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Motives for food choice of consumers in Central México

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1. Introduction

Social studies on human food consumption are recent with just over thirty years, with the largest advances in the Francophone and Anglophone schools, and to a lesser degree, the Spanish school. The studies undertaken have looked at (Diaz, 2005; Mili, 2006; Gómez, 2008): 1) The effect of globalization and its interaction with local food cultures (Hinrichs, 2000; Chambers *et al*., 2007); 2) Micro-social modifications of contemporary food consumption (Barham, 2003; Hermann, 2009; Pettersson *et al*., 2016); 3) Issues relating to nutrition in a general sense and associated to social stratification (Frewer *et al*., 2003; Doyon and Labrecque, 2008); and 4) The changes in agro-food technologies and issues related to food risks (Aruoma, 2006; Luomala *et al*., 2015).

In contemporary Western societies, the distance between the consumers and the preparation of their own food makes the global agri-food industry and its distribution system as a symbol of void (Díaz and Gómez, 2005; Álvarez, 2008), increased suspicion on the manipulation of food by these industries (Aguilar, 2007), and generating interest for what they call quality foods; where consumption is not ruled by economic aspects, but by values as health, quality, tradition, culture, the environment and ethics (Espeitx, 1996).

This creates an eclectic gastronomic condition that is fragmented, unequal, postmodern, and strongly anomic (Alonso, 2005), which gives way to a new

consumer, less uniform, better informed, and more demanding (Mili, 2005; Gómez, 2008).

Food trends are apparently contradictory. On one hand, there is globalization and its homogenizing effects, and on the other hand, local foods that regain identities (Mili, 2005; Gómez, 2008). This has led to the proposal of four agri-food systems: 1) Traditional, 2) Modern, 3) Late modern or post-modern, and 4) An incipient phase that has not been named, where biotechnology plays an important role (Díaz, 2005). However, these trends are established from work undertaken in western countries, since studies on consumer behaviour in other regions are incipient.

In relation to this trend, different governments, as in Europe, have addressed these new forms of consumption taking advantage of opportunities that benefit local producers, through the generation of added value as 'Protected Designations of Origin (DOP), geographical indications, collective brands, ecological produce, local products of the land, among others (FAO, 2003).

These proposals are promoted as a path to follow in Latin America (FAO, 2003; Vandecandelaere *et al.,* 2009), assuming that Latin American consumers have the same characteristics or interests as in those developed countries. Not knowing consumers represents a problem in the processes of valorisation of products.

At the same time, economic development, demographic and socio-cultural changes in Latin America, have promoted phenomena both in the polarisation of livelihoods in their societies as well as changes of lifestyles in different social strata. Therefore,

studies are needed on the effect of these changes not only in food consumption, but also on the symbolic elements when consumers choose their food.

In some countries, research has been aimed to identify the choice of foods by consumers. The first to develop a tool for this studies were Steptoe *et al*. *(*1995) who created the *Food Choice Questionnaire*, which has been used in or inspired a number of works, from those that applied it to identify perceptions of traditional foods (Guerrero *et al*., 2009; Peniak *et al*., 2009; Almli *et al*., 2011), preferences of specific foods (Krystallis *et al*., 2007), as ecological or organic products (Sánchez *et al.,* 2000; Lee and Yun, 2015), natural foods (Dickson-Spillmann *et al*., 2011), or transgenic and functional foods (Sánchez and Barrena, 2004).

The questionnaire has also been used to study the relationship between life habits and health (Szakály *et al*., 2012), or cultural aspects of foods, investigating the perceptions towards local or international foods (Sandoval and Camarena, 2011). It has been used also to analyse the new ethical values of modern society as the influence of animal welfare in consumption (Toma *et al*., 2012), and finally, as a methodological tool to prove is validity and to know consumption motives in other regions and cultures (Prescott *et al*., 2002; Ares and Gámbaro, 2007; Honkanen and Frewer, 2009; Januszewska *et al*., 2011; Jáuregui and Bolaños, 2011; Ellorriaga *et al*., 2012; Milošević, *et al.*, 2012).

In Mexico, the study of food consumption has followed diverse approaches (Ortiz *et al.*, 2004): 1) As a matter of policy; 2) from an economic perspective; 3) from anthropology, particularly focused on indigenous cultures, and 4) from the nutrition and health field (Aboites, 2010). A good number of reports are centred in the study

of eating patterns, but from the composition of the daily diet, aimed at individuals, families, or groups (Ortiz, *et al*., 2004), emphasising economic aspects and the urban – rural dichotomy (García, 2014).

