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## Ethical and sustainable consumption in the Italian coffee market: a choice experiment to analyse consumers' willingness to pay<sup>1</sup>

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Consumers increasingly consider ethical and sustainable attributes of products in their purchasing decisions, in particular with reference to food consumption. Among agri-food products, coffee is a pioneering food for sustainability and ethical certification, such as organic and Fair Trade, whose success depends significantly on consumers' willingness to pay a premium price for these attributes. This study uses a choice experiment (CE) to investigate the attitudes towards organic and Fair Trade coffee among Italian consumers. The results show considerable heterogeneity among respondents, the majority of whom tend to be more interested in organic coffee than Fair Trade coffee, even if a large group of them are willing to pay a premium price to consume Fair Trade coffee.

### 1. Introduction

Consumers in affluent societies increasingly consider the moral features of products in their everyday monetary decisions. They buy food produced by respecting the environment and animal welfare, use renewable energy, consume while paying attention to reducing food waste and to recycling waste, abstain from buying goods manufactured under dubious working conditions, invest in companies that operate in a socially responsible manner and so on. These aspects concern both environmental and socio-economic dimensions of the supply chain, the same involved in a sustainable development approach, so the ethics and sustainability of the supply chain have become two strongly related concepts.

This consumer behaviour can drive production activities in general, and the agri-food supply chain, toward more sustainable and ethical production models. This depends both on the consumers' willingness to pay (WTP) for sustainable and ethical attributes both from the effective communication mode of such attributes as private labels, certification standards and traceability systems.

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Several agri-food products present ethical and sustainable characteristics, including wine, olive oil, coffee, cacao, cheese, ham and different processed foods. Among these, coffee is one of the world's most valuably traded commodities, the most important agri-food product harvested in developing countries and consumed in developed countries and a pioneering industry for sustainability standards and ethical certification; therefore, it is particular interesting to analyse coffee's ethical consumption.

The aim of this paper is to investigate the attitudes of Italian consumers towards organic and Fair Trade coffee, two labels strongly connected with ethical aspects.

This article is organised as follows: first, the theoretical framework deals with relations between ethics and sustainability consumption, certifications and labels of the agri-food sector, traceability and the methods used to evaluate consumers' preferences and, in particular, consumers' WTP. Thereafter, the research analyses global coffee market trends, with particular attention to differentiation strategies, sustainability and organic and Fair Trade labels, and presents an essential review of studies, at Italian and international level, about consumers' attitudes towards organic and Fair Trade coffee. Following this is the illustration of a choice experiment (CE), conducted in accordance with several other studies, to investigate the attitudes towards organic and Fair Trade coffee among a sample of Italian consumers. The article concludes by offering some perspectives on future research on the topic and some suggestions to improve market efficiency through the implementation of an ethical traceability system.

## **2. Theoretical framework**

### *2.1 Ethical and sustainable food consumption*

Ethical consumption can be defined as purchase decisions by people concerned with not only the price of products and services but also with the political, social and environmental consequences of their purchases (Coff *et al.*, 2008).

It is interesting to note that ethical consumption combines the role of consumer with that of citizen, and the term 'consumer-citizen' refers to this duality (Scammell, 2003); in this way, there is a reconfiguration of the consumer's role characterised by a consumer-oriented activism that represents a pathway to participation for ordinary people (Coff *et al.*, 2008).

The phenomenon of ethical consumption has received increasing attention among academic researchers in recent times, with the production of a wide body of multidisciplinary literature (Coff *et al.*, 2008; Newholm and Shaw, 2007). There are contributions from different disciplines, e.g. sociology (Caru-

ana, 2007), ethics (Barnett *et al.*, 2005), social psychology (Sparks and Shepherd, 1992), anthropology (Wagner, 2003), human geography (Low and Davenport, 2007) and economics (Altman, 2005).

Several studies emphasise the characteristics that ethical consumers consider important in the purchase of food (Coff *et al.*, 2008; Korthals, 2004), below summarised in ten categories in Table 1.

Some of these categories are not necessarily endorsed; e.g. it is doubtful whether an intrinsic quality can be considered an ethical element, while trust and voice are very general items, but with respect to the other elements there should be a general consensus to consider them as associated with ethical issues. Transparency appears to be a generic ethical attribute that guarantees the consumer product characteristics. This list is not necessarily exhaustive for the purposes of the present work, but serves to better focus the ethical issues of consumer demand.

It is evident that ethical consumption is strongly connected with the concept of sustainability, which also involves environmental, social and economic dimensions of production, consumption and market exchange. Therefore, in this paper we often refer only to ethical characteristics or attributes, where ethical aspects also include a sustainable dimension.

