Literature review on the perception of agro-foods quality cues in the international environment

Sergio Marchesini, Huliyeti Hasimu, Domenico Regazzi

University of Bologna, Italy; Xinjiang Agricultural University, China

smarch78@gmail.com



Poster Paper prepared for presentation at the 105th EAAE Seminar 'International Marketing and International Trade of Quality Food Products', Bologna, Italy, March 8-10, 2007

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Sergio Marchesini ¹, Huliyeti Hasimu ², Domenico Regazzi ³ ^{1,2,3} Alma Mater Studiorum-University of Bologna, Italy; ² Xinjiang Agricultural University, P.R. of China smarch78@gmail.com

Summary

Consumers look for the highest affordable food quality, given their household budgets and perceptions of product quality. Such perception is however strictly related to culturally linked variables, and the importance attached to each component of the overall quality vary greatly among countries. Different perceptions lead to different purchase decisions. This concept is even clearer for the aspects of quality that can't be tested directly.

Consumer goods may be divided into search, experience and credence goods, depending on when the consumer is capable of assessing their quality (before buying, after consuming or in the very long term). Most quality agro-food products, such as food with geographical indications (GIs) and low input food (LIFs), fall into the credence good category.

The aim of this paper is to point out how much attention is currently paid in literature (both scientific and popular: articles, papers, reports, marketing studies etc.) to the evaluation of the perceived value of such credence goods attributes for the quality food sector, and which relationships are mainly explored.

A special attention will be paid to the situation in China.

KEYWORDS: quality, agro-food, perception

1. Introduction

Labels are used as quality cues, to the extent they are understood by consumers. Universal labels, such as national organic certifications, reduce search costs. Easy identification of quality makes price comparison and choice easier (Lohr, 2000). Understanding the relationship between quality attributes is important in order to clarify which factors influence the purchasing decisions with regard to quality food.

- Zanoli et al. (2002) pointed out that certification standards and taste are perceived by the distribution channel members as the most important purchasing factor, followed by visual and smell components, and production methodology. Consumers share the same vision, but they focus less on geographical indications and guarantees of origin.
- According to Steenkamp (1997) the most important evaluative criteria are product quality, price, brand name/reputation, freshness and guarantees. The last factor, guarantees, makes it easier to interpret and process information in presence of hidden quality attributes.

According to a quality cue related criterion, quality agro-food products may be grouped into various groups.

This literature review will take into consideration two groups 1) food with geographical indications (GIs) and 2) low input foods (LIFs), that is to say foods produced according to systems that relies on sustainability and the use of low chemicals (integrated pest management system, organic, green foods etc.), aiming at comparing the consumer's

attitude towards such labeled and towards standard products, as well as the relationship between the two groups. Consumer's attitude towards GIs and LIFs have been in fact widely analyzed in literature, but very few papers have examined the associations between the two groups, or studied the potentials that GI and LIF labels could express if combined or presented jointly.

This paper is meant to provide the basis for further studies aimed at comparing or combining the effectiveness of the two abovementioned labeling systems.

2. Background

Quality is a multidimensional concept: intrinsic data relating to the product itself are combined with more symbolic data, and each country or social group has its own set of evaluation criteria. According to Cazes-Valette (2001), seven distinct facets could be distinguished to define quality:

- Nutritional quality: the food's overall contribution to a balanced diet.
- Hygienic quality: when the food contains no harmful or toxic substance and is therefore supposedly good for your health.
- Functional quality: if the product is practical to purchase, handle, transport, prepare and use
- Organoleptic quality: the sensory pleasure that the product procures when it is purchased or eaten.
- Social quality: according to how the food position ourselves in terms of belonging to a group or in relation to a reference group.
- Symbolic quality: acceptability by the consumer's cultural background.
- Humanistic quality: if it's grown using environmentally friendly practices or providing farmers a fair price

The reason why imported goods are often perceived as being of lower quality is because of the different importance attached to each component of the overall quality of the good. (e.g. many United States consumers mainly identify quality with food safety, while Europeans tend to define with the same term perhaps less "sterilized" products but embedded with more cultural and environmental attributes). Moreover there is no single international regulation, so even the premises for a united vision of "quality" are lacking.

