
**CONSUMER EVALUATION OF A TRADITIONAL FOOD PREPARED IN AN
INNOVATIVE MANNER**

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SUMMARY

Innovation is one of the most-used positioning strategies in companies. Even when innovation is essential, there is also a trend that revalues everything considered traditional and focuses on products from the region. Therefore, this study aimed to perform a sensory evaluation of a traditional dish made innovatively. The study was comprised of two stages. First, three focus groups were created (N=35), and second, the researchers chose a group

of consumers older than 18 years old to perform two hedonic tastings. One tasting was closed, and the other was open, each with two products and different processes. The scoring method was used for each descriptor. The value scale used ranged between zero (I do not like it at all) and five (I really like it). The findings show that the traditional food was evaluated with higher points in all the attributes regarding product innovation.

Introduction

The agri-food industry faces several challenges, including logistics and distribution, market competitiveness, pattern changes in consumption, and sustainable production processes. To meet these upcoming challenges, business leaders need to create actions that

answer production and market needs. In this context, innovation arises as a critical factor for business development and the development of societies. Moreover, innovation offers possibilities for producing food demanded in the market.

According to the Organisation for Economic Co-operation and Development (OECD) (OECD,

2018:21), innovation refers to “product or process that is new or has an improvement (or a combination of both), that is significantly different from the previous products and processes, and that has been available to potential users (product) or has been used by a unit (process). Innovation is about modifications that may be

introduced to processes, marketing, organization, society, technology, and products” (European Commission, 2013; OECD, 2005:46). In the food sector, innovation is a strategy that can lead to increased competitiveness, as long as it is done with market orientation and knowledge because satisfying consumers’ needs is a

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EVALUACIÓN DEL CONSUMIDOR DE UNA COMIDA TRADICIONAL PREPARADA DE MANERA INNOVADORA

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RESUMEN

La innovación es una de las estrategias de posicionamiento más utilizadas por las empresas. Sin embargo, aun cuando cobra relevancia también surge una tendencia que revaloriza lo tradicional y se centra en productos de la región. De ahí, que el objetivo de este trabajo fue evaluar sensorialmente un platillo tradicional con innovación. El estudio se realizó en dos fases. Primero, se efectuaron tres grupos focales (N=35) y segundo, se eligió a un grupo de consumidores mayores de

18 años (n = 38) para llevar a cabo dos catas hedónicas, una cerrada y otra abierta, con dos productos cada uno con diferentes tipos de procesos. Se utilizó el método de puntajes para cada descriptor. La escala utilizada para las valoraciones fue de 0 (no me gusta en absoluto) a 5 (me gusta mucho). Los hallazgos muestran que el alimento tradicional ha sido evaluado con puntajes más altos en todos los atributos respecto al producto con innovación.

AVALIAÇÃO DO CONSUMIDOR DE UM ALIMENTO TRADICIONAL ELABORADO DE FORMA INOVADORA

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RESUMO

A inovação é uma das estratégias de posicionamento mais utilizadas nas empresas. Mesmo quando a inovação é essencial, há também uma tendência que valoriza tudo o que é considerado tradicional e aposta nos produtos da região. Portanto, este estudo teve como objetivo realizar uma avaliação sensorial de um prato tradicional confeccionado de forma inovadora. O estudo foi composto por duas etapas. Primeiro, três grupos focais foram criados (N=35) e, segundo, os pesquisadores escolheram

um grupo de consumidores com mais de 18 anos para realizar duas degustações hedônicas. Uma degustação foi fechada e outra aberta, cada uma com dois produtos e processos diferentes. O método de pontuação foi usado para cada descritor. A escala de valores utilizada variou entre zero (não gosto nada) e cinco (gosto muito). Os resultados mostram que a comida tradicional foi avaliada com nota máxima em todos os atributos referentes à inovação do produto.

fundamental element in a company (Hernández and Simón, 2015).

In the food sector, highly innovative products represent less than 2% of the total products, from which approximately 25% are successful in the market (Khan *et al.*, 2017). Said numbers show that food innovation is not an easy task, which is why the primary food companies worldwide pay close attention to the market and consumers' demands. In this sense, and according to a study carried out in 78 global food companies, researchers identified products that were formulated or reformulated in sodium, sugar, saturated fat, trans fat, vitamins, parabens, and omega-3, which are in high demand with consumers. Consequently, companies aligned to health and nutrition policies by increasing their offer with products that comply with those characteristics,

going from 22,500 in 2014 to 179,600 in 2016 (Deloitte, 2016). In this manner, some of the market's tendencies are oriented toward searching for healthy and natural foods, without artificial colorants, reduced in fat and sugar, while at the same time guaranteeing more and better health benefits.

