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# Determinants of the intention to purchase an autochthonous local lamb breed: Spanish case study\*



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#### ABSTRACT

The aim of the paper is to study consumers' acceptability for a lamb meat from a local autochthonous breed. An intention to purchase model was developed based on the Theory of Planned Behavior (TPB) and estimated using data from a survey conducted in Spain. Results indicated that consumers were willing to buy this lamb meat because 86% of respondents said that they probably/definitely would buy it, although only 23% would if the meat is not available in their usual meat store. Then, the lack of availability in the market is an aspect limiting its consumption. The most important factors explaining the intention to purchase for consumers who would purchase this meat if it were not available in their usual store are the importance attached to the animal breed and their social embeddedness with the local area. An appropriate food policy would be to inform consumers about the importance of the animal breed in the quality of the meat and the local origin.

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#### 1. Introduction

An increasing interest in indigenous animal genetic resources of the regions exists worldwide because of the benefits they bring to sustainable economic development and food security (FAO, 2007). Although indigenous breeds generally offer lower production yields, these breeds represent unique combinations of genetic resources and present a higher ability to adapt to local conditions, including feed and water availability, climate change and diseases (Hoffmann, 2010, 2011).

Many local breeds deliver a wide range of ecosystem services and products that supports the livelihoods of their keepers as integral components of agricultural ecosystems, economies and cultures. Those diverse products and services are not usually accounted for but their value can exceed that of market products in many production systems (Hoffmann, 2011). Therefore, the production of food products together with the maintenance of the agricultural biodiversity and the ecosystem services is one of the most important challenges for the international community (Millennium Ecosystem Assessment, 2005).

As Hoffmann (2011) stated, animal biodiversity conservation by using autochthonous breeds has to go hand in hand with the production of food products with high added-value in order to improve the producers' standards of living and effectively ensure the biodiversity

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conservation. However, in order for the production system based on local autochthonous breeds to be successful, these high-value products must be accepted by consumers and they must be willing to buy them and to pay a price that could exceed the higher cost of producing this meat from the local autochthonous breed (Ottesen, 2006).

Then, the aim of the paper is to study consumers' acceptance of lamb meat from an autochthonous local breed. In particular, the consumers' intention to purchase lamb meat from a local autochthonous breed (Ojinegra) from Teruel, a province in the northeast of Spain (Aragon), is analyzed. In the region of Aragon, there are two local lamb promotion breeds: "Rasa Aragonesa" and "Ojinegra from Teruel". The first one is the most important in terms of the number of animals (around 2 million heads) while the second one only holds around 29,000 heads but is more important in terms of rural development because it is bred in a small and less favored area in southern Aragon. This breed (Ojinegra from Teruel) is native from the counties of Bajo Aragon, Andorra and Maestrazgo (Teruel province) characterized by a harsh geography (mountainous) and an extreme continental climate (large temperature fluctuations, low rainfalls). This breed has been produced for a long time in this area because other breeds cannot be adapted due to this difficult climatic and geographic environment. This breed has a high capacity to run on top of mountains in semi-extensive farms, maximizing the use of the natural resources of the area. In this area, there are around 50 "Ojinegra from Teruel" small and medium sized farms with semiextensive farming systems. In 1999, these farms created an association

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 $<sup>^{\</sup>rm 1}\,$  Although several endangered lamb breeds also exists (i.e. Ansotana, Churra Tensina, Maellana, etc.).

to maintain the breed called AGROJI (Association of Ojinegra farmers) in collaboration with the regional Government. These farms directly sell "Ojinegra from Teruel" sheep animals to the largest cooperative in Zaragoza and to other slaughterhouses located in Aragon. In both cases, they sell live animals to the slaughterhouses that sell the final lamb meat as an undifferentiated product, without any indication that the meat comes from this particular breed. The province where this autochthonous local breed meat is produced (Teruel) is considered a less favored area because it is mountainous and sparsely and low density populated (PDR, 2009). Therefore, this breed plays an important economic, social and environmental role (Ripoll et al., 2010) supporting the local economy in the Teruel province in terms of jobs and income but also it is an important animal genetic resource. Moreover, this breed provides lighter animals than the other local breeds, what would be more appreciated by consumers. Ripoll-Bosch et al. (2012) analyze the carcass and meat quality of suckling lambs from the Ojinegra from Teruel breed. Findings indicated that the carcass and quality of the suckling lamb meat from Ojinegra are similar to the meat of the other breeds.

One important factor that could benefit the future maintenance of this breed is the decision of the Spanish National Government to consider this breed one of the autochthonous promotion breeds ("raza autóctona de fomento") under the National Regulation (R.D 2129/ 2008, December 26th) on conservation, improvement and promotion of animal breeds. This regulation opens the possibility for producers and/or producers' associations to apply for two types of subsidies (national and regional) for the maintenance of the herd book and the program for genetic improvement.<sup>2</sup> Subsidies for these autochthonous sheep breeds would help the maintenance of the breed in comparison to other breeds without this promotion recognition. Then, this institutional aid will be an important tool for the maintenance and extension of the breed but it would also be necessary that the final lamb meat produced will be demanded by, at least, a segment of consumers. Using a model of the intention to purchase derived from the Theory of Planned Behavior (TPB) by Ajzen (1991), this paper analyzed the intention to purchase the lamb meat from the autochthonous local breed (Ojinegra) and determine the factors explaining this intention. Then, it will be possible to determine the profile of the segment of consumers who are willing to buy this lamb meat from the autochthonous local breed. To do that, data from a survey administered to a representative sample of consumers in one Spanish region<sup>3</sup> (medium-sized town within 150 km from the producing area) during 2009 was used. The lamb carcass analyzed in the present study belongs to the light carcass classification system (Mediterranean scheme) and in particular, corresponds to categories A (i.e., "Suckling" lamb) and B and C (named "Recental" in Spain but commonly known by consumers in Aragon as "Ternasco"). Then, respondents received information on the type of commercial type under analysis, "Ternasco" and "Suckling"<sup>4</sup> before they have to respond to the particular questions about this sheep breed.

