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## Consumer response to quality differentiation strategies in wine PDOs

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### Abstract

The wine-growing sector is probably the area of agriculture that best expresses the binomial of production quality-territorial identity. In fact, the identification of agricultural production with the territory, its peculiarities and its atmospheres generates a relationship that is mutually advantageous and that the consumer perceives and values. This binomial is the basis that has generated the PDOs, which represent a winning solution for the success of productions that are otherwise fragmented and have little market “recognisability”. A current debate that has spread to various wine-growing areas questions the advisability of introducing sub-zoning based on quality levels in order to better promote the typical characteristics of each territory. The objective of this paper is to verify whether the strategy of sub-zoning based on the quality diversification of productions could constitute an appropriate tool to further promote a territory’s productions. Towards this end, we have developed a discrete choice experiment to compare a new Chianti Classico DOCG type of excellence with other 4 DOCG Tuscan Sangiovese wines. The results show that introducing this new typology into a territory that has already been awarded the DOCG certification can represent a valid development strategy for the firm, as well as for territories.

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## 1. Introduction

The wine-growing sector is probably the area of agriculture that best expresses the binomial of production-quality/territorial-identity. One need only think of the Chianti, Barolo and Champagne denominations and the fact that they simultaneously represent productions and territories, intrinsically and indivisibly tied to one another. This identification of the agricultural production with the territory, its peculiarities, and its atmospheres generates a relationship that is mutually advantageous and that the consumer perceives and values. While on one hand, the territory indeed enjoys the positive impacts connected with the wine-growing activity, the latter benefits from the reputation of the territory itself (Corbo et al. 2014).

The symbiosis that thus takes shape becomes a strategic element in sustainable development, inasmuch as the economic dimension alone is insufficient to guarantee the vitality of the territorial system when it is not supported by a development model that takes into account the environmental and social demands (Casini et al. 2014; Menghini and Marinelli 2011). Productions based on strict and responsible specifications defined on homogeneous territorial levels seem to respond perfectly to this type of development. These strategies intend to differentiate productions by seeking to valorise the relationship between the product and territory, proposing wines with high levels of typicality and quality (Pomarici et al. 2014). By so doing, they indeed intend to strengthen in the consumer the territory/wine-quality idea that is at the basis of success for the producers (Thomas and Pickering 2003) as well as for the entire territory, making the territory become a factor in the production of wine, as well as in its promotion.

While the PDOs can thus represent a winning solution (Skuras and Vakrou 2002) for the success of productions that are otherwise fragmented and have little market “recognisability”, a current debate that has spread to various wine-growing areas consists of expanding/reducing the production areas or introducing sub-zonings based on quality levels, so as to better identify, enhance, and valorise the typical characteristics of every territory. Sub-zoning a certain denomination is, for example, a common practice in the French protection and promotion system in which an “Appellation d’origine contrôlée” (AOC) differentiates vineyards in function of their quality. This rigidly regulated internal quality scale makes it possible to differentiate the production of a specific denomination, thereby enabling greater possibilities for business strategies and further strengthening the product-territory-quality relationship (Landon and Smith 1997).

The purpose of this study is to verify, in contexts where it does not exist, whether the strategy of sub-zoning based on a qualitative diversification of productions can constitute an appropriate tool to further promote the productions of a territory, reducing the risk of abandonment (Bernetti et al. 2013). The research question we intend to answer is:

Can the creation of a subzone in a relatively established denomination, aimed at identifying a particularly valuable production, make it possible to internalise a share of consumer surplus by means of a price premium for the products produced there?

In order to answer this question we have developed a discrete choice experiment (DCE) on a sub-zoning conducted on the territory of Chianti Classico DOCG. The Consorzio del Chianti Classico DOCG has in fact recently enriched its commercial offer with a new label for wines produced on its best suited terrains, which intends to represent the highest quality expression of the vinicultural range certified by the Chianti Classico DOCG trademark: “Gran Selezione”.

