



Information asymmetry in the agri-food sector and territorial marks: The case of the olive oil Val di Mazara PDO

Filippo Sgroi^{a,*}, Fabrizio Piraino^b, Giorgio Garifo^b, Federico Modica^a, Marzia Ingrassia^a

^a Department of Agricultural, Food and Forestry Sciences, University of Palermo, Palermo, 90128, Italy

^b Department of Economics, Business and Statistics, University of Palermo, Palermo, 90128, Italy

ABSTRACT

This article analyzes the importance of information in the agri-food market, since the presence of information asymmetry favors market failure. This analysis examines the information asymmetry in the agri-food market and its geographical brands, PDO and PGI, focusing on the Sicilian oil sector of the olive oil Val di Mazara PDO. A quality product has specific organoleptic characteristics that give it flavors, fragrances and various nutritional properties. To protect this, there are the brands that are essential to avoid that between sellers and consumers there is information asymmetry and consequently the failure of the market. In fact, through this analysis are examined the evolution of the reference legislation, consisting of the Paris Convention for the Protection of Industrial Property and Directive (EU) 2015/2436, which represent the result of long negotiations undertaken by the institutions of the European Union with the aim of modernizing the European system of trademark protection. Proceeding with the analysis examined the case of the olive oil Val di Mazara PDO. The legislator has created the PDO territorial brand which, however, is not used by farm. This situation determines a lack of valorization of the product and an impoverishment of the territory. The impact is also at the level of gastronomy, the olive oil of dubious quality are preferred over certified oil. In the present study the Val di Mazara PDO was analyzed. In particular, through the Economic Theory we have verified that the information asymmetry hinders the diffusion of the Val di Mazara PDO and determines the market failure and the lack of valorization of olive oil.

1. Introduction

Olive oil is a food that has always accompanied human nutrition. Its beneficial properties on the human body are undisputed. In many areas of olive cultivation for the production of oil, very often there is a lack of value of the product in terms of price. In many cases the selling prices of the product are lower than the production costs. This situation is common to many agri-food sectors. Indeed, the agri-food sector can be mainly influenced by two factors, environmental factors, such as climatic conditions or soil composition, and human factors such as the typical processing of a specific area or the presence of manufacturing traditions, all these factors contribute to influence consumers' purchasing choices. Information plays a fundamental role in our lives, becoming a precious resource and an essential source of decision-making power. But only in a utopian world is it possible to speak of complete information, i.e. information available to all and analyzable without errors, in reality, however, the situation is quite different, the actors are equipped with limited rationality and act opportunistically, thus creating a situation of information asymmetry. It is possible to assume that *«Currently, the market fails as it is unable to guarantee an efficient allocation of resources and therefore an ineffective remuneration of the*

production factors used occurs. Among the reasons for the market failure is the lack of information among economic actors involved in food transactions. In Economic Theory this situation is indicated as a market failure as the lack of perfect information determines the situation in which the consumer is not able to perceive all the information that contributes to his well-being» [1]. The greatest contribution to economic theory has been that of George Arthur Akerlof, whose analysis highlights how information asymmetries have implications not only in terms of transaction costs but also in terms of trade efficiency. The author in fact, with his article "The market for lemons" puts in relation quality and uncertainty by stating the existence of many markets where buyers tend to use market statistics in order to evaluate the quality of a potential purchase, considering moreover, how expensive and in some cases impossible it is to acquire information. The author then breaks the established correlation between price and quality, showing that, in the presence of asymmetric information, the price is not able to reflect the true quality of the product, therefore, the price is not able to convey the full information. Akerlof to explain his theory took as an example the car market, in which it was highlighted the large gap between the price of a new car and a car just out of the showroom. As first thing we have to analyze the cars, a new car can be both in good condition and a lemon, and in the same way can be a used car. In a

* Corresponding author.

E-mail address: filippo.sgroi@unipa.it (F. Sgroi).

