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Factors associated with the consumption of traditional foods in central Mexico

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Abstract

Purpose – The purpose of this paper is to identify the factors associated with the consumption of traditional foods (TFs) in central Mexico.
Design/methodology/approach – A total of 512 surveys were applied to consumers in central Mexico. The survey included a free word association with TF and an example, the food choice questionnaire, and the sociodemographic characteristics of respondents. A binary logistic regression was carried out comparing regular TF consumers with non-regular TF consumers.
Findings – Men tend to eat TFs in more regular way than women. People with heavier consumption habits associate TF with "authenticity/way of doing", "origin" and "habit", which are reinforced both by TF examples and the FCQ variables. Foods considered traditional were classified as cooked (elaborated under specific recipes of gastronomic heritage) and uncooked. Both groups comprise central foods, basic in the Mexican diet, in which maize, chili and beans are outstanding.
Research limitations/implications – The study did not comprehend the whole country and not consider specific food categories.
Practical implications – Provides important information on the factors that drive consumption of TFs in Mexico, information that may be useful in valorisation processes.
Social implications – Results may support the commercialisation of these foods, and lead to an improvement in the livelihoods of producers of TFs.
Originality/value – In Mexico, the study of consumers has not been addressed. Therefore, this is a pioneer study that documents the factors associated with the consumption of TFs.

Keywords Mexico, Traditional food, Binary logistic regression, Meanings

Paper type Research paper

1. Introduction

There is increasing recognition of the need to integrate consumers information into agri-food chains to offer products according to the clients' wishes and needs (Braziotis *et al.*, 2013). This generates benefits for all stakeholders. Although people are widely diverse and have varied tastes in agro-industry there is generalised concern among the consumers about the integrity and quality of the foods (Wu *et al.*, 2015). Nevertheless, quality encompasses broad aspects that range from the products' characteristics to production systems.

Among the latter, studies point at the consumers' interest in environmentally friendly production, respect for animal welfare, and the origin of products and authenticity as

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quality enhancers (Guerrero *et al.*, 2010; Doherty *et al.*, 2015). Traditional foods (TFs) are deemed highly important regarding origin and authenticity.

In this sense, the perspective from consumers on TF is interesting towards their valorisation, and subsequent commercialisation of these foods. Guerrero *et al.* (2009, p. 348) based on the perception of European consumers defined TF as: "A product frequently consumed or associated with specific celebrations and/or seasons, normally transmitted from one generation to another, made accurately in a specific way according to the gastronomic heritage, with little or no processing/manipulation, distinguished and known because of its sensory properties and associated with a certain local area, region or country".

Other work related to TF and consumers delve in topics as food risks (Tajkarimi *et al.*, 2013; Adeyeye, 2016); the influence of consumers' characteristics and perceptions on their purchases (Almli *et al.*, 2011; Cacciolatti *et al.*, 2015); new technologies and innovations (Vanhonacker *et al.*, 2013; Guerrero *et al.*, 2016); their relation with health (Pieniak *et al.*, 2013; Tanuwidjaja *et al.*, 2016); and, their relation with the territorial context (Stolzenbach *et al.*, 2013).

This latter aspect is of great relevance for the European Union (Trichopoulou *et al.*, 2006), which has promulgated abundant legislation on these foods, for instance protected designation of origin, protected geographical indication and traditional specialities guaranteed among others (Tosato, 2013).

The growing interest in studying TF from the standpoint of consumers has produced works in the context of European countries such as Belgium, France, Italy, Norway, Poland and Spain (Guerrero *et al.*, 2010; Cotillon *et al.*, 2013; Vanhonacker *et al.*, 2013). Also in Germany (Sidali and Hemmerling, 2014), the UK (Cacciolatti *et al.*, 2015), Denmark (Stolzenbach *et al.*, 2013), Croatia and Austria (Cerjak *et al.*, 2014).

Also, some works have been carried out in North America, particularly in Canada (Laberge Gaudin *et al.*, 2015). Nevertheless studies in developing regions are very incipient, some Asian (Hovsepyan *et al.*, 2016) and Latin American works are noted (Camarena-Gómez *et al.*, 2011; Espejel-Blanco *et al.*, 2014; Hidalgo-Milpa *et al.*, 2016).

