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Commentary

Are health claims a useful tool to segment the category of extra-virgin olive oil? Threats and opportunities for the Italian olive oil supply chain

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ABSTRACT

The Italian olive oil supply chain is experiencing great economic difficulties competing in the world markets. The current market scenario is characterized by increasing levels of competition based on cost reductions. Starting from the insights on the Italian olive oil supply chain, this article discusses the possibility of adopting health claims as an effective tool to segment the broad trade category of extra virgin olive oil. We conclude that including a label with the health claim based on olive oil polyphenols content would be useful to effectively signal both the “highest quality” and the “healthiest” Italian extra virgin olive oils.

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1. Introduction

The Italian olive oil supply chain is experiencing great difficulties competing in the world markets (De Gennaro, Notarnicola, Roselli, & Tassielli, 2012). This decreased competitiveness has occurred because of some structural and organizational weaknesses and profound changes in the economic and institutional framework. Most Italian olive-producing farms and processing plants are small and situated in disadvantaged hilly areas; the introduction of innovations both in farming systems (application of the best agronomic practices) and in milling firms (application of the best milling technologies) is particularly slow. Other economic weaknesses are related both to the poor coordination mechanism within the supply chain and to the ability to develop market niches for higher quality products that could better stand up to the external competition (Pomarici & Vecchio, 2013). In addition, the current competitive scenario is characterized by the

internationalization of the olive oil market, which is increasingly dominated by the strategies of multinational industrial bottling companies and those of modern retailer firms that have become the key players in the olive oil supply chains (De Gennaro et al., 2012).

This article aims to highlight the main causes that have led the Italian olive oil supply chain to such a critical situation, and to illustrate some possible strategies that economic agents could adopt to find a way out of the crisis. In particular, we discuss the use of health claims as a marketing tool to segment the extra virgin olive oil (EVOO) category. Finally, we propose some practical solutions to increase competitiveness and outline the need for future research.

2. The Italian olive oil supply chain: weaknesses and new challenges

The international olive oil market is characterized by increasing levels of competition based on cost reduction strategies that have negative effects on profitability, mainly at the farming stage. One reason behind this trend is the difficulty of getting consumers to appreciate the overall quality of the oils (Barbieri, Bendini, Valli, & Toschi, 2015) and to recognize a premium price for the best products (Cicia et al., 2013). The Italian olive oil supply chain should

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avoid trying to beat the main international competitors with lower prices and poor quality. On the contrary, all members of the supply chain should work to increase the volume of high quality products, characterized by their high health value, and to develop persuasive messages to raise consumers' awareness of the perceivable quality and their willingness to pay a premium price needed to guarantee a fair income for the producers.

The production costs of Italian olive oil are normally higher than those of other Mediterranean countries ([International Olive Council](#),) because of the extreme fragmentation of the olive orchards and production facilities, and the geological, morphological, structural and hydrogeological features of the Italian territory. Furthermore, the quality of production in Italy is usually evaluated retrospectively at the end of the harvesting season. This dynamic makes it difficult to make precise predictions in terms of the quantity and quality of the product at the start of the season, forcing the producers to accept the selling price enforced by the industrial buyers. Moreover, olive oil millers are not sufficiently trained to modulate the quality of the product by varying the extraction process depending on the olive cultivar, the maturity index and the type of product they want to produce ([Bedbabis, Rouina, Salvatore, & Clodoveo, 2015](#)). A deep knowledge of the manufacturing process can improve and preserve polyphenolic substances and hence the quality of the product ([Clodoveo, 2013a](#); [Clodoveo, Hbaieb, Kotti, Mugnozza, & Gargouri, 2014](#); [Clodoveo, Dipalmo, Schiano, La Notte, Pati, 2014](#); [Clodoveo et al., 2016](#)). Thanks to their health properties, these substances can increase the perceived value of the product, at least for some consumers ([Boncinelli, Contini, Romano, Scozzafava, & Casini, 2016](#); [Casini, Contini, Marinelli, Romano, & Scozzafava, 2014](#)). If the best practices were applied from the orchard to the olive mill, Italian olive oil with health-giving properties would not represent a niche product, but could be a large segment of the national olive oil supply because each olive cultivar harvested at the right maturity index and properly extracted can provide health-promoting oils.