## 2. The Case Study

In order to verify whether the strategy of sub-zoning within a specific denomination can constitute an appropriate tool to increase the added value of quality wines, a discrete choice experiment (DCE) was developed (Louvière et al. 2000, Adamowicz and Swait, 2011, McFadden, 1973), estimated by means of a conditional multinomial logit model. Several researches used choice modelling to highlight consumers’ preferences in the wine sector (Costanigro et al. 2014, Mueller et al. 2010, Lockshin, L. 2003), however, to our knowledge, none used DCE to investigate the effect of sub-zoning within a specific denomination.

The choice experiment was applied to an actual case study: “Chianti Classico DOCG Gran Selezione”, a quality trademark certified by the Consorzio del Chianti Classico DOCG that has added to its specifications the wording, “Gran Selezione”, as the top quality expression for wines that respect certain organoleptic, territorial and production

characteristics.

To evaluate the impact of the Consorzio's new certification we decided to develop a label experiment. The new label was compared to 4 other wines already on the market, selected among the wines most diffused in the area of origin (Chianti DOCG, Chianti Classico DOCG) and among the most probable competitors (Brunello di Montalcino DOCG, Chianti Classico Riserva DOCG).

All of the labels presented were therefore characterised as DOCG wines, from Tuscany, and with a clear prevalence of the Sangiovese grape variety. The declared choice preferences between the labels are therefore not influenced by the effect of certification or by that of the area of origin, and are instead tied to the trade-off between price and specific wine typology. The price attribute is specific for each label and is made up of 4 labels (Tab 1), defined by means of a market analysis based on IRI-Infoscan data and on interviews with privileged witnesses.

Table 1 – labels and specific price attribute levels.

Label	CHIANTI DOCG	CHIANTI CLASSICO DOCG	CHIANTI CLASSICO RISERVA DOCG	CHIANTI CLASSICO GRAN SELEZIONE DOCG	BRUNELLO DI MONTALCINO DOCG
Price €/bottle	4,2-5,4-6,6-7,8	9,1-11,7-14,3-16,9	14-18-22-26	17,5-22,5-27,5- 32,5	21-27-33-39

Starting from a full factorial of  $5^{4 \times 4}$  choice situations, we reduced their number with an orthogonal fractional factorial design, which satisfies attribute level balance and allows for an independent estimation of the influence of each attribute on choice.

This proves to be the most efficient solution in cases where there is no knowledge about the prior parameter values (Louvière et al., 2000; Bliemer and Rose, 2005). The design was obtained by means of Ngene software (ChoiceMetrics Ltd.). It produced 12 choice situations in which consumers were asked to select a wine for a special occasion between the five labels, plus the no-choice option (Adamowicz et al. 1998).

### 3. Sample description

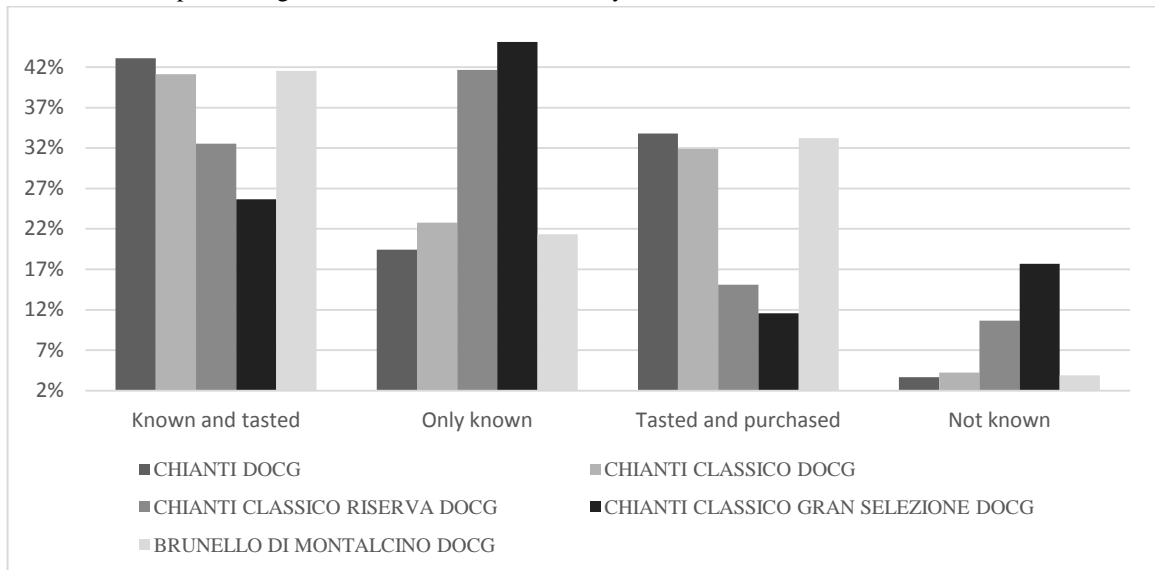
The analysis was conducted on line in summer 2014 on a sample of nine hundred individuals representative of the Italian population for gender, age, and region of residence.

