

The role of PDO/PGI labelling in Italian consumers' food choices

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Abstract

The ability of Italian consumers to recognize and distinguish food products protected by the European Union denomination of origin trademarks PDO and PGI through the information provided on the label was explored with 400 face-to-face interviews of consumers, responsible for household food purchasing. Cluster analysis showed that the PDO and PGI logos are commonly the main purchasing motivation for shoppers with an excellent knowledge of the EU certification labels, while consumers with no knowledge of the European origin trademarks tend to base their decision to buy on the product's lower price, better appearance and Italian origin.

Key words: *PDO; PGI; Labels; Italian consumers; Cluster analysis; Segmentation*

Introduction

There appears to be widespread confidence that the promotion of products with a strong geographical connotation has now become a strategic factor for the development of the European agro-food system. This has led to a marked increase in the number of food products with denomination of origin (PDO) and geographical indication (PGI) trademarks (Council Regulation (EC) No. 510/2006).

Many of these products, especially those more recently launched that cannot rely on an already established presence in the markets, are struggling to perform well. Among the reasons cited for this limited market success are difficulties due to the low visibility of the European system of quality assurance. Product differentiation is necessary but not sufficient; there is also a need to activate a communication process that allows the consumer to perceive the actual value difference of PDOs and PGIs.

Geographic indications and certifications are often subject to misunderstandings, misinterpretations and generalizations (Grunert, 2005; Verbeke, 2005). Numerous studies have shown that these trademarks do not always work as indicators of quality (Belletti *et al.*, 2006; Desquilbet *et al.*, 2006): consumers may be unaware of the information on the label, they may not know the region/area of origin or they may fail to interpret what they mean. Furthermore, many other brands and trademarks, owned by private companies or modern distribution chains, with a broad range of geographical links confuse consumers and crowd out the food market. This situation is due to many different factors, the most obvious being: poor recognisability of PDO and PGI graphic logos; confused, fragmented and sporadic information; and also the emergence of numerous other brands and logos that promote local origin of food products.

Given the above scenario, the present study analyzes the ability of consumers to rec-

ognize and distinguish the products protected by the European Union (EU) PDO and PGI trademarks through the information provided on the label. To this intent, a direct survey was conducted on a sample of 400 Italian consumers to observe the factors that influence the perception and the purchasing attitude towards such products and the role of logos on the label in influencing their choices. In particular, to investigate this last aspect, a test was conducted on consumers by comparing the same food products (Asiago cheese and Mortadella Bologna cured meat) with and without the EU PDO/PGI label. The test was supplemented by a questionnaire that investigated the perception of the concept of typical products, the propensity to purchase and consume these products and the confidence placed in the different certification systems.

The study is structured as follows: first, recent literature on consumers' attitudes towards typical foods is reviewed; next, the most prominent research on typical food labelling is considered; then, drawing from the direct survey, results are presented and discussed. The paper concludes with some practical guidance that could assist policy-makers and marketers to build more informed decisions on Italian consumer knowledge, concern and response to geographical indications for agricultural and food products. The current work also seeks to provide these groups with a means of targeting consumer clusters that may be more responsive to promotion efforts.

Consumer behaviour towards typical foods

Under the tag *typical foods* many include a large number of products whose common feature is the link of their production process with specific localities. For the purposes of the current study the term *typical* will refer only to certified PDO/PGI foods. However, it should be noted that different terminology is used and many studies also identify these products as regional, local or specialities.

Within the discipline of consumer behaviour, many authors have demonstrated that food-related behaviour, choice and preference are driven by a number of interrelated factors (e.g. Grunert, 2005; Verbeke and Ward, 2005) that can diverge even in relatively homogeneous countries such as those belonging to the EU (Askegaard and Madsen, 1998; Gracia and Albisu, 2001; Olsen *et al.*, 2007). Since the 1990s, due to the increased interest in food quality and value-added markets, several researchers have focused on consumer behaviour and attitudes towards typical¹ food products (Tregear *et al.*, 1998; Loureiro and McCluskey, 2000; Fotopoulos and Krystallis, 2003; Stefani *et al.*, 2006). In addition, recent research has provided evidence revealing the great importance placed by consumers on the association of products with places (Kuznesof *et al.*, 1997; Ilbery and Kneafsey, 2000; van der Lans *et al.*, 2001; van Ittersum *et al.*, 2007).

A number of factors such as socio-demographic characteristics, perceived quality and risks have been found to be significant causes of consumers' attitudes towards typical foods and of their willingness to pay a premium to buy these products (Scarpa *et al.*, 2005; Wirthgen, 2005).

As established by Romano and Rocchi (2006), the variation in consumption habits, development of the distribution chain and the growth of purchasing possibilities have significantly enlarged the market for typical products, but at the same time the mechanism for conveying and recognizing food quality has become more delicate. Moreover, linking product to place through the specification of local raw materials or traditional methods of production is an innovative strategy of product differentiation which targets

a market segment for quality products (Dimara and Skuras, 2005). However, its use is currently limited and constrained by problematic issues (Ilbery *et al.*, 2005). In particular, small and medium sized enterprises, that represent the greater part of European food firms (Spillan and Parnell, 2006), find it very difficult to adapt rapidly to consumer needs, and to effectively communicate the quality attributes of their products.