## 2.2 Ethical certifications and traceability in agri-food sector

Numerous agri-food products present one or more of the ethical characteristics listed in Table 1, such as wine, olive oil, coffee, cacao, cheese, ham and

**Tab. 1.** Main categories of characteristics of ethical demand

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1. Animal welfare
  2. Human health
  3. Methods of production and processing, and their impact (e.g. environmental, landscape)
  4. Terms of trade (fair price, etc.)
  5. Working conditions
  6. Quality (intrinsic qualities such as taste, composition, etc.)
  7. Origin and place
  8. Trust
  9. Voice (participation)
  10. Transparency
- 

Source: Coff *et al.*, 2008

different processed foods. At the same time there are different certifications or labels that provide or declare ethical attributes of products, such as Fair Trade, organic, geographical indication (GI) (protected designation of origin – PDO; protected geographical indication – PGI), carbon footprint, vegan labels, no-palm oil/palm oil-free, OGM-free, kosher (or kasher), and halal.

Several of these certifications and labels have both ethical and non-ethical attributes. With reference to the coffee market it is evident that organic production and Fair Trade – the two more known and widespread attributes communicated to consumers – are linked to ethical aspects of coffee, but not only to these (Tab. 2).

Note that the list of attributes indicated in Table 2 is not necessarily exhaustive, but highlights that in several cases one certification or label can have both ethical attributes and non-ethical attributes, and consumers can look for ethical characteristics and non-ethical characteristics at the same time.

In fact, consumer demand for an agricultural activity that produces crops and raises animals without relying on toxic chemical pesticides, synthetic fertilisers, genetically modified seeds or practices that degrade soil, water or other natural resources can be related to ethical aspects. However, there is another component of consumer demand for organic products that relates to food safety and the absence of residues of fertilisers and pesticides on the food; this component is not concerned with ethical demands. Relating to organic products, it is relevant to remember that the public consultation on the future of the EU organic production policy, which took place in January 2013, identified the main reasons why citizens buy organic products. The respondents were asked to indicate drivers for purchasing and consuming organic products, and they claimed that the most important reason was general attitudes that concern respecting the environment and its sustainability, animal welfare

**Tab. 2.** Ethical and non-ethical attributes of Fair Trade and organic coffee

Certification or labels	Ethical attributes	Non-ethical attributes
Fair Trade	Terms of trade, working conditions, origin and place	
Organic	Animal welfare, working conditions and human health (farmers' health), methods of production and processing and their impact (soil and landscape preservation, reduction of CO <sub>2</sub> emissions, etc.)	Human health (consumer's health), methods of production and processing and their impact (no chemical residue on products)

Source: Own elaboration

and other similar elements, all characteristics of organic production that can be considered ethical aspects ('over 80% of all questioned citizens claimed that the most important rationales behind organic product consumption were concerns about the environment' [European Commission, 2013]).

It is also interesting to note that labels such as Fair Trade and organic production – but also GI and others – do not strictly follow the standard required by the traceability system provided for food security, although the GI scheme can be considered a model that inspired the traceability rules. As is well known, the EU rules that regulate the traceability system were established by several EC Regulation on the base of the principles established by the European Commission's *White Paper on Food Safety* in 2000.

In the case of organic products, consumers can be confident that they have been produced in accordance with the EU's strict environmental and animal welfare rules, and checked accordingly. These rules introduced a rigorous control system that provides for checks to be carried out on the operators at every stage of the organic chain. Each operator (farmer, processor and trader) has to be checked at least once a year, or more often based on a risk assessment. This approach is a proxy of a traceability system, but it does not necessarily track all movement of products, and the steps within the supply chain, although in some countries, including Italy, systems based on databases were recently introduced.

Moreover, in the case of Fair Trade labels, there is no EU legislation and the certification follows some NGO international standards. In these cases, as in others, consumers usually are not able to establish the origins and characteristics of products, the materials used and the processes adopted. This can only happen if the firm, or usually the whole supply chain, adopts a voluntary system of traceability according to ISO standards.

In this situation, on the one hand it is evident there is growing consumer attention to attributes of agri-food products concerning safety and quality, origin, environmental and socio-economic sustainability, the ethical nature of the processes adopted and the whole organisation of the supply chain. However, at the same time, on the other hand it is doubtful whether consumers are actually able to choose a food in a rational way based on the effective attributes communicated by labels and a certification system, as we discuss below.

In fact, paradoxically, although consumers are under pressure from information on food – from the media, the food industry, food authorities, NGOs and interest groups – details about how foods are actually produced is often not easy to find; much of the information available is superficial, conflicting or incomplete, and it is difficult for consumers to make the right choices (Coff *et al.*, 2008).

Therefore, a traceability system can become a fundamental tool to assure consumers about the effectiveness of the characteristics of the products in accordance with the certification system (organic, Fair Trade, etc.). In particular,

it has become interesting the idea of 'traceability ethics', which adapts the concept of traceability to record and communicate the ethical aspects of a food's production history, including elements concerning the environmental, social and economic sustainability of the agri-food chain (Coff *et al.*, 2008).

It is evident that the importance of ethical traceability for consumers is essentially manifold. Ethical traceability can help consumers make informed food choices; moreover, it can act as a means for enabling consumers to participate more fully as citizens in the shaping of the contemporary food supply. Finally, food producers can use ethical traceability as a tool for managing the ethical aspects of their own production practices and for communicating the ethical values of their products (Coff *et al.*, 2008).