The questionnaire is composed of several parts. The first concerned defining wine consumption behaviours, while the second, the choice experiment proper, explored the inclination and purchasing preferences in terms of wine, and the third contained questions on the perception of quality and familiarity with wine. The final section was devoted to gathering socio-demographic information.

Men constitute 50% of the sample. About 40% of these men are over 54 years of age, 44% are between 35 and 54 years of age, and the remaining 16% are younger than 35. 17% of the women are younger than 35, 26% of them are between 34 and 54 years of age, and the remaining 27% are older than 54. 81% of the sample possess at least a high school diploma, while 21% hold a university degree. 76% of the sample declares average family spending of less than 2000 euros per month, excluding mortgages and rents. The average monthly food expenditure is less than 500 euros for 44% of the sample, and between 501 and 1000 euros for 45% of the sample. About 95% of the sample analysed declare they consume red wine at least once per week, while 35% of the sample declare they consume it every day. 70% of the subjects interviewed believe they have a higher than average competence in the area of wine, while nearly half of interviewees declare they have a good familiarity with the sector. On the other hand, only 29% believe they do not possess sufficient notions about wines. The high level of declared competence seems to be validated also by the results concerning the evaluation of the proposed Labels that we asked them to position with respect to the perceived average quality. The table of average votes indeed reflects the table that in theory is each product's quality bracket: Chianti DOCG at the base, followed by Chianti Classico DOCG (in ascending order,

Chianti Classico, Riserva and Gran Selezione), and at the peak of the quality pyramid, Brunello di Montalcino DOCG. Graph 1 shows the degree of confidence and familiarity of the consumers considered with respect to the labels proposed in the choice experiment (the sum of 100% is given by considering all the options for each label: Know and tasted, Only known, Tasted and purchased, Not known).

Graph 1 – Degree of confidence and familiarity with the Labels considered in the DCE



The results show consumers’ marked familiarity with the proposed labels. Chianti Classico Gran Selezione is the label that recorded minimum direct experience, that is it is the one less tasted and purchased, and it is the one characterised by the greatest number of users who declare they do not know it (more than 17%). This result is comprehensible considering that this label has been on the market for a very short time. It is interesting to note, however, that despite the novelty, this label has already obtained a high level of familiarity among consumers. As far as the factors that most influence wine purchase are concerned, the results shown in Table 2 seem to be in line with what emerged from the bibliographic study.

Table 2 – Influence of the principal factors of wine in purchasing decisions

	Not at all	Little	Indifferent	Fair	Great
Region of Origin	2%	7%	10%	55%	26%
Vintage	4%	9%	22%	50%	15%
Packaging	8%	17%	34%	34%	7%
Info on back of Bottle	2%	7%	18%	57%	16%
Price	1%	4%	12%	55%	29%
Occasion of Consumption	1%	3%	13%	50%	33%
Certification	1%	3%	13%	52%	30%
Alcohol by Volume	2%	6%	26%	51%	15%
Previous Experience	2%	4%	18%	44%	32%
Grape Variety	3%	8%	27%	46%	16%
Gastronomic Pairing	2%	5%	18%	51%	24%
Wine-grower	3%	9%	27%	43%	18%
Organic	10%	15%	35%	29%	11%

Occasion of consumption, previous experience, certification, and price are the variables most taken into consideration in the choice phase. The region of origin, while important, does not prove to be such a decisive variable as it does for other food products (Casini et al. 2014, Scozzafava et al. 2014).

