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# **Consumer Willingness to Pay for Food Quality Labels: Evaluating the Prosciutto di Parma PDO Quality Differentiation Strategy**

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**Poster paper prepared for presentation at the EAAE 2014 Congress  
'Agri-Food and Rural Innovations for Healthier Societies'**

August 26 to 29, 2014  
Ljubljana, Slovenia

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# **CONSUMER WILLINGNESS TO PAY FOR FOOD QUALITY LABELS: EVALUATING THE PROSCIUTTO DI PARMA PDO QUALITY DIFFERENTIATION STRATEGY**

## **Abstract**

This poster paper aims to investigate the consumers' preferences and willingness to pay for different quality strategies associated with the designations Prosciutto di Parma PDO. After a qualitative analysis, an on-line choice experiment was conducted on a sample of 250 Italian consumers. A multinomial logit model was tested to assess the relative importance of quality attributes. The results show that price, a "high quality" PDO label and the ageing period are the most important attributes for consumers. These findings provide Consortium members with an important food for thought for the development of future strategies for the Designation of Origin.

**Keywords:** quality label, choice experiment, willingness to pay (WTP), Prosciutto di Parma PDO.

## **1. Introduction**

The Regulation (EU) n. 1151/2012 has defined further and maintained the protected designations of origin (PDOs) and protected geographical indications (PGIs) schemes. This Regulation aims to help the producers of agricultural products and foodstuffs to communicate with buyers and consumers the product characteristics and farming attributes. It is generally assumed that the perceived utility of food products increases for quality-seeking consumers if they are aware of the product' origin and the production methods (van der Lans et al., 2001). Agricultural and food producers face new market challenges, such as the progressive concentration of the retail system and the growing consumer awareness. In addition, small businesses falter and multinational companies and large conglomerates productive are settling and spreading. In this scenario, the Designation of Origin producers must compete in a new perspective and have to redefine their management approaches.

This poster paper aims to investigate the consumers' perception and preferences for quality labelled products with regard to the Prosciutto di Parma PDO case; in particular, we have evaluated the utility attached to the PDO label, to the individual company's brand, and to a quality signal associated with the PDO. Then, the consumers' preferences and willingness to pay (WTP) for different quality strategies have been estimated.

## **2. Background: the Prosciutto di Parma PDO network and strategies**

The Prosciutto di Parma PDO is one of the most important Italian traditional food products representing the first meat product in terms of certified production (89,138 tons) and turnover at the production and consumer stage (respectively € 992 million and € 1,549 billion) (Osservatorio Qualivita – Ismea, 2013). It plays an important role for product characteristics and the type of processing (e.g., slicing and packaging), for the features of the companies involved in the production and marketing, for the number and type of trading partners throughout the supply chain, for logistics costs and trade promotion, and for the retailers strategies (Arfini and Capelli, 2011; Dentoni et al., 2012). It is produced in the province of

Parma, in the Emilia-Romagna region, whereas pigs must come exclusively from breeding farms located in ten Italian regions. The Prosciutto di Parma PDO is processed by 150 companies that have produced approximately 9 million PDO-labelled hams in 2012 (Prosciutto di Parma Consortium, 2014). It is sold mostly in Italy (73%), whilst more than one fourth is exported. The pre-sliced Prosciutto di Parma market accounted 72 million packs sold in 2012 (with a 7% increase in sales over the previous year), 17 million of which are traded in Italy and 55 million exported.

The Prosciutto di Parma network reflects the regional cluster concept, because many important resources and capabilities are the result of network activities and are shared across members (Giacomini et al., 2010). The complex links among firms are empathized within the Consortium of the Prosciutto di Parma, where two types of companies coexist with different business strategies: the small firms and the large groups and corporations. The first concentrate their activity almost exclusively on the production of the Prosciutto di Parma PDO, whilst the latter consider the PDO ham as a part of their own product mix. The decisions that are made within the Consortium are the result of the coexistence of these two realities, which may have very different positions (Giacomini et al., 2010). This heterogeneity has been discussed by Dentoni et al. (2012). This study has shown two groups of companies with potential factor of strategic contrast within the Consortium: on the one side members aiming to a more restrictive PDO specification to effective signal the tangible quality of their products and, on the other, members wishing a less restrictive PDO specification mainly to reduce the cost of fresh meat. The introduction of a “high quality” label within the current PDO specification would satisfy the first group of firms providing a strategic tool for signalling quality. On the other hand, a weaker application of the PDO specification would allow, for instance, the supply with imported fresh meats to reduce the input costs. In this case, however, the PDO label would not be associated to the designation Prosciutto di Parma anymore. The market potential, the consumer’s preferences and willingness to pay (WTP) for these two alternative strategies are investigated and discussed in the present study.

