

Article

Consumer Perceptions and Willingness to Pay for Certified Agri-Food Products in Italy's Campania Region: Insights from a Survey-Based Study

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Abstract

This study investigates consumer knowledge, perceptions, and purchasing behaviors regarding products with geographical indications and certifications in the Campania region. Traditional Agri-Food Product (PAT) is the regional label used in Italy to identify traditional products whose distribution is so limited that they do not qualify for PDO or PGI designation. In this view, this research examines the diffusion of such products, their economic and sustainability attributes, and alignment with modern objectives, including environmental impact reduction, rural development, and the European Common Agricultural Policy (CAP) 2023–2027. Using a structured questionnaire administered to a sample of 706 respondents, the study combines descriptive statistics and econometric analysis, trying to identify key factors influencing Willingness to Pay (WTP) for certified products and knowledge of certifications. Findings reveal that education, knowledge of certifications, and lifestyle factors positively affect WTP, highlighting opportunities for targeted marketing and awareness campaigns, also emphasizing critical issues in view of new trade scenarios (e.g., Mercosur agreement) and climate change.

Keywords: geographical indications; Campania; consumer behavior; willingness to pay; agri-food sustainability

1. Introduction

Increasing consumer interest in sustainable and locally produced food has emphasized the relevance of products with geographical indications in regional economies [1,2]. These products contribute not only to cultural and historical preservation but also to rural development and environmental sustainability [3,4].

Italy is internationally recognized for the excellence of its agri-food products, many of which carry official European quality certifications designed to protect traditional production methods, guarantee traceability, and preserve territorial identity [5]. The most important of these certifications are PDO (Protected Designation of Origin), CDO (Controlled Designation of Origin), and PGI (Protected Geographical Indication). These systems are grounded in European legislation, particularly EU Regulation No. 1151/2012 [6], which establishes the framework for protecting geographical food names, and EU Regulation No. 1308/2013 [7], which defines rules for the wine sector. PDO represents the highest level of



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protection. To receive PDO status, a product must be produced, processed, and packaged entirely within a specific geographical area, following recognized and traditional methods. This requirement ensures an unbroken link between the product and its environment—including factors such as local climate, soil composition, and human craftsmanship—which scientific studies in the field of food geography and terroir research have shown to strongly influence sensory characteristics and chemical composition [8]. CDO is a certification historically associated with Italian wines and regulated initially by national laws (such as Law 930/1963) before being harmonized under European rules. CDO wines must follow precise production specifications, including permitted grape varieties, maximum yields, aging requirements, and geographical origin. This system ensures that wines express the specific viticultural traditions and environmental conditions of their territory. Scientific research in oenology has demonstrated how factors such as microclimate, altitude, and soil mineral content contribute to measurable differences in wine phenolic composition, aromatic profile, and aging potential [9]. PGI offers a slightly more flexible certification, requiring that at least one phase of production, transformation, or processing take place within the designated area. While the link to territory is less strict than PDO, PGI still ensures that a product possesses reputational or qualitative characteristics tied to its region [10]. Together, these certification systems form a comprehensive legal and scientific framework that protects consumers, supports rural economies, and helps preserve Italy's intangible cultural heritage. Legislative rules ensure transparency and traceability, as well as guaranteeing food safety. Meanwhile, scientific studies are increasingly demonstrating that characteristics associated with origin, such as soil nutrients, microbial populations, and the selection of appropriate feed and processing methods for animal nutrition, contribute to objectively measurable differences in certified products [11,12].

As a result, PDO, CDO, and PGI labels not only guarantee authenticity and quality but also reinforce the connection between food, people, and place that lies at the heart of Italian gastronomic identity. Italy's Campania region is one of the most important areas in the country for high-quality, certified animal-origin food products, combining long-standing agricultural traditions with strict standards of control and traceability. The Campania region produces several foods that have earned European quality labels such as PDO and PGI; among Campania's most famous certified products is "Mozzarella di Bufala Campana DOP", made exclusively from the milk of the Italian Mediterranean buffalo [13] and produced, processed, and packaged within a regulated geographical area. Its characteristics, such as elasticity, moisture content, and flavour profile, reflect both environmental factors and artisanal techniques, which have been analysed scientifically in studies on milk composition and the microbiota involved in cheese maturation [14]. Closely linked to this heritage is "Ricotta di Bufala Campana DOP". The Campania region is also known for notable PDO cheeses such as "Provolone del Monaco", produced following codified standards that preserve historic cheesemaking practices and regional biodiversity in terms of livestock breeds and local feed resources [15]. In addition, the region contributes to certified meat production through products such as the "Vitellone Bianco dell'Appennino Centrale IGP", which reflects the longstanding pastoral traditions of the Apennine areas [16]. Together, these certified products represent not only excellence in Italian food culture but also a system in which scientific validation, legislative protection, and local tradition work together to safeguard authenticity, nutritional value, and heritage.

The Campania region is one of the Italian regions with the highest concentration of high-quality livestock products that, due to their size, do not meet the criteria for PDO status. In this sense, traditional Agri-Food Product (PAT) is the regional label used in Italy to identify traditional products whose distribution is so limited that they do not qualify for PDO or PGI designation. It is the only quality designation awarded by the Regions,

pursuant to Legislative Decree No. 173/98 and Ministerial Decree 350/99, which are responsible for registering such products in the national registry established at the MIPAAF by Ministerial Decree of 18 July 2000, and updated annually, with the aim of promoting local specialties produced using traditional methods of processing, preservation, and aging, recognized as exceptions to EU regulations, in use for at least twenty-five years, and consistent throughout the entire region concerned. The regional trademark, in particular, aims to consolidate the Region's image as a guarantor of the product's intrinsic quality, which stems from specific traditional production methods of the area, in order to maintain and increase the levels of brand recognition and market penetration achieved in the areas of greatest commercial interest. The Region, therefore, does not limit itself to legislative activity but is responsible for the total or partial financing of activities related to the use of the trademark and also intervenes in organizational and managerial aspects through collective marketing initiatives. This premise has prompted us to continue our research in order to understand, at the regional level (though this is clearly a limitation of the analysis in terms of its representativeness), the degree of consumer acceptance—as reflected in their willingness to pay—for this type of product (high quality and animal welfare), with a view to potentially forming a collective brand in the future. Despite growing market demand, consumer knowledge and awareness remain uneven; the primary objective of our investigation is to evaluate consumer perceptions, economic behavior, and WTP for certified agri-food products in the Campania region, highlighting areas for potential enhancement. At the same time, perceived value can take on even greater strategic socio-economic relevance when considering the critical issues facing new commercial scenarios (e.g., the imminent Mercosur agreement) and climate change.

