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"Country of origin" effect and ethnocentrism in food purchase in Southern Chile

Efecto "país de origen" y etnocentrismo en la compra de alimentos en el sur de Chile

Berta Schnettler [1, 6*], Mercedes Sánchez [2], Horacio Miranda [1], Ligia Orellana [3], José Sepúlveda [3], Marcos Mora [4], Germán Lobos [5], Clementina Hueche [6]

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Abstract

This study sought to determine the relative importance of the country of origin in the selection of four foodstuffs (rice, sugar, chicken meat and oil); to identify consumer segments; and to evaluate which sociodemographic variables affect ethnocentrism in food consumption, through a survey responded by 800 habitual supermarket shoppers in southern Chile. It was determined that the country of origin was the most important attribute in the selection of the four foods. Three consumer segments were distinguished which assigned a different degree of importance to the country of origin, although in two segments the country of origin was highly important in the purchase choice. The consumers of the three segments preferred Chilean foods and expressed a lower preference for food imported from countries that were farther away and more culturally different from Chile. The segments differed significantly in the frequency of purchase of imported foods, reasons for preferring to buy imported foods, and ethnocentrism. It was found that if the respondent was a woman, of older age, belonged to the medium or high socioeconomic level, and had a conservative lifestyle, the probability of being ethnocentric in food consumption increased.

Keywords
food consumption • market segments • origin • ethnocentrism • Chile

1 Departamento de Producción Agropecuaria, Facultad de Ciencias Agropecuarias y Forestales. Universidad de La Frontera. Casilla 54-D, Temuco, Chile. E-mail: berta.schnettler@ufrontera.cl
2 Departamento de Gestión de Empresas, Universidad Pública de Navarra, Campus Arrosadía 31006, Pamplona, España.
3 Department of Psychology, University of Sheffield, United Kingdom.
4 Departamento de Economía Agraria, Facultad de Ciencias Agronómicas, Universidad de Chile, Santiago, Chile.
5 Universidad de Talca, Escuela de Ingeniería Comercial, Talca, Chile.
6 Centro de Excelencia en Psicología Económica y del Consumo, Universidad de La Frontera. Temuco, Chile.

Resumen

Este estudio buscó determinar la importancia relativa del país de origen en la elección de cuatro alimentos (arroz, azúcar, carne de pollo y aceite); identificar segmentos de consumidores, y evaluar qué variables sociodemográficas afectan el etnocentrismo en el consumo de alimentos, a través de una encuesta respondida por 800 compradores habituales de supermercados en el sur de Chile. Se obtuvo que el país de origen fue el atributo de mayor importancia en la elección de los cuatro alimentos. Se distinguieron tres segmentos de consumidores que asignaron diferente importancia al país de origen, aun cuando en dos de ellos el país de origen tuvo elevada relevancia en la elección. Los consumidores de los tres segmentos prefirieron los alimentos chilenos y expresaron una menor preferencia hacia los alimentos importados desde países más lejanos y diferentes culturalmente de Chile. Los segmentos difirieron significativamente según la frecuencia de compra de alimentos importados, razones para preferir comprar alimentos importados y etnocentrismo. Se obtuvo que si la persona es mujer, si es de mayor edad, pertenece al nivel socioeconómico medio o alto y posee un estilo de vida conservador, aumenta la probabilidad de que sea etnocéntrico en el consumo de alimentos.

Palabras clave
consumo de alimentos • segmentos de mercado • origen • etnocentrismo • Chile

Introduction

The increase in world trade associated with globalisation has made the purchase decision process more complex for consumers (5, 52), who must decide between domestic products and imported alternatives (13). This situation is not unknown to developing countries. In Chile, a developing country in South America, an increase of 378% has been recorded in imports of agrifood products between 2000 and 2014 (33). Among the principal products imported in recent years are rice, sugar, and blended oil, all of which increased in imports by more than 50% between 2008 and 2014. Another notable product is chicken meat, imports of which began only in 2003 and increased by more than 250% between 2008 and 2014 (33).

International literature provides ample evidence that consumers evaluate products based on the country in which they were produced, and that ethnocentric consumers give priority to domestically produced alternatives (49). To understand this patriotic consumption behaviour, at least two lines of research offer theoretical bases: studies referring to ethnocentrism in consumption, and work focusing on the "country of origin effect" (COO) (49). This combination of the two seeks to study the influence of psychographic variables, such as ethnocentrism, with the attribute of the product, such as country of origin (26, 48). Therefore, because the studies focused on the COO effect and those undertaken to explain ethnocentric behaviour have investigated a similar phenomenon -patriotic consumption behaviour-, the contribution of the present study consists in analysing the acceptance of different foods with a different country of origin, including both concepts in the investigation in a developing country.

Studies conducted on ethnocentrism and COO conclude that consumers prefer domestic products or those from countries with a similar culture or level of development. However, no studies have been carried out that demonstrate this behaviour in a basic product category, such as food, in a developing country. Thus, the objectives of this study were:

1) To determine the relative importance of the country of origin as compared to other important attributes of the product in the selection of different foods, imports of which have increased to an important extent in Chile in recent years.

2) To identify and characterise consumer segments based on their preferences for domestic or imported foods, their demographic characteristics, level of ethnocentrism, and their purchasing behaviour of imported foods.

3) To evaluate which sociodemographic variables affect ethnocentrism in food consumption, and if this variable is affected by the consumer's self-declared lifestyle, independently of their sociodemographic background.

Literature review

The country of origin effect illustrates that consumers carry out different assessments towards products from various countries (12). This effect implies that consumers use the origin as an attribute related to the quality of the product (12, 37, 53), on its own, or in combination with other attributes.

The quality association derived from indicators of origin determines an effect on the value perceived by the consumer and consequently on their confidence, thus reducing the risk associated with the purchase (25).

Numerous studies show the importance of the country of origin in the food purchase choice (3, 10, 37, 43, 45, 54). However, other investigations have determined that the origin of the food is only considered by a small proportion of consumers when it comes to purchase decisions (19), it does not present a significant effect in consumer preferences, or is an attribute of lesser importance in the choice (12, 54).

Nevertheless, the relative importance of this attribute might be associated with the product itself (42, 53) and with the attributes with which the country of origin is compared (1, 42, 54). It should be emphasized, however, that most of these studies have focused on measuring the importance of the country of origin in the decision to purchase a single food, and therefore the literature has yet to account for how the consumer reacts when confronted with choosing several foods with different countries of origin simultaneously, comparing the relative importance with different attributes. There is also evidence of rejection of domestic products and preference for imports when domestic foods are of poor quality (25, 49).

In other words, the country of origin effect is only detected in certain products and with unequal intensity, and therefore it is impossible to generalise for any product or country (53).