Although typical food products are a niche market in Europe accounting for around 7-9% of overall food consumption (Giraud, 2006), their contribution to the Italian food economy is far from marginal (excluding wine, they provide over 7% of total national agricultural added value) with a consumption turnover of around 8.6 billion euro (INDICOD - Nomisma, 2007). This could be explained by their suitability in responding to consumers' needs as regards authenticity when faced with industrialized food, thus rediscovering old cultural traditions (Belletti *et al.*, 2007). Other studies (Brunori *et al.*, 2007) demonstrate that interest in typical foods, shown by more than 50% of the Italian population, is seen to be dependent on the offer of an effective value added that the consumer identifies with qualitative excellence, product specialisation, respect for original ingredients and taste. Despite the portrayed scenario, as previous studies have assessed (Arfini, 1999; Nomisma, 2001; Privitera and Platania, 2004; Zanolini *et al.*, 2003; Aprile and Gallina, 2007), Italian consumers have a very limited knowledge of certification systems despite their over 10-year-long presence on the market.

The role of PDO and PGI labelling

The shopper is nowadays provided with an overwhelming amount of food quality labels of different types (private or public; production or process) as in no other economic sector (Raynaud and Sauv e, 1999). Labels aim to mitigate potential inefficiencies resulting from imperfect information about product characteristics. Food labelling can improve the information environment by either supplying missing information or by increasing the flow of information between suppliers and consumers. A label is intended to help consumers distinguish the labelled food from otherwise similar products and enable choices to be better in line with preferences. More specifically, labelling converts experience and credence attributes into search attributesⁱⁱ.

In terms of typical products, quality appellations have a long historyⁱⁱⁱ: in the fourth century BC in ancient Greece there were wines from Corinth, almonds from Naxos, and honey from Sicily (Bertozzi, 1995). Nowadays labels that communicate the origin of foods are becoming more prominent as consumers are increasingly concerned about the quality, safety, environmental and social attributes of the foods they consume (McCluskey and Loureiro, 2003; Krisoff *et al.*, 2004; Verbeke, 2005). In this context, the name of the region of origin also provides consumers with information about the quality level of the product (van der Lans *et al.*, 2001; van Ittersum *et al.*, 2003).

Producers and governments in several countries have developed various marketing strategies based on geographical labelling (Anders and Caswell, 2008) as a means of differentiation in the agri-food sector and an instrument to defend the reputation value of typical products from being usurped by counterfeits. Implementation of European regulations in the early 1990s was planned to protect traditional food products from misuse and imitation, to promote the survival of long-established agriculture and to increase the economic welfare of rural areas (Loureiro and McCluskey, 2000). It is also suggested (Letablier and Delfosse, 1995; Marreiros, 1999; van Ittersum *et al.*, 1999)

that European labels were introduced with the aim of contributing to the market balance between supply and demand, stimulating an increase in the production of better quality products. In particular, the EC Regulation 510/2006 states that PDO designated products are “produced, processed, and prepared within a given geographical area using recognized know-how”, while for PGI designated products “the geographical link must occur in at least one of the stages of production, processing or preparation. Furthermore, the product can benefit from a good reputation” (EC, 2006)^{iv}. Currently over 850 PDO and PGI products are registered in the European Union^v and almost 80% of these come from only five Member States: France, Italy^{vi}, Greece, Portugal and Spain.

Empirical findings from previous consumer studies diverge significantly with respect to whether labelling cues such as geographical indications have a favourable impact on product valuation by consumers (Bonnet and Simioni, 2001; van der Lans *et al.*, 2001; Roosen *et al.*, 2003). Other researchers claim that much of today’s information about food quality is irrelevant to consumers as it does not address particular needs and expectations (Salaun and Flores, 2001; Verbeke, 2005). Recently van Ittersum and colleagues (2007) concluded that consumers of regional products value PDO labels, based on the finding that consumers have a favourable image of regional certification labels, which significantly influence their willingness to buy and pay for protected products, through consumers’ quality perceptions and relative attitude towards the PDO.

Based on the evidence that European shoppers’ rate of recognition of PDO/PGI logos varies remarkably from country to country^{vii} (EU Commission, 2008; Giraud, 2006), the present work studies the Italian consumers’ ability to recognize and distinguish food products protected by the European Union denomination of origin labels.

The survey

The survey set out to observe the factors that influence the perception and the purchasing attitude towards PDO/PGI products, to analyse the role of labelling in influencing consumers’ choices and ascertain the existence of market segments formed by consumers with different propensities towards these products and their labels, ultimately with a view to suggesting and developing appropriate consumer communication strategies. Hence a questionnaire was developed taking into consideration the literature on consumer behaviour towards typical foods and food labelling. In addition, a pilot test ($n=40$) was performed, which ensured that the questions were clear and understandable to consumers.

The final questionnaire, comprising 24 questions, was sub-divided into four sections addressing specific issues: in the first section we analysed the criteria that affected purchasing decisions related to the same product with and without the PDO/PGI logo, the aim being to identify consumers’ motivations in choosing a food product. The second section covered consumers’ attitudes, purchasing habits and interest in typical food. The third section of the questionnaire aimed at assessing how familiar consumers were with EU trademarks and other regional or private marks. The fourth section covered consumers’ socio-demographic aspects such as age, gender, marital status, annual income and education level, plus additional questions on life style.

Stimulus materials included a set of picture cards of four products (Figures 1 and 2) with price, weight and images of different logos/marks (two with EU certification marks) applied on the same two foods. The survey was conducted by face-to-face inter-

views, in the three cities of Bologna, Rome and Naples^{viii}, outside modern distribution chain outlets^{ix} on different days of the week. To determine the sample a two-stage procedure was adopted. Firstly, a simple sampling technique was used; setting 0.95 as the level of confidence, for an infinite population, 400 personal interviews were carried out, with the sample error being fixed at 5%.