Quality may also be both identified with sensory capacities (taste, practicality of the product) or just claimed due to the impossibility to check (organic, traditional, local produce, animal welfare, traceable). In this case quality is underpinned by trust in predetermined organic criteria and other information. Therefore consumer goods may be divided into search, experience and credence goods (Nelson, 1970; Darby & Karni, 1973). A good is a search good when the consumer is capable of assessing its quality before buying it, an experience good when the consumer discovers the quality only after consuming it, and a credence good when the consumer never discovers the quality of the good (or does so only in the very long term). Many agro-food goods fall into the "credence" category (Bureau et al., 1999).

Many consumers, especially European, consider that the soil, climate and traditional know-how that exist in a region have a decisive influence on product quality. In the EU three systems of identification have been implemented:

- PDO (Protected designation of origin): food is produced, processed and prepared in a given geographical area using recognized know-how, when the origin determines the quality of the product
- PGI (Protected geographical indication): the geographical link must occur in at least one of the stages of production, processing or preparation
- TSG (Traditional specialty guaranteed): does not refer to the origin but highlights traditional character, either in the composition or means of production

Unlike the EU, the US does not have legislation specifically geared towards GI in general (wines are an exception). The US provides property rights protection for GIs through its trademarks legislation. More specifically, GIs like Roquefort cheese and Colombian coffee are protected in the US as certification marks, according to the US trademark Act. The certification mark concept encompasses GIs, but is much broader and, by design, it cannot be used to control supply. Therefore the establishment of farmer owned brands in the US is not widespread, and only very few groups are aware of its potentials. This stands in sharp contrast with the regulatory environment for GIs in the EU (Hayes et al., 2005).

LIFs on the other hand are distinguished from non-LIFs by the methods used in their production and processing, rather than by observable or testable characteristics. Although there is no single international production regulation, all generally accepted LIF rules reduce or, in some cases, prohibit use of synthetic fertilizers, pesticides, growth regulators, and livestock feed additives, encourage long-term soil management, emphasize animal welfare and extensive record keeping and planning. Intermediate categories of LIFs, such as certified Integrated Pest Management (IPM) in the United States, Low-Chemical foods in Japan, and some classes of Green Food in China, fall short of the strict requirements of organic certification (Lohr, 2000).

Currently, there are numerous systems that growers can adopt to ensure safe food production, which include amongst others Good Agricultural Practices (GAP), Good Manufacturing Practices (GMP), Hazard Analysis Critical Control Points (HACCP), Good Hygiene Practices etc.

One of the GAP systems that have taken off within the European community is EurepGAP. EUREPGAP was established in 1997 by the Euro-Retailer Produce Working Group (Eurep) with the aim of setting standard and procedures for the development of GAP, and represents the most accredited agricultural practices system worldwide.

3. Objectives

This review will explore and clarify the following relationships between agro-food quality product cue related attributes:

- 1. Distance from the region of origin attitude towards GIs
- 2. Region of origin versus brand
- 3. Willingness to pay
- 4. Distance from the region of origin certification demand
- 5. Associations for organic products
- 6. Attitude country of Origin (for China)

4. Data and methodology

The analysis will focus on consumer's perception towards quality agro-food products and investigate the causes that determine such attitude. This review will therefore array bibliographic materials according to consumer's evaluation factors (such as WTP), country or regional information, and quality cues (organic/green or geographically linked foods). The search for the material to review will rely on the literature available on scientific community databases.

Distance from the region of origin - attitude towards GI

Designations of origin are often indicated as distinctive quality signals, but this is true only under particular conditions. The role of origin information is to serve as a quality indicator for undetectable attributes, making product differentiation easier. This requires that a sufficiently precise quality level must be attached by the user to origin information: if the consumer is not able to detect these differences, then origin is not perceived as a signal of

higher quality and therefore the product is not chosen (new and foreign consumers fit this description).

Differentiating a product by means of a region of origin guarantee is generally more difficult because the association of a particular quality level with a restricted geographic region is usually limited to those subjects with a sufficient knowledge both of the product and of the area. The higher the physical and psychological distance between the individuals and the product, the lower is the goodness of quality perception from designations of origin, which is not interpreted as a quality cue "per se". It is the case of foreign consumers facing imported product, both the lack of consumption experience, which makes difficult to perceive the relevant attributes, and the lack of familiarity with the regional origin (PDO, PGI), usually lead to lower appreciation. Producers may not therefore be able to sell a domestically well established new product on a foreign market if foreign consumers cannot observe its true quality or if they do not put value on the quality characteristics whose level is higher with respect to similar products (Boccaletti, 1999).

