



Influence of quality labels on the formation of preferences of lamb meat consumers. A Spanish case study



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ABSTRACT

Analysis of the attributes determining the formation of consumers' preferences when buying lamb meat is a key aspect in increasing the demand for this product. To this end, by means of conjoint analysis, we determined lamb meat consumers' preferences according to their frequency of consumption, and we used logistic simulation to analyse market shares of the most valued attributes. After segmenting the market into habitual and occasional consumers of lamb meat, our results seem to suggest that while regular consumers base their preferences mostly on origin, occasional consumers take other attributes into account, such as Protected Geographical Origin (PGI) and organic production. An analysis of market shares shows that PGI significantly influences consumer preferences, while ecological production has a less marked impact. This finding confirms the usefulness of PGI in the lamb meat market and highlights the urgent need to improve the communication strategy of the organic production sector as a synergistic effect to increase its acceptance among consumers.

1. Introduction

The current trend to reduce meat consumption does not seem to be having the same effect on all types of meat (Grunert, 2006). Lamb is one of the meats which is most being replaced by meat from other species, as well as being affected by shifts towards other types of meat within the same species (Bernabéu & Tendero, 2005).

The meat market is highly competitive, especially as regards high-value products such as lamb (Gracia & De-Magistris, 2013). Thus, product differentiation has become a key element in ensuring the viability of production.

One of the main ways to differentiate lamb meat is through higher quality, which is increasingly important to consumers (Dalen, 1996; Northen, 2000; Simpson, Muggoch, & Leat, 1998). Besides demanding higher quality, consumers increasingly place greater value on factors not directly applicable to the end product, such as the influence of the consumption of a certain product on health or ethical factors related to the production process (Bernués, Olaizola, & Corcoran, 2003a, 2003b; Grunert, 2006; Hersleth, Næs, Rødbotten, Lind, & Monteleone, 2012; van der Lans, van Ittersum, De Cicco, & Loseby, 2001; Wandel, 1997; Wandel & Bugge, 1997). Consequently, new business opportunities are emerging for producers who are able to meet the new market demands.

Various studies highlight the importance of the formation and composition of the preferences of lamb meat consumers (Alcalde,

Ripoll, & Panea, 2012; Bernabéu & Tendero, 2005; Sepúlveda, Maza, & Mantecón, 2010; Sepúlveda, Maza, & Pardos, 2011). These preferences for a certain product are formed on the basis of intrinsic factors (e.g. percentage of fat) and extrinsic factors (e.g. origin or production method) (Berta Schnettler, Ricardo Vidal, Roberto Silva, Lisette Vallejos, & Néstor Sepúlveda, 2008; de Andrade, de Aguiar Sobral, Ares, & Deliza, 2016; van der Lans et al., 2001).

It is precisely this increase in consumers' valuation of extrinsic quality attributes that constitutes an opportunity to develop new products aimed at certain consumer segments that will allow producers to optimise profits (Bernués et al., 2003a; Grunert, 2006).

Since meat is considered a potentially harmful product for health, correct labelling is a key factor for consumers. In this sense, consumers seem to be principally interested in the expiration date and the origin (Bernués et al., 2003b).

However, apart from the most common data appearing on product labels, there has been a steady growth in the use of quality assurance schemes as a distinguishing element for food products (Gellynck, Verbeke, & Vermeire, 2006), with Protected Geographical Indications (PGIs) being especially widespread in Europe.

According to the European Commission, "a geographical indication is a distinctive sign used to identify a product as originating in the territory of a particular country, region or locality where its quality, reputation or other characteristic is linked to its geographical origin" (EC, 2017).

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This quality indication was conceived as a system to differentiate and recognise products offering higher quality as a result of being produced in a specific geographical region and under the influence of a differentiated human factor (Díaz, Prieto, & Bernabéu, 2013).

It should be noted that, despite its importance at European level, the PGI has not been the subject of much research, which has largely focused on other quality labels such as the Protected Denomination of Origin (PDO) (Egea & Pérez y Pérez, 2016; Marcoz, Melewar, & Dennis, 2016; van der Lans et al., 2001).

A number of studies have shown lamb meat consumers perceive quality labels as offering greater guarantees, and furthermore, believe that meat with this type of certification is healthier (Sepúlveda et al., 2010). Spain currently boasts six different PGIs for lamb meat, whose effectiveness in forming consumer preferences in Spain should be examined.

Organic production is another differentiating element of lamb meat, due to the growing social concern for the environment and a more natural diet (Wandel & Bugge, 1997). These concerns have led to this type of seal being increasingly appreciated by consumers concerned about their health and environmental sustainability (Sepúlveda et al., 2011).

Apart from ethical questions, a sensory analysis found that organic lamb meat was more highly rated by consumers due to its juiciness, flavour and general taste, thus offering sensory advantages compared to conventionally produced lamb meat (Angood et al., 2008).

The production system is an important parameter for consumers in Spain, France and Great Britain (Wandel & Bugge, 1997), while in Spain it has been found that consumers are willing to pay up to 38.45% more for organic lamb meat (Díaz et al., 2013). With regard to the high prices habitually attributed to lamb meat, Angood et al. (2008) showed that the price differential between organic and conventional lamb in the UK is relatively modest.

