



The Estey Centre Journal of **International Law and Trade Policy**

Market Differentiation Potential of Country-of-origin, Quality and Traceability Labeling

Wim Verbeke

Professor, Department of Agricultural Economics, Ghent University, Gent, Belgium

Jutta Roosen

Professor, Business School, Alte Akademie, Technische Universität München, Germany

Product labeling has gained considerable attention recently, as a means to both provide product-specific information and reduce quality uncertainty faced by consumers, as well as from a regulatory point of view. This article focuses on whether and to what extent origin, quality and traceability labeling is an appropriate way to differentiate food products. The focus is on fresh meat and fresh fish, two mainly generic food product categories with a high degree of credence character. Insights into the potential for market differentiation through origin, quality and traceability labeling are provided and discussed using primary data collected during the period 2000-2005 by means of four consumer surveys. In general, direct indications of quality, including mandatory information cues such as best-before dates and species names, but also including quality marks, are found to be more appealing to consumers in general than origin labeling, and the latter more than traceability. The different studies yield the conclusion that the market differentiation potential of origin and quality labeling pertains mainly to a product's healthiness appeal, and this potential seems stronger for meat than for fish. The differentiation potential of traceability per se is rather limited. Instead, traceability is needed as the regulatory and logistic backbone for providing guarantees related to origin and quality.

Keywords: consumer; country of origin; labeling; quality; traceability

Editorial Office: 410 22nd St. E., Suite 820, Saskatoon, SK, Canada, S7K 5T6.

Phone (306) 244-4800; Fax (306) 244-7839; email: kerr.w@esteycentre.com

Introduction

Product labeling has gained considerable attention recently, as a means to both provide product-specific information to stakeholders involved in the food chain and reduce quality uncertainty faced by consumers in their food-choice decision process. Also, from the regulatory point of view, issues relating to the labeling of food products have gained momentum recently. This has become very apparent with the cases of quality, country-of-origin (or provenance), geographic-origin and traceability labeling, which have come to the fore in international law and trade debates (and disputes), specifically regarding registration and protection issues (Maher, 2001). Fresh food products have been particularly prone to origin and quality labeling as an alternative product differentiation strategy to branding (Carter, Krissoff and Zwane, 2006). Furthermore, governments have put labeling legislation high on the agenda in the past decade. In the European Union rules have been put in place on the labeling, presentation and advertising of foodstuffs (most notably Council Directive 2000/13/EC and its amendments) to enable European consumers to get comprehensive and accurate information on the contents and the composition of food products, therefore helping them to make informed food choices. Within the EU General Food Law, traceability has occupied a very prominent position recently, most specifically with the establishment of Commission Regulation EC/178/2002, which defines the concept of traceability and contains general provisions related to it. Another piece of legislation relevant to this study is the EU fish labeling regulations, more specifically Council Regulation 104/2000 and Commission Regulation 2065/2001, which lay down detailed rules regarding consumer information for fishery and aquaculture products, including the mandatory provision of information on the production method (i.e., farmed or caught) of these products.

The objective of this article is to present and discuss results from consumer surveys regarding consumers' perceptions of origin and traceability labeling information (as a means of assuring origin) relative to quality labeling information such as collective quality marks informed by food quality assurance schemes. The concept of origin labeling information in the different studies reported in this article refers basically to country-of-origin labeling rather than to the more specific geographical indications such as Protected Designation of Origin (PDO) or Protected Geographical Indication (PGI). PDO and PGI labels differ from simple indications of origin in the sense that such geographical indications secure a certain product specification and signal a certain quality (e.g., relating to authenticity or genuineness) to consumers, besides referring to a particular origin or provenance of the food product. The survey results related to origin label cues presented in this article cover

simply country of origin,¹ i.e., label indications that describe solely the origin or provenance of a food.

Consumer Value of Food Labeling Indications

Indications on food labels, such as quality marks, origin labels or geographical indications, may represent some value for consumers because they may be perceived as signaling a particular product specification (e.g., relating to authenticity and genuineness) and quality level (which does not necessarily need to be premium quality). For example, region and origin labels have been reported to be rather convenient marketing tools, designed and used to signal and stress particular food product attributes, rather than to objectively indicate premium quality (Cannon, 2005). The intrinsic added value of traceability for consumers is debatable. Traceability labeling assures the consumer regarding the feasibility of tracing back the origin in the event of a food safety crisis. In the event of a food safety problem the information becomes especially relevant, though mainly for legal purposes and to allow efficient product recall and recovery (Verbeke and Ward, 2006); otherwise, such information may be of little value and legibility to the consumer. The General Food Law Regulation EC 178/2002 requires the traceability of all foodstuffs. Thus traceability has become mandatory and is no longer a criterion on which products can be differentiated, and specific labeling in compliance with legal rules may be of little value to consumers.

