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# Consumer Information and Product Quality Regulation

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**Abstract.** Product differentiation, market segmentation and the relevance of credence attributes for food require complex information. Lack of information, or its unreliability may result in negative welfare effects. Given that market failures can arise along food chains the provision of complete information requires public intervention.

This paper aims to discuss the weaknesses in the present EU legislation and markets, with reference to information conveyed to consumers. It especially focuses on the case of PDOs. Particularly the paper discusses the following points:

- a) the complex nature of the information on the quality aspects labelled and/or guaranteed. Providing full and reliable information is not a trivial task. Consumer behaviour is deeply affected by information, and a consumer's capability to use it is bounded.
- b) the high number of different quality regulations associated with a public guarantee, both private or collective.
- c) the overlapping of quality guarantees provided by different stakeholders along the food chain, that requires coordination policies in order to avoid a reduction of the reliability of the information provided.

The difficulties in the design of a complete and effective regulation on product quality certifications and guarantees are discussed by taking into consideration two different issues: consumer's capability to use quality information effectively, and the interaction between public intervention and firms' strategies. Empirical evidence is also given on consumers' discernment and behaviour.

**Keywords:** Designation of Origin, Public Regulation, Consumer's behaviour.

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## 1. Introduction

Quality attributes relevant to consumers are increasing in number. Furthermore, among these, "credence attributes" [1], both linked to the production process or to the product itself, are increasingly important in affluent countries. This leads to a growing differentiation of supply and increasing segmentation of food markets. Consequently, the complexity in recognising and appreciating attributes of food products has given rise to a growing demand for information and guarantees. If this demand on the part of the consumer remains unsatisfied, there will inevitably be disorientation and confusion which will reduce consumer well being and can lead to market failure [2].

Therefore, public intervention is justified in the case of credence characteristics, for a number of reasons. Among these reasons are: 1) information as a public good; 2) the importance of health concerns and; 3) the fragmented nature of the supply of agricultural products, which does not allow the majority of producers to intervene effectively, given the frequent need for economies of scale. These are required not only in setting up production processes to supply quality foods, but also in providing information on the quality attributes of the foods produced.

The paper discusses some of the difficulties consumers find in understanding quality signals in the market, with special attention paid to public certifications as opposed to brands and other quality signals.

It is important here to distinguish between these two types of *quality signals*. On the one hand, there are certification systems, which are based on a legal regulation. This could be derived from national laws, super-national ones, or from other kinds of bodies with the power to impose laws, which may, or may not, imply compulsory behaviours. On the other hand, there are the private brands of producers or distributors; these are regulated autonomously within a general norm, which defines the extent and means of application. It should be pointed out, however, that the two types of quality signals might intersect as in the case of the denominations of origin, which will be dealt with at a later stage. Indeed, it is a well known fact that, though these supply a certification regarding certain quality features of the product- being regulated under Reg.Ue 2081/92- they play a role in the market close to that of brands (which is what they are in fact in a collective setting). This is because they identify a product by distinguishing among its substitutes, similarly in the way in which individual brands operate.

The paper is organized as follows. Section 2 focuses on consumption. The aim is to highlight the elements that play a role in determining the criteria used by consumers in choosing attributes and products. This is a necessary step to understand the nature of the interaction between consumers and quality signals, and thus to understand the problems that may arise in this process. The third section describes and analyses the weaknesses of public quality certifications, from the point of view of the effectiveness of information. Section 4 contains hints on competition and cooperation relations between brands, on the one hand, and certifications and different forms of public regulations, on the other. In section 5, results of a survey on a sample of 400 Italian consumers are presented, showing the level of consumer's knowledge on certifications and on quality attributes, and the main elements affecting this knowledge. Concluding remarks are reported in the last section.