Works on TF in these regions are necessary due both to their economic development as well as the demographic and sociocultural changes exhibited by developing economies, propitiating a better quality of life for all social classes (World Bank, 2015), as in the case of Mexico, where some welfare indicators have improved in recent decades (OCDE, 2015).

Mexico is one of the strongest Latin American emerging economies, in which agri-food industry plays an important role in the economic sector, in spite of only contributing with 8.2 per cent of the national GDP (INEGI, 2017b). Nowadays, the importance of the agri-food sector goes beyond the mere economic aspects, of nutritional and national security, where elements such as culture become relevant. An example is the recognition of Traditional Mexican Cuisine in UNESCO's (2010) list of intangible cultural heritage of humanity, which has prompted the policy for the promotion of national gastronomy by the Mexican government (SECTUR and SHCP, 2014). The objective is to support the production emblematic foods from the Mexican cuisine, given their importance in social cohesion, and regional and national identity, where consumers are essential to drive the production of these foods.

Although some studies on food consumption from the consumers' perspective have been undertaken in Mexico (Díaz Víquez *et al.*, 2015; Espinoza-Ortega *et al.*, 2016; Escobar-López *et al.*, 2017), the approach to TF consumption is limited. There is research by Camarena-Gómez *et al.* (2011) and Espejel-Blanco *et al.* (2014) that studied TF consumption in northern Mexico, and Hidalgo-Milpa *et al.* (2016) in central Mexico, who studied TF consumers focused on Mexican fresh cheeses. It is, therefore, necessary to contribute to the study of TF from various standpoints.

The objective of the present study was to identify the factors associated with the consumption of TFs in Central Mexico.

2. Methodology

2.1 Information gathering and sample description

Information was obtained in Central Mexico. The selected cities were the four main capital cities: Mexico City, Puebla, Guadalajara and Toluca. A total of 512 surveys were applied to consumers, following convenience sampling by equal shares. In emerging economies, such as Mexico, traditional markets and supermarkets are the main commercial outlets to purchase food (Suryadarma *et al.*, 2010). Rahadi *et al.* (2015) established that traditional markets are places where consumers acquire various products from food and household items to garments.

The consumers were interviewed face to face and applied to people over 18 years old, as it was considered that individuals under this age still depend heavily on their parents' food choice (Agriculture and Agri Food Canada, 2012). The socio-demographic characteristics of the sample are presented in Table I.

The survey was omnibus type divided into three sections. According to objectives of the study, the first section of the questionnaire embraced TF buying habits, which only considered consumption place; it was followed by a top-of-mind question to express what TF mean for the respondent in a single word (Guerrero *et al.*, 2010); and to provide an example of TF. Word association is a projective technique that allows a myriad of associations that disclose consumers' beliefs or attitudes (Cerjak *et al.*, 2014). These two variables were string type and to process them, links of words were formed, codified and used as multinomial variables. This way of identifying aspects related whit concept of the TF.

The second section was inspired by the Food Choice Questionnaire (FCQ) (Steptoe *et al.*, 1995); it consisted of nine variables: weight control; sensory attractiveness; natural/industrial contents; price; health; familiarity; ethical issues; convenience/practicality; mood. Three questions were made for each variable, the questions were answered in a five-point Likert scale: 1 for never and 5 for always. The FCQ has been widely utilised to identify consumer perceptions associated with food selection when buying (Sánchez and Barrena, 2004; Almli *et al.*, 2011; Wang *et al.*, 2015). Finally, the third section considered the sociodemographic characteristics of respondents (Fotopoulos *et al.*, 2009).

2.2 Statistical analysis

In line with the stated objective and in view of identifying the most determining factors associated with the consumption of TF in Mexico, a binary logistic regression was carried out.

Variable	Value (%)
Gender	
Man	43.4
Woman	56.6
Education level	
None/elementary	14.3
Secondary/high school	48.0
University	37.7
Age	
18–25	23.6
26–35	21.9
36–45	21.1
46–55	17.4
56 and older	16.0

Table I. Sociodemographic characteristics of respondents

The sample was divided in two groups (G_i = groups). The first comprised respondents who always or almost always eat TF, it was called "frequent, usual or regular TF consumers" ($G_i = 1$). The second group was composed of individuals who stated eating TF sometimes or almost never; they were called "non-frequent or non-regular TF consumers" ($G_i = 0$). Of the respondents, only five gave a negative answer to consuming TFs, so they were suppressed from the model. In the end, the group of regular consumers comprised 202 respondents and that of non-regular consumers, 305 respondents. This division of consumers according to their buying habits followed Sepúlveda *et al.* (2008).

