STRUCTURAL EQUATION MODELS FOR THE HIERARCHIZATION OF ACTIVITIES IN THE SUPPLY AND DISTRIBUTION OF ORIGIN-CERTIFIED FOODS

Mercedes Sánchez and Ramo Barrena

Public University of Navarra
Business Management Department, Campus Arrosadia, 31006 Pamplona (Spain)
Phone: +34-948-169396; Fax: +34-948-169404

Contact: mersan@unavarra.es

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Abstract
A quality differentiation strategy for agrifood products based on geographical origin and production method has become a viable alternative for certain firms in the internationalized food markets, if it could be considered as a rural development instrument. This method of adding value to their products nevertheless requires them to take into account not only objective factors, which tend to be related to product characteristics, but also subjective factors that are more closely linked to consumers' assessment of their differentiating features and the factors that influence that assessment. The study confirms using various structural equation models the key impact of consumers' attitudes towards these products (image) on final purchase behaviour. The experiment was conducted both inside and outside the production region of two selected food items and in all markets it will be necessary to act upon both attitudinal components, that is, product image in its various dimensions and consumer attitude toward the region of origin, in order to develop these markets, where, currently, product characteristics are found to have the stronger influence.

Key Words: Consumer behaviour, Regional Certification Labels, Structural Equation Modelling

1. Introduction. Purchase decision models for Protected Regional Products.

The key feature of the competitive context of agrifood markets, at present and for the foreseeable future, is its increasing complexity. Developed countries are experiencing a level of supply saturation that is resulting in growing business rivalry and an ever more demanding, highly fragmented and information-inundated consumer population. At the same time, the increasing globalization and internationalization of these markets mean that producers need to take efficiency, cost reductions and new strategies to the highest possible levels in order to differentiate themselves from their rivals. In terms of firm size, large firms employ market growth strategies, while smaller firms use a variety of ways to differentiate their product depending on their degree of reliance on larger firms and their target demand. One of the options open to these firms is to differentiate their products by geographical origin or production method, or market them as traditional specialities[1]. Firm survival will depend on the aforementioned efforts to diversify in mature markets (Van der Lans et al., 2001), on the ability to generate higher added value (Bonetti, 2004, Freitas and Ribeiro 2005, among others) and perhaps, more interestingly from the point of view of rural policy, on their role in developing or sustaining regional production structures (European Commission, 2006, Ilbery et al, 2005). This type of strategy also harmonises well with the current philosophy of the Common Agricultural Policy (CAP), which is geared to generating added value in sustainable markets.

In this competitive context, therefore, in which firms are forced to become demand- oriented, an understanding of the degree to which consumers are ready to accept the various differentiation

[1] In the European context, EC Regulation 2081/92, subsequently amended by regulation 510/2006, gives protection to Designations of Origin (PDO) and Protected Geographical Indications (PGI) for agricultural and food products. EC Regulation 882/2004, enacted by the European Parliament and European Council and subsequently amended by Regulation 509/2006, identifies traditional agricultural and food specialities guaranteed.

