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European consumer preferences for beef with nutrition and health claims: A multi-country investigation using discrete choice experiments

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ABSTRACT

The European Union (EU) nutrition labelling policy aims to facilitate consumers' food choice, stimulate innovation and facilitate the circulation of foods bearing claims across countries. However, the beef industry has not fully taken advantage of utilizing nutrition and health claims based on the EU nutrition labelling policy to differentiate beef products in the market. This study investigates consumer preferences for nutrition and health claims on lean beef steak. Two choice experiments were conducted among 2400 beef consumers in four EU countries (Belgium, France, the Netherlands, United and United Kingdom). Multinomial logit and error component models were estimated. Our results generally suggest that consumer valuation of nutritional and health claims varies across countries. In Belgium, the Netherlands and France, nutrition and health claims on saturated fat yielded higher utilities than claims on protein and/or iron, while the opposite was found among consumers in the UK. The results imply that marketing opportunities related to nutrition and health claims on beef are promising, but that different nutritional marketing strategies are necessary within different countries.

1. Introduction

Consumer perceptions of the nutritional value of beef are not unequivocally positive (Van Wezemael et al., 2010). Personal health concerns have arisen, among others about the fat content in beef and the possible negative effect on consumers' cholesterol levels. Although there is no conclusive evidence that moderate consumption of beef, as part of a healthy diet, has negative health effects (Wyness et al., 2011), recent research and consumer concerns about the association between red meat and cancer (Santarelli et al., 2008) have negatively influenced consumer perception of the healthiness of beef (Van Wezemael et al., 2010; Perez-Cueto and Verbeke, 2012). However, beef contains important nutrients such as high quality protein, iron, zinc, vitamin D, B3, B12, selenium and long-chain omega-3 fatty acids, all potentially contributing to good health throughout life (McAfee et al., 2010). The present study investigates the possible appeal of these nutritional benefits when signalled to consumers by means of nutrition and health claims.

One of the ways to inform and enable consumers to evaluate the nutritional value and the healthiness of beef is through nutrition and health claims. Since nutrition and health considerations can play a role in food choices (da Fonseca and Salay, 2008; Nayga, 2008; Rimal, 2005), nutrition labelling might influence consumer decision making processes at the point of purchase. Furthermore, it might positively influence consumer perceptions of the healthiness of beef products (Ares et al., 2009). Regulations for nutrition labelling are diverse across the world. Within the European Union (EU), EC Regulation 1924/2006 stipulates the rules for the use of nutrition and health claims. This regulation aims to help consumers make healthy and informed food choices, stimulate and protect innovation in the food market, and facilitate the circulation of foods bearing claims across EU member states. In comparison to the EU, claims in the United States (US) are very similar in nature, but the regulatory system is more liberal, and procedures for the use and approval of claims differ substantially (Verhagen et al., 2010).

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Beef is one of the most consumed meat types in the European and American cuisine. The EU and the US have dominant global positions in terms of beef production and consumption, with recent numbers indicating consumers eating 17.2 and 27.7 kg per head per year on average in the EU-27 and the US, respectively (FAOSTAT, 2011; USDA, 2012). Over the last decades, the beef industry and butchers have diversified their market offerings from the traditional beef steak and roast to an increasing number of beef-based processed products, including ready-meals. However, up until now, the beef industry has not fully taken advantage of the nutrition labelling regulations. Only a limited number of meat products available in the market use the extant nutrition labelling regulation for product differentiation (Steinhauserova et al., 2011; Barreiro-Hurlé et al., 2009). In contrast, nutrition labelling has been an inspiring source for new product development in other food sectors such as the dairy and snacks industries (Vyth et al., 2010). Nutrition labelling could be a source of market opportunities for the beef sector if consumers are found to value nutrition and health claims on beef. However, up till now only one study has investigated the application of approved nutrition and health claims in the European red meat sector. Barreiro-Hurlé et al. (2009) investigated consumer preferences for nutrition and health claims regarding the fat content in pork Frankfurter sausages. Their results indicated that consumers value approved nutrition and health claims, and therefore confirm market opportunities that could arise with the use of the existing nutrition labelling regulation, especially with respect to health claims. Our study complements these findings by focussing on beef instead of pork, and by investigating unprocessed steak compared to further-processed sausages. Our study, however, differs from the Barreiro-Hurlé et al. (2009) study in a number of ways. First, the scope of our study is broader with the focus on claims with respect to a variety of nutrients. Second, our multi-country study provides an overview of consumer preferences in a European context instead of focussing on only one country.

The aim of this study is to investigate consumer preferences for nutrition labelling on beef steaks. In particular, we used the choice experiment method to achieve two specific objectives. First, we wish to investigate consumer preferences and willingness-to-pay (WTP) for nutrition and health claims for different nutrients on beef steak. Second, we examine if there are differences in the results across European countries (i.e. Belgium, France, the Netherlands, and the United Kingdom). In particular, the key question investigated in this study is whether nutrition and health claims are appealing to European consumers, and if so, whether they are equally or differently appealing for consumers in different European countries. No other known published study has investigated this question in the past. Furthermore, since very few multi-country studies exist in choice experiment literature (Aristides et al., 2004; Blaauw et al., 2010; Lusk et al., 2003), this study also contributes to the growing body of literature on multi-country choice experiments.

2. Background

For the food industry, the successful application of nutrition and health claims on food products remains a complex issue. For instance, some of the nutrient or ingredient claims may be perceived positively or negatively by consumers irrespective of their actual need or function in a healthy balanced diet (Biesalski et al., 2011). Hence, not all combinations of carrier product, nutrient or functional ingredient, and claims are equally attractive to consumers (Verbeke et al., 2009). Not only claim-related factors (such as named ingredient, its function, and type of benefit it provides) but also product-related factors (such as the image of the carrier product, or previous experience with claim labelling) and personal characteristics influence how consumers perceive different claims (Lähteenmäki, 2012). These differences in consumer reactions to claims complicate the strategic choice for the large-scale application of a specific claim on a specific food product.