At the same time, there's a constantly increasing worldwide movement that draws attention to reevaluating traditional foods. These are foods in which the consumer appreciates the cultural component, identity, and relationship with the territory. Thus, products with quality labels referring to the tradition of particular people or cultures are gaining space in the taste and preferences of consumers. In the European Union alone, foods with these characteristics represent 7% of the food and beverage total. Their sales

have increased by 42% over a seven-year period from 2010 to 2017 (European Commission, 2020). Globally, sales of traditional foods, also known as ethnic foods, were estimated at slightly greater than 36 billion dollars in 2018. Some projections forecast that they will maintain a growing trend of 11.8% annually through 2024 (Statista, 2019). Currently, the United States is the primary market for this type of food (Lee *et al.*, 2014; Statista, 2019).

These trends affect different levels; hence, it is not surprising that traditional food producers from different environments would also want to be part of this boom and expansion period. However, the reality shows that commercializing these products in international markets is highly competitive. Therefore, entering those markets is not an easy task. As for traditional food entrepreneurs

from the state of Sonora, a state located in northeastern Mexico, several factors are considered growth incentives. On the one hand, the increase in demand for traditional food in the international context, particularly Mexican food, and on the other, the geographic proximity with the primary market of traditional food in the world, where Mexican food is considered the third most popular food. It is estimated that 230.88 million Americans consumed Mexican food and ingredients in 2019 (Demeyer, 2014; Ancle and Montiel, 2018; Statista, 2019).

Despite these characteristics that seem to favor the situation initially, other elements are a constraint in entering international markets, being a highly divided sector where micro, small, and medium enterprises are the most common. According to information from official agencies, 157

companies sell traditional foods in Sonora, from which more than 95% are micro, small, and medium enterprises (Ferrales, 2018). At the same time, their structural characteristics hinder the development of commercial strategies as a large number of traditional food companies use informal channels to sell their products, based mainly on social relationships. Therefore, changes in the products, presentation of ingredients, manufacturing processes, and commercializing strategies, among others, must be done carefully, with the greatest amount of market knowledge possible. In as much as the difference that occurs in other sectors is estimated, the failure rate of the agri-food sector fluctuates between 75-90% (Barrena y Sánchez, 2012; Khan *et al.*, 2017).

In the spirit of diminishing the gap that exists between the businessman and the market information with respect to product acceptance, the investigation plays a key role. In this respect, various methodologies have been used to amplify knowledge of perception, preference, emotions, attitudes and implementation of a product.

This way, in the food sector, some recent implementations of focus groups as a technique refer to the study of Oljans *et al.* (2020). Focus groups are used to ascertain the participants' opinions about the food and health education content or consumers' concerns regarding the food they consume and its impact on their health (Lalor *et al.*, 2011). Another methodology widely used and accepted in the literature is sensory analysis. Sensory analysis, as a science, is used to trigger, measure, analyze, and interpret reactions toward certain foods and materials characteristics, just as they are perceived by the sight, smell, taste, touch, and auditory senses (Stone and Sidel 2004). Implementing this methodology makes it possible to ascertain consumers' acceptance toward the product, in

addition to having access to comparative studies on the product proposal versus the current offer. Obtaining this information will establish the framework for improving the evaluated product or innovate it with new suggestions in line with consumers' identified preferences.

Three types of taste are identified within the sensory analysis: technical, analytical, and hedonist (Sancho *et al.*, 2002). The first refers to an objective test to evaluate the commercial qualities of the product (Adasme *et al.*, 2006; Chaparro Hernández *et al.*, 2013; Vázquez-Araújo *et al.*, 2014). The second is applied to identify and differentiate consumers' critical perceptions (Carbonell *et al.*, 2007). The third sets out to explore the pleasure of eating or drinking a particular food (Díaz *et al.*, 2017; Carvalho *et al.*, 2018).

In general, the literature shows that focus groups and sensory analysis have gained relevance in the food industry in recent years. They are essential tools to identify consumers' preferences related to product acceptance. Notably, the importance of sensory evaluation is related to the attributes consumers value the most and the search to reduce the product failure rate in the market.