From a consumer perspective, labeling debates are largely about information, its processing and its use by the targeted audiences (Verbeke, 2005). Because many food products are rather low-involvement goods, i.e., products that have perceived importance that is rather low in the purchasing decision, at least relative to more durable goods, it is likely that consumers use label cues (if ever) as heuristics or easy decision aids that help them in making quick quality judgments (Verbeke and Ward, 2006). Nevertheless, in cases where uncertainty about quality or safety is elevated and where thus consumer involvement increases, labeling information can become more dominant as a means to infer product quality. Such a function was reported, for example, for meat labels shortly after the BSE crisis in Europe (Verbeke and Viaene, 1999; Becker, 2000).

Thus labels, including quality marks, country-of-origin labels and geographical indications of origin, are extrinsic information cues that can assist consumers in inferring product quality and forming quality expectations. Labels often signal a particular credence quality. Through their signal value and visibility on product packages – similar to the case with brands – such labels may reach the status of a search cue, i.e., an information cue that consumers actively search for during their shopping and purchasing decision processes. Quality expectations in turn affect

attitudes and behaviours related to food purchasing, satisfaction and future purchasing decisions (Grunert, 2005). Consumers typically weigh the perceived value of a label or a specific information cue on a label against other cues and product attributes as they make their decisions. Since products are bundles of attributes and since they are marketed carrying a bundle of cues, each of which attempts to signify to consumers a certain quality, it is difficult to discern the true premium tied to a single indicator on a particular food label (Kerr, 2006).

For labels to have value for consumers, they must be attended to and understood in the first instance. Studies indicate that this condition is often not fulfilled. Grunert (2005) reported that information cues relating to quality, origin or traceability may be relatively difficult for consumers to interpret compared to more easily understood indications such as expiry or best-before dates. Origin information is unlikely to have an effect on consumers' quality evaluations when they lack concrete knowledge about the region of origin or when they do not consider the signaled quality to be desirable.

Several empirical studies have concentrated on mapping the value consumers place on labeling information. For example, van Ittersum et al. (2007) concluded that consumers of regional products value regional certification labels. The image consumers held of regional certification, more specifically PDO labels in this case, consisted of two dimensions, namely a quality warranty dimension and an economic support dimension. Furthermore, these researchers reported that both dimensions were positively related to consumers' willingness to buy and pay for the protected regional product. The quality warranty dimension enhanced consumers' perceptions of product quality, while the economic support dimension was associated with beliefs regarding support of the regional economy. In another study, Caporale and Monteleone (2001) indicated that providing information on the origin of a food product, virgin olive oil in this case, had a significant positive impact on product acceptability. Loureiro and Umberger (2003) calculated that U.S. consumers were willing to pay a price premium of up to 38 percent for "U.S. certified steak", and even up to 58 percent for "U.S. certified hamburger". The results of a study by Roosen, Lusk and Fox (2003) indicated that consumers place more importance on labels of origin than they do on private brands in the case of beef. More specifically, among consumers in Germany and France, origin received the highest ranking of all steak attributes. Finally, Enneking (2004) reported that third-party certified quality and safety labeling significantly influenced German consumers' behaviour with regard to choice and their willingness to pay for liver sausages, even on top of premium branding strategies.

In contrast, Bonnet and Simioni (2001) concluded that it cannot be taken for granted that consumers in general value the quality signal provided by a PDO label. Their study dealt mainly with branded products, more specifically branded Camembert, and in this particular case the study concluded that brands appeared to be

more relevant than origin labels in consumers' valuation of food products. In a similar vein, Loureiro and Umberger (2007) concluded that geographical indications in the form of country-of-origin labeling for beef were not considered the most important quality attribute. Instead, consumers valued food safety inspection certification more. This led these authors to conclude that geographical indications may only become a signal of quality if the place of origin itself is associated with higher food safety or quality, thus suggesting an indirect impact of geographical indications associated with higher perceived quality or safety. Another study reported that geographical indications can influence regional product preferences indirectly through perceived quality (van der Lans et al., 2001). In this line, van Ittersum et al. (2007) stressed the importance of perceived quality as a determinant of willingness to buy and pay for protected regional products. However, the influence of geographical indications on product preference did hold only for specific consumer segments, most specifically for residents in the product's region of origin. This corroborates the findings of Lusk et al. (2006), who suggested that perceptions of quality, intertwined with consumers' ethnocentrism, are primary motivations for purchasing products with origin labels. In the particular case of food, ethnocentrism relates to beliefs in the superiority of, and therefore also a strong preference for, local food products.

Clearly, findings from previous consumer studies are not unanimous with respect to whether labeling cues such as country-of-origin labels, geographical indications or quality labels have a favourable impact on product valuation by consumers. The diversity of empirical findings suggests that the perceived value of quality labels, geographical indications and traceability information depends on product-related, environment-related (institutional and regulatory) and person-related factors.