### 2.3 Economic approach

The research on ethical consumption has generated, obviously, multidisciplinary literature with different approaches to analyse the consumers' demand; Andorfer and Liebe (2012), for example, with reference to Fair Trade consumption, consider economic approaches, social psychological approaches, studies about consumer attitudes, research on information and communication, consumer values studies, sociological approaches and different research methods (qualitative, quantitative, experimental, etc.).

Andorfer and Liebe (2012) cite the economic research of Cranfield *et al.* (2010), De Pelsmacker *et al.* (2005a) and Dickson (2001), who include a price attribute in their description of ethical products to estimate respondents' willingness to pay (WTP). De Pelsmacker *et al.* (2005b) use conjoint analysis (CA) to assess the relative importance of different marketing strategies of ethically labelled coffee, without including product price. In general, price, Fair Trade and organic labels, country of origin, type of coffee beans and roast are product attributes often included in these studies. Moreover, Basu and Hicks (2008) and Auger *et al.* (2003) draw on choice experiments (CE) to estimate WTP for Fair Trade coffee and sweatshop-free manufactured athletic shoes; CE are also used to assess respondents' interest in different criteria for social labels (Howard and Allen, 2010) and to analyse the effect of social context on Fair Trade consumption (Carlsson *et al.*, 2010).

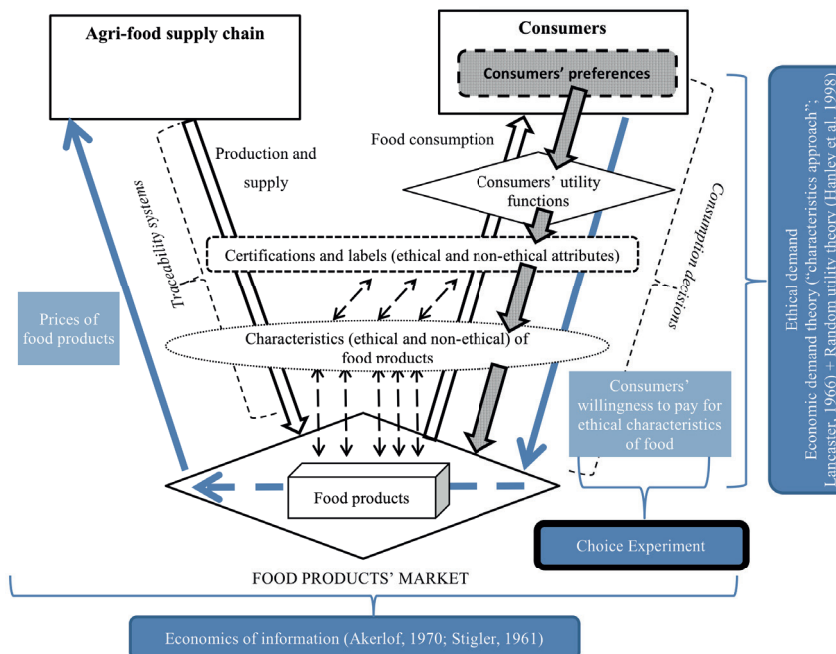
In this article, we follow an economic approach based on the new consumer demand theory of Lancaster (1966), in combination with the random utility theory (Hanley *et al.*, 1998); on this theoretical basis, we conduct CE to evaluate consumers' WTP for ethical attributes of food. The economics of information theory (Akerlof, 1970; Stigler 1961) also contribute to draw the theoretical framework of our analysis.

In particular, the considerations in the preceding paragraphs about (a) the demand for ethical characteristics of products, (b) the ethical attributes provided by different certifications and labels and (c) the relationship between certification schemes, brands and labels from on one hand, traceability, and ethical traceability on the other hand, outline the following analytic scheme (Fig. 1).

With reference to consumer demand, it is necessary to note that this approach means the adoption of the so-called new consumer demand theory (Lancaster, 1966), and consequently there is the operational problem of estimating the consumers' WTP for the specific ethical attributes of the products.

Regarding the first issue, it is useful to note that the traditional microeconomic theory investigates the relationship between the demand for goods and their prices and income under the assumption of utility maximisation and rational behaviour. The patterns of current food consumption and the demand analysis has changed over the past few decades to incorporate new factors, now considered more important than prices and income, in order to explain modern food choice process in affluent societies. The traditional approach is

Fig. 1. The outline of the theoretical framework



Source: Own elaboration

not able to explain consumer behaviour, which has led many studies, especially in recent decades, to incorporate other factors in applied food demand analysis as proxies for the unobservable factors that determine consumer preferences; these studies have given rise to new approaches to consumer modelling.

In 1965 and 1966, Gary Becker and Kevin Lancaster, in two different but related articles, introduced the concept of household production functions. In these models, it is assumed that utility is derived from the characteristics of goods (not from the goods *per se*), and that the utility of product alternatives is a latent construct that only exists in the minds of individual consumers. Researchers are not able to observe this directly. Yet, indirect measurement techniques can be used to explain a significant part of the latent utility construct. An error component determined by additional unobservable attributes, measurement errors and variation between individual consumers, however, remains unexplained.