The origin of meat is another factor that has traditionally had an impact on the preferences of lamb meat consumers. Several studies have shown that in Spain there are consumer segments who prefer Spanish lamb meat (Bernabéu & Tendero, 2005; Gracia & De-Magistris, 2013) compared to lamb from another origin. Similarly, a study conducted in Spain, France and United Kingdom found that origin was the most important parameter and that consumers from these countries preferred nationally produced lamb meat to lamb imported from other countries (Font i Furnols et al., 2011).

Studies on consumer preferences for lamb meat have reached different conclusions depending on the geographical area and the type of lamb meat analysed. (Bernabéu & Tendero, 2005) found that consumers preferred suckling lamb, while (Gracia & De-Magistris, 2013) determined “ternasco” lamb to be the preferred option.

The price of lamb meat has been identified as one of the factors that least affects the possibility of purchase (Font i Furnols et al., 2011). However, consumer segments have been identified that are more sensitive to this factor, and these same segments are those that least value nationally produced meat over a higher price (Gracia & De-Magistris, 2013).

In light of the above, the aim of this study is to identify the attributes that influence the formation of the preferences of lamb meat consumers. We study both the variables traditionally found to be significant, such as price, origin and meat type, and also others which have been the subject of less research but which might grow in importance in the future, such as PGI or organic production quality labels. We then determine their relative level of importance.

2. Materials and methods

The data used in this study were collected by means of a survey of lamb meat consumers resident in the Madrid Metropolitan Area. This location was chosen due to its position as a major business centre and showcase for Spanish commerce.

During November and December 2014, 400 consumers were surveyed in the main shopping areas. The maximum sampling error did not surpass 5.0%, for a 95.5% confidence level of 95.5% ($k = 2$), under the principle of maximum indetermination ($p = q = 50\%$). Before the fieldwork, a preliminary questionnaire was administered to 25 food consumers to confirm that the survey questions were well designed and easily understandable.

Data analysis included carrying out a multivariate analysis using Conjoint Analysis (CA) technique, which determines the preference structure for lamb meat consumers, with the aim of identifying, exploring and quantifying their attitudes to diagnose consumer preferences (Green & Rao, 1971).

The variables and attributes used in this study were selected on the basis of previous studies on lamb meat consumption in Spain (Bernabéu & Tendero, 2005; Díaz et al., 2013; Sánchez, Sanjuán, & Akl, 2001). The variables studied in the present work were: price (12, 15, 19 €/kg), type of meat (suckling, “ternasco”),¹ origin (national, imported), production system (organic, conventional), and PGI certification (yes, no).

Origin has traditionally been one of the variables included in studies on the formation of preferences in lamb meat consumers. Consumers in our study were asked to choose between “national” and “imported” meat, with the latter term being the only one used to refer to meat of foreign origin. Thus, this group would include lamb meat from various countries, both European and non-European. A number of studies have already demonstrated that the income of the country of origin of many agri-food products impacts on the consumers' perceived quality of these products (Jouanjan, Maur, & Shepherd, 2015). However, lamb meat is mainly imported into Spain from countries of high or medium high income, such as New Zealand, Australia or Argentina. Thus, this variability in perceived quality might not emerge in the consumers' opinions.

Combining these five attributes and their 11 levels, 48 different profiles would be obtained. This number of profiles is considered too high to be presented to consumers. Therefore, an orthogonal design was used to reduce the number of combinations to only eight (Bretton-Clark, 1986). In this way, the consumer is asked to evaluate a lower number of combinations, thus preventing fatigue and routine responses (Kirk, 1982).

Once the set of hypothetical products had been created (Table 1), a questionnaire was designed to be presented in the form of cards. Consumers were asked to score each card from one to ten, with one being the minimum value (least valued product) and ten the maximum, or the most valued meat. These valuations were used to determine the influence of each variable on consumers' preferences when buying lamb meat.

After an initial analysis of the data, and following the study by (Bernabéu & Tendero, 2005), we decided to analyse the difference between the relative importance consumers place on each of the variables considered depending on the frequency of consumption.

In this regard, those who consumed lamb meat at least once a week were considered as regular consumers (11.2%) and those who consumed lamb meat on a less regular basis (88.8%) were considered as occasional consumers. For each of the groups, we used the following regression:

$$Y_i = \beta_0 + \beta_1 \times PRI + \beta_2 \times TYPE + \beta_3 \times ORIG + \beta_4 \times ORG + \beta_5 \times CER + \varepsilon$$

β_i = coefficients for regression; PRI = price; TYPE = dummy for suckling lamb meat; ORIG = dummy for the national origin of the lamb meat; ORG = dummy for organic lamb meat; CER = dummy variable

¹ Suckling meat comes from a lamb fed on mother's milk for 25–45 days, yielding a carcass of < 7 kg when butchered. “Ternasco” meat comes from the lamb butchered between 60 and 90 days, with a carcass weighing between 10 and 14 kg.

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