This article focuses on whether and to what extent country-of-origin, quality and traceability labeling is an appropriate way to make particular food products more desirable than others. The focus is on fresh meat and fresh fish, two mainly generic food product categories, each with a high degree of credence character, i.e., qualities that can hardly be objectively verified by consumers even after experiencing the product. The focus on generic food products is interesting, since this product category may suffer from higher risk perception, higher quality uncertainty and stronger information asymmetries, e.g., relative to premium branded products (Enneking, 2004). The premise is that if consumers are found to value country-of-origin or geographic indicators on such typically non-branded products, this would suggest there might be some true value and differentiation potential in the indicator per se (see also Kerr, 2006).

Materials and Methods

In this article we summarize empirical results from primary cross-sectional data that were collected through a series of four consumer studies during the period 2000-2005. Each of these studies focused on specific issues related to country-of-origin, quality or traceability labeling, either with respect to fresh meat or fresh fish. The studies measured attitudinal variables, including beliefs and perceptions, and perceived importance of country-of-origin, quality and traceability labeling cues.

The first study was performed in 2000 with a sample of $n=278$ meat consumers in Belgium (Verbeke and Ward, 2006). This study investigated consumer interest in information cues denoting country of origin, quality and traceability on beef labels relative to other information cues. Also, the potential impact of a generic information campaign aimed at drawing consumers' attention to beef origin, quality and traceability labeling was assessed (Verbeke, Ward and Avermaete, 2002).²

The second study, which was performed in 2004 with a representative sample of $n=409$ Belgian consumers, investigated the relationship between purchase of labeled meat and consumers' personal characteristics. A distinction was made between quality and region-of-origin labels on each of beef, pork and poultry. With respect to personal characteristics, consumers' quality orientation, health consciousness, price consciousness, convenience orientation and ethical consciousness were assessed. These personal characteristics were measured on five-point interval scales using multi-item constructs that proved to have satisfactory internal reliability.

The third study was the pan-European SEAFOODplus consumer survey performed in 2004 with representative consumer samples (total $n=4,786$) in Belgium, Denmark, the Netherlands, Poland and Spain. Methodological details are provided in Pieniak et al. (2007). Within this study, one of the key attention points was consumer interest in traceability information relative to other information cues such as quality labels and indications of origin. The origin information pertained specifically to the indication whether the seafood had been farmed (i.e., produced by aquaculture) versus caught in nature (i.e., wild in origin).

A fourth study assessed also Belgian consumers' interests in traceability information, though it focused specifically on detecting eventual differences in consumers' interests depending on the product category meat versus fish. For this purpose, two similar but independent consumer samples were surveyed in 2005 ($n=125$ for both the meat and fish samples) (Gellynck, Verbeke and Vermeire, 2006).

Results and Discussion

Consumer Attention to Country-of-origin, Quality and Traceability Information on Beef Labels

Findings from the first study indicated that consumer interest was generally low for direct indications of traceability, moderate for country of origin and high for direct indications of quality (Verbeke, Ward and Avermaete, 2002; Verbeke and Ward, 2006). Figure 1 shows the probabilities that consumers scored high (which is expressed as a score of 4 or 5 on a five-point scale) in terms of attention paid to beef label information cues.³ Clearly, the best-before date, meat type and the beef label in general attracted high levels of attention among consumers. Consumers' levels of attention to quality labels or quality marks are generally substantially higher than their level of attention to country-of-origin indicators. The lowest level of attention is paid to direct indications of traceability. The resulting ranking of information cues in terms of attention is in line with other studies. Notably, Bernués, Olaizola and Corcoran (2003) also concluded that expiry-date information is of paramount importance to consumers, while Hobbs et al. (2005) also reported that cues relating to traceability identification scored low in terms of the attention consumers pay.

The study concluded that it was rather surprising that the country-of-origin indications received relatively little importance and attention. A bigger impact could have been expected, given the large amount of negative press associated with the safety of beef (more specifically BSE) in that time period (1998-2001), especially in the case of beef originating from some specific countries. This finding suggests that a designation of beef origin was not automatically associated with a higher level of safety or better quality, a finding that is in line with findings by Bernués, Olaizola and Corcoran (2003) and more recently also Loureiro and Umberger (2007).

Finally, the information-campaign component of the study demonstrated that the values consumers place on country-of-origin and quality labels could be changed positively through the use of information campaigns, which was not the case for consumer interest in direct indications of traceability (Verbeke and Ward, 2006). For example, the probability of consumers paying a high level of attention to country-of-origin indications increased from just above 25 percent in the pre-campaign sample (figure 1) to about 50 percent in a post-campaign sample of consumers who were aware of the information campaign, which aimed at improving consumers' awareness of origin labeling. The findings herewith underscore a certain potential for indications of origin and quality to play a role in marketing strategies, when appropriately advertised through marketing communication campaigns. However, the findings also show that consumers do not value traceability labels per se, even when informed about them in a campaign.

