

## Purchase meanings and willingness to pay for corn tortillas in Nuevo Leon

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### Abstract

In Mexico, there are few studies on consumer analysis and willingness to pay (WTP) a premium for traditional foods such as tortillas made by hand from local corn. This work aimed to identify the meanings and values associated with the consumption of tortillas and the WTP a premium for specific attributes, in a sample of local consumers. The study was conducted in Monterrey, Nuevo León, in 2021. A survey was designed using Google Forms and applied to 300 consumers, who selected their preferences, the importance of tangible and intangible attributes, the reasons for their willingness to pay, and the WTP in percentages by type of tortillas. Two images and the phrase 'tortillas from local corn from ejidos in the south of Nuevo León' were shown; they were asked to write three words for each stimulus shown. The words were grouped into categories and related to a motivational value and product meaning. A k-proportions test and the Marascuilo procedure were applied to the frequencies. The highest percentages were obtained for the symbolic meaning and the values of tradition and stimulation in the image of the artisanal tortilla compared to the conventional one. The phrase evoked values of universalism and tradition. The variables that influenced the WTP were: promoting diversity (the blue tortilla), being artisanal (all except the yellow tortilla), and being a local product (the yellow tortilla). Using a base price of \$21.00 per kilogram, the WTP was \$25.00 for tortillas with chili and nopal, unlike the blue and yellow tortillas, which showed an 8.3% premium price.

### Keywords:

consumers, human values, traditional food.

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## Introduction

In Mexico, 59 native races of corn have been identified, which are the product of cross-pollination, selection, and free exchange of seeds carried out by farmers, which gives rise to hundreds of local varieties adapted to different biophysical conditions. Several authors have addressed the relationship between corn races and varieties and tortilla quality and their importance in the national diet and the economy of rural families (Appendini *et al.*, 2003; Fernández-Suárez *et al.*, 2013; Hellin *et al.*, 2013; Eakin *et al.*, 2014; Calleja and Basilia, 2016; López-Torres *et al.*, 2016; Boué *et al.*, 2018; Arnés and Astier, 2019).

There are also studies that have characterized the consumer of corn tortillas (Herrera *et al.*, 2010; Espejel-García *et al.*, 2016), in which their preferences (Jaramillo, 2016; Escobedo and Jaramillo, 2019; Luga *et al.*, 2019; Xochipa-Morante *et al.*, 2021) and their WTP (Blare *et al.*, 2020) are identified. These studies have been carried out in the center and south of the country, specifically in Mexico City, State of Mexico, Puebla, Michoacán, and Chiapas, based on identifying sensory attributes and economic valuation tools.

It is essential to analyze the preferences for the different types of tortillas and the meanings that the consumer gives them; consumers not only rely on rational judgments and tangible attributes of the products that are useful to them (utilitarian meanings), but they also use their emotions, intuitions, and intangible attributes (symbolic meanings) (Mouret *et al.*, 2013; Calia *et al.*, 2019; Urdapilleta *et al.*, 2021).

Knowledge of these values is essential for designing revaluation campaigns for this type of food and marketing strategies (Allen, 2001). In recent years, research has been carried out on different traditional foods and some studies on the emotions provoked by eating tortillas (Santiago-Cruz *et al.*, 2021) and perceptions of the tortilla as a traditional food (Sánchez-Vega *et al.*, 2021).

This information is valuable for corn farmers and women who still make artisanal tortillas from native corn since the urban population revalues traditionally produced farm products, and with this, the demand for quality tortillas increases (Ortega-Paczka, 2003). Nuevo León is not a state that is distinguished by its contribution of native corn races, as is the case of Oaxaca, Chiapas, or other states in central and southern Mexico, but it is similar in terms of the marginalization of rural areas, especially the southern region of Nuevo León, which suffers from water scarcity due to prolonged droughts, early frosts, and mountain topography, factors that hinder agricultural activities, limiting regional development.