In this regard, this study endeavours to confirm that the importance of origin in the decision to purchase differs according to the product, and the importance of this attribute is evaluated in relation to other attributes relevant to the decision to purchase. Accordingly, we suggest the following hypothesis:

H1

The importance of the attribute origin in the purchase decision will be different depending on a) the food evaluated, b) on the attributes to which it is compared.

In parallel, some investigations have detected different consumer segments based on acceptance of foods from different countries of origin (36, 43). Therefore, it is also impossible to generalize that origin is an attribute that decisively affects or not the decision to purchase made by all consumers and their preferences towards certain countries of origin. However, these studies have detected consumer segments based on preferences for a single product. The present investigation seeks to distinguish consumer segments according to the preferences for several foods at the same time. Therefore, we propose the following hypothesis:

H2

Different consumer segments will be identified according to the importance assigned to the attribute origin in the purchase choice of different foods.

One aspect for which there is no consensus in the literature refers to the connection between the importance consumers assign to the attribute country of origin and their demographic characteristics. There is evidence that the perception of foods of different origins depends on the consumer's age (3, 51, 54), gender (3, 12), educational level (54), residential area (3) and ethnocentrism (10).

However, Scarpa *et al.* (2005) indicate that the consumers' demographic characteristics have a limited explanatory power on the country of origin effect. At the same time, some studies conducted with different foods also relate the importance of the attribute origin to the frequency with which the food is consumed (9, 43) and the frequency with which imported foods are purchased (13).

On this basis, this investigation endeavours to confirm that the importance assigned to this attribute is related to consumption habits. This background therefore leads us to propose the following hypothesis:

H3

The consumer segments will differ in their a) sociodemographic profile, b) level of ethnocentrism, c) their consumption habits.

It has also been reported that consumers prefer foodstuffs produced in their home country (3, 9,10, 39, 43) or imported from countries nearby or with a similar culture (3, 37, 39). This behavior is indicative of ethnocentric tendencies (37).

In this respect, the level of economic development of the country of origin has been found to have an impact on consumer evaluations of imported foods: products originating from developed countries tend to receive higher overall evaluation than those from less developed countries (3), but consumer acceptance in developing nations of foods imported from developed countries has been less studied. On this basis, we propose the following hypothesis:

H4

Consumers will prefer a) foods of domestic origin, b) foods imported from countries nearby with a similar culture.

Consumer ethnocentrism is defined as the beliefs held by consumers about the appropriateness and morality of purchasing home-made products and the rejection of foreign-made products (49).

The concept of ethnocentrism incorporates the emotional dimension of buying imported goods and the implications of such a choice as a threat to domestic industry or even national security (4).

It is therefore expected that the consumer's level of ethnocentrism may be related to some of their psychographic characteristics, such as lifestyle.

Shimp and Sharma (1987) developed a scale of 17 items to evaluate ethnocentric tendencies in consumers called the CETSCALE (Consumer Ethnocentric Tendencies Scale).

The purpose of the CETSCALE is to measure the degree to which consumers feel that buying imported products is unpatriotic and immoral because it damages the economy of their own country (49).

Ethnocentrism is an important factor in predicting the attitudes and perceptions of consumers towards foreign or imported products (36), influencing the purchasing habits of the consumer by generating loyalty to his own country and rejection of others (4, 10, 11, 12).

Various investigations have demonstrated that ethnocentrism is a global phenomenon, but differences exist in the degree of ethnocentrism expressed by consumers depending on the country studied (23, 51).

People in developed countries tend to be less ethnocentric than their counterparts in emerging countries (27).

However, findings from food studies indicate the opposite: consumers from developed countries prefer their own food (4, 9, 10, 39, 56) or imported from countries with a similar level of development (3, 4, 37, 39).

One possible explanation for this phenomenon is that consumers in developed countries are more likely to identify their own domestic products as being of higher quality than imported products (3).

In the case of developing countries, it has also been reported that consumers prefer domestic foods (43) over imports, but some studies conclude that in these countries the level of ethnocentrism is lower and that buying imported products increases the consumer's status (6, 26). Sharma (2011) studied the influence of ethnocentrism and country of origin effect in developed and emerging countries. They detected the relevance of other aspects like cultural values and economic situation to this relation.

Li *et al.* (2012) found less ethnocentrism for developing countries because consumers considered the foreign product as being of higher quality or representing a higher status level. Batra *et al.* (2000) suggested that in developing countries a brand's country of origin not only serves as a "quality halo" or summary of product quality, but also possesses a dimension of 'non-localness' that, among some consumers and for some product categories, contributes to attitudinal liking for status-enhancing reasons. However, these studies were conducted with product categories where buying the imported alternative may bring about this effect, but no studies have been carried out that demonstrate this behaviour in a basic product category, such as food. In Southern Chile, Schnettler *et al.* (2011) distinguished five typologies of consumer with different degrees of ethnocentrism based on the values of the factors in the CETSCALE. These authors concluded that different levels of ethnocentrism exist in the consumption of foods, related with some socio-demographic characteristics of consumers and their attitudes to imported foodstuffs.

However, Schnettler *et al.* (2011) did not look at the relation between the consumers' level of ethnocentrism and their preferences for domestic and imported foods, which the present research intends to approach while adding the COO.

Some studies have determined stronger ethnocentric tendencies in women and older people (23, 51, 54),

while education and income tend to relate negatively to ethnocentrism (23, 51, 54). However, all these studies were conducted in developed countries. Therefore, in the present investigation it is expected to find that ethnocentrism is associated with the sociodemographic characteristics of consumers in a developing country. Based on the results of the studies discussed here, we suggest the following hypothesis:

H5

In terms of sociodemographics and ethnocentric tendencies a) women have more ethnocentric tendencies than men, b) elderly have more ethnocentric tendencies than young people, c) people from lower sociodemographic status have more ethnocentric tendencies than people from higher sociodemographic status.

Nevertheless, there is evidence to suggest that sociodemographic variables are not sufficient to explain the phenomenon of ethnocentrism in consumption (7). Indeed, the rationale provided for the aforementioned relationships is that females, older and less-educated people are more conservative than other people (4, 23, 49, 54).

Materials and Methods

Sample

Accidental non-probability sampling was used to recruit a sample of 800 habitual supermarket shoppers in two Chilean cities in Southern Chile, aged over eighteen, who were responsible for buying the food for their homes. 400 persons were surveyed in Los Angeles (Biobío Region), and 400 in Temuco (Araucanía Region), Chile.

The survey was conducted in person by two trained surveyors, at the exit of two supermarkets in Temuco and Los Angeles.

The surveyors approached people as they were exiting the supermarkets, explained to them the objectives of the survey and the strictly confidential treatment of the information obtained, and then asked if they were willing to answer the questionnaire (mall intercept type).

The response rate was 60%. Prior to conducting this survey, a pilot test of the questionnaire was conducted with 10% of the survey sample.

The preliminary test was done in the two supermarkets selected in Temuco, using the same method of addressing the participants as in the definitive survey. As the behaviour of the instrument was satisfactory, no changes were required in either the questionnaire or the interview procedure.