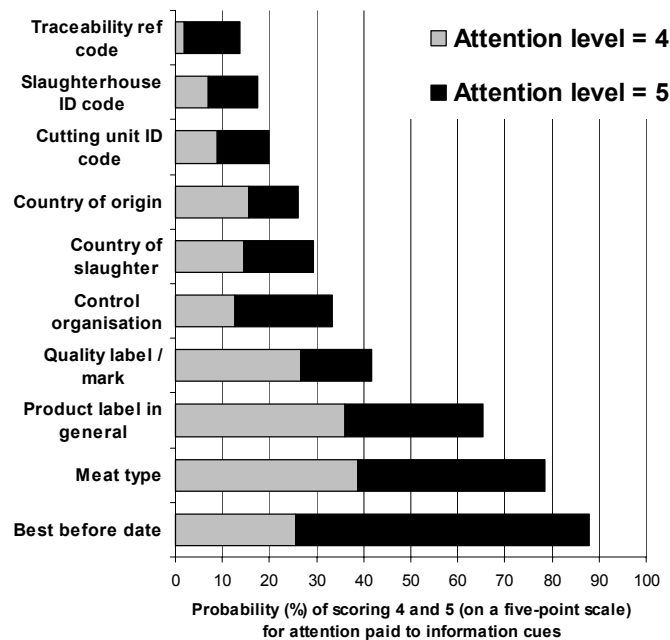


Figure 1 Probability of paying a high level of attention (4 or 5 on a five-point scale) to beef label information cues (data collected in 2000; n = 278; Belgium). Based on Verbeke and Ward (2006).

The Appeal of Quality and Region-of-origin Labels on Fresh Meat

The second study focused on uncovering to what kind of consumer interests quality and region-of-origin labels on fresh meat appeal. Bivariate correlations have been computed to assess the relationships between personal consumer interest factors and their reported shares of labeled-meat purchase. The significant relationships are depicted in figure 2. Both for fresh meat in general, as well as for the different meat species separately, the shares of quality and region-of-origin-labeled meat purchase correlated positively with consumers' health orientation, thus indicating that quality and region-of-origin labels appeal relatively more to consumers with a stronger interest in personal health and eating healthily. Despite being significant, the correlation coefficients are only moderate in size, which indicates that univariate relationships are not particularly strong.⁴ The share of region-of-origin-labeled meat also correlated negatively with convenience orientation, suggesting that region-of-origin-labeled meat appeals rather to consumers with a lower interest in convenience.

When the meat species are considered separately, the association of region-of-origin-labeled meat purchase with lower convenience is significant for poultry and pork, though not for beef. This finding suggests that the purchase of origin-labeled pork and poultry is considered as less convenient than the purchase of non-origin-

labeled meat. In previous qualitative, exploratory studies (Verbeke et al., 2005), consumers indeed indicated their perception that the purchase of meat with a clear indication of origin is less convenient because they believe products with this kind of indication are less easily available (“We might have to drive further to find this product”; “We don’t think it is available at our local butcher or in the supermarket we usually visit”). Furthermore, the purchase of region-of-origin-labeled poultry is associated with a higher ethical consciousness. Ethical consciousness in this study captured both animal welfare and environmental friendliness. Thus, poultry with a region-of-origin indicator seems to be associated in consumers’ minds with better animal welfare conditions as well as a higher degree of environmental sustainability.

Finally, quality-labeled beef purchase correlated with a higher quality consciousness, which is exactly the selling proposition that has been communicated in marketing campaigns by beef quality-assurance and labeling organizations during the last decade. Interestingly, no associations were found with price consciousness, which indicates that labeled meat is neither appealing nor repelling because of its price positioning.