In essence studies are focused in the study of changes in the diet of Mexicans and their health consequences. Some study nutritional vulnerability of indigenous peoples, as a consequence of the social inequality in which they live (Ortiz *et al.*, 2004). Paradoxically, this situation leads them to change their traditional diet for one abundant in industrialised low cost foods with high calorie content (Consuelo and Vizcarra, 2009).

On the other hand, in urban areas population and middle class growth has also promoted the inclusion of high energy foods in the diet, all of which has caused the Mexican population to have high indices of overweight and diabetes mellitus (INS, 2012).

As in other developing countries, those works do not address the role of the consumer and their motivations, so that research that studies their motives in the choice of foods is needed (Gómez, 2008) in order to promote quality local food products.

This work had the objective of knowing the motivations of Mexican consumers in selecting or preferring their food through a segmentation exercise, applying the Food Choice Questionnaire.

2. Methodology

2.1 Questionnaire

The questionnaire comprised two sections to collect quantitative and qualitative information. The first section considered socioeconomic aspects like: sex, age, marital status, education and occupation (Fotopoulos *et al.,* 2009).

It must be mentioned that income was originally considered. However, many interviewed subjects declined to answer that question, given problems with security issues currently in Mexico. Therefore, that variable was omitted in the final analysis.

Weight and height were also included to determine Body Mass Index (BMI) (Januszewska *et al*., 2011; Jáuregui and Bolaños, 2011; Milošević, *et al*., 2012).

The second section collected information on food items, based on the scheme of the *Food Choice Questionnaire* (FCHQ) (Steptoe *et al*., 1995), with 11 variables: 1) Place of purchase of foods, 2) Weight control, 3) Sensorial aspects, 4) Attitude towards natural / industrial contents, 5) Economic aspects, 6) Health care, 7) Familiarity, 8) Environmental and animal welfare sensitivity, 9) Social sensitivity, 10) Convenience, and 11) Culinary identity. There were three questions for each variable, totalling 33 items (Table 1).

⇒ Please insert Table 1 here.

Answers were recorded through a unipolar scale of five points of the Likert type (Bryman and Cramer, 2011; Milošević, *et al*., 2012), ranging from 1 = never to 5 = always.

2.2 Data collection and sampling

Wang *et al. (*2009) and Lee and Yun (2015) establish that the questionnaires

should be applied in popular food outlets. Four contrasting spaces were selected randomly: a traditional open air street market (*tianguis* in nahuatl that take place once a week), an established market in the centre of the city, a gourmet gastronomic fair, and a market of traditional produce, all in central Mexico. Questionnaires were applied between August and October 2013.

Interviewed subjects were randomly selected by line transect sampling (Reig and Coenders, 2002), and all were over 18 years old (Fotopoulos *et al*., 2009). A total of 1250 questionnaires were applied, but those that did not have full information were eliminated; with a final sample of 1202 subjects. Sample size was determined to meet two rules. Firstly, the minimum size for infinite populations, where the equation proposed by Aching (2005) at a confidence level of 95% yielded 384 required questionnaires. On the other hand, the multivariate statistics rule that establishes that cluster analysis require five cases for each analysed item (Hair *et al*., 2010), that is at least 165 cases.

2.3 Data analysis

The relationship among the 33 items of the *Food Choice Questionnaire* (Steptoe *et al*., 1995, Fotopoulos *et al*., 2009) was examined with factor analysis, using principal component analysis (PCA) as factor identification extraction method (Field, 2013). The Kaiser-Meyer-Olkin index value of 0.5 or above was used as criteria to fulfil the conditions of parsimony and interpretability of PCA. Variance maximizing (Varimax) orthogonal rotation was applied to simplify the interpretation of factors (Field, 2013).

The factor loadings obtained from PCA were used in a hierarchical cluster analysis using Ward´s method as agglomerative algorithm to measure the similarity among

subjects and group them using the Euclidean distance (Hair *et al*., 2010). The dendrogram and agglomerative schedule obtained from Ward´s method and the interpretability of the resulting solutions were used to establish the most meaningful number of clusters (Hair *et al*., 2010).

