Spanish Journal of Agricultural Research (2005) 3(1), 43-51

Determination of the surplus that consumers are willing to pay for an organic wine

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Abstract

The aim of this study was to estimate the premium price that Spanish consumers are willing to pay for an organic wine with respect to the price of a conventional wine with similar characteristics. To accomplish this aim, contingent valuation has been used, which permits using a survey and a direct estimation of the premium price that consumers are willing to pay. The question format used is dichotomous choice valuation with follow-up questioning. Statistical analysis was carried out using descriptive statistical analysis and logistic regression, in such a way that the estimation for both methods has been compared. The premium price has been estimated in three segments of consumers, according to their life style (healthy, concern about environment and concern about food/diet). The main findings show that consumers with a healthy life style are those willing to pay a higher price for an organic wine.

Additional key words: characterization of the consumers, contingent valuation, life style, logit analysis, segmentation, willingness to pay.

Resumen

Determinación del sobreprecio que los consumidores están dispuestos a pagar por un vino ecológico

En este trabajo se ha estimado el sobreprecio que los consumidores españoles estarían dispuestos a pagar por un vino ecológico con respecto al precio de uno convencional de similares características. Para ello se ha utilizado la metodología de la valoración contingente. Este método, mediante la utilización de una encuesta, permite la estimación directa del sobreprecio que los consumidores están dispuestos a pagar. El formato de pregunta utilizado ha sido el formato mixto (pregunta cerrada-pregunta abierta). Para el análisis de los datos se ha utilizado el análisis estadístico descriptivo y la regresión logística, de forma que se han podido comparar las estimaciones para ambos métodos. Las estimaciones del sobreprecio se han realizado para tres segmentos de consumidores que han sido determinados en función de sus estilos de vida (saludable, preocupado por el medio ambiente y preocupado por la alimentación), obteniéndose como principal resultado que los consumidores con un estilo de vida saludable son los que están dispuestos a pagar un mayor sobreprecio por el vino ecológico.

Palabras clave adicionales: análisis logit, caracterización de los consumidores, disposición a pagar, estilos de vida, segmentación, valoración contingente.

Introduction

Consumption habits in society today are changing and the latest tendencies show a greater concern for health and environment (Martínez-Carrasco *et al.*, 2004; Smith and Marsden, 2004). When consumers are choosing food products they give a very important role to ethical, environmental and health factors (Torjusen *et al.*, 2001). Foods and balanced diet are considered as instruments to protect health. Environmental concern in society and sustainable development have been discussed in a recent study edited by the European Commission (Environment Directorate-General) and researched by Gallup Europe (2002). According to this study, Spanish citizens consider that environmental factors have a fair amount of influence on their life quality.

All these characteristics are related to the way in which food has been produced and processed (Torjusen

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Received: 06-09-04; Accepted: 13-01-05.

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et al., 2001). It seems that consumers perceive organic products as «healthier» and of «higher quality» as well as «more respectful of the environment» (Schifferestein and Oude Ophius, 1998; Williams and Hammit, 2001; FAO, 2003; Magnusson *et al.*, 2003; Saba and Messina, 2003). These are, therefore, the attributes that can distinguish between organic and conventional products. Thus, from a strictly commercial point of view, organic agriculture is a way to differentiate agro-food products (Brugarolas and Rivera, 2001). This differentiation is mainly based on the positive image that organic products have (Mann, 2003).

From a productive point of view, the development of world organic agriculture has been very important during the last few years. In 2002, the cultivated organic surface area worldwide was 22,811,267 hectares and the number of farms was 398,804. In the world context, this area represents 2% of the total useful agricultural surface area (FAO, 2003).

From a commercial point of view, organic products only represent 0.2% of the total world food market, although these figures vary greatly for countries and products. These products, however, come up against many obstacles in the market: consumer ignorance, distrust in the guarantee, the high price and the problems of availability in the purchase place (Roddy *et al.,* 1996; Latacz-Lohmann and Foster, 1997; Worner and Meier-Ploeger, 1999). Nevertheless, market expectations for organic products seem to be positive (Joensen, 2003; Yuseffi and Willer, 2003).