- Scarpa and Del Giudice (2004) showed a sizeable diversity of taste across three representative Italian cities. Differences are marked especially for the intensity of taste for certified origin. The proportion of residents in Milan (North) who find certified Southern olive oil unattractive is much larger than in Rome (Centre) and Naples (South). Similarly, the proportion of residents in Naples and Rome not attracted by certified oil from the Centre-North is higher than those in Milan. These findings support the existence of home-bias as found in other studies (Scarpa et al. 2001). The intensity of preference for organic is lower as we move from North to South, with preference intensity for PDO/PGI always dominating the organic nature of the product in all towns.
- Regional differences were identified also by Gil et al. (2000). In general terms, consumers were willing to pay a higher premium for organic products in the producing region (Navarra) than in the consuming region (Madrid).
- Location of production does seem to play some role in terms of proximity to consumption, promoting trust, perceptions of freshness and traditional quality, and it can also serve to improve local economic self-reliance (Midmore et al.2004).
- Interest in supporting regional producers is strong among regular buyers of organic foods (Richter et al., 2000). Many consumers are also troubled by the long distances that food has to travel from farm to table. Organic fruits and vegetables are in demand partly because they are perceived as fresher than conventionally grown foods. With longer distances between producer and consumer, this advantage declines (Lohr, 2000).
- Another study (Darby at. al. 2006) suggests that consumers are willing to pay more for locally produced foods. In the case of fresh strawberries, customers intercepted in grocery stores would pay an average of 64 cents more per quart, while those intercepted at direct markets would pay nearly \$1.17 more per carton of strawberries that was grown locally rather than berries identified simply as "produced in the U.S.".

Region of origins versus Brand

- Besides the country of origin also the brand plays an important role. A strong
 image may reduce it if the reputation built by producers with strong intangible
 investments is high enough to move consumer's quality perception of that product
 to the top of her preference list (Boccaletti, 1999).
- Han and Terpstra (1988) found that both country of origin and brand affect consumer quality perceptions and that origin is more important than brand name.

WTP

Willingness to pay is one of the methods used to measure the value consumers place on a product with a certain or a combination of attributes. WTP is defined as consumer surplus derived from a Hicksian demand curve, where quantity demanded is a function of prices and the utility level and where income adjusts to maintain the utility level (Golan and Kuchler, 1999).

- A study by Dickerson and Bailey (2002) measures consumers' WTP for meat traceability, transparency, and extra assurances (for meat). Traceability was defined as the ability to trace meat back to the farm, transparency as knowing the meat was produced without added growth hormones or knowing the animal was humanely treated, and extra assurances as extra meat safety assurances. Average WTP to upgrade beef and pork sandwiches to a TTA sandwich is about 33% of the price.
- The WTP for products carrying Organic and eco-friendly labels have also been analyzed (apples). An eco-label identifies environmentally preferable products based on an environmental impact assessment of the product compared to other products in the same category (Loureiro et al., 2001). Many consumers who would be favourably disposed toward purchasing eco-labelled apples consider organic apples to be an even safer and more environmentally friendly alternative, and thus will buy organic if products are offered at equal prices. Statistical evidence supports the conjuncture that eco-labelled apples are an intermediate choice between organic and regular apples with respect to certain consumer characteristics (having presence of children, strong environmental and safety concerns usually as deciding factors)
- Research by Umberger et al. (2003) quantitatively and qualitatively evaluates U.S. consumers' preferences for Country of Origin of beef products. Their study shows that the majority of surveyed consumers in Chicago and Denver (73%) were willing to pay a premium of 11% and 24% for Country of origin labelled of steak and hamburgers, respectively. Consumers in the auction study were willing to pay a premium of 19% for steak labelled "USA Guaranteed: Born and Raised in the US." The results also indicated that those who were willing to pay the most for the label believed the label signified increased food safety and quality.
- A survey was made in 2003 in the continental USA indicate that consumers are in general very concerned about food safety issues, viewing US meat as the safest among the selection of countries considered. Nevertheless, consumer willingness to pay for Certified US products is relatively small, although above the expected implementation costs associated with a mandatory labelling program. This finding coincides with the fact that only 36% of the sample favoured consumers paying directly for the costs related to a mandatory country of origin labelling program (Loureiro et al. 2003)
- A study by Gil et al. (2000) found no differences between consumers and likely consumers for organic products in terms of WTP, indicating a similar premium for all products. In both segments, the WTP ranges from 15% to 25% over the price of conventional products. Consumers were also willing to pay a higher premium for meat, fruits, and vegetables, suggesting that for them the organic attributes are more important in fresh and perishable products, or at least it is easier to identify them in such products. In the case of the meat, the higher premium could be partly explained by food scares (BSE, dioxins, etc.).
- A study across Europe found out that the price premium, expressed as the percentage by which the price of the organic product is above the price of a similar conventional product, can be expressed as follows:

Table 1. % by which the price of the organic product is above the price of conventional product

Country	% WTP
Austria	25 – 30
Denmark	20 - 30
France	25 - 35
Italy	35 – 100
Germany	20 - 50
The Netherlands	15 - 20
Sweden	20 - 40
Switzerland	10 - 40
UK	30 - 50
Japan	10 – 20
USA	10 - 30

Source: FAS GAIN reports, 1999 and 2000;

- Richter et al. (2000) determine why frequency of purchase is not higher among occasional buyers: they found that buyers are more price conscious and mistrust organic labels and enforcement more than regular purchasers. Non buyers are most influenced by price.
- According to Henneberry (2004), while consumers in some developed countries
 are very concerned and willing to pay a premium for products that have certain
 desired process-based characteristics such as free of GMOs, consumers in other
 countries (especially if less developed) may not be willing to pay that premium.
 The more urgent needs in terms of food availability, nutritional intake, trust in
 government, positive perceptions of science, and positive media influences are
 among factors that differentiate consumers' attitudes towards and willingness to
 pay for food credence characteristics across the globe.

Distance from the region of origin - Certification demand

 One more consideration concerns the relationship between the demand for certifications and the degree of urbanization of the environment where consumers dwell. Those who live further from the production site have a higher demand for certification, while those who live close to the farms care more about the farm environment and have a lower demand for certification (Bureau and Valceschini, 2002)

Associations for organic products

Organic and green foods are mostly perceived as having benefits associated with a combination of interrelated values focused around health, safety and environmental soundness; as 'pure' or natural food, free from artificial additives, fertilizers, pesticides and growth hormones produced without the use of genetically modified technology. Ethical issues related to organic food quality include aspects of environmental conservation and fair trade (workers rights, social equity, animal welfare etc.). There are also positive associations with the home country, and links with origin-labelling and regional imagery. Organic quality is perceived as a symbol of sustainable agriculture and healthy living. Such perception is interwoven with confidence in production processes (process-related quality), and in the particular use of safe or natural raw materials (health-related quality).

• Studies supports the hypothesis that the belief that organic products are healthier lead consumers to believe that they taste better, in terms of the common perceptions of organic taste as 'real' or 'genuine'.

- There are clear reasons why organic foods should cost more than conventional, although value for money emerged from the focus groups as being of greater significance to consumers than absolute price.
- The perceptions of organic foods, in terms of the benefits sought by consumers and the values that underpin them, are neither stable nor permanent.
- According to Lohr (2000), European retailers emphasize food safety and health aspects of organic foods, with this theme dominating retail messages in 12 countries (Michelsen et al., 1999). Environmental protection is the second most important argument presented by retailers in Europe, although consumers do not consistently select food products according to the environmental impact of the production and processing systems. Whilst there are environmental motives for buying organic food in most European countries, they are less strong than the more individual values, associated with own health issues or food as enjoyment (Midmore et al., 2005). Taste and freshness are not important parts of retailer's message in Europe, although consumers rate organics higher in this regard (Michelsen et al., 1999).
- Japanese retailers focus promotions on food safety issues, touting perceived advantages of organic foods, which corresponds to the greatest concerns of their clientele (FAS, 2000). Japanese consumers also are very concerned about freshness, which is believed to be linked to the nutritional content and functional value of foods (MAFF, 1996). Overall, Japanese retailers appear to be more attuned to their consumer interests than European retailers.
- Conflicting data on nutritional, environmental, and human safety qualities of organic foods, coupled with strict truth-in-advertising regulations in the United States, have limited the ability to promote organics on these grounds.