It is assumed that P_i measures the probability of a respondent to be a regular consumer of TF ($G_i = 1$), while $1-P_1$ measures the probability of the respondent to be a non-regular consumer of TF ($G_i = 0$). According to Sepúlveda *et al.* (2008), in the binary logistic regression, probability is defined as follows:

$$P_i = Prob(G_i = 1) = 1/\left(1-e^{-Z_i}\right). \tag{1}$$

While the probability of observing $G_i = 0$ would be expressed as:

$$1-P_i = Prob(G_i = 0) = 1-1/\left(1-e^{-Z_i}\right). \tag{2}$$

The *Prob* of observing $G_i = 1$ in relation to observing $G_i = 0$ can be established by means of the expression:

$$1/\left(1-e^{-Z_i}\right)/\left(1-1/\left(1-e^{-Z_i}\right)\right) = e^{Z_i}. \tag{3}$$

Applying Ln in (3), it becomes:

$$\mathrm{Ln}\left(e^{Z_i}\right) = Z_i,$$

where $Z_i = B_o+B_1X_{1i}+B_2X_{2i}+\ldots+B_jX_{ji}$ is the expression of a multiple linear regression model; where B_o is the constant of the model, and B_j is the estimated parameter for each explanatory variable Xj.

In the binary logistic regression, each estimated B_j corresponds to the partial derivative of e^{Zi} with respect to X_j. Consequently the sign of each B_j indicates if the probability of observing $G = 1$ (regular consumer) in relation to observing G = 0 (non-regular consumer) increases or decreases as the variable X_j associated with each estimated B_j increases in one unit.

Gender, educational level, and age were included in the model as independent variables. According to Fotopoulos *et al.* (2009), these socioeconomics variables are generally associated with food choice. Even though income level is a variable that necessarily conditions purchases, it was not included in the present study as it exhibited a high percentage of missing data (more than 28 per cent). As for buying habits, consumption inside and outside the household was considered, because in urban areas people use their time commuting, which implies eating out more often (García, 2012). Likewise, the then TF meanings included in the model were the result of generating semantic fields out of the 179 different words obtained from "Top of mind" replies. The words were grouped following Guerrero *et al.* (2010) (Table III).

Only five of the 27 items from the FCQ were included in the model: frequently consume the same dish; buy ecological foods; prefer regional products; search for foods rich in nutrients and vitamins; and food is nowadays the same as during the respondent's childhood.

The remaining 22 items were not included due to the following two reasons. First, previous bivariate analyses were performed among the items and the grouping variable (G_i), where only the five selected items out of the total 27 items of the FCQ were significant in the

U Mann-Whitney test ($p \leqslant 0.05$). Second, if all were included there would be problems of multicollinearity.

The latter could have been solved with a factorial analysis including factors obtained from the model. However, previous factor analyses showed that none of the five items was determinant in discriminating between the two groups ($G_i = 1$ and $G_i = 0$). This is in agreement with the results of the bivariate analyses previously undertaken with the 27 items of the FCQ.

Regarding TF, the top 10 of the most frequently mentioned food products mainly comprised traditional dishes (Table IV): mole, pozole, chiles rellenos, tortas ahogadas, tortillas, tacos and enchiladas. Less frequently mentioned were unprocessed foods as beans, nopal (Opuntia cactus), and chicken. Mole was taken as TF base level. The variables considered in the model are shown in Table II.

Model parameters were defined by the maximum likelihood method including all variables in the same set using the statistical software SPSS V 21.0. As goodness of measures for the model, Nagelkerke's R^2, Hosmer-Lemes how test and the classification table were used. The most significant variables of the model were determined by Wald's test (Jiménez and Manzano, 2005).

3. Results and discussion

3.1 Resulting semantic fields

Mentally working with abstract concepts is harder than working with objects or actions (Prabhu, 1987). However, consumers had a clear idea of "traditional", as mentioned by Guerrero *et al.* (2010), owing to the familiarity and emotional values associated with words such as "traditional food". The respondents mentioned 179 words, with which 12 fields were generated. These were named after the grouped words. In total, 11 fields were included into the model. The field not considered was "other" as it did not have a reduced number of words and had nothing to do with the other fields (Table III).