In this context, from a consumer's perspective, this exploratory research evaluates the value and sensory aspects of a traditional dish prepared in an innovative manner, such as the Sonoran casserole in its ready-to-eat format. In this manner, through focus groups, the elements that consumers value the most regarding traditional food are identified in addition to their perception and knowledge. While using sensory evaluations, the degree of satisfaction offered by the product can be established (Cárdenas *et al.*, 2018). Moreover, it can be determined if process innovation is a strategy that may work for this particular food and therefore can help forecast its market acceptance. The results will provide exploratory

knowledge regarding innovation acceptance in traditional dishes while also contributing to the generation of essential information for traditional food entrepreneurs.

Theoretical Framework

In the food industry, one of the applied methodologies to determine product acceptance is sensory analysis. This analysis provides information regarding willingness, perception, consumer expectations, identification, description, and differentiation of the product's characteristic attributes. The implementation of these methodologies makes it possible to know consumers' willingness toward the product, besides having access to comparative studies on the product proposal versus the existing offer. Getting this information will establish the framework for improving the evaluated product or innovate with new proposals that are in line with consumers' identified preferences.

Regarding technical sensory analysis studies have been useful in the case of determine the acceptability of a new product with functional ingredients such is the sausages with orange peel flour and / or maguey (Chaparro *et al.*, 2013); to determine the perception of consumers towards the main attributes of the white strawberry and the intention to purchase a product with a designation of origin, the results show that the white strawberry is preferred to the red strawberry, suggesting that aspects such as the texture, juiciness, softness of the pulp, in addition to the flavor and sweetness are what consumers highlight from the white strawberry over the red one. There is also a willingness to pay a premium for the white strawberry (Adasme, *et al.*, 2006).

On the other hand, in the research of Carbonell *et al.*, (2007), descriptors were analyzed to evaluate fresh and processed mandarin juices. From 12 juice samples and 29 descriptors, the judges reached a concession to define terms

and definitions of the descriptors. The authors conclude that, while useful information was provided, some raters need training to improve reproducibility and the use of scales to achieve efficient profiling of tangerine juices. Of these studies, the first two correspond to Latin American countries and the third to Spain.

Several food investigations are also identified where a hedonistic sensory analysis is carried out, such is the case of the study by Carvalho *et al.*, (2018), where diet and light yogurt, made with natural sweeteners, was sensory analyzed. To do this, the authors carried out a simple centroid design using the preference map methodology, where they found that the high acceptance means were for xylitol, stevia and sugar, which were characterized by a sweet taste, with a creamy texture, flavor of strawberry, fermented milk flavor and light pink appearance. In another study with pre-cooked-frozen hamburgers, goat meat, parsley and basil were used, it was through hedonic perception that consumers identified attributes that could be used to optimize hamburger formulations with compounds that increase their functionality. The results show that attributes such as hardness, intense flavor, juiciness, taste, consistency and spiciness were what make the difference between formulations (Díaz, *et al.*, 2017).

In this line, the investigation of the work of Tuorila and Cardello (2002) addresses the responses of consumers to a bad taste in the juice in the presence of specific health claims, the results indicate that the consumption of a functional food will be inversely related to the severity of the bad taste and the required frequency and duration of consumption, in addition that the bad taste is not a positive indicator of benefits related to the health of consumers. This last study originates from the United States and the previous two from Latin American countries.

In the same methodological orientation, referring to analytical studies, is the intercultural study carried out by Vázquez-Araújo *et al.*, (2014), where the preferred characteristics of olive oils from Spanish consumers and the United States were analyzed. Basically, it sought to provide useful information to olive oil producers to design products that meet consumer expectations in both markets; the study was based on the integration of consumer data with descriptive sensory information supported by data Instrumental on color and volatile compounds, the results showed that Spanish consumers were more aware of the quality of olive oil in general than their American counterparts. Other authors (Millán *et al.*, 2010) evaluated the influence of the concentration of papaya and modified starch on the acceptance and texture in a bittersweet borojo sauce, sensory tests of flavor and viscosity were carried out, in addition to texture tests. The results of this research show that the formulation with the highest papaya content presented the highest qualification regarding textural analysis and viscosity in the sensory test, a study carried out in Colombia.