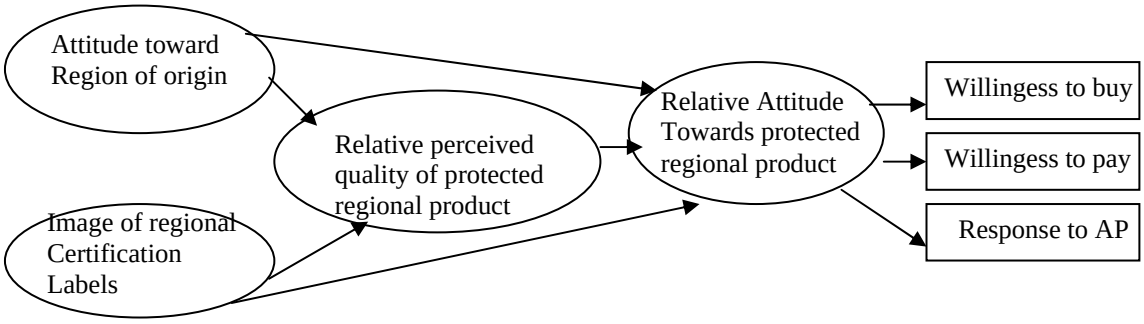
strategies is basic to firm survival. Taking up Grunert's (2005) proposal for three-step quality analysis, the first step of our analysis is based on objective elements, such as technical details or features of the production process, through which consumers are able to identify how firms are addressing the issue of quality enhancement. The following two stages, however, which focus on the ways in which quality is perceived and demanded, consider the numerous subjective factors by which these processes are dominated, in an effort to explore the structure and underlying factors of the purchase decision-making process. According to Becker (2000), higher levels of efficiency are achieved when firms have a fuller understanding of the complete process involved in demand-side decisions concerning quality. The approach adopted in the present study therefore includes subjective aspects. Various models are presented to explain the progression of consumer behaviour through the three main phases of the decision-making process, starting with the preliminary stages, which are concerned with the acquisition of product knowledge and the generation of various attitudes and ending with final purchase behaviour in relation to the food category of interest. The study sets out to test the suitability of various behaviour models, in which the theory is progressing towards the inclusion of subjective, attitudinal aspects. The models therefore combine factors relating to product *quality*, with others connected with *symbolic, emotional and situational* values, while also including elements designed to analyse consumer perception of the impact of business strategies on rural development. Thus, the model devised by Van der Lans et al. (2001) examines preference for Protected Regional Products (PRP) including attitudes towards geographical origin. Meanwhile, Villanueva and Papadopoulus (2003), who adopt an ethnocentrism approach, present a model that takes into account the influence of familiarity, affectivity and ethnocentrism on regional image and final purchase behaviour. Lunardo & Guerinet (2007) go one step further by dealing with the impact of authenticity, risk preference and product perception on purchase intention. Fandos and Flavián (2006) and Espejel et al. (2007) use satisfaction theory to examine the product assessment process that leads from customer satisfaction to customer loyalty. Using a similar approach, quality theory, Calvo and Blázquez (2007) extend regional image by considering the importance of product notoriety and consumer perception of the quality benefits associated with this food category. Sánchez (2006), meanwhile, makes a proposal to extend the analytical approach to include vertical differentiation factors that take into account personal values of the individual in PRP consumption, which varies with consumers' experience of the product and the region of origin. Finally, it is worth noting the interesting attitudinal approach proposed by Van Ittersum et al., (2007) who succeed in obtaining separate measures of the impact on willingness to buy made, first, by consumer attitudes towards the region of origin and, second, by their attitude towards the Protected Regional Product itself. They also use intermediate variables to represent the quality assessment made by the purchaser at each stage of the product assessment process. The present study has been designed to fit this theoretical

approach, but differs from previous research by analysing consumer product assessments of Protected Regional Products from the local area and then from a more distant region, in order to measure various attitudinal effects, including ethnocentrism, that may influence the acceptance of this type of product in the market place. Two protected regional products each from a different region of Spain (Olive Oil from 'Les Garrigues' in the region of Catalonia and 'Asparagus from Navarra' in the region of Navarra) were selected for analysis. Consumer behaviour was subjected to testing by general and multigroup structural equations, in each case using information obtained by means of one-on-one interviews with regular household food shoppers.

2. Methodology.

As already noted, consumer behaviour has been modelled using various approaches including some that take into account subjective attitudinal aspects. The majority of these approaches draw on Quality Theory and Satisfaction Theory. The present study adopts Quality Theory, because its aim is to perform a partial analysis of the effect of the various components of consumer attitudes, by estimating different partial models of individual behaviour towards Protected Regional Products. The model selected as the basis for the measurements performed is that proposed by Ittersum et al. (2007) and summarized in Figure 1.

Figure 1. Conceptual model of the influence of the consumer image of regional certification labels on willingness to buy and pay for protected regional products



Source: Van Ittersum, et al., (2007)

The model includes three stages in the behaviour of the decision-maker: a) the first stage measures the *Relative perceived quality of protected regional product* in terms of two components: *Attitude toward region of origin* and *Image of regional certification labels* , b) the second stage analyzes the influence of the three components of the previous stage through a new summary variable identified as *Relative attitude towards protected regional product* and c) and

the final stage relates the above attitudinal scores to willingness to buy PRP, pay a premium and vary purchase intention according to relative prices.