It is therefore quite clear that consumers' purchasing decisions today can be influenced both by low prices (and in this case, the Mercosur agreement is a critical factor for the profitability of EU producers) and by issues related to disruptions in trade flows caused by various ongoing conflicts. Specifically, on the one hand, the foreseeable price competition from products imported into the EU from their countries of origin—which, particularly in light of inflation (now almost cyclical in recent years due to political and trade tensions in various parts of the world)—may shift the demand of many EU consumers (and thus also Italian consumers). The issue of climate change, with increasingly unpredictable and severe catastrophic weather events impacting agricultural production, would be an additional task for farmers in developed countries. Climate change patterns will certainly contribute to exacerbating inflationary pressures on primary products and their derivatives. Clearly, the abundance or scarcity of arable crops in the world's most productive regions also has a significant impact on European producers and, above all, on EU livestock farmers in terms of feed-related production costs, rather than operational costs (such as nitrogen and electricity). In this sense, focusing on high-quality animal products from extensive farming systems can provide an additional source of economic resilience for EU livestock farmers. It is worth noting that in the era of trade globalization, climate change also has global impacts, as recently demonstrated by the large-scale effects of El Niño, La Niña, and ENSO on arable crop production worldwide [17]. In this context, the optimal management of a massive amount of meteorological and climatological data will also be a crucial [18] way to support revenue risk management tools and policy.

Literature Review

In the global food system, the agricultural sector's shift towards productivism has resulted in the separation of production and consumption locations, alongside the adoption of standardized, de-territorializing and de-naturalizing practices [19–21]. The establishment of increasingly long supply chains has had significant environmental impacts, disconnecting

food production from natural processes and severing the link between food and territory. This has had clear effects at both the material and symbolic levels, due to the standardization and banalization of foodscapes, and the loss of traditional cultural and identity values associated with food [22]. Several factors, including climate change risks, highlight the need for more sustainable food governance and place-based food policies, which are designed to enhance local resources and specificities. A number of studies, movements and policies are emerging that aim to reconnect food and territory [23]. These initiatives emphasize productive relocalization and the activation of re-territorialization processes to create ‘alternative geographies of food’, where multidimensional proximity (in spatial, cultural, and identity terms) becomes a tangible medium and value in itself [24]. In recent years, there has been growing interest among European consumers in local and traditional agri-food products [25–27]. As early as 2017, Italian consumers expressed a clear preference for products predominantly produced in Italy (‘Made in Italy’) (74.1%), certified as such by European Geographical Indication (GI) and Traditional Specialities (TSG) schemes (53.1%), locally sourced (‘Km 0’ products) (59.3%) and seasonal (80.4%) products [28]. Furthermore, consumers’ growing interest in product healthiness in terms of food safety and nutritional value, coupled with the proliferation of new purchasing channels (e.g., online markets), has facilitated the commercial growth of local and traditional food products [29–31]. To promote environmentally responsible and socially equitable food systems, it is crucial to understand how consumers respond to the sustainable attributes of agri-food products. As awareness of environmental degradation and ethical concerns about food production intensifies globally, sustainability certifications have emerged as key tools for guiding consumer choices and incentivising responsible practices throughout the supply chain [32]. However, sustainable products are often perceived as more expensive, which raises questions about consumers’ willingness to pay extra for certified attributes [33,34]. This study is among the first attempts in Italy to uncover the impact of certification for animal products (covering both quality and animal welfare aspects) on the end consumer’s WTP, although some studies have already examined the impact of PGIs on consumers’ willingness to pay [35–37]. Certified quality, together with product and process innovation, represents one of the strategic levers for Italian (and EU) farms in the face of new competitive scenarios—scenarios in which agreements such as the one with Mercosur will play a crucial role in the survival of thousands of farms.

2. Materials and Methods

2.1. Survey Description and Data Collection

A structured questionnaire consisting of approximately 30 multiple-choice and open-ended questions was developed (Appendix A). The survey investigated:

- demographic and socio-economic characteristics;
- knowledge of local products from Campania;
- purchase preferences and retail outlet choices;
- economic and qualitative perceptions of products with European and national certifications.

Respondents not involved in grocery shopping were redirected to a secondary section with context-specific questions.

The survey included 800 participants aged 18–80 years, of both sexes and diverse education, income, and family backgrounds. Exclusion criteria:

- individuals not consuming meat, meat-based products, milk, or dairy;
- participants over 80 years or with an education below lower secondary school.

The questionnaire was administered via Google Forms and distributed through Facebook and Instagram. Participants were informed of the study's objectives and assured of anonymity.

A total of 706 participants completed the questionnaire in full, while 19 participants completed it partially but sufficiently to avoid exclusion from the data set. An initial group of approximately 50 people was directly recruited into the study via an invitation sent to their cell phones; the remaining participants joined the study through a referral link posted on social media. The survey was conducted using Google Forms software, and the link was shared on Facebook and Instagram via a redirect link.

Each questionnaire included a brief introduction explaining the study's objectives and how the data would be collected. Given the anonymous nature of the data collection, it is not possible to determine the method of recruitment. Evidently, this sampling method introduces elements of bias into the sample; not all consumers, especially those with lower levels of education and/or older individuals, regularly access the web (self-selection). However, the ability to conduct this initial attempt at segmenting demand for the products considered in this study more quickly leads us to consider this limitation (which also affects representativeness for potential interpretations regarding other regions and/or products) to be acceptable.

Specifically concerning WTP, each consumer surveyed was asked "How much are you willing to pay extra for a PDO, PGI, product compared to a product without certification? [Meat products]"

Respondents indicated their willingness to pay more for a product to ensure its quality, choosing from a scale ranging from "Nothing" to "10%, 30%, or 50% more."

The most common response was "10% more" (47%), while others would be willing to pay "30% more" (30%), "Nothing more" (14%), and "50% more" (6%).

The same question was asked regarding the purchase of dairy products: "How much are you willing to pay extra for a PDO or PGI product compared to a product without certification? [Dairy products and cheeses]"

Respondents expressed their willingness to pay more for a product to ensure its characteristics, choosing from a scale ranging from "Nothing" to 10%, 30%, or 50% more.

The most common response was "10% more" (48%), while other consumers would be willing to pay "30% more" (36%), "Nothing more" (9%), and "50% more" (7%).

2.2. Econometric Model

One of the main objectives of this study is to identify the key consumer characteristics within the analysed sample that positively influence the WTP for certified products, as well as the factors that affect trust in such certifications. These characteristics are derived from the responses provided in the administered questionnaire.

Given the declared propensity to pay more for certified products (PDO, PGI), the analysis aimed to determine which sample characteristics play a significant role in increasing the likelihood of a higher WTP, depending on the respondents' level of certainty in their answers. As mentioned earlier, the possibility of sample bias clearly limits the generalizability of the results obtained from our analysis. However, this limitation—which can be addressed in future studies that pay closer attention to the stratification of the respondent sample—is certainly secondary to the objective of the present study. We did not construct a sample to obtain desired results; instead, we determined the sample composition randomly (albeit with the limitations regarding internet access for certain consumer groups, such as the elderly, which we have highlighted).