In general, the literature shows that in recent years, sensory analysis has gained relevance in the food industry, but the focus and analyzed products may vary. However, sensory evaluations are an important tool to identify consumers' preferences related to product acceptance. Particularly, the importance of sensory evaluation is related to the attributes that consumers value the most and with the search to reduce the product failure rate in the market. It is important to consider that in the food industry, the senses, such as smell, sight, taste, and organoleptic attributes are all criteria tested to accept or reject products (Sancho, *et al.*, 2002). Some proposals consider the four sensory modalities; however, it is necessary to identify one highlighting sensory modality (Van Andersen, *et al.*, 2019). It

is true that currently there is no definite modality and results may vary depending on the food and context.

Material and Methods

To reach the general objective, empirical research was carried out that was structured in 2 phases. The first phase comprised forming focus groups and the second phase comprised a sensory analysis (only hedonic tasting).

Product selection

Considering traditional foods' increasing demand and looking for market adaptation, the proposal of a traditional dish, such as the casserole, arose. However, the proposal relates to innovation, in a ready-to-eat format. According to Sandoval and Camarena (2015), this casserole is recognized as a proprietary traditional Sonoran product. The labor-intensive preparation and the cost of ingredients, have been identified as a consumption constraint, particularly among the younger population segment (Miranda *et al.*, 2019; Sandoval and Camarena, 2015). The alternative analyzed in this research aims to answer the market needs regarding traditional and healthy food, but of which the preparation is simple, i.e., the casserole is ready-to-eat. The portion is 32 grams of shredded beef, potato, coriander, onion, tomato, salt, and spices, upon which hot water (preferably at boiling point

(100°C) has to be poured, followed by letting it sit for three minutes. The packaging made of Styrofoam and keeps the content warm, and the caloric content is 125 kcal complying with the established Official Mexican Standard NOM-051-SCFI/SSA1-2010 (Figure 1).

Process

Previously, an invitation letter was given to possible consumers with instructions for the experiment, as well as upon arrival at the facilities where the study was conducted, the participants were given oral instructions and indications, and were given a brief to read. In this manner, a complete and correct understanding of the information and process was ensured. A group of people was selected (n= 35) who were traditional food consumers older than 18 years. The participants' information obtained from the focus group and the sensory analysis were analyzed as a group to ensure the participant's anonymity, according to the Law on Personal Data Protection.

The first stage comprised three focus groups carried out simultaneously where in a total of 35 consumers participated. The groups were mixed and formed based on the suitable criteria in accordance with the researcher's established criteria. Participants were distributed to have a balance in age and gender (Table I). It should be noted that the selection of the participants is related to the need

to obtain information as close as possible to a real market situation, where consumers are the ones who buy the product.

The three focus groups were related to lifestyles and consumer insights, knowledge about the casserole dish, purchasing habits, and fast-food consumption. Before the session, participants were given written instructions about the details of the focus group. The moderator then explained the instructions, noting that they were free to express their ideas, as well as complement the comments of other participants. Sessions were audio-recorded and filmed for further analysis. In the end, participants were taken to a different area to perform the sensory evaluation.

The hedonic tasting was performed in a specific room with adequate lighting. Two products with different processes were used, specifically: a) new process techniques (Bigliardi and Galati, 2013) with a brand; and b) traditional, homemade. Both had similar consistency and color to perform the evaluations. While conducting the tasting, participants were asked to sign an informed consent, a document that explained that their participation in the study was entirely voluntary, confidential, and anonymous.

Two evaluations were carried out. The size of the sample was determined by the availability of products, the accessibility of participants, consideration of the criteria concerning the representativeness of the segments by age and gender,

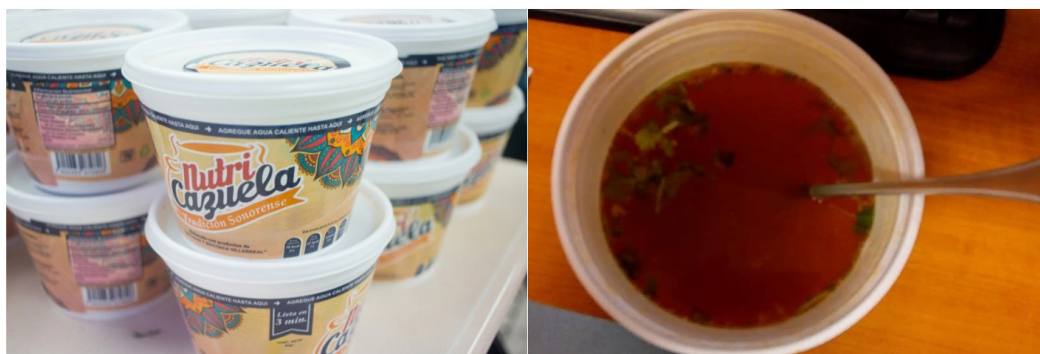


Figure 1. Selected product.