Attitude – Country of Origin (for China)

Country image is also a multi-dimensional construct that reflects: (1) beliefs about the country's level of industrial and technological development; (2) consumers' emotional response towards people of that country; and (3) a motivational and volitional component, reflecting consumers' desired level of interaction with that country (Laroche et al., 2005)

- Evidence showed that consumers indicate a willingness to pay a premium for manufactured products sourced from more industrialized countries. (Knight and Gao, 2005)
- The country of origin serves directly as a status symbol" (Heslop and Papadopoulos, 1993). This aspect seems potentially highly relevant to the Chinese market in view of the importance of status and prestige in Chinese culture and the symbolic value inherent in foreign products (Wei, 1997, Zhou and Hui, 2003).
- Products from developed countries are however seen as being safer and of higher
 quality than those from less developed countries, but if there's no price advantage
 this differential appears weak. (Knight and Gao, 2005). Among distribution
 members taste is mentioned as being the key determinant, price is perceived as a
 major determinant in purchasing decision (except for wine, where a strong price
 quality relationship is perceived), while brand is important in conveying status and
 quality.

5. Results

What emerges from the literature review is that the shorter the distance between producer and consumer (geographically and culturally speaking), the higher the effectiveness of local geographical indications. Such effectiveness decreases drastically from regions of the same country to different countries, where local geographical indications have almost no appeal

due to information lack. Unlike Country of origin indications on the other hand refer to a different set of culturally linked variables, such as the country development or its international reputation, therefore "quality" per se it is not necessarily the most relevant purchasing factor.

As far as brand is concerned, it affects consumer quality perceptions less than the country/region of origin, but it is much more flexible and likely to meet the consumers requirements.

WTP still remains the most widespread method used to evaluate consumer's perception towards specific quality cues. The appreciation of geographical indications or eco labels varies a lot between countries: the upgrades of conventional foods to GI or ECO systems ranges from 10-30% and 10-50% (up to +100%) respectively. Eco-labelled products are considered an intermediate choice between organic and regular products. The deciding factor for such an increase in the WTP mostly relies on a perceived increase in food safety and quality, especially for fresh and perishable products.

It also emerged that regular buyers have the presence of children or strong environmental and safety concerns as principal deciding factors, while other categories (occasional and non buyers) are most influenced by price.

As far as it concerns China, the country of origin plays an important role in quality perception (products from developed countries are perceived as of higher quality than the local ones), but if there's no price advantage this differential still appears weak.

6. Final remarks

On GIs

The designation of origin policy showed some limitations, as Bureau and Valceschini (2002) pointed out:

- It is unlikely that non EU-countries recognize, and let alone adopt, the EU system where a quality label is linked to the geographical origin of a product. It is however possible that countries like the US will move in that direction due to the GIs potentials, but it will take a change in the property rights regulations before the political pendulum changes (Hayes et al., 2005).
- Large scale industries are able to offer high quality products that emphasize other attributes than authenticity or origin, which are more likely to be accepted by consumers, since the "authenticity" is not always a quality attribute that drives purchasing decisions.
- New criteria that are seen as relevant as quality attributes are emerging (protection of landscape, natural resources, animal welfare), as well as food safety. The official labels such as the PDO/PGI account for some of these characteristics, but they are not central in terms of focus.

On GF

Despite attempts to harmonize organic regulations within the EU, there is substantial variability in ease of import entry. Even with a common minimum standard, stricter rules are permitted in individual countries and may give rise to protectionism to ensure integrity of domestic standards (Michelsen et al., 1999). Based on an unpublished telephone interview of importers and exporters, Belgium, Denmark, the Netherlands, Sweden, and the United Kingdom were considered to be relatively easy markets to enter. France is considered very difficult to enter, 2001 (FAS, 2000b), while Germany's consumers are considered the most discriminating in the world with respect to organic credentials (Lohr, 2000).

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Acknowledgements

The present work was made in the framework of the BEAN-QUORUM project (TH/Asia-link/006), co-funded by the EU, within the Asia-link Europeaid Co-operation Programme.

Contact information

Sergio Marchesini Dipartimento di Economia e Ingegneria agrarie (DEIAgra) Alma Mater Studiorum-Università di Bologna viale Giuseppe Fanin, 50 I-40127 Bologna (Italy)

Phone: +39 - 051 20 96125 Fax: +39 - 051 20 96105 Email: smarch78@gmail.com