Data collection instrument

The survey was composed by 11 closed questions, the CETSCALE (Consumer Ethnocentric Tendencies Scale), and four conjoint designs with eight combinations of attributes for each food, which the survey respondents had to arrange according to their preferences.

Closed questions in the questionnaire were used to inquire into knowledge on the origin of foodstuffs and purchasing frequency of imported foods. Respondents with a high purchasing frequency (always or almost always) were asked the reasons for their preference, and, in the opposite case (low purchasing frequency: almost never or never), their reasons for rejection. Classification questions were included to establish gender, age, zone of residence, self-declared lifestyle, level of education of the head of the household, and ownership of ten domestic goods.

The combination of these two latter variables in a matrix allows the socio-economic level to be determined, classified as high and upper middle, middle-middle, lower middle, low and very low (2).

The CETSCALE, developed by Shimp and Sharma (1987), was applied. The CETSCALE was recently validated in Chile by Schnettler *et al*. (2011) (Cronbach's α coefficient = 0.928).

The CETSCALE consists of 17 statements to which respondents must indicate their level of agreement using a five-point Likert scale (5: completely agree, 1: completely disagree). Considering that individuals scoring high on the CETSCALE were expected to be more ethnocentric (48), the average of each subject was calculated for the scale and a division was then generated at the mean point, to assign each subject to a category of ethnocentric and non-ethnocentric. Thus, participants classified as ethnocentric were those whose score on the scale was higher than the sample average, and as non-ethnocentric those whose score was lower than the average. Other authors have also used this classification (*e.g.* 14, 17, 23, 49).

To determine the relative importance of the country of origin attribute, and to evaluate preferences for rice, sugar, chicken meat, and oil of different origins, a conjoint analysis (CA) was employed (19). CA allows estimating the relative importance of the attributes of a product and the part worth utility values for each level of an attribute.

The estimated part worth utility values indicate how influential each level of an attribute is in the formation of consumer preferences for a combination, *i.e.*, the degree of preference for each level of an attribute (19).

Table 1 (page 250), shows the attributes and levels defined for each food. Among the alternatives of countries of origin, the most important have been chosen in the last few years, but countries of origin similar to Chile's culture and development were included (Argentina and Uruguay), as well as others with greater cultural differences (Colombia), and belonging to the group of developed countries (United States). In the case of rice, Uruguay is one of the principal exporters of rice to Chile but the volumes of rice imported from the United States are not large. Nevertheless, the United States was included as an alternative to evaluate acceptance of a product imported from a country with marked cultural differences to Chile. These countries were chosen following the cultural dimensions of the Hofstede framework. Hofstede and Bond (1987) found pronounced differences between Chilean and United States citizens for power distance, individualism, masculinity, and in the uncertainty avoidance dimension. These authors also reported differences between Chilean and Colombian citizens in the same dimensions.

Conversely, Hofstede and Bond (1987), reported similarities between Chilean and Argentinean citizens in individualism, masculinity and uncertainty avoidance, while they found similarities in the four dimensions between Chilean and Uruguayan citizens (21). Although there is scarce literature available that includes Chile in cultural distance measurements, more recently Merkin (2006), confirmed the pronounced differences between Chilean and United States citizens for the uncertainty avoidance dimension, whereas Farías (2007) confirmed the differences between Chilean and United States citizens in the four dimensions.

It should be noted that "vegetable oil" in Chile corresponds to a blend of oils, preferably containing soybean oil. It should also be noted that when the survey was conducted, over 95% of all imported sunflower oil and "vegetable oil" was of Argentinean origin.

Table 1. Design of the conjoint experiments.
Tabla 1. Diseño de los experimentos de análisis conjunto.

Food	Attributes	Levels
Rice	Origin	Chile Uruguay US
	Quality	Grade 1 Grade 2
	Price	US $1.1/kg US $1.3/kg US $1.6/kg
Sugar	Origin	Chile Argentina Colombia
	Packaging	1 kilogram 5 kilograms
	Price	US $0.51/kg US $0.63/kg US $0.76/kg
Chicken meat	Origin	Chile Argentina
	Form of presentation	Whole In pieces
	Price	US $2.1/kg US $2.4/kg US $2.8/kg
Oil	Origin	Chile Argentina
	Variety of oil	Sunflower Vegetable (mix with soybean)
	Price	US $1.7/L US $2.1/L US $2.5/L

Moreover, all the imported chicken meat came from Argentina. Based on this information, only Chile and Argentina were defined as levels in the attribute "origin" for both foods.

In the four foods, the relative importance of the country of origin with respect to price was evaluated, because consumers use this attribute as a quality indicator that helps reduce uncertainty and risk when purchasing food.

The price levels were established based on the average retail sale price at the time of the survey in the cities where the study was conducted.

When there are many attributes, conjoint analysis experiments include problems of information overload that affect their validity. Since the respondents were asked to order alternatives of four different foods according to their preference, the choice was made to define a third attribute that had to be different for each food and relevant to the decision to purchase.

The third attribute evaluated for each food was: quality for rice, packaging for sugar, presentation for chicken meat, and variety for oil (table 1, page 250).

From these attributes and levels, 18 combinations (3x2x3) were obtained for rice and sugar, and 12 combinations for chicken meat and oil (2x2x3).

However, to facilitate the response of respondents it was decided to use a fractional factorial design obtained using the orthoplan option of SPSS (20). This allowed the number of stimuli to be reduced to eight with one specification for each attribute in each food.

The stimuli were presented to respondents in cards with verbal information. Participants were asked to order the cards from most to least preferred, on a scale of 1 to 8 (where 1=most preferred; 8=least preferred). This procedure was conducted for each food separately.

Statistical analysis

Conjoint analysis was carried out by means of the TRANSREG procedure of SAS (SAS Institute Inc., Cary, NC, USA).

The relative importance that consumers gave to the different attributes and the utility values obtained for each level of the selected factors were determined.

A hierarchical cluster analysis was chosen to determine consumer segments according to the partial utility scores of the levels of the attributes. Ward's procedure, which calculates the squared Euclidean distance, was carried out with the CLUSTER procedure of SAS.

The presence of outliers was detected using the Mahalanobis distance (20), which is why the database used for the statistical analyses comprised 792 cases.

The number of clusters was taken based on the R^2 obtained, and from a strong increase produced in the Cubic Criterion of Clustering and Pseudo-F values. To describe the segments, a Chi-square test was applied for the discrete variables and a one-factor analysis of variance for the continuous variables, with a 99% confidence level. Because the Levene's statistic indicated non-homogeneous variances in all the continuous variables analysed, the variables for which the analysis of variance resulted in significant differences ($P<0.001$) were subjected to Dunnett's T3 multiple comparisons test.

To evaluate sociodemographic variables affecting ethnocentrism in food consumption, a nominal binomial logit model was generated (unordered data) (16).