TABLE I
FOCUS GROUP FORMATION

Focus group	Distribution per age range	Distribution	
		Men	Women
1	18–35 (55.4%)	4	8
2	36–55 (22.8%)	3	8
3	56–83 (21.8%)	3	9
Total		10	25

and data acquisition considering theoretical saturation. It is sought that normal, habitual and potential consumers express their preferences between the alternatives, the acceptability and their perception of the evaluated product (Cabana *et al.*, 2015; Alvarado, 1992). One of the evaluations was closed, where in the consumers did not know the products they were tasting. The other was open, where in consumers could identify the innovative product and the traditional one. The aim was to detect notable differences between one taste and the other. Bottled water and bread were offered in between samples. A scoring method was used to evaluate the samples; each defined descriptor (taste, smell, color, texture, aspect, and consistency) was given a numeric score based on a scale. The hedonic scale

used for the evaluations ranged from 0 (I do not like it at all) to 5 (I really like it) (Figure 2).

Data analysis

A discourse analysis was performed in the focus groups, which comprised selecting meaningful conversation segments from the focus group and examining the phrases and words to see how people described their version of experiences, situations, knowledge, etc. (Cowan and McLeod, 2004; Onwuegbuzie *et al.*, 2011).

For the sensory analysis, the results were analyzed using the SPSS software version 21.0, with the one-way ANOVA variance analysis calculated. This statistical analysis was performed to learn whether the distinct opinions

regarding the food were significantly different.

Results

While carrying out the research, each focus group participant performed a sensory analysis of the products. The focus group results on the available “knowledge” category for traditional food identified that the food that everybody knows are dishes related to the region, made using ingredients from the area. Explaining the concept of traditional food, examples that relate to dishes reminding the consumer of something traditional were used, such as grilled meat, menudo, pozole, casserole, meat with chili, flour tortillas, machaca, wheat pozole, tacos, seafood, and cheese broth.

Within the “knowledge” category, the fast-food perception was researched in detail. The immediate associations that were primarily used were unhealthy food, saving time, cheap products, food prepared “with no love,” food that does not need to be cooked, necessary food. Nevertheless, fast food is not considered the same as “junk” food. Despite having healthy ready-to-eat foods, these are indeed regarded as unhealthy when it comes to hamburgers and fries. Regarding ready-to-eat soups, participants mentioned Maruchan, Campbell, Nissin and Knorr multiple times when they were asked about their known options regarding ready-to-eat soups instead of explaining what they are. Regarding traditional ready-to-eat soups, it is perceived that these are sold in supermarkets and specialty stores selling prepared food. Others mentioned restaurants with a delivery service.

Participants from the three focus groups mentioned that nutritious food contains meat, vegetables, and grains. An example mentioned was “full meals that include soup and main dish, that is, food with neither preservatives nor colorants.” When exploring the options of traditional and

nutritious ready-to-eat soups, no product or alternative was mentioned, which proves that a product fulfilling those characteristics “does not exist in consumers’ minds”. This knowledge scale sought to learn the consumer’s perception of a food product prepared innovatively. The most generalized answers were “a product that has something new,” a fast and nutritious food, different from what already exists.

In the “purchasing and consumption habits” category, it was found that the most frequently consumed soups are noodles, chicken broth, vegetable soup, hen soup, and pasta. Regarding consumption away from home, the majority responded that they did not eat them. Among all the participants, only three mentioned having consumed these types of soup away from home, above all when traveling. When investigating the extent to which they find them nutritious, the majority pointed out that it depends on the place of consumption, without giving percentages or proportions. The maximum time they will be willing to wait for a prepared traditional soup is half an hour, and the minimum indicated was eight minutes.

Concerning the “traditional dish and attitudes toward food innovations” dimension, the findings show that not all consumers perceived the idea of traditional food prepared in an innovative manner. After the willingness to pay (WTP) and providing more detailed information, more than half of the participants agreed that the product’s original characteristics could be maintained depending on the process used for its preparation. As examples, they mentioned artisanal products when cold storage was unavailable.