Interviews were then conducted using two criteria: the city of residence and place of purchase. Respondents were all responsible for household food purchasing. The three cities were selected due to their location respectively located in the north, centre and south of Italy and representative of different Italian socio-demographic realities. The number of questionnaires administered among modern distribution chain outlets reflects the national share of food sales (ISMEA 2007; Federdistribuzione 2007).

Explorative analysis

From a socio-demographic perspective, 66.5% of the respondents were women, 77.6% of the sample was aged between 25 and 55, 65.4% was married and 77.6% declared an annual income between 10,000 and 40,000 euro. The most frequent occupations were: employee (31%), housewife (20.8%) and self-employed (14.7%). The sample is not strictly statistically representative of the Italian population: there is an over-representation of women and older respondents. However, the general features closely match those of the national population. Table 1 gives the complete demographics of the total sample.

Table 1: Demographics (%)

		Sample	National Population
Residence	Bologna	33	
	Rome	33	
	Naples	34	
Gender	Male	43.5	48*
	Female	56.5	52*
Age	18-25	8.2	8.5*
	25-35	20.3	17*
	35-45	21.4	19.8*
	45-55	18.9	17.8*
	55-65	15.8	16.2*
Marital status	65-75	9.4	9.6*
	married	65.5	62.5**
	divorced	6.1	6.2***
	single	28.4	27.8***
Education	Master degree	7.6	
	Bachelors degree	33	
	High school degree	51.7	
	Middle school degree	4.1	
	other	3.6	
Occupation	employee	31	
	self employee	14.7	
	Doctor/Paramedic	4.6	
	housewife	20.8	
	retired	5.6	
	student	6.1	
	trader	8.1	
	unemployed	2	
	other	7.1	
	Average annual income (Euro)	< 10.000	17.8
10.000-20.000		47.8	
20.000-40.000		28.9	
40.000-50.000		4.6	
>50.000		1	

* Istat (National Statistics Institute) data, 2007, ** Italian total married population, *** Eurostat and OCSE data 2009, referred to the 2007 population between 25 - 64 years old.

First of all, respondents were asked: “*If choosing a cheese which of these two products would you buy?*” (Figures 1 and 2) and “*Could you please explain your motivations?*”. The two products used in the study were chosen since they are easily available in stores, widely recognized and used by Italian consumers, though their sales volumes and awareness are not comparable to national market leaders such as Grana Padano^x cheese and Parma ham. Indeed, cheese and prepared meats account for 95% of the total value of Italian PDOs and PGIs, and Mortadella Bologna^{xi} PGI is the seventh most important certified Italian product, in terms of total turnover (200 million euro), while Asiago Cheese^{xiii} PDO is the twelfth at 95 million euro of sales (Qualivita, 2008).



