The market for PDO/PGI protected regional products : consumers' attitudes and behaviour

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Abstract

In this paper, we examine which consumers purchase PDO/PGI protected regional products and to what extent these consumers perceive a PDO or PGI label to add value to the regional product. A PDO/PGI label guarantees the region of origin of products and legally protects these products from other Small and Medium-Sized Enterprises trying to imitate or to benefit from the image of the product.

The authors find that users of protected regional products can be differentiated from non-users. Like users of brands (versus generic brands), users of regional products tend to be older and have higher incomes. Living in the region of origin of a regional product increases the likelihood of purchasing that product. Users attach more value to knowing the country/region of origin of the food products they purchase.

Further, it is shown that users of regional products are willing to pay more for regional products that are protected by a PDO/PGI protection label. One of the reasons for this is that they perceive the PDO/PGI protection label to guarantee authentic, high quality products. Although a PDO/PGI protection label adds value to regional products, there is one large problem, namely the lack of consumer awareness and understanding of the PDO/PGI protection label. Unless the consumer awareness and understanding of these labels is improved, the added value of PDO and PGI labels will be limited.

Keywords : PDO/PGI products, consumer awareness, consumer attitudes, added value

INTRODUCTION

Within the framework of the quality policy regarding agricultural products and foods, the European Committee (EC) introduced regulations enabling European Small- and Medium-sized enterprises (SMEs) to protect legally their regional products (Regulation 2081/92). It concerns regulations for the Protected Designation of Origin (PDO) and the Protected Geographic Indication (PGI). Next to enabling SMEs to protect legally their regional product, a number of other objectives are aimed at. One of the most important objectives is to stimulate the development of European rural areas. The extent to which this objective can be reached depends among others on the consumer added value of both labels. For these labels to add value, several conditions have to be fulfilled. First, consumers of regional products need to be aware of and understand the meaning of PDO or PGI protection labels. Second, consumers should have a favourable perception of both labels. Finally, since the inspection of the PDO/PGI regulation costs money, consumers should be willing to pay for such a protection label.

In this paper, we examine the consumer added value of PDO/PGI protection labels among *users* of regional products. Considering the limited amount of research on the consumers of PDO/PGI protected regional products, we will first study whether users of regional products can be differentiated from non-users. Gaining insights into the characteristics of the consumers in the users segment may enable SMEs to market their protected regional product more efficiently. Next, we will examine the consumer awareness and understanding of PDO/PGI protection labels as well as the consumer attitude towards both protection labels. Finally, the willingness to pay for the PDO/PGI protection labels is studied.

1. THEORETICAL BACKGROUND AND HYPOTHESES

1.1. Users versus Non-Users of Regional Products

Regional products are generally regarded as exclusive, high quality and (more) expensive products. Having to protect legally regional products from other SMEs trying to imitate the product or to benefit from the image of the product may be considered a clear indication for this. The exclusive image of these products, often, is due to a combination of limited production volumes and specific product(ion) characteristics. Since the limited production volumes and specific, often handicraft, production systems frequently result in above average production costs ; regional products generally are marketed at above average prices. Together with the limited production volumes and specific product(ion) characteristics, this premium price creates an exclusive, high quality product image for these products, which may be compared with strong (national) brands (versus generic brands) (Bellizzi et al., 1981). Considering the similarities between having to decide on purchasing a regional product or not and purchasing a national brand or not, studies on national versus generic brands are drawn upon in formulating hypotheses concerning the consumer characteristics that strongly influence the likelihood of purchasing regional products. Several studies have examined the influence of socio-economic and demographic consumer characteristics on the likelihood of purchasing national brands (e.g. McEnally and Hawes, 1984 ; Quagrainie et al., 1998). In this research, we will focus on the influence of gender, age, household size, income and region of residence.