Non parametric Kruskal-Wallis and Mann-Whitney tests were performed to identify statistical differences (P<0.05) among groups in relation to the 10 factors identified from the PCA (Ares and Gambaro, 2007) and for the socioeconomic characteristics of gender, age, marital status, children, education and occupation (Field, 2013).

Also, the median and interquartile range (IQR) was used as measures of central tendency and dispersion; since items were recorded in an ordinal scale. The reliability of the Likert type scale used in this study was ascertained with Cronbach´s α coefficient of 0.7 or above (Field, 2013).

In order to have a better understanding in the description of the groups the variable Sensitivity towards the environment and animal welfare was taken into account in spite that it was not selected by the PCA.

Data were analysed with the SPSS programme, version 22.

3. Results and discussion

3.1 Factor analysis

A multivariate factor analysis was performed to identify the relationships among the 33 items of the *Food Choice Questionnaire* (Steptoe *et al*., 1995, Fotopoulos *et al*., 2009), using principal component analysis (PCA) as the method for the extraction of factors (Field, 2013). However, seven items were omitted from the results of the

commonalities obtained in the factor analysis. Therefore, the final analysis was undertaken with 26 items (those not considered appear with "*" in Table 1). The 26 items chosen were the ones that contributed most to the explained variance of the model.

Factor analysis identified ten factors that explain an accumulated variance of 61.78% (Table 2), Characteristics in relation to considered items were:

⇒ Please insert Table 2 here

Factor 1. Care for Weight and Health. The items that build up this factor are related to the search for foods low in calories, low in fat, and that help weight control, as well as by the interest in reading the nutritional information.

Factor 2. Social sensitivity. Composed by the search for Mexican food with a local origin, interest in buying in open air and farmers' weekly markets as well as buying directly from farmers.

Factor 3. Practicality. Consisting of aspects related to foods easily found in markets and shops located near the house or workplace.

Factor 4. It is noteworthy that the factor related to the Economic aspects, is not he most important and falls to the fourth place. Nonetheless, it reflects care for food prices that lead to the search of low price products and a good quality/price relationship.

Factor 5. Not industrialised, indicates a positive relationship between the items "I avoid buying in supermarkets" and "I avoid buying packaged foods". Usually, it is in supermarkets where industrialised foods are mainly sold.

Factor 6. Hedonism concentrates the aspects related with taste and smell of foods, as well as the purchase of products that look pleasant.

Factors 7 and 9. These factors are linked to traditionality in food. The first one avoids the consumption (whether in a restaurant or at home) of international fast food, which was named Traditionality A. The factor that favours the consumption of traditional Mexican foods in the street was named Traditionality B.

Factor 8. Familiarity is related to daily life and practicality in preparing foods, that is, dishes that are repeated because are easy to prepare.

Factor 10. No sugar, that indicates the consumption of foods that contain sugar is avoided.

In the work herein reported, the Care for Weight and Health result as the main factor. Other works mentioned health as important factor too (Steptoe *et al*., and 1995; Prescott *et al*., 2002; Januszewska *et al*., 2011; Milošević, *et al*., 2012). In the work undertaken in Uruguay, Health was associated with the nutritional state (Ares and Gámbaro, 2007) and in the study undertook in the Balkans it is associated to natural aspects (Milošević, *et al*., 2012). While health is reported to be relevant as a second factor appears in the work in the UK (Steptoe *et al*., 1995) and in Taiwan and Malaysia (Prescott *et al*., 2002).

In the last three referred cases, weight control implies a different factor and less important than in the Mexican case.

On the contrary, in the studies from New Zealand (Prescott *et al*., 2002), Russia (Honkanen and Frewer, 2008), Hungary, Romania and Belgium (Januszewska *et*

al., 2011) the sensorial aspects resulted to be the main factor, being significant that health and weight control were not the most relevant. In the same sense, in the work in Spain (Jaúregui and Bolaños, 2011), the mood appears as the main factor, followed by health.

In relation to the economic issues, it is in Japan where they result most relevant (Prescott *et al*., 2002) and in Philippines as the second most important (Januszewska *et al*., 2011).