## 2. Information and Purchasing Decisions

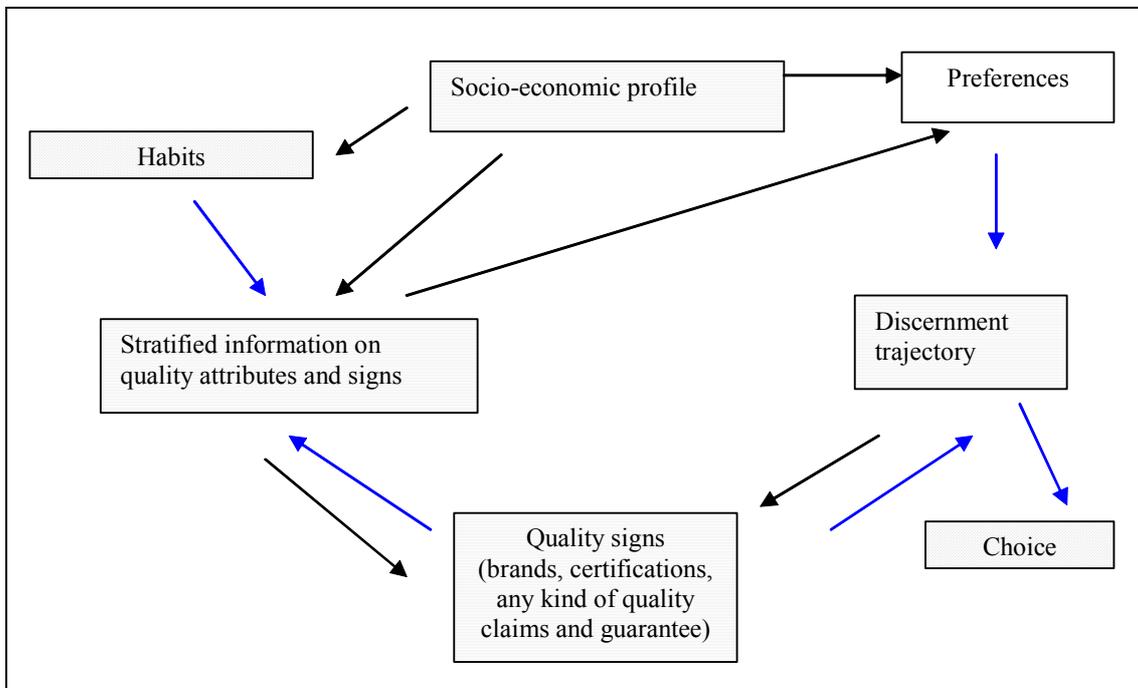
In this section we aim to present the main features of the path that lead consumers to define the criteria to be used to choose attributes/products in the market, here referred to as the *discernment trajectory*. The frame depicted is a very general one, and it is consistent with many of the contributions that in the last decades have modified consumer analysis; it also takes into account some of the contributions of the marketing approach [3, 4]. The scheme has the purpose to simplify the understanding of consumers' difficulties in using quality information and the role that quality signals play in this respect. The knowledge of this interaction is, obviously, necessary to design better market communication strategies both from the supply side and from the policy makers' side [5, 4].

The first two elements we consider are: 1) the socio-economic profile of the consumer and; 2) the information available to him to understand quality signals, both the scientific general knowledge and the more specific one (we call it stratified information).

Consumer preferences here depend on socio-economic profile and information. The *discernment trajectory* (i.e. the criteria adopted to choose products) is the result of the interaction of all these elements with consumption habits and quality signals. In turn, this affects quality signals and stratified information. So it can be deemed that the interactions between all these elements are important in market evolution over time.

The central idea here is that the process is complex for at least two reasons: first, there are many elements playing a role in the formation of the discernment trajectory; second, there are many interactions among these elements. Therefore the outcome changes over time.

As previously mentioned, some of the most widely known contributions of economic literature on consumption fit well in our frame. Among these we want to recall the ones that are of most relevance here. First of all, it has been known that the constraint system does influence preferences, so that consumer's judgment of the same attribute/product/bundle of products may vary in a different context [6, 7]. Close to this is the notion introduced by the so called *regret theory* that affirms that in a choice problem, it is not only what we choose which is relevant but also what we refuse [8]. Furthermore, of importance in this context is the notion of habit (i.e. the influence that past behaviour can have on present behaviour [3]). This introduces some inertia in the process. Inertia, however, is also due to the relevance of *credence* in consumption behaviour [3]. Appraisal is relevant to the changing of preferences and as these are not complete, the outcome is, at least to some extent, subject to casualty. Above all, to us it is important to remind the reader of the more general hypothesis of bounded rationality by Simon<sup>[9]</sup> according to which it can be affirmed that the capacity to use available information on quality attributes is limited.



**Figure 1.** Determinants of consumers' choice

Figure 1 indicates that the above mentioned theoretical insights do help to focus on the interactions between the different elements of the process. In particular, they help to focus on the influence of stratified information and of quality signals on the formation of the discernment trajectories.

In this way, the specific phases of the process can be identified, where different types of public intervention play a role in improving the information which is the basis on which agents make their choices. Intervention can, in fact, regulate the guarantees currently available in the market. In the long term, there is also a role for public action aimed at providing medical information which influences the quality and quantity of "stratified information". Moreover, policies aimed

at improving co-ordination in the production chain, may also increase incentives to generate consistent information.