To identify which characteristics of the surveyed sample influenced a higher willingness to pay (WTP) for the purchase of certified products (both animal-based and dairy-

based), a logistic regression model was employed. In this model, the dependent variable assumes a value of 1 when the consumer reports a willingness to pay more for certified products with a certainty level of at least 90%, and 0 otherwise. From the respondent's perspective, this threshold reflects a clear willingness or certainty to spend more on certified products.

The formal specification of the model used is as follows:

$$P_i = P(Y_i = 1|X_i) = E(Y = 1|X_i) = \frac{1}{1 + e^{-(\alpha + \beta X_i)}} = \frac{1}{1 + e^{-Z_i}}$$

where X_i denotes the set of independent variables and, as in standard regression models, α represents the intercept while β is the vector of coefficients associated with the vector of independent variables.

This model enables the identification of which individual factors (such as age, education, income level, and awareness of certifications) are statistically significant in influencing both trust in certification systems and willingness to pay a price premium for certified agri-food products.

The econometric analysis aims to highlight the impact of the independent variables on the probability that a consumer purchases certified products or not.

The last term of the equation

$$P_i = \frac{1}{1 + e^{-Z_i}}$$

follows a logistic distribution bounded between 0 and 1. This functional form ensures that, for any estimated value of X_i , the resulting value of P_i can be interpreted as a probability. In other words, the condition $0 \leq E(Y_i | X_i) \leq 1$ is satisfied [38,39]. This property constitutes a fundamental justification for the adoption of a logit specification in the present analysis. In order to estimate P_i , the equation must be transformed into a formulation that is linear in the parameters X_i and β . Accordingly, for estimation purposes, the logit model is specified through the log-odds transformation as follows:

$$\ln\left(\frac{P_i}{1 - P_i}\right) = \alpha + \beta X_i + \varepsilon_i$$

In this specification, the dependent variable is the logarithm of the odds ratio of the reported purchase frequency of certified products, while ε_i denotes the stochastic disturbance term.

Therefore, each consumer's choice is represented by a dummy variable:

$WTP_i = 1$ if the consumer is available to spend more to purchase certified products; 0 otherwise.

When the dependent variable is categorical, the ordinary least squares (OLS) estimation method proves inadequate due to the inherent nonlinear relationship within the data. As a result, maximum likelihood estimation (MLE) is employed as a more suitable approach for modeling logistic regression [40]. It is noteworthy, however, that the estimated coefficients in logistic regression do not directly indicate the magnitude of change in the dependent variable. Instead, these coefficients signify the directionality of the relationship between the independent variables and the outcome variable [41,42]. To assess the extent of influence exerted by various factors on purchase intentions and willingness to pay a premium price, marginal effects were calculated [43]. Marginal effects are defined as the change in the probability of an outcome resulting from a one-unit change in an independent variable, while all other variables are held constant. In this context, these effects quantify

how variations in independent variables impact the likelihood of consumers' purchase intentions and their willingness to pay a premium for PDO and PGP [44].

In the logit model, the constant, β_0 , represents the logit value of the probability when all independent variables are zero.

The estimated parameters, $\hat{\beta}$, can be interpreted as the marginal effects on the likelihood that a consumer purchases certified products. Positive values of $\hat{\beta}$ indicate that an increase in the explanatory variable X_i raises the probability that the respondent purchases certified products, while negative values imply the opposite [45].

To determine which variables to include in the model, one may use a pre-selection or post-estimation approach, based on the statistical significance of the estimated parameters. Various evaluation tools can be employed for this purpose, including:

- the Wald test,
- the Likelihood Ratio test (LR),
- the Akaike Information Criterion (AIC), and McFadden's Pseudo R^2 , which provides an overall measure of the model's goodness of fit.

This methodology allows for a robust identification of the most relevant variables influencing purchasing behaviour and trust in certified agri-food product labels.

They can be used for an overall evaluation of the estimated logit model [45].

In this study, the Likelihood Ratio (LR) test was applied, which assumes as the null hypothesis that all the coefficients in the model are jointly equal to zero, i.e., that the model does not explain any of the variation in the dependent variable Y .

This null hypothesis is rejected if the LR test statistic is greater than the Chi-squared (χ^2) critical value, with degrees of freedom equal to the number of independent variables included in the model.

Regarding the goodness of fit of the model, the estimation software used (Microfit, 5.5.10) provides R^2 values, which can be interpreted as the proportion of the total variance explained by the model. However, as highlighted by Gujarati [45], the goodness of fit is of secondary importance in discrete choice models, while the signs and statistical significance of the estimated parameters are of primary importance.

In the logit model implemented in this analysis, the aim was to verify how the socio-economic factors characterizing the sample influenced the propensity to purchase certified products.

The independent variables included were:

- Place of purchase;
- Age;
- Purchase frequency of certified products;
- Level of education;
- Field of study (Agriculture, Economics, Social Sciences, Law, Engineering, Medicine),
- Household income;
- Place of purchase;
- Degree of knowledge of certified products;
- Perception of certified products in terms of lifestyle (animal welfare, environmental awareness, and economic sustainability);
- Importance of animal welfare and environmental protection.

3. Results

3.1. Descriptive Statistics

Descriptive statistics of the sample are reported in Figures 1–4. As pointed out above, of the 800 individuals who participated in the survey, 706 completed the questionnaire

fully, while 24 provided partial but usable responses. The sample is heavily skewed toward female respondents (83%), a pattern commonly observed in surveys related to food purchasing behavior. The clear predominance of female respondents clearly introduces a bias. However, this bias does not alter the results of the analysis for two main reasons. First, there is no discrepancy in the responses between the two groups. Second, especially in southern Italy, women are primarily responsible for purchasing decisions. It is clear, however, that this indicates a limitation in the sample, which, as previously noted, has certain limitations. The age distribution shows a predominance of participants in the 48–57 age group (30%), followed by those aged 58–67 (20%) and 38–47 (15%). This distribution is consistent with the demographic profile of the purchasing manager (a higher proportion of people aged 27 and older). The educational level of the sample is relatively high: 45% of respondents hold a high school diploma, while 34% have obtained a master's degree. Regarding purchasing habits, the majority of respondents purchase certified products on a regular basis, with 41% doing so on a monthly basis and 35% on a weekly basis.