The existence of a higher price for organic products is a consequence of both the higher costs of production and elaboration, as well as the higher utility that these products have for consumers who perceive them as having a higher quality, being more healthy and environmentally friendly. This premium price is very different, depending on the type of product and the type of purchase place where it is sold and can vary from 10 to 200%. Several studies have tried to estimate the premium price that consumers would pay for an organic product. In 1995, Davis *et al.* compared the premium price that consumers were prepared to pay in 1987 with what they were prepared to pay in 1995, and they found that in 1987, the premium price was only 5%, whereas in 1995 the premium price reached 30%. In 1997, Hutchins and Greenhalgh determined that half the consumers were willing to pay more for organic food products, the most frequent premium price was between 10 and 20%. A study carried out by Meier-Ploeger and Woodward (1999) in Germany stated that 52% of consumers would pay more for fruit and vegetables, 34% would pay a premium price for animal products and 39% would pay more for grain products. In Greece, Fotopoulos and Krystallys (2001) estimated the willingness to pay (WTP) a higher price for a wide range of organic products which included oranges, olive oil, raisins, bread and wine. This premium price fluctuates between 19 and 63%, depending on the product.

In Spain, a study conducted by Gil *et al.* (2000) showed that consumers who are concerned about a healthy diet and environmental deterioration are more willing to purchase organic foods and more willing to pay a higher price. In the research carried out by the «Entorno Foundation» concerning consumers' opinions about price, 47% of Spanish consumers were willing to pay more for organic products (Joensen, 2003). The main problem is to determine how much this «more» is.

The main aim of this study was to determine the premium price that consumers are willing to pay for an organic wine. One of the requirements for organic wines to be commercialised in Spain is to be under the protection of a Designation of Origin. According to the Spanish Ministry of Agriculture, Fisheries and Food (MAPA, 2004), quality wines are those protected by a Designation of Origin, therefore, organic wines may be considered as quality wines.

The analysis was based on the global population and the life styles of three segments of society. The product (wine) has been chosen due to the wide supply existing in wine market; according to the MAPA (2004), there are at present 60 Designations of Origin and new legal concepts to protect quality wines are appearing. Wine companies should make the most of this and search for new market opportunities to differentiate their products. In Spain, there are many wine companies that produce organic wines but the production is mainly exported to Northern Europe, and only a little of the production is commercialised in the local market.

By addressing the new consumption habits of Spanish consumers, organic wines might constitute a market opportunity for wine companies. They have to establish the target consumer segment, taking into account whether they are willing to pay at least the premium price to cover production costs, which fluctuate between 25-30%, according to wine producers from Alicante.

Another aim of this study was the profile analysis of the consumers belonging to these segments, in order to establish appropriate commercial strategies for each one of them.

Material and Methods

Contingent valuation

In the current study, contingent valuation has been used to determine consumers WTP for an organic wine.

This method is included in the direct or hypothetical group of methods which are based on the information that persons give when they are questioned about the value object of analysis (Azqueta, 1994). The instrument used in contingent valuation is a survey which states a market situation, in such a way that the interviewer aims to obtain the highest price that the interviewee is willing to pay (Riera, 1994). The method is very simple to understand: the questionnaires perform the role of a hypothetical market (Sánchez *et al.,* 2001), where the supply is embodied by the interviewer and the demand by the interviewee.

Contingent valuation has been traditionally used to determine the value of goods without market, and it has been specially applied to environmental valuation with the aim to estimate environmental and recreational benefits of open spaces, the quality of air and water, etc. (Mitchell and Carson, 1989; Venkatachalam, 2004). However, in the last decade, contingent valuation is being applied to research on food security in order to estimate the WTP so as to avoid the potential risk of consuming a particular food (Henson, 1996; Lin *et al.*, 1996).