### 3. Quality Information and Certification Policies

If the role of the discernment trajectory can be interpreted as that of a compass, products-brands, certifications and every kind of quality signals can be interpreted as the main compass points; consumers need to use both in order to find their way round the market. In this section we want to discuss the conditions that make quality certifications not fully effective. In particular, the aim is to concentrate on how the public sector regulates the flow of information targeted at consumers. The identifying signals produced by private production and retailing companies, on the other hand, will be considered only in the discussion on their interactions with public signals, and on how the strategies operated by private companies in response to public regulation initiatives, can alter the effectiveness of the latter. This will be the task of the subsequent section.

A first difficulty is the vast and increasing number of certifications and norms, which are inevitably accompanied by logos, acronyms, and denominations. The effect of all this is that each message becomes diluted in the vast flow of information already circulating in the market. In Gregori [10] there is a very effective quotation, taken from an American daily paper in the 1920s: “ the newspapers are so full of advertisements that nobody reads anymore.” In this sense, there is nothing exceptional about the distinguishing signals of products that base their guarantee on government norms, as there are so many of them, and this number is constantly on the increase. There is no space here to provide an exhaustive list but the principal and most used product signals can be mentioned: PDO, PGI, GTS, for wine VQPRD (including further specifications different from country to country), Traditional Products (for exemption from HACCP), Organic Products, Low environmental impact products (Reg. EU 1257/99 ex 2078/92), and many others.

Furthermore, in many cases there are subtle differences between different types of guarantees, and it is not easy to assess which are the distinguishing elements. A good example of this is that of goods produced by organic farming and those produced by farming which practice crop rotation, or where there is merely a reduction in the use of chemical inputs. Another good example is the case of PDO and PGI products. The law recognises the right to attach a PDO to products whose characteristics are “ essentially or exclusively” due to their place of origin. The term PGI, on the other hand, can be applied to products for which “a characteristic or reputation can be attributed to the territory”. As regards this aspect, it should be underlined that the distinction proposed by the Regulation which underpins both PDO and PGI, apart from being subtle and not easily comprehensible, appears somehow inherently contradictory. In fact, the basis for the existence of Reg. 2081/91 is the link between the quality of a product and its place of origin: therefore it is difficult to understand how, within this context, there is any space for PGI products, whose connection with the territory is tenuous.

But that is not all. The logical basis underpinning the system of guarantee offered by Reg. 2081/92, has already been mentioned, is the identification between the name of the product and the geographical area it comes from. This logical basis is translated into operational practice in the sense that, it is at the basis for the drawing up of the boundaries of the area covered by the guarantee. The restriction imposed on competitors deriving from this is justified on the grounds that the nature of the product from one specific area is different from products from outside that area.

It can be observed that while it incorporates pre-existing pieces of national legislation (not all of which were coherent with each other), Reg.2081/92 gives the PDO seal to a number of unlikely products. In some cases, production takes place, in part or entirely, in areas not even contiguous to that covered by the legislation. In other cases, the need for certain raw materials necessitate products to come from well outside the protected area. Situations such as these are understandable from the point of view of the need to take account of preexisting legislations that make it necessary to have new measures that are politically viable, given that some of the products concerned have high economic importance. One cannot, however, ignore the effect that these exceptions have on the reputation of the entire system of denominations of origin and, thus, on the credibility and efficiency of the policy instrument. Some examples drawn from Italy can help give an idea of the size of this problem. "Parma ham" is produced from pigs from eleven Italian regions, despite the fact that it has the PDO label and not the PGI label. This is yet another example of the subtleties involved in distinguishing between the two. Roman Pecorino cheese is another PDO product, yet roughly 95% comes from the Sardinia Region. This is completely at odds with the name (denomination) being protected, but also in conflict with the pivotal idea sanctioned by the regulation, according to which the name tells the consumer where the item is produced [11]. Finally, leaving the consequence of this in each specific market aside, one should not underestimate the wider consequences in terms of their impact on consumer understanding and confidence in the informative content of the PDO's system of guarantee<sup>1</sup>.

A further element that contributes to making the meaning of guarantees and certifications even harder to understand is the number of the features that are being guaranteed, and their complexity. Although aimed at improving the quality of the product guaranteed, this is not the way it appears to the consumers. For example, the regulation for animal products from organic farming adds to the guarantees on the healthiness of the food, the respect for the environment in its production, and to a number of norms on the welfare of the animals themselves. The effects of the latter on the healthiness of the final product are somewhat indirect and still uncertain. While this is an important ethical problem, many of the potential consumers looking for food produced without the use of chemical substances may not see it as such.