Figure 1: Picture card with Mortadella Bologna

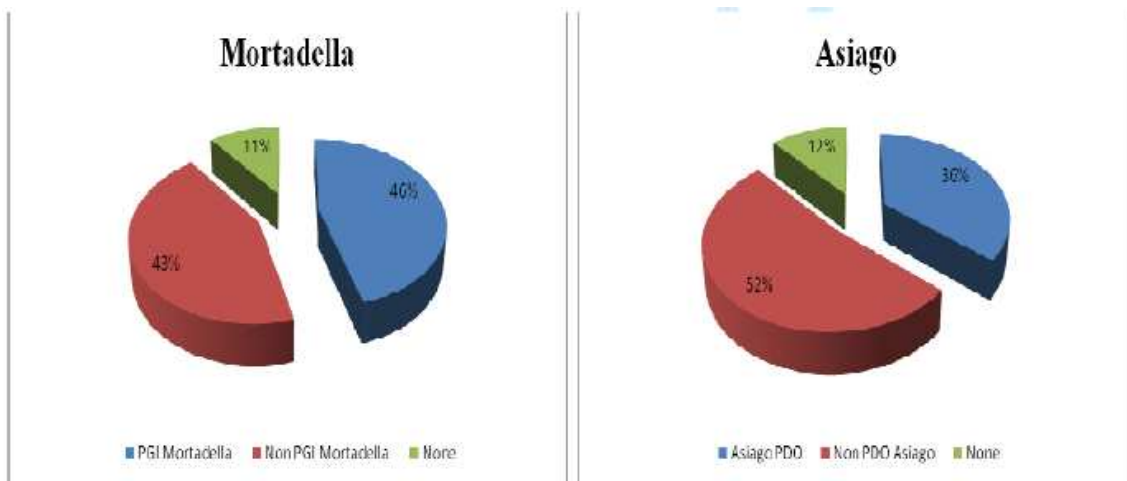


Figure 2: Picture card with Asiago cheese

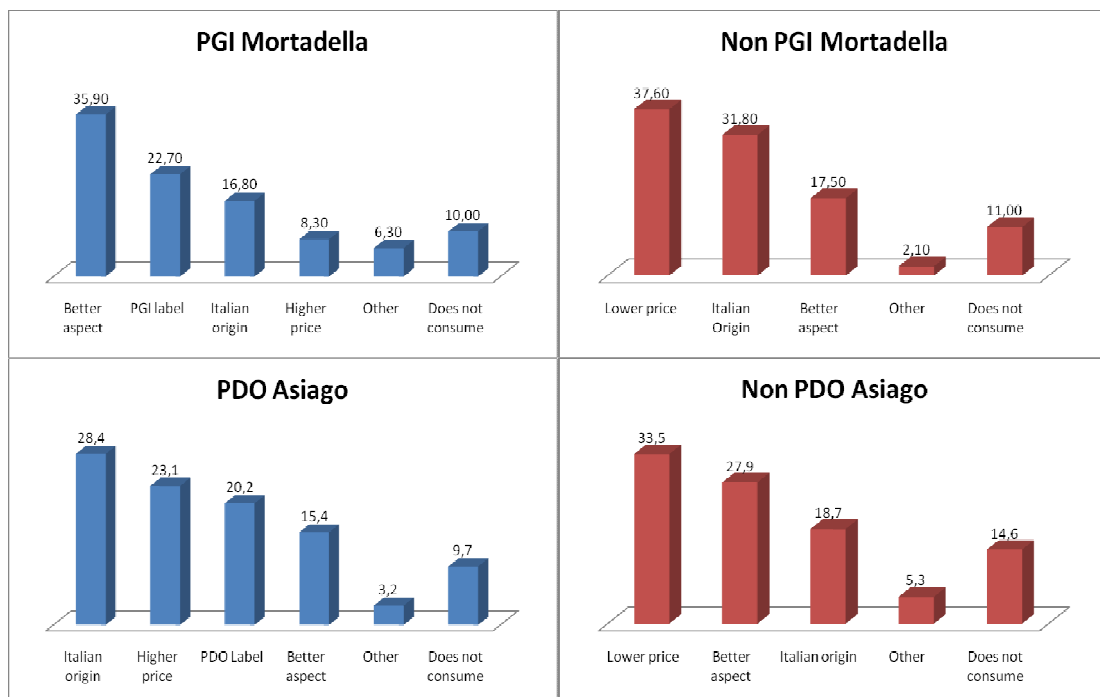
During the interviews 46% of the total sample selected the Mortadella with the PGI mark, 43% the one without the PGI mark and the remaining 11% stated no preference.

The Mortadella with the PGI mark was chosen primarily due to the better appearance of the product (35.9%), PGI label (22.7%) and Italian origin (16.8%). While the Mortadella without the PGI mark was selected mainly for its low price (37.6%) and Italian Origin^{xiii} (31.8%).

By contrast, for Asiago 52% of respondents selected the cheese without the EU trademark, 12% none of the two products and only 36% the one with the PDO. The main motivations for the product with the PDO were: its Italian origin (28.4%), higher price (23.1%) and PDO label (20.2%). Whilst for the non-PDO the main reasons for selection were lower price (33.5%), better exterior aspect (27.9%) and Italian origin (18.7%). These findings demonstrate that the EU certification did not have a strong appeal on the respondents, who were more interested in the price and exterior appearance of food. Importantly, many consumers also consider a higher price as a signal of higher quality (8.6% for Mortadella and 8.1% for Asiago cheese) rather than geographical indication.



Graph 1: Product selection

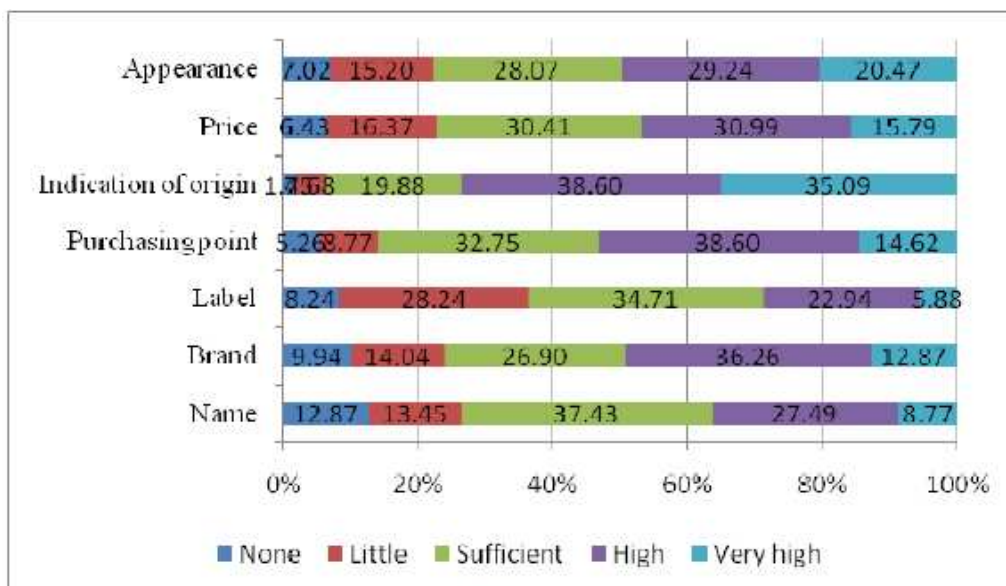


Graph 2: Choice motivation

To further analyse respondents' habits in grocery shopping, the importance of several attributes when selecting a food product were investigated through a Likert scale (Graph 5 in Appendix). Results demonstrated that hygienic standards (71.4%), Italian origin (60.9%) and previous experiences (53.3%) were the factors most highly rated by the respondents. Certifications were very important for merely 20.8% of the sample. Surprisingly, also price was rated very important by a relatively low number of respondents (24.9%). However with reference to this latter results the degree of importance of price is probably underestimated, since this is not an observed behaviour.

The need to understand consumers' interest and overall concern of typical foods led to formulate several queries on shoppers' inclination to buy these products and broad feelings over them. 86.8 per cent of the sample affirmed generally to buy typical foods; among these consumers the most frequently bought products were cheeses and cured meats. The preferred sales points to purchase typical foods were supermarkets (42%), followed by traditional grocery stores (34%), speciality food stores (17%), local markets (4.7%), fairs and festivals (1.7%), and farm/ producer (0.6%). When respondents had to select the definition of a typical food 49.3% strongly agreed that it was a product tied with a territory, followed by products made with local raw materials (38.1%) and free of genetically modified organisms (29.9%). Subsequently, the key features of a typical food were examined and the highest agreement rates were expressed towards: local origin (45.7%), genuineness (39.1%), safety (34.5%) and healthiness (33.5%).

