AN ANALYSIS OF THE POTENTIAL EFFECTS OF THE MODIFICATION OF THE PROSECCO PROTECTED DESIGNATION OF ORIGIN: A CHOICE EXPERIMENT

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Abstract. The wine market is facing new challenges that require a high degree of competitiveness. To support the agricultural sector the European Commission has issued regulations (Regulation 510/2006 followed by Regulation 1151/2012) regarding the protected designations of origin (PDO) and protected geographical indications (PGI). These measures are part of the common agricultural policy (CAP) and affect, among others, the wine sector. The objectives of Regulations 510/2006 and 1151/2012 are to promote rural economies, enhance internal markets and increase consumer choice and information. We applied a choice experiment to understand whether the new PDO Regulation has a positive

effect on the Prosecco wine market. Five attributes were considered: using grapes from local biotypes, protection of the traditional landscape, traceability, place of production and finally, price. Our results indicate that the production area appears to be an important attribute in guiding consumers' purchasing decisions. The research also showed that consumers seem to attribute great importance to other characteristics of Prosecco, in particular, the use of grapes from local biotypes. The latter has more influence than the area of origin on the propensity to buy Prosecco for 64% of the sample.

Keywords: *choice experiment; wine marketing, latent class, Prosecco*

1. Introduction

The wine market is facing new challenges that require a high degree of competitiveness. To support the agricultural sector the European Commission has issued regulations (Regulations 510/2006 and 1151/2012[1]) regarding protected designations of origin (PDO[2]) and protected geographical indications (PGI[3]). These measures are part of the common agricultural policy

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[1] Regulation 1151/2012, while introducing some new norms regarding agricultural products, did not alter the provisions first introduced by Regulation 510/2006 as regards wines.

[2] "'Designation of origin' [PDO] means the name of a region, a specific place or, in exceptional cases, a country, used to describe an agricultural product or a foodstuff: originating in that region, specific place or country; the quality or characteristics of which are essentially or exclusively due to a particular geographical environment with its inherent natural and human factors; and the production, processing and preparation of which take place in the defined geographical area." (source: Regulation 510/2006).

[3] "'Geographical indication' [PGI] means the name of a region, a specific place or, in exceptional cases, a country, used to describe an agricultural product or a foodstuff: originating in that region, specific place or country; and which possesses a specific quality, reputation or other characteristics attributable to that geographical origin; and the production and/or processing and/or preparation of which take place in the defined geographical area." (source: Regulation 510/2006).