<https://doi.org/10.1016/j.jafr.2022.100337>

Received 12 May 2022; Received in revised form 30 June 2022; Accepted 1 July 2022

Available online 6 July 2022

2666-1543/© 2022 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

situation of information asymmetry, buyers do not know whether they have just bought a good car or a lemon, they only know that they have probability (q) of buying a good car and probability ($1-q$) of buying a lemon. The buyer, only after having owned the car, is able to know the real characteristics of his car. This leads the author to believe that quality and uncertainty in addition to leading to the expulsion of the market of good cars in favor of used ones, can also lead to market failure [2]. What Akerlof explains is also taking place in the olive oil market. In fact, our study starts from the verification that despite the Val di Mazara PDO oil certification, many companies do not adhere to the territorial brand. This research aims to highlight why, despite the certification, many companies do not adhere. In fact, many researches highlight the importance of certification, but no research to date has highlighted the reason for the failure to adhere to the specification. This aseptic appears of considerable importance if we consider that through agri-food products the territories are competitive and create wealth for all economic operators. Finally, the correct management of the olive groves also acts as a protection for the environment.

2. Akerlof's theory applied to the agri-food sector

With reference to what has been said, also in the agri-food market the consumer, most of the times, does not have all the necessary information to make a rational choice, who, for example, does not know if that particular food product has been conceived in full respect of the environment. This type of information is proper to the producer only, therefore the market fails. With reference to this example it is possible to consider that, an entrepreneur who produces food goods respecting the environment, surely sustains higher production costs compared to an entrepreneur who does not produce under the same conditions, since he/she will not have to sustain, for example, costs for waste disposal, costs for the use of biodegradable, biological materials etc. which are transformed, precisely, into an increase in production costs. In terms of consumer demand, not all consumers can share the higher cost for a given good. According to Economic Theory, the demand for a food product is related to the consumer's disposable income, therefore consumers with an adequate income will be able to purchase a good at a higher price, as it is produced in respect of the environment, on the contrary, consumers with an inadequate income will hardly buy that food product made in respect of the environment [3]. Another important aspect to analyze is that of counterfeiting, which is an increasingly widespread practice [4]. The counterfeiting of Italian products has accelerated rapidly in both the economic and social spheres. This practice goes to take possession of the intellectual property of others, which can be seen as the use of the economic and intellectual resources necessary to make known the distinctive sign of the selling company, in order to identify its products but at the same time differentiate them from those of others. The counterfeiting is present in almost every sector including the food industry, in Italy many products are counterfeited, in fact according to «*OECD surveys on counterfeiting and piracy show that world trade in counterfeit products that violate Italian registered trademarks has exceeded 30 billion euros (exactly 32 billion), equal to 3.6% of the total sales of the Italian manufacturing sector, both domestic and export*» [5]. Italian food products are certainly very subject to the market of false, in which are inserted the false indication of origin, a name that can create assonance with the original product, but also indicate the origin of Italian regions, all to create confusion to the consumer to believe that particular product is Italian. Among the different products that are made and put on the market, with fake Italian brand and names that remind of Italy, it is possible to find also those with PDO and PGI marks, since these reflect in particular the quality and guarantee of the same [6]. It is necessary, therefore, to protect Italian products, above all in order not to fall into the theory of the already mentioned Akerlof, according to which the bad product succeeds in making the good product fall by the wayside [7].