The metropolitan area of Monterrey (MAM) has 5 003 597 inhabitants, which represents 86.5% of the total population of the state (5 784 442 inhabitants) and comprises 13 of the 51 municipalities of Nuevo León (INEGI, 2021). In the ejidos of La Providencia and La Encantada, located in the municipalities of Galeana and General Zaragoza, respectively, two groups of women who make tortillas in an artisanal way organized to market in the MAM, this event represented the perfect opportunity to corroborate the statements about the revaluation of traditional products from the countryside by urban consumers and the importance of the rural-urban relationship for the dynamism of the diversity of varieties of local corn and their contribution to rural development through the sale of traditional foods, such as corn tortillas.

The objectives of this research were to identify the commonalities of the meanings in tortilla consumers in Nuevo León, to explore the conceptualization associated with tortillas, and to identify the factors that influence the willingness to pay a premium for different types of artisanal tortillas. Commonality indicates the proportion of members of a society who share the meaning of a product (Hirschman, 1981; Bartels and Reinders, 2010; Onwezen and Bartels, 2013; Rodrigues *et al.*, 2015).



## Materials and methods

### Type of research

The present work corresponds to applied research since the results will help make recommendations and design marketing strategies for the actors involved in the production and commercialization of artisanal tortillas; to explanatory research because it will account for the reasons why consumers prefer some types of tortillas and their willingness to pay a premium for them; to mixed methods research because it involved the generation of qualitative and quantitative information.

### Sampling

In July 2021, a survey was designed and applied in Google Forms and disseminated online; first, a pilot test was carried out where respondents were asked about the survey's time, difficulty, and clarity. The final improved version was released between August and December 2021. A non-probabilistic convenience sampling was applied; the survey was disseminated through the women who make artisanal tortillas, and it was distributed to distributors and customers; additionally, it was sent to people who attended agrifood fairs during the years 2019, 2020, and 2021, to visitors to a mobile market and WhatsApp and Facebook groups. A total of 307 consumer responses were obtained, and seven records were deleted, leaving 300.

### Design of information collection instruments

The survey was designed online with the Google Forms tool and included the following sections. In the first section, the differences between conventional and artisanal tortillas were described in order to clarify both terms to the consumer and to avoid problems when answering the survey; they were then asked about the brands of tortillas they buy to identify the type of tortillas they consume. In the fourth section, the consumer indicated how much they agreed with 19 purchase statements.

The fifth section included the level of importance of fourteen tangible and eight intangible attributes; subsequently, they were asked about the liking of seven tangible attributes for conventional and traditional tortillas, which were divided into four types: blue or black, white or yellow, with chili and with nopal.

In the sixth section, the willingness to pay a premium for each type of artisanal tortilla was evaluated; the price paid by the consumer for a kilogram of conventional tortilla was considered as a base; subsequently, the consumer evaluated 10 reasons why they would be willing to pay a surplus for artisanal tortillas. The seventh section referred to the consumer's conceptualization of tortillas. In the ninth section, sociodemographic data of the consumer were collected.

### Conceptual analysis

To identify the meanings and symbolism that consumers evoke about tortillas, the method of free word association was used (Elliott, 1994), where three stimuli were shown: an image of conventional tortillas, an image of artisanal tortillas, and the phrase 'tortillas from local corn from ejidos in southern Nuevo León' in order for the consumer to write three words or ideas evoked when observing each stimulus (Figure 1 and 2).



Figure 1. Image of conventional tortillas used in the survey as a visual stimulus.



Figure 2. Image of artisanal tortillas used in the survey as a visual stimulus.



Phrases that expressed different things were reduced to words, and these were grouped into subcategories, then into categories, and into their product meaning (Allen, 2001). For example, 'the tortillas that my grandmother makes for us are delicious' refers to three different categories: 'delicious' implies satisfaction, 'tortillas' implies food, and 'grandmother' implies family longing, so the motivational values and product meanings differed for each word. Nevertheless, when the phrase expressed a single idea such as 'farmers who work hard to survive', it was left complete since it refers to the rural population, with assignation to the category of rurality, the motivational value of which is tradition and its product meaning is symbolic.

### Economic valuation

For the economic valuation of the artisanal tortilla, the declared preference method was used under the contingent valuation method. The contingent valuation method uses the survey to directly ask a sample of the population how much they value a good; the results of the survey represented a hypothetical market, where the question to the interviewee was whether the maximum willingness to pay would be equal, higher, or lower than a given amount of money (Riera, 1994). In this study, different percentages of premium price were used depending on the type of tortilla (0, 5, 10, 20, 30, and >50%). The price paid by the consumer for a kilogram of conventional tortillas was considered the base; subsequently, the consumer evaluated 10 reasons why they would be willing to pay a surplus for artisanal tortillas.