(CAP) and affect, among others, the wine sector. The objectives of Regulations 510/2006 and 1151/2012 are to promote rural economies, enhance internal markets and increase consumer choice and information while the expected results are: "Increased diversity of agricultural production; Increased income for farmers; Fair competition between producers of products with geographical indications or designations of origin; Increased recognition and credibility of registered names on the part of consumers; Consumers able to make better choices due to clear information on product origin" (European Commission, 2008, p. 23).
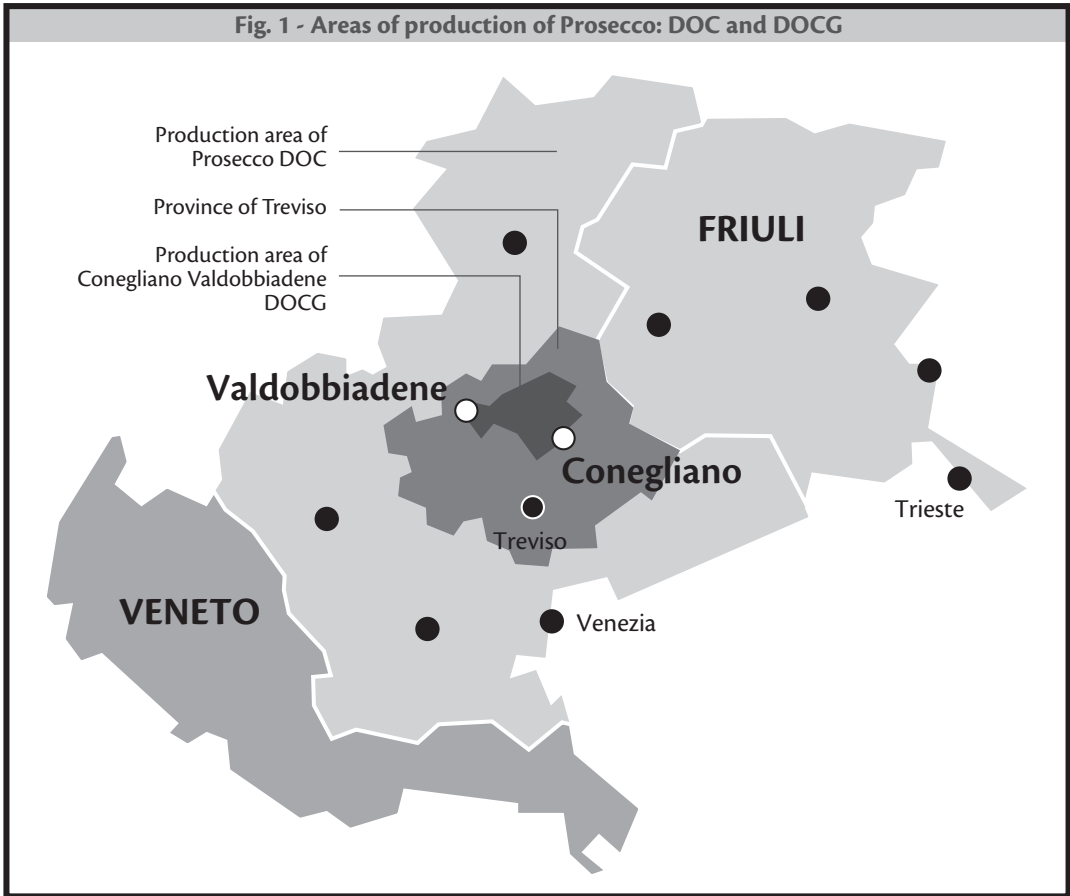
The present research aims to evaluate the impact of this policy with regard to the latter objective, namely the provision of quality signals to consumers about the products labelled as PDO. The understanding of consumers' perception of PDO labels will also enable guidelines to be formulated for possible marketing strategies to enhance the signalling value of PDO labels.

We consider Prosecco wine, one of most famous sparkling white wines of north-eastern Italy, as a case study.

The chosen case study is motivated by two factors. First, Prosecco wine is quite well known on the market and second, it was recently affected by the Ministerial Decree of 17 July 2009 that has significantly altered the production specifications of Prosecco wine.

The Ministerial Decree has had three effects on the production/labelling of Prosecco wine. First, the boundaries of the production area have been changed; the original Protected Designation of Origin (PDO or DOC) became Protected and Guaranteed Designation of Origin (PGDO or DOCG). Second, the DOC area has been extended and now includes nine provinces of the Veneto and Friuli-Venezia Giulia Regions (Figure 1). Third, only the wines from grapes produced in DOC and DOCG areas can be labelled as "Prosecco". As a result, the areas for the production of Prosecco (labelled as DOC or DOCG) tripled from about 3,932 ha to 12,600 ha.

These norms should improve consumer perception of the quality of Prosecco thus eliminating unfair competition and helping to reduce asymmetry in information. As a consequence, it is presumed that the market power of the Prosecco producers will rise due to the greater protection given to their product by the labelling policy. However, the reform carries a controversial threat, due to the expansion of the production area and the subsequent potential increase in supply: this aspect could undermine the gain in market power due to a price fall as a consequence of the increased production. This could particularly affect small wineries and vineyards on the hills that have higher production costs than growers on the plains. It could therefore happen that in the medium and/or long-term, growers and vineyards in historic production areas currently DOCG will face a loss of competitiveness. This will happen especially if consumers do not understand the significance of the DOCG and DOC labelling, and especially the differences between the wines produced in these areas.