#### 4. Choice Experiment

The results of applying the conditional multinomial logit are shown in Table 3.

Table 3 – Conditional multinomial logit estimation

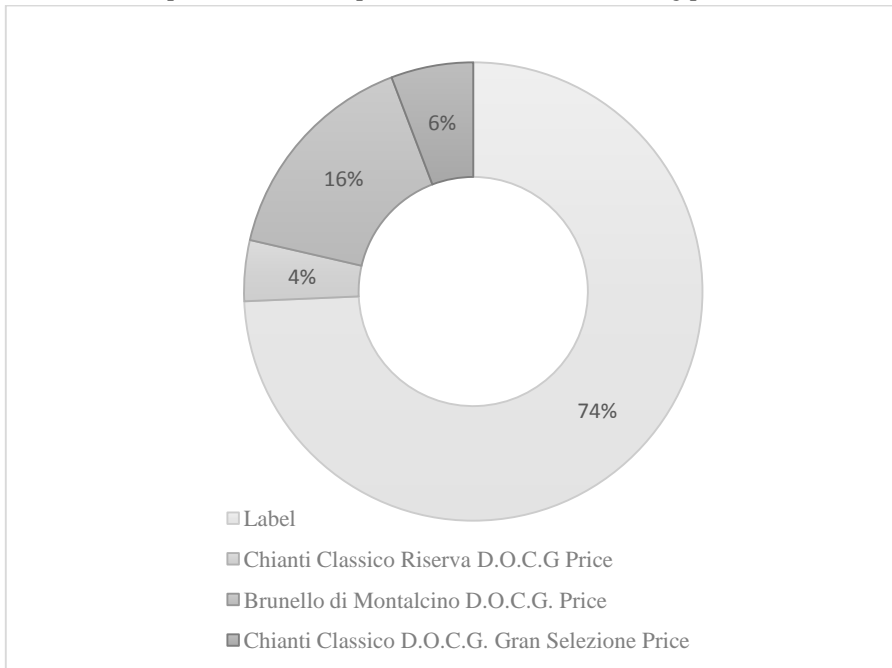
<b>Model estimates: <math>L^2 = 20337</math>, <math>LL = -15496</math>, <math>BIC = 14283</math>.</b>	Class1		Overall
Attributes	$\beta$ Class1	z-value	Wald
<b>Label effect:</b>			
Chianti D.O.C.G.	-1,9297	-10,1775*	359,0256
Chianti Classico D.O.C.G	-0,7784	-5,7434*	
Chianti Classico Riserva D.O.C.G	0,4410	4,0248*	
Chianti Classico Gran Selezione D.O.C.G.	0,5751	5,3063*	
Brunello di Montalcino D.O.C.G.	1,692	17,8243*	
<b>Prices effect:</b>			
Chianti D.O.C.G	0,064	1,7391	3,0246
Chianti Classico D.O.C.G	0,0055	0,4810	0,2314
Chianti Classico Riserva D.O.C.G	-0,0257	-4,5536*	20,7357
Chianti Classico Gran Selezione D.O.C.G	-0,0236	-5,292*	28,0056
Brunello di Montalcino DOCG	-0,0251	-8,6785*	75,3159
<b>No Choice</b>			
Purchase	0,7827	18,8612*	355,7438
No purchase	-0,7827	-18,8612*	
* = Significant $p < 0,05$			

The results show that for a special occasion, Chianti DOCG and Chianti Classico DOCG are considered less suited than other Labels, which instead, all show positive and significant  $\beta$  parameters. In particular, Brunello di Montalcino obtains a value much higher than Chianti Classico Riserva and Gran Selezione DOCG, thus confirming it as a PDO with a great reputation that lends itself to consumption on special occasions.