A question examined the importance of different attributes when distinguishing a typical product from a conventional one (Graph 3), consumers revealed a very high value of the indication of origin (35.1%), followed by the product appearance (20.5%), price (15.8%) and purchasing point (14.6%). On the other hand an extremely small amount of respondents (5.9%) considered the label as a very important cue to distinguish a typical food.



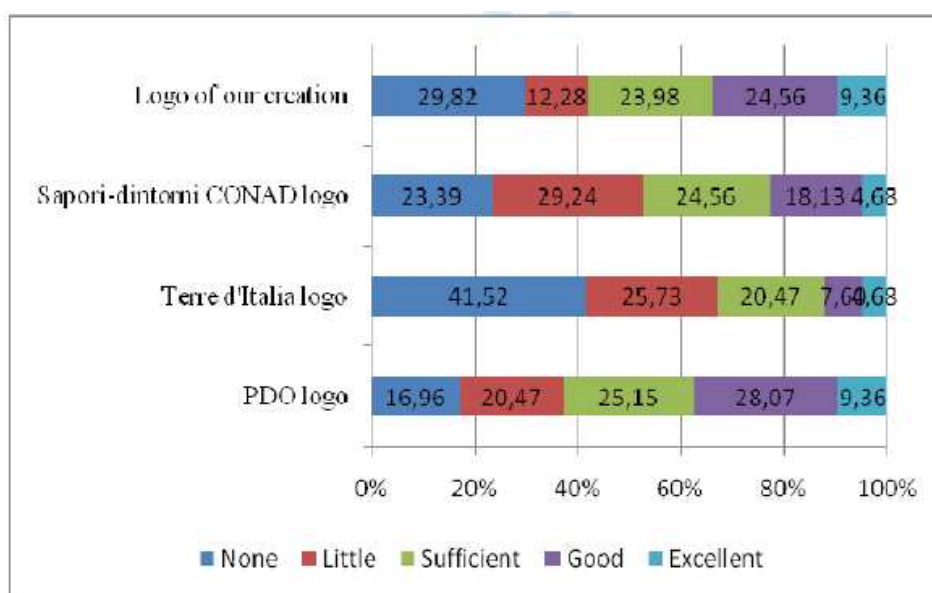
Graph 3: Attributes' importance in distinguishing a typical food

To test consumers' real knowledge of typical foods they were also asked if they could name some protected products. Our findings reveal that over 37% of the sample

gave the wrong answer, around 29% were unable to recall any PDO or PGI food, 20% gave less than two names and 14% less than four. An interesting outcome of this question was to ascertain that the vast majority of respondents who were able to bring to mind a PDO/PGI mentioned a regional product (e.g. Mozzarella di Bufala Campana^{xiv}). This finding could support previous studies (Giraud, 2002) which suggest that marketing plans of typical foods should mainly focus on local consumers.

Although poor consumer familiarity with PDOs and PGIs, our results highlighted that almost 58% of respondents were willing to pay a premium price of over 20% for a typical food and 27% of the sample up to 10 per cent^{xv}. An additional experiment was made to reveal respondents' knowledge of the PDO/PGI logo; four different logos (the EU PDO logo, two distribution chains' private brand logos and a completely invented logo) were shown and consumers were asked to rate them (on a Likert scale) based on their familiarity and their trust towards these logos. In response, 37.4% of the sample stated they had a good or excellent knowledge of the PDO logo meaning, and conversely the same percentage of respondents (37.4%) stated they had no, or little, knowledge of the PDO label. Surprisingly, 33.9% of the sample stated they knew the logo of our creation well or very well, while 22.8% of the sample knew the Sapori&Dintorni brand well or very well and only 12.3% that of Terre d'Italia.

Very similar results also emerged upon analyzing consumer trust in the symbol: high or very high confidence levels were expressed towards the PDO label (in 41.5% of the cases) and towards our invented logo (38%). The latter level was much higher than that for the other real logos, namely Sapori&Dintorni (17%) and Terre d'Italia (13.4%).



Graph 4: Knowledge of food logos

The interviewees were then asked for their agreement level with some statements revealing the distinctive elements of typical foods: high or very high agreement rates were found on the statement "I am very proud of the typical foods produced in my area" (60.4%), "typical foods are too expensive" (49.7%), "when I buy typical foods I support local farmers" (44.7%) and "I buy Italian foods whenever I can" (40.1%). Finally, some general variables related to food consumption were investigated: 70.6% of the sample

never or rarely consumed frozen or precooked food; 40.6% of the respondents said they often or very often consumed homemade meals; 26.4% stated they often or very often ate away from home; 42.1% never or rarely purchased organic foods.

Contingency tables were used to record and analyse the relationship between the most explanatory variables, using the chi-square test. Specifically:

- Consumers who stated they did not buy typical foods in around 70% of cases selected the product without the EU certification mark, while 50.7% of respondents who stated they purchased typical foods chose the PGI Mortadella and the PDO Asiago (all $p < 0.05$).
- 42.3% of respondents who stated they did not buy typical foods were very interested in the Italian origin of the product, as opposed to 63.7% of the buyers of typical foods ($p < 0.01$).
- Indication of origin was very important for 11.5% of the non-buyers and for 34.5% of the buyers of PDO/PGI products ($p < 0.05$).