The definition of sociodemographic characteristics as explanatory variables of the logit model is based on the works of Javalgi *et al.* (2005), Verbeke and Ward (2006), and Unahanandh and Assarut (2013). The dependent variable of the model was the consumer classification according to the results of the CETSCALE, which may take two values (dichotomous variable): Non ethnocentric = 0, Ethnocentric = 1. The parameters of the logit model were estimated by the method of maximum likelihood. The goodness-of-fit measurements used for the model in this work were: $R^2_{adj.}$ Nagelkerke's (Pseudo-R^2) and Hosmer-Lemeshow's test.

The condition index was used for the diagnosis of collinearity of the logit model. This is justified by the variance

matrix playing the same role in the logistic regression than in the linear regression. The literature states that a condition index between five and 10 is associated with a weak collinearity (18). Wald statistics were used to measure the statistical significance of the explanatory variables. The SPSS program version 16.0 for Windows was used.

Results

Of the whole sample (table 2), the largest proportion were women, aged less than 35, resident in urban areas, with a conservative lifestyle, in high and upper middle and middle-middle socioeconomic groups. Most of the consumers said that they knew the origin of the foods they buy. The frequency of consumption of imported foods was occasional in most cases.

The main reason for rejecting imported foods in those individuals who never or hardly ever buy them (27.7%; n = 222), was a preference for Chilean products.

The principal motives for preferring imported foods in those individuals who buy them with more than occasional frequency (72.3%; n = 578) were the good price-quality ratio and that they were cheaper than Chilean products (table 2).

In the present study, the average sum of the CETSCALE was 52.9 with a typical deviation of 13.1 (minimum = 20, maximum = 85). The Cronbach's α coefficient obtained (0.938) allowed to conclude that the CETSCALE was reliable. Consistent with the study by Schnettler *et al.* (2011), three dimensions were obtained by factor analysis, which represent 61.6% of the accumulated variance (table 3, page 253). It was found that 53.2% of the total sample was qualified as ethnocentric individuals and 46.8% as non-ethnocentric.

Table 2. Characteristics (%) of the sample.
Tabla 2. Características (%) de la muestra.

Sample	Total
Female	59.0
Male	41.0
< 35 years	45.0
35-54 years	40.1
55 years or older	14.9
High and upper middle	30.2
Middle-middle	33.1
Lower middle	19.8
Low	14.5
Very low	2.4
Conservative	42.4
Liberal	24.5
Ecological	10.6
Athletic	10.9
Innovator	10.8
Other	0.8
Always buys AI*	6.2
Generally	26.0
Occasionally	40.1
Almost never	22.8
Never	4.9
Prefers AI* for better quality	20.9
Cheaper	29.5
Good price-quality ratio	36.4
No domestic substitutes	9.7
Other	3.5
Rejects AI* for lower quality	1.2
For being more expensive	26.7
Prefers Chilean products	58.8
Other motive	1.8

* AI: Imported foods.
* AI: alimentos importados.

Importance of country of origin in food purchase

The results of the conjoint analysis for the whole sample indicated that, for these four foods, the country of origin was the attribute that dominated consumer preferences, while the price was in third place (table 4 , page 254 and 5, page 255).

Table 3. Results of the CETSCALE factorial analysis.
Tabla 3. Resultados del análisis factorial de la CETSCALE.

Item on the ethnocentrism scale	Component		
	1	2	3
A real Chilean and should always buy Chilean-made foods.	0.789	0.300	0.119
Purchasing foreign-made foods is un-Chilean.	0.780	0.305	-0.005
Curbs should be placed on food imports.	0.731	0.095	0.335
Chilean consumers who purchase foods made in other countries are responsible for putting their fellow Chileans out of work.	0.728	0.160	0.300
Foreigners should not be allowed to put their foods on our markets.	0.635	0.045	0.421
It is not right to purchase foreign foods, because it puts Chilean out of jobs.	0.629	0.354	0.251
We should purchase foods manufactured in Chile instead of letting other countries get rich off us.	0.600	0.340	0.355
Chileans should not buy foreign foods, because this hurts Chilean business and causes unemployment.	0.558	0.222	0.331
It may cost me in the long-run but I prefer to support Chilean foods.	0.519	0.355	0.105
Foreign foods should be taxed heavily to reduce their entry into the Chile.	0.508	0.079	0.145
Chilean foods, first, last, and foremost.	0.318	0.786	0.040
Chilean people should always buy Chilean-made foods instead of imports.	0.280	0.728	0.125
Buy Chilean-made foods. Keep Chile working.	0.046	0.688	0.224
It is always best to purchase Chilean foods.	0.212	0.571	0.275
We should buy from foreign countries only those foods that we cannot obtain within our own country.	0.155	0.215	0.783
There should be very little trading or purchasing of foods from other countries unless out of necessity.	0.116	0.222	0.713
Only those foods that are unavailable in Chile should be imported.	0.101	0.246	0.571
Variance by factor (%).	47.97	8.19	6.58
Accumulated variance (%).	47.97	55.06	61.64

Kaiser-Meyer-Olkin measure of sampling adequacy = 0.946. Bartlett's test of sphericity: Approximate Chi2 = 7.149.389; gl = 136; Sig. = 0.000. Method of extraction: Principal axes. Method of rotation: Varimax normalization with Kaiser. The rotation has converged in ten iterations.

Kaiser-Meyer-Olkin medida de adecuación de muestreo = 0,946. Prueba de esfericidad de Bartlett: Chi2 aproximado = 7.149.389; Gl = 136; Sig. = 0,000. Método de extracción: Ejes principales. Método de rotación: normalización Varimax con Kaiser. La rotación ha convergido en diez iteraciones.

Table 4. Importance (%) of the origin, presentation and price in the purchase of rice and sugar, and utilities of the levels of each attribute in the cities of Los Angeles and Temuco, Chile, and in the groups obtained via cluster analysis.

Tabla 4. Importancia (%) del origen, presentación y precio en la compra de arroz y azúcar, y utilidades de los niveles de cada atributo en las ciudades de Los Ángeles y Temuco, Chile, y en los grupos obtenidos a través de análisis de conglomerados.