The proposal of the present study is twofold. The first aim is to perform a partial analysis of the extent to which *Relative attitude towards protected regional* products is influenced, first by consumer product image, and then by consumer attitudes towards the region of origin. Furthermore, while most of the existing related research work focuses on consumer behaviour towards a product from the local region, the present study aims to extend the analysis to examine the behaviour of consumers from another region, which is the reason for the choice of the two regions and two products mentioned above. The various components of the model were measured according to the constructs and variables proposed by Van Ittersum et al. (2007).

The main source of data was in each case ad hoc, one-on-one interviews with regular household food shoppers from a random sample stratified by age and place of residence, which provided 200 interviews in region 1 (Catalonia) and 280 in region 2 (Navarra)[2]. The sample structure in terms of sex, age, income, family size and level of education was similar for both regions. The questionnaire content was divided into four sections, the first of which covered overall attitudes towards protected regional products, and perceived quality of protected versus non-protected products. Sections 2 and 3 focused on the particular behaviour of the purchaser towards the two selected food items, both for protected and non-protected varieties. Section 4 dealt with respondents' sociodemographic characteristics, lifestyle and nutritional attitudes.

The resulting models were estimated using structural equation techniques including the structural and measurement model. The model was first tested on the full sample and subsequently re-tested for each region separately, using a multigroup approach to control for regional effects. Goodness of fit was estimated using the usual statistics χ^2, p, RMSEA, GFI, CFI and TLI.

3. Results

The results are given in two parts, the first of which is a descriptive comparison of overall consumer behaviour in the two regions in terms of attitudes, knowledge and behaviour towards Protected Regional Products in general, and towards the product selected for analysis in particular. The selected methodological techniques are one way bivariate analysis or χ^2 for this initial analysis and Manova multivariate analysis of variance, for the overall analysis of the construct behaviour. The second part of the results presentation gives, in the following order, the results of the partial model of consumer perception, in which product assessment is

[2] Starting with p values of 0.15 for the purchase of protected regional products in both regions, maximum sample error was 5% in Catalonia and 4.3% in Navarra.

considered independently of regional image, the result obtained when it is included and finally the result of the complete assessment model, which analyses the importance of the consumer attitude towards the product and toward the region of origin in the development of markets for products differentiated by region of origin.

Attitudes, knowledge and consumption of Protected Regional Products. Interregional differences

The primary descriptive statistics for the consumer evaluation process involved in the decision to buy protected regional products are given in Table 1. The decision process involves three key components: 1) attitudinal variables represented by four angles, three relating to certified foods (image of regional certification labels, relative attitude towards PRP and relative perceived quality of PRP) and one relating to the attitude towards the corresponding region of origin, 2) a variable to represent knowledge of the PRP in question and 3) behavioural variables measured in terms of current consumption of PRP and willingness to buy, pay a premium and vary consumption according to price. The results show that, in overall terms, purchasers were coherent in all stages of the decision process. That is, in terms of attitudes, statistically significant interregional differences emerged in the perceived image of Regional Certification Labels and in the attitude towards the region of origin in the case of both products. This finding is further confirmed at the global level by the Manova tests (Table 1A and 2A in the Annex).

Differences with respect to the first issue, that is, product image, can be seen in the fact that one of the regions (Catalonia, region 1) places a higher value on product-related attributes as quality indicators, whereas the other region (region 2), while also appreciating product-related differentiation factors, rates more highly the benefit that producers can derive from this type of strategy. When it comes to attitude towards the region of origin, consumers obviously rate their own more highly, thus revealing a degree of ethnocentrism. Nevertheless, one of the regions (Navarra, region 2) is highly rated by consumers in both territories, showing that both cross-product and cross-region differences are possible. The other two attitudinal components present virtually no cross-region differences, since the components of relative attitude towards PRP and relative perceived quality of PRP are similar. Thus, a priori, the consumers do appear to differ in terms of their perceived image of regional protected labels and their attitude towards the region of origin. As might be expected, each region's local consumers showed more knowledge of their own region, while findings regarding consumption levels remain consistent with the rest of the results. Consumption levels and willingness to buy are higher in the region of origin for both products, although one of them (asparagus) reports no significant differences. Willingness to pay a premium for these PRP is higher in the region of origin, except in the case of asparagus, where there is no significant difference. Olive oil presents the only noteworthy price-related variations in consumption, which are more pronounced in the region of origin, no interregional

differences of this nature being found for asparagus. In short, therefore, cross-region or cross-product differences are found in consumer ratings of the two PRP, and these will be analysed by interrelating the different behavioural phases in the estimated structural equation models.

