individuals with high levels of food neophobia may be less willing to engage with these animal-derived products (Henchion *et al.*, 2016). Although it has been demonstrated that the use of familiar carrier foods increases the acceptance of novel foods (Hartmann *et al.*, 2015), exceptions may occur when ingredient combinations are perceived as inappropriate (Stallberg-White & Pliner, 1999).

If presented separately, the discussion should focus on interpreting the results (without repeating them), considering their intrinsic characteristics, their consistency with the proposed hypothesis, and their similarities or differences in relation to findings from previously conducted studies. In all cases, the discussion should provide an explanation of the results beyond merely comparing them with similar studies.

CONCLUSIONS

This study made it possible to characterize consumers' perceptions toward foods derived from animal viscera and offal, using moronga as a case study. The results revealed the existence of three clearly differentiated consumer segments according to their level of food neophilia or food neophobia. The most prevalent profile corresponded to

intermediate consumers, who constituted the majority group and associated moronga with unrelated terms, reflecting a disconnection from the product. This group was followed by neophilic consumers, who associated moronga consumption with hedonic and pleasurable experiences. In contrast, the neophobic group, which represented the smallest proportion of respondents, exhibited a clear aversion and perception of disgust toward this product. It is noteworthy that no statistically significant differences were observed in the distribution of these groups according to sociodemographic variables such as age, gender, and educational level. This suggests that attitudes toward moronga and, by extension, toward meat by-products are more strongly influenced by psychological and cultural dimensions than by conventional demographic factors.

ACKNOWLEDGMENTS

The authors gratefully acknowledge the Consejo Mexiquense de Ciencia y Tecnología for funding the project CIKAS--FICDTEM-25-043.

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