## Statistical analysis

The information collected was downloaded in CSV format, reviewed, sorted, corrected (spelling errors and deletion of records), and categorized in an Excel spreadsheet. It was then analyzed with the help of the Xlstat version 2022.1.2 Program. For the purchase meanings, the K-proportions test was applied with the  $X^2$  test statistic ( $p \leq 0.05$ ) and the Marascuilo procedure to group and differentiate the proportions of each category. The results were analyzed and presented using the sensory wheel to facilitate the comparison of commonalities between the three stimuli.

To know the willingness to pay for the four types of artisanal tortillas (yellow, blue, with nopal, and with chili), the average number of people who were willing to pay a premium of 0, 5, 10, 20, 30, and >50% was calculated; subsequently, a K-proportions test was carried out in order to know if there is a difference between the tortillas evaluated in each percentage of WTP.

To know the reasons why consumers are willing to pay, a binomial logistic regression was applied, using as independent variables the sociodemographic characteristics, the ratings of the 19 purchase statements, the ratings of the degree of importance for 14 tangible attributes and eight intangible attributes, and the evaluation of the 10 reasons why these consumers would be willing to pay a premium for artisanal tortillas. The data generated were processed with a Logit model, estimated by maximum likelihood (Jaramillo *et al.*, 2018)

## Results and discussion

### Purchase meanings and conceptual analysis in consumers of corn tortillas

Of the words evoked by consumers, a total of 2 336 records were compiled, of which 781 corresponded to the image of conventional tortillas, 817 to the image of artisanal tortillas, and 738 to the phrase referring to tortillas from ejidos of Nuevo León. These records are not equivalent to single words because there were variations in the words, for example, yellow (feminine singular form), yellows (feminine plural form), and yellow (masculine singular form), so we speak of records and not of the number of different words. Table 1 shows examples of words and their classification into categories of meanings.

**Table 1. Classification of words expressed by tortilla consumers in Nuevo León and categories of meanings.**

Product meaning	Motivational value	Category	Words or ideas	No. of records
Symbolic	Stimulation	Authenticity	Distinction, novelty, original, etc.	133
Symbolic	Stimulation	Emotions	Joy, love, longing, confusion, etc.	15
Symbolic	Hedonism	Satisfaction	Pleasant, delicious, tasty, etc.	243
Symbolic	Tradition	Family longing	Grandmother, ancestors, memories, etc.	59
Symbolic	Tradition	Ways of preparation	Metate, mill, nixtamal, etc.	103
Symbolic	Tradition	Identity	Native, landrace, from my land, etc.	119
Symbolic	Tradition	Rurality	Artisans, peasants, poverty, etc.	111
Symbolic	Tradition	Traditional	Ancestral, custom, culture, etc.	96

Product meaning	Motivational value	Category	Words or ideas	No. of records
Utilitarian	NA	Tangible attributes	Smell, blue, hot, flavor, etc.	299
Utilitarian	Benevolence	Wellbeing	Benefit, fair pay, progress, etc.	25
Utilitarian	Safety	Accessibility	Cheap, available, express, etc.	76
Utilitarian	Safety	Foods	Appetizer, appetite, barbacoa, etc.	470
Utilitarian	Safety	Quality attributes	Clean, reliable, fresh, etc.	119
Utilitarian	Safety	Industrial	Artificial, glyphosates, factory, etc.	109
Utilitarian	Safety	Health	Harmless, natural, vitamins, etc.	183
Utilitarian	Universalism	Protecting others	Support, help, charity, etc.	87
Utilitarian/ symbolic	Conformity and previous	Negative attributes*	Expired, exploitation, fraud, hypocrisy, etc.	89
Total	7	17		2 336