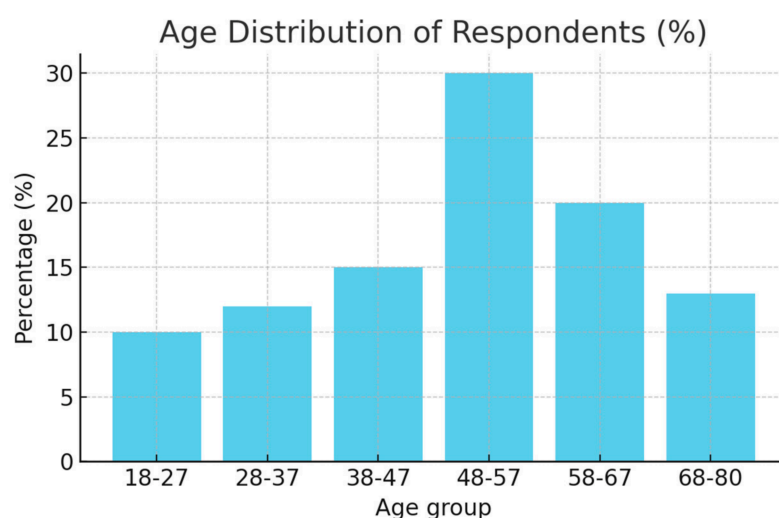


Figure 1. Age distribution of respondents (%).

Gender Distribution of Respondents

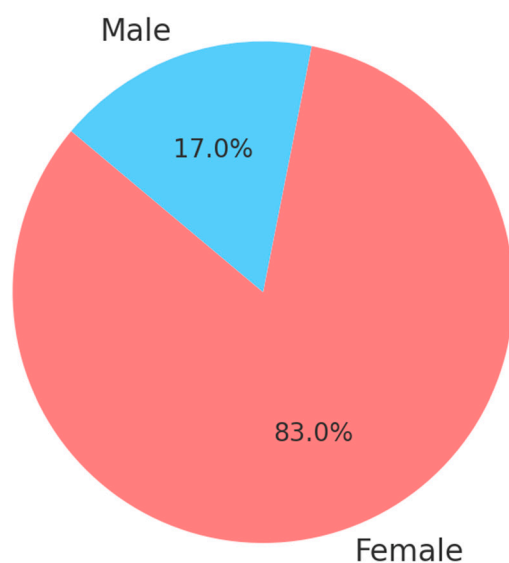


Figure 2. Gender distribution of respondents.

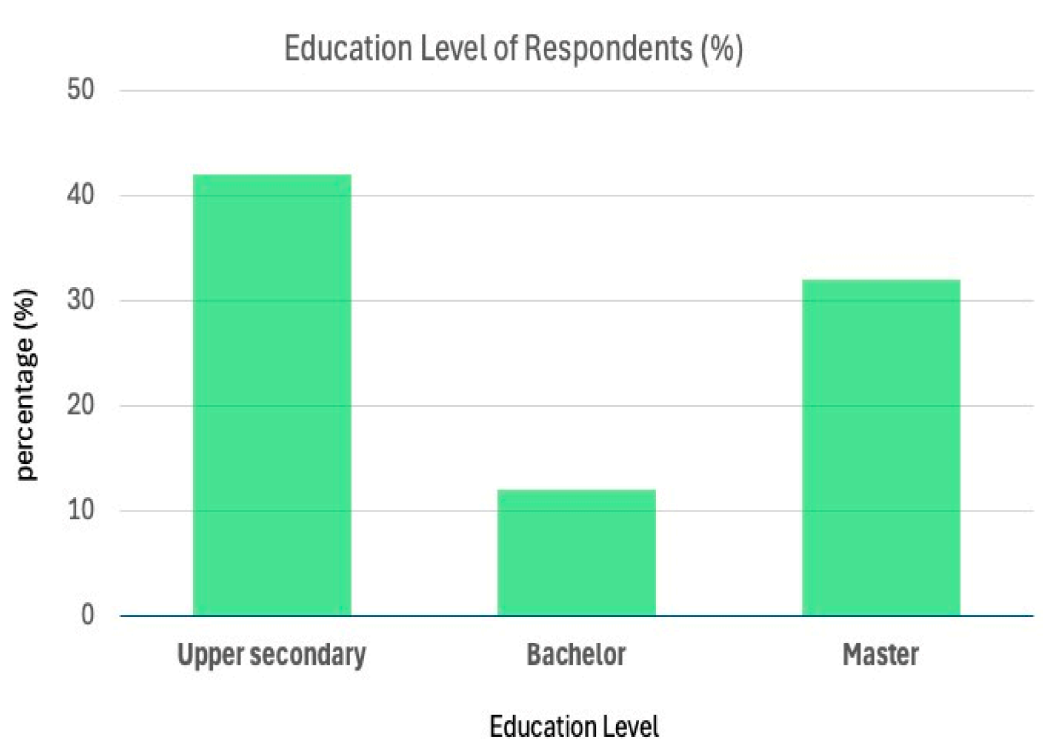


Figure 3. Education levels of respondents (%).

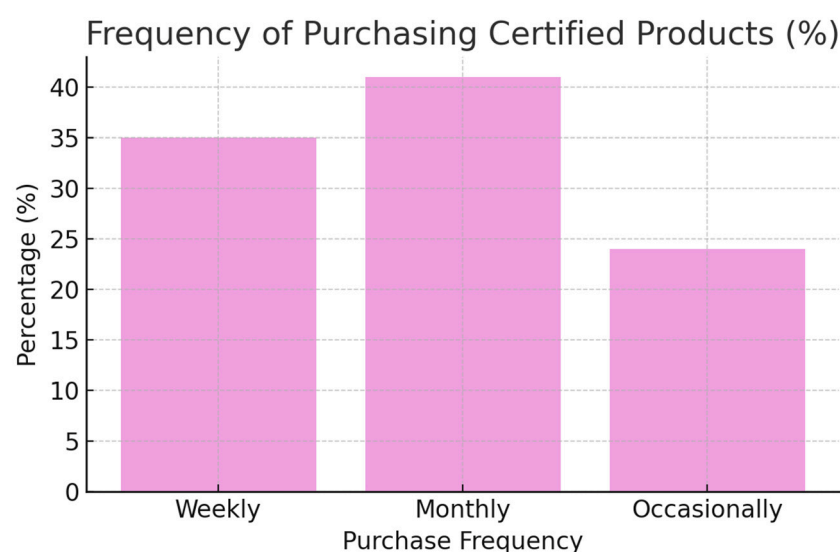


Figure 4. Frequency of Purchasing Certified Products (%).

3.2. Econometric Analysis

Previous empirical studies investigating consumers' WTP for certified products [46–48] have shown that product certification is often perceived as a substitute for health-related and environmentally friendly attributes. Consumers tend to associate certified products with higher levels of animal welfare, well-being, and environmental sustainability, thus justifying a premium price compared to equivalent uncertified goods. These studies also highlight that dietary habits, lifestyle, and education level significantly influence the likelihood of purchasing certified products. In the past, many studies have used contingent valuation (CV) to determine the WTP for food products [49–52]. In this study, this methodology was not used because the structure of the questionnaire did not attempt to identify, for each respondent, the maximum WTP threshold through dichotomous (yes/no) responses.

Instead, two separate logit models were estimated: the first model examines the socio-economic and behavioural factors influencing consumers' WTP for a price premium of at least 30% for certified products, while the second model focuses on the determinants of consumers' knowledge and awareness of product certification schemes.