Table 1. Consumer attitude, knowledge and consumption of Protected Regional Products (PRP): average levels by study area

Depedent Variable	Zone [1]		Statistical Test	
	Region 1 (Cataluña)	Region 2 (Navarra)	Value	Sig.
ATTITUDINAL VARIABLES				
Image of regional certification labels				
Higher quality	3.98	3.74	9.97 [a]	0.002
Constant quality	4.10	3.62	2806 [a]	0.000
No fraudulent	3.54	3.26	6.39 [a]	0.012
Exclusivity	4.16	3.63	25.83 [a]	0.000
More employment region	3.27	3.02	5.31 [a]	0.022
Higher farmer incomes	3.38	3.97	34.19 [a]	0.000
Relative attitude towards protected regional products				
Attractive	3.91	3.71	6.166 [a]	0.013
Pleasant	3.54	3.55	0.001 [a]	0.976
Overall opinion	3.80	3.86	0.682 [a]	0.409
Attitude toward region of origin[1]				
Olive Oil (Cataluña, region 1)				
Attractive	3.98	2.35	308.6 [a]	0.000
Feel	3.87	2.32	290.4 [a]	0.000
Overall opinion	3.95	2.42	293.3 [a]	0.000
Asparagus (Navarra, region 2)				
Attractive	4.12	4.61	46.33 [a]	0.000
Feel	3.91	4.63	93.33 [a]	0.000
Overall opinion	3.85	4.57	93.56 [a]	0.000
Relative perceived quality of PRP	3.85	3.86	0.013 [a]	0.910
KNOWLEDGE VARIABLE				
Knowledge of Region PRP				
Región 1 (Cataluña, olive oil 'Les Garrigues)	3.49	1.50	542.84[a]	0.000
Región 2 (Navarra, asparagus 'Navarra')	2.90	4.32	286.80 [a]	0.000
CONSUMER BEHAVIOUR VARIABLES				
PRP consumption				
Olive oil (Les Garrigues, region 1)	50.65	20.83	7.52 [a]	0.007
Asparagus (Navarra, region 2)	46%	70%	26.71 [b]	0.000
Willingness to buy PRP				
Olive oil (Les Garrigues, region 1)	55.99	42.27	22.81 [a]	0.000
Asparagus (Navarra, region 2)	63.61	67.13	1.21 [a]	0.272
Willingness to pay PRP				
Olive oil (Les Garrigues, region 1)	24.26	16.72	16.33 [a]	0.000
Asparagus (Navarra, region 2)	23.48	22.63	0.185 [a]	0.667
Response to relative price increase PRP				
Olive oil	31.31	38.13	60.29 [a]	0.000
Asparagus	12.81	38.57	0.024 [a]	0.877

[(a)] F de Snedecor; [(b)] χ^2 de Pearson

[1] The Protected Regional Product selected from Region 1 (Catalonia) is *'Olive Oil from Les Garrigues'* and the Protected Regional Product selected from Region 2 (Navarra) is *'Asparagus from Navarra'*.

Models of the influence of the attitude towards Regional Certification Labels on willingness to buy and pay for Protected Regional Products

In the first model estimated, the results obtained for the relation between consumers' perceived image of regional certification labels and relative perceived quality of protected regional products, including interregional differences, are shown in Table 2. The standardized coefficients for the full sample reveal the significant influence of the two predefined components of the image of regional certification labels (quality guarantee 0.88 (7.27) and economic support 0.47 (2.42)) on the perceived quality of this category of products. Nevertheless, some interregional differences are found. In region 2 (Navarra) the variable representing perceived benefits to producers (economic support 0.20 (0.54)) has no significant effect on the way consumers perceive the product. Consumers are influenced only by the product's own differentiation factors. These differences also emerge in the multigroup estimation.