Contingent valuation has been also applied to agro-food marketing on certain occasions, with special contributions to the analysis of purchase behaviour in food retailers (Ruiz and Iglesias, 1998), and the determination of the factors to explain the consumption of fresh meat (Verbeke *et al.*, 2000).

As far as organic products is concerned, contingent valuation has been used before; firstly to estimate the WTP for a free residual product (Misra *et al.*, 1991; Weaber *et al.*, 1992; Buzby *et al*., 1995), and secondly to estimate the WTP for «more secure» products, although they do not represent a reduction in food risk (Buzby *et al.*, 1998). In other studies a significant higher WTP has been revealed for an organic product in a segment of consumers who are environmentally sensitive and regular buyers of this type of product (Gracia *et al.*, 1998; Sánchez *et al.*, 2001).

The questionnaire

In the present study, a survey was carried out on 400 wine consumers from Alicante (5% error and 95.5% probability level). The sample was randomly stratified according to age, sex and type of habitat. In order to detect misunderstanding or errors in the survey, a pretest was conducted on 10% of the sample. The surveys were done in the street by two interviewers. The data was compiled between May and June 2003. Sample control was done by telephone on 10% of the sample (Table 1).

The target population corresponds to wine consumers because contingent valuation has to be applied to goods which are familiar to consumers (Cummings *et al*., 1986; Bateman and Turner, 1993).

In a contingent valuation survey, three question formats are possible: open multiple choice and dichotomous choice valuation with follow-up questioning (Riera, 1994). In the present study, dichotomous choice valuation with follow-up questioning has been used, including a reference price, which is the most usual for this type of research. This format permits more dispersed and reliable values to be obtained but it may introduce bias at the start (Riera, 1994).

In this study, consumers are questioned whether they would pay a premium price or not (in percentage) for an organic wine with respect to a conventional wine with similar characteristics. To avoid the guide price bias (that means, the influence of the reference price on consumers WTP), the sample was divided into four sub-samples, each one of which was indicated a starting premium price (10%, 25%, 50% and 100%) in the first question referred to as the contingent valuation (i.e.: «Are you willing to pay 10% (25% / 50% / 100%) more for an organic wine with respect to a conventional wine with similar characteristics?»). In the second question, with an open format, consumers were asked about the maximum premium price that they would pay for an organic wine with respect to a conventional one. Through ANOVA, it has been proven that there are no significant differences in the premium price indicated for each sub-sample, with a starting premium price and

Table 1. Technical note of the survey

Population	Wine consumers
Geographical scope	Province of Alicante
Sample size	400
Sampling type	Random stratified
Maximum admissible error with a probability level of 95.5%	5%
Pretest	10% of sample
Date of collecting data	May-June 2003
Control	By telephone to 10% of the sample

a maximum premium price of, respectively: a) 10% and 14.5%; b) 25% and 16.8%; c) 50% and 20.0%; d) 100% and 19.8%.

Data analysis: logit analysis

Data analysis was carried out by applying SPSS 12.0 (SPSS, 2004), with a logit analysis previously used in some studies on agro-food marketing (Ruiz and Iglesias, 1998; Sánchez *et al.*, 2001).

Logit analysis, which is also called logistic regression, is a multivariate technique that permits the relationship to be studied between a dichotomous dependent variable and one or more independent variables (quantitative or categorical) (Hair *et al.*, 2000). The dependent variable takes the value of «1» if the event occurs (in this case if the interviewee will pay the premium price for organic wine) and «0» if the event does not occur (the interviewee will not pay the premium price). The Logit model equation is as follows:

$$p = 1 \Big/ 1 + e^{-(\beta_0+\beta_1 X_1)}$$

where p is the probability to pay; β_0, β_1 are equation coefficients; and X_1 is the premium price variable.

Through a simple transformation, and under the hypothesis that individual utility function is linear, the WTP mean and median are equivalent, and WTP mean may be obtained using the following expression (Hanemann, 1984):

$$E\ (WTP) = -\beta_0/\beta_1$$

where β_0 and β_1 are the constant and the explaining variable in the estimated logit model.

