

A Review of Consumer Preferences for Lamb and Beef Products

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Abstract. Consumer preferences towards lamb and beef meat depend on several intrinsic and extrinsic factors which include psychological, sensorial and marketing parameters, interacting with each other and influencing the purchasing decisions and willingness to pay. Beef and lamb meat is widely consumed globally. However, the consumers profile is too complicated to elaborate. Greeks largely include lamb and beef meat in their diet. Among the main factors affecting consumer preferences are visual appearance, flavour, price, quality labelling, origin, cuts and type of meat. Moreover, social and financial factors, customs and religious traditions, also play an important role in beef and lamb demand. In addition, among consumers' top priorities are the sensorial characteristics and the country of origin of meat. This study aims to define the factors that influence consumer's behaviour concerning lamb and beef meat, focusing on the meat cuts of lamb and beef that are most desirable in Greece.

Keywords: Consumer; preferences; lamb; lamb meat; beef; Greece.

1 Introduction

Consumers' preference, behaviour and perception of meat products is complicated (Pethick et al., 2011). Food quality is characterized by its degree of adaptation to the consumers' requirements which may be related to the nutritional value, the organoleptic characteristics of the product and consumers' health safety (Ambrosiadis, 2005). Opinion formation is based on conscious or subconscious factors that can be

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endogenous and exogenous. Endogenous factors are characteristics of the product that cannot be changed unless the nature of the product changes, such as organoleptic characteristics. These factors are subjective and can therefore mislead the consumer (Grunert et al., 2004). On the contrary, exogenous factors, such as the origin and price of the product, are not a property of food (Grunert et al., 2011). In addition, several other social, cultural, economic, religious, and moral factors may vary widely among consumers regarding food consumption (Font-i-Furnols et al., 2014). Especially for beef and lamb meat, foodborne crises, such as spongiform encephalopathy, can significantly alter consumer choices (Rezitis et al., 2011). Therefore, it is vital for the market to interpret consumer behaviour towards beef and lamb meat in order to adapt immediately to changes. The purpose of this review is to identify the factors affecting Greek and global consumer preferences concerning beef and lamb meat.

2 Factors influencing consumer behaviour and choices

Various factors affect consumer choices and attitudes. According to Font-i-Furnols et al. (2014), these factors are divided into 3 major categories: psychological (factors related to the individual), organoleptic (factors related to the product) and marketing (socio-environmental related factor). These factors are interrelated and can affect people's cognitive and emotional intelligence (Figure 1).

Psychological factors such as beliefs, attitudes, motivations, perceptions, lifestyle-values, as well as social and cultural factors, shape consumers' personalities and influence their behaviour. Public has developed a negative opinion towards meat products due to factors related to animal welfare, slaughter conditions (Troy et al., 2010), environmental issues (Povey et al., 2001), religion, ideology and ethics (Berndsen et al., 2005). Moreover, the hygiene of meat and the potential adverse dietary effects of meat consumption on human health, are considered to be important reasons for consumers (Latvala et al., 2012; Garnier et al., 2003). However, these negative attitudes appear to have minor impact on meat market (Grunert, 2006), as consumers prefer, instead of reducing meat consumption to use meat as an ingredient.

The most important organoleptic factors that affect consumers' behaviour are appearance, colour, taste, aroma, juiciness and tenderness of the meat. These factors are affected by both endogenous and exogenous factors, such as the type and breed of animal, its nutrition and age, the animal's welfare conditions during slaughter, maintenance and maturation of the meat (Pethick et al., 2005). Especially, appearance and taste are among the most important factors influencing meat consumers' choices (Font-i-Furnols et al., 2014). Concerning fat, most consumers prefer lean meat (Ngapo et al., 2006). Still, tenderness, juiciness, taste and aroma are significantly related to Consumers' purchase behaviour (Banović et al., 2009). These characteristics mainly depend on the intramuscular fat content of the product and the type of fat (Pannier et al., 2014). However, there are substantial differences among and within countries, e.g. in Mediterranean countries consumers prefer light sheep meat colours, as they usually consume carcasses of young animals (Bernué et al., 2012).

Advertising, product promotions and proper quality labelling constitute the most influential ways to reach consumers, affecting their desires and perceptions. Price is

another important exogenous factor which is directly related to the socio-demographic characteristics of a population (Reicks et al., 2011), since low-income consumers prefer low quality cuts (Bello Acebrón et al., 2000; Font-i-Furnols et al., 2014). Regarding the content of meat product labels, the features required by the consumers to make informed purchasing decisions include the brand/product name (address line), expiration date, quantity statements and meat origin (Verbeke et al., 2006). According to Chambers et al. (2007), certified and domestic meat products are top consumers' choices. Finally, consumers prefer organic products despite their high price (Kim et al., 2008), since they are considered to be healthier and of high-quality and have a better environmental footprint (Verbeke et al., 2010).