Cultural differences can be seen in the array of factors, an aspect to note in the work herein reported is related to the traditionality. Arredondo *et al*. (2006), in a study on food consumption by Hispanic women in United States, mention this factor is important where women are who mainly prepare the food for the family; but in those families where decisions are shared in the choice of food, there is a trend to consume more fast food, and less Mexican food. This coincides with reports from Sandoval and Camarena (2011) in North Mexico, who state that even if there is an important proportion of people who continue to enjoy traditional dishes, each time there are more people getting to know and enjoy international dishes occasionally.

As happens in other parts of Latin America like in Uruguay (Ares and Gámbaro, 2007), the attitude towards that which is traditional may be due to the fact that in the centre of Mexico the role of women in buying food for the family prevails.

3.2 Analysis of identified groups

The results of the Factor analyses were used to perform a Cluster analysis. Four

groups were identified and named de as: Traditional, Healthy, Conscious, and Careless. Table 3 shows that the four groups presented highly significant statistical differences ($P<0.01$) in relation to the ten factors analysed. The Traditional and the Conscious groups are the most similar but they showed statistical differences ($P<0.01$) between them in respect to their attitude towards weight control and health. The Healthy group was totally different from the Traditional and Conscious groups in respect to the ten factors analysed.

⇒ Please insert Table 3 here

The Groups were name from the scores obtained for each factor within each group. The characteristics of each group are described as follows:

The Careless group, although sharing some aspects to the other three groups, was the cluster that presented the lowest score for the Care for Weight and Health factors, Social Sensitivity, and No Sugar. In relation to the Economic Aspects, the Careless group presented a higher score than the Healthy cluster, but similar to the Traditional and Conscious groups.

In order to have a better idea of the characteristics of each group, the variable Sensitivity towards the Environment and Animal Welfare was added in spite of the fact that those items were not considered by the PCA. It enabled the naming of the groups and to define their characteristics (Figure 1).

⇒ Please insert Figure 1 here

Traditional. This type of consumer has the highest scores in eight factors, coinciding in them with the Conscious cluster. It refers to a consumer who does not

pay attention to weight and health; therefore does not avoid consumptions of foods with sugar. They are also indifferent to environmental or animal welfare issues (Figure 1). Except from this variable, it would seem that they are sensitive consumers to aspects of the environment and traditionality, but who do not thinks on the welfare of their own organism. This group was formed by 20.1% of the sample.

*Healthy not committed***.** Is the most numerous, concentrating 41.6% of the sample. Although this group does not present the highest values in many of the factors, and is even over passed by Conscious consumers in the Care of Weight and Health factor, this is the group that also pays attention to this factor and also avoids the consumption of foods with sugar.

Due to this, it pays less attention to the factors of Familiarity and Traditionality A and B. They do not give importance to issues related to Social Sensitivity, and is the group that shows the lowest scores in the Economic Aspects factor. It is a group of consumers more concerned with individual aspects tan those of their surroundings, such that they do not worry in expending more in the care of their health and personal looks.

Conscious. This group has 27% of the sample. It is a group that has the highest scores in all factors. This group shares some characteristics with other identified groups, but gives more importance to Weight and Health Care, and avoids consuming foods with sugar. It is also the group most consented with the Care of the Environment and Animal Welfare. That means it apparently includes consumers who are more reflexive and sensitive not only to their surrounding but

also with their own body.

Careless. It is the smallest group with 11.3% of the surveyed people. Consumers in this group do not care about Weight and Health Care, and do not mind consuming foods with sugar. In fact, it was the group with the lowest scores for these factors. Surprisingly, aspects of hedonism are also not important for these consumers. The Careless is also the group that pays least importance to aspects of Social Sensitivity, and Care for the Environment and Animal Welfare. The group represents consumers that give more importance to issues related to Practicality, Familiarity and Traditionality B; as well as the Economic Aspects. These seem to be pragmatic consumers, which makes them careless about themselves.

From the analysis of works consulted, it follows that the groups that they identified could be classified into seven typologies of consumers. Those motivated by economic aspects and convenience (Honkanen and Frewer, 2008; Sandoval and Camarena, 2011; Milošević *et al.*, 2012; Lee and Yun, 2015), the traditional or conservative (Krystallis *et al*., 2007; Brunori *et al.,* 2011), those who are sensitive to attributes like natural aspects (Honkanen and Frewer, 2008), those for health and nutrition (Krystallis *et al*., 2007; Sandoval and Camarena, 2011; Milošević *et al*., 2012; Lee and Yun, 2015); those influenced by their mood (Honkanen and Frewer 2008, Milošević *et al*., 2012), the indifferent and not committed (Krystallis *et al*., 2007; Milošević *et al.*, 2012; Szakály *et al*., 2012), and those sensitive to ethical or rational aspects (Krystallis *et al*., 2007; Brunori *et al.,* 2011; Szakály *et al*., 2012; Lee and Yun, 2015). The work herein reported does not coincide with typologies of consumers motivated by economic aspects and convenience, influenced by their

mood, or those who are sensitive to attributes like natural aspects.