When referring to the traditional dish “casserole,” people aged 56 years and above identified the dish; they even remembered the ingredients used to prepare it in detail. In the 36–55 age range, the participants knew what a casserole is and have tried it once, but

Code _____

In front of you there are samples of instant soups, you must taste them all and evaluate them according to each of the attributes mentioned, on a scale from 1 (I don't like it at all) to 5 (I really like it), in the corresponding box.
Please, do not forget to rinse your mouth after each sample by drinking some water.

Sample N°1 (closed)

Attributes	☹️	😞	😐	😊	😄
Flavor					
Smell					
Color					
Texture					
Appearance					
Consistency					
Comments:					

Figure 2. Evaluation format.

they mentioned that they do not prepare it regularly and that when they do prepare it, they do it more intuitively as they do not know the exact method. In other cases, they mentioned that their lack of time is what limits them from preparing it at home. As for the youngest consumer group (18–35 years), their lack of knowledge of the dish and its ingredients stands out as they do not prepare it. However, these participants have tried the casserole and consider it tasty. The consumption situations of the traditional casserole are linked with childhood, grandparents/parents, memories, town/natural environment, flour tortillas, and ancestors.

When eating the casserole in its fast-food presentation, the attitude, in general, was positive, especially in the youngest group. Even though this age range showed a more significant lack of knowledge of the product and its preparation, they did mention that they would be willing to consume it, considering that it is healthy food; besides, they regularly consume other soups in the ready-to-eat format. Conversely, the 36–55-year-old range would taste it for comfort and for eating something traditional from the region. The age range of people older than 56 was responsive to tasting the soups as long as the traditional flavors were respected. They showed a clear interest in the soup being available in the market so that younger generations can carry on with the tradition of consuming regional dishes. As for the amount they were willing to pay for a product with these characteristics, this ranged from 15 to 50 pesos.

In the last category, the “brand and image valuation” was carried out. In this case, the first brand of ready-to-eat soups mentioned constantly was Maruchan, while the word “Nutricazuela” was associated with casserole, vegetables, nutritious, and soup. When shown the product logo, it was stated that it was confusing; it did not represent something

traditional, reminded participants of coffee, and something youthful. The participants’ attitude to acquire the traditional soup prepared in an innovative manner was positive, and their willingness to pay for it increased, reaching a range of 35–50 pesos per portion.

In general, the focus group results show that the knowledge of traditional food is associated with ingredients from the region. Despite being a traditional food, the casserole is not one of the most recalled products by consumers. The consumers highlighted several elements between innovation and tradition. However, a traditional soup prepared in an innovative manner is an innovative product. Its quick preparation relates to the lack of knowledge and to being a complicated dish to prepare. Likewise, a casserole is a dish that evokes happy memories from the past or nature among consumers. There is a positive

willingness to acquire a soup that fulfills the elements of traditional, nutritious, and easy to consume. Still, the product must have an adequate image and design, enabling it to be easily relatable to those characteristics. Moreover, it was identified that the willingness to pay for a traditional soup prepared in an innovative manner is above the average market price (Table II).

The results show that the higher score is for the casserole’s new flavor (3.42) and taste (3.39). Contrarily, texture and consistency receive the lowest scores, with an average of 2.76 each. For the traditional casserole’s sample, the highest scores are for those attributes related to the new product, such as flavor with an average of 4.45, followed by consistency with 4.34. The attributes with the lowest score are color and appearance, both scoring 4.21. A one-way ANOVA test was performed to ascertain the

differences among the variables and to study the differences with a fixed level of significance simultaneously. Significant differences in the flavor variable were encountered (Table III).

A second open hedonic tasting was performed, wherein the brands of the compared products were disclosed, to ascertain whether a brand influence exists in the consumer’s perception. The findings show that the casserole (prepared in an innovative manner) had lower scores in almost every variable, while the traditional casserole had higher scores. This result means that consumers do not have a good perception of the innovative product. However, the ANOVA does not show significant differences between attributes, except in flavor and smell (Table IV).