	Total sample (n = 792)	Group 1 (n = 364)	Group 2 (n = 157)	Group 3 (n = 271)	F	P value
RICE (RMSE = 0.22)						
Importance of the attributes (%)						
Origin	55.4	53.6 b	35.8 c	68.9 a	159.681	0.000 **
Quality	22.7	28.4 a	20.4 b	16.7 b	40.382	0.000 **
Price	21.9	18.0 b	43.8 a	14.4 c	214.722	0.000 **
Partial utility of each attribute level						
Chile	2.483	1.886 b	1.699 b	3.736 a	119.804	0.000 **
Uruguay	-0.711	-0.549 a	-0.316 a	-1.157 b	20.836	0.000 **
United States	-1.772	-1.337 a	-1.383 a	-2.579 b	46.937	0.000 **
Grade 1	0.464	0.342 b	0.399 b	0.663 a	4.785	0.009 **
Grade 2	-0.464	-0.342 a	-0.399 a	-0.663 b	4.785	0.009 **
US $1.1/kg	1.096	0.869 b	2.232 a	0.750 a	100.606	0.000 **
US $1.3/kg	-0.109	-0.087 a	-0.223 b	-0.074 a	49.606	0.000 **
US $1.6/kg	-0.987	-0.782 a	-2.009 b	-0.676 a	105.606	0.000 **
SUGAR (RMSE = 0.23)						
Importance of the attributes (%)						
Origin	56.0	55.7 b	29.8 c	73.5 a	255.451	0.000 **
Package capacity	24.1	26.8 a	32.2 a	16.1 b	48.694	0.000 **
Price	19.9	17.5 c	38.0 a	10.4 b	160.146	0.000 **
Partial utility of each attribute level						
Chile	2.609	2.319 b	1.340 c	3.742 a	177.455	0.000 **
Argentina	-0.529	-0.510 b	-0.145 a	-0.781 b	12.203	0.000 **
Colombia	-2.080	-1.809 b	-1.195 a	-2.961 c	72.960	0.000 **
Bag 1 kg	-0.231	0.058 a	-1.389 b	0.050 a	59.549	0.000 **
Bag 5 kg	0.231	-0.058 b	1.389 a	-0.050 b	59.549	0.000 **
US $0.51/kg	1.128	0.916 b	2.174 a	0.579 b	101.659	0.000 **
US $0.63/kg	-0.282	-0.250 a	-0.543 b	-0.174 a	25.659	0.000 **
US $0.76/kg	-0.846	-0.666 a	-1.630 b	-0.405 a	99.659	0.000 **

Utility numbers in the different levels from an attribute with a negative sign indicate utility loss for the consumer. Higher negative numbers indicate higher utility loss.

* Significance (0.001). Different letters in a row indicate statistical difference according to Dunnet T3 multiple comparison test (P ≤ 0.001).

Los números de utilidad en los diferentes niveles de un atributo con un signo negativo indican pérdida de utilidad para el consumidor. Los números negativos más altos indican una mayor pérdida de utilidad.

* Significancia (0,001). Diferentes letras en una fila indican diferencia estadística según la prueba de comparación múltiple de Dunnet T3 (P ≤ 0,001).

Table 5. Importance (%) of the origin, presentation and price in the purchase of chicken and oil, and utilities of the levels of each attribute in the cities of Los Angeles and Temuco, Chile, and in the groups obtained via cluster analysis.

Tabla 5. Importancia (%) del origen, presentación y precio en la compra de pollo y aceite, y utilidades de los niveles de cada atributo en las ciudades de Los Ángeles y Temuco, Chile, y en los grupos obtenidos mediante análisis de conglomerados.

	Total sample (n = 792)	Group 1 (n = 364)	Group 2 (n = 157)	Group 3 (n = 271)	F	P-value
CHICKEN MEAT (RMSE = 0.21)						
Importance of the attributes (%)						
Origin	44.9	39.2 b	29.9 c	60.2 a	147.598	0.000 **
Presentation	30.2	37.0 a	24.8 b	23.0 b	59.660	0.000 **
Price	24.9	23.8 b	45.3 a	16.8 c	135.055	0.000 **
Partial utility of each attribute level						
Chile	1.254	0.870 b	0.951 b	1.944 a	140.316	0.000 **
Argentina	-1.254	-0.870 a	-0.951 a	-1.944 b	140.316	0.000 **
Whole	0.016	0.007	0.129	-0.018	0.739	0.478 **
In pieces	-0.016	-0.007	-0.129	0.018	0.739	0.478 **
US $2.1/kg	0.866	0.819 b	2.094 a	0.576 b	111.307	0.000 **
US $2.4/kg	-0.394	-0.341 a	-0.698 b	-0.115 a	25.307	0.000 **
US $2.8/kg	-0.472	-0.478 a	-1.396 b	-0.461 a	98.307	0.000 **
VEGETABLE OIL (RMSE = 0.20)						
Importance of the attributes (%)						
Origin	41.5	38.9 b	26.9 c	53.7 a	179.639	0.000 **
Variety	30.2	38.8 a	20.4 b	24.3 b	94.678	0.000 **
Price	28.3	22.3 b	52.7 a	22.0 b	80.618	0.000 **
Partial utility of each attribute level						
Chile	0.945	0.218 b	0.723 b	1.722 a	138.287	0.000 **
Argentina	-0.945	-0.218 a	-0.723 a	-1.722 b	138.287	0.000 **
Sunflower	0.172	-0.089 b	0.297 a	0.446 a	18.838	0.000 **
Vegetable (mix with soybean)	-0.172	0.089 a	-0.297 b	-0.446 b	18.838	0.000 **
US $1.7/L	1.114	0.858 b	2.049 a	0.915 b	116.838	0.000 **
US $2.1/L	-0.464	-0.357 a	-0.854 b	-0.381 a	18.838	0.000 **
US $2.5/L	-0.650	-0.501 a	-1.195 b	-0.534 a	78.838	0.000 **

Utility numbers in the different levels from an attribute with a negative sign indicate utility loss for the consumer. Higher negative numbers indicate higher utility loss.

* Significance (0.001). Different letters in a row indicate statistical difference according to Dunnet T3 multiple comparison test (P ≤ 0.001).

Los números de utilidad en los diferentes niveles de un atributo con un signo negativo indican pérdida de utilidad para el consumidor. Los números negativos más altos indican una mayor pérdida de utilidad.

* Significancia (0,001). Diferentes letras en una fila indican diferencia estadística según la prueba de comparación múltiple de Dunnet T3 (P ≤ 0,001).

Consumers preferred Chilean grade 1 rice, Chilean sugar in 5 kg bags (table 4, page 254), Chilean whole chicken, and Chilean sunflower seed oil (table 5, page 255).

In all four products consumers preferred to pay the low price. Consumers expressed a lower preference for rice from United States than rice imported from Uruguay. Likewise, there was less rejection of Argentinean sugar than Colombian product (table 4, page 254).

Consumer segments

Three consumer segments were distinguished by cluster analysis with significant differences in partial utility scores for the levels of the attributes in most cases (P≤0.001 or P≤0.05), except in the preference for whole chicken or chicken pieces (P>0.1) (table 4, page 254 and 5, page 255).

The clusters presented significant differences in ethnocentrism, frequency of purchase of imported food, and reasons for preferring imported foods (P≤0.001) (table 6). These groups did not present any statistical differences in the rest of the variables included in this study, including city of residence (P>0.1).

Table 6. Characteristics with significant differences in the groups of supermarket buyers identified by cluster analysis in Los Ángeles and Temuco cities. Chile.