The estimation of consumers' WTP a premium for the ethical features of products is a prevalent research objective of several empirical studies. For example, consumers buying the more expensive Fair Trade product reveal their preferences for the ethical features of a product and, consequently, these consumers gain additional utility from these characteristics.

If the characteristics of goods become, in this approach, what it is actually required by the consumer it means that consumers are interested in food knowledge, and therefore information plays a substantial and important role. In fact, the ability of consumers to perceive certain characteristics of the product may be weak, as we see; in these cases, a traceability system (an ethical traceability system in our case) becomes important to ensure the existence of the characteristics desired by consumers. Moreover in the Lancaster approach the characteristics possessed by a good or a combination of goods are the same for all consumers.

The theory at the base of this later aspect is distinctive in the economics of information (Akerlof, 1970; Stigler, 1961). More specifically, among the different sources of information available to the consumer, labelling can support customers in making choices connected to their preferences in terms of qualitative features by reducing information asymmetry and, thus, improving economic efficiency. Akerlof (1970) was the first to show that asymmetric information, as quality uncertainty about a commodity, can cause the market to degenerate into one consisting of only low-quality commodities.

#### *2.4 Choice experiments (CE)*

As is well known, different methods can be used to estimate consumers' preferences for specific attributes of goods, among these contingent valuation



method (CV), conjoint analysis (CA) and choice experiments (CE) are some of the most used (see Breidert *et al.*, 2006).

The basic idea behind CA and CE methods is that public and private goods can be described as a bundle of different product attributes; each combination of these characteristics results in a different product, and survey respondents are asked to evaluate these changes (Hanley *et al.*, 1998). As in studies using CV, a hypothetical market of goods is constructed. However, in contrast to CV methods – and to simple item survey questions for that matter – consumers' WTP is measured indirectly and respondents are forced to make trade-offs between the different product attributes. Thus, consumer choices are supposed to be more realistic and therefore yield more valid measures of WTP. The experimental design of CA and CE allows researchers to estimate the effect of each product attribute on respondents' product evaluations or product choices independently (Luce, 1959; McFadden, 1974; Lusk *et al.*, 2003).

According to Louviere *et al.* (2010), it is useful to remark that CA is a generic term used to describe several ways to elicit preferences, using methods that are purely mathematical and concerned with the behaviour of number systems, not the behaviour of humans or human preferences. Therefore, CA is generally inconsistent with economic demand theory. Instead, CE methods, which evolved out of the theory of 'conjoint measurement', have a long-standing, well-tested theoretical basis in random utility theory, and are more general and consistent with economic demand theory. In particular, CE is based on Lancaster's (1966) characteristics theory of value in combination with the random utility theory (Hanley *et al.*, 1998).

Therefore, statistical analyses of the responses obtained from CE are used to estimate the marginal values of attributes of a good. Those values represent the premium price that consumers are willing to pay for the characteristics they desire.

For these reasons, this study uses CE to estimate consumers' WTP, with data obtained from a field experiment through face-to-face interviews at some points of sale.

### **3. The world coffee market and the ethical consumption of coffee**

#### *3.1 Trends in the global coffee market*

The world coffee market shows that coffee is a widespread consumption product characterised by a considerable potential for further increases. Moreover coffee is one of the world's most valuably traded commodities and a pioneering food for sustainability and ethical certification, such as organic and

Fair Trade. In particular, coffee is one of the world's most valuably traded commodities, second only to oil, and the most widely traded agricultural product. Its consumption has doubled in the last forty years as the drink has come to form part of a modern affluent lifestyle in the Global North (Tucker, 2011).

In fact, world coffee production was estimated to be around 141.9 million bags in crop year 2014/2015, while an initial estimate of world coffee consumption in calendar year 2014 was 149.3 million bags (ICO, 2014, 2015). This production represents an average annual growth rate of 2.3% over the past four years; statistical data shows similar growth rates in the first decade of the century (ICO, 2014, 2015).

World coffee consumption is characterised by different trends; more mature or traditional markets, such as those of Europe, the USA and Japan, are relatively stable, while emerging markets, particularly Africa and Asia, are recording significant increases, albeit from a relatively low base. The strongest growth over this time has been found in emerging markets, averaging 4.6% since 2011, with particularly strong demand in Russia, South Korea, Algeria and Turkey. Exporting countries have also been recording increased demand, at an average of 2.6%. Brazil, with 20.8 million bags for 2014, is by far the largest coffee consumer among exporting countries, followed by Indonesia (4.2 million), Ethiopia (3.7 million) and Mexico (2.4 million) (ICO, 2014, 2015).

The mature market and the traditional market account for over 50% of the world's total coffee consumption, but they do not drive global growth; in fact, these markets have been growing at a rate of 1.5% over the past four years. In particular, Europe has recorded relatively modest growth over this time, increasing on average 0.8% per year, while North America has registered 2.6% over the period (ICO, 2015).