Table 2. Standardized path estimates for the influence of consumers' image of regional certification labels on relative perceived quality of Protected Regional Product by zone (Model 1)

Variables		Total sample		Region 1		Region 2	
		S.R.W	C.R.	S.R.W	C.R.	S.R.W	C.R.
Perceived Quality							
	Quality Warranty	0.885	7.27[a]	0.644	3.201 [a]	0.979	6.79 [a]
	Economic Support	0.465	2.42 [a]	0.765	3.27 [a]	0.204	0.54
Higher quality	Quality Warranty	0.689	--	0.643	--	0.668	--
Constant quality		0.551	9.39 [a]	0.469	4.49 [a]	0.608	8.16 [a]
No fraudulent		0.703	10.8 [a]	0.521	4.77 [a]	0.800	9.46 [a]
Exclusivity		0.587	9.85 [a]	0.577	4.98 [a]	0.572	7.77 [a]
More employment region	Economic Support	0.513	--	0.574	--	0.243	--
Higher farmer incomes		0.207	2.25 [b]	0.591	4.00 [a]	-0.232	-0.65
Relative perception quality	Perceived Quality	0.458	--	0.455	--	0.500	--
Fit Indices							
χ^2		(14) 108.32					
RMSEA		0.12					
GFI		0.943					
CFI		0.821					
TLI		0.731					
Multi-group indices							
Unconstrained M.							
χ^2				(28) 128.35			
RMSEA				0.088			
GFI				0.933			
CFI				0.814			
TLI				0.721			

S.R.W.: Standardized Regression Weights; C.R.: Critical Ratio; [a] Significatively at 1%; [b] Significatively at 5%

Table 3. Standardized path estimates for the influence of consumers' image of regional certification labels and attitude towards region of origin on relative perceived quality of Protected Regional Product by zone (Model 2)

Variables		Olive Oil						Asparagus					
		Total sample		Region 1		Region 2		Total sample		Region 1		Region 2	
		S.R.W	C.R.	S.R.W	C.R.	S.R.W	C.R.	S.R.W	C.R.	S.R.W	C.R.	S.R.W	C.R.
Perceived Quality													
	Attitude region of origin	-0.122	-1.34	-0.085	-0.551	0.054	0.468	0.127	1.33	0.051	0.334	0.060	0.519
		0.868	7.45 [a]	0.655	3.20 [a]	0.990	6.72 [a]	0.849	7.16 [a]	0.645	3.19 [a]	0.972	6.72 [a]
	Quality Warranty	0.481	1.17	0.751	3.19 [a]	0.133	0.365	0.512	1.21	0.762	3.25 [a]	0.228	0.59
	Economic Support												
Attractive	Attitude region of origin	0.932	--	0.878	--	0.892	--	0.892	--	0.870	--	0.859	--
Pleasant		0.964	42.37 [a]	0.959	19.47 [a]	0.933	23.15 [a]	0.938	28.60 [a]	0.963	17.34 [a]	0.868	17.5 [a]
Overall opinion		0.930	37.65 [a]	0.862	16.74 [a]	0.895	21.63 [a]	0.830	24.10 [a]	0.782	13.79 [a]	0.877	17.7 [a]
Higher quality	Quality Warranty	0.689	--	0.643	--	0.668	--	0.689		0.644	--	0.667	--
Constant quality		0.549	9.38 [a]	0.469	4.49 [a]	0.608	8.16 [a]	0.551	9.38 [a]	0.469	4.49 [a]	0.608	8.15 [a]
No fraudulent		0.704	10.91 [a]	0.522	4.78 [a]	0.801	9.44 [a]	0.703	10.85 [a]	0.520	4.77 [a]	0.802	9.44 [a]
Exclusivity		0.588	9.87 [a]	0.577	4.98 [a]	0.572	7.76 [a]	0.587	9.84 [a]	0.577	4.98 [a]	0.572	7.75 [a]
More employment region	Economic Support	0.412	--	0.573	--	0.266	--	0.409	--	0.574	--	0.236	--
Higher farmer incomes		0.244	1.17	0.593	3.97 [a]	-0.196	-0.64	0.245	1.22	0.591	3.99 [a]	-0.242	-0.66
Relative perception quality	Perceived Quality	0.478	--	0.449	--	0.488		0.468	--	0.452	--	0.498	--
Fit Indices													
χ^2		(33) 170.47						(33) 141.18					
RMSEA		0.094						0.084					
GFI		0.938						0.947					
CFI		0.936						0.931					
TLI		0.913						0.906					
Multi-group indices													
Unconstrained													
χ^2					(68) 205.85						(68) 212.21		
RMSEA					0.066						0.067		
GFI					0.923						0.919		
CFI					0.920						0.903		
TLI					0.894						0.872		

S.R.W.: Standardized Regression Weights; C.R.: Critical Ratio; [a] Significatively at 1%.