The paper is structured as follows. The next section develops the theoretical framework and Section 3 describes the methodology. Section 4 presents the estimation results, and finally, Section 5 presents a summary of conclusions, discussion of implications and further research.

#### 2. Theoretical framework

The Theory of Planned Behavior (TPB) by Ajzen (1985, 1991) is an extension of the Theory of Reasoned Action (TRA) developed by Ajzen and Fishbein (1980). According to the Theory of Reasoned Action, a behavioral intention (e.g. purchase intention) is determined by a consumer attitude toward engaging in the behavior and the degree of social pressure felt by the person with regard to the behavior (i.e. subjective norm). Attitude refers to the individual's evaluation of a given behavior as favorable or unfavorable and formed on the basis of the individual's beliefs about the outcomes of behavior and their evaluations of those outcomes (Ajzen, 1991). Subjective norm refers to perceived social pressure to perform (or not perform) the behavior. Subjective norm is formed as a result of the individual's beliefs about the extent to which important others would approve or disapprove of their performance of the behavior mediated by the individual's motivation to comply with others' views. However, the TRA has been criticized because it can be applied only to behaviors that are totally under volitional control. To account for this concern, Ajzen (1985) introduced in the TRA a third predictor of behavior, the perceived behavioral control, to include behaviors that are not completely under an individual's control. Perceived behavioral control refers to the consumer's perceptions of personal control over what to buy and eat, which he or she believes to influence the judgment of risks and benefits of products in a purchase situation. Perceived difficulty implies a consumer's skills and abilities which are believed to influence the degree of personal control over the behavior in question (Bredahl, Grunert, & Frewer, 1998).

The TPB has proved to be a successful analysis tool for a range of behaviors and this model and modified versions have been used in many empirical studies. In particular, this model has been used to explain consumer food choices applied to different food products such as fresh produce (Verbeke & Vackier, 2005; Stefani, Cavicchi, Romano, & Lobb, 2008; Tuu, Olsen, Thao, Kim, & Anh, 2008; Menozzi & Mora, 2012), GMO products (Bredahl, 2001; Bredahl et al., 1998; Chen, 2008; Cook, Kerr, & Moore, 2002; Lobb, Mazzocchi, & Traill, 2007; Verdurme & Viaene, 2003), ready to eat food (Dunn, Mohr, Wilson, & Wittert, 2011; Mahon, Cowan, & McCarthy, 2006) and organic produce (Arvola et al., 2008; Chen, 2007; Gracia & De Magistris, 2007; Guido, Prete, Peluso, Maloumby-Baka, & Buffa, 2010; Ruiz de Maya, López-López, & Munera, 2011; Vermeir & Verbeke, 2008). Those previous studies conclude that the most important factor explaining the intention to purchase is the attitude toward the purchase followed by the perceived behavioral control. However, the influence of the social norms on the intention to purchase was found to be positive, negative or not significant, depending on the study.

On the other hand, most of these papers proposed extensions of the TPB model. Verdurme and Viaene (2003) and Chen (2008) integrated the TPB model with the Attitude model (Fishbein, 1963) to analyze the intention to purchase GM foods. Stefani et al. (2008) and Lobb et al. (2007) developed their models with the intention of purchasing GM foods and chicken, extending the TPB model to take into account the impact of perceived risk and two of its antecedents, trust and knowledge. Finally, Sparks and Shepherd (1992), Cook et al. (2002) and Gracia (2013) extended the TPB model, introducing consumer self-identity to account for predispositions that are expected to have an important influence on intention. They analyzed the intention to purchase organic vegetables, GM food and animal welfare-friendly meat products, respectively.

Following these last works, we developed a model of intention to purchase lamb meat from the indigenous local breed (Ojinegra), introducing social embeddedness in the TPB model. The rural sociology literature associates consumer choice of traditional local foods with the notion of social embeddedness (Cranfield, Henson, & Blandon, 2012), which refers to the social relationships between the actors in the local food system and the surrounding community based on reciprocity,

 $<sup>^2\,</sup>$  R.D. 1625/2011, 14th November for subsidies for the promotion of Spanish autochthonous breeds (BOE) and O. 2nd March for subsidies for the producers' associations that promote autochthonous breeds.

 $<sup>^3</sup>$  In Aragon, the lamb consumption in 2009 was 6.31 k per capita and the average price 10.13  $\epsilon$ /kg (MAGRAMA, 2015). It is worthwhile to mention that in the following years until 2014, the per capita consumption decreased at an average rate of 7% reaching a consumption of 4.14 k per capita in 2014. Moreover, the per capita expenditure also decreased at a similar rate in this period and accounted for  $40\epsilon$ /per capita in 2014. This decrease might be due to the economic crisis.

<sup>&</sup>lt;sup>4</sup> We did not include the feeder lamb category because it consists of animals weighting more than 13 kg, which represents only 12% of the slaughtered animals in Aragon and they are not consumed in the region.

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