### **3. Methods**

A focus group and in-depth in-person interviews to consumers were performed to identify the attributes and levels to be included in the study. Moreover an on-line shelf survey has been performed to assess the availability and pricing patterns of the product analysed. A choice-based conjoint experiment (Hanley et al., 1998) was conducted and data were analyzed with a multinomial-logit (MNL) model to investigate the consumers’ preferences and WTP for different quality strategies associated with the Prosciutto di Parma PDO. The following attributes and levels have been identified for one 100 gr. package of sliced ham:

- Brand: Brand of a big enterprise (BE), Brand of a small-medium enterprise (SME) and Private Label (PL).
- Ageing Period defined on the basis of the Prosciutto di Parma PDO specification: 16/18 months; more than 24 months.
- Quality label was defining testing three different scenarios: the status quo with the PDO label, the unbranded dry-cured ham through a no-PDO label alternative, and the High Quality signal associated with the PDO label (no quality label, PDO label, PDO-High Quality label).

- Price was defined, as described by Furlan et al. (2011), comparing the 34 references identified through an on-line retail shelf survey (2.76 €; 3.44 €; 4.13 €).

After having defined the target population to be achieved and a consequent screening of the respondents, we proceeded with the definition of the survey channel, the method of presentation of the profiles and the preparation of the materials for the choice experiment. Specifically, the survey channel chosen was CAWI type (Computer Assisted Web Interviewing). The Sawtooth conjoint software (SSI Web version 8.2.4) was used to create the choice set, to develop and distribute the questionnaire and to assist the statistical elaboration.

After a brief introduction presenting the case study, respondents were provided with 18 choice sets, each with three product alternatives plus the no-choice option, for a total number of 54 product profiles. After the choice experiment, the interview ended with a series of socio-demographic questions. The interview was tested on a sample of 23 consumers of Prosciutto di Parma PDO. The data were collected during October 2013. The final sample is formed by 250 respondents (total number of concepts shown 13,500).

#### 4. Results and Discussion

The results show that the BE brand is the most popular attribute level, having been chosen 39% of the times by respondents, whilst PL is the least popular with 26%. The mostly chosen ageing period is “more than 24 months” with 62%. The level "High Quality - PDO" is preferred with 44% choices, followed by the PDO level (33%) and by the unbranded level (24%). Finally, not surprisingly, the most expansive price level was selected less (19%), while the cheaper price level was selected 47% of times by respondents.

The parameters associated with each level of the product attributes (i.e., the partial attribute utility functions) have been estimated (Table 1). All the parameters are significant at  $p < 0.001$ . The chi-square value 2.684 (7 df) demonstrates that respondent choices are significantly affected by the attribute composition of the concepts. The price linear coefficient ( $\beta_{price} = -0.883$ ) has been estimated from the categorical prices coefficients. Thus, it was possible to estimate the marginal WTP applying the following formula:

$$WTP_j = - \frac{\beta_j}{\beta_{price}} \quad (1)$$

**Table 1. Multinomial logit model coefficient estimates, standard errors and WTP for each level of attributes (N=250).**

Attribute	Level	Coefficient	Std error	WTP
<b>Brand<sup>a</sup></b>	Brand SME	0.396	0.053	0.448
	Brand BE	0.551	0.053	0.624
<b>Ageing Period<sup>b</sup></b>	> 24 months	0.692	0.037	0.784
<b>Quality label<sup>c</sup></b>	PDO label	0.443	0.054	0.502
	HQ PDO label	0.861	0.053	0.975

<sup>a</sup> Baseline: Private Label.

<sup>b</sup> Baseline: 16/18 months.

<sup>c</sup> Baseline: No quality label.

The results show that consumers are willing to pay an extra +0.62 and +0.45 €/100 gr. package for, respectively, the big enterprise (BE) and small-medium enterprise (SME) brand

compared to the private label (PL); the consumer is willing to pay € 0.78 more for the level “more than 24 months” than the standard 16/18 months of the ageing period. Finally, the respondents are willing to pay an extra € 0.97 per 100 gr. package for the high quality PDO label and 0.50 € extra for the PDO label compared to the product without quality signals.

From these results it is possible to define the profiles of the product having the following total value compared to the baseline scenario (Table 2).