Fig. 1 - Areas of production of Prosecco: DOC and DOCG

We analysed the effect of PDO labels in influencing the propensity to buy Prosecco wine by means of a choice experiment that considers five characteristics (attributes) of the product: designation of origin, traceability, use of local vine biotypes, preservation of the traditional land-scape and price. The application of a latent class model allowed the market segmentation to be analysed, providing the bases for discussion of marketing strategies that satisfy the preferences of the different consumer targets.

The rest of the paper is organised as follows: section two summarises the results of past research in this field. The methodology applied is presented in section three, followed by a description of the results obtained from our analysis. The last section discusses the results of the econometric analysis and presents our conclusions.

2. Background

Wine is defined in the literature as an experience good, namely a good whose quality is unveiled only during its consumption (Lockshin *et al.*, 2006).

As pointed out by Sáenz-Navajas *et al.* (2013), wine is a complex good and the perception of

its quality depends on both intrinsic and extrinsic characteristics. Both characteristics provide a set of information to consumers, and while the first category (intrinsic factors) is derived from tasting the product, the second (extrinsic factors) is more related to its commercial description, namely advertising and packaging (Sáenz-Navajas *et al.*, 2013).

Protected Designation of Origin can be classified among extrinsic factors, given that it provides a signal to consumers on the product label.

Several studies have analysed the effect of both intrinsic and extrinsic factors, applying different methodologies. These methodologies can be classified in monetary (e.g. hedonic pricing, choice experiments) and non-monetary techniques (e.g. multi-criteria analysis, conjoint analysis, preference rating), where the latter have the advantage of providing information on the premium price given by consumers to a specific characteristic of a product. Among monetary techniques, hedonic pricing (Bartik, 1987; Court, 1941) and choice experiments (Hensher *et al.*, 2005) have been the most widely applied to the wine market. The first was applied, among others, by Combris *et al.* (2000); Schamel (2003); Schamel & Anderson (2003) while the second by Cicia *et al.* (2013); Lockshin *et al.* (2006).

According to the literature, several factors are crucial in influencing purchasing decisions and the most important are taste (Mitchell & Greatorex, 1988; Thompson & Vourvachis, 1995), price (Jenster & Jenster, 1993; Djumboung *et al.*, 2013; Koewn & Casey, 1995; Perrouty *et al.*, 2006), region of origin (Batt, 2000; Perrouty *et al.*, 2004; Skuras & Vakrou, 2002; Tustin & Lockshin, 2001; Thiene *et al.*, 2013; Veale & Quester, 2009), grape variety (Combris *et al.*, 2000; Goodman *et al.*, 2005), branding (Vlachvei *et al.*, 2012), packaging (De Mello & Pires Gonçalves, 2008; Mueller Loose & Szolnoki, 2012; Piqueras-Fiszman & Spence, 2012), previous experience (Casini *et al.*, 2009) and traceability (Cicia & Colantuoni, 2010).

While several authors have analysed the effect of country of origin labelling (Alfnes, 2004; Alfnes & Rickertsen, 2003; Bolliger & Réviron, 2008; Carpio & Isengildina-Massa, 2009; Chung *et al.*, 2009; Loureiro & Umberger, 2007; Tempesta & Vecchiato, 2013; Umberger *et al.*, 2002), the analysis of the premium price for PDO (DOC and DOCG) Italian wines has not yet been investigated. Looking at the results obtained from the analysis of the effect of country of origin labelling for foods, it seems that the indication of the place of origin on product labels is often one of the characteristics most appreciated and rewarded by consumers (Mauracher *et al.*, 2013; Tempesta & Vecchiato, 2013). Our study will try to understand whether this is also the case for the PDO labelling introduced on the wine market by the CAP with particular attention to the DOC and DOCG designations.