Finally, a question about consumer life style was also included in the survey as well as some questions related to the consumer's descriptive characteristics. These questions permitted consumers to be grouped according to life style and the consumers in each segment to be characterized.

Results

Table 2 shows the results of the percentage of premium price that the total sample of consumers is willing to pay for an organic wine. The percentage of premium price is given with respect to a conventional wine with the same characteristics. These results are derived both from the descriptive statistical analysis and the logistic regression; WTP was considered as the dependent variable and the premium prices in percentage as the independent variables for the last analysis.

Table 2. Descriptive statistics of the variable «percentage of premium price» for the total sample

Mean	16.92
Median	10.00
Mode	10.00
Std. deviation	20.07
Skewness	2.5
Skewness std. error	0.141
Kurtosis	7.1
Kurtosis std. error	0.281
Minimum	0.00
Maximum	100.00

The average premium price that consumers are willing to pay for an organic wine is 16.92%. The most frequent value is 10%, and the standard deviation is 20.07% (Table 2).

When four intervals for premium price are considered, 67% of the sample would pay an additional amount for an organic which is less than or equal to 10%, 19% would pay between 11% and 25% more, 10% between 26% and 50% more, and only 4% would pay more than an additional 50% (Table 3).

Next, results of the logit analysis for the total population are shown. By substituting the coefficients obtained when logistic regression is carried out with SPSS 12.0 (Table 4), the resulting equation is:

$$p = 1 \Big/ 1 + e^{-(1.059-0.065 X_1)}$$

With this equation, 80.9% of values of the WTP are correctly predicted.

The average premium price that the total population is willing to pay by using logistic regression is:

$$\text{Premium price} = -\beta_0/\beta_1 = -1.059/(-0.065) = 16.29\%$$

Next, the premium price for the different segments according to life styles is estimated.

Table 3. Frequency distribution of the percentages of premium price that consumers are willing to pay

Interval of premium price (%)	Frequency	Percent	Cumulative percent
≤ 10%	199	66.56%	66.56%
11-25%	58	19.40%	85.95%
26-50%	30	10.03%	95.99%
51-100%	12	4.01%	100.00%

Table 4. Variables in logit model equation for the total population

	β	SE	Wald	Df	Sig.	Exp(β)
Premium price	–0.065	0.010	42.873	1	0.000	0.937
Constant	1.059	0.266	15.836	1	0.000	2.883

β: estimated coefficient. SE: standard error. Wald: $(\beta/S.E)^2$. If the Wald statistic is significant (less than 0.05) then the parameter is useful to the model. Df: degree freedom.

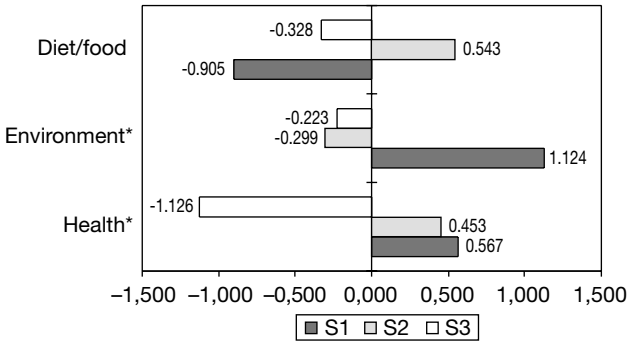

Figure 1. Profile analysis of the segments of consumers according to life styles. * Indicates significant differences among segments ($p < 0.05$).

First, factor analysis has been used to reduce the number of variables related to life styles. Three factors or dimensions have been identified and have been called: health, environmental concern and food/diet (Table 5).

By using cluster analysis, consumers from Alicante were grouped into three segments according to life style. According to the average utilities obtained for each of the life style factors, the profile of the segments is as follows: Segment 1 (S1) is comprised of 19.4% of the population, and shows an environmental (utility: 1.12) and health (0.57) concern, but they are not concerned about feeding (–0.91). Segment 2 (S2) is comprised of 50.5% of consumers and they are especially worried about feeding (0.54) and health (0.45), but not about environment (–0.30). Segment 3 (S3), corresponding to 30.1%, is not concerned about any of the factors taken into account, health (–1.13), environment (–0.22) or diet (–0.32) (Fig. 1).