There is little research examining the relationship between *gender* and the likelihood of purchasing high quality products. Sheth et al. (1999) report that for food, differences between males and females are present in health-oriented perceptions of foods and beverages. Females, for instance, tend to purchase fresh vegetables more because they perceive it to be healthier than canned vegetables. Bellizzi et al. (1981) refer to a study showing that males tend to perceive generic products more favourable than females. Kinnucan and Clary (1995) show that females tend to purchase high quality cheeses more often than males do. These studies suggest that gender may well relate to differences in the likelihood of purchasing high quality regional products. Hence, we hypothesise :

H 1 Females are more likely to purchase regional products than males.

Several studies have shown a relationship between *age* and the likelihood of purchasing national brands (versus generic brands) and high quality products (e.g. Granzin and Schjelderup, 1980 ; McEnally and Hawes, 1984 ; Quagrainie et al., 1998). Often this relationship is positive. Based on several studies, McEnally and Hawes (1984) conclude that "preliminary evidence suggests that middle-aged consumers have shown more interest in generic brand groceries". "This may, of course, be related to the size of the household. Most young and elderly consumers tend to live in smaller households that may have less need to stretch the family's food budget" (p. 78). Based on these studies and considering the exclusive, high quality image of regional products we hypothesise :

H 2 *The likelihood of purchasing regional products is positively influenced by the age of the consumer.*

Considering McEnally and Hawes (1984) proposition on the influence of the *household size*, this characteristic is included in our study as well. In line with the reasoning of McEnally and Hawes, most studies examining the relationship between the size of household and the purchase of brands or high quality products find a negative relationship (e.g. Kinnucan and Clary, 1995 ; Quagrainie et al., 1998). Hence :

H 3 *The size of the household has a negative influence on the likelihood of purchasing regional products.*

In order to determine the direct influence of the family budget, *income* is included in our research as well. Several studies have shown a positive relationship between the family income and the purchase of brands or high quality products (Kinnucan and Clary, 1995 ; McEnally and Hawes, 1984 ; Quagrainie et al., 1998). Given the exclusive, high quality image of regional products, we hypothesise that :

H 4 *Income has a positive influence on the likelihood of purchasing regional products.*

The last demographic that is examined concerns the *region of residence* of the consumer. We distinguish between consumers who live within the region of origin of the regional product and those who live elsewhere. Since consumers tend to have a higher preference for products from the own region (Van Ittersum 1999), we hypothesise that :

H 5 *Consumers living within the region of origin of the regional product are more likely to purchase the product than consumers living outside the region of origin of the product.*

Next to examining the influence of socio-economic and demographic characteristics, we will also examine the influence of the importance consumers attach to a number of characteristics when purchasing food products. We focus on the place of origin, the price of the product, quality labels, the brand name, the consumers' confidence in the retail outlet and the appearance of the product. These characteristics are selected based on a study of INRA (1996).

Considering the products we are interested in we expect a positive relationship between the importance of knowing the *place of origin* of food products in general and the likelihood of purchasing regional products. Hence :

H 6 *Consumers who attach more importance to knowing the place of origin of the food products they purchase are more likely to purchase a regional product than consumers who attach less importance to this characteristic.*

Several studies have shown that consumers of (national) brands attach more importance to the *quality* of the product, while consumers of generic brands attach more importance to the *price* of the product, they are more price conscious (e.g. Faria, 1979 ; Granzin, 1981 ; McEnally and Hawes, 1984 ; Cunningham et al., 1982). Faria (1979) shows that two-third of the users of generic brands indicated that price was the most important reason for not buying brand products. Considering the perceived expensiveness of most regional products, we hypothesise that :

H 7 *Consumers who attach more importance to the price of the food products they purchase are less likely to purchase regional products than consumers who attach less importance to the price of the product.*

With respect to the influence of the importance consumers attach to the presence of *quality labels*, we again draw on the research on respectively generic and national brands. As mentioned, consumers of generic brands attach more importance to the price of the product, while consumers of national brands attach more importance to the quality of the products they purchase. Interpreting the importance consumers attach to quality labels as an indicator for the importance they attach to quality in general and taking into account the high quality image of regional products, we hypothesise that :

H 8 *Consumers who attach more importance to quality labels are more likely to purchase regional* *products than consumers who attach less importance to these labels.*

Next, the potential influence of respectively the *brand name* of the product, *appearance of the product*, and the consumers' *confidence in the retail outlet* will be discussed. Considering the functional similarities between a place-of-origin label and the brand name of products (identifying the origin of the product) (Farquhar, 1989), we expect to find the same effect for the influence of the importance of a brand name on the likelihood of purchasing a protected regional product as for the influence of the importance of knowing the place of origin of the product. Hence :

H 9 Consumers who attach more importance to the brand name of the food products they purchase are more likely to purchase regional products than consumers who attach less importance to the brand name.