In recent decades in these areas, especially in Europe, the traditional coffee market has transformed from a principally 'bulk' market – where the coffee was a commodity – to a market with quality and sustainability claims, where the product has become, in many cases, a 'speciality food'. In fact, this sector is now characterised by an increasing awareness regarding the implications of climate change, sustainability of production and new variations in consumer demand.

Therefore, since the late 1990s and the beginning of 2000, the sustainability debate has been directly linked to the coffee sector, so that coffee is regarded as the pioneering industry for sustainability standards and certification (Potts *et al.*, 2014).

In particular, in the traditional markets and especially in Europe, the increase in specialty coffee consumption is increasing the value of demand more than the volume, although the USA and Canada are still exhibiting considerable market growth. In addition, mainstream roasters are focusing on devel-

oping more individualised products for their consumers; this trend allows for price differentiation. Exporters should be aware of the increasing market segmentation for the distinct needs of individual consumers, such as Fair Trade and organic.

In addition to the better-known niche labels (Fair Trade and organic), a number of new schemes have emerged that focus on mainstream products. The most popular mainstream labels include 4C, UTZ Certified, Rainforest Alliance and the company labels Coffee and Farmer Equity (CAFE) Practices and Nespresso AAA. Standard compliant coffee production represented 40% of global production in 2012, with Brazil and Vietnam being the largest producers of standard compliant coffee by volume in 2011/2012 (Potts *et al.*, 2014). UTZ Certified (26% per annum from 2008 to 2012) and Rainforest Alliance (30% per annum from 2008 to 2012) are the fastest-growing labels. It is expected that certified farmers and exporters can bargain for a better income due to increased efficiency and insights into their position in the supply chain. However, oversupply can lead to reduced benefits for sustainable producers (Fairtrade Foundation, 2012; ICO, 2014, 2015).

Moreover, the coffee market is also defined by high price volatility and long-term declining profits for the producers, in particular for small producers (ICO, 2014, 2015) who are the weaker agents of a complex supply chain with many actors.

In fact, the agents of the coffee supply chain also have to face high price volatility. The causes of price volatility are largely systemic, and price speculation, unfavourable weather conditions and climate change have continued to drive price volatility. The current coffee market is influenced by speculation more than ever before. This is due to the prevailing uncertainty surrounding the damage to the Brazilian crop, together with higher than usual price volatility (ICO, 2015). In addition, oversupply and growing global production contribute to the ongoing profit decline in the coffee sector, which particularly affects profits for the growers. International efforts (*e.g.* by the International Coffee Organization – ICO) to secure a more stable and predictable relationship between supply and demand have not yet counteracted the ongoing price volatility. In this situation, product segmentation, price differentiation and supply chain coordination/integration are some useful strategies to tackle high price volatility. In addition, agents can adopt other strategies of risk management concerning financial and insurance instruments, such as futures, options and insurance policies.

Of note is that the coffee supply chain is very complex and involves many actors; by some reports, a coffee bean could change hands as many as 150 times along the commodity chain between the producer and the consumer. Almost 70% of the coffee produced worldwide is sold by thousands of very

small farms (with less than five hectares) to a few international traders and coffee roasters. The international traders and coffee roasters have recently undergone a process of horizontal and vertical integration; as a result, the main groups of traders and roasters have increased their market share, and the market power distribution among farmers, traders and roasters has become highly asymmetrical (Rotaris and Danielis, 2011).

In summary, it is possible to observe that coffee is one of the most important goods produced in developing countries (in many producing countries, coffee accounts for over 75% of total export revenue) and consumed (and also transformed) in developed countries. It therefore represents a symbol of the economic relations between these two world areas in a market characterised by imperfect competition, where the market power distribution between the agents (in particular between producer on one hand and traders and roasters on the other) is asymmetrical. For these reasons, the distribution of the added value between coffee market agents represents a fundamental ethical aspect of a traditional economic problem.

Organic and Fair Trade are two of the most important ethical attributes of coffee with specific labels. The success of an organic and/or Fair Trade coffee depends on several factors. One of the most critical is the willingness of consumers to pay a premium price for ethical attributes.

### *3.2 Ethical consumption of coffee*

Ethical certification in the coffee sector dates back to 1967, when the first organic coffee was exported from Mexico. Although principally identified as production without chemical inputs, the organic movement was initially fuelled by an interest in building farm sustainability through improved soil health. Since then, organic production has grown to be associated with, and is largely fuelled by, a combination of ensuring both environmental integrity and personal health.

The first certification initiative to explicitly target trade itself as a tool for improving farmer livelihoods was the Max Havelaar label, established in Holland in 1988. This model, which required licensees (manufacturers) to pay a minimum price for coffee while also ensuring other trade benefits, was quickly adopted in other countries; these eventually came together to form Fair Trade Labelling Organizations International (FLO) in 1997. In addition to the specification of a minimum price, Fair Trade is exceptional in that it works only with democratically organised smallholders (i.e. those organised into co-operatives) while also specifying a fixed social premium to be distributed to the producer organisations for reinvestment in the local community (Adriani

and Becchetti, 2004; Araque-Padilla *et al.*, 2015; Becchetti and Rosati, 2007; Becchetti and Solferino, 2003; Fehr and Schmidt, 1999; Gallenti and Prestambugo, 2001). It is estimated that while conventional supply chains distribute to the farmers 8% of the price paid by the final consumers, the Fair Trade supply chain awards the farmers 18% of such value. Finally, traders and coffee roasters get 83% and 73% of the shelf price within the conventional – and Fair Trade supply chain, respectively (Rotaris and Danielis, 2011).