Tabla 6. Características con diferencias significativas en los grupos de compradores de supermercados identificados con análisis de conglomerados en las ciudades de Los Ángeles y Temuco. Chile.

Characteristic	Group 1 (n = 364)	Group 2 (n = 157)	Group 3 (n = 271)
Ethnocentrism	P = 0.000		
Ethnocentric	44.7	40.3	64.9
Non-ethnocentric	55.3	59.7	35.1
Frequency of imported food purchase	P = 0.000		
Always	8.2	3.8	4.8
Generally	31.3	34.4	14.4
Occasionally	41.8	49.0	33.2
Almost never	15.9	10.2	38.7
Never	2.7	2.5	8.9
Reasons for preferring imported food	P = 0.000		
Greater quality	30.2	3.2	17.3
Cheaper	21.7	40.8	38.0
Price/quality ratio	38.7	40.8	26.6
Lack of domestic substitute	8.0	8.3	15.1
Other	1.4	6.4	3.0

P value corresponds to the (bilateral) asymptotic significance obtained in Pearson's Chi squared Test.
El valor de P corresponde a la significancia asintótica (bilateral) obtenida en el test de Chi cuadrado de Pearson.

Group 1 "Consumers sensitive to the origin depending on the product" (46.0% of the sample)

Assigned great importance to the country of origin in the case of rice and sugar (table 4, page 254), significantly higher than Group 2 but lower than Group 3 (P≤0.001).

The results for the relative importance assigned to the country of origin for chicken meat and oil (table 5, page 255) were statistically similar to the above foods, but in the case of chicken meat the importance assigned to the presentation was slightly less than that for origin, while for oil the same occurred with the relative importance of origin and variety.

The preference of this group for Chilean foods was significantly lower than Group 3 (P≤0.001), similar to Group 2 in rice (table 4, page 254), chicken meat and oil (table 5, page 255), but higher than Group 2 in sugar (table 4, page 254) (P≤0.001).

The negative utility figures for sugar imported from Argentina and Colombia were significantly lower than those of Group 2 (P≤0.001). With respect to the whole sample, this segment presented a higher proportion of non-ethnocentric persons (55.3%), and those who always or generally buy imported foods (39.5%), because they consider them to be of better quality than Chilean foods (30.2%) (table 6, page 256).

Group 2. "Consumers sensitive to price" (19.8%)

The consumers of this group assigned greater importance to the price of the four foods (P≤0.001).

The importance assigned to country of origin was significantly below Groups 1 and 3 for all four foods (P≤0.001) (table 4, page 254 and table 5, page 255).

In the preference expressed for Chilean products and lesser preference for imported food this Group did not differ statistically from Group 1 for rice (table 4, page 254), chicken meat, and oil (table 5, page 255); this group presented the least preference for Chilean sugar, and least rejection of sugar imported from Argentina and Colombia (table 4, page 254), statistically different from Groups 1 and 3 (P≤0.001). This type of consumer contained a higher presence of non-ethnocentric people (59.7%), who generally or occasionally purchase imported foods (83.4% altogether), because they are cheaper than domestic products (40.8%) (table 6, page 256).

Group 3 "Consumers sensitive to origin" (34.2%)

Assigned the greatest importance to country of origin in the four foods, significantly higher than Groups 1 and 2 (P≤0.001) (table 4, page 254 and table 5, page 255). This group presented the highest figures for preference of products of Chilean origin for all four foods (P≤0.001). At the same time, it presented the most negative figures in preference for imported foods (P≤0.001), except in the case of sugar imported from Argentina, in which it did not differ statistically from Group 1 (table 4, page 254). This segment presented the highest proportion ethnocentric persons (64.9%) and those who never or almost ever buy imported foodstuffs (47.6% altogether) (table 6, page 256).

In all four foods, consumers preferred the low price and the utility was negative with higher prices, particularly in Group 2 "Consumers sensitive to price" which presented values significantly lower than those of Groups 1 and 3.

The partial utility values for Group 2 towards the lowest price were significantly higher than the other groups.

Demographic variables influencing ethnocentrism in food consumption

The results of the logit model generated for "ethnocentrism" (Ethnocent) are presented in table 7.

The binomial logistic regression model proved significant overall (P≤0.01). This means that the model is a good predictor according to the likelihood function test, Nagelkerke's coefficient and Hosmer-Lemeshow's test.

The highest condition index was 5.68; therefore, the generated model shows no collinearity problems, or, at the most, there may be weak collinearity.

The variables "Age" and "Socioeconomic level" (SEL) proved to be significant in the model (P<0.01), as did "Gender" and "Lifestyle" (P<0.05). In view of the signs of the coefficients and categories of comparison of the logit model, it is concluded that:

If the person is a man, a lower probability can be expected that he will be ethnocentric (β = -0.345).

The older a person is, the higher the probability that he or she will be ethnocentric (β = 0.461).

If a person belongs to a medium socioeconomic level, the probability increases that he or she will be ethnocentric as compared to person of low socioeconomic level (β = 0.862), the latter being the category of comparison.

The same conclusion is found for persons belonging to a high socioeconomic stratum (β = 0.407) against the same category of comparison.

Table 7. Results of the logit model generated using the likelihood method.

Tabla 7. Resultados del modelo logit generado utilizando el método de verosimilitud.

Regressors	**β Estimator**	**Wald[a]**	**Sig.**
Constant	1.489	1.701	0.191
Gender	-0.345**	5.088	0.025
Age	0.461***	16.538	0.000
Sel		12.245	0.002
Sel(1)	0.862***	11.672	0.001
Sel(2)	0.407**	5.465	0.018
Style		8.200	0.147
Style(1)	-1.859*	2.803	0.094
Style(2)	-2.234**	4.009	0.044
Style(3)	-1.890*	2.809	0.093
Style(4)	-2.167*	3.696	0.054
Style(5)	-2.175*	3.734	0.053
R^2 Nagelkerke	0.246		
Hosmer-Lemeshow (HL)	6.138		
	Prob(HL): 0.633		

[a] Significant variables at *P<0.1; ** P<0.05; *** P<0.01 based on Wald statistics.

[a] Variables significativas a * P <0,1; ** P<0,05 *** P <0,01 basado en el estadístico de Wald.

If the respondent describes his or her lifestyle as liberal, ecological, sporting, innovative or other, the probability of this respondent being ethnocentric is lower than persons who describe themselves as conservative (β = -1.859, -2.234, -1.890, -2.167, -2.175, respectively), the latter being the category of comparison.