With regard to the Italian implementation of Reg. 2081/92, a difficulty arises in that quite often only few producers use Denomination of origin certifications within entitled areas<sup>[13]</sup>. We will not discuss the reasons for such a situation here. The main interest here is to highlight the consequences, if any, in terms of the performance of the quality guarantee. The first effect is positive in that there is an increased reputation of the product and of the area. But there is also a possible second effect: if only a low quota of production is certified there is scarce interest in control and prevention. Free riding behaviour is more common; producers will often use the denomination even if the product is not actually certified: the difference between a product coming from an area and a product certified of that area will fade. The risk is so real that the Italian law for DOC wines establishes that under a fixed threshold of utilisation a denomination is revoked. What's more, there is a debate undergoing on whether the present threshold needs to be augmented [14].

It is obvious that any quality guarantee can be said to work effectively only if it is known, understood and considered reliable by consumers. The points raised above, therefore, are of crucial importance. The bounded rationality of consumer behaviour implies that the consumer is unable to grasp and process an undefined amount of complex information. The conclusion is that a surfeit of information itself can weaken the effectiveness of the regulation.

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<sup>1</sup> For welfare consequences of a not fully credible quality regulation see [12]

#### 4. Quality Signs Along the Food Chain: Competition and Cooperation

This section examines some of the interactions between quality signals produced by public regulation and by the market. To some extent, the role of producers and retailers is distinguished as it is believed that the former mainly compete with certifications, while synergies may emerge with the second.

Generally speaking, the presence in the market of brands of producers and distributors represents a serious threat to the effectiveness of public certification, at least potentially. Firstly, distinctive signals of a private nature benefit from considerable economies of scale, both in defining the content of the message and in its diffusion. Viceversa, the majority of companies that utilise certifications are small scale firms, and therefore they have few resources for investments in communication<sup>2</sup> [15]. One more advantage for private brands is that they convey very simple messages. On the other hand, the quality claims associated with brands tend to be more vague when compared to the certification ones.

These two features are the consequence of the lack of legal obligation, as well as of the need for simplicity arising from the attempt to make the message more comprehensible and memorable. Some examples are given from the Italian case hereafter. One spot by a firm selling chickens says: "We guarantee that our chickens are raised on animal feedings, minerals and vitamins according to our own Decalogue." The point is that the message, in some way, implies that, were it also possible to raise chickens without minerals or vitamins (which it clearly is not), the producers is certainly not doing so.

Recently one of the main retail chains in the Italian market launched the spot that follows: "Fresh food for a better and healthy life. Products from the food chain". The message indirectly refers to the idea of traceability, though, actually, the statement is literally null: food chain in itself is not a guarantee for anything, it does not guarantee freshness nor safety. The claim evokes the general idea that the seller may control every step of the process from the raw material to the final consumer. The purpose is to meet consumers' concern about food safety following Eu emergencies of recent years. Full implementation of traceability and other measures undertaken after those emergencies is taking time.

The relationship between brands and certifications or other quality regulations may, of course, also be different. For example, organic food laws (Reg. EU 2082/92) have been an incentive for producers and retailers to reduce the use of chemicals, and to make claims on this to compete in the same market segment. A more complex and controversial effect arose from the new EU norm on chocolate ingredients [16]. The recent less restrictive norm is producing a segmentation of the market with a decreasing average quality in the lower segment, and increasing average quality in the higher one.

In terms of the interactions between the producers' brands and certifications, let's consider the case of large scale companies entering the market of PDOs. This may easily occur if the company takes over a firm in the area in which production is certified. Usually, there are two main scopes for this: increasing market shares, and increasing producers' reputation.

Once in the market, the large scale company competes with local firms. First of all, the certification may become less visible in case the brand is widely known and its reputation well established in the market. In addition, the large scale company usually tends to drive price downward because its unit costs are lower due to scale and scope economies; it tends to

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<sup>2</sup> For PDO, for example, Reg. Eu 2081/92 explicitly refers to small, traditional producers with no market power and need competitive tools in the market for quality food where there is a lack of information on quality.

standardize the product to meet a larger segment of demand, and to meet the need of large scale retailing firms. To these ends, the large scale company may also try to influence the rules defining product and process characteristics in the PDO. The outcome is this paradoxical change in the nature of product and the change of the actors playing in the market: the disappearance of the local, traditional and artisan content of the product<sup>3</sup>.