The research findings show that focus groups and sensory analysis are two methodologies

TABLE II
RESULTS BY CATEGORY

Knowledge	Purchasing and consumption habits	Traditional dish attitudes toward innovations	Brand and image valuation
Traditional food is prepared with ingredients from the area and is known by everyone.	From the most consumed traditional soups, the casserole was not mentioned.	Not all consumers perceive traditional food with innovation.	The positioned brand in the consumer’s mind is Maruchan.
The casserole is hardly mentioned as traditional food.	Traditional soup consumption away from home is rare, only occurs when traveling.	Traditional food characteristics can be maintained despite innovation.	The brand of the study (Nutricazuela) is associated with the product.
Fast food is associated with unhealthy, something fast, cheap, and prepared with no love.	Traditional soups that are consumed away from home, can be nutritious, depending on where they are consumed.	The casserole is a dish that is mostly identified by consumers older than 36 years.	The product’s design and image do not correspond to traditional food.
Fast food and junk food are not the same.	The waiting time to consume traditional soup ranges from 8 to 30 minutes.	It is a dish that is not frequently prepared at home, due to a lack of knowledge and time.	There’s a positive willingness to acquire a traditional soup with innovation.
The ready-to-eat soup that is most positioned in the consumer’s mind is Maruchan.		The casserole is considered a tasty dish.	WTP increased from 35 to 50 pesos.
Nutritious food includes meat, vegetables, and grains.		The casserole’s consumption is associated with memories, childhood, rural environment, and ancestors.	
Consumers think that traditional soup prepared in an innovative manner does not exist.		There is a willingness to taste the casserole in its ready-to-eat format.	
An innovative food has something new and different from what already exists.		Consumption motivations vary according to the age range.	
		WTP ranges from 15 to 50 pesos.	

TABLE III
ONE-WAY ANOVA RESULTS (CLOSED TASTING)

Variable	ANOVA (P Value)	Casserole (new)	Standard deviation	Casserole (traditional)	Standard deviation Type of
Flavor	0.059**	3.39	1.079	4.45	0.760
Smell	0.728	3.00	1.185	4.26	0.891
Color	0.380	3.42	1.081	4.21	0.905
Texture	0.483	2.76	1.101	4.29	0.732
Appearance	0.591	3.05	1.064	4.21	0.905
Consistency	0.297	2.76	0.971	4.34	0.909

Notes: 5-point scale: 1= I don't like it at all, 5= I really like it. This indicates significant differences between segments at 5%* and 10%**; ANOVA: T-test for equal means, for homogeneous or heterogeneous variances, depending on the Levene test result.

TABLE IV
ONE-WAY ANOVA RESULTS (CLOSED TASTING)

Variable	ANOVA (P Value)	Casserole (new)	Standard deviation	Casserole (traditional)	Standard deviation Type of
Flavor	0.001*	3.11	1.203	4.53	0.762
Smell	0.058**	2.79	1.119	4.16	1.128
Color	0.707	3.16	1.079	4.24	0.852
Texture	0.403	2.66	1.214	4.29	0.956
Appearance	0.180	2.89	1.110	4.08	0.969
Consistency	0.405	2.45	1.132	4.37	0.852

Notes: 5-point scale: 1= I don't like it at all, 5= I really like it. It indicates significant differences between segments at 5%* and 10%**; ANOVA: T-test for equal means, for homogeneous or heterogeneous variances, depending on the Levene test result.

that complement each other and reveal consumer's preferences and perceptions toward a product's attributes. This complement has been demonstrated in the specialized literature (Jiménez, 2014; Guerberiffm *et al.*, 2020; Singh and Seo, 2020).

Focus groups showed that consumers associate nutritious food with a product that includes meat, vegetables, and grains, the first two being central ingredients of the casserole. Moreover, consumers' willingness to acquire a traditional soup with innovation and consider the casserole as a tasty dish may favor the product's purchase. These results match those found by Jones *et al.* (2014), in which the primary motivators to prepare food are related to having a food preparation model, knowing the cooking techniques, and having the time.

Within the focus groups, it was observed that the casserole is a traditional food,

known and consumed, to a greater extent, especially by the older age range group. At the same time, consumers associate the casserole's consumption with memories and traditions; similar results were found by Laureati *et al.* (2006), which show that in the case of the elderly, the primary criteria they associate when selecting food are simple cooking and traditional and sensory aspects.

However, the hedonic test, both open and closed, show that flavor and smell are the most valued attributes by consumers. The flavor variable matches with other studies which identified it as a decisive element. Despite flavor by itself not being the only element that people consider when evaluating food, it is one of the most significant and relevant attributes in the sensory analysis (Adasme *et al.*, 2006; Díaz *et al.*, 2017; Carvalho *et al.*, 2018).

Research shows that smell is closely linked with flavor,

showing differences depending on the product. In this case, smell intensity was not analyzed as Han *et al.* (2019) did, but it was possible to identify it as a relevant element in consumers' decisions. At the same time, it should be considered that smell does not affect further food intake, but it does affect appetite, and it can also direct people toward more healthy options (Morquecho-Campos *et al.*, 2020). These characteristics may sometimes favor traditional food such as the casserole since, in the consumers' minds, it is associated with a healthy and nutritious product.