In a study in six European countries on the relationship between consumption of traditional foods and the motives for its choice, Pieniak *et al. (*2009) found that the general attitude towards these products, familiarity, and the importance of natural aspects emerge as controlling aspects for its consumption, while comfort and health represent direct barriers, and the importance of weight control is an indirect barrier.

In agreement with this, Milošević,k *et al. (*2012), from a study in the Balkans, state that consumers oriented to health aspects tend to consume less traditional foods. In this work, it seems that the Healthy not committed group does behave in that sense, but not the Conscious group.

In regards to sensitive consumers to attributes of foods, Gómez and Lozano (2014) developed the concept of "food citizen", referring to an informed consumer in aspects of health, production and distribution processes, who is conscious on the social, environmental and animal welfare issues of the food chain. That is, a person whose practices are coherent with their values orientation. An example is the response of European consumers to food scandals that is supported with policies by the State, as those related to animal welfare.

3.3 Analysis of the socioeconomic characteristics by group

Table 4 shows highly significant statistical differences (P<0.01) among groups in relation to the variables age, marital status, and education.

⇒ Please insert Table 4 here

In regards to education, some works establish the importance of education in the attention given to some aspects of foods, like food safety in the study in China (Wang *et al*., 2009). In countries of the European Union access information is the most important determinant, followed by the perception of responsibility, and education (Toma *et al*., 2012).

Other work from Mexico reports that consumers who tend to value nutrition, have university degrees and postgraduate studies in a higher proportion (Sandoval and Camarena, 2011). In our current work, it seems that this variable is not determinant. Although Traditional consumers show a larger proportion of people with basic education only, there were no statistical differences among Healthy not committed, Conscious and Careless consumers. These groups concentrate the highest proportion of subjects with university degrees. It seems that there are other elements that determine the classification, among those like the age of subjects.

The Traditional and Conscious groups are similar in age; distributed evenly. However, the Healthy not committed and the Careless groups are younger people. The latter group has the highest proportion of subjects under 25 years old. These aspect influences their marital status, being the group with the largest number of single people.

The work herein reported agrees with Krystallis *et al. (*2007), they identified three groups, the one named Indifferent was conformed mainly by young people, who give less importance to the variables analysed, including the hedonic ones.

In terms of sex distribution, the four groups are different, but the Careless group has a larger proportion of males. Other work mentioned that women are more

sensitive to nutritional values, health benefits and the origin of products, Sandoval and Camarena, (2011), as well as exposure risks to chemicals (Dickson-Spillmann *et al*., 2011).

There were also significant differences in the number of children. Again, the Careless group is different with a lower number of children, same as the Healthy group, logical because both groups have younger people.

The variables for Occupation and Body Mass Index were not significantly different (P>0.05) among groups, which are different from other works that report a relationship between lifestyle, behaviour towards health, and the preference for functional foods (Milošević, *et al*., 2012; Szakály *et al*., 2012). It is interesting to note that in the work herein reported, even though Weight and Health Care came out as the first factor, there were no differences among groups for BMI. This shows the problem faced by Mexico in the rapid increase in overweight and obesity that affects all ages, with a prevalence of 73% for women and 69.4% for men (INS, 2012).

The fact that Weight and Health Care is the factor with greatest importance is a paradox, which may be due to State media campaigns to prevent obesity and to contribute to reduce problems related to diabetes. This may make people consider these aspects as important, but does not necessarily mean that people take action in response, as not avoiding the consumption of foods with sugar, for example.

Klöckner and Homs (2007) state that in the purchase of foods it may be possible that personal norms deviate strongly tan social norms, since they develop independently from their social environment. Other authors mention that in recent

years the image of consumption results in the main element that defines a contemporary society, giving way to the analysis of eating behaviours linked to the non-rational processes and motivations, beyond those related to income and the satisfaction of needs (Díaz and Gómez, 2005).