Considering only the respondents who bought typical foods, our findings showed that PDO and PGI were commonly the main purchasing motivation for shoppers with an excellent knowledge of the EU certifications (81.3% for Mortadella and 75% for Asiago). As a consequence, the degree of knowledge of the logos was significantly associated with PDO and PGI consumption frequency ($p < 0.01$). By contrast, consumers with no knowledge of European labels tend to buy Mortadella basing their choice on the lower price of the product (27.6%), better appearance (20.7%) and Italian origin (20.7%), the same characteristics used to decide the purchase of Asiago cheese: lower price (24.1%), Italian origin (24.1%), and better exterior appearance (17.2%).

As regards respondents with an excellent knowledge of the PDO label, 37.5% expressed a willingness to pay a premium price up to 40% for typical products, whereas 34.5% of consumers with no knowledge of the labels stated a willingness to pay a premium price up to 10%. Moreover, all the consumers with an excellent knowledge of the certification labels revealed absolute trust in them. No significant relation emerged between knowledge of PDO and socio-demographic variables.

Segmentation analysis

Segmentation of the sample was created to ascertain the existence of homogeneous groups of consumers characterized by a different propensity towards typical foods. For this purpose a cluster analysis was applied, using the K-means method, which is a non-hierarchical algorithm, widely used in the literature for analogous studies (Carbone and Sorrentino, 2003; Platania and Privitera, 2004; Luceri and Latusi, 2006; Aprile and Gallina, 2008). Variables used for clustering relate to knowledge and the confidence placed in different logos.

From the application of this method, division into three groups proved the ideal solution where homogeneity was maximized within the individual clusters and minimized between them; any further group would have resulted in excessive fragmentation of the sample. Table 2 summarizes the final cluster centre. Subsequently, to better understand which aspects characterize the different groups, crosstabulation and ANOVA analysis to compare means was carried out between these and several different variables, as well as on attitudinal variables and personal motivations and also socio-demographic aspects.

Table 2: Final cluster centres

	Cluster 1	Cluster 2	Cluster 3	F tests
	36.2%	42.4%	21.4%	
Degree of knowledge of PDO logo	2,4	2,8	3,6	64,040
Degree of knowledge of MD logo	2,3	2,5	3,2	55,628
Degree of knowledge of invented logo	3,7	3,8	1,8	40,647
Trust in PDO logo	2,4	2,7	3,9	76,616
Trust in invented logo	3,6	4,1	2	57,502

The first cluster groups 36.2% of respondents that have a very limited knowledge of the array of typical foods, stating they prefer the product with the invented logo mainly for the Italian origin and/or are influenced by the lower price (see table 3, first column). Moreover, these consumers place greater trust in the invented logo than in the real one. However, upon analyzing the results of Table 4 we note that these consumers place, on average, a lower level of importance on the indication of origin and the presence of certification marks in their purchasing decisions, swayed mainly by the appearance and price of the food, and do not use labels to select food products. Hence these shoppers can be tagged as *practical* consumers.

Practical consumers are characterized by poor knowledge and little interest in typical foods, also confirmed by the large number of individuals who were unable to provide any examples of such products or provided incorrect examples, and by their limited willingness to pay for them (see Table 3, first column). Moreover, the above cluster is different from the others, since these consumers tend to consider these products too expensive. As regards socio-demographic variables (see Table 5), this group is characterized by a higher concentration of young consumers, aged between 18 and 35 years, mostly employees or students, while in terms of behavioural variables, this segment has little tendency to participate in fairs and festivals, patronize local restaurants and producers or consume organic products.

In the second cluster, accounting for 42.4% of the total sample, consumers selected products in both cases with PGI/PDO logos, even if that choice appears to be influenced not only by the presence of the logo, but also by the fact that the product is Italian and/or by its external appearance. Analyzing variables in tables 3 & 4 it emerges that although these consumers show a particular interest in these foods, perceiving them as genuine, superior products, and also showing a willingness to pay up to 20% more, in this cluster there is the highest concentration of individuals who provided wrong examples of typical foods. Moreover, despite giving a high degree of importance to labelling and quality certifications in product selection these consumers show they know the PGI/PDO logos less than the devised one with the Italian flag, in relation to which they even state greater confidence.

Based on these considerations, consumers of this cluster can be termed *confused* shoppers. From a socio-demographic perspective this group chiefly consists of individuals aged between 55 and 65 years, mostly housewives.

Finally, the third cluster groups 21.4% of respondents particularly attentive to the origin of products, quality certifications and to the information contained on the label. Indeed, in both cases most of these consumers selected the PGI/PDO food influenced by

the presence of the logo on the label. Compared to the other two clusters, these consumers show a good degree of knowledge of typical foods, confirmed by their ability to provide (in 32% of the cases) between two and four correct examples, and also because they give high importance to the link between typical products and local raw materials in the definition of the former.

Taking into account these characteristics, these shoppers can be called *foodies*. In this cluster there is a high incidence of respondents aged between 35 and 55 years with a higher level of education and income than the previous clusters, although these variables were not strictly statistically significant ($p=0.467$ for education and $p=0.031$ for income).