There is an unbalanced market power distribution among production stages of the Italian olive oil supply chain, which affects the formation and transmission of prices ([Pomarici & Vecchio, 2013](#)). While the olive growing (farmers) and olive crushing (mills) are very fragmented, the bottling industry and the retail chains are becoming more and more concentrated and multinational, allowing them to exert market power ([Clodoveo, Camposeo, De Gennaro, Pascuzzi, Roselli, 2014](#)). This structural feature of the EVOO supply chain has negative effects on the price paid to olive growers and on their revenue ([Anania & Pupo D'Andrea, 2007](#); [De Gennaro, Roselli, & Medicamento, 2009](#); [Carlucci, De Gennaro, Roselli, & Seccia, 2014](#); [Roselli, De Gennaro, Cimino, & Medicamento, 2009](#)). Another important reason behind the negative trend of revenues for producers of high quality EVOO is linked to the information asymmetry theory ([Akerlof, 1970](#)). This theory explains that in many markets, only sellers have appropriate knowledge of the characteristics of the product, while the buyer has insufficient knowledge to determine its value. This information asymmetry between sellers, who know the origin, quality, price and other credence attributes, and consumers, who are unable to judge those quality attributes, gives sellers the opportunity to propose lower quality goods than the market average and at competitive prices, thus damaging the market for high quality goods.

The trade category of "extra virgin olive oil" (EVOO) comprises different types of products, ranging in quality from excellent to standard, and differing in terms of prices and nutritional, sensory and health benefits. There is an unbalanced distribution of information between buyers and sellers with regard to the health benefits of EVOO, which can affect consumers' choices. This situation can cause the phenomenon of adverse selection ([Akerlof,](#)

[1970](#)), whereby the buyer fails to discriminate between different quality products at the time of purchase, thus compromising the potential for producers of higher quality products to obtain the recognition of a premium price. Under these circumstances, producers of high quality products cannot remain in the market because the cost of their products exceeds the price that consumers are willing to pay. This is precisely what happens to the highest quality EVOO producers in competition against lower quality EVOO. Such asymmetry may induce consumers who are unable to distinguish between high quality and low quality products to make erroneous purchases. Consequently, there is a loss of welfare due to deception. In our opinion, therefore, it is necessary to introduce marketing tools to help consumers recognize the different kinds of products that are actually classified as EVOO.

3. Health claims as a tool to segment the EVOO category

Health claims represent a rarely used legal tool ([European Commission, 2006](#)) that could be helpful in designing comprehensive labelling to increase consumers' knowledge about the product quality and their willingness to pay. The authors believe that increased use of these health claims could change a credence attribute into a search attribute, thus reducing the difference between the perceived and actual value of EVOO. From a theoretical viewpoint, reducing the uncertainty about a positive attribute, as in the case of the healthy properties of EVOO, could increase demand for the same quality level ([Coppola and De Stefano, 2000](#); [Nelson, 1970](#)).

Among the list of claims approved by the EFSA, four are applicable to EVOO, as reported in [Table 1](#) ([European Commission, 2014](#); [European Community, 2012](#)). Three of the four claims are authorized as functional health claims (Art.13 (1) of Regulation (EC) No. 1924/2006), while the other is authorized as a reduction of disease risk claim (Art.14 of Regulation (EC) No. 1924/2006).

In particular, as described in [Table 1](#), one of the authorized function health claims is specific to olive oil and relates to the level of olive phenolic compounds. The claimed health function concerns the protection of blood lipids from oxidative stress. The claim "olive oil polyphenols" can be used only for an olive oil that contains at least "5 mg of hydroxytyrosol and its derivatives (e.g., oleuropein complex and tyrosol) per 20 g of olive oil". The disclaimer "a daily intake of 20 g of such an olive oil provides the expected beneficial effects" must be added to the label. This concentration corresponds to a minimum content of total phenolic compounds in EVOO of no less than 300–350 mg/kg, corresponding to a bio-phenol concentration of at least equal to 250 mg/kg ([Servili, 2014](#)). The total concentration of phenolic compounds in oils belonging to the marketable class of EVOO varies widely, between 40 mg/kg and 1000 mg/kg ([Clodoveo et al., 2015](#)).

Beyond the health properties of EVOO, the polyphenol content also affects the sensory properties of the product. This feature is very interesting because it can transform a credence attribute (health property) into an experience attribute (sensory property). In fact, while much of the label information refers to properties that the consumer cannot directly evaluate (e.g. origin, extraction method, organic process), the presence of polyphenols is clearly attested by the presence of a bitter and pungent taste, which varies in intensity depending on the concentration. These last sensory characteristics are due to the activation of taste receptors and trigeminal nerve endings associated with taste buds in the fungiform papillae, which are sensitive to chemical stimuli. In virgin olive oils, these sensations are related to the presence of phenolic compounds ([Servili & Montedoro, 2002](#)) and they can persist for rather a long time after deglutition, showing a clear after effect that can strongly vary in intensity among olive oils ([Vitaglione et al., 2015](#)).

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