



Reprint of “Attitudes towards honey among Italian consumers: A choice experiment approach”[☆]



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ABSTRACT

Honey is becoming increasingly popular with consumers for its nutritional benefits as well as many other functions. The objective of this article is to determine which factors influence consumers' purchase intentions and to assess the importance of certain honey characteristics to enable identification of the constituents of an ideal honey profile. This information will lead to satisfaction of consumers' preferences and formulation of marketing strategies that support honey makers.

We applied a choice experiment to the Italian honey market to define the preferences and the willingness to pay for key characteristics of the product. A face-to-face questionnaire survey was conducted in 2014 (January–July) among Italian consumers; it was completed by 427 respondents. A latent class model was estimated and four classes were identified, with different preferences, illustrating that respondents seem to be heterogeneous honey consumers. Results suggest the “organic” attribute was more important than others factors, such as the place where the honey was produced (landscape), but less important than the country of origin; local Italian honey was preferred to foreign honey. Respondents showed a higher willingness to pay (WTP) for honey from their country of origin versus the production method used. Our results suggest that while organic beekeeping might be an important strategy for diversification, if suitable communication is not taken into consideration, the added value of the production method might not be perceived by consumers.

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1. Introduction

In 2013, global production of honey was about 1.66 million metric tons, and in Europe, annual production reaches about 372 thousand tons (204 thousand tons in the European Union) (FAOSTAT, 2015). The average production of honey in Italy ranges from 9 to 12 thousand tons (FAOSTAT, 2015), depending on meteorological conditions during the year.

Honey is becoming increasingly popular with consumers for its nutritional benefits as well as many other functions (Aparna &

Rajalakshmi, 1999; Al-Qassem & Robinson, 2003; Bogdanov, Jurendic, Sieber, & Gallmann, 2008; Ismaiel, Al-Kahtani, Adgaba, Al-Ghamdi, & Zulail, 2014; Joshi, 2008). Moreover, as health consciousness has increased and concerns have focused on food processing technologies (Anton et al., 2010), consumption of honey has increased because it is not subjected to any technological processes (Ghorbani & Khajehroshanaee, 2009; Pocol & Teselios, 2012).

Despite this positive consumption situation, the beekeeping sector in Italy has not yet learned to understand the consumers' needs in order to increase their product satisfaction and earnings (Sillani & Grillenzoni, 2007).

According to the literature, there are various factors that influence consumers when purchasing honey. However, the decision is often habitual and dictated by knowledge of the honey's value. For example, Yeow, Chin, Yeow, and Tan (2013) have determined several factors that influence consumers' purchasing behaviours regarding honey-related products such as bee pollen, royal jelly and honey drinks. In detail, they stated that medical conditions, quality of the product, brand reputation and pricing have a positive and significant relationship with Asian consumers' purchasing

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behaviour. Likewise, [Ismaiel et al. \(2014\)](#) and [Zulail, Ismaiel, Al-Kahtani, Al-Ghamdi, and Adgaba \(2014\)](#) analysed the major factors influencing consumption, expenditure patterns and demand for honey in Saudi Arabia, finding the major motivations for consuming honey are its medicinal and nutritional values. While investigating consumer behaviour in Romania, [Arvanitoyannis and Krystallis \(2006\)](#) identified four main dimensions in honey-purchasing motivation: medical benefits of its consumption, dietary quality, the ethical character of honey and suitability with food consumption lifestyle.

[Unnevehr and Gouzou \(1998\)](#) analysis of the US retail honey market indicated that consumers were willing to pay substantial premiums for honey based on form, container, brand and, in particular, unique monofloral sources. Similarly, [Swanson and Lewis \(1991\)](#) demonstrated that consumers were willing to pay for the unique characteristics of honey associated with particular floral sources, while [Gambaro, Ares, Gimenez, and Pahor \(2007\)](#) found that consumers showed significantly different degrees of approval of the colour of the evaluated honeys.

[Jensen and Mørkbak \(2013\)](#) used principal components analysis and multinomial logit analysis to explore the role of gastronomic, externality and feasibility dimensions in the formation of consumers' values and product perceptions. They also used these methods to determine the importance of the respective dimensions in consumers' choices of local and/or organic varieties of honey and apples. They found that perceived gastronomic quality is the most important determinant for food choice, but externality and feasibility aspects are also important correlates. [Ghorbani and Khajehroshanaee \(2009\)](#) surveyed the consumer demand for qualitative factors of honey using the hedonic pricing (HP) model and cross-sectional data from a consumer sample. Their results showed that the type of honey, as well as its packing conditions, colour, aroma and protraction, have positive effects on its price. [Murphy, Cowan, Henchion, and O'Reilly \(2000\)](#) used least squares regression to estimate part worths for the conjoint analysis and found that price and texture were felt to be the most important product attributes, followed by packaging, scale of production and, finally, the honey's colour. [Mohamadi-Nejad \(2013\)](#), using the qualitative pricing model, studied the demand for honey in urban areas of the Kermanshah province of Iran. This study showed that physical and chemical characteristics of honey affect its market price. Characteristics such as scent, production location and high traction significantly positively affect its price, while characteristics like proper packaging, bright colours and types of honey (with wax) can have significant negative effects on its market price. As one of the few studies to analyse willingness to pay (WTP) for honey, [Wu, Fooks, Messer, and Delaney \(2014\)](#) used auction experiments. They elicited consumer WTP for honey to compare auction and posted-price mechanisms and found that WTP estimates generated by an auction were approximately 50% lower than those from a posted-price mechanism.