Notwithstanding, it is recognised in this work the limitation of not having information on the income aspects of subjects, since this issue has indirect influence on aspects that affect food choice. The majority of the Mexican population is within mass consumption, bad nutrition, and poverty. The Mexican National Institute of Public Health (*Instituto Nacional de Salud Pública*, 2012), 28% of the population suffers lack of food, and 70% are overweight or obese. Paradoxically, the agency for the evaluation of social policies (CONEVAL, 2010) mentions that over 46% of the Mexican population is poor. This explains the low education level, where 63% of Mexicans just have primary education or less. The low education level makes it difficult to access well paid jobs; such that the national statistics (INEGI, 2012) show that 82% of population earns less than five minimum wages, and 44% is in informal employment, partially employed, or unemployed.

In spite of this economic situation, the Mexican population has the capacity to consume a large volume of carbonated soft drinks that imply large expenditures.

An example is the alarming growth in the consumption of the most popular cola drink. In 1991 consumption was 290 glasses per capita per year; in 2001, 460 bottles; and in 2012, 729 glasses per person a year. Since 2010, Mexico is the country with the largest consumption per person of this soft drink (based on U.S. 8 ounces of a finished beverage) (Coca Cola, 2012).

The latter is an example of what Bauman (2008) established, that in this changing human condition the lacks of today are now different from before, and escape cognitive frameworks created to fit previous conditions.

Following those ideas, choices in food consumption constitute a truly sign system. That is, they constitute a functional unit in a communication structure that surpasses the conscience of actors in the presence of a single word or verbal

dialogue. Therefore, they have to be read or given a sense (what does it produce) and it significance (what does it say) (Alonso, 2005), in order to analyse what is being expressed during eating (Espeitx, 1996).

4. Conclusions In this work, Mexican consumers reflect a certain loyalty to flavours related to traditional cuisine. That explains a certain priority to prefer foods for their taste, and in general, being less concerned with aspects related to their health and nutrition and much less sensitive to animal welfare and products that are friendly to the environment.

These results establish the need to study these two aspects of concern for animal welfare and the environment since studies are lacking on these topics. Observation in some groups (through social networks) show a growing interest in aspects related to animal welfare, which makes it relevant to study the logic that motivates these incipient movements; in contrast with most of the people who do not consider these issues as important.

These have implications in the process of valorisation of food products. On one hand, it gives the possibility to valorise local or traditional products, as well as a reduced market for products suitable for weight control or even reduced in sugar. On the other hand, most relevant are the challenges faced by products with an ecological, environmental, or animal welfare distinctive seal.

Research is needed on products or distinctive seals to identify the perception on these valorisation processes. Likewise, the influence that westernised lifestyles have in some social groups in Mexico may be part of new behaviour factors that need to be studied, since there is no clear evidence from this study.

Evidently, the large diversity of motivations and behaviours in food consumption in Mexico are not all addressed in this study. However, this work opens a new area of research in Mexico so that in the near future studies on the diversity of Mexican consumers are undertaken, looking at the transformation of their food preferences.

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Table 1. Variables and items used in the questionnaire to record perception

Variable	Item	Cronbach´s α coefficient of scale reliability
1). Place of purchase of foods	I avoid buying in supermarkets * I buy in weekly open air markets * I buy in markets of shops near where I live *	.702
2) Wight control	I search for foods low in calories * I select low fat foods * I consume foods that help me control my weight *	.748
3) Sensorial aspects	I select foods with good taste I eat foods that are pleasant to the sight I select foods from their smell	.752
4) Attitude towards natural / industrial contents	I avoid buying packaged products I consume fresh foods without canning or packaging * I avoid eating industrialised or frozen foods *	.719
5) Economic aspects	I buy foods with low price I am interested in a good quality – price relationship I care for the price of foods	.731
6) Health care	When labels exist, I read the nutritional information When I eat, I do it thinking on my health I consume drinks, sweets and biscuits with no sugar added	.774
7) Familiarity	I usually eat the same type of foods I avoid foods or presentations I do not know * I consume the same food that my mother cooked *	.778
8) Sensitivity towards the environment and animal welfare	I have lowered my consumption of meat because I care for animal welfare in food production * I avoid foods with plastic packaging or in plastic bags * I buy vegetables or fruits produced without synthetic fertilizers and pesticides *	.766
9) Social sensitivity	I search for foods produced in Mexico I buy foods sold directly by farmers I search for open air markets and markets where farmers sell directly	.749
10) Convenience	I eat foods easy to cook I search for foods I can buy near my house or work I consume foods that I can easily find	.741
11) Culinary identity	I consume Mexican snack food I avoid eating in fast food chain establishments I avoid cooking at home hamburgers, hot dogs and pizzas	.761
Overall Cronbach´s α coefficient of scale reliability		.756

* Items that were eliminated from the results of commonalities from the factor analysis.

