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Aspects of quality related to the consumption and production of lamb meat. Consumers versus producers

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ARTICLE INFO

Article history: Received 8 April 2010 Received in revised form 12 November 2010 Accepted 12 November 2010

Keywords: Consumer Producers Lamb meat Meat quality Sheep

ABSTRACT

The purpose of this study was to identify and compare the different evaluations made by the agents at either end of the lamb meat chain, i.e. producers and consumers, in relation to the parameters that consumers use when purchasing lamb meat and the factors that affect the production of quality lamb meat. In addition, consumer segments that can be targeted for action by the different agents in the chain were examined. The study was carried out in Aragón, a region in north east Spain that is a producer and consumer of lamb meat. 371 surveys were carried out on purchasers of lamb meat and 49 surveys on sheep farmers. Bivariant analyses and a cluster analysis were performed. The results suggest that there are certain congruencies and divergences between producers and consumers. Also, a segment of consumers for whom the hygiene and sanitary conditions on the farm, animal welfare and the environment are of great importance were found.

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1. Introduction

The importance placed on quality has been one of the most significant factors in agro-food chains over the past few years. This importance has heightened due to the problems that have arisen in animal production in Europe. Consequently, quality has become a key concept for both producers and consumers (Bosmans, Verveke, & Van Gysel, 2005; Verbeke, Demey, Bosmans, & Viaene, 2005). However, whilst primary producers and agro-industries judge quality from an objective viewpoint, i.e., taking into account the characteristics of the product to form an opinion based on technical indicators, quality is a much more subjective concept from the consumer's point of view (Grunert, Harmsen, Larsen, Sorensen, & Bisp, 1997; Sepúlveda, Maza, & Mantecón, 2008).

Consumers' opinion of quality before purchase is inferred by means of quality cues (Oude Ophuis & Van Trijp, 1995). Two types of quality cues, intrinsic and extrinsic, have been proposed (Becker, 2000; Grunert et al., 1997; Northen, 2000; Steenkamp & Van Trijp, 1996). Whilst the former are part of the physical product, for example, the colour or fat content of the meat, the latter are related to the product but are not a physical part of it, such as the price or labelling (Bredahl, 2004; Oude Ophuis & Van Trijp, 1995; Steenkamp & Van

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Trijp, 1996). Furthermore, any aspect in the agro-food chain that affects the product's observable physical structure affects the intrinsic cues and must be considered (Northen, 2000). In the meat chain, a great number of pre- and post-slaughter factors influence the intrinsic quality of meat. e.g., at farm level, the multiple interactions between animal feeding, disease control, production systems, breed and age amongst others, are factors that are linked to the intrinsic quality of meat (Beriain, Purroy, Treacher, & Bas, 2000; Martínez-Cerezo, Sañudo, Medel, & Olleta, 2005; Olson & Pickova, 2005; Rosenvold & Andersen, 2003; Sañudo, Sanchez, & Alfonso, 1998). With regard to the other aspects relating to animal production, e.g. region of origin, that are not perceivable by intrinsic cues, quality can be denoted by extrinsic cues, e.g., labelling (Northen, 2000). Hence, objective quality is related to subjective quality (Bredahl, Grunert, & Fertin, 1998).

The differences in judgment of quality also mean that there are divergences between the quality supplied by producers and that demanded by consumers (De Haes, Verbeke, Bosmans, Januszewska, & Viaene, 2004; Verbeke et al., 2005). In this regard, knowing and integrating into the meat chain, those aspects (intrinsic and extrinsic) that consumers most associate with the quality of the product, is of upmost interest (Maza & Ramírez, 2006; Simons, Francis, Bourlakis, & Fearne, 2003; Thanh Loc, 2003), as farmers and the rest of the agents in the chain would be expected to focus their added value activities on those aspects that consumers rate as being most important in order to improve their commercial value (Brunso, Ahle Fjord, & Grunert, 2002; Ottesen, 2006).

The aim of the present work is to identify and compare the different evaluations made by the agents at either end of the lamb

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meat-producing chain (producers and consumers) using different quality parameters. These evaluations refer to the parameters that consumers use when purchasing lamb meat and to the factors that affect the production of quality lamb meat. In addition to the main aim, segments of consumers are also examined in search of profiles that may be targeted in actions by different agents in the chain.

2. Methodology

2.1. Selection and description of the sample

The information was obtained from questionnaire-based personal surveys carried out on a sample of 371 lamb meat buyers residing in the city of Zaragoza and 49 sheep farmers oriented towards meat production located in rural areas of Aragón. The study was carried out in the Autonomous Community of Aragón in north east Spain, which is a typical consumer and producer of lamb meat. This region has the greatest per capita consumption of lamb meat (6.5 kg of meat/person/year), well above the national average of around 2.4 kg of lamb meat/person/year (MARM, 2010). Furthermore, in 2008 Aragón produced 13.0% of all lamb meat in Spain. 77.9% of the meat produced in Aragón corresponds to lamb meat carcasses of between 10.1 kg and 13.0 kg, obtained from animals no more than 100 days old (MARM, 2009).