The formation of semantic fields followed Guerrero *et al.* (2010) whose in the field for "preparation of foods" include: laborious, made by hand and made at home. These represent an intrinsic part of food identity and the know-how, which when transmitted from one generation to the next one makes them TFs (Díaz-Méndez, 2005).

Culture and enjoyment were two main issues that respondents linked to TF, with origin and habit following in importance. These four items cover 67.5 per cent of the semantic fields. Therefore, in the case of central Mexico from the consumer perspectives, TF are perceived as foods connected to an identity, a history and with defined organoleptic characteristics, linked to a geographic origin and consumed regularly.

These aspects are related with the four dimensions identified by (Guerrero *et al.*, 2010) from pan-European consumers: "habits and natural"; origin and locality; processing and elaboration, and sensory properties.

The difference between both groups seems to be that one group gives importance to cultural aspects and the other one to the process of manufacture.

Díaz-Méndez (2005) states that through history, each society develops eating characteristics based on cultural components, as is the example of common foods, practices in relation to their preparation as well as the time and place for consumption, issues that gradually constitute a TF.

3.2 Top 10 of TFs

In total 74 different foods were mentioned, of which 40 were dishes, i.e. cooked foods, and 34 unprocessed foods. We only considered those with at least 15 mentions, which became ten foods accounting for 68.8 per cent of the sample (Table IV).

Variable		Description
Sociodemographic	Gender	0 = Man 1 = Woman
	Education level (1)	0 = Elementary/none 1 = Secondary/high school
	Education level (2)	0 = Elementary/none 1 = University
	Age	Continuous variable that indicates the age in years of the respondent
TF buying habits	Place of TF consumption	0 = At home 1 = Outside home
"Top of Mind" meaning of TF	Quality	0 = Better quality
	Authentic/way of doing	1 = Authentic food and way of doing
	Longing	1 = Longing
	Special dates	1 = Special dates
	Enjoyment	1 = Enjoyment
	Habit	1 = Habit
	Basic	1 = Basic
	Origin	1 = Origin
	Healthy	1 = Healthy
	Non-healthy	1 = Non-healthy
	Culture	1 = Culture
FCQ	Same dish	Discrete variable that indicates if the same sort of dish is frequently consumed
	AMA	Discrete variable that indicates if environmentally-friendly foods are bought
	Region	Discrete variable that indicates if regional products are preferred
	Nutrients	Discrete variable that indicates if foods rich in nutrients and vitamins are sought
	Longing	Discrete variable that indicates if food nowadays is the same as in the respondents' childhood
Example TF, Top 10	Mole (dish of chillies, condiments and spices eaten with poultry meat)	0 = Mole (base parameter for TF)
	Pozole (maize grain and pork meat in a chilli soup)	1 = Pozole
	Chile relleno (stuffed chili)	1 = Chile relleno
	Tortas ahogadas (bread stuffed with pork meat dipped in chilli sauce)	1 = Tortas ahogadas
	Tortillas	1 = Tortillas
	Tacos	1 = Tacos
	Enchiladas	1 = Chile
	Beans	1 = Beans
	Nopal (Opuntia cactus)	1 = Nopal
	Chicken	1 = Chicken

Note: NB: 0 represents the base variable

Table II. Description of the variables included in the model

The top 10 shows the cultural mix of Mexican food. Of the dishes, mole is a baroque preparation (between 12 and 57 ingredients, depending on the region) composed of a mixture of various chillies, spices and condiments commonly served with poultry. Pozole is a soup of whole-kernel maize, accompanied with pork or chicken. The sorts of Chile relleno (stuffed chilli) change depending on the region, where the ingredients for the filling widely varies. Tortas ahogadas are made of wheat-based bread filled with pork dipped and dressed in chilli sauce. Tortillas, are made of maize cooked with calcium hydroxide and can have various sizes, thicknesses and textures, however they are always flat and round. A taco is a