According to the literature, the act of purchasing and the resulting negative impact on willingness to pay (WTP) for certified products—or those that may incorporate ethical values, such as those related to animal welfare—are positively influenced by consumer knowledge and educational attainment, which is often a prerequisite for such knowledge. Other variables that are often positively correlated include income (for certified products or, more generally, high-quality products, the starting purchase price is higher; this factor creates a disparity in terms of purchasing power) and age (younger age groups often show greater sensitivity toward certified products, especially from an ethical standpoint) [37].

3.2.1. Determinants of WTP for Certified Products

The results of the logit regression model for WTP for certified products, reported in Table 1, show the relevance of each variable in increasing the probability of a higher declared WTP (starting from a +30% willingness compared to the price of equivalent non-certified products; this threshold is clearly arbitrary, but is considered a determining factor in the purchase).

Table 1. Factors influencing a higher WTP for certified products: Logit Maximum Likelihood Estimation.

Variable	Coef.	Std Error	T-Ratio [Prob]	Marginal Effect
Cost	−0.24302	0.15753	−1.9427 [0.054]	e
Income Class	−0.41661	0.14808	−2.8133 [0.005]	−0.027 [0.031]
Age	0.36148	0.11382	2.4726 [0.003]	0.009 [0.017]
Education	0.28387	0.14239	3.2635 [0.003]	0.003 [0.023]
Knowledge	0.38594	0.15633	4.1340 [0.011]	0.025 [0.019]
Place Purchase	1.9582	0.40089	4.8847 [0.000]	0.008 [0.011]

Factor used for calculating marginal effects = 0.24585. Number of obs n = 706. Maximum value of the log-likelihood function = −140.3430. Akaike Information Criterion = −144.3430. Schwarz Bayesian Criterion = −151.2536. Hannan–Quinn Criterion = −147.1293. Goodness of fit = 0.68803. Pesaran–Timmermann test statistic = 5.7977 [0.000]. Pseudo-R-Squared = 0.13015.

Knowledge of certified products emerges as one of the most influential factors, exerting a positive and statistically significant effect on the probability of expressing a higher WTP. This result suggests that greater awareness of certification schemes and their underlying guarantees increases consumers' readiness to accept a price premium. Respondents under the age of 27 show a strong interest in the quality attributes underlying the certification; in this case—though this warrants further investigation—the younger generation's sensitivity to animal welfare may be a significant factor. Educational attainment is also positively associated with WTP, indicating that more educated consumers are more likely to value certification attributes. Conversely, there is a negative relationship with the income class of those who expressed a higher WTP for certified products, implying that higher declared WTP is not necessarily driven by greater purchasing power. Therefore, these findings seem to highlight that greater awareness of product quality and the intrinsic value of certification make price considerations and actual household income less relevant in the consumer's decision. Additionally, purchasing behaviour plays a crucial role: consumers who frequently purchase food products in supermarkets display a substantially higher probability of being willing to pay a premium for certified products. This result may reflect greater exposure to certified products and labelling information in modern retail environments.

The model can be expressed as:

$$WTP_{\text{certified products}} = \cos t + \beta_1 \text{Income Class} + \beta_2 \text{Young Age} + \beta_3 \text{Education} + \beta_4 \text{Knowledge} + \beta_5 \text{Place Purchase}$$

As expected and shown, knowledge about certified products has the greatest positive impact on the probability of a higher WTP. This result, if confirmed by analyses on larger samples and in different geographical areas, could suggest marketing strategies focused on increasing consumer awareness of the benefits of these products, as well as promoting their presence on the shelves of smaller stores, particularly those located near areas frequented by young people (we defined “young people” as respondents under the age of 27). These considerations are further supported by the inverse relationship between income class and WTP, which emphasizes that greater awareness of product quality and the intrinsic value of certification outweigh price sensitivity and actual consumer income.

3.2.2. Determinants of Knowledge of Certified Products

This section discusses the results of the second logit model, reported in Table 2, that investigates the factors influencing consumers’ knowledge of certification schemes. The conceptual link between the two different logit models, in their methodological simplicity, lies in the inseparable connection between the impact of the variables observed in Model One (which attributes influence consumers’ willingness to pay) and the level of awareness regarding the certification process. Awareness of the value of quality is fundamental and goes hand in hand with the variables observed in Model One; if quality is not “recognized,” the consumer is not willing to pay a “markup.” This analysis thus highlights the need to pursue, within the EU, a parallel initiative to inform and educate consumers about the “hidden” quality attributes behind a certification. We consider this approach strategic for the success of CAP policies in this area. Consistent with expectations, the most relevant factors in increasing the probability of higher consumer knowledge about certified products are education level and lifestyle. Moreover, respondents who attribute greater importance to sustainability-related attributes and who purchase products through specialized retail outlets exhibit higher levels of awareness of certification schemes. By specialized retail outlets, we mean stores that focus their sales on high-quality, certified products; it is often impossible to find “mass-produced” items in these stores. In contrast to the previous findings of the WTP model, income class displays a positive and significant relationship with consumer knowledge. This outcome, still open to interpretation, may reflect greater access to information and knowledge about the meaning of certifications for agri-food products, increased exposure to the Horeca channel, or broader consumption experiences, such as travel, among higher-income consumers.

Table 2. Factors influencing greater knowledge of certifications. Logit Maximum Likelihood Estimation.

Variable	Coef.	Std Error	T-Ratio [Prob]	Marginal Effect
Cost	0.33118	0.13628	2.7856 [0.054]	E
Income Class	0.41661	0.16527	3.8133 [0.004]	0.008 [0.014]
Education Level	0.81764	0.42123	1.9411 [0.053]	0.016 [0.019]
Specialized Retail	0.30514	0.16724	4.1578 [0.005]	0.003 [0.021]
Lifestyle	0.43112	0.14239	4.1146 [0.002]	0.031 [0.014]

Factor for marginal effects calculation = 0.20778. Number of obs n = 706. Maximized log-likelihood function value = −116.6536. Akaike Information Criterion = −122.6536. Schwarz Bayesian Criterion = −133.0196. Hannan–Quinn Criterion = −126.8332. Goodness of fit = 0.77778. Pesaran–Timmermann test statistic = 6.9658 [0.000]. Pseudo-R-squared = 0.20109.