Discussion

This study focuses on country of origin effect and ethnocentrism in food purchase in Southern Chile. Conjoint analysis of the whole sample allowed us to confirm the importance of the country of origin attribute in the formation of consumer preferences for the four foods under study, consistent with previous studies (3, 10, 26, 37, 43, 51, 55). This result by itself would lead to a rejection of hypothesis 1a. Nevertheless, it was possible, using cluster analysis, to distinguish three segments of consumers for whom the importance of this attribute differed, in line with the findings of Van Ittersum *et al.* (2003) and Scarpa *et al.* (2005) that the country of origin effect is detected with unequal intensity. Thus, although an important part of the sample Group 3 (34.2%) presented a similar behaviour to the total sample, for the Group 1 the country of origin was the most important attribute only in the choice of rice and sugar, presenting similar importance to the variety in the case of oil and the presentation (whole or pieces) for chicken meat. The latter contradicts the results obtained by Pouta *et al.* (2010) in Finland, and Vukasovic (2010) in countries of Central and Eastern Europe, who found that country of origin had high importance as a choice cue in chicken meat. This result may be attributed to contextual factors or confounding variables.

However, the preferences of Group 1 are consistent with studies that have detected a secondary importance of origin in the purchase decision, both in global samples (12, 54) and in different market segments (36, 43).

Oliver *et al.* (2006) detected different segments among European consumers in terms of their acceptance of beef of different origins, with some groups who do not discriminate among products for their origin. In Group 2, the attribute that dominated consumer choice in the four foods was price, while country of origin occupied second place, in agreement with research which indicates that it is an attribute of lesser importance in choice (12, 54). Thus, to the findings of Van Ittersum *et al.* (2003) it must be added that the country of origin effect is found with unequal intensity among consumers of the same country.

The results are sufficient to accept hypotheses 1a, 1b and 2, and highlight the importance of studying the market in segmented form rather than drawing conclusions based on the entire sample.

Regarding the profile of the market segments identified, it should be noted that they are mainly differentiated by behaviour and not by sociodemographic characteristics, contrary to the findings reported in various studies (3, 10, 51, 54), but in line with Scarpa *et al.* (2005).

Group 2, which assigned the greatest importance to price in product choice, purchases imported foods because they are cheaper than national products. Group 3, which assigned the greatest importance to the country of origin and showed the greatest preference for foods produced in Chile, was remarkable due to the lowest frequency of purchase of imported foodstuffs. Although Group 1 assigned greater importance to country of

origin in the choice of rice and sugar, this behaviour was not observed in chicken meat and oil.

At the same time, although the results of the conjoint analysis indicate that these consumers prefer domestic foods, Group 1 was differentiated by greater frequency in the purchase of imported products, indicating that these consumers are not unconditional in their attitude to Chilean foods, preferring imported alternatives if they are of better quality. These results confirm previous studies regarding a relation between the importance assigned to the attribute origin and the frequency of purchasing imported foods (13).

A key aspect in the differences between the segments was the proportion of ethnocentric persons in each, according to the classification obtained from the scores of the CETSCALE. Thus, Group 3 presented a significantly higher proportion of ethnocentric individuals, corroborating the association between the preference for domestic products and a high degree of ethnocentrism in consumption detected in United Kingdom (10), the western Balkans (13) and in countries in America, Europe, and Asia (11). These results lead to reject hypothesis 3a, as consumer segments do not differ in their sociodemographic profile.

However, hypotheses 3b and 3c can be accepted, given that the consumer segments do differ in their level of ethnocentrism and purchasing behaviour. This result is interesting because it suggests that when studying the country-of-origin effect, a greater number of consumer-associated variables should be considered, such as consumption habits and psychographic characteristics, and not limited solely to sociodemographic characteristics.

In the whole sample, and in the three consumer segments, independent of the importance of the country of origin, consumers preferred the four foods produced nationally, in agreement with results from previous studies (3, 9, 10, 39, 43, 56). Although, based on the results of this investigation, it is not possible to assert that Chilean consumers prefer domestic foods due to their higher quality, it may be suggested that this behaviour is related to the confidence associated with indicators of origin, thus reducing the risk associated with purchase (25). Similar findings have been also reported in studies that evaluate the effect of the region of origin, protected designations of origin, and protected geographical indications (28, 40, 50, 46).

One possible explanation for this result is that people in developing countries tend to be more ethnocentric than their counterparts in developed countries (27, 45, 38).

When the preferences for rice and sugar are analysed, it can also be confirmed that in the case of foreign products, consumers prefer those imported from countries nearby or with a similar culture (3, 37, 39). This preference was expressed in the lesser preference for sugar imported from Colombia as compared to Argentinean product, and the lesser preference for rice imported from United States as compared to product from Uruguay. Therefore, from these results, it is possible to accept hypothesis 4a and 4b. This contradicts the findings reported by Alfnes (2004), that products originating from developed countries tend to receive higher overall evaluation than those from less developed countries. It should be noted that the studies of these authors were carried out in developed countries, where there will be greater confidence in products coming from countries with a similar level of development. By contrast, this research conducted in a developing country found that consumers showed

less preference for products from more distant and culturally different countries, independent of their level of development as a country, which may be indicative of ethnocentric tendencies not only in favour of the country of residence, but also of the countries which make up the geographical area of immediate influence. Also, this contradicts the results of Batra *et al.* (2006) and Li *et al.* (2012) in developing countries, where a country of origin not only serves as a "quality halo", but also contributes to attitudinal liking for status-enhancing reasons. This is likely related to the products evaluated in this study, all of which are for habitual consumption, and which independently of their origin, do not improve the consumer's status. Despite the importance of this finding for the export strategies of neighbouring countries, this result must be confirmed with other products and other countries of origin in future research. This notwithstanding, another explanation for the lower acceptance of products imported from the United States and Colombia is that country-of-origin effect is associated with diverse marketing factors that affect consumer behaviour, including familiarity (16).

Familiarity can be an important factor in explaining the propensity for using country-of-origin information and its effects on other variables (30). Grebitus *et al.* (2011) studied the use of origin information on the purchase of pork in Germany. They found that the use of origin information decreases when pork is the consumer's most purchased type of meat, thus suggesting that intrinsic quality cues might be used instead of extrinsic quality cues, such as origin information, by shoppers who are more experienced or familiar with the food.

Although the price was the most important attribute only for the minority segment (Group 2, 19.8%), in the whole sample and in all three segments the consumers preferred the low price, and the utilities were negative for the highest prices. This indicates that consumers choose the foods which have the attributes desired but at the low price.

Although the preference for domestic foods was the general tendency, which would enable Chilean industry to use the country of origin attribute to differentiate itself from imported competition in the internal market, the choice of lower priced foods imposes a demand on the industry of being able to produce efficiently and develop competitive cost advantages to maintain or increase sales in the domestic market.

However, it is possible to suggest the need to produce a differentiated marketing strategy, including a commercial mixture that emphasises the Chilean origin of the food aimed at Groups 1 and 3, and another that incorporates lower prices or sales promotions aimed at Group 1.