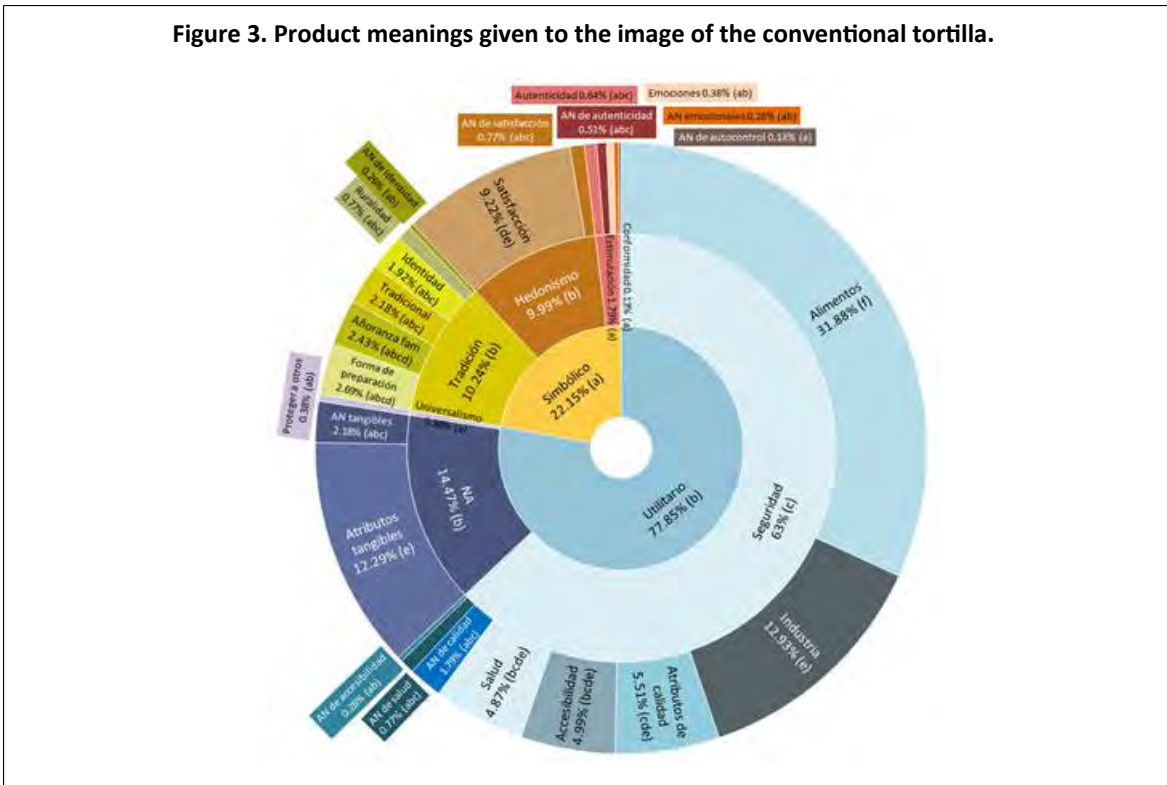
\* = to perform the statistical analyses and the three-level sensory wheels, the negative attributes (NA) were separated according to the category to which they belong because they cannot be classified under the same motivational value and meaning, for example, the word 'expired' corresponds to a negative attribute of quality, while the word 'fraud' is a negative attribute of authenticity, so each one has a different product meaning.

### Commonalities for the conventional tortilla

In the case of the image of conventional tortillas, the  $X^2$  test for the analysis of k proportions of the different categories, motivational values, and meanings of the product were significant ( $p \leq 0.05$ ), this suggests a difference between their commonalities, where the highest categories in this measurement were: food, industry, tangible attributes, and satisfaction. Through language, it can be inferred that the motivation values of the people surveyed were the safety they perceived in the conventional tortilla, as they gave a utilitarian meaning to the product (Figure 3).



Figure 3. Product meanings given to the image of the conventional tortilla.



### Commonalities for the artisanal tortilla

Regarding the image of artisanal tortillas, the  $X^2$  test for the analysis of k proportions was significant ( $p \neq 0.05$ ), suggesting a difference between their commonalities. The categories that showed the highest proportions were: food, tangible attributes, authenticity, and satisfaction; with this, it is inferred that the motivational values of the consumers of artisanal tortillas were safety and tradition; in terms of the meaning of the product, although the utilitarian dimension predominated, the symbolic part is also significant.