Likert type scale used: ranging from 1= never to 5=always; computed the overall Cronbach´s α coefficient = .756

Table 2. Name of the obtained factors and the correspondent variance

Factor	Name	Eigenvalues of PCA	Total explained variance	
			% of variance	% Accumulated
Factor 1	Care for weight and health	3.158	9.89	9.89
Factor 2	Social sensitivity	2.623	7.28	17.17
Factor 3	Practicity	2.014	6.94	24.11
Factor 4	Economic aspects	1.433	6.51	30.62
Factor 5	Not industrialised	1.364	5.73	36.35
Factor 6	Hedonism	1.182	5.72	42.07
Factor 7	Traditionality A	1.162	5.51	47.57
Factor 8	Familiarity	1.095	5.27	52.85
Factor 9	Traditionality B	1.031	4.60	57.44
Factor 10	No sugar	1.001	4.34	61.78

PCA= Principal componet analysis

Table 3. Comparative analysis of identified groups

Name of factor	Traditional (n=242)		Healthy (n=500)		Conscious (n=324)		Careless (n=136)		P^2
	Median	IQR[1]	Median	RIC[1]	Median	RIC[1]	Median	RIC[1]	
Care for Weight and Health	2.3[a]	0.7	3.2[b]	1.0	3.3[c]	0.7	1.8[d]	0.9	.01
Social sensitivity	3.8[a]	1.0	2.8[b]	0.8	3.8[a]	0.7	2.4[c]	0.8	.01
Practicality	4.0[a]	0.6	3.3[b]	0.7	4.0[a]	1.0	3.7[a]	1.3	.01
Economic aspects	4.0[a]	0.6	3.3[b]	1.0	4.0[a]	1.0	3.7[c]	1.3	.01
Not industrialised	3.0[a]	1.0	2.5[b]	1.0	3.0[a]	1.5	2.5[b]	1.0	.01
Hedonism	4.0[a]	1.0	3.7[b]	0.7	4.0[a]	1.0	3.5[b]	1.0	.01
Traditionality A	4.0[a]	1.0	3.5[b]	1.0	4.0[a]	1.0	3.5[b]	1.0	.01
Familiarity	3.5[a]	1.0	3.0[b]	1.0	3.5[a]	1.0	3.5[a]	1.0	.01
Traditionality B	4.0[a]	2.0	3.0[b]	1.0	4.0[a]	1.0	4.0[a]	2.0	.01
No sugar	2.0[a]	2.0	3.0[b]	1.0	3.0[c]	1.0	1.0[d]	1.0	.01