Semantic field	Example of most representative words[a]	Percentage of mentions per sematic field
Culture	Education, identity, roots, history, family…	25.2
Enjoyment	Delicious, tasty, scrumptious, exquisite, people like them…	20.9
Origin	Characteristic of a place, zone, regional, from a place, Mexico…	10.9
Habit	Constant, always, quotidian, daily, everyday…	10.5
Healthy	Healthy food, full meal, good for health, good for the body…	7.0
Better quality	The best dish, the best, very good, lots of quality, good food…	5.1
Special dates	Celebration, holiday, event, party, new year…	4.7
Basic	Eating, food, essential, indispensable, necessary…	3.7
Longing	Recollection, childhood, happiness, nostalgia, important…	2.7
Non-healthy	Junk food, lots of fat, fattening, fried food, obesity…	2.7
Authentic /ways of doing	Special, authentic, unique, normally prepared at home, artisanal …	2.1
Others	Variety, simple, street, easy, food: pambazos, enchiladas, mole	4.5

Note: [a]Only the five most mentioned words for each field are reported

Table III. Semantic field groupings: in one word, what means traditional food to you?

Traditional foods	Frequency of mention	Type
Mole	110	CF
Pozole	55	CF
Tacos	40	CF
Beans	24	UF
Chicken	22	UF
Enchiladas	22	CF
Chile relleno (Stuffed chili)	19	CF
Nopal	16	UF
Tortas ahogadas (Tortas dipped in spicy sauce)	16	CF
Tortillas	15	CF

Notes: CF, cooked food; UF, unprocessed foods

Table IV. Top 10 of traditional foods

tortilla filled with various dishes and rolled to eat; while enchiladas are a variation of taco, which is dressed with cream, cheese and a chili-based sauce. The beans are the main leguminous consumed by Mexicans and it is eaten with other stews. The nopal is a cactus that is consumed in different way, the poultry is also consumed in different preparations.

The Mexican traditional diet has maize, beans, chili and squash as a nutritive-cultural core (Almaguer-González *et al.*, 2016). All the aforementioned dishes include products of Mesoamerican origin and representatives of Mexican cuisine. Although these two products were not explicitly referred to, their variations are present in the mentioned dishes.

De Garine (1998) calls central or primary foods for those that are part of the basic diet, they have affectivity and symbolic value; therefore, they provide the largest caloric contribution to the diet. In addition to maize and chili, the traditional Mexican diet also includes beans, which were mentioned individually, chicken as an inexpensive meat, thereby the most consumed meat in Mexico. As the only mentioned peripheral product, respondents mentioned nopal; moreover, it can be noticed that squash has scarce relevance for the consumer as a TF.

3.3 Model results

The significance of variables ($p \leqslant 0.05$) is from the Wald test. Among the sociodemographic variables, gender became a significant variable associated to the sort of TF consumer: "TF regular consumer" ($G_i = 1$) vs "TF non-regular consumer" ($G_i = 0$). Education level and

age did not show significant differences between both groups. As for the meaning expressed by the respondents, "authenticity", "basic" and "origin" were significant since they discriminated between consumer groups. Regarding TF, significant variables were "beans", "chicken", "*nopal*" and "tortillas". Out of the five variables of FCQ included in the model, two were significant: "I frequently eat the same dish" and "I prefer products from the region". Nagelkerke's $R^2 = 0.374$, Hosmer-Lemeshow test ($p = 0.939$), and the classification table with a percentage of overall determination of 75.5 per cent, indicate good fit of the model (Table V).

The negative sign in the B parameter for the sex variable indicates that women have a lower probability of being consumers of TF in comparison to men. Women are responsible for the purchase of food (Hidalgo-Milpa *et al.*, 2016; Escobar-López *et al.*, 2017) and the household economics. Therefore, they must have pragmatic responses, as is the purchase of industrialised foods that have a high caloric content. Purchase of these foods is due to their