With respect to the influence of the importance consumers attach to the appearance of the product and the consumer's confidence in the retail outlet we draw on a study of Granzin and Schjederup (1980). They show that regular generic purchasers are more store-oriented rather than product-oriented. This result supports the hypothesis that generic products create difficulties in product identification for a consumer, and thus should appeal to consumers whose purchase decisions are influenced more by the store patronised than by the product it carries. Hence :

H 10 Consumers who attach more importance to their own confidence in the retail outlet when purchasing food products are less likely to purchase regional products than consumers who attach less importance to their own confidence in the retail outlet.

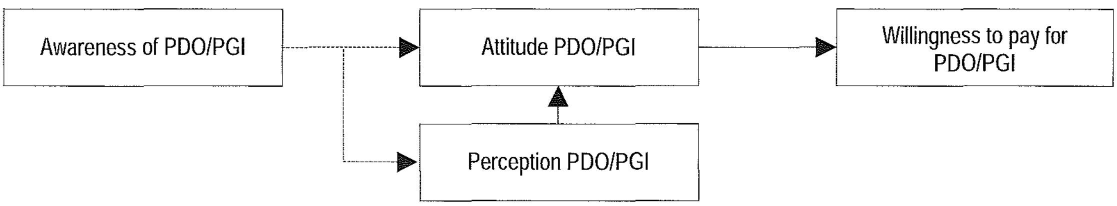
Since national brand purchasers are more product-oriented rather than store-oriented (Granzin and Schjederup, 1980), we hypothesise that :

H 11 Consumers who attach more importance to the appearance of the products when purchasing food products are more likely to purchase regional products than consumers who attach less importance to the appearance of the product.

1.2. Consumer Added Value of PDO and PGI Protection Labels

The research on the consumer added value of PDO and PGI protection labels consists of three parts. The first part examines the consumer awareness and understanding of the PDO and PGI protection labels. Next, the consumer attitude towards and perception of both labels is examined. Finally, the consumer added value of the PDO and PGI protection labels is examined. This part of the paper is summarised in Figure 1.

Figure 1 : Consumer Added Value of PDO/PGI protection label



Consumer awareness of the PDO and PGI protection labels is a necessary condition for this label to yield an added value. It will be difficult for consumers to form an attitude towards an object that they do not know. At the end of 1995, the consumer awareness of the PDO and PGI regulation was low in Europe. Only 6% of consumers had heard of the abbreviation PDO, only 14% had heard of the description "Protected Designation of Origin" and only 5% had heard of both the abbreviation *and* the description "Protected Designation of Origin". With respect to the PGI protection label, these figures were even lower (respectively 5%, 7% and 3%) (INRA 1996). Since the end of 1995, the EC has promoted the PDO and PGI protection labels. Hence, one would expect that the percentage of consumers aware of the labels has increased. In this study, we will examine the consumer awareness of the PDO and PGI regulation among the *users* of regional products. Besides examining the consumer awareness of the PDO and PGI protection labels, the *consumer understanding* of both labels will be examined.