With respect to the second model, which includes the influence of the attitude towards the region of origin on perceived quality, the standardized coefficients shown in Table 3 suggest that the attitude towards the region of origin has no influence in either of the products or either of the regions on the global rating for perceived quality (olive oil TS -0.12 8-1.34); R1 -0.085 (-0.551), R2 0.054 (0.468); asparagus TS 0.127 (1.33), R1 0.051 (0.33) and R2 0.060 (0.52)). Comparison with the results obtained by Van Ittersum et al. (20079 for products from a variety of European regions shows that the attitude towards the region of origin was also less important than product image in determining the relative attitude toward this category of products, although in their case both parameters proved significant. The remaining variables of the model behave, as might be expected, in a way analogous to that found in the above estimation, the region of origin having little influence on the image of PRP in region 2 (Navarra).

To conclude, the complete model estimated, shown in Table 4, finds the influence of the selected attitudinal factors on the final interest of consumers in protected regional products to vary across regions and across products. Cross-product comparison shows that attitudes have a stronger influence on the acceptance of asparagus (the product with the higher rate of consumption in our consumer samples) than of oil. Thus, for the full sample (1 (3.88)) and for both regions (R1 1 (5.32) R2 1 (2.12) willingness to buy asparagus increases with more positive attitudes towards the product, and a highly positive product assessment is also found to influence willingness to pay a premium in the full sample and in region 1 (Catalonia). When it comes to olive oil, the consumer's attitude towards the product affects willingness to buy (1 (2.19)) and willingness to pay (1 (3.58)) in the full sample, but when the sample is segmented by regions, it is found to affect WTP in region 1 (1 (3.53) and WTB in region 2 (1 (2.35)). Reasonable goodness of fit indicators were found for both models.

Attitudes are therefore good predictors of product purchase behaviour, but further product-specific research, aimed at measuring factors such as the effect of consumption, product notoriety, product-market structure, and potential demand size, would be required in order to justify a proposal for differentiated marketing actions to match the profile of the product under analysis. Secondly, it will also be worth using these models to analyze the potential of these markets in different areas in terms of the attitudinal components of local consumer behaviour in each case, since this would help to shape more efficient marketing and communication policies in each target market.

4. Conclusions

A quality differentiation strategy for agrifood products based on geographical origin and production method has become a viable alternative for certain firms. This method of adding value to their products nevertheless requires them to take into account not only objective factors, which tend to be related to product characteristics, but also subjective factors that are more closely linked to consumers' assessment of their differentiating features and the factors that influence that assessment. This study

confirms the key impact of consumers' attitudes towards these products (image) on final purchase behaviour. An improvement in the attitude toward a product may therefore trigger a demand increase, although attitudinal behaviour patterns do very, especially across regions. For the majority of European PRP it can be said that the acknowledged ethnocentric behaviour that emerges in relation to this category of products requires a well-tuned marketing approach, if producers wish to extend their market beyond their local territory. It will be necessary to act upon both attitudinal components, that is, product image in its various dimensions and consumer attitude toward the region of origin, in order to develop these markets, where, currently, product characteristics are found to have the stronger influence. As has been observed, moreover, these products wield a heavy attitudinal or subjective influence on the purchaser's decision-making process. This makes it more difficult to analyze, but also creates opportunities to assess the weight of consumers' personal values in their perception of the features that differentiate the product or the region of origin, which will help producers to fine tune their communication strategies.

These models could be usefully tested in other geographical and production contexts in order to build on the present findings and overcome some of the limitations of this research.

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Table 4. Standardized path estimates for the influence of consumers' image of regional certification labels and attitude towards region of origin on willingness to buy and pay for Protected Regional Product by zone (Model 3)