In this case, the values of stimulation and tradition were of great relevance in the artisanal tortilla, and although the safety value decreased, the percentage for the health category increased almost twice compared to the information obtained from the image of conventional tortillas (Figure 4).



Figure 4 Product meanings given to the artisan tortilla.



## Commonalities for tortillas from local corn from ejidos in southern Nuevo León

For the phrase 'tortillas from local corn from ejidos of southern Nuevo León', the  $X^2$  test for the analysis of k proportions of the word categories was significant ( $p \neq 0.05$ ); this shows the difference in terms of evocation and conceptualization. The categories that showed the highest commonality were: satisfaction, protecting others, rurality, health, and identity. These consumers were motivated by values of safety, tradition, hedonism, and universalism, which gave the product utilitarian and symbolic meaning since their percentages were very close. The commonalities of the categories mentioned above indicate that, of the sample of consumers, between 9 and 11 people out of 100 had a shared meaning concept for this stimulus (Figure 5).





Figure 5 . Commonalities given to the phrase ‘tortillas from local corn from ejidos in the south of Nuevo León’.



The results showed that consumers in Nuevo León perceive the artisanal tortilla as a traditional food, where the motivational value of tradition represents 29% and 24%, respectively, according to whether or not they originated from ejidos of the state. This coincides with the four dimensions that define a traditional product, according to European consumers (Warrior *et al.*, 2009): a) ‘habit’ because the tortilla has been consumed since the past and is part of the daily life of Mexicans and ‘natural’ because this type of tortilla is perceived as healthy, homemade, without industrial manipulation or additives; b) ‘origin and locality’ because it comes from ejidos in the south of Nuevo León; c) ‘processing and making’ because they are made by hand with native or landrace corn under the nixtamalization technique; and d) ‘sensory properties’, color and flavor were the most frequently mentioned; if we compare them with the categories of traditional, health, identity, way of preparation and tangible attributes, they together represent 46%.

The artisanal tortilla is innovative according to the perception of the respondents because it meets the dimensions of the concept of innovation of traditional foods by (Guerrero *et al.*, 2009); this can be explained by the fact that 79.6% of respondents have only consumed conventional or industrial tortillas, so when they found out that in Nuevo León there are artisanal tortillas made with local corn they were surprised, as an example we have 11% in the category of ‘authenticity’ with words such as novelty, original, striking, special, exotic, different, diversity, variety, curiosity, indigenous, among others.

Therefore, the dimensions of ‘novelty and change’, ‘variety’, and ‘origin and ethnicity’ are met. For the urban consumer, the tortillas analyzed represent an alternative to return to the origin, to the natural, and this makes it be perceived as an innovative product, mainly in view of the high industrialization of corn and the production of homogeneous and industrial tortillas. These data showed that consumers in urban areas identify with traditional foods such as tortillas and associate them with authentic and quality products.

As for the dimension of ‘processing and technology’, artisanal tortillas have undergone changes in the way they are made since the metate was used before, and this product was formed with the hands. Now, it is a semi-mechanical process because they use electric mills and metal or wooden

presses, and some women use a gas stove and steel griddle instead of a wood-fired oven and a clay comal.

However, local corn is used in all cases; the corn is cooked in water with lime (nixtamalization), and the balls are made by hand, so, despite resorting to technology to facilitate part of the work for women, the tortilla retains its nutritional properties and its tradition. Finally, the dimension of 'convenience' also applies to this case since these tortillas can be frozen to increase their shelf life and make life easier for urban consumers.

Know-how is a determining factor in classifying a food within the category of traditional; know-how is a combination of the ingredients used in making tortillas and the culture that gives rise to the diversity of foods and processes that differentiate foods sensorially.

### Willingness to pay (WTP) a premium for artisanal tortilla and factors influencing that decision

Regarding the WTP, respondents were asked how much they currently pay for a kilogram of tortillas and about the reference price, they were asked about their willingness to pay a premium for the four types of artisanal tortillas (blue, white, with chili, and with nopal) made in the south of Nuevo León. The results indicate that the average cost of a kilogram of tortilla is \$21.00 Mexican pesos, and the highest willingness to pay a premium was for the blue tortilla, with 72% (Table 2).