Independent variables	B	E.T.	Wald	G_i	Sig.
Gender	−0.783	0.281	7.746	1	0.005
Age	−0.009	0.010	0.684	1	Ns.
Education level			*4.221*	*2*	*Ns.*
Education level (1)	−0.299	0.421	0.504	1	Ns.
Education level (2)	−0.847	0.462	3.360	1	Ns.
Meaning of TF			11.131	10	Ns.
Authentic/way of doing	3.063	1.504	4.145	1	0.042
Longing	1.072	1.010	1.127	1	Ns.
Special dates	1.489	0.863	2.973	1	Ns.
Enjoyment	1.253	0.694	3.260	1	Ns.
Habit	1.934	0.817	5.605	1	0.018
Basic	2.083	1.033	4.067	1	0.044
Origin	1.909	0.740	6.659	1	0.010
Healthy	1.400	0.910	2.365	1	Ns.
Non-healthy	−19.418	18,131.510	0.000	1	Ns.
Culture	1.136	0.691	2.699	1	Ns.
Consumption place	−0.280	0.317	0.778	1	Ns.
Sort of TF			28.453	9	0.001
Pozole	−0.403	0.430	0.880	1	Ns.
Chile relleno	0.907	0.557	2.650	1	Ns.
Tortas ahogadas	0.560	0.644	0.756	1	Ns.
Tortillas	3.654	1.192	9.392	1	0.002
Tacos	−0.043	0.456	0.009	1	Ns.
Enchiladas	0.476	0.586	0.660	1	Ns.
Beans	1.415	0.581	5.941	1	0.015
Nopal	1.688	0.696	5.882	1	0.015
Chicken	2.224	0.672	10.939	1	0.001
FCQ					
Same dish	0.356	0.116	9.462	1	0.002
AMA	0.243	0.124	3.843	1	Ns.
Region	0.487	0.218	4.975	1	0.026
Nutrients	−0.004	0.142	0.001	1	Ns.
Longing	0.105	0.093	1.280	1	Ns.
Constant	*−5.376*	*1.454*	*13.667*	1	<0.001

Table V. Results of the model for the regular consumer

Notes: NB: Wald test on B coefficients. Dependent variable used: FREQUENCY of consumption. "Regular consumer of TF" ($G_i = 1$) and "non-usual consumer of TF" ($G_i = 0$). Criteria for goodness of fit: Nagelkerke = 0.374; Hosmer and Lemeshow test ($p = 0.939$) and classification table = 75.5 per cent global. Variables from the FCQ refer to Table III. Significance $p < 0.05$

low cost and is linked also to social status (Bourges-Rodríguez, 2001). That may also be a reason for a higher prevalence of women overweight (ENSANUT, 2016).

The sociodemographic variables of education level and age were not significant on the regular consumption of TF. These results oppose those reported by Balogh *et al.* (2016), who found that a higher education level is associated with a higher preference for TF. These differences between results may be attributed to the fact that Balogh *et al.* (2016) only studied a single TF; whereas in the study herein reported, reference is to TF in general. Sharif *et al.* (2015) point out that as age increases there is greater interest in consuming TF, concluding that younger generations prefer eating "occidental" foods (hamburgers) or other foods apparently more appealing than TF.

The positive sign for variables "authentic/way of doing", "habit", "basic" and "origin" in relation to "quality" indicate that regular consumers TFP associate these characteristics with the latter. The results agree with three of four of Guerrero *et al.* (2009) constructs: processing-elaboration, habit and origin, leaving sensory properties aside.

In the dimension of "authentic/way of doing", consumers perceive these foods as original, unique, that depend on the way they are prepared. According to Gellynck and Kühne (2008) in order to regard any kind of food as traditional, a recipe is needed, as well as ingredients and processes with specific cultural origins, which are usually minute. De Garine (1998) incorporates the sentiment of nostalgia as an implicit characteristic. The aforementioned dishes agree with what these authors established.

In spite of these results, authors such as Espejel-Blanco *et al.* (2014) mention that the habits of TF preparation are changing mainly in urban areas owing to the dynamism of economic and work activities. In this research modern western foods were not mentioned.

Regular consumers closely associate TF with "habit", this is to say, foods that are eaten everyday or almost always and customarily (Guerrero *et al.*, 2009). According to Nunes dos Santos (2007), it is due to the influence of cultural and social formations on eating habits; so that identities and ethnocentrism are nurtured. Accordingly, the habit of regularly consuming may turn any regular food into traditional; for instance, chicken, a product associated with regular consumption (31 kg per capita) (FIRA, 2015), which reached this status because of its low cost (1.9 USD/kg) considering the minimum wage (4.2 USD/day) (SAT, 2017).

Something similar occurs with the concept "basic", being food indispensable and/or essential that is considered an identity marker (Richards, 2002), for instance, tortillas are associated with regular consumers, and historically are the basis of the Mexican diet. Logically this food is conceptualised as a basic product (Vázquez Carrillo *et al.*, 2011), as well as the dishes in which it is included (tacos and enchiladas). Because of this, the consumer tends to relate TF with basic and indispensable (De Garine, 1998).