3. Material and methods

3.1. The Choice Experiment Methodology

The Choice Experiment (CE) methodology (Louviere & Woodworth, 1983; McFadden, 1974) is a popular technique in marketing, transportation and environmental studies. CE can be framed in the economic valuation techniques, along with the Contingent Valuation Method (CVM), among stated preference methods. Both techniques are based on a survey that mimics consumer choices, asking respondents to declare their willingness to pay (WTP) for a proposed good or service. While in the CVM respondents are asked to declare their WTP for a single hypothetical scenario, CE requires respondents to choose their preferred good for each of the proposed bundles. In each bundle (choice set) the respondent is presented with different con-

figurations of the same good differentiated by some of its key characteristics (attributes). The interested reader can find an in-depth presentation of the CE methodology in Hensher *et al.* (2005) and Hoyos (2010).

CE data can be analysed with different models depending on the purpose of the study and on the assumptions made about the data collected. While multinomial Logit (MNL) (McFadden, 1974), multinomial Probit (MNP) and nested Logit (NL) models can be applied when preferences are assumed homogeneous among respondents, random parameters Logit (RPL) and latent class models (LCM) are usually applied when studying heterogeneous preferences among respondents and therefore a segmented market. LCM models (Swait, 1994) analyse heterogeneity finding different clusters (classes) of respondents whose preferences are homogenous in every class but different between classes. On the contrary, RPL models (Train, 2003) treat heterogeneity in a continuous fashion and require the analyst to make assumptions on the distribution of the parameters assumed to be interpreted in a heterogeneous way by respondents.

In this research data were analysed first with a MNL model and then with a LCM model in order to investigate the segmentation of the Prosecco wine market. MNL model estimates should be considered only as "explorative" results. In fact MNL models assume that error terms are independent and identically distributed (iid) and that the Independence of Irrelevant Alternatives (IIA) (Arrow, 1951) is satisfied. The latter assumption is rarely satisfied and therefore other models like LCM or RPL models should be applied in order to overcome the IIA assumption that characterises MNL models.

3.2. Experimental design

The definition of the choice sets that will be presented to respondents in a CE is reached by a process called experimental design. Once the key attributes and the level of the good under investigation have been defined, the full factorial of their combinations is reduced to a limited set of combinations that can be presented to respondents. Attributes must be relevant and related to the investigation and are usually selected by organising technical focus groups with experts in the field of the good under investigation. Keeney & Raiffa (1976) report that the selected attributes must have the following properties: be exhaustive, in the sense that they must contain all the main aspects of the problem; meaningful and understandable, decomposable, non-redundant.

The selection of the key attributes for our research was reached with two rounds of focus groups with experts of the Prosecco Consortium of Conegliano-Valdobbiadene. The chosen bundle of attributes was then tested with three rounds of focus groups involving potential respondents to check whether they were clear and understandable. This process led to a final set of five attributes: use of local biotypes, protection of the traditional landscape, traceability of the wine, place of production and price.

Tab. 1 - Attributes and levels used in the choice experiment	
Attributes	**Levels**
Use of local biotypes	- Main use of grapes from local biotypes - Partial use of grapes from local biotypes - No use of grapes from local biotypes
Protection of traditional landscape	- Protection of traditional landscape - No protection of traditional landscape
Traceability	- With Traceability - Without Traceability
Place of production*	- Prosecco wine produced in D.O.C.G. area - Prosecco wine produced in D.O.C. area - Prosecco wine obtained in any other part of Italy
Price (€/bottle)	- 3 € - 5 € - 10 €
* The D.O.C.G. area consists of the historical and most typical area of Prosecco production. It includes the district of the hilly municipalities located between Conegliano and Valdobbiadene. In this case, the wine is subject to very strict controls to ensure the compliance of the product specifications. The D.O.C. area is much larger and includes the provinces of Treviso, Belluno, Venice, Padua, Vicenza, Pordenone, Udine, Gorizia and Trieste. In this case too, the wine is subject to strict controls for compliance with product specifications that are less restrictive than those of D.O.C.G.	

3.2.1. Attributes description

Growers select the vines that provide the best grapes related to the territory where they are grown. The local biotypes are, in fact, better adapted to the environmental and climatic conditions of the area and provide better quality products. Prosecco can be obtained through the use of more or less grapes from these vines.