A profile analysis of the segments according to descriptive characteristics such as sex, age, level of education, level of income and knowledge about organic products was carried out. Results derived from crosstabulations are shown in Table 6, only when significant differences among segments have appeared.

Segment 1 (S1) is comprised of a higher percentage of men compared with the total sample, has a smaller proportion of consumers with primary education, and a higher percentage of consumers with secondary education and a university degree. In this segment there are fewer individuals older than 64, and more consumers in the remaining age groups. There is a higher percentage of individuals with a monthly income between 1,501 and 3,000 €, whereas the number of consumers with an income below 1,500 € and above 3,000 € is lower. As regards knowledge about organic products, there is a higher percentage of consumers with medium, medium-high, and a high level of knowledge, but a smaller percentage of consumers with a medium-low and low level. This means that these

Table 5. Pattern matrix for oblique rotations of the factorial analysis of life styles

	F1 Health	F2 Environment	F3 Food/diet
I do exercise every week	0.766	0.006	–0.072
I do worry about my health	0.673	0.038	0.058
I eat fruit and vegetables every day	0.552	0.015	0.368
I follow a vegetarian diet	0.530	0.197	0.169
I collaborate with charity organization	0.062	0.798	0.027
I belong to an association for the protection of nature	0.084	0.741	–0.193
I do separate the rubbish	0.052	0.576	0.240
I consume red meat moderately	0.025	–0.123	0.764
I buy food free of additives	0.221	0.225	0.747
Total variance explained (%)	24.75	16.04	11.68

Extraction method: principal component analysis. Kaiser-Meyer measure of sampling adequacy: 0.648. Shady cells indicate the correlation between variables and factors.

Table 6. Profile analysis of the segments according to descriptive variables

Variables	S1 (19.4%)[1]	S2 (50.5%)[1]	S3 (30.1%)[1]	Total
*Sex**				
Men	58.6%	46.4%	43.3%	47.8%
Women	41.4%	53.6%	56.7%	52.2%
*Level of education**				
Primary	12.1%	27.8%	28.9%	25.1%
Secondary	44.8%	39.7%	34.4%	39.1%
University	43.1%	32.5%	36.7%	35.8%
*Age***				
18-29	36.2%	23.8%	35.6%	29.8%
30-49	37.9%	41.1%	43.3%	41.1%
50-64	20.7%	18.5%	15.6%	18.1%
> 64	5.2%	16.6%	5.6%	11.0%
*Monthly family income**				
< 1,000 €	12.1%	24.5%	24.4%	22.1%
1,001-1,500 €	32.8%	37.1%	35.6%	35.8%
1,501-2,000 €	27.6%	19.2%	25.6%	22.7%
2,001-3,000 €	25.9%	12.6%	8.9%	14.0%
> 3,000 €	1.7%	6.6%	5.6%	5.4%
*Level of knowledge about organic products***				
Low	27.6%	36.4%	43.3%	36.8%
Medium-low	17.2%	30.5%	27.8%	27.1%
Medium	34.5%	25.8%	21.1%	26.1%
Medium-high	15.5%	5.3%	4.4%	7.0%
High	5.2%	2.0%	3.3%	3.0%

*,** Significant differences among segments at 90% and 95% respectively. [1] Segment size.

consumers have the greatest knowledge about organic products.

Segment 2 (S2) is comprised of similar percentages of men and women as those existing in the total sample. There is a lower percentage of consumers with a university degree, and a large proportion have only primary education. According to age, there is a lower percentage of young consumers and a higher percentage of consumers older than 64 years old. In this segment, there is a slightly higher proportion of consumers with an income below 1,000 €. The level of knowledge about organic products is similar to that of the total population, whereas there is a somewhat higher percentage of consumers with a medium-low level of knowledge.