The model can be expressed as:

$$KNOWLEDGE = \cos t + \beta_1 \text{Income Class} + \beta_2 \text{education} + \beta_3 \text{lifestyle} + \beta_4 \text{specialized retail}$$

4. Discussion and Implications

In this trial, consumer knowledge emerged as the most critical determinant of WTP for certified products, confirming the central role of information and awareness in shaping sustainable food consumption [53]. From a managerial perspective, these findings indicate that communication strategies and educational initiatives could strongly contribute to increasing consumer demand for certified products. Investments in awareness campaigns, especially targeting younger consumers located in university areas, may enhance the diffusion of PDO and PGI products among demographic segments that are currently less engaged but potentially receptive to sustainability-oriented values. This result is consistent with the broader sustainability literature, in which the importance of informed consumer choices in supporting environmentally and socially responsible agri-food systems is highlighted [54,55]. Specialized retail stores can also play a key role in increasing both WTP and consumer knowledge, underscoring the relevance of targeted distribution strategies. Moreover, the observed inverse relationship between income and WTP suggests that perceived product value and awareness may outweigh economic considerations, indicating that certified products should be positioned as value-oriented goods accessible to a wide range of consumers, rather than as premium products. Finally, certified products also serve as instruments for promoting sustainable agriculture and rural economic development. However, limited familiarity with local products underscores the need for targeted educational and marketing interventions to enhance consumer trust. Nonetheless, while the findings provide significant insights, they should be interpreted considering some limitations: the use of a non-probabilistic, region-specific sample and self-reported measures of WTP could limit the generalization of the results [39]. One of the most controversial aspects regarding the prospect of consumer preference for the products considered in this study is the (limited) scale of production. As highlighted in the literature [56–58], one of the most important aspects of the relationship between consumers and product certification/quality is linked to brand creation and compliance with a range of legal requirements. These prerequisites can act as an *ex ante* barrier to the development of essentially niche products with small-scale production, which would require incentives for aggregation as well as incentives for economic sustainability. Future research should address these limitations by using larger and more diverse samples and integrating alternative empirical approaches, such as choice experiments or experimental auctions, to mitigate hypothetical bias and further explore consumers' perceptions of local products and certification schemes.

5. Conclusions

This study provides empirical evidence on the determinants of consumer WTP for certified agri-food products in Campania, highlighting the central role of consumer knowledge and awareness. The econometric analysis underscores that the perceived value associated with certifications (PDO, PGI, CDO) outweighs price sensitivity, showing an increased focus on perceived product value. These findings suggest that communication and educational initiatives, especially among younger consumers, together with targeted distribution strategies through specialized retail stores, can enhance the evaluation of certified products and positively influence consumers' WTP. Thus, in this overall scenario, certified products could play a crucial role both as a market strategy and as key tools for supporting sustainable agriculture, rural development, and territorial identity. In this scenario, we would also like to consider the Mercosur agreement, which clearly could have very significant repercussions in terms of economic sustainability, especially for European farmers. The EU–Mercosur agreement is generating considerable debate in the political arena and among stakeholders in the primary sector. It is now clear to everyone that there will be a gradual elimination of tariffs (on 93% of tariff lines) on EU agri-food exports, while the EU

itself will liberalise 82% of agricultural imports from Mercosur countries. The agreement provides for the EU to grant tariff quotas on beef (99,000 tonnes), poultry (180,000 tonnes), pork (25,000 tonnes), sugar (with the elimination of duties on Brazilian sugar), ethanol (for both chemical and other uses), rice (60,000 tonnes), and honey (45,000 tonnes). The agricultural sector is one of the sectors affected by this agreement and is clearly the sector most concerned about the economic externalities of the agreement. The main reason for this is obviously linked to the foreseeable price competition that Mercosur countries would be able to introduce. In this sense, the strategic importance of labelling and product quality certification would be clear, first and foremost from the point of view of economic sustainability in terms of consumers' perception, i.e., certification that guarantees product distinctiveness on the market and induces consumers to be more willing to pay. To mitigate hypothetical bias, future research should extend the analysis to broader geographical contexts, using larger samples and alternative empirical approaches. As expressions of territorial identity, certified and typical agri-food products represent key economic and cultural assets. Promoting informed consumer choices is crucial to support the resilience, competitiveness, and long-term viability of regional agri-food systems, in line with the objectives of the CAP 2023–2027. The results of the econometric analysis provide relevant insights for producers, retailers, and policymakers, and offer a basis for further research on the role of local breeds and certification schemes within evolving agri-food markets.

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Appendix A. Questionnaire Structure and Results

Appendix A.1. COMMON SECTION (725 Respondents)

1. Gender

The gender breakdown of respondents shows a clear predominance of women, at 80%; male respondents account for only around 20% of the total. Two respondents chose not to specify their gender.

2. Age

The age of respondents ranged from 18 to 80 years, with the majority aged between 48 and 57. The 'over 80' category was subsequently excluded as it was not relevant to the study.

	Age Response Percentage
18–27	16%
28–37	14%
38–47	21%
48–57	31%
58–67	15%
68–80	3%

3. Educational Qualifications

Around half of the respondents (44%) had completed upper secondary education, 34% held a Master's degree or equivalent, and 13% held a Bachelor's degree or equivalent.

4. Income bracket

The distribution of income brackets among respondents is almost identical, with a slight prevalence (29%) of the bracket up to € 15,000.

Income Bracket	Percentage of Responses
Up to €15,000	29%
Up to €25,000	27%
Up to €35,000	20%
Up to €50,000	15%
Above €50,000	9%

5. Employment

The respondents come from a variety of roles and professions, and new categories have been created in the questionnaire—currently under analysis—to better categorize the results. It proved necessary to include the categories 'housewife' and 'manual worker'. Most respondents (34%) are office workers.

Occupation	Percentage of Responses
Office worker	34%
Self-employed	21%
Unemployed	16%
Student	11%
Housewife	7%
Other (total)	11%

6. What is your level of knowledge regarding the typical agri-food products of the Campania region?

Respondents rated their knowledge on a scale from 0 (no knowledge) to 5 (extensive knowledge). Most responses (35%) fell between a rating of 3 (basic knowledge) and a rating of 4 (fairly comprehensive but not in-depth knowledge) (32%).

Level of Knowledge	Response Percentage
1 No knowledge	7%
2 Partial knowledge	13%
3 Basic knowledge	35%
4 Fairly comprehensive but not in-depth knowledge	32%
5 Comprehensive and in-depth knowledge	11%

7. What is your level of knowledge regarding the native animal breeds of the Campania region?

Respondents rated their knowledge on a scale from 0 (no knowledge) to 5 (extensive knowledge). Most responses (31%) fell between a rating of 3 (basic knowledge) and a rating of 2 (partial knowledge) (31%).

Level of Knowledge	Percentage of Responses
1 no knowledge	24%
2 partial knowledge	31%
3 basic knowledge	31%
4 comprehensive but not in-depth knowledge	10%
5 comprehensive and in-depth knowledge	4%

8. What is your level of knowledge regarding product origin certifications such as PDO, PGI, TSG, PAT and DeCo?

Respondents rated their level of knowledge on a scale from 0 (no knowledge) to 5 (extensive knowledge). Most responses (31%) fell between level 3 (essential knowledge) and level 2 (partial knowledge) (29%).