Although consumer awareness and understanding of the PDO/PGI regulation are necessary conditions for the realisation of added value, they certainly are not sufficient conditions. For a PDO/PGI protection label to yield an added value, consumers should have a favourable *attitude* towards the protection label. Like guarantees in general, PDO/PGI protection labels are expected to reduce the purchase risk and to increase consumers' confidence in the purchase decision (Steenkamp, 1997). With respect to regional products, guaranteeing the region of origin of the product by means of the PDO/PGI regulation will increase the consumers' confidence that s/he purchased the "real thing" and not some cheap imitation from a different area. Further, we expect the PDO/PGI protection label will be considered a quality label. We will examine what the consumer attitude towards and perception of PDO/PGI protection labels is. We hypothesise that :

H 12 *The more favourable the perception of a PDO/PGI protection label is, the more favourable the attitude towards the label is.*

H 13 *The more favourable the attitude towards the PDO/PGI protection label is, the more consumers are willing to pay.*

We are not only interested in the relationship between the attitude towards the PDO/PGI protection label and the willingness to pay. We also want to examine whether the PDO/PGI label yields an added value (also in terms of monetary value). Considering the research on labelling (e.g. Van Trijp et al., 1997) as well as the objectives and expectations of the EC we hypothesise that :

H 14 *A PDO/PGI protection label adds value to a regional product.*

2. METHOD

2.1. Users versus Non-Users of Regional Products

For the first survey, in five European countries, on average 1000 respondents are interviewed for each country. A random sample of respondents being mainly responsible for the food purchases in their household, was drawn. The respondents were not informed about the purpose of the study. All respondents first were asked to mark those characteristics which they considered most important during the purchase of cheese, fruit, potatoes, ham and lamb. The product categories were selected based on the protected regional products examined in our study. The protected regional products examined in our study were selected in such a way to get a representative overview of the market of PDO/PGI protected regional products. In Appendix 1, an overview of the different protected regional products examined is given. The six characteristics were selected based on a study of INRA (1996). Consumers first were asked to indicate whether they purchase products from the different product categories. If so, consumers were asked to indicate which of the six aspects they consider important when purchasing products from the different product categories. One extra option, "other characteristics", was included in order to provide consumers with the opportunity to mention aspects that were not included. Next, consumers were given the names of two or three pre-selected protected regional products (see Appendix I) and asked whether they purchased the product during last year. Finally, socio-economic and demographic data[3] were gathered, which, together with the data on the general purchase behaviour, are compared between the users and the non-users of each protected regional product under consideration.

2.2. Consumer Added Value of PDO and PGI Protected Regional Products

The second survey consisted of personal interviews with *users* of at least one of twelve protected regional products (see Appendix I). Per product, on average, 200 users are interviewed. Data were gathered in five European countries. The questions that are used in this paper were part of a larger survey on the consumer added value of protected regional products.

First, consumers are asked whether they have ever heard of Protected Designation of Origin or PDO (or Protected Geographic Indication, PGI). Next, consumers who indicated they had heard of Protected Designation of Origin or PDO (or PGI) were asked which of the following descriptions best described what Protected Designation of Origin or PDO (or PGI) stands for :

- EU legislation which protects the poorer parts of the European Union
- EU legislation which protects regionally branded foods
- EU legislation which protects products which are unique to a particular region of the EU
- Don't know/Can't remember

The third description is considered to be the best description of what PDO and PGI stands for. Considering the small consumers' awareness of the PDO/PGI protection legislation (INRA 1996), we have decided to provide all consumers next with a description of Protected Designation of Origin or PDO (or Protected Geographic Indication, PGI). The descriptions shown in table 1 are used. These descriptions were tested for consumer understanding by means of a series of focus groups. In table 1, we give an example for the product potatoes.

Table 1 : Description of PDO and PGI protection

Protected Designation of Origin (PDO)
On the basis of a recent EC regulation, it is possible to classify certain potatoes as products with a protected designation of origin. These products are produced, processed and prepared in the specified region. Only these products are allowed to carry the specified name, since the quality of these products can be attributed to the region denoted by the name.
Protected Geographic Indication (PGI)
On the basis of a recent EC regulation, it is possible to classify certain potatoes as products with a protected geographic indication. These products are produced *or* processed *or* prepared in the specified region. Only these products are allowed to carry the specified name, because of their fame, or because they are known for their quality.