The results of the logit model to assess the influence of sociodemographic variables on ethnocentrism in food consumption obtained from the results of the CETSCALE, provided confirmation of the effect of gender, producing a more ethnocentric attitude among women (23, 49, 51); greater ethnocentrism associated with increasing age (18, 49, 51, 54); and greater ethnocentrism associated with education and income level, represented in this case by the socioeconomic level of the consumer. Nevertheless, in the latter case the results obtained contradict the reports in the literature which indicate that education and income tend to present a negative relation to ethnocentrism (23, 51, 54), since the probability that a person will be ethnocentric in our study

was higher in medium and higher socioeconomic levels (higher levels of income and education).

This result is in contrast with the lack of significant differences in the sociodemographic profile of the segments identified, which differed significantly in the presence of ethnocentric and non-ethnocentric consumers. It can be hypothesized that variables such as gender, age, and socio-economical level may have influenced the preferences of the consumer segments through associated ethnocentrism, although further research is needed to corroborate and validate this potential finding. Nonetheless, it is possible to accept hypotheses 5a and 5b, but reject hypothesis 5c.

This is probably due to the character of food as a basic need, in agreement with the findings reported by Javalgi *et al.* (2005), which is more difficult to satisfy in conditions of low income; it may therefore be expected that ethnocentric attitudes will make less sense in this context, and therefore with respect to foodstuffs.

Nevertheless, the results of this investigation are in line with studies conducted with beef in Spain, where the people with the highest education and income preferred meat produced in Spain over meat imported from the US, once the origin the meat was known (8, 41). This could be associated with these consumers' feeling protective of their culture. In this regard, Javalgi *et al.* (2005) conclude that the differences in the level of ethnocentrism found in studies that consider more than one country are generally associated with culture, confirming the importance of the consumer's culture as an internal factor in the consumer decision-making process (11).

Additionally, this result may be related to what is reported by Gretibus *et al.* (2011) in Germany, in the sense that a higher income increases the likelihood of using origin information for purchase decisions.

The literature explains the relation between ethnocentrism and gender, age and education level on the basis that women, older and less-educated people are more conservative than other individuals (4, 23, 49, 54).

However, in the present investigation it was found that a relation existed between ethnocentrism and the self-declared lifestyle of the consumers. Thus, an increase was obtained in the probability that a consumer will be ethnocentric if he describes himself as conservative, but in this case independent of his gender, age, income level or education. This result makes it appropriate to incorporate the consumer's psychographic characteristics in research into ethnocentrism in consumption.

One of the limitations of the study is that the sample is not representative of the country's population distribution in terms of socioeconomic status and gender. However, the consumer distribution in this survey was similar to the sample obtained by Schnettler *et al.* (2009, 2016) in supermarket consumer studies. Therefore, although the results and conclusions in this study may not be applicable to the whole population, they might be valid for those consumers that who normally purchase foods in supermarkets, the commercial formats in which imported foodstuffs are principally sold. In addition, all data were self-reported, thus, responses may be affected by social desirability, which partially would explain the preferences toward the domestic foods and the higher proportion of participants who answered that occasionally, almost never or never buy imported foods, despite the increase in agrifood products imports between 2000

and 2014 (33). These imports have been relatively constant in 2015 and 2016 (34), although an increase of 14.1% has been registered in rice imports, 23.7% in sugar imports, 35.9% in oil imports and 56.3% in chicken meat, in the period 2014-2016 (35). Another possible explanation may be the fact that participants do not know the COO of the food products they purchase, since this information, while it is included, it is not presented in a consumer-friendly manner in the packages for rice, sugar, oil, and many imported products sold under the store brand.

The exception is imported chicken meat, which is sold with labels that highlight the origin, and it is usually sold frozen unlike its Chilean counterpart. These results are in contrast with the fact that in Chile, 41% of rice is supplied by national production, and the remaining percentage comes mainly from Argentina (31). In the case of sugar, 45% is national production and the rest is imported from several Latin American countries (22), 97.2% of oil for national consumption is imported and 14% of total Chilean chicken meat consumption belongs to imports (33).

Conducting the survey in Temuco and Los Angeles can be considered a limitation, given that for both cities farming activities are paramount, thus these cities are not representative of other Chilean cities where these activities are less relevant, such as Santiago, Conception, and other Northern cities. Therefore, the noticeable preference towards Chilean products, and the low frequency of purchase of imported foods may have been affected by the participants' closeness to a farming environment.

New research is required in other cities across the country, and with methodologies that consider the consumers' behaviors and not only their stated preferences. In addition, although various previous studies have categorized consumers as ethnocentric and non-ethnocentric (14, 17, 23, 49), future research should consider different levels of ethnocentrism (24).

Another limitation lies in the study design. Evaluating the relative importance of the attribute origin in four foods at the same time imposed several limitations.

The first was the need to define only three attributes for each food to facilitate participants' responses. Despite this precaution, and although fractional factorial designs were used, asking participants to order eight combinations of stimuli of four different foods according to their preferences could have caused a potential respondent fatigue from evaluating many trade-offs.

An additional limitation of this investigation is the lack of control over variables such as economic development of the country of origin, and the level of familiarity with the evaluated product, which will have to be considered in future studies.

Conclusions

For supermarket consumers in the cities of Los Angeles and Temuco, in southern Chile, the country of origin was more important than the quality, packaging, presentation, variety and price in four foods, imports of which have increased in recent years in Chile.

Three consumer segments were identified, for whom the country of origin varied in importance, with significant differences in the frequency of purchase of imported foods, reasons for preferring these foods over domestic alternatives, and in their degree of ethnocentrism.

Independent of the importance of the country of origin, a preference for Chilean food was found in all three segments.

With respect to the imported alternatives, the least preferred were those imported from geographically remote countries, and countries with greater cultural differences, independent of the level of development of the country, as occurred with products imported from Colombia and United States. Ethnocentrism in food consumption, considering the categories ethnocentric and non ethnocentric, was affected by the gender, age, socioeconomic level and self-declared lifestyle of the consumer, some of which had been described in the literature dealing with ethnocentrism in general or as an attitude towards durable goods.

From a managerial point of view, the overall results of the study indicate that the Chilean food industry may use country of origin as an attribute to differentiate itself from imported competition in the internal market.

However, at the same time, the Chilean industry must be able to produce efficiently and develop competitive cost advantages to maintain or increase sales in the domestic market.

The results of cluster analysis indicate that it is possible to cover a larger market share through the implementation of a differentiated marketing strategy.

A marketing mix that emphasises the Chilean origin of the food must be developed for consumers who prefer domestic production because they are more ethnocentric, and consistently show a low frequency of purchase of imported food.

In parallel, a marketing mix with lower prices or sales must be developed for consumers who give minor importance to origin and more relevance to the price of food. This market segment is comprised of less ethnocentric consumers and reports a high frequency of purchase of imported foods due to lower prices. It is also possible to implement a marketing mix that advertises the quality of Chilean food, focused towards consumers that, although are not ethnocentric, may consider that the origin of food is important, but have a high frequency of purchase of imported food, because it is considered of better quality than domestic food.

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