Level of Knowledge	Percentage of Responses
1 No knowledge	17%
2 Partial knowledge	29%
3 Basic knowledge	31%
4 Fairly comprehensive but not in-depth knowledge	17%
5 Comprehensive and in-depth knowledge	6%

9. How important do you consider the environmental sustainability of agri-food production to be?

Respondents rated this on a scale from 0 (not at all important) to 5 (very important). Many responses (66%) were at level 5, very important. It is worth noting that only a very small percentage of respondents gave a rating of 1 or 2 for this question.

Level of Importance	Percentage of Responses
1 not at all important	1%
2 not very important	0.5%
3 neutral	7%
4 important	25%
5 very important	66%

10. How important do you consider the conservation of native breeds in a region to be?

Respondents rated their opinion on a scale from 0 (not at all important) to 5 (very important). Many responses (64%) were for value 5, very important. It should be noted that only a very small percentage of respondents assigned a value of 1 or 2 to this response.

Degree of Importance	Percentage of Responses
1 not at all important	0.5%
2 not very important	1.5%
3 neutral	10%
4 quite important	23%
5 very important	64%

Appendix A.2. PART 1 (For Those Shopping in Person—706 Respondents)

12. How many people are in your household?

Respondents indicated that their household consisted of between 1 and 4 people, or more. Most households consisted of 4 or more people (47%). The remaining figures were 25% for three members, 20% for two members, and 6% stated they lived alone.

13. What is the approximate amount spent on food shopping per week?

Respondents indicated spending levels ranging from €50/week to over €150/week. Most respondents (39%) stated that the amount spent is up to €100 per week. The remaining figures stand at 30% for up to €150 per week, 18% for up to €50 per week, and 14% stated they spend more than €150 per week.

14. Where do you prefer to buy the following food products? [Meat]

Respondents indicated their preferred place of purchase for meat, choosing between specialist shops and various types of supermarkets/hypermarkets. Respondents showed a clear preference (65%) for specialist shops (such as organic shops, butchers, etc.).

Type of Shopping Venue	Percentage of Responses
Discount stores	2%
Large retail chains	2%
Convenience stores	10%
Specialist shops (such as organic shops, butchers, etc.)	65%
Supermarkets/hypermarkets	21%

15. Where do you prefer to buy the following food products? [Meat products]

Respondents indicated their preferred place of purchase for meat products, choosing between specialist shops and various types of supermarkets/hypermarkets. Respondents expressed a preference (43%) for specialist shops (such as organic shops, butchers, etc.).

Type of Shopping Venue	Percentage of Responses
Discount stores	3%
Large retail chains	2%
Convenience stores	19%
Specialist shops (such as organic shops, butchers, etc.)	43%
Supermarkets/hypermarkets	33%

16. Where do you prefer to buy the following food products? [Dairy products and cheese]

Respondents indicated their preferred shopping location for dairy products and cheese, choosing between specialist shops and various types of supermarkets/hypermarkets. Respondents expressed a preference (46%) for specialist shops (such as organic shops, butchers, etc.).

Type of Shopping Location	Percentage of Responses
Discount stores	2%
Large-scale retail chains	3%
Convenience stores	22%
Specialist shops (such as organic shops, butchers, etc.)	46%
Supermarkets/hypermarkets	27%

17. What are the reasons for choosing the retail outlet you use for MEAT products?

Respondents gave a combination of reasons for preferring the previously chosen shopping location for meat products, selecting from specialist shops and various categories of supermarkets/hypermarkets. It was possible to identify a selection of preference combinations and a selection of the most important reasons for their choice. The category relating to home delivery was added during the analysis, given the relevance of the data.

The most common reason for both selections was ‘quality of fresh produce’, with a preference of 37%. The most representative values are shown in the table.

Most Appreciated Characteristics	Percentage of Responses
Quality of fresh produce	37%
It is my trusted shop	27%
Wide range of products	14%
Availability of local products	12%
Home delivery	0.4%
Availability of branded products	0%

Two respondents stated that they do not buy meat, and one respondent stated that they follow a vegetarian diet. One respondent stated that they buy meat exclusively from farms.

18. What are the reasons for choosing the shop you use for MEAT PRODUCTS?

Respondents cited a combination of reasons for preferring the previously chosen shopping location for meat products, ranging from specialist shops to various types of supermarkets and hypermarkets. It was possible to identify a selection of preference combinations and a selection of the most important reasons for their choice. The category relating to home delivery was added during the analysis, given the relevance of the data.

The most common reason was ‘quality of fresh products’, with a preference rate of 34%. The most representative values are shown in the table.

Most Appreciated Characteristics	Percentage of Responses
Quality of fresh products	34%
It is my trusted shop	24%
Availability of local products	17%
Availability of offers, discounts and promotions	14%
Wide range of products	11%
Home delivery	0.4%
Availability of branded products	0%

Three respondents stated that they do not buy meat products, and one respondent stated that they follow a vegetarian diet.

19. What are the reasons for choosing the shop you use for DAIRY PRODUCTS AND CHEESE?

Respondents cited a combination of reasons for preferring the previously chosen shopping location for products such as dairy and cheese, ranging from specialist shops to various types of supermarkets and hypermarkets. It was possible to identify a selection of preference combinations and a selection of the most important reasons for their choice. The category relating to home delivery was added during the analysis, given the relevance of the data.

The most prevalent reason was ‘quality of fresh products’, with a preference rating of 40%. The most representative values are shown in the table.

Most Appreciated Characteristics	Percentage of Responses
Quality of fresh products	40%
Wide range of products	19%
It is my trusted shop	19%
Availability of local products	12%
Availability of offers, discounts and promotions	10%
Home delivery	0.4%
Availability of branded products	0%

20. How often do you read the label or check the origin of the products you buy?

Respondents indicated the frequency with which they gather this information on a scale from 1 (Never) to 4 (Always). Most respondents chose 3 (42%). The other figures were 30% for Always, 23% for Sometimes, and 5% for Never.

21. How often do you buy PDO, PGI, TSG, PAT or DeCo products?

Respondents indicated the frequency of their purchases of branded products on a scale ranging from 'Never' to 'Daily'. The most common response was 'A few times a month' (41%).

Preference	Percentage of Responses
Daily	5%
Weekly	35%
A few times a month	41%
A few times a year	17%
Never	2%

22. What is your perception of the price of a PDO, PGI, TSG, PAT or DeCo product compared to that of a generic product?

Respondents expressed their perception of the price of branded products relative to the perceived cost of generic products on a scale ranging from "Significantly lower" to "Significantly higher". Most respondents answered "Moderately higher" (69%).

Preference	Percentage of Responses
Significantly lower	2%
Moderately similar	14%
Moderately higher	69%
Higher	15%

23. Do you consider that, for a PDO, PGI, TSG, PAT or DeCo product, in relation to production costs, quality, and the promotion of tradition and the local area, the price is:

Respondents answered by expressing their perception of the price of branded products compared to their perception of the cost these products should have based on the importance attributed to them by the consumer. The response scale ranged from "Too low" to "Too high". The majority of respondents answered "In line with actual value" (75%), whilst others answered "Too high" (23%) and "Too low" (2%).