**Table 2. Willingness to pay for product profiles based on the scenarios presented (€/100 gr.).**

Scenario	Brand	Ageing Period	Quality Label	Overall Price level	Marginal WTP
<i>Baseline</i>	PL	16	No quality label	2.76	
<i>SME</i>	SME	24	No quality label	3.99	1.23
<i>SME-PDO</i>	SME	24	PDO label	4.49	1.73
<i>SME-HQ</i>	SME	24	PDO – HQ label	4.97	2.21
<i>BE</i>	BE	24	No quality label	4.17	1.41
<i>BE-PDO</i>	BE	24	PDO label	4.67	1.91
<i>BE-HQ</i>	BE	24	PDO – HQ label	5.14	2.38

The findings show that consumers value the PDO label around 12-13% more than the non PDO product for, respectively, big enterprise and small-medium enterprise. The high-quality label would attach an extra value of +10% for big enterprise and +11% for SME compared to the PDO level. These findings show that the introduction of a High Quality label next to the PDO is recommended, since it adds production value to both SME and large companies. Whether this extra-price consumers would pay for the high quality is large enough to compensate for the higher cost born by the companies to sustain an enhanced quality strategy (i.e., by producing heavier or more aged hams) has to be carefully assessed before implementing this high quality strategy. The prices referring to the strategic scenarios appear to be consistent with the actual prices on the market.

## 5. Conclusions

The surveyed consumers showed that, for this product, the attribute price is very relevant. In fact, it was the feature showing the greatest effect on their choices. Once consumers had looked at the price, they searched for the product with the best declared quality by choosing the designation of origin (PDO label). And finally they expressed their preferences based on the attribute brand, opting for the corporate brands rather than the retailer’s one.

This information itself can be important for the companies within the Consortium in order to develop targeted strategies for the future. But the analysis has gone far beyond, being able to estimate the consumers’ willingness to pay for each attribute of the Prosciutto di Parma (i.e., brand, quality label, price and ageing period). On the basis of this information it has been possible to develop hypothetical scenarios and assess the overall willingness to pay for each of the simulations presented.

Within the product specification, our findings show that consumers would positively value an enhanced quality strategy. As a matter of fact, the level "High Quality – PDO label" as having been the most chosen by the respondents compared to the levels presented for the

quality attribute, showed a willingness to pay by consumers of € 0.97 compared to the non-PDO label. Finally, the creation of a product profile dedicated to the evaluation of this strategy, showed how the consumer would be willing to pay more than the baseline scenario and more than the product profiles with the PDO level. The results have shown that the introduction of a High Quality label next to the PDO may add value to the product of both SME and large companies. Thus, we recommend the Consortium to implement this strategy in order to vertically differentiate the product quality providing consumers with a useful quality signal and companies, both large and small-medium size, with an effective tool to add production value.

Finally, the type of experiment, hypothetical in nature and not performed in person by the researcher, may have partially distorted the results. However, the scale of the estimates obtained is consistent with the actual market situation. A real experiment, for example by means of experimental auctions, may provide more reliable results to be compared with those obtained in the present study. Despite these considerations, the present work provides insights for the Prosciutto di Parma Consortium members in order to formulate a future, common strategy, adequate but also coherent to the needs of consumers.

## References

Arfini, F. and Capelli, M.G. (2011). The resilient character of PDO/PGI products in dynamic food markets: the Italian case. In Baourakis, G., Mattas, K., Zopounidis, C. and van Dijk, G. (eds.), *A Resilient European Food Industry in a Challenging World*. Nova Publishers, 37-58.

Dentoni, D., Menozzi, D. and Capelli, M.G. (2012). Group heterogeneity and cooperation on the geographical indication regulation: The case of the “Prosciutto di Parma” Consortium. *Food Policy* 37(3): 207-216.

Giacomini, C., Arfini, F. and Menozzi, D. (2010). Processi di qualificazione ed effetti spillover: il caso del Prosciutto di Parma Dop. *QA – Rivista dell’Associazione Rossi-Doria* 3: 55-80.

Hanley, N., MacMillan, D., Wright, R.E., Bullock, C., Simpson, I., Parsisson, D. and Crabtree, B. (1998). Contingent valuation versus choice experiments: estimating the benefits of environmentally sensitive areas in Scotland. *Journal of Agricultural Economics* 49: 1-15.

Osservatorio Qualivita – Ismea (2013), “Rapporto 2012 sulle produzioni agroalimentari italiane DOP IGP STG”, available at: <http://www.qualivita.it/>. Accessed 30<sup>th</sup> November 2013.

Prosciutto di Parma Consortium (2014). Economic figures. Available at <http://www.prosciuttodiparma.com/>. Accessed 29<sup>th</sup> January 2014.

van der Lans, I.A., van Ittersum, K., De Cicco, A. and Loseby, M. (2001). The role of the region of origin and EU certificates of origin in consumer evaluation of food products. *European Review of Agricultural Economics* 28(4): 451-477.