Table 3: Comparison between qualitative variables

Variables		Practical consumers	Puzzled consumers	Foodies	Sig.
Mortadella selection	PGI product	32,3	53,1	62,3	,004
	Conventional product	67,7	34,4	26,1	
	None	,0	12,5	11,6	
Mortadella selection motivation	PGI label	9,7	21,9	36,2	,000
	Lower price	21,9	12,5	10,1	
	Higher price	9,7	0	13,0	
	Better aspect	20,3	12,5	12,9	
	Italian origin	31,6	34,4	7,2	
	Other	3,2	6,3	1,4	
	Does not consume	,0	12,5	11,6	
Cheese selection	PDO product	32,3	25,5	56,5	,000
	Conventional product	67,7	53,1	31,9	
	None	0	21,9	11,6	
Asiago selection motivation	PDO label	9,7	18,8	36,2	,000
	Lower price	35,5	15,6	11,6	
	Higher price	9,7	0	10,1	
	Better aspect	16,1	18,8	18,8	
	Italian origin	25,8	18,8	10,1	
	Other	3,2	6,3	1,4	
	Does not consume	0	21,9	11,6	
Number of examples	No example	48,4	18,4	17,4	,000
	<2	9,7	21,1	23,2	
	<4	6,5	5,3	31,9	
	Wrong examples	35,5	55,3	27,5	
Willingness to pay	Nothing	12,5	10,1	9,7	,027
	Up to 10%	32,3	31,3	17,8	
	Up to 20%	38,7	37,5	36,7	
	Up to 30%	19,4	9,4	21,6	
	Up to 40%	0	6,3	10,6	
	Over 40%	0	0	3,1	

Table 4: Comparison between clusters' averages

Variables	Practical consumers	Puzzled consumers	Foodies	Tot.	Sig.
Importance of certifications	3,1	3,5	3,7	3,4	,002
Importance of Italian origin	4,3	4,6	4,7	4,4	,000
Importance of indication of origin	3,2	3,7	4,3	3,9	,000
Importance of producer's brand	3,8	3,4	2,7	3,5	,002
Are more genuine than conventional products	2,7	4	3,5	3,4	,000
Produced by small firms	2,4	3,1	3,2	2,9	,023
Produced with local raw materials	2,8	3,9	4,3	4,1	,012
Produced using ancient techniques	3	3,4	3,5	3,2	,000
Linked with the territory	2,8	3,2	4,3	4,2	,005
GMO Free	2,5	3,6	3,2	3,4	,033
More tasty	3,2	3,8	3,7	3,4	,001
Support small firms	3,2	3,3	3,6	3,4	,026
Are too expensive	3,9	3,6	3,4	3,5	,000
Importance of producers' brand to distinguish	2,2	4	3,7	3,1	,000
Importance of retailer advice to distinguish	2,5	3,5	3,1	3	,000
Importance of label to distinguish	2,6	3,6	4,6	2,9	,000
Importance of logos and symbols to distinguish	3,2	3,8	4,2		,000
Importance of origin to distinguish	3,4	4,5	4,6		,000
Importance of price	3,6	3,5	2,6		,000
Importance of exterior aspect to distinguish	3,8	3,3	2,7		,000
I read food magazines	1,4	1,8	2,4		,000
I go in typical restaurants	2,4	2,5	3,6		,017
I often go to festivals and fairs	2,9	3,8	4,4		,009
I consume organic foods	2,7	3,2	3,7		,007

Table 5: Comparison of socio-demographic variables in clusters

Variables		Practical	Puzzled	Foodies	Sig.
Age group	18-25	29	5,3	8,7	,001
	25-35	25,8	5,3	23,2	
	35-45	16,1	42,1	27,5	
	45-55	25,8	36,8	29	
	55-65	3,2	10,5	7,2	
	>65	0	4,3	0	
Education	Master	6,5	2,6	13	,467
	Bachelors degree	38,7	23,7	37,7	
	High school	48,4	63,2	40,6	
	Middle school	0	5,3	4,3	
	Other	6,5	5,3	4,3	
Gender	Male	38,7	23,7	33,3	,579
	Female	61,3	76,3	66,7	
	Employee	25,8	21,1	36,2	
Occupation	Self employed	25,8	10,5	15,9	,028
	Medical doctor	0	0	7,2	
	Housewife	16,1	39,5	15,9	
	Retired	0	2,6	7,2	
	Trader	3,2	15,8	5,8	
	Student	6,5	2,6	4,3	
	Unemployed	3,2	2,6	0	
	Other	19,4	5,3	7,2	
Annual income (euro)	< 10.000	35,5	13,2	11,6	,031
	10.000 – 20.000	32,3	57,9	39,1	
	20.000 – 40.000	29	26,3	43,5	
	40.000-50.000	3,2	2,6	4,3	
	>50.000	0	0	1,4	

Discussion and conclusions

Previous studies have demonstrated that PDO and PGI certifications affect consumers' purchasing decisions and expectations (Loureiro and McCluskey, 2000; Van der Lans *et al.*, 2001; Fotopoulos and Krystallis, 2003; Fandos and Flavián, 2006). In the present work an attempt was made to examine Italian consumers' ability to recognize and distinguish the food products protected by the European Union denomination of origin trademarks PDO and PGI. Therefore explorative analysis and cluster analysis were performed on data obtained through 400 face-to-face interviews of Italian consumers responsible for household food purchasing. In most cases the respondents stated they knew and consumed typical products (86.8% generally bought these foods) but in interpreting the logos on the label they were misled by other logos or marks.

Cluster analysis revealed the existence of three different groups of individuals with a diverse degree of knowledge and interest in the typical attributes of foods. In particular, our results showed that a large share of consumers was confused by other logos/symbols on the label.

Our findings showed that consumers with no knowledge of the European origin trademarks tend to make purchases basing their decision on the lower price of the product or better appearance. These were labelled as *practical* consumers. At the same time, our analysis revealed the existence of a large cluster of consumers, the *confused*: while stating they knew typical products and the related certification systems, they actually had trouble distinguishing them on the basis of label information, being often fooled by the presence of the Italian flag. By contrast, for shoppers with an excellent knowledge of the EU certification labels, the PDO and PGI logos are commonly the main purchasing motivation. However, such consumers form the smallest identified cluster.