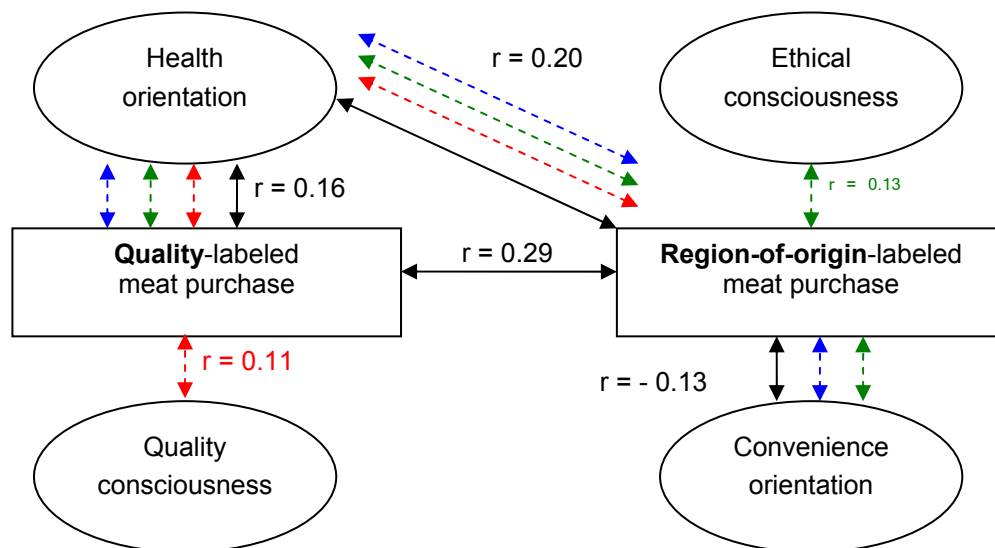


Figure 2 Pearson correlations between personal characteristics and the share of labeled meat purchase (data collected in 2004; n = 409; Belgium). Full black lines indicate significant relationships for aggregated fresh meat; red dashed lines for beef; green dashed lines for poultry; blue dashed lines for pork. No significant correlations were found between labeled meat purchase and “price consciousness”.

Fish Compared to Meat

Do consumers react differently to labeling information for fish versus meat? On one hand, fresh meat has been more subjected to safety problems and negative press compared to fish. On the other hand, many consumers indicate they face a large degree of quality uncertainty when evaluating and purchasing fresh fish, despite the predominantly healthy image of fish (Verbeke, Vermeir and Brunsø, 2006). Hence, there are arguments for interest in quality, origin and traceability information on both products. In addition, both are mainly marketed as generic products.

In the pan-European SEAFOODplus study, European fish consumers were probed about their interest in different information cues on seafood labels (figure 3). In general, consumers showed a strong interest in a safety guarantee and a quality mark for fish. Almost 60 percent of the sampled consumers scored 5 or more on a seven-point interest scale for these information cues. Mandatory indications such as country (or region) of origin, as well as the indication farmed/wild scored considerably lower in terms of consumer interest. These indications can be interpreted as information cues that need some kind of traceability back up in order to be credible or trustworthy.

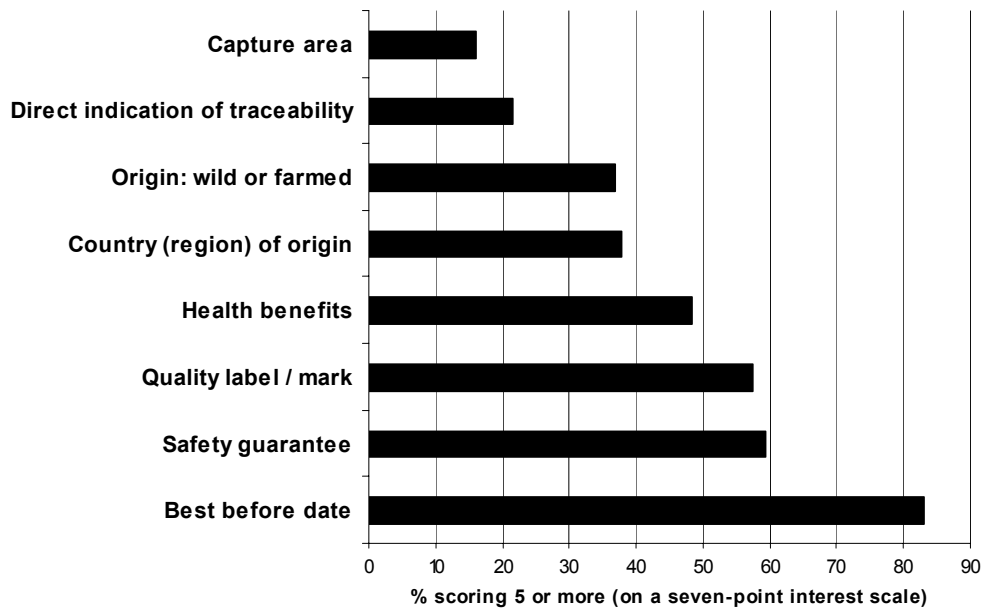


Figure 3 European consumer interest in information cues on seafood labels; percentage of consumers scoring 6 or 7 on a seven-point interest scale (data collected in 2004; n = 4,786; five European countries). Note: the indication “capture area” is relevant in the case of wild fish, whereas the indication “country (region) of origin” is an equivalent indication in the particular case of farmed fish.