3. The protection of geographical brands, a tool for the enhancement of the territory

In this field of research, both jurists and economists are called upon to confront each other. The protection of these marks is fundamental, both at legal, national and community level, and for a correct information about the exact origin of raw materials. Before an agri-food product is labeled with the PDO or PGI mark, the producer must follow what is established by the Disciplinary of competence, in order to conceive a product with unique quality characteristics and not replicable in other territories. Through this analysis we tried to better analyze the relationship between trademarks and geographical indications, outlining the role of the legal-economic perspective that trademarks and geographical indications have on the market. Distinctive signs are used to indicate persons or things by communicating information about them, but it is necessary that each sign has a certain message, or that there is a rule that gives the sign a specific meaning. In addition, it is important to know the signs and their use. The distinctive signs have different functions, the distinctive signs are the sign, the company and the brand, the latter is considered the most important, because it is both an instrument of identification and a means of information. The trademark has a high instrumental value such that it can be considered a fundamental element of a company's goodwill. In Italy, the sources of law that regulate the discipline of the trademark are the Civil Code, art. 2596 - 2574 and the Industrial Property Code (Legislative Decree 10/02/05, n.30 and amendments) art. 7–28, at the EU level, the European Union has issued several directives and regulations to govern the trademark, among which is certainly noteworthy the EU Directive No. 2436/2015, operated by Legislative Decree N. 15, February 20, 2019, in force since March 23, 2019, with which an attempt has been made to guarantee a new balance between the needs of producers and the public interest, significantly affecting the protection and management of European Union trademarks by modifying and introducing new norms, certainly just as important are the norms which introduce a new “*dualistic*” structure of the trademarks institutionally in charge of guaranteeing the quality of products, which are no longer only collective trademarks, but also certification trademarks. The protection of the trademark is carried out first of all by registration, with which the owner acquires the exclusive right to use the sign and the right to forbid its use to third parties without his explicit consent. In order to protect a registered trademark against counterfeiters, there are different types of protection: civil, criminal and administrative. Initially, the owner has the task of discovering any violations and deciding what measures to take to enforce his rights. Surely before proceeding with judicial actions, the owner of the trademark will be able to put in place attempts at conciliation, through the institutes of arbitration and mediation, if these are not sufficient, judicial remedies can be undertaken which can initiate *urgent precautionary actions* and the ordinary procedure aimed at *claiming damages*. In this way the trademark owner can obtain from the judicial authority a judgment prohibiting him from manufacturing or marketing what constitutes infringement of the trademark itself, and to enforce the judgment against the counterfeiter, the judicial authority may fix a sum due for each type of violation or non-observance subsequently observed. Art. 124 et seq. of the I.P.C. identify the measures and sanctions which the trademark owner can obtain to protect his industrial property rights. The main ones are: *description, seizure, inhibition, destruction, and damages*. Currently, the EU trademark legislation consists of EU Regulation No. 2017/1001 on the EU trademark, EU Delegated Regulation N. 2018/625 supplementing the EU trademark regulation, and EU Implementing Regulation N. 2018/626 implementing certain provisions of EU Regulation N. 2017/1001 on the EU trademark. «*The objective of these regulations is to promote innovation and economic growth by simplifying the mechanisms for registering trademarks in the European Union, making them more accessible in terms of cost and more efficient in terms of legal certainty, and eliminating doubts about interpretation. With this in mind, a cooperation mechanism has also been created between the European Union Office for*