Segment 3 (S3) is comprised of a higher proportion of women compared to the total population. There is a higher percentage of individuals with primary education, whereas the percentage of consumers with secondary education is below average and there is a slightly higher percentage with a university degree. There is a higher percentage of young consumers and individuals with low incomes. The proportion of consumers with little knowledge about organic products is higher than average.

Next, the WTP in each of the segments has been calculated, first through descriptive statistical analysis, obtaining the average premium price in each segment (Table 7).

By means of ANOVA, significant differences among the premium prices given by each segment have been found, with a confidence level of 95%.

With direct estimation, the first segment is willing to pay a premium price of 20.9% more for an organic wine, the second segment 18.36% and the third segment 11.94%. The most frequent value in the three

Table 7. Estimation of the descriptive statistics for the variable «percentage of premium price»

	Segment 1	Segment 2	Segment 3
Mean	20.90	18.36	11.94
Median	10.00	10.00	10.00
Mode	10.00	10.00	10.00
Std. deviation	24.45	21.92	10.85
Skewness	1.928	2.383	1.580
Skewness std. error	0.314	0.197	0.254
Kurtosis	3.754	5.954	3.268
Kurtosis std. error	0.618	0.392	0.503
Minimum	0.00	0.00	0.00
Maximum	100.00	100.00	50.00

segments is 10%, and the standard deviations are 24.45 in the first segment, 21.92 in the second one, and 10.85 in the third one.

When frequency distribution is analysed, it is observed that segment 1 has a higher percentage of consumers that are willing to pay higher premium prices, whereas in segment 3 the opposite occurs (Table 8).

Below, a logit analysis has been done to determine the probability of a given premium price being paid by a certain consumer or by each of the segments. Results are shown in Table 9.

The Logit model equation is as follows:

$$p = \frac{1}{\left(1 + e^{-(\beta_0+\beta_1 x_1+\beta_2 x_2+\beta_3 x_3+\beta_4 x_4+\beta_5 x_5)}\right)}$$

where: p = probability to pay; β_0, β_1, β_2, β_3, β_4, β_5 = coefficients associated to each variable in the equation; X_1: percentage of premium price for an organic wine; X_2: dichotomous variable that indicates inclusion in segment 1; X_3: dichotomous variable that indicates inclusion in segment 2.

With this equation, 80.9% of cases are correctly predicted.

Finally, the WTP for an organic wine has been calculated in each of the segments:

Table 9. Variables in logit model equation

	β	SE	Wald	Df	Sig.	Exp(β)
X_1	–0.189	0.049	15.105	1	0.000	0.828
X_2	–1.554	0.995	2.441	1	0.118	0.211
X_3	–2.524	0.880	8.226	1	0.004	0.080
X_4	0.125	0.053	5.590	1	0.018	1.133
X_5	0.144	0.050	8.455	1	0.004	1.155
Constant	2.997	0.811	13.652	1	0.000	20.027

Segment I: $DAP_1 = -(\beta_0 + \beta_2) / (\beta_1 + \beta_4) = -(2.997 - 1.554) / (-0.189+0.125) = 22.55\%$

Segment II: $DAP_2 = -(\beta_0 + \beta_3) / (\beta_1 + \beta_5) = -(2.997 - 2.524) / (-0.189+0.144) = 10.51\%$

Segment III: $DAP_3 = -(\beta_0 / \beta_1) = 2.997 / (-0.189) = 15.86\%$

When results from the two estimations are compared, it can be observed that, in fact, there are differences between the quantities that consumers from every segment are willing to pay. Although the premium prices do not match exactly in both estimations, it can be observed that the first segment is the most willing to pay, followed by the third segment and finally the second one.