These results confirm that consumers end up making inferences based on cues with which they feel confident (Grunert, 2005). Further, the Italian consumer is attracted by the concept of typical products but is unable to associate it correctly with the information contained on the label, mistaking products with labels that evoke an Italian origin for typical products. As powerfully revealed by the experiment with the fake label, 33.9% of the sample stated they knew the non-existing brand well or very well. Therefore PDO/PGI labels have limitations as an information tool to distinguish typical foods for Italian consumers.

This issue has important implications for producers and marketers since the study also demonstrated that a large number of respondents (58%) are willing to pay a premium price of over 20% for typical foods. Hence consumers, while recognizing the added value of typical products and being willing to pay a premium price, are not always able to identify and distinguish these products on the market since they tend to blur between different logos and quality assurance systems. This confirms that, as previously noted in the literature (Grunert, 2005; Verbeke, 2005), brands and certifications are often subject to misunderstandings, misconceptions and generalizations, and often do not work as quality indicators since consumers cannot interpret their meaning effectively, leaving the information asymmetry problem essentially unchanged.

The low-power information of origin trademarks is also apparent due to the fact that many consumers value the status of typical only for foods which enjoy a high reputation on the domestic and/or local market. Indeed, descriptive analysis showed that consumers asked to provide an example of typical products in many cases provided responses

limited to a few well-known foods on the national market (e.g. Parmigiano Reggiano, Mozzarella di Bufala Campana). This also implies that the burden of costs incurred by producers to retain trademark recognition is avoidable and unnecessary, as it does not bring the added value information that was intended by the legislation (De Rosa and Turri, 2003). As a result, there is an impelling need to implement measures to streamline the communication of information regarding the quality of food products and increase the effectiveness of European trademarks as a means of assurance. Operating in this way will not only support the revitalization of typical food products and ensure their competitiveness in the national and international scenario, but also limit the well-known phenomenon of product imitation that damages not only consumers but the entire European food system.

Moreover, as shown by recent studies (Verbeke, 2005; Nosi and Zanni, 2004), given that information about food quality can be effective only when it can be processed and used by its target audience, it would appear necessary to build different targeted marketing strategies to capture the best business opportunities for Italian typical food manufacturers. Furthermore, our findings are consistent with other studies that believe that both the EU Commission and producers might well have overestimated the potential benefits indicated by PDO and PGI trademarks for consumers (van der Lans *et al.*, 2001). Finally, some other insights of the research suggest that marketing plans for typical foods should mainly focus on local consumers, as recommended by Giraud (2002).

The present study suffers the limitation of the sample not being strictly statistically representative of the Italian population. All respondents were urban residents, and the sample is biased towards relatively older shoppers and female consumers. Therefore additional qualitative and quantitative research needs to be done with a larger, differently located, sample to extend the legitimacy of the findings and generalise the results to the national population.

An interesting development of the current work could also be to investigate consumer knowledge and use of geographical indication labels in other European (or extra EU) countries with different food quality policy environments since several studies have demonstrated that cultural variation in food choices throughout Europe is even greater when dealing with typical foods that are based mainly on the natural resources available in the area.

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ⁱ Other research avenues have explored the contribution that typical/regional foods can make to rural development (Bessiere, 1998; Ilbery and Kneafsey, 1999, 2000; Marsden *et al.*, 2000; Murdoch *et al.*, 2000; Kneafsey *et al.*, 2001; Parrott *et al.*, 2002), as well as alternative and relocalised food systems (Hinrichs, 2000; Mormont and Van Huylenbroeck, 2001; Renting *et al.*, 2003; Goodman, 2004; Ilbery *et al.*, 2004).

ⁱⁱ The economic literature distinguishes quality attributes, as a function of their degree of visibility and based on the importance of the procurement costs, in: search (Stigler, 1961), experience (Nelson, 1970) and credence (Darby and Karni, 1973).

ⁱⁱⁱ The specification of Parmigiano Reggiano cheese, for example, dates from 1934 (de Roest and Menghi, 2000).

^{iv} European Council (EC) Regulation 510/2006 replaced EC Regulation 2081/92 after the United States complaint to the WTO. The new regulation allows the EU regulatory system to recognize and protect foreign GIs and allows foreign producers to apply directly for registration of GI products in the European Union.

^v EU DOOR database, February, 2010.

^{vi} In Italy there are 184 PDO and PGI food products (February, 2010).

^{vii} Loisel and Couvreur (2001) effectively showed that even in France, motherland of AOC, such signals of quality are not clear to many consumers.

^{viii} Rome is the largest Italian city in terms of population (approximately 2,726,593), and Naples the third largest (1,226,594), while Bologna has 374,057 inhabitants (ISTAT 2007).

^{ix} According to data from AC Nielsen-Ismea (2006) the modern distribution chains hold 77% of the market share value of total national agro-food expenditures.

^x The Grana Padano Consortium, alone in 2006 spent 17 million euro on advertising and communication (Qualivita, 2008).

^{xi} Mortadella Bologna has had the PGI certification since 1998.

^{xii} Asiago cheese was certified PDO in 1996.

^{xiii} The Italian origin was clearly visible due to the Italian flag.

^{xiv} Mozzarella di Bufala Campana PDO is a traditional cheese made from 100% water buffalo milk in the Campania region and the neighbouring regions of Apulia and Lazio.

^{xv} An intrinsic limit of these types of investigation is that outcomes undoubtedly overestimate the willingness to pay that would be observed if respondents actually had to buy a PDO/PGI product.