Intellectual Property and the National Offices, with the aim of strengthening the systems of protection of intellectual property through the convergence of the practices of the different Offices» [8]. In addition, it has been foreseen that the protection of the trademark also extends to non-distinctive uses, i.e. those which are capable of determining or causing damage to its distinctiveness. In this way it has been avoided that an undue advantage may be taken from the fame of the trademark or that there may be forms of prejudice in order to prevent the trademark from becoming a generic name for goods or services. The reform reflects the evolution, in the national and European context, of the function of the brand and its ability to carry information. It is fundamental to examine this type of trademarks since they can be registered as *individual trademarks* only if they are presented as a “fantasy” name, that is when the geographical name used, in the perception of the consumers, is not able to influence the characteristics of that specific product, or as *collective trademarks*, in this case the toponym, the name of a specific geographical area, can be subject to registration. The collective trademark is a sign that has both an indication of origin, linking the product to a plurality of companies entitled to use it, and a function of quality guarantee for the end consumer, ensuring the origin, nature and quality of the product to which it is affixed. In reality, very often the intrinsic quality of a product derives from its geographical origin. Considering this, both national and European legal systems have the task and the interest to protect entrepreneurs to distinguish their products according to their geographical origin, when the relevant conditions are met. The Paris Convention for the Protection of Industrial Property, signed in Paris on March 20, 1883, was one of the first treaties on intellectual property and industrial property. The convention, with some modifications and improvements, is still in force. The Paris Convention represents only the beginning of a path characterized by a growing attention, international and otherwise, on these distinctive signs, very important as they are characterized by the link with a territorial and traditional reality, which gives, to the marked products, an added value in terms of guarantee of origin, quality and also, essentially, of mere reputation. On an international level, the difference between denomination of origin and geographical indications emerges, according to which the former, as defined in art. 2 of the Lisbon Convention of 1958, integrate a hypothesis which is certainly more circumscribed and qualified than the latter, outlined, instead, by art. 22 paragraph 1 of the TRIPs Agreement of 1994, in fact the term “indications” alone is literally inclusive of further signs with respect to geographical names, such as words, expressions, symbols or images which are geographically significant. The denominations of origin, moreover, indicate products which possess qualities and characteristics due exclusively to the geographical origin and are part of a more qualified protection system, as they are subject to registration and consequent quality controls, whereas the geographical indications refer to goods having quality, reputation or other characteristics determined, essentially, by the territory of origin.

PDOs are based on a closer link between characteristics and quality of the product and its territorial origin, while for PGIs it is sufficient that the geographical origin depends even only on the reputation of the product. Another difference between PDO and PGI concerns the location of production, processing and elaboration of the product, summarized in the Regulation 1151/2012 in the most immediate expression “stages of production”. The phases of production must be integrally referable to the geographical area of reference, for the Denominations of Origin, and instead also limited to a single phase, for the Geographical Indications. At legislative level, this belonging is confirmed both at international level, as previously highlighted, starting from the first version of the Paris Convention dating back to 1883, but also in the TRIPs Agreement (Trade Related Aspects of Intellectual Property), and at Community level, where the first statement conforms to the international orientation, it is possible to find it in the pronouncement of the Court of Justice of March 25, 1999, in case C- 388/95, in which it held that such distinctive signs are comparable to trademarks, in particular to collective ones, assimilating also the relative discipline. Products bearing an

industrial property right, in particular those qualified by geographical indication but also those qualified by designation of origin, are mainly aimed at circulation and marketing outside the borders of the territory of origin or production, through exportation but also through an incisive marketing and promotion activity. Against this, it is possible to determine that outside the political borders of a State, the international scenario remains characterized by a multiplicity of different legal systems, each competent according to the principle of territoriality, so the global legal reality is fragmented, which is an important obstacle to the full use of industrial property rights abroad, becoming a kind of brake for international trade. By analyzing the different levels of protection of geographical indications, from domestic to transnational legislation, it was found to be essential to identify the appropriate modalities and degree of protection in order to ensure a high level of protection. Starting from the oft-mentioned Convention of the Union of Paris of 1883, up to the Madrid Agreement for the repression of false or misleading indications of source. Noteworthy is the International Convention on the Use of Appellations of Origin for Cheeses, known as the Stresa Convention, which states: «*The Contracting Parties, recognizing the usefulness of international regulation and cooperation to ensure the fair use of designations of origin and cheese names, and considering the importance of defining designations of origin and names by adding to them indications of the characteristics of the cheeses to which they refer, in order to protect their original characteristics and their use in informing consumers.*» On the basis of that, six countries, among which Austria, France, Italy, Belgium, Holland and Switzerland, joined the treaty starting the protection of the appellations of origin of agricultural productions. In Italy the Convention of Stresa has been acknowledged with the DPR of November 18th, 1953, nr. 1099, providing the basis of the law of April 10th, 1954, issued by President Einaudi.