The vineyard is a factor that strongly characterizes rural landscapes. Vineyard landscapes often preserve the characteristics they had in the past and are a testimonial of great importance in farming culture. In recent times, however, to reduce production costs, major transformations of vineyard landscapes have led to a loss of their cultural value. In order to promote the protection of historical landscapes, a possible solution could be certification attesting that grapes were obtained from vineyards that have preserved the traditional landscape.
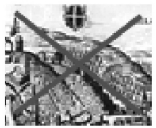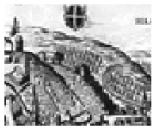
According to EC Regulation 178/2002 that came into force in 2005, traceability is the ability to trace and follow food, feed or ingredients through all stages of production, processing and distribution. In the case of wine, it consists of recording all oenological stages and movements of the primary product (grape). Through traceability, the consumer can accurately identify the location of grape production and therefore have more information on the area and the quality of the environment where the wine was produced.

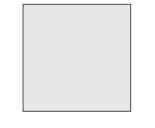Designation of Origin is the term used to describe a typical product from a specific production area. Until 1992 each country had its own rules and its own symbol. In July of that year, the European Community established a uniform system of development and protection of food products within the European Union. This results from adopting two regulations: the Protected Designation of Origin (PDO) and the Protected Geographical Indication (PGI) on the one hand, and the Traditional Speciality Guaranteed (TSG) on the other. Regarding wine, the designation of origin refers to a product whose quality or characteristics are due exclusively or essentially to the geographical environment, including natural and human factors.

The price is always an important attribute that should be considered to give credibility to the hypothetical market created in the choice experiment. It should ensure that respondents make

decisions about their budget constraints and enables the researcher to derive the marginal willingness to pay for the different attributes and levels. In the context of our CE it was defined as the price of a bottle of Prosecco with a capacity of 0.75 l and was expressed in euros. The levels of the price attributes were chosen following the results of a previous research (Tempesta *et al.,* 2010). Note, however, that the vector price is consistent with the WTP for Prosecco wine estimated by Thiene *et al.* (2013).

Image 1 - Choice cards: an example				
Purchase situation 2	**Bottle A**	**Bottle B**	**Bottle C**	**No bottle**
Use of local Biotypes	No use of grapes from local biotypes	Main use of grapes from local biotypes	Partial use of grapes from local biotypes	
Traditional landscape protection	Absent	Present	Present	
Traceability	Absent	Present	Present	
Place of production	DOCG	DOC	Other	
Price	3 €	5 €	10 €	

3.2.2. Experimental design: technical characteristics

In order to obtain different profiles to submit to respondents, choice sets were constructed following the steps proposed by Louviere *et al.* (2000). We opted for an unlabelled choice experiment. The full factorial design of our experiment was reduced with an orthogonal fractional factorial design resulting in 18 choice options (profiles), grouped into six choice sets, containing three alternatives each plus the no-choice option. The latter was added to each choice set as recommended in the application of choice experiments to marketing products: according to Bateman *et al.* (2002) the exclusion of the no-choice option from the experimental design might result in unreliable welfare measures. The 6 choice sets were termed "purchase situation" and the choice options "Bottle A, Bottle B, Bottle C, No Bottle" (Image 1).

3.3. The questionnaire

The choice experiment was presented to respondents by means of a questionnaire that was structured as follows.

The first part contained information on wine consumption habits while the second focused on Prosecco. The latter section was designed to elicit the knowledge about Prosecco, consumption patterns, purchasing habits, knowledge about the difference between DOC and DOCG labels meaning and implications. The third part consisted of the CE introduced by the presentation of the hypothetical scenario. The six purchase situations created in the experimental design were then presented one by one to each respondent. A choice for each purchase situation was required from each respondent, asking him to imagine being at the wine shelves to make a purchase. The next part asked some questions to verify the consistency of the choices made in the CE. The fourth part of the questionnaire asked socio-economic questions to understand the consumer's profile.