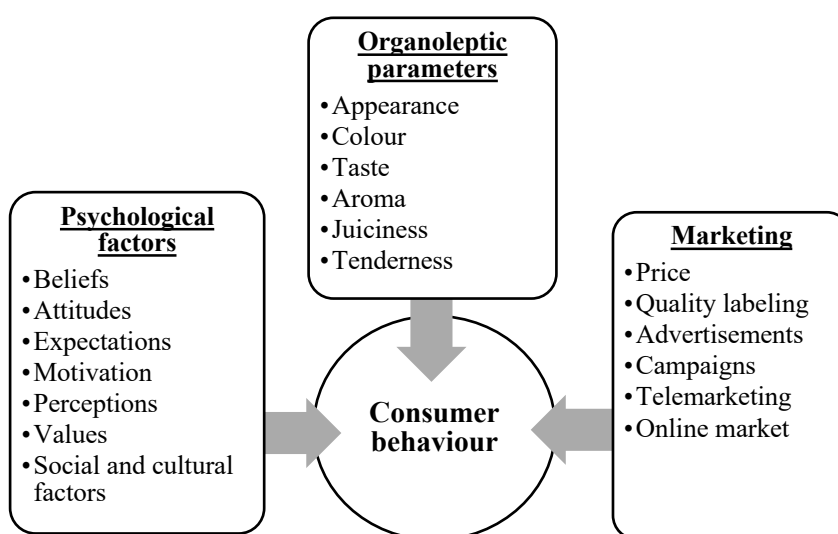


Fig. 1. Factors influencing consumer behaviour and choices (Font-i-Furnols *et al.*, 2014).

3 World beef and lamb consumption

Beef and lamb meat have always been high in consumer preferences worldwide. Many differences occur in consumer preferences among countries regarding high-quality beef and lamb meat. According to Henchion et al. (2017), the three most important factors that influence consumer choices concerning beef are price, product labelling and fat content, followed by taste, freshness and tenderness. In Italy, the most important factors include price, animals' welfare and breed, product's labelling and type of production (e.g. organic). The factors that Italian consumers rank as the less important in influencing their preferences are organoleptic characteristics of meat products other than taste (tenderness, aroma, colour), their origin, their nutritional characteristics and the existence of an identification and traceability system (Merlino et al., 2018). German consumers show a significant preference for products with quality labelling of Black Angus meat for which they are willing to pay a higher price

(Meyerding, et al., 2018). Almi et al. (2013) report that in Belgium and Norway there is a clear preference for beef tenderloin; Norwegians are not willing to buy it because of its high price, unlike the people in Belgium, where its price is lower, indicating the impact that price and marketing in general may have on consumer choices. In contrast to Belgians' attitude, Norwegians' purchase behaviour is based mainly on products' organoleptic preferences and less on products' nutritional value or safety. In general, European consumers consider beef consumption beneficial to their health, thus positively affecting the purchase of beef, with a clear preference towards lean (Ngapo et al., 2006), local (Realini et al., 2013) and less technologically processed beef meat (Verbeke et al., 2010).

Many differences among European countries are also observed regarding lamb meat preferences. The most significant difference is related to the preference of Mediterranean consumers for carcasses of young lambs (animals are slaughtered during weaning period), and the preference of northern Europeans for heavy carcasses of grass-fed animals. Consumers in France, UK and Iceland prefer French or Icelandic sheep breeds, which produce carcasses over 15 kg, while Spain and Italy prefer to consume autochthonous sheep breeds, with a carcass of less than 10 kg (Sañudo et al., 2006). The factors mainly influencing European consumers' choices are the origin and type (lamb or mutton) of meat, and animal's breeding system (Furnols et al., 2011). The less important factors include price (Bernabéu et al., 2005), specific cuts, nutritional value, labelling and traceability (Bernués et al., 2003).