In spite of this, the protection granted to these institutions was limited both because the Madrid Agreement had mentioned designations of origin only in art. 1, equating them to indications of provenance, without providing a precise definition, and because the Convention had limited itself to excluding that trademarks could be registered if they were composed exclusively of signs or indications useful for indicating the place of origin of the products. As far as art. 24 of the TRIPs Agreement is concerned, some countries have started negotiations and concluded bilateral agreements in order to increase the protection of single geographical indications, compared to the one offered by the single international treaties; in this way the countries reciprocally commit themselves to recognize and protect geographical indications and denominations of origin which are indicated by each country in a special list. Worthy of note is also one of the elements introduced by Regulation 1151/2012 is the one aimed at making more transparent and explicit the quality systems, which are proper to food and wine products, qualified as PDO and PGI. This is intended precisely to enhance the communicative profile of the signs in question, which can rely on various normative references, such as art. 12 inherent to “names, symbols and indications” according to which every operator must indicate on the label the symbols of the Union with the relative indications, DOP and IGP, accompanied by the registered name, but above all the graphic, verbal or symbolic references of the member State or Region in which the place of origin is located must be included, and from art. 45 which concerns the “role of the groups” which are necessary to guarantee and contribute to the quality, fame and authenticity of the products. In Italian law, at first, the protection of geographical indications was entrusted to the rules on *unfair competition* and had a dual function both to counter the misleading use of signs without protection, in order to avoid the emergence of a prejudice to entrepreneurs operating in the area and competitors, and to extend this protection to geographical indications protected by specific provisions. The Italian legislator, with the coming into force of the TRIPs Agreement, felt the need to implement the provisions contained in its articles, at first with Legislative Decree no. 198/1996, in particular with the adoption of art. 31, and subsequently with the Industrial Property Code, regulating the matter in

articles 29 and 30, considering it necessary to protect geographical indications and denominations of origin as industrial property rights. From this it is possible to highlight how the Italian legislator has preferred to bring geographical indications in the same way as designations of origin. As a confirmation of this, the laws previously issued in the field of agri-food and wine products were limited to recognize and protect the designations of origin, while with the reform 131/2010, part of the art. 30 of the C.P.I. has been modified, in which both the designation of origin and the indication of origin are protected in the case in which there are conditions such as to deceive the public, but also if such use involves an *inappropriate exploitation* of reputation.

4. Materials and method

Returning to the case study, before proceeding with the analysis carried out it is appropriate to understand and identify the olive oil Val di Mazara PDO. This is an oil obtained from the fruits of different varieties of olive Biancolilla, Nocellara del Belice and Cerasuola, present in the olive groves for at least 90%, not exceeding the remaining 10% you can find other varieties such as Ogliarola Messina, Giarrappa and Santagatese. The production and processing area of Val di Mazara PDO extra virgin olive oil is in the region of Sicily, more precisely it includes the whole territory of the province of Palermo and many municipalities in the province of Agrigento (Figs. 1 and 2). As for the production method, the disciplinary is very strict, as many conditions must be respected in order to guarantee a quality product. In fact, the oil extraction and packaging operations must be carried out within the area previously indicated, the olive harvest must be carried out from maturation until December 30 of each year. The olives must be pressed within two days but only by mechanical and physical processes that are able to preserve the particular characteristics of the fruit. The oil obtained will be an extra virgin olive oil Val di Mazara PDO, whose appearance is a golden yellow color with shades of deep green, the smell is fruity with hints of almond, while the taste is fruity and velvety with a sweet aftertaste.