Major retailing chains have shown, in recent years, a growing interest in placing genuine PDO products in their display window distinct from their standard industrial fare, which nevertheless remains the hard core of their product range [18]. This strategy, that is a response to the need for an image more in line with consumer trends, leaves room for some cooperation with local producers of certified products.

## 5. Empirical Evidence

This section illustrates some of the results of a survey carried out in spring 2003 over 400 consumers of the Lazio Region. The consumers were asked to answer a number of questions about different kinds of food attributes and certifications, and particularly on the quality attributes of olive oil, and on shopping habits. For each consumer, information on education level, age and working position were also collected. The analysis is made up of two parts. The first is a qualitative description of the results, while the second is a Cluster Analysis performed on 31 dummy variables that summarises the most important answers given by the consumers. A full discussion of (further) results are reported in Carbone and Sorrentino [19].

The first evidence of the analysis is the scarce knowledge of quality signals, even of the most common. Even if a large proportion of consumers (84%) can tell what PDO stands for or even if they claim to know what organic products are (63.3%), then only few are able to tell what are the distinctive attributes of each (36.3%). The PGI and other certifications are almost completely unknown to the vast majority of those interviewed. Similar results are reported in VIII Rapporto Nomisma [20] on agriculture: less than 35% of those interviewed connect the quality of a product to its geographical origin; moreover, 80% did not know the meaning of the acronym PGI, and 72% did not know PDO.

Only a low percentage of the consumers interviewed were able to give an answer when asked to identify the main product types defined by law (6.5%) (in the case of olive oil, these refer to extra virgin, virgin). Also specifications currently used by producers, such as *not filtered*, *cool obtained*, and others, are properly known by a minority of consumers (14.3%).

It is also interesting to note that consumers place high importance to the place where olive oil is produced (53.5%), and at the same time place trust certifications. Nevertheless, as they do not associate PDO with the place of production, a high share of consumers (47.4%) buy olive oil directly from the producer. Quality signals and certifications in this case are ignored and/or not fully trusted; and the short chain is preferred<sup>4</sup>.

The Cluster Analysis was helpful in discovering relations among *socio-economic profiles*, *stratified information* on quality attributes and signals, and the discernment trajectory. More specifically, higher socio-economic profiles and a better level of information are generally associated with a wider capacity to use it autonomously to make buying decisions. In this case, consumer choice is based on product attributes and on the discernment of quality signals. Whereas, the lack of information, even when associated with a high socio-economic profile, leads to a more passive

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<sup>3</sup> Empirical evidence for this with reference to some case studies can be found in [13], [15], [17].

<sup>4</sup> A previous study showed that in Lazio Region less than 10% of olive oil entitled to use PDO actually used it [13].

attitude: consumers rely mostly on brand reputation and habits, whereby past behaviours are simply repeated: the same product is bought just because it had been bought on a previous occasion. On the other hand, low socio-economic profile and scarce information are features of consumers who pay attention essentially to price. In this case, information seems not to be relevant because of the budget constraint that cuts off consumers from higher market segments.

## 6. Concluding Remarks

The paper discusses the weaknesses of public regulation on food quality, focusing on the clarity and reliability of information conveyed to consumers, with special reference to EU legislation. A need for more communication and simplification of the whole system emerges both from: 1) the discussion of the main features of regulation (i) a large number of different certifications, many of which tend to overlap; ii) the large number of exemptions and special regimes); 2) the presence of quality signals introduced by producers and retailers, that compete in the market for consumers' attention, and that are more visible than public regulation; 3) the discussion of empirical evidence from the consumer's side. This has shown the difficulties that consumers encounter in fully understanding quality categories, certifications. Consequently, even if they generally place trust in certifications, consumers seem not to be able to properly understand them, therefore they tend to under-utilise the information content of certification as a choice criteria, while looking for alternative forms of guarantee.

In the case of olive oil in Central Italy, a high share of the market is represented by "short chains", i.e. by consumers buying directly from farmers to be sure of the place of production and of product quality. The location of production is considered an important feature by many consumers, but they are not aware of the fact that the PDO certification guarantees this. In the case of the so called short chains, producers may obtain a higher share of value added. Drawbacks of such an organisation are: a) from the producers point of view, the limited size of the market which is mostly bounded to the local scale; b) social costs associated with partial implementation of regulations. Returning to the olive oil example, in the Lazio Region, where less than 10% of entitled product is certified by the two existing PDOs, there are six more areas waiting to obtain new PDOs [13].

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