Consumers' direct interest in traceability per se however was low, similar to the results reported for fresh meat. It should be noted though that consumer interest for country-of-origin indicators on fish labels showed a significant variation across different countries, with Spanish consumers indicating a much stronger interest in country-of-origin indicators on fish as compared to Belgian, Danish, Dutch and Polish consumers.

The rankings of information cues in terms of attention level on meat labels (figure 1) and interest level on fish labels (figure 3) are very similar. However, because of conceptual (attention versus interest) and methodological (research approach) differences, the data obtained in these previous studies are not directly comparable. Therefore, a fourth study was undertaken, aimed specifically at obtaining a direct comparison between fish and meat in terms of consumer interest in labeling. The empirical findings from this study (figure 4), which matched to a large extent with findings from the previous studies, confirmed that Belgian consumers' perceptions in terms of information cue usage are remarkably equal for fish and meat. Consistent with the previous studies, best-before date and product type received the highest scores. The only significant differences were that consumers were slightly more interested in country-of-origin and quality labels for meat as compared to fish (figure 4). These findings again reflect the market reality, with origin and quality labels for meat having a stronger market presence, and thus higher consumer familiarity, than those for fish.

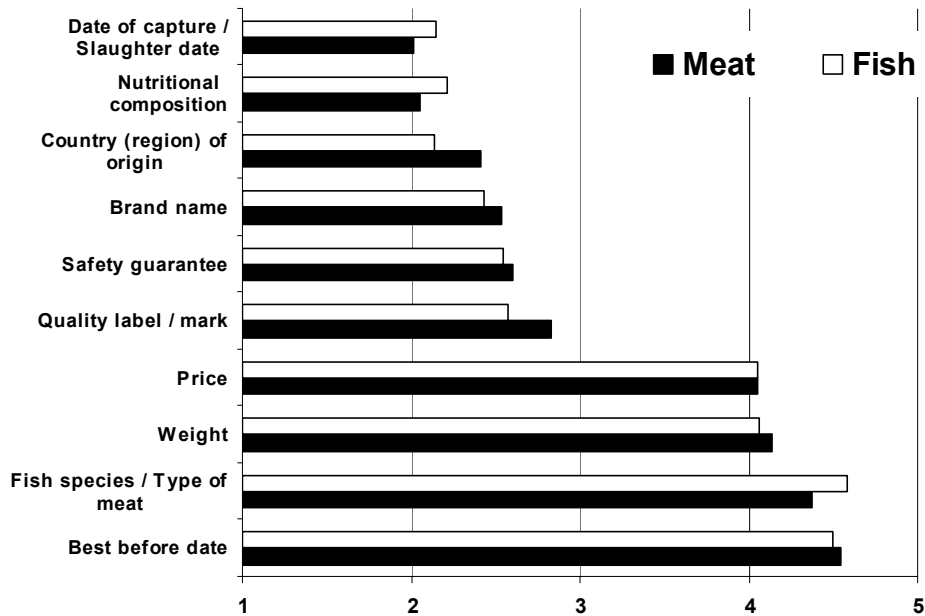


Figure 4 Meat versus fish: consumer interest in information cues on meat and fish labels; mean score on five-point scale (data collected in 2005; two independent samples for meat and fish, n=125 each; Belgium).

Conclusion

In general, the empirical findings presented and discussed in this article demonstrate that direct indications of quality, including not only mandatory information cues such as best-before date and species name, but also a quality mark, are generally more appealing to consumers than country-of-origin labeling, and the latter more than traceability indications per se. The different studies yield the conclusion that the market differentiation potential of country-of-origin and quality labeling pertains mainly to its healthiness appeal, and this potential seems stronger for meat than for fish. The differentiation potential of traceability per se is quite limited. Instead, traceability is needed as the backbone for guarantees related to quality and origin.

It should be noted though that the studies presented mainly considered consumers in Belgium. An important implication of this focus is that the findings as reported in this article (primarily pertaining to the Belgian context) cannot be simply transferred to another country or market context. The Belgian food quality policy context has been characterized as one that is strongly oriented toward food quality assurance schemes (Becker, 2008). As a characteristic of this orientation, quality labels and quality marks occupy a much more prominent position in Belgium's food markets

than do the classical geographical indicators such as PDO/PGIs. In contrast, Spain for example has been characterized as being mainly oriented toward geographical indications. Effectively, Spanish consumers were found to value origin information for fish significantly more highly than did Belgians and Northern Europeans. Clearly, the local market reality is reflected in consumers' reactions toward label cues signaling quality and origin. The importance of anchoring in experience is also obvious when considering the different fresh meat species within one country. For beef in Belgium, origin labeling has been done for a while, whereas for pork, hardly any origin labeling exists. So consumers are not educated to link, for example, pork origin labels to quality and rather associate the unfamiliar origin-labeled pork with inconvenience.