A last distinctive note of Val di Mazara DOP extra virgin olive oil is about its level of acidity, as its maximum total acidity level is 0.5 g per 100 g of oil, and a panel test score greater or equal to 6.5. According to the analysis carried out the value of PDOs, and in particular the value of Val di Mazara PDO extra virgin olive oil, should be recognized both by consumers and by the companies themselves. Just consider that oils with a protected designation of origin are obliged to have an organoleptic evaluation by an independent panel of tasters who give them a score, which is not compulsory for non PDO or PGI oils. It should be noted that in a panorama of oils of dubious origin, in Italy is consumed more oil than is produced, often there are companies that play on the



Fig. 2. PDO Val di Mazara, brand name
Source: Protection Consortium.

misunderstanding related to the name to generate confusion in the consumer, in fact if you think that Italy in the last oil campaign has produced about 315,000 tons of olive oil EVO, but it consumes 500,000 tons and is also able to export, it is clear that not all the oil consumed can be Italian, then only the PDO and PGI oils guarantee the certainty of their origin from the area of denomination [9]. In addition, consumers are unfamiliar with PDO and PGI certification marks, and prefer products purchased from short local circuits, since the consumer knows not only the origin but also its producer, thus creating a relationship of trust between the parties. This happens mainly in rural areas or small towns, rather than in big cities. In general, the perspective of the consumer is oriented to the possibility of knowing the different characteristics of the product, through the guarantees in relation to the certification itself, and a greater reliability of the product should justify the price given for a product that presents the declared characteristics. As for producers, instead, it is possible to make two distinctions: the first one concerns the role the producer plays within the production chain, and the second one concerns the economic size and visibility of the PDO. As for the first distinction, the functioning of the supply chain depends on the characteristics of that specific production sector which however remains a role difficult to define both for the potential advantages and for the costs connected to the PDO product. As far as the second distinction is concerned, instead, it is evident that PDO is able to provide the possibility to assert itself better on the territory, unlike an anonymous product. As a matter of fact, since they came into force, PDO and PGI have become a real instrument for the protection and differentiation of typical productions, whose qualities derive from the close link with the territory. Finally, we compared the olive grove area [10] of the territory with the data of the area destined for the production of olive oil Val di Mazara PDO. The comparison will bring out a large area currently destined for PDO production.

5. Results and discussion

As regards the case in question it is clear that companies prefer not to use the DOP Val di Mazara brand for the production of olives, in fact, according to ISTAT, only in the province of Palermo, which falls completely within the PDO Val di Mazara territory, there are a total of about 22,300 hectares for the production of olives for oil and table olives, while the hectares of olive groves that are registered within the certification body of PDO Val di Mazara are only 4,046 [11]. This is due to the fact that companies are driven by self-interest, triggered by the value of PDOs that do not always live up to expectations, unlike what one might think, so on the one hand there are difficulties related to their



Fig. 1. PDO Val di Mazara, production area
Source: Protection Consortium.