3.4. Data collection

Data were collected in 2012 through face-to-face interviews in three locations: Conegliano, in the north-east of Treviso province, Selvazzano and Albignasego, both municipalities in Padua province. We used a sampling strategy described by Davis (2004) as an intercept survey. A group of interviewers was specifically trained to conduct the interviews in central squares, in front of grocery stores, local street markets, and bakeries. To ensure randomness of respondents and avoid self-selection, interviewers were told to stop one person in every five. Shopping centres as point of data collection allowed us to have quite a heterogeneous sample. A total of 440 questionnaires were collected.

4. Results and discussion

4.1. Sample characteristics and consumption habits

Socio-demographic characteristics are reported in Table 2. Looking at gender, our sample is composed mainly of males (59.5%). 27.7% of respondents are under 30, 39.8% are between 30 and 49 years of age, 19.8% are between 50 and 59, and the remaining 12.7% are older than 59 years. Regarding levels of education, a high school diploma is the most common (53%) followed in order of importance by university graduates (26.6%), high school (18.2%) and primary school (2.3%). Most people live in urban areas (40.7%). With regard to employment, only 3.2% of respondents are in the agricultural sector, a quarter of the sample work in industry and crafts, 47.8% provide services (shops, administration, utilities ...).

All respondents declared that they had consumed Prosecco wine at least once during the year preceding the interview (Table 3), and 72% had bought it in the same period. This reflects the real trend, given that 73% of the production of Prosecco in 2011 was for domestic use (Distretto del Conegliano Valdobbiadene, 2012).

The usual place where consumption takes place is at home for 61.1% of the sample, in restaurants for 55.2%, while 43.2% consume it at festivals, fairs and exhibitions. Only 13% drank Prosecco with friends and 4.5% at unspecified locations.

The purchase of Prosecco is almost equally distributed between wine companies and wine cellars (31% and 30%). Supermarkets and grocery stores are in third position followed by wine shops.

Tab. 2 - Socio-demographic characteristics		
Age Class	**N**	**%**
Less than 30 years	122	27.7
30 to 49 years	175	39.8
50 to 59 years	87	19.8
60 years or over	56	12.7
Education level	**N**	**%**
Primary school	10	2.3
Secondary school	80	18.2
High school diploma	233	53.0
University degree, Master, PhD	117	26.6
Place of Residence	**N**	**%**
Agricultural area	179	40.7
Urban area	261	51.3
Employment sector	**N**	**%**
Agriculture	14	3.2
Industry and handicrafts	111	25.2
Tertiary sector	210	47.8
Not active	105	23.8

Tab. 3 - Prosecco Consumption			
Consumption and purchase		**N**	**%**
Have you drunk Prosecco in the last year?	Yes	432	98.1
	No	8	1.9
Have you purchased Prosecco in the last year?	Yes	317	72.0
	No	123	28.0
On what occasions did you drink Prosecco?			
Occasion	**N**	**%**	
At home	269	61.1	
At a restaurant	243	55.2	
At a bar	171	38.9	
At festival, fair, exhibition ...	190	43.2	
With friends	189	13.0	
Other	20	4.5	
* Possibility of making multiple choices			
Where did you buy Prosecco?			
	N	**%**	
Wine company	130	31.7	
Cellar	124	30.2	
Wine shop	47	11.4	
Supermarket and generic grocery store	95	23.1	
Other	14	3.4	

Tab. 3 ctd.

Importance given to factors when purchasing		
Position	Factors	Mean
1	Type of wine	4.1
2	Place of production	3.8
3	That the wine reports the Designation of Origin on its label	3.6
4	Curiosity to discover new wines	3.3
5	Knowledge of the production company	3.2
6	Price	3.2
7	Recommendation from friends	3.0
8	Knowledge / Brand Reputation	3.0
9	Type of cap	2.7
10	Packaging (label / elegant bottle)	2.5

4.2. Results

Data were analysed first with an MNL model and then with an LCM model. All variables were effect-coded, apart from price which was considered as a continuous numerical variable.

Both models share the same utility function that, in its first formulation, is linear for all variables considered.