Next, the *consumer perception* of the PDO/PGI protection label is measured. Based on sixty-three focus groups in six European countries, eleven beliefs regarding the PDO/PGI protection label were determined and selected for further research. These beliefs are measured on a 5-point Likert scale with the end poles labelled "totally disagree" – "totally agree". Consumers are asked to indicate to what extent they associated each belief with a PDO/PGI protection label. In table 2, the beliefs are presented.

Table 2 : PDO/PGI Beliefs

The PDO/PGI-protection will.....
▪ guarantee a constant product quality ▪ lead to higher product prices ▪ protect the authenticity of the product ▪ fully guarantee the region of origin of the product ▪ guarantee a hand crafted product ▪ lead to more employment in the region of origin ▪ reduce the likelihood of fraudulent copycat products ▪ preserve a higher product quality ▪ lead to higher farmer incomes ▪ preserve the exclusivity of the product ▪ guarantee the product is produced in a traditional way

Next, consumers are asked to express their *attitude* towards the PDO/PGI protection label. The attitude is measured by means of three 5-point semantic differential scales with the end poles labelled by respectively "very unattractive" – "very attractive", "very good" – "very bad" and "really dislike it" – "really like it".

Finally, a conjoint study is conducted to gain insights into the consumer added value of PDO and PGI labels (Wittink and Bergestuen 1998). A 2 (attributes : product and price) x 3 (attribute levels) Full Factorial design was used to construct nine profiles (Green and Srinivasan 1990). For each regional product we distinguished between the closest substitute (e.g. *Edammer cheese*), the regional product itself (e.g. *Noord-Hollandse Edammer* cheese) and the protected regional product (e.g. PDO protected *Edammer* cheese). For price, the average price of the closest substitute is included as the lowest price level ($PRICE_l$). The average price of the regional product is included as the second price level ($PRICE_m$). The third price level, finally, is determined by adding the difference in price between the substitute product and the regional product to the price of the regional product ($PRICE_h$). The preference for each of the nine resulting product profiles is measured by means of 9-point Likert scales with the end poles labelled "no preference" – "very high preference".

3. ANALYSES AND RESULTS

3.1. Users versus Non-Users of Regional Products

To test hypotheses 1 until 11 logistic regression analyses are conducted. The dependent variable is whether the respondent purchased a protected regional product during last year. To correct for potential country- and product-specific effects, dummy variables are included in the regression equation. First, the model including only the dummy variables to correct for possible country- and product-specific effects was estimated. Next, the socio-economic and demographic variables were included. Adding these variables improved the model significantly ($p < 0{,}000$). The same held when the product characteristics were included ($p < 0{,}000$). In table 3 an overview of the results is given.

Table 3 : Influence of Socio-Economic and Demographic Variables on Purchase Likelihood of Regional Products

Variables	Coefficient (B)	Significance*
Gender (females)	0.131	0.056
Age	0.003	0.045
Size of the Household	-0.040	0.432
Income	0.490	< 0.001
Region of Residence	0.333	0.002
Place of Origin	0.608	< 0.001
Price Not Too High	-0.098	0.097
Quality Labels	0.566	< 0.001
Brand Name	0.334	< 0.001
Confidence in Retail Outlet	0.182	0.013
Appearance of Product	0.230	< 0.001
Other aspects	0.215	0.045

** one-sided*

Contrary to hypothesis H1, we do not find a significant influence of *gender* on the likelihood of purchasing protected regional products ($p > 0.05$).

For *age*, we find a small significant influence ($p < 0.05$). In line with our hypothesis H2, we find that older consumers are more likely to purchase protected regional products than younger consumers are. No significant effect is found for household size. H3 is not supported. This means that the suggestion of McEnally and Hawes (1984), that the influence of age on the likelihood of purchasing brands actually is due to household size, is not confirmed by our research. Age seems to be the crucial factor.

In line with hypothesis H4, we find that income has a significant positive effect on the likelihood of purchasing a protected regional product. H5 also is confirmed. We find that regional inhabitants are more likely to purchase regional products than non-regional inhabitants are.