use, on the other hand, the results are not entirely satisfactory. Sicilian companies, which operate in the territory of the provinces of Palermo and Agrigento, before expressing interest and converting their production to the PDO mark are interested in carrying out a cost and benefits analysis beforehand. In order to better understand the reasons why most Sicilian companies do not apply for the PDO mark, it is necessary to highlight the costs they incur and how much is absorbed by variable costs. «In this regard, a study by Ismea for the Ministry of Agriculture, Food and Forestry Policies offers an economic overview of the sector: in Sicily, 1 ha of olive grove yields 6,183 euros, 800 of which are contributions. From the direct revenues of the sales alone, 5,384 euros per hectare arrive. But Sicily is also the region where variable costs absorb 70 percent of the cake, i.e. 4,275 euros, which guarantee a net margin of about 1900 euros. The bulk of the expense items is constituted by labor, which affects just under three thousand euros per hectare and covers half of production costs (in Calabria and Puglia is about 33%). Another important item is energy: each hectare costs 500 euros compared to 194 in Calabria and 233 in Puglia. While Sicilian producers invest an average of 183 euros per hectare on fertilizers and 123 euros on pesticides» [12]. From this it can be easily deduced that Sicilian companies, especially the smallest ones, are reluctant to use the PDO Val di Mazara brand, given the high costs. It is therefore necessary to investigate what are the benefits of PDO and if these can somehow cover the costs of the same denomination. One of the main expected benefits is surely the one concerning the obtainable price increases, especially thanks to the value provided by the PDO logo, which gives the product a higher willingness to pay by the consumer as it is able to eliminate or at least make its way among the false products that incorrectly use the name of a certain territory, besides being synonymous of quality. Unfortunately these expectations are not always realized, as not all companies believe that higher costs are compensated by higher revenues. To avoid this, it is possible to use two important solutions that companies can apply to promote the conversion of their production to the PDO Val di Mazara, in order to reduce the related costs and implement the benefits. Certainly the cooperative plays a fundamental role. The creation of cooperatives is, in fact, a very effective solution, precisely because through them it is possible to interpret the needs and respond to the needs of small farms, favoring their growth and making them more profitable thanks to the marketing system that begins with production and ends with sale. The cooperative, like any legal form, has several economic advantages and limitations. These advantages can be: a greater remuneration, a purchase of goods to a lower price, at the same time the conferment of the same happens to higher price regarding that one offered from the market, and finally the reduction of the costs of management of the single enterprises. The agricultural cooperatives follow the principle of mutuality, which consists in the exchange of services between the cooperative members and the cooperative itself, it does not follow purposes of private speculation and has the purpose of working, preserving and transforming the agro-alimentary products, introduced by the members, in order to place them in the market with the best economic conditions. Moreover, thanks to the union of more working forces, it is possible to reduce the production expenses in order to realize high quality products at a competitive price. Surely, it is very important to work as a team for the relaunching of the agri-food sector and especially for the strengthening of the PDO oil sector. In the last year, the pandemic has mainly affected small companies, for which the lockdown has affected a lot, at the same time it has not had a big impact on the trade of large companies, especially cooperatives. Another possible solution is coopetition. First we must understand the concept of coopetition, the term derives from the fusion of cooperation and competition, it indicates the precise strategic choices useful to create a collaboration of resources, but also objectives between two or more competing companies to be able to obtain common benefits, then the term can be summarized as a strategy of collaboration with its rival. Coopetition is, in fact, a business strategy that connects the characteristics of cooperation and competition between companies that choose to collaborate only on certain activities of their business, in fact they are

agreements between subjects operating in the same sector. Unfortunately, deciding to collaborate with competitors is not easy, in fact, this strategy is difficult to apply because the culture of cooperation is lacking, and companies are stuck in the dilemma of competing or cooperating, when it would be enough to compete and cooperate at the same time. The same agri-food sector, in particular that related to the olive oil sector of the DOP Val di Mazara, would benefit with the use of these solutions, increasing their impact both nationally and internationally. Previous studies [1,13,14] have also highlighted that the non-recognition of the quality product by the consumer determines a nullification of the protection process [15,16].

6. Conclusion

From the analysis carried out it is clear that small and medium-sized companies are mainly oriented to marketing on local channels, where the presence of a PDO does not have its correct and important informative and guarantee value, because in these channels are present with greater influence other mechanisms such as trust, geographical and cultural proximity. On the other hand, as far as companies operating in long channels are concerned, the presence of the geographical denomination is fundamental and proves to be an effective and promising tool. Its effectiveness depends, therefore, on the one hand on the reduction of costs and on the other on the increase of benefits. Despite the work done by ISTAT, ISMEA and Qualivita [9–11], to date little has been done to understand and evaluate both the correct impact of EU protection of companies and the impact they have on the territory in terms of social and environmental aspects. It is necessary to learn, which are the possible economic, social and environmental effects that the community protection is able to generate, therefore it is necessary to understand the consequences of exclusion of companies that derive from the application of the specification, the consequences in which the economic activity produces productive effects on the environment, society and also other areas. The present research, even if it is a study based on the failure to adhere to the PDO certification, clearly shows that in the olive oil market there is a problem of information asymmetry. In the presence of the latter, the companies do not adhere to the regulator. The results should be read according to the gastronomic aspect and territorial growth. Under the first aspect, the legislator created the denomination of origin and tried to protect the territory; on the other hand, much remains to be done on raising consumer awareness. The long path for territorial brands if they are not appreciated by the consumer is something that is not needed. Actually, according to the data collected, since the denomination is used by few companies, this demonstrates a lack of valorization of the product.