The city of Zaragoza is the capital of Aragón and was selected for the consumer study as it is the largest centre of consumption and also because 50.5% of the population of Aragón live there (IAEST, 2007). To ensure representativeness in terms of age, the sampling that was carried out from July to November 2008 was stratified with proportionate allocation by age ranges. Within the socio-demographic variables, gender and age have been identified as those most associated with meat consumption. Age was selected for stratification as it seems to be more closely related with meat consumption (Guenther, Jensen, Batres-Marquez, & Chen, 2005; Nesbitt et al., 2008; Schnettler, Silva, & Sepúlveda, 2008). The socio-demographic characteristics of the sample of consumers are indicated in Table 1.

The sample comprises 60.2% women and 39.8% men. With regard to age, all of the pre-established age ranges are represented. This is logical given the sample used. Furthermore, in the sample 34.4% of the respondents stated they were university educated, 33.9% had an intermediate level of education and the remaining 31.7% had a basic level of education. Level of income was included in the survey but was not taken into account in the analyses due to the high non-response rate. In addition, prior analyses indicated that in this variable the missing data did not display a *completely randomized distribution* and this may have biased the results.

In the case of producers, a convenience sample was carried out (Santesmases, 2004) and information was gathered during the spring and winter 2008. The producers interviewed were farmers who form

 Table 1

 Socio-demographic characterisation of consumer sample.

Variable	Sample (%)	Population ^a (%)
Gender		
Male	39.8	48.1
Female	60.2	51.9
Age of respondent		
15 to 24 years	12.1	12.2
25 to 34 years	18.3	19.3
35 to 49 years	29.9	27.1
50 to 64 years	21.3	21.0
=>65 years	18.3	20.4
Level of education		
Basic	31.7	44.3
Intermediate	33.9	45.7
Higher	34.4	10.0

^a Information calculated from IAEST (Institute of Statistics of Aragón) (2007) and INE (Spanish Institute of Statistics) (2001) data.

Table 2 Socio-demographic characterisation of producer sample.

Socio-demographic variables	
Age of producer (mean, in years)	44.8
Gender (%)	
Male	91.1
Female	8.9
Living with partner (%)	76.7
Children—Yes (%)	70.8
Number of members of the family unit (mean)	3.9
Number of children per household (mean)	1.3
Time producing lambs (mean in years)	24.6

part of programme of Economic Technical Management of sheep meat organised by the Escuela Politécnica Superior de Huesca that forms part of the University of Zaragoza and the farming cooperative Carnes Oviaragón SCL. The farmers that belong to this programme have been subject of other studies related with the sector (e.g. Pardos, Maza, Fantova, & Sepúlveda, 2008), because of their willingness to supply information and the quality of said information. It is noteworthy that the farming cooperative Carnes Oviaragón SCL, is one of the largest lamb meat producers in Spain. Table 2 shows the socio-demographic characteristics of the sample of producers.

The sample of farmers mainly comprises men with a mean age of 45 years. These producers belong to the farming cooperative Carnes Oviaragón SCL and are located in 31 municipalities of Aragón. 76.7% of the producers interviewed live with their partner and 70.8% have children. The mean number of members in the household was 3.9, with a mean of 1.3 children. The mean period of time that the producers interviewed have been raising lambs was 24.6 years.

2.2. Survey design

Two surveys were prepared, one aimed at consumers and the other at producers. The two surveys included socio-demographic questions and two common questions with a ranking scale. One of the ranking questions was used to evaluate the order of importance that consumers and producers assign to a series of aspects related to the quality of lamb meat at the time of purchase (see Table 3). The other, also aimed at both, asked them to rate the aspects that, at farm level, could affect quality lamb meat (see Table 4). The information obtained from the two ranking type questions included in the surveys allows the main objectives of this research to be fulfilled. In the survey aimed at consumers, further questions referring to lamb meat purchasing habits were included.

Each ranking question contained seven items that respondents were asked to place in order. The items included in the ranking question related to aspects that may affect the forming of quality perception of meat at the time of purchase were: price, quality label, production region/origin, direct appraisal, animal feeding, production that respects animal welfare and environmentally friendly production. The first four items were included because it was presumed that they play an important role in signalling the quality of lamb meat at

Table 3Question related to quality aspects at the time of purchase. Ranking scale included in the interview carried out on consumers and producers.

Column L	Column R	
Aspect	Level of importance Order	
1. Price	Most important	
2. Quality label (PGI)		
3. Production region/region of origin		
4. Production that respects animal welfare		
5. Animal feeding		
6. Environmentally friendly production		
7. Direct appraisal (colour, freshness, fat, and others)	Least important	

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