Variables		Olive Oil						Asparagus					
		Total sample		Region 1		Region 2		Total sample		Region 1		Region 2	
		S.R.W	C.R.	S.R.W	C.R.	S.R.W	C.R.	S.R.W	C.R.	S.R.W	C.R.	S.R.W	C.R.
Perceived Quality	Attitude region of origin	-0.078	-1.79	-0.084	-1.21	0.032	0.573	0.073	1.64 [c]	0.040	0.575	0.029	0.50
	Quality Warranty	0.447	7.87 [a]	0.390	3.92 [a]	0.481	6.66 [a]	0.427	7.52 [a]	0.419	3.81 [a]	0.478	6.62 [a]
Relative attitude towards PRP	Perceived quality	0.327	5.81 [a]	0.384	4.36 [a]	0.265	3.77 [a]	0.317	5.91 [a]	0.254	3.19 [a]	0.292	4.14 [a]
	Attitude region of origin	0.035	0.76	0.136	1.81 [b]	0.010	0.176	0.238	5.01 [a]	0.425	5.76 [a]	0.070	1.17
	Quality warranty	0.462	6.44 [a]	0.384	3.27 [a]	0.53	5.67 [a]	0.461	6.65 [a]	0.675	4.56 [a]	0.508	5.56 [a]
	Economic Support	0.738	0.58	-0.761	-0.78	0.72	1.31	-0.703	-0.25	-0.382	-2.71 [a]	0.713	1.63 [c]
Willingness to buy	Relative attitude	1	2.19 [a]	1	0.48	1	2.35 [a]	1	3.88 [a]	1	5.32 [a]	1	2.12 [b]
Willingness to pay	towards PRP	1	3.58 [a]	1	3.53 [a]	1	1.41	1	2.14 [a]	1	4.12 [a]	1	0.29
Response to relative price increase		1	1.58	1	0.32	1	1.65 [c]	1	0.85	1	3.23 [a]	1	1.17
Attractive	Attitude region of	0.932	--	0.878	--	0.891	--	0.893	--	0.875	--	0.860	--
Pleasant	origin	0.964	42.38 [a]	0.959	19.47 [a]	0.933	23.15 [a]	0.937	28.74 [a]	0.956	17.95 [a]	0.867	17.5 [a]
Overall opinion		0.930	37.65 [a]	0.862	16.72 [a]	0.895	21.63 [a]	0.830	24.16 [a]	0.787	13.97 [a]	0.877	17.7 [a]
Higher quality	Quality Warranty	0.652	--	0.574	--	0.652	--	0.645	--	0.482	--	0.647	--
Constant quality		0.556	9.49 [a]	0.487	4.62 [a]	0.615	8.25 [a]	0.562	9.50 [a]	0.481	4.42 [a]	0.613	8.20 [a]
No fraudulent		0.734	11.25 [a]	0.577	5.07 [a]	0.808	9.71 [a]	0.737	11.16 [a]	0.575	4.86 [a]	0.813	9.64 [a]
Exclusivity		0.583	9.83 [a]	0.571	5.05 [a]	0.572	7.80 [a]	0.581	9.75 [a]	0.524	4.64 [a]	0.571	7.75 [a]
More employment region	Economic Support	0.036	--	0.074	--	0.104	--	0.016	--	0.689	--	0.130	--
Higher farmer incomes		0.077	0.53	-0.015	-0.16	0.077	0.78	-0.054	-0.24	0.402	2.56 [a]	0.046	0.55
Relative perception quality	Perceived Quality	1	--	1	--	1	--	1	--	1	--	1	--
Attactive PRP	Relative attitude	0.686	--	0.726	--	0.673	--	0.699	--	0.617	--	0.690	--
Feel PRP	towards PRP	0.720	11.71 [a]	0.692	7.33 [a]	0.770	9.72 [a]	0.728	12.18 [a]	0.621	6.99 [a]	0.757	9.77 [a]
Overall opinion PRP		0.653	11.10 [a]	0.577	6.52 [a]	0.715	9.36 [a]	0.638	11.20 [a]	0.610	6.89 [a]	0.704	9.40 [a]
	Willingness to buy	0.115	--	0.039	--	0.16	--	0.204	--	0.445	--	0.145	--
	Willingness to pay	0.190	--	0.294	--	0.096	--	0.112	--	0.334	--	0.020	--
	Response to relative price	0.083	--	0.026	--	0.112	--	0.044	--	0.258	--	0.080	--
Fit Indices													
χ^2													

RMSEA	(100) 519.57	(100) 476.96
GFI	0.095	0.090
CFI	0.868	0.887
TLI	0.856	0.839
	0.827	0.806
Multi-group indices		
Unconstrained χ^2	(200) 633.02	(200) 700.15
RMSEA		0.073
GFI		0.843
CFI		0.789
TLI		0.746

S.R.W.: Standardized Regression Weights; C.R.: Critical Ratio; [a] Significatively at 1%; [b] Significatively at 5%; [c] Significatively at 10%.