The question arises whether a study focusing, for example, on regional specialties (for which PDO/PGI labels have been developed) in a country with a different food quality policy environment, would produce similar results. Therefore, cross-cultural studies investigating consumer interest in geographical and/or quality indications, including the aspect of cross-cultural differences, are recommended. The studies presented here only considered aggregated consumer data, without focusing on potential differences between different consumer segments and without concentrating on particular niche markets. Previous studies have indicated that origin-labeled products may appeal more to particular market segments, for example, consumers with a strong interest in and openness to high-quality/high-priced foods (Loureiro and McCluskey, 2000); specific socio-demographic groups (Bonnet and Simioni, 2001); or residents of the region of provenance of the considered foods (van Ittersum et al., 2007). Appropriate market segmentation and targeting have effectively been stressed as key success factors for food labeling and information provision programs (Verbeke, 2005). Therefore, investigating particularities of specific market segments, both cross-culturally and within a country, is recommended.

From the perspective of information economics the results seem rather clear. Best-before dates and species names are clear, quite universal and familiar differentiations of quality. Country-of-origin labeling can be an aid to distinguishing quality, but it seems to be a more noisy signal, especially among consumers who are less familiar with food quality policies that centre around origin labels or geographical indications. Traceability is an assurance in case of a food safety event, but *ex post* it is of little value to the individual consumer. Apart from providing producers with protection from liability and serving as a means of identifying origin and a given quality, the additional differentiation and marketing potential of geographical indications is clearly not obvious. The findings suggest that direct consumer interest in country-of-origin labeling in a country with a "non-origin-driven" food quality orientation cannot be taken for granted.

Acknowledgement

The work presented as “study 3” (figure 3) in this paper was performed within the EU FP6 Integrated Project SEAFOODplus, contract no. FOOD-CT-2004-506359. The partial financing of the work by the European Commission is gratefully acknowledged. The authors gratefully acknowledge comments and suggestions received from the journal editors and two anonymous referees.

References

- Becker, T. 2000. Consumer perception of fresh meat quality: a framework for analysis. *British Food Journal* 102: 158-176.
- Becker, T. 2008. European food quality policy: the importance of geographical indications, organic certification and food quality insurance schemes in European countries. *The Estey Centre Journal of International Law and Trade Policy* 10(1): 111-130.
- Bernués, A., A. Olaizola, and K. Corcoran. 2003. Extrinsic attributes of red meat as indicators of quality in Europe: an application for market segmentation. *Food Quality and Preference* 14: 265-276.
- Bonnet, C., and M. Simioni. 2001. Assessing consumer response to Protected Designation of Origin labeling: a mixed multinomial logit approach. *European Review of Agricultural Economics* 28(4): 433-449.
- Cannon, J. 2005. Notions of region and the Mediterranean diet in food advertising – quality marks or subjective criteria? *British Food Journal* 107(2): 74-83.
- Caporale, G., and G. Monteleone. 2001. Effect of expectations induced by information on origin and its guarantee on the acceptability of a traditional food: olive oil. *Science des Aliments* 21(3): 243-254.
- Carter, C., B. Krissoff, and A. P. Zwane. 2006. Can country-of-origin labeling succeed as a marketing tool for produce? Lessons from three case studies. *Canadian Journal of Agricultural Economics* 54(4): 513-530.
- Enneking, U. 2004. Willingness-to-pay for safety improvements in the German meat sector: the case of the Q&S label. *European Review of Agricultural Economics* 31: 205-223.
- Gellynck, X., W. Verbeke, and B. Vermeire. 2006. Pathways to increase consumer trust in meat as a safe and wholesome food. *Meat Science* 74: 161-171.
- Grunert, K. G. 2005. Food quality and safety: consumer perception and demand. *European Review of Agricultural Economics* 32: 369-391.
- Hobbs, J. E., D. Bailey, D. L. Dickinson, and M. Haghiri. 2005. Traceability in the Canadian red meat sector: do consumers care? *Canadian Journal of Agricultural Economics* 53: 47-65.
- Kerr, W. A. 2006. Enjoying a good port with a clear conscience: geographic indicators, rent seeking and development. *The Estey Centre Journal of International Law and Trade Policy* 7(1): 1-14.
- Estey Centre Journal of International Law and Trade Policy*