Many studies have also stated that a honey's origin is the most important factor considered prior to purchase. [Batt and Liu \(2012\)](#) found that in purchasing honey from a retail store (exploratory factor analysis revealed), there were three principal constructs most influential in the purchase decision: brand reputation, origin and value for the money. A study conducted by [Roman, Popiela-Pleban, Kozak, and Roman \(2013\)](#) showed that most consumers said they only purchase honey with domestic origin, although almost half of them said they had not checked the provenance on the label. Likewise, [Pocol and Bolboacă \(2013\)](#) found that respondents preferred to buy honey from a local Romanian producer and had more knowledge in domestic rather than imported honey. [Gyau, Akalakou, Degrande, and Biloso \(2014\)](#) identified key consumer characteristics that influence preferences of honey

consumers in the Democratic Republic of Congo; they showed that consumers who are married and have reached at least the level of secondary education have a strong preference for local forest and savannah honey. Moreover, [Wu et al. \(2014\)](#) evaluated consumer behaviour related to informational messages about honey that is produced locally, domestically and internationally and demonstrated that consumers prefer locally produced honey.

Nevertheless, sufficient clarification has not been established as to which is the best strategy for differentiating honey productions that emphasise increasing producers' earnings. A number of studies have investigated processing, storage and shelf life of organic honey. [Parvanov and Dinkov \(2012\)](#) recommended more specific conditions for processing, storage and production of honey to preserve its natural organoleptic, physical, chemical and antibacterial features. According to [Belay, Solomon, Bultossa, Adgaba, and Melaku \(2015\)](#), many consumers still think that if honey has crystallized it has gone bad or has been adulterated with sugar, but granulation is one of the characteristics for honey. In fact, the ongoing process of crystallization applies to all honeys ([Roman et al., 2013](#)).

Few studies have investigated consumer attitudes towards organic honey, yet this could be an alternative strategy to verify whether organic production would be preferred to other strategies such as geographic origin. For example, [Ványi, Á, Csapo, and Karpati \(2011\)](#) suggested that (in addition to price, food quality, healthy lifestyle and nutrition) food safety, organic options and animal welfare awareness influenced consumer decision-making.

Perception of landscape feature of production is quite a complex phenomenon as it involves a number of components of the human mind, and has an important emotional value ([Tempesta et al., 2010](#)). While the international literature ([Tempesta et al., 2010](#); [Veale & Quester, 2008](#)) has demonstrated that associating wine to an image of greater visual impact can positively affect the wine quality perception, the analysis of the premium price for landscape features of beekeeping has not yet been investigated.

Moreover, to our knowledge, there are only a few studies regarding honey and choice experiments (CE). CEs have been extensively used to understand the determinants of consumers' choice of food products. So far, CE has not been used to investigate the factors potentially shaping the choice of honey in Italy or other countries. The objective of this study is to determine the factors that influence consumers' purchase intentions and to assess the importance given by consumers regarding honey's five primary characteristics: country of origin, landscape features of production, crystallisation, production method—organic or conventional—and price. These are needed to identify an ideal honey profile to satisfy consumers' preferences and formulate marketing strategies that support honey makers. Specifically, we used a choice experiment approach to evaluate Italian consumers' WTP to select honey attributes, incorporating consumer preference heterogeneity in a latent class model (LC). In accordance with this objective, we carried out a survey in Friuli Venezia Giulia, a North-Eastern region in Italy.

This study contributes to the literature not only by providing estimates on Italian consumer WTP for premium honey, but also examines consumers' preferences towards local honey compared to domestic and international alternatives. Additionally, it provides insights on their specific perceptions about the organic and local origin of honey. To better assess WTP for local origin, it was decided to conduct interviews in a single region. Understanding these product-organic-origin interactions may illustrate the best marketing opportunities for domestic growers, especially for small farms in particular, who would otherwise compete with foreign producers on simple low-cost criteria. The paper is organized as follows: Section 2 provides a short overview of the theoretical

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