The data suggest that a higher average percentage is willing to pay a surplus associated mainly with the color of the tortilla and the addition of ingredients typical of the Mexican culture, such as chili and nopal; with these results, it was appreciated that the consumer values tortillas made from colored corn or with some ingredient associated with the culture and that contribute to improving their health.

**Table 2. Percentage of consumers who are willing to pay a premium for different types of artisanal tortillas.**

Type of tortilla	Not willing to pay	Willing to pay
Blue, purple, or black	28	72
White or yellow	29.67	70.33
With chili	35.67	64.33
With nopal	36	64

When making the comparison of k proportions by tortilla type for each percentage of WTP, no significant differences ( $p \leq 0.05$ ) were found, except for WTP #50%. The tortilla added with nopal is the one for which they would pay the least compared to the others. The white or yellow tortilla is the one that showed the highest percentage in the WTP with premium prices of 5, 20, and 30%; nonetheless, 21.6% of consumers would pay between 5 and 30% more for all four types of tortillas.

It is noteworthy that the willingness to pay a premium of 50% or more was higher in dark corn tortillas (39.6%), which suggests an area of opportunity in terms of the commercialization of blue, purple, or black tortillas (Table 3). The results show significant differences associated with consumption by type of tortilla, mainly in the highest percentage of WTP, which is # 50%. This suggests a process of reevaluation of emblematic foods such as tortillas by consumers.

**Table 3. Percentages of consumers willing to pay different percentages of premium price depending on the type of tortilla.**

Type of tortilla	WTP 0%	WTP 5%	WTP 10%	WTP 20%	WTP 30%	WTP# 50%
Blue, purple, or black	21.65 a	23.94 a	28.09 a	26.35 a	23.93 a	39.62 b

Type of tortilla	WTP 0%	WTP 5%	WTP 10%	WTP 20%	WTP 30%	WTP# 50%
White or yellow	22.94 a	28.57 a	21.7 a	27.03 a	27.35 a	26.42 ab
With chili	27.58 a	25.48 a	24.26 a	21.62 a	22.22 a	22.64 ab
With nopal	27.84 a	22.01 a	25.96 a	25 a	26.5 a	11.32 a

Proportions with the same letter in each column are statistically equal or non-significant ( $p \leq 0.05$ ). WTP= willingness to pay a premium.

The results of the logistic regressions obtained with the Logit model indicate the independent factors or variables that were significant ( $p \leq 0.05$ ) and that influenced the decision of consumers to pay a premium, which were income, sensory attributes, and the fact of being artisanal. Although significant, the variables with a negative sign indicate that they were not important to the consumer because they took them for granted or were indifferent, so they did not affect the WTP.

For the blue tortilla, the promotion of the use and diversity of local corn influenced the WTP a premium. When averaging the percentages of the marginal effect, a premium price of 8.3% was obtained, equivalent to \$22.70 per kilogram (Table 4).

**Table 4. Econometric model of the WTP for blue tortilla  $p \leq 0.05$ .**

Variables	Marginal effect	Standard error	Pr >  z	-2 Log (Likelihood)
Income	0.077	0.019	<0.0001	$X^2 = 88.72$ DF= 7
ReasonWTPSensoryProp*	0.099	0.023	<0.0001	Pr> $X^2 = <0.0001$
StatemUseCornNL**	0.062	0.023	0.003	
ImportaColor	-0.117	0.032	1	
ImportaTraditional	-0.086	0.043	0.977	
ImportaArtisanal	0.105	0.042	0.006	
LikeBlueSmell	0.035	0.012	0.002	

\* = because I like its sensory properties; \*\* = my purchase decision is based on the fact that these tortillas promote the use and diversity of Nuevo Leon corn.

As for the yellow tortilla, it is important that it is a local product. The average marginal effect percentages were also 8.3%, indicating that respondents would be willing to pay up to \$22.70 for a kilogram of this tortilla (Table 5).

**Table 5. Econometric model of the WTP for yellow tortilla  $p \leq 0.05$ .**

Variables	Marginal effect	Standard error	Pr >  z	-2 Log (Likelihood)
Sex	-0.12	0.058	0.981	$X^2 = 37.45$ DF= 4
Income	0.087	0.021	<0.0001	Pr> $X^2 = <0.0001$
StatemSuperiorFlavor	0.067	0.023	0.002	
ImportaLocalProduct	0.059	0.027	0.014	

In the case of the tortilla with chili, consistency and the other variables with a positive sign showed influence. These consumers are willing to pay up to 21.6% more; that is, up to \$25.50 per kilogram (Table 6).