Next, hypotheses H6 until H11 are examined. First, we expected that consumers who attach more importance to the place of origin of the food products they purchase are more likely to purchase protected regional products than consumers who attach less importance to knowing the place of origin of products (H6). As can be seen in table 3, this hypothesis is confirmed. Next, the influence of the importance of the price is examined (H7). Consumers were asked whether they attached importance to the prices of the products not being too high. Although price influences the likelihood of regional product in the hypothesised direction, the influence is not significant. With respect to the influence of the importance of a quality label (H8), it can be concluded that this hypothesis is confirmed. The more importance consumers attach to the presence of quality labels, the larger the chance of purchasing a regional product. The same conclusion can be drawn with respect to the influence of the importance of the brand name of products (H9). In line with what we expected we find that consumers, who attach more importance to the brand name of the food products they purchase, are more likely to purchase regional products. With respect to the hypothesis on the influence of the importance of confidence in the retail outlet, it can be concluded that it is not confirmed. We expected a negative influence of the aspect (H10). The importance of confidence in the retail outlet, however, has a *positive* influence on the likelihood of purchasing regional products. It seems that users of regional products do not only rely on the brand name or place of origin of the food products they purchase, they also attach more importance to their confidence in the store. It seems that users of regional products are more involved in the purchase decision process than non-users. In line with hypothesis H11, we further find that the appearance of the product positively influences the likelihood of purchasing regional products.

In conclusion, older consumers with higher incomes, living in the region of origin, that attach more importance to among others the place of origin of as well as the presence of quality labels when purchasing food products, are most likely to purchase regional products.

3.2. Consumer Added Value of PDO and PGI Protection Labels

First, the consumer awareness is examined. In table 4, an overview of the average consumer awareness in five European countries is presented.

Table 4 : Consumer Awareness of PDO and PGI Regulation

	1998
PDO	30.1%*
PGI	25.1%**

** Based on the five countries included in this study*
*** Based on two countries included in this study*

Before discussing table 4, it seems important to stress that, since we determined the consumers' awareness of PDO/PGI labels among *users* of *protected* regional products, the percentages found will be higher than the average awareness among *both* users *and* non-users. Considering the results in table 4, it may be concluded that the awareness is rather low.

Next, it is examined whether the consumers who indicated they have heard of the PDO or PGI label, have any idea about the meaning of the labels. In table 5, the overall results for the PDO and the PGI label are presented.

From the figures in table 5, it can be concluded that only 17.2% (57.0% x 30.1%) of the respondents interviewed have heard of the PDO protection label *and* understand what it means. With 13.6%, this figure is even lower with respect to the PGI protection label. Hence, if we should find that PDO/PGI protection labels are able to yield an added value, it can be concluded that the lack of consumer awareness and understanding may hinder the performance of both labels significantly.

Table 5 : The Meaning of the PDO and PGI labels

	PDO label	PGI label
▪ EU legislation that protects the poorer parts of the EU	2.5%	1.2%
▪ EU legislation that protects regionally branded foods	36.4%	30.1%
▪ EU legislation that protects products that are unique to a particular region of the EU	57.0%	54.2%
▪ I don't know	4.1%	14.5%

Next, the consumer attitude towards the PDO/PGI protection labels is examined. As mentioned, the consumer attitude towards the protection label is measured by means of a three item 5-point semantic differential scale. The scale is first examined by means of a factor analysis and a reliability test. The scree test criterion, the percentage of variance criterion and the latent root criterion (Hair et al., 1995) are used to determine the number of factors. The factor analysis on the three attitude items reveals a one-factor solution. Next, a reliability analysis is carried out on these items which shows high inter-item correlations (Cronbach's α = 0.88). Based on these results, the attitude towards the PDO/PGI regulation is included in the model by means of the scores on the single factor extracted by factor analysis. The average score for the attitude towards the PDO/PGI protection label is 4.15 (measured on a scale from 1 until 5).

Next, a factor analysis is conducted on the beliefs regarding the PDO/PGI protection labels. A factor analysis of the belief scores reveals a three-factor solution. In table 6 an overview of the rotated factor solution is given.