24. How much are you willing to pay extra for a PDO, PGI, TSG, PAT or DeCo product compared to a product without certification? [Meat]

Respondents expressed a willingness to pay more for a branded product to ensure its characteristics, choosing from a scale ranging from "Nothing" to "50% more".

The most common response was "10% more" (46%), whilst others would be willing to pay "30% more" (39%), "nothing more" (9%) and "50% more" (6%).

25. How much are you willing to pay extra for a PDO, PGI, TSG, PAT or DeCo product compared to a product without certification? [Meat products]

Respondents indicated their willingness to pay extra for a product to ensure its characteristics, choosing from a scale ranging from "Nothing" to "50% more".

The most common response was "10% more" (53%), whilst others would be willing to pay "30% more" (30%), "Nothing more" (14%) and "50% more" (3%).

26. How much are you willing to pay extra for a PDO, PGI, TSG, PAT or DeCo product compared to a product without certification? [Dairy products and cheeses]

Respondents indicated their willingness to pay extra for a product to ensure its characteristics, choosing from a scale ranging from “Nothing” to “50% more”.

The most common response was “10% more” (48%), while other consumers would be willing to pay “30% more” (36%), “Nothing more” (9%) and “50% more” (7%).

27. Would you buy a PDO, PGI, TSG, PAT or DeCo product, which you had never tasted before, based solely on the certification of origin?

Respondents indicated their willingness to rely solely on the label as a guarantee of quality, choosing from a probability scale ranging from 1 (No probability) to 5 (Highly likely). The majority of responses (35%) fell between the value 5, Highly likely, and the value 3, Likely (35%).

Probability	Percentage of Responses
Highly likely	35%
Very likely	20%
Likely	35%
Unlikely	7%
Highly Unlikely	3%

28. Would you always prefer to buy a PDO, PGI, TSG, PAT or DeCo product over the same product without certification?

Respondents expressed their purchasing preference, disregarding economic factors, on a preference scale from 1 (Unlikely) to 5 (Highly likely). The most common response (31%) was for value 5, Highly likely. The other preferences expressed were 3, Likely, (28%) and for value 4, Very likely, (24%), 2, Unlikely, (11%) and 1, Not at all likely, (6%).

29. Which PDO, PGI, TSG, PAT or DeCo products do you buy most frequently?

Respondents indicated a combination of products they prefer to buy from specialist shops and various types of supermarkets/hypermarkets.

The most common response was ‘dairy products’, with a preference of 23%.

Type of Branded Product	Percentage of Responses
Dairy products	23%
Oil	22%
Meat	14%
Wine	14%
Fruit and/or vegetables	12%
Meat products	11%
No response	4%

Appendix A.3. PART 2 (For Respondents Who Do Not Shop in Person—19 Respondents)

12. How often do you read the label or check the origin of the products you consume?

Respondents indicated the frequency with which they gather this information on a scale from 1 (Never) to 4 (Always). The most common response was 3, Often (50%). The

other responses were 33% for ‘Sometimes’ and 17% for ‘Never’. No respondent stated that they always check the label.

13. How often do you consume PDO, PGI, TSG, PAT or DeCo products?

Respondents indicated the frequency of consumption of these branded products on a scale ranging from ‘Never’ to ‘Daily’. Respondents answered in equal measure “Weekly” and “A few times a month” (35%). No respondent answered “Daily” or “Never”.

Preference	Response Percentage
Daily	0%
Weekly	35%
A few times a month	35%
A few times a year	30%
Never	0%

14. When do you consume these products?

Respondents answered by indicating how they consume branded products at home, on a daily basis, or on special occasions, such as at events. The responses show a clear preference for home consumption (90%) over occasional consumption (10%).

15. What is your perception of the price of a PDO, PGI, TSG, PAT or DeCo product compared to that of a generic product?

Respondents answered by expressing their perception of the price of branded products compared to the cost of generic products, on a scale from “Significantly lower” to “Significantly higher”. The majority of respondents answered “Moderately higher” (65%). No respondent answered “Significantly lower”.

Preference	Percentage of Responses
Significantly lower	0%
About the same	23%
Slightly higher	65%
Significantly higher	12%

16. Do you consider that, for a PDO, PGI, TSG, PAT or DeCo product, in relation to production costs, quality, and the promotion of tradition and the local area, the price is:

Respondents expressed their perception of the price of branded products compared to the perceived cost these should have based on the importance attributed to them by the consumer. The response scale ranges from “Too low” to “Too expensive”. The majority of respondents answered “In line with actual value” (88%), whilst others answered “Too expensive” (6%) and “Too low” (6%).

17. How much are you willing to pay extra for a PDO, PGI, TSG, PAT or DeCo product compared to a product without certification? [Meat]

Respondents expressed their willingness to pay extra for a product to ensure its characteristics, choosing from a scale ranging from “Nothing” to “50% more”.

The most common response was “30% more” (61%), whilst others would be willing to pay “10% more” (33%) or “Nothing more” (6%). No respondent answered “50% more”.

18. How much are you willing to pay extra for a PDO, PGI, TSG, PAT or DeCo product compared to a product without certification? [Meat products]

Respondents indicated their willingness to pay extra for a product to ensure its characteristics, choosing from a scale ranging from “Nothing” to “50% more”.

The most common response was “10% more” (50%), whilst other consumers would be willing to pay “30% more” (39%) or “Nothing more” (11%). No respondent answered “100% more”.

19. How much are you willing to pay extra for a PDO, PGI, TSG, PAT or DeCo product compared to a product without certification? [Dairy products and cheeses]

Respondents indicated their willingness to pay extra for a product to ensure its characteristics, choosing from a scale ranging from “Nothing” to “100% more”.

The most common response was “30% more” (61%), whilst other consumers would be willing to pay “10% more” (33%) or “Nothing more” (6%). No respondent answered “50% more”.

20. Would you always prefer to consume a PDO, PGI, TSG, PAT or DeCo product rather than the same type of product but without certification?

Respondents indicated their purchasing preference, disregarding cost, on a scale from 1 (Unlikely) to 5 (Highly likely). The majority of responses (55%) were for value 4, Very likely.

Probability	Percentage of Responses
Highly likely	24%
Very likely	55%
Likely	31%
Unlikely	3%
Not at all likely	2%

21. Which PDO, PGI, TSG, PAT or DeCo products do you consume most frequently?

Respondents indicated a combination of products they prefer to buy from specialist shops and various types of supermarkets/hypermarkets.

The most common responses were ‘Oil’ (25%) and ‘Dairy products’ (23%). The most representative figures are shown in the table.

Type of Branded Product	Percentage of Responses
Dairy products	23%
Oil	25%
Meat	14%
Wine	17%
Fruit and/or vegetables	2%
Meat products	19%

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