In recent decades, organic and Fair Trade initiatives have continued to benefit from the growing corporate and consumer interest in sustainable sourcing, with constant growth well beyond that of the conventional coffee sector as a whole. The latest reported sales for both Fair Trade (2012) and organic (2011) are in the range of 130,000 metric tons (each approximately 2.1% of the 2012 coffee trade), making them major players in total sales of sustainable coffee (Potts *et al.*, 2014).

Numerous international and Italian studies have analysed consumers' preferences and consumers' WTP for ethical attributes of coffee certified by Fair Trade or organic labels. Prominent international level studies include Arnot *et al.* (2006), Basu and Hicks (2008), Cranfield *et al.* (2010), Galarraga and Markandya (2004), Loureiro and Lotade (2005), De Pelsmacker *et al.* (2005a), De Pelsmacker *et al.* (2005b), Hudson M. *et al.* (2012), Wolf and Romberger (2010) and Yang *et al.* (2012). In Italy we evidence the studies of Bosbach and Maietta (2011), Catturani *et al.* (2008), Cicia *et al.* (2010), Rotaris and Danielis (2011) and Maietta (2005, 2009).

These studies, in particular with reference to Italian consumers' behaviour, evidence a positive WTP for ethical attributes of coffee, in particular for organic coffee, related to some variables such as personal income, and increasingly over time.

#### **4. Choice experiment design**

We applied a CE to the Italian coffee market in order to define not only the ordinal ranking of preferences but also the WTP for the key characteristics of the product: organic and Fair Trade attributes.

In fact, since the market share of the organic and Fair Trade channel ultimately depends on the consumers' preferences for the characteristics of the product and on the premium price they are willing to pay for the organic and Fair Trade label, it is necessary to analyse the consumers' choices in order to estimate the market potential of these products. As explained above, Fair Trade is more closely related to the ethical behaviour of consumers and less tied to the intrinsic characteristics of the product; in addition, the organic la-

bel is more strongly linked to the health aspects of consumption, also presenting characteristics of ethical consumption.

From a methodological point of view, the CE method approximates real-world purchasing behaviour, and for this reason is widely used in economic research to study the valuation of public and private goods, including Fair Trade and organic ones (Arnot *et al.*, 2006; Carlsson *et al.*, 2010; Hanley *et al.*, 1998; Hudson M. *et al.*, 2012).

Moreover, this study uses for exploratory purposes the multinomial logit model (MNL) and examines a random effect specification by implementing a random parameter logit model (RPL). Unlike the traditional MNL, where consumers are assumed to be homogeneous, here heterogeneity in consumer preferences for coffee attributes is measured. Despite the traditional logit, the RPL model relaxes the limitations by offering particular flexibility, in order to deal with respondents' differences in choice decision strategies and choice consistency, which would otherwise lead to biased part-worth utilities (Hensher, 2010; Hess *et al.*, 2013; McFadden and Train, 2000). The increasing use of a RPL model for the analysis of CE in food contexts has been underpinned by recognition of the heterogeneity in consumers' preferences and the desire to make this heterogeneity relevant for marketing segmentation purposes.

Welfare measures are found by looking at the marginal rate of substitution between non-monetary and monetary attributes included in the indirect utility function (IUF). Therefore, it was possible to estimate the premium price (or WTP) for each attribute level by dividing  $\beta$  coefficients by  $\beta_{\text{price}}$ :

$$\text{WTP} = - \beta / \beta_{\text{price}}$$

As the utility function is assumed to be linear in cost, the marginal WTP for the attribute is the ratio between the parameter of the attribute and the cost parameter in the utility function.

Prior to developing the CE and analysing consumers' preferences towards coffee, we formed a focus group and conducted a pilot study during the process of designing the questionnaire.

Focus group discussions were used to obtain information about the dimensions of the quality of coffee that are important to individuals when choosing this product. Five main attributes and their levels were defined after the focus group screening (Tab. 3): geographic origin of coffee, organic product, Fair Trade product, recyclable package and price. To enable estimation of WTP, a monetary attribute with three levels was defined as the price for a 250g package. All five were among the top ten attributes identified in the focus groups. The levels of attributes were chosen to reflect the range of characteristics that respondents might expect to experience.

**Tab. 3.** Attributes and attribute levels used in the CE

Attribute	Levels
Geographic origin	Ethiopia; Indonesia; Brazil
Fair Trade coffee	Yes; no
Organic	Yes; no
Recyclable package	Yes; partially; no
Price (€/250g)	3; 5; 9

Source: Own elaboration

We conducted a face-to-face questionnaire survey among Italian consumers during 2013 and 2014 in the Friuli Venezia Giulia Region. A pilot survey was conducted involving 50 consumers filling in the pilot questionnaire. Before the survey, interviewers were trained in survey administration.