What is particularly interesting to note is the marked positive inclination for the new Gran Selezione brand which, compared to the other Labels of the Consorzio, obtains the greatest preference. This datum seems to confirm the thesis of the positivity of having decided to create a quality line ex novo, enriching the offers base of Consorzio Chianti Classico DOCG productions.

In analysing the importance of the attributes in the purchase choice, the Label plays a primary role, though price, especially that of Brunello di Montalcino, represents an important variable in the final evaluation, as shown in Graph 2.

Graph 2 – Relative importance of attributes in making purchase



It is also interesting to note that the relative importance of the price of the two Consorzio Chianti Classico DOCG Labels is clearly inferior, which is sign of a greater elasticity of Price/Label compared to that of Brunello di Montalcino. One motivation for this behaviour is connected to the fact that Brunello can reach very high price levels compared to the other Labels.

The analysis of the average willingness to pay for the proposed Labels provides useful information to verify the possibility of consumers obtaining a price premium for the new Gran Selezione brand. Table 4 shows the values expressed in euros of willingness to pay (WTP)<sup>1</sup> compared to Chianti Classico DOCG riserva, which represented the top quality level of Chianti DOCG before the introduction of Gran Selezione.

Table 4 – Average willingness to pay (€/bottle)

<i>Label</i>	<i>WTP (€/bottle)</i>
Chianti Classico Riserva D.O.C.G	17
Chianti Classico D.O.C.G. Gran Selezione	24
Brunello di Montalcino D.O.C.G.	67

Willingness to pay was not calculated for the Chianti DOCG Label or for the Chianti Classico DOCG, as the betas of the prices estimated are not significant. The data show that the average WTP for the Gran Selezione DOCG Label is higher than that of Riserva DOCG, placing this production at the top level among the wines the Consorzio proposes. It therefore appears confirmed that the strategy of further diversifying the production level within the

<sup>1</sup> Willingness to pay was calculated with the following formula:  $WTP = -\beta_i / \beta_p$  where  $\beta_i$  is the coefficient estimated for the i-nth attribute for which we intend to calculate WTP and  $\beta_p$  the parameter associated to the price.

Consorzio Chianti Classico wines is functional to obtaining a greater monetary effort from consumers who seem to appreciate the proposed strategy. Let us underline that this result is even more appreciable in virtue of the scarce direct experience consumers have till now had with this typology of Label, as we mentioned earlier. Brunello confirms its role of leader within the market, obtaining the maximum average willingness to pay.

## Conclusions

Analysing consumer behaviour with respect to introducing a new type of excellence has shown the validity of this strategy within a territory particularly suited to wine-growing that has already been awarded the DOCG certification, thus showing that it is possible to obtain further recognition from consumers through a considerable price premium. The choice experiment conducted by comparing the new typology with 4 other DOCG Tuscan Sangiovese wines has pointed out that consumers are willing to pay 7 euros more for the new type compared to the Riserva product that represented the top quality level of Chianti before the introduction of the Gran Selezione. Furthermore, the results show that though the consumer has a low level of familiarity, the price obtained by the new type of excellence approaches the most direct and qualified competitor, Brunello.

These potentially very important results require, however, the careful management of the Consorzio del Chianti Classico. Exercising control over the correspondence to quality standards and production specifications proves to be a fundamental activity in order to win the trust of consumers for the new product. The creation of new communication strategies aimed at spreading product familiarity and its recognisability appears to constitute an indispensable completion in the development of the new type of wine. Further segmenting the offer with products of excellence closely tied to a careful zoning of the territory can effectively represent a development strategy for the wine-grower, as well as for territories. Indeed, the possibility to valorise to the utmost the quality of products makes it possible to increase the added value of agricultural activities, and to strengthen the typicality of productions, guaranteeing their maximum recognisability and differentiation on the market. This contributes to increasing the competitiveness of productions and the overall sustainability of the rural territory.