As for the variable "origin", there is extensive literature that links traditional products with the place of origin (Verbeke and Roosen, 2009; Cerjak *et al.*, 2014; Contini *et al.*, 2016). European Union have a regulation (Becker and Staus, 2008) that relates the quality product with environmental and traditional characteristics, to the place of origin (European Union, 2006).

Mexico, even though incipiently, has some policies focussed on the valorisation of TF. There are 15 designations of origin, of which seven are foods and five alcoholic beverages (IMPI, 2016). The incorporation of Mexican Cuisine into the UNESCO list of Intangible Cultural Heritage, and the recent federal policy to foster national gastronomy (DOF, 2015), demonstrate the relevance acquired so far in the country by TFs linked to identity.

Statistically significant TF were "beans", "nopal", "tortillas" and "chicken"; that are preferred by regular consumers. As already mentioned, the first three products date back to Pre-Columbian times (Almaguer-González *et al.*, 2016), excluding chicken that was introduced by the Spaniards, and are part of the cultural identity of Mexican people. The non-significance of the other foods that are regarded as traditional may indicate that are considered traditional by both groups.

As for FCQ, "searching for the same dish" and "products from the region" are variables significantly associated with the regularity of eating TF. As stated before, given the regularity that consumers attribute to TF, the variable "I frequently eat the same dish" is expected to be significant.

As for the variable "I prefer products from the region", which refers to the origin, the obtained results agree with those reported by Cerjak *et al.* (2014), who found that the motivation to buy TF is the interest in consuming food with national origin or made with raw materials from the region or the country.

It is interesting to point out that, none of the foods with designation of origin in Mexico reached the top ten mentioned by the respondents. These foods are: vanilla from Papantla, state of Veracruz; coffee from the state Veracruz; coffee from the State of Chiapas; rice from the state of Morelos; Habanero chili from the Yucatan Peninsula; Ataulfo mango from the Soconusco, state of Chiapas; and Grijalva Cacao. The reason is that these products are not normally considered in what De Garine (1998) calls central food. This reinforces the idea that Mexican consumers are indeed interested in products with roots in a territory, even though they do not necessarily bear a quality seal (Escobar-López *et al.*, 2017).

Results of this research (meanings, examples and attitudes towards TF) may be used in the promotion of Mexican TF, and contribute to the implementation of the policy for the promotion of national gastronomy that benefits both producers and consumers.

4. Conclusions

Results show that men tend to eat TFs in a more regular way. Authors such as Vanhonacker *et al.* (2010) mention that in Europe both men and women tend to consume TF. Hidalgo-Milpa *et al.* (2016) and Espejel-Blanco *et al.* (2014), in studies carried out in Mexico, establish that women have a preponderant role in buying food and are the ones that keep traditions alive, so this result will have to be thoroughly analysed in later studies.

People with heavier consumption habits associate TF with meanings such as "authenticity/way of doing", "origin" and "habit", which are reinforced both by TF examples and the FCQ variables.

The significant FCQ variables were origin with the variable "I prefer products from the region" and regularity with the variable "I frequently eat the same sort of dish".

Foods considered traditional were classified as cooked (elaborated under specific recipes that follow the gastronomic heritage) and uncooked, both groups comprise central foods, thereby basic in the traditional Mexican diet, in which outstanding are maize, chili and beans.

This is a pioneer study in Mexico that documents the factors associated with the consumption of TFs, which can support the revaluation processes of local products as established by Berard and Marchenay (2006).

These results show that the factors associates to the consumption of TFs. All should be taken into account, starting by institutions responsible for consolidating the cultural and gastronomic identity of the country. They may also be a referent for the consolidation of the policy for the promotion of national gastronomy (SECTUR and SHCP, 2014), that has the objective to recover, promote, safeguard and disseminate Mexican gastronomy.

Results also contribute to a better understanding of TF consumers, and may be used to identify strategies to improve on the valorisation processes of these foods to enhance the market for the TF industry, which mainly consists of artisan workshops that are the source of income for many families and even whole communities (Dominguez-Lopez *et al.*, 2011).

It is worth mentioning the limitations of the study: it did not comprehend the whole country nor did it consider specific food categories. Therefore, future research should incorporate geographic and sociocultural aspects of the country.

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