The results obtained from the MNL model using a linear function of the attribute price led to controversial results. Contrary to our expectations, the coefficient of the price variable was positive. This implies that the higher the price the higher the probability of purchasing a given wine *ceteris paribus*. Although this result, indicates that, to some extent, the price attribute is taken as proxy for quality by respondents, it cannot be justified in economic terms. In other words, while it is plausible that purchasing decisions are guided by price as a signal of quality up to a threshold maximum price, it is not acceptable that the relationship between the price level and purchasing probability is linear and positive if the budget constraint of an agent is to be considered rationally.

To overcome this problem a model with a quadratic price utility function was estimated and its results are reported in Table 4. These are satisfactory - all variables are significant (p-value < 0.05). A first result is the relative importance of the attribute levels considered in terms of utility. The most influential attribute levels are, in order of decreasing importance: traceability, the prevalent use of local biotypes, conservation of traditional landscape, the DOCG area of production, the partial use of local biotypes, and finally the DOC area of production. Note that in this case it is not possible plausibly to estimate the premium price since the marginal utility of money is a function of the price level (inverse U-shaped parabola in our utility function specification). At best it is possible to calculate the price (we refer to it as $P_{threshold}$) that discriminates two different parts of the utility function by using the following formula:

(1)
$$\begin{cases} U = \beta_p p + \beta_{p^2} p^2 + \sum \beta X \\ \dfrac{\partial U}{\partial p} = \beta_p + 2\beta_{p^2} p \end{cases}$$

where X are all attributes considered apart from price. The indirect utility function U becomes parabolic when $\beta_p > 0$ and $\beta_{p2} < 0$.

Then $P_{threshold}$ can be derived finding the maximum of $\frac{\partial U}{\partial p}$, namely the value of p where $\frac{\partial U}{\partial p} = 0$. Therefore:

$$(2) \qquad P_{threshold} = -\frac{\beta p}{2\beta_{p2}}$$

Where: b_1 = coefficient of price in the utility function; b_2 = coefficient of price squared in the utility function.

$P_{threshold}$ is the value of P that maximises the indirect utility function with respect to price. When the price is lower than $P_{threshold}$, the consumer considers the price as a signal of wine quality. Only if the price is higher than $P_{threshold}$ the consumer behaves in a way consistent with neoclassical consumer theory.

The application of LCM models implies a first analytical step where the number of classes that best fit the data is found by an iterative process of estimation, varying the number of classes exogenously. Following this process, several models were estimated. The statistical parameters/criteria taken into consideration in order to determine the optimal number of classes are: (a) the log likelihood; (b) information criteria (Bayesian - BIC, Akaike - AIC and *Hannan-Quinn - HQIC*); (c) the McFadden pseudo R-squared. Following these indexes/criteria (see Table 5) the model with three classes was chosen, where the first class represents 45% of the sample, the second 36% and the third 19%.

For the first class (45% of the sample) the coefficients of the price attribute and those of the DOC production area are not significant (p > 0.05). For this group, the most important characteristics are: the prevalent use of grapes from local biotypes, preservation of the historic landscape, and the DOCG labelling. These consumers seem to show a preference for the preservation of the cultural identity of the wine and its production area. Interestingly, for this class, the price is not statistically significant and does not seem to affect the consumers' choices.

For those belonging to the second class (36% of the sample), all parameters result as being significant except the constant that identifies the no-choice option. All coefficients have a low value and are positive (apart from the squared specification of price). Traceability is the most important attribute, followed by price, the importance given to the DOCG production area and finally by preservation of the historical landscape. Contrary to the first class of respondents, the members of class 2 perceive the price as an indicator of quality, and for this class the $P_{threshold}$ is 7.5 €/bottle[4]. This class consists of consumers rather undecided on the characteristics of the Prosecco they could buy.

Finally, consumers of the third class (19% of the sample) seem to be more interested in the quality of the grape, traceability of the product, and belonging to the DOCG and DOC areas. Landscape preservation and partial use of grapes from local biotypes are the least important characteristics. These respondents seem to be mostly interested in the quality of the wine and its origin, rather than in other aspects of the product.

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[4] Where the capacity of a bottle is 0.75 l.