Table 6 : Perceptual Beliefs for PDO/PGI protection labels

The PDO/PGI protection will ..	Quality	Economic support	Price
▪ protect the authenticity of the product	0.762		
▪ preserve a higher product quality	0.760		
▪ preserve the exclusivity of the product	0.757		
▪ guarantee a constant product quality	0.750		
▪ fully guarantee the region of origin of the product	0.711		
▪ guarantee the product is produced in a traditional way	0.706		
▪ reduce the likelihood of fraudulent copycat products	0.638		
▪ guarantee a hand crafted product	0.604		
▪ lead to more employment in the region of origin		0.857	
▪ lead to higher farmer incomes		0.846	
▪ lead to higher product prices			0.946

The first factor is interpreted as a *quality dimension*. As can be seen, "authenticity", "high quality", "exclusivity" and "constant quality" load high on this factor. The second dimension is construed as an *economic-support dimension*. Both the belief that a PDO/PGI protection label may lead to higher farmer incomes and more employment in the area of origin load on this factor. Although we expected the price belief to load on the same factor as the beliefs on the farmer incomes and employment in the region, price forms a separate factor. It may be that an increase in price is not considered a sign of support for the region of origin but is considered a costs-factor for the consumers themselves.

In order to test hypothesis H12, a regression analysis is conducted. The attitude towards the PDO/PGI protection label is regressed on the three perceptual factors. To correct for possible country and regional product-specific effects, again dummy variables have been included in the regression analysis. Since only in two of the five countries the effect of a PGI label is measured, we will not differentiate between both labels in this paper. The results of the analysis are shown in table 7.

Table 7 : Influence of PDO/PGI perception on the Attitude towards the PDO/PGI protection

Variables	Regression Coefficient
Quality	0.471***
Economic Support	0.215***
Price	-0.074***
	R^2 = 0.362, F***

*** p < 0,001

In line with hypothesis H12 we find that the more favourable the perception of the PDO/PGI protection labels is the more favourable the attitude towards these labels is. For price, a significant negative effect is found. Price, thus, is perceived as a costs-factor instead of an indication for economic support. Hence, hypothesis H12 is confirmed.

Next, we will examine whether there is a positive relationship between the attitude towards the PDO/PGI protection label and the willingness to pay for this label. First, we will shortly examine whether consumers are willing to pay more for the PDO/PGI protection label at all. As mentioned, the consumer added value of the PDO/PGI protection label is examined by means of a conjoint study with nine profiles. Based on the conjoint analysis, the utilities of respectively the closest substitute, the regional product and protected regional product are determined. In table 8, the results are shown.

Table 8 : Utilities of PDO/PGI Protected Regional Products

Type of Product	Utilities	ΔUtility
Closest Substitute	-1.251	
Regional Product	0.234	1.485***
Protected Regional Product	1.478	0.782***
Constant = 5.026 (average preference across all nine profiles)		

*** p < 0,001

Based on the constant and the utilities, the preference for each product can be determined. The average preference for the protected regional products thus is 5.026 + 1.478 = 6.504. In the last column, the added value of respectively regional indication (0.234 - (-1.251)) and the PDO/PGI protection label (1.478 - 0.234) are included. Both values differ significantly from zero ($p < 0.001$). Hence, it can be concluded that a protection label adds value over and above the added value of regional products. Having a regional product protected thus increases the preference for the product significantly, which supports H14.

Based on the price information that was included in the conjoint study we are able to calculate the percentage consumers are willing to pay more for protected regional products than for regional products without a PDO/PGI protection label. This percentage (%WP) is calculated using the following formula :

$$\%WP_{PDO/PGI} = \frac{\Delta UT_{PDO/PGI}}{\Delta UT_{price}} \times \frac{\Delta PRICE_{l-h}}{PRICE_{m}} \times 100$$

The worth of a unit increase in utility in terms of money can be calculated as the ratio of the decrease in price ($\Delta PRICE_{l\text{-}h}$) divided by the associated increase in utility (ΔUT_{price}). If we multiply this monetary value of a unit increase in utility by the increase in utility due to PDO/PGI ($\Delta UT_{PDO/PGI}$), we have the monetary value of these labels. Relating this to the price of the regional product ($PRICE_m$), we obtain the relative increase in price due to the PDO/PGI label. Utilising this formula, we find that the users of protected regional products in our study, on average, are willing to pay 18.0% more for regional products with a PDO/PGI protection label than for regional products that do not have this protection label.