References

- [1] F. Sgroi, Food traditions and consumer preferences for cured meats: role of information in geographical indications, in: *International Journal of Gastronomy and Food Science*, 2021.
- [2] G.A. Akerlof, The market for "Lemons": quality uncertainty and the market mechanism, *Oxford University Press, Q. J. Econ.* 83 (n°3) (1970), 488–50.
- [3] F. Sgroi, Territorial development models: a new strategic vision to analyze the relationship between the environment, public goods and geographical indications, *Sci. Total Environ.* (2021). *Disciplinare di produzione Pomodoro di Pachino GPI*.
- [4] S. Prestamburgo, F. Sgroi, Agri-food markets' functional efficiency, products' quality and information's role, *Calitatea* 19 (164) (2018) 145–149.
- [5] Cavesti L., La contraffazione del made in Italy è un business globale da 32 miliardi, in il sole 24h, 04/2021, visibile in https://www.ilssole24ore.com/art/la-contraffazione-made-in-italy-e-business-globale-32-miliardi-ADst11UB?refresh_ce=1.
- [6] S. Vieri, M. Prestamburgo, M. Marotta, L'agricoltura italiana. Sfide e prospettive di un settore vitale per l'economia della nazione, INEA. Stilgrafica, Roma, 2006.
- [7] F. Sgroi, F. Modica, Localized agri-food systems: the case of Pecorino Siciliano PDO a food product of the tradition of Mediterranean gastronomy, *Int. J. Gastronom. Food Sci.* 27 (2022), 100471.
- [8] C. Zamboni, La tutela dei marchi dopo il d.lgs. 20 febbraio 15, 2019. *Studium Iuris* 10/2020.
- [9] Ismea mercati, Olio: confermate le stime nazionali a 315 mila tonnellate nel 2021/22, A livello globale il calo della produzione comunitaria è bilanciato dagli

- incrementi produttivi degli altri player extra <https://www.ismeamercati.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/11927>.
- [10] <https://www.istat.it/>.
- [11] <https://www.qualigeo.eu/en/product/val-di-mazara-dop-olio-evo/>.
- [12] Filippone T. e Lo Porto G., La ripresa dell'olio: l'oro verde di Sicilia vale 200 milioni, La previsione è di 40 mila tonnellate superiore a quella degli ultimi tre anni. Un ettaro di uliveto rende 6.183 euro, la Repubblica, 10/2021.
- [13] F. Arfini, E. Cozzi, M.C. Mancini, H. Ferrer-Perez, J.M. Gil, Are Geographical Indication Products Fostering Public Goods? Some Evidence from Europe, MPDI, 2019.
- [14] F. Arfini, F. Antonioli, E. Cozzi, M. Donati, M. Guareschi, M.C. Mancini, M. Veneziani, Sustainability, Innovation and Rural Development: the Case of Parmigiano-Reggiano PDO, MPDI, 2019.
- [15] G. Belletti, A. Marescotti, Agriregionieuropa, Costi e benefici delle denominazioni geografiche (DOP e IGP), Mar, <https://agriregionieuropa.univpm.it/it/content/article/31/8/costi-e-benefici-delle-denominazioni-geografiche-dop-e-igp?page=0%252C0%252C1%2C0%2C1>, 2007.
- [16] G. Belletti, A. Marescotti, J.M. Touzard, Geographical indications, public goods, and sustainable development: the roles of actors' strategies and public Policies, World Dev. 98 (2017) 45–57. University of Firenze, Firenze, Italy INRA, Montpellier, France.