- Loureiro, M. L., and J. J. McCluskey. 2000. Assessing consumer response to protected geographical identification labeling. *Agribusiness* 16(3): 309-320.
- Loureiro, M. L., and W. J. Umberger. 2003. Estimating consumer willingness to pay for country-of-origin labeling. *Journal of Agricultural and Resource Economics* 28(2): 287-301.
- Loureiro, M. L., and W. J. Umberger. 2007. A choice experiment model for beef. What US consumer responses tell us about relative preferences for food safety, country-of-origin labeling and traceability. *Food Policy* 32(4): 496-514.
- Lusk, J. L., J. Brown, T. Mark, I. Proseku, R. Thompson, and J. Welsh. 2006. Consumer behaviour, public policy, and country-of-origin labeling. *Review of Agricultural Economics* 28(2): 284-292.
- Maher, M. 2001. On vino veritas? Clarifying the use of geographic references on American wine labels. *California Law Review* 89(6): 1881-1925.
- Pieniak, Z., W. Verbeke, J. Scholderer, K. Brunsø, and S. O. Olsen. 2007. European consumers' use of and trust in information sources about fish. *Food Quality and Preference* 18: 1050-1063.
- Roosen, J., J. L. Lusk, and J. A. Fox. 2003. Consumer demand for and attitudes toward alternative beef labeling strategies in France, Germany and the UK. *Agribusiness* 19: 77-90.
- van der Lans, I. A., K. van Ittersum, A. De Cicco, and M. Loseby. 2001. The role of the region of origin and EU certificates of origin in consumer evaluation of food products. *European Review of Agricultural Economics* 28(4): 451-477.
- van Ittersum, K., M. T. G. Meulenberg, H. C. M. van Trijp, and M. J. J. M. Candel. 2007. Consumers' appreciation of regional certification labels: a pan-European study. *Journal of Agricultural Economics* 58(1): 1-23.
- Verbeke, W. 2005. Agriculture and the food industry in the information age. *European Review of Agricultural Economics* 32: 347-368.
- Verbeke, W., V. Demey, W. Bosmans, and J. Viaene. 2005. Consumer versus producer expectations and motivations related to superior quality meat: qualitative research findings. *Journal of Food Products Marketing* 11(3): 27-41.
- Verbeke, W., I. Vermeir, and K. Brunsø. 2006. Consumer evaluation of fish quality as basis for fish market segmentation. *Food Quality and Preference* 18: 651-661.
- Verbeke, W., and J. Viaene. 1999. Consumer attitude to beef quality labeling and associations with beef quality labels. *Journal of International Food and Agribusiness Marketing* 10(3): 45-65.
- Verbeke, W., and R. W. Ward. 2006. Consumer interest in information cues denoting quality, traceability and origin: an application of ordered probit models to beef labels. *Food Quality and Preference* 17: 453-467.
- Verbeke, W., R. W. Ward, and T. Avermaete. 2002. Evaluation of publicity measures relating to the EU beef labeling system in Belgium. *Food Policy* 27: 339-353.

Endnotes

1. In some of the studies, “region of origin” is used, and refers to an indication of region or provenance instead of country of origin. This is relevant in the case of regional-origin labels for meat, or for origin labels on wild fish that mention the zone where the fish was captured (using the nomenclature of the FAO major fishing areas).
2. A generic information campaign was implemented during September 2000 with the aim of informing Belgian consumers about the features and guarantees offered by the European beef labeling system. Commission regulations EC 2071/1998, EC 481/1999, EC 890/1999 and EC 1468/1999 made provisions for the financing, implementation and evaluation of such publicity measures. A quarter-page coloured advertisement was inserted in twenty national newspapers and four women’s magazines, with two insertions in the first week of September 2000. These media efforts resulted in a net coverage of around 70 percent of the target audience, which was defined as persons responsible for food purchasing, producing an average opportunity-to-see of 2.5 for a total number of 7.35 million exposures. The ad comprised an eye-catching statement, “You know me! Did you know?”; a drawing of a cow with an ear tag; textual information about the existence of the labeling system, drawing attention to “quality beef with a guarantee of origin”; and a direct response opportunity (telephone number) for requesting further information. A detailed evaluation of the campaign’s impact is described in Verbeke, Ward and Avermaete (2002) and Verbeke and Ward (2006).
3. Verbeke and Ward (2006) also reported data related to “perceived importance” attached to the different information cues, next to “attention paid to”. It is acknowledged that attention is only one step in information processing as part of a purchasing or choice decision-making process. Although attention is considered a crucial step in information processing, this step alone cannot be considered a proxy for the entire purchase decision. Whether different information cues have a differential impact at different stages of the information-processing and purchase decision-making process has not been considered in this study.
4. It should be noted that the reported relationships may look different when modeled in a multivariate framework. Simultaneous consideration of the different personal characteristics as determinants of labeled meat purchase can produce stronger (or weaker) effects as compared to the reported bivariate correlations. Further analysis of the data using a multivariate setting will be reported in a later paper.

The views expressed in this article are those of the author(s) and not necessarily those of the Estey Centre Journal of International Law and Trade Policy nor the Estey Centre for Law and Economics in International Trade. © The Estey Centre for Law and Economics in International Trade. ISSN: 1496-5208