Next, we examined to what extent the attitude toward the PDO/PGI protection label positively influences the willingness to pay for a protection label. The $\%WP_{PDO/PGI}$ is regressed on the attitude towards the PDO/PGI protection label. To correct for country and regional product-specific effects, again dummy variables are included in the regression analysis. In table 9, the results are presented.

In line with hypothesis H13, we find that the attitude towards the PDO/PGI protection label has a positive and significant effect on the willingness to pay for it.

Table 9 : Influence of the Attitude towards the PDO/PGI protection on the Willingness to Pay for it

Variables	Regression Coefficient
Attitude towards PDO/PGI	0.112***
	$R^2 = 0.065$, F***

*** $p < 0,001$

CONCLUSIONS

The main objectives of this study were to examine whether users of PDO/PGI protected regional products can be distinguished from non-users and whether a PDO/PGI protection label adds value to regional products for users of these products.

With respect to the first objective, it can be concluded that users indeed can be distinguished from non-users based on among others, age, the region of residence and income. Like purchasers of brands (versus generic brands), the users of regional products tend to be older and have higher incomes. Next to the effect of age and income, we have shown that consumers living in the region of origin of a regional product are significantly more likely to purchase the product than consumers living elsewhere. Further, it is shown that users of regional products attach more importance to the presence of quality labels, and to knowing the place of origin of the products they purchase.

With respect to the second objective, several important conclusions can be drawn. The most important conclusion is that a PDO/PGI protection label yields a significant amount of added value for the users of the regional products that are examined in this study. Consumers of regional products are willing to pay a significant amount of money extra for a regional product with a protection label. This can partly be explained based on their attitude towards the PDO/PGI protection label, which in turn is significantly influenced by the perception of the label. The PDO/PGI protection label is perceived on three dimensions, namely quality, economic support and price. The first two dimensions positively influence the attitude towards the PDO/PGI protection label. The latter dimension negatively influences the attitude.

Although PDO/PGI protection labels are able to yield an added value, there is one major problem relating to the lack of consumer awareness of these labels. As shown, only 17.2% of the users of regional products have heard about the PDO/PGI protection label *and* understand what such a label means. Therefore, unless the consumers' awareness increases, the possibilities of the PDO/PGI protection labels to add value to regional products will be limited.

NOTES

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(2) Math J.J.M Candel was affiliated to Wageningen University when we began work on this research. He is currently assistant professor at the Department of Methodology and Statistics, Maastricht University, The Netherlands.

(3) *Gender* : 0 = male, 1 = female ; *Age* = ... years ; *Household size* = ... persons ; *Income* : 0 = low income, 1 = high income ; *Region of Residence* : 0 = outside the region of origin of a regional product, 1 = within the region of origin of a regional product.

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APPENDIX I

Country	Regional Product
France	Comté cheese (PDO) Cantal cheese (PDO) Quercy lamb (PGI)
Greece	Ipiros Feta cheese (PDO) Zagora apples (PDO)
Italy	Parmigiano Reggiano cheese (PDO) Parma ham (PDO)
The Netherlands	Noord-Hollandse Edammer cheese (PDO) Opperdoezer Ronde potatoes (PDO)
Switzerland[1]	Gruyère cheese (PDO)
United Kingdom[2]	West Country Farmhouse Cheddar cheese (PDO) Jersey Royal potatoes (PDO) Scotch lamb (PGI)

1. *Gruyère cheese is only examined to study differences between users and non-users of regional products.*
2. West Country Farmhouse Cheddar cheese, Jersey Royal potatoes and Scotch lamb are only examined with regard to the consumer added value of PDO/PGI protection labels.