## References

- Adamowicz W., Boxall P., Williams M., Louviere J., 1998. Stated Preference Approaches for Measuring Passive Use Values: Choice Experiments and Contingent Valuation, *American Journal of Agricultural Economics*, 80 (1), 64-75.
- Adamowicz W., Swait J., 2011. Discrete choice theory and modeling, in Lusk J. L., Roosen J., Shogren J., *The Oxford Handbook of the Economics of Food Consumption and Policy*, Oxford University Press.
- Bernetti I., Alampi Sottini V., Marinelli A., Marinelli N., Marone E., Menghini S., Sacchelli S., Scozzafava G., 2013. Evaluation of economic, social and sector impacts of agricultural land loss, *Italian Journal of Agronomy* 8, (4), 197-205.
- Bliemer, M.C.J. and Rose, J.M., 2005. "Efficiency and sample size requirements for stated choice studies", Working Paper ITLS-WP-05-08, Institute of Transport and Logistics Studies, University of Sydney, Sydney.
- Casini L., Marone E., Scozzafava G., 2014. Management accounting in the winegrowing sector: Proposal and development of an "Ad Hoc" control system. *Quality – Access to Success*, 15 (138), 70-73.
- Casini L., Contini C., Marinelli N., Romano C., Scozzafava G., 2014. Nutraceutical olive oil: Does it make the difference? *Nutrition and Food Science* 44 (6), 586-600
- Corbo C., Lamastra L., Capri E., 2014. From environmental to sustainability programs: A review of sustainability initiatives in the Italian wine sector. *Sustainability* 6 (4), 2133-2159.
- Costanigro M., Appleby C., Menke S.D., 2014. The wine headache: Consumer perceptions of sulfites and willingness to pay for non-sulfited wines, *Food Quality and Preference* 31 (1), 81-89.
- Landon, S., Smith, C.E., 1997. The use of quality and reputation indicators by consumers: the case of Bordeaux wine, *Journal of Consumer Policy*, 20, 289-323.
- Lockshin, L., 2003. Consumer Purchasing Behaviour for Wine : What We Know and Where We Are Going, Cahier de Recherche n. 57 (03).
- Louviere, J., D. Hensher and J. Swait., 2000. Stated choice methods: Analysis and application, Cambridge University Press, Cambridge.
- McFadden, D., 1973. Conditional logit analysis of qualitative choice behaviour. In. P. Zarembka (ed.), *Frontiers in Econometrics*, New York: Academic Press, 105-142.
- Menghini S., Marinelli N., 2011. Sostenibilità e mercati nelle teorie del benessere e del comportamento dei consumatori. *Italian journal of agronomy*, 6, 55-59.
- Mueller, S. Lockshin, L., Saltman, Y., Blanford, J., 2010. Message on a bottle: The relative influence of wine back label information on wine choice. *Food Quality and Preference*, 21 (1), 22-32.
- Perrouy, J. P., d'Hauteville, F., Lockshin, L., 2006. The Influence of Wine Attributes on Region of Origin Equity: An Analysis of the

- Moderating Effect of Consumer's Perceived Expertise, *Agribusiness*, 22 (3), 323–341.
- Pomarici E., Vecchio R., Verneau F. 2014. Future of sustainable wine? A reasoned review and discussion of ongoing programs around the world. *Quality - Access to Success* 15 (1), 123-128.
- Scozzafava G., Casini L., Contini C., 2014. Analysis of Italian consumer preferences for beef. *New Medit* 3 (1), 66-72.
- Skuras, D., & Vakrou, A., 2002. Consumer's willingness to pay for origin labeled wine: A Greek case study, *British Food Journal*, 104 (11), 898-912.
- Thomas A. Pickering G., 2003. "The Importance of Wine Label Information", *International Journal of Wine Marketing*, 15 (2), 58 – 74.