[1] IQR = Interquartile Range

[2] P value for the Kruskal-Wallis test with significance at $P<0.05$

[a,b,c,d] $P<0.05$ among groups for the U Mann Whitney test

Figure 1. Characteristics of the groups according to identified factors

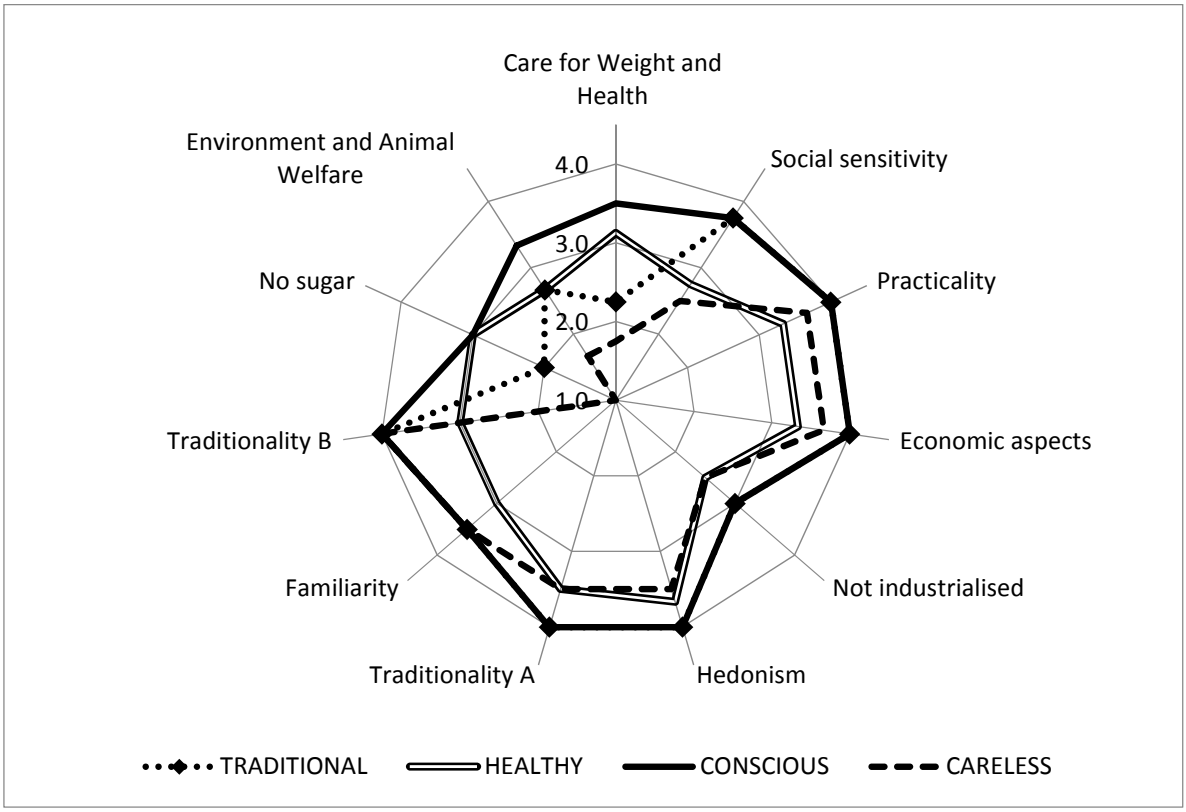

Table 4. Comparative analysis of socioeconomic variables by group

Variable		Traditional (n=242)	Healthy (n=500)	Conscious (n=324)	Careless (n=136)	*P*[1]
Sex %	Women	58.0[a]	60.0[ab]	67.0[b]	46.0[c]	.01
	Men	42.0	40.0	43.0	54.0	
Age %	18-25	27.0[a]	31.0[b]	23.0[a]	54.0[c]	.01
	26-35	23.0	30.0	23.0	26.0	
	36-45	25.0	20.0	28.0	12.0	
	46-59	19.0	13.0	20.0	5.0	
	+60	5.0	6.0	6.0	2.0	
Marital status %	Single	41.3[a]	47.7[a]	42.1[a]	64.0[b]	.01
	Married	50.0	42.5	50.2	29.04	
	Other	8.7	9.9	7.7	6.6	
Children Median /IQR		1.0 (2.0)[a]	1.0 (2.0)[b]	1.0 (2.0)[ab]	0.0 (1.0)[b]	.007
Education %	Elementary	30.0[a]	11.0[b]	22.0[b]	12.0[b]	
	Secondary/ technical	26.0	33.0	25.0	39.0	
	University	44.0	55.0	54.0	60.0	
Occupation	Employee	42.0	41.0	40.0	51.0	.646
	Private activity	21.0	16.0	21.0	7.0	
	Retired	4.0	7.0	4.0	1.0	
	Home	16.0	15.0	21.0	15.0	
	Other	17.0	22.0	14.0	26.0	
Body Mass Index	Low weight	3.8	2.7	1.0	0.8	.229
	Normal	45.7	52.0	49.2	55.1	
	Overweight	42.3	39.0	37.8	38.6	
	Obesity I	6.4	5.6	11.4	3.9	
	Obesity II	1.7	0.6	0.6	0.8	
	Obesity morbid	0.0	0.0	0.0	0.8	

[1] *P* value of the Kruskal-Wallis test with differences at $P<0.05$

[a, b, c] ($P<0.05$) among groups for the *U* of the Mann Whitney test