Annex

Table 1A. Multivariable Tests of model constructs by study area

		Image of regional certification labels			Relative attitude towards protected regional products			Attitude toward region of origin: Olive oil			Attitude toward region of origin: Asparagus		
Effect		Value	Sig.	Partial η^2	Value	Sig.	Partial η^2	Value	Sig.	Partial η^2	Value	Sig.	Partial η^2
Intercept	Pillai's Trace	0.969	0.000	0.96	0.965	0.000	0.96	0.919	0.000	0.91	0.969	0.000	0.96
	Wilks' Lambda	0.031	0.000	0.96	0.035	0.000	0.96	0.081	0.000	0.91	0.031	0.000	0.96
	Hotelling's Trace	31.3	0.000	0.96	27,67	0.000	0.96	11.27	0.000	0.91	31.27	0.000	0.96
	Roy's Largest Root	31.3	0.000	0.96	27,67	0.000	0.96	11.27	0.000	0.91	31.27	0.000	0.96
Zone	Pillai's Trace	0.152	0.000	0.15	0.022	0.014	0.02	0.408	0.000	0.40	0.181	0.000	0.18
Factor	Wilks' Lambda	0.848	0.000	0.15	0.978	0.014	0.02	0.592	0.000	0.40	0.819	0.000	0.18
	Hotelling's Trace	0.179	0.000	0.15	0.023	0.014	0.02	0.689	0.000	0.40	0.222	0.000	0.18
	Roy's Largest Root	0.179	0.000	0.15	0.023	0.014	0.02	0.689	0.000	0.40	0.222	0.000	0.18

Table 2A . Tests of Between-Subjects Effects on model constructs by study area

		Image of regional certification labels			Relative attitude towards protected regional products (PRP)				Attitude toward region of origin							
									Olive oil				Asparagus			
Source	Dependent Variable	F	Sig.	Partial η^2	Dependent Variable	F	Sig.	Partial η^2	Dependent Variable	F	Sig.	Partial η^2	Dependent Variable	F	Sig.	Partial η^2
Corrected Model	Higher quality	7.75	0.006	0.017	Attractive	6.166	0.013	0.013	Attractive	87.73	0.000	0.160	Attractive	9.98	0.002	0.021
	Constant	28.40	0.000	0.059	Pleasant	0.001	0.976	0.000	Feel	290	0.000	0.386	Feel	93.33	0.000	0.166
	quality	6.83	0.009	0.015	Overall	0.682	0.409	0.001	Overall	293	0.000	0.389	Overall opinion	93.56	0.000	0.167
	No fraudulent	23.08	0.000	0.048	opinion				opinion							
	Exclusivity	5.75	0.017	0.012												
	More employment region	30.56	0.000	0.063												
	Higher farmer incomes															
Intercept	Higher quality	7874	0.000	0.945	Attractive	9130	0.000	0.951	Attractive	1544	0.000	0.770	Attractive	1813	0.000	0.795
	Constant	7555	0.000	0.943	Pleasant	6885	0.000	0.935	Feel	4525	0.000	0.908	Feel	13402	0.000	0.966
	quality	4014	0.000	0.898	Overall	8763	0.000	0.949	Overall	4946	0.000	0.915	Overall opinion	12587	0.000	0.965
	No fraudulent	4883	0.000	0.915	opinion				opinion							
	Exclusivity	3505	0.000	0.885												
	More employment region	4679	0.000	0.911												
	Higher farmer incomes															
Zone Factor	Higher quality	7.75	0.006	0.017	Attractive	6.166	0.013	0.013	Attractive	87.83	0.000	0.160	Attractive	9.98	0.002	0.021
	Constant	28.4	0.000	0.059	Pleasant	0.001	0.976	0.000	Feel	290	0.000	0.386	Feel	93.33	0.000	0.166
	quality	6.83	0.009	0.015	Overall	0.682	0.409	0.001	Overall	293	0.000	0.389	Overall opinion	93.56	0.000	0.167
	No fraudulent	23.08	0.000	0.048	opinion				opinion							
	Exclusivity	5.75	0.017	0.012												
	More employment region	30.56	0.000	0.063												
	Higher farmer incomes															