4 Beef and lamb consumption in Greece

In Greece, the average annual meat consumption is lower than the European average, mainly due to climatic and environmental factors, as well as the dominance of the Mediterranean diet on Greek cuisine. Meat consumption in Greece increased substantially during the 1970s and 1980s, stabilizing from the 1990s onwards. According to the most recent available data published in FAO database, in 2013 the annual per capita consumption in Greece was 16.1Kg of bovine meat and 12.47 Kg of lamb/mutton and kid/goat meat. Greek consumers prefer to buy their meat from local butcher shop or supermarkets (Krystallis et al., 2006). The relevant literature on meat consumption in Greece is limited and no information regarding preferred cuts of beef and sheep meat are available.

According to the studies available, the key factor in purchasing behaviour in Greek beef meat market is taste. Since taste can only be assessed after purchasing, consumers rely on a variety of characteristics that can be assessed during purchase, such as appearance, colour and fat content (Krystallis et al., 2006). Social factors are also affecting Greek consumers' behaviour, such as the age of the consumers and their educational level: older people and people with lower educational level appear to choose beef based only on product labelling, in contrast to younger and more educated consumers who further explore nutritional value and microbial safety. The bovine spongiform encephalopathy crisis in the global beef industry severely affected consumers' attitude towards beef meat (Krystallis & Arvanitoyannis, 2006). According to Morrison et al. (2003), exogenous factors can potentially affect the Greek

market. However, the prices of beef have been relatively stable; therefore, its purchase is mainly influenced by consumers' income, with older people being more affected (Krystallis & Arvanitoyannis, 2006). Economic crisis in Greece and the volatile economic environment in general had an impact on the purchasing behaviour of consumers in Greece who moved to low price meat cuts and products.

Table 1. Meat preferences studies among Greek consumers.

Reference	Country	Sample size	Method	Meat type	Factors
Sañudo <i>et al.</i> (2006)	Greece, Spain, Italy, France, United Kingdom, Iceland	773	Organoleptic evaluation at home, questionnaire	Lamb meat	Smell, aroma, tenderness, juiciness, flavour
Krystallis <i>et al.</i> (2006)	Greece	268 households	Questionnaire, personal interview	Beef, Lamb meat	Organic product, price, availability
Krystallis & Arvanitoyannis (2006)	Greece	268 households	Questionnaire, personal interview	Beef, Lamb meat	Safety, nutritional value, labelling, taste, appearance
Morrison <i>et al.</i> (2003)	Greece		Review	Beef, Lamb meat	Price, income, taste

Greeks prefer to eat lamb over mutton, as it is considered to be of better quality due to its lighter coloration (Bernabeu *et al.*, 2005). Lambs are usually slaughtered at 4-8 weeks old, when the carcass weight varies between 6-10 kg (Christodoulou *et al.*, 2007). However, in specific regions of the country (Epirus, Sterea Ellada) a significant portion of citizens in the Greek countryside consume heavier sheep carcasses (over 13 kg) (Skapetas *et al.*, 2006). Katsaounis *et al.* (1996) argue that the heaviest sheep carcass became more acceptable to Greek consumers when the latter were aware about its high nutritional value. Both lamb and mutton consumption presents seasonal demand, with Easter being the period of the highest demand due to religious purposes. Sañudo *et al.* (2006) examined consumer preferences in six European countries. After organoleptic examination of meat of different breeds at different ages of slaughter,

they concluded that taste (juiciness, tenderness, and aroma) and appearance (colour, fat content) play the most important role in beef and lamb meat selections. These factors are mainly influenced by animal's breed, age and diet. Most Greek consumers preferred to consume autochthonous sheep breeds with a slaughter age of up to 2.5 months. Similarly to beef, there are no literature sources describing the preferred sheep meat cuts. Georgakis et al. (2002) report that the sheep and goat carcasses are usually cut shortly before they are sold in the butcher's shop and their cuts follow those of cattle.

5 Conclusions

Consumer behaviour regarding beef and lamb meat is difficult to assess accurately, due to the large variation it presents both among and within countries. There are several differences among European countries, concerning the preferred endogenous factors of beef and lamb meat. The puzzle becomes more complicated if one takes into account the various social, economic and cultural factors that prevail in each country and the current events, which are constantly changing the market and demand. In addition, exogenous factors, such as the price of the product, seem to affect consumer behaviour both within countries and among them. Globally, two large consumer groups are recognized: the consumers that are willing to pay more for a better-quality food and the consumers that look for the cheapest food, regardless of quality. However, some similarities are observed among countries. The vast majority of consumers prefer domestic beef and sheep food. Similarly, consumers prefer to buy fresh meat, relying mostly on its bright red colour. In any case, it is necessary for the beef and lamb meat market to continuously assess the factors affecting consumer choices in order to adapt to any contemporary changes.

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