It is important to highlight that young people are a significant segment. This generation has been characterized by being more concerned about components of food prepared with technology, such as the casserole (Baker and Mazzocco, 2002; Hu *et al.*, 2004). That's why a positive product evaluation is

fundamental in the perception of new and unknown technologies implemented in new foods (Costa-Font *et al.*, 2008; Siegrist, 2008).

Conclusions

This study demonstrates the effective utilization of qualitative consumer testing such as focus group with sensory evaluation when probing the consumer attitudes and acceptance toward traditional food processing. The findings of the focus groups show consumers' preferences towards different aspects of the product (such as price and image), as well as knowledge of the food and motivations for consuming it. The sensory analysis provided preferences for intrinsic characteristics of the products. Without a doubt, the focus group and the sensory analysis are two techniques which complement each other to contribute in obtaining a better understanding of acceptance of innovation in a traditional foodstuff.

When the open tasting is performed where consumers identify and taste the traditional product compared to the innovative one, the results match again, favoring the product without the innovation. In both cases, significant differences were identified in flavor. These results may be associated with previous product knowledge and small food companies' scarce brand positioning.

In general, it was shown that knowledge might influence a product's valuation. Besides, information may vary between the expressed preferences compared to those revealed by the consumer. However, the results show that a traditional product prepared in an innovative manner has market potential. Working on flavor adjustments must always be done considering the target market as there may be variations in flavor preferences, consistency, and smell, among others. In the same way, the image must match the consumer's product expectations so that it can be associated effectively. Undoubtedly, innovation

strategies must consider the target market to adapt accordingly and achieve better product positioning.

Traditions and innovation are complementary trends; if these are integrated with elements related to health and nutrition, the acceptance is more viable. Additionally, this is becoming more relevant as an alternative to be explored by small producers. The demands of modern life influence the time available to prepare and consume food. At the same time, environmental conditions and increased competitiveness lead to creating strategies, such as innovation, that enable companies to remain in the market. Trends show an increased interest in natural foods, without preservatives or artificial colorants, reduced fat and sugar, and products that guarantee more and better health benefits. Hence, companies have promoted food creation that fulfills these characteristics. At the same time, a new trend has arisen, which is getting stronger and revalues traditional products that are tied to a territory, a town, and a culture's identity. In this manner, traditional food has been positioned among consumers' preferences with an increased boost of around 11.8% annually through 2024. This situation favors an opportunity so that entrepreneurs can gain market share. However, innovating involves risk, even more so when it entails traditional food where it can even be contrasted with the very essence of the product.

ETHICAL CONSIDERATIONS

The procedure to recollect data was approved by the Ethics Committee of the Universidad de Sonora on November 12, 2018 (CEI-UNISON 19/2018).

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ERRATA

En el número 2 del vol. 48, 2023 se publicó un ensayo titulado **O ORGANISMO, SUA INDIVIDUALIDADE, E IMPLICAÇÕES PARA A ECOLOGIA** por Lidiane Andressa Cavalcante Uhlmann, Geraldo Mendes dos Santos e Fernando Mayer Pelicice el cual contiene el siguiente error de omisión en la sección de Agradecimientos:

Aparece:

O presente trabalho se originou a partir de dois trabalhos precedentes, sendo uma qualificação de doutorado (“Henry A. Gleason rumo a uma filosofia para a ecologia”, defendida por Fernando M. Pelicice em 2006 pela Universidade Estadual de Maringá) e uma dissertação de mestrado (“Organismo e individualidade biológica: origens, causas e implicações ecológicas”, defendida por Lidiane A. C. Uhlmann em 2019 pela Universidade Federal do Tocantins). Os autores agradecem ao Programa de Pós-Graduação em Biodiversidade, Ecologia e Conservação (PPGBEC) e à Universidade Federal do Tocantins (UFT) por proporcionarem as condições necessárias para a condução desse trabalho. Agradecem também aos docentes Etiene Fabbrin Pires (UFT) e Rafael José Oliveira (UFT) pela revisão e comentários. Durante a elaboração desse trabalho, Lidiane A. C. Uhlmann recebeu bolsa Capes e Fernando M. Pelicice recebeu bolsa de produtividade CNPq.

Se corrige a:

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