The questionnaire, which was completed by 420 respondents, included questions about respondents' socio-economic characteristics, coffee-related consumption habits, their specific knowledge of organic and Fair Trade coffee (section A of the questionnaire) and their perception of the Fair Trade coffee (section B of the questionnaire). As usual in this kind of study, interviewees were contacted in the main lobby area of a number of supermarkets, groceries and Fair Trade shops because of the product's characteristics. Financial incentives were not offered.

A fractional factorial orthogonal design was then generated using SPSS<sup>®</sup> software, with 18 alternatives (or profiles) selected. The profiles were randomly combined into choice sets, so that respondents had to face six groups with three treatment combinations each, plus the opt-out alternative.

To analyse data, we used a utility function for each considered option in the multinomial logit model (base model) as follows:

$$U(x_i) = \beta_0 \cdot \text{OPT-OUT} + \beta_1 \cdot \text{INDONES}_i + \beta_2 \cdot \text{BRAZIL}_i + \beta_3 \cdot \text{FAIR}_i + \beta_4 \cdot \text{ORG}_i + \beta_5 \cdot \text{REC}_i + \beta_6 \cdot \text{NOREC}_i + \beta_{\text{price}} \cdot \text{PRICE}_i,$$

where:

OPT-OUT = dummy for the 'none of these/no choice' option;

INDONES = dummy for origin from Indonesia;

BRAZIL = dummy for origin from Brazil;

FAIR = dummy for Fair Trade coffee attribute;

ORG = dummy for organic coffee;

REC = dummy variable for recyclable package;

NOREC = dummy variable for no recyclable package;

PRICE = price in €/kilo.

The  $\beta$ s coefficients can be considered as the marginal utilities of each attribute of the utility function.

## 5. Results

Table 4 shows the main characteristics of the respondents. The sample was highly diverse in key socio-demographic variables, which was helpful in understanding the factors affecting the coffee-buying attitudes. Of the 420 respondents, 62% were women. Each relevant age group was represented. Regarding level of education, 50% of the respondents had successfully completed high school and 32% held a university or postgraduate degree. More than half of the respondents were employed (54%), 16% were students or housewives and 22% were retired.

As for their knowledge and habits in terms of consumption of coffee, most members of the sample knew Fair Trade (71%) and organic coffee (92%), and 46% and 58% consumed them respectively.

The analysis of the data was performed using a RPL model, with the results obtained summarised in Table 4. The estimation of the model was conducted using NLOGIT<sup>®</sup> 4.0. As regards distributional assumptions made about the chosen random parameters, we opted for a triangular distribution. Although we did not observe the WTP, we could estimate the respondents' WTP from the RPL model. In addition, we were able to obtain individual specific parameters, and consequently WTP values for each respondent.

All the coefficients of the model had the expected sign except Fair Trade coffee, and they were all statistically significant ( $p < 0.005$ ). The model appeared to have a good ability to interpret the phenomenon (pseudo  $r$ -squared = 0.29; Tab. 5). We noticed that respondents tended to prefer coffee produced in Brazil, where the most traditional coffee is produced, not taking into consideration coffee quality. Their mean WTP was € 3.3. In addition, while literature shows a large range of WTP premiums for Fair Trade coffee (Van Loo *et al.*, 2015), in our study it seemed to decrease respondents' utility. According to Basu and Hicks' (2008) results, this could be due to the lack of knowledge about this type of certification and the abovementioned positive impacts on improving the livelihoods and wellbeing of producers. In order to better understand the RPL results for this attribute, and to take into consideration latent heterogeneity, we analysed the cumulative frequency distribution of individual WTPs. From the analysis of this distribution, it was possible to observe that more than half of respondents had a positive



**Tab. 4.** Questionnaire: Section A

Respondents' characteristics	Contents	Sample Friuli Venezia Giulia Region Italy		
		(%)	(%)	(%)
Gender	Female	62	48	49
Age	Less than 25 years	8.2	21	24
	25-40	35.6	20	21
	41-55	27.6	23	23
	56-70	23.1	19	17
	Older than 70	5.5	17	15
Education	Primary and lower secondary	17.9	49	55
	Secondary	50.0	38	34
	Graduate	31.6	13	11
	Other	0.5	/	/
Employment	Employee	43.2		
	Entrepreneur/professional	10.8		
	Students/housewife	15.6		
	Retired	22.5		
	Other	7.9		
Knowledge of Fair Trade coffee	Yes	71.5		
Consumption frequency of Fair Trade coffee	Occasionally	46.2		
Knowledge of organic food	Yes	91.7		
Consumption frequency of organic food	Occasionally	57.8		

Source: Own elaboration

WTP for this attribute, highlighting the significant heterogeneity among respondents.