**Table 6. Econometric model of the WTP for tortilla with chili  $p \leq 0.05$ .**

Variables	Marginal effect	Standard error	Pr >  z	-2 Log (Likelihood)
Sex	-0.203	0.064	0.999	$X^2 = 88.81$ DF= 8
Income	0.101	0.025	<0.0001	Pr> $X^2 = <0.0001$

Variables	Marginal effect	Standard error	Pr >  z	-2 Log (Likelihood)
ReasonWTPSensoryProp	0.102	0.027	<0.0001	
ImportaLabel	-0.069	0.03	0.988	
ImportaTraditional	-0.139	0.049	0.998	
ImportaArtisanal	0.192	0.048	<0.0001	
LikeRedConsistency	0.489	0.147	0	
LikeRedThickness	-0.436	0.146	0.999	

Finally, for the tortilla with nopal, the flavor showed influence. The rest of the variables led to a WTP a premium of 19.4%, so they would be willing to pay up to \$25.07 for a kilogram of these (Table 7).

**Table 7. Econometric model of WTP for tortilla with nopal  $p \leq 0.05$ .**

Variables	Marginal effect	Standard error	Pr >  z	-2 Log (Likelihood)
Income	0.074	0.022	0	$\chi^2 = 108.8$ DF= 6
Reason	0.103	0.026	<0.0001	Pr> $\chi^2 = <0.0001$
WTPSensoryProp				
ImportaSize	-0.091	0.033	0.997	
ImportaArtisanal	0.108	0.033	0.001	
LikeGreenSmell	-0.344	0.148	0.99	
LikeGreenFlavor	0.442	0.148	0.001	

It was expected that the variables of intangible attributes such as the importance of it being a traditional, natural, and beneficial product for health, produced by small rural farmers of low resources, under environmentally friendly agriculture, through the sustainable use and conservation of biodiversity would influence the WTP, but this was not the case; these results are different from those reported by Jaramillo (2016), who found that the reasons for acquiring organic tortillas are concern for health and care for the environment.

From his study, a WTP of 16% more for organic tortillas in consumers in Puebla can be highlighted; age and sex were not statistically significant. Authors cited by Blare *et al.* (2020) indicate that sex, age, whether they are parents of a young child, education level, and income are essential in the decision to consume nutritious, organic, and specialized foods and their WTP.

Of the variables studied, in the present study, income influenced the WTP in the four types of tortillas (the higher the income, the higher the WTP), which coincides with what was reported by Jaramillo (2016); Blare *et al.* (2020).

The results of Blare *et al.* (2020) indicate that consumers preferred the sensory attributes of the blue tortilla over the white tortillas, and the blue tortilla had higher WTP when they went out to eat but not to consume it at home; this showed that the way a food is used affects its choice and WTP. They consider that the estimates could be lower in regions of the country where blue corn is less rooted in culinary traditions, so it is suggested that this type of research be carried out in different regions of Mexico.

## Conclusions

Consumers perceived conventional and artisanal tortillas differently as they associated the former with food and industry, while the latter with health and authenticity; this was reflected in a greater symbolic meaning. The phrase 'tortillas from local corn from ejidos in the south of Nuevo León' differed from the other two stimuli because of the motivational value of universalism.

The motivational values of safety, tradition, stimulation, and universalism can be used in marketing strategies to promote artisanal tortillas, emphasizing health benefits, rural origin, benefits for small producers, and authenticity.

The variables with the greatest influence on WTP were income (in all four types), smell, flavor, and consistency (depending on the type of tortilla); because it promotes the use and diversity of Nuevo León corn (blue), because it is important that it is a local product (yellow); and because it is important that it is artisanal (blue, with chili, and with nopal). Tortillas with chili and nopal showed a premium of 21.6% and 19.4%, respectively, over a base price of \$21.00 per kilogram of tortilla; that is, approximately \$25.00, unlike the blue and yellow tortillas which only showed an 8.3% premium price.

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