Discussion

In Spain, consumption of quality wine, defined as the wine protected by a Designation of Origin, is in a very competitive market situation. Therefore, wine companies should try to diversify their offer and adapt their products to suit consumer preferences. The latest tendencies in consumption indicate that organic products can be considered as a market opportunity for certain segments of consumers, those concerned about their health, the environment and product quality. Great efforts in the organic line are being made by companies with distribution channels in foreign markets with high purchasing power. However, Spain could constitute a potential and interesting market. One of the main problems of organic products is their high price, which

Table 8. Frequency distribution of the percentages of premium price that consumers are willing to pay in each segment

Premium price (%)	Segment 1		Segment 2		Segment 3	
	%	% cum.*	%	% cum.*	%	% cum.*
≤ 10	60.3	60.3	64.2	64.2	74.4	74.4
11-25	15.5	75.9	21.2	85.4	18.9	93.3
26-50	17.2	93.1	9.3	94.7	6.7	100.0
51-100	6.9	100.0	5.3	100.0	0.0	100.0

* cum: cumulated.

is a consequence of the high production costs, between 25 and 30% above the costs of a conventional wine.

Detecting target segments that are willing to pay these premium prices and determining commercial strategies for each segment, are important challenges for wine companies if they want to commercialise their products on the national market. These challenges are especially relevant for companies without good commercial channels abroad, and the great competition in markets, the competitive advantage of well-known products, and the tendency to prefer local products should also be considered.

The first results show that the average premium price that the population is willing to pay is between 16.29% and a 16.92%, depending on the method used to estimate it. Moreover, around 14% of the population is willing to pay a premium price of 25% for an organic wine. These figures foresee the existence of a segment in the population that is willing to pay the minimum premium price necessary for the product to be profitable on the market.

Three different segments have been identified according to life styles. The first one is comprised of 19.4% of the population and is characterized by a healthy life style and environmental concern. It includes a high percentage of men; the consumer level of education is higher than the average; there are less consumers older than 64 and they have a high purchasing power. They also have a good knowledge of organic products and the consumers are willing to pay the highest premium price, between 20.9% and 22.55%. This premium price is close to the one indicated by wine companies, although it is still insufficient to cover production costs. Moreover, and according to the frequency distribution for the different premium price intervals, 24.1% of consumers from this segment (4.7% of the total population) are willing to pay more than 25% for this type of wine. Commercial strategies should promote the environmental respect that organic wines represent, as well as the benefits of wine in general, and organic wines in particular, for health.

The second segment is the largest (50.5%), and they are the least worried about the environment, although they are concerned about diet and health. Consumers have primary education, they are older and with lower incomes. Moreover, they have little knowledge of organic products. The premium price that they are willing to pay is between 10.51% and 18.36%, and frequency analysis shows that 14.6% of consumers from this segment (7.06% of the total population) are willing to pay more than an additional 25% for an organic wine. In the first analysis, this segment does not seem to be a clear target, although an increase of organic product information campaigns as well as an attempt to relate these products to healthy, high quality products, might be basic communication strategies.

The third segment is comprised of 30.1% of the consumers, and they do not show any of the given life styles. This includes a higher percentage of women, the level of education is lower, they are younger and their level of knowledge about organic products is lower than average. The premium price that they would pay is between 11.94% and 15.86%, and only 6.7% of consumers from this segment (2% of the population) would pay more than 25%. This segment is difficult to approach because the profile segment is fairly unknown. Therefore, the most appropriate commercial strategy might be to conduct an in depth study of the segment in order to find ways to establish an effective approach to these consumers, or on the contrary, to completely dismiss them.

The most relevant conclusion is that willingness to pay is higher for consumers concerned about the environment. It could also be expected that willingness to pay will be transferred to the purchase action, if the remaining determining factors (availability, presentation, etc.) are similar to those existing in the equivalent conventional product. This means, according to our results, that environmental concern is a factor with a strong influence on the intention to purchase organic wine, even more so than health concern.

Finally, it may be desirable to analyse whether the percentage of consumers willing to pay the current organic wine premium price is profitable enough for companies to make the necessary additional effort. However, in our opinion, 19.4% of the population corresponds to a promising figure.

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