Tab. 4 - MNL and LCM Results (p-value in brackets)				
Parameters	MNL	LCM		
		Class 1: 45% of sample*	Class 2: 36 % of sample*	Class 3: 19% of sample*
Constant	2.080 (0.000)	1.351 (0.007)	-0.210 (0.283)	8.172 (0.000)
Prevalent use of local biotypes	0.638 (0.000)	1.276 (0.000)	0.178 (0.000)	1.481 (0.000)
Partial use of local biotypes	0.285 (0.000)	0.438 (0.016)	0.180 (0.009)	0.552 (0.013)
Place of production DOCG	0.433 (0.000)	0.719 (0.000)	0.344 (0.000)	1.062 (0.000)
Place of production DOC	0.250 (0.000)	0.113 (0.308)	0.184 (0.000)	0.863 (0.000)
Protection of traditional landscape	0.582 (0.000)	0.858 (0.000)	0.234 (0.002)	0.615 (0.009)
Traceability	0.653 (0.000)	0.572 (0.000)	0.482 (0.000)	1.102 (0.000)
Price	0.183 (0.021)	0.160 (0.443)	0.481 (0.000)	0.281 (0.364)
Price2	-0.014 (0.013)	-0.019 (0.223)	-0.032 (0.000)	-0.014 (0.517)
Log likelihood function	-2504.431		-2252.740	
McFadden pseudo R square	0.079		0.383	
* 440 respondents				

Tab. 5 - Comparison of selection criteria LCM2 vs. LCM3		
Criteria	Two classes	Three classes
Log likelihood function	-2319.113	-2252.740
AIC Criteria	1.775	1.732
BIC Criteria	1.817	1.797
HQIC Criteria	1.790	1.755
McFadden pseudo R square	0.364	0.383

5. Conclusions

The objective of our analysis was to study consumer preferences for Prosecco wine and their ability to distinguish the differences introduced by the CAP policy concerning PDO labelling. Five attributes were considered: using grapes from local biotypes, protection of the traditional landscape, traceability, place of production and price. These attributes have been studied taking into account their different levels. Using latent class as methodology has enabled us to emphasize the existence of heterogeneity between preferences.

The latent class model yielded information of great interest for defining marketing strategies for the producers of DOCG Consortium Conegliano-Valdobbiadene. Our results show that consumer preferences are quite heterogeneous. Nevertheless, we note that for consumers, the production area appears to be an important attribute. The coefficients of this variable are significant for all three classes. In contrast, the DOC area appears not to have a statistically significant influence on the inclination to buy Prosecco wine in the class with the largest number of respondents (45% of the sample). An important result is that the coefficient for Prosecco of the DOCG production area is always higher than that of the DOC. This result implies that DOCG wine growers are expected to benefit from a significant competitive advantage over those of the

DOC area. In this respect our research supports the effectiveness of the Regulation 510/2006, given that consumers seem to be able to distinguish the differentiation of PDO labels and to interpret them correctly as a signal of quality.

The research also demonstrated that consumers seem to attribute great importance to other characteristics of Prosecco. Particularly in the first and second classes (64% of the sample), the prevalent use of grapes from local biotypes has more influence on the propensity to buy Prosecco than the DOCG labelling. The existence of a strong link between the wine and the production area seems to be quite important for consumers. The fact that wine is perceived as typical does not derive only from the PDO labelling, which indicates the area of production and the respect of a regulation. The selection of vine biotypes that winemakers have performed over time and the historical process of vines to adapt to the territory are very important. This seems to be testified in our analytical model by the fact that the preservation of traditional landscapes has a positive influence on the propensity to purchase.

According to our results, consumers place great importance on the relationship between territory and typicality of the productions, even if the concept of typicality that emerges is fairly heterogeneous. Typicality is not only the result of the guarantee of place of production, but a combination of respect for the historical identity of that place and its traditional vineyards. The presence of a designation of origin in itself does not appear to be sufficient to increase the tendency to buy. Consumers seem to require a historical and welded link between the wine and the territory. This is an element that should ensure, even in the future, a competitive advantage in the original areas of wine production such as the DOCG Conegliano and Valdobbiadene area.

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