However, our findings demonstrate that consumers seemed to be mainly interested in pointing out the opportunities of organic coffee, as respondents were willing to pay a premium price for the organic attribute (€ 2.8). Moreover, they were also willing to pay for recyclable packaging (€ 2.5), while not having recyclable packaging seemed to decrease their utility (€ 4.7).

**Tab. 5.** Random parameter logit model results

	Coeff.	Std. Error	T-value	P-value	WTP estimate (€ per 250 g)
Random parameters in utility functions					
INDONES	-0.378	0.109	-3.471	0.000	-2.2
BRAZIL	0.569	0.110	5.174	0.000	3.3
FAIR	-0.744	0.131	-5.660	0.000	-4.3
Non-random parameters in utility functions					
OPT-OUT	-3.948	0.211	-18.725	0.000	
PRICE	-0.173	0.015	-11.489	0.000	
ORG	0.495	0.168	2.944	0.003	2.8
REC	0.432	0.071	6.119	0.000	2.5
NOREC	-0.814	0.122	-6.656	0.000	-4.7
Derived standard deviations of parameter distributions					
INDONES	0.929	0.128	7.248	0.000	
BRAZIL	1.009	0.092	10.962	0.000	
FAIR	0.972	0.077	12.541	0.000	
McFadden pseudo R-squared= 0.29					
Log-likelihood = -2,474.63					
Number of observations: 2,520					

Source: Own elaboration

## 6. Conclusions

This study examined attitudes towards organic and Fair Trade coffee among Italian consumers. The findings provide an understanding of how consumers perceive Fair Trade and organic attributes of coffee. The RPL results showed that respondents tend to be more concerned with organic attributes than with Fair Trade coffee. Nevertheless, the analysis also identified a considerable heterogeneity among respondents, and a consistent group of them were willing to pay a premium price in order to consume a Fair Trade coffee. However, these findings could be due to several factors: a) the attributes we considered in our CE, as we compared Fair Trade coffee with the organic attributes, while other studies did not consider this comparison. Because our respondents had to consider two ethical attributes, they could have decided to place more importance on environmental and safety considerations (organic production)

instead of the social impacts of the Fair Trade system; b) sample dimension; c) socio-economic characteristics of the respondents; d) interview location or the type of shop (supermarket vs. specialty store); and e) the heterogeneity of the sample investigated influencing the results. In particular, consumers with strikingly different socio-demographic, demographic, economic and consumptive behaviour variables could have had a different WTP for Fair Trade coffee.

These aspects underscore an important area of further research and exploration – consumer WTP in distinct markets.

These findings can be viewed as part of a more comprehensive work to understand consumer behaviour. First, they can be used for developing further research to improve producers' strategies by reflecting what consumers perceive as important; second, they can be used to improve consumers' knowledge about Fair Trade products and their impacts.

According to Bosbach and Maietta (2011) and Schollenberg (2012), consumers in developed countries are increasingly interested in the consumption of products that incorporate ethical aspects; however, it seems obvious from our study that consumers need more information about Fair Trade products. In fact, while other studies (e.g. Rotaris and Danielis, 2011) stated that respondents were willing to pay a significant premium price for certified Fair Trade coffee, our results suggest that a group of respondents were not.

It is well known that the coffee sector has been the testing ground for many of the sustainability initiatives operating across commodity sectors today. As such, the sustainable coffee market is one of the most mature markets currently in operation.

Differentiated and value-based coffees, including environmentally and socially certified products, present an opportunity for small rural producers to participate in the cost-competitive global coffee market. Indeed, securing a market position based on ethical certification is potentially a viable long-term strategy for coffee-producing smallholders.

Ethical consumption mixes the role of consumer with that of citizen. There is much talk about consumers' informed choice, and most actors in the food supply chain and elsewhere support the idea in principle (Cosmina *et al.*, 2016). However, informed food choice with respect to ethical issues in the agri-food sector is still limited. In particular, in the coffee market, ethical certification is not supported sufficiently by a traceability system. In fact, traceability has been implemented in the agri-food sector in general, and in particular inside the EU, but ethical traceability has not.

Ethical traceability has the potential to function as a communication strategy for empowerment and involvement in ethical aspects of food production. This is true both for actors in the food supply chain and for consumers. For actors in the food supply chain, ethical traceability and informed food choice

can help define the ‘value-laden’ and ethical qualities of their products, and thus contribute to the ‘identity’ of their products. For consumers, ethical traceability is paramount both for making informed food choices and for engaging in ethical issues related to food production. According to the Akerlof theorem (1970), the adverse effects of asymmetric or incomplete information give rise to ‘adverse selection’ and an inefficient market equilibrium that highlights the importance of an effective labelling system based on the traceability system.

Ethical traceability is put forward as a potential goal for traceability systems to allow for, and to enable, a more open and democratic approach for consumers to act as citizens in the marketplace through their purchasing decisions by asking for and obtaining the information they desire about food production practices. The realisation of ethical traceability will need to negotiate both these modern supply chain complexities and their governance, and the existing private sector and public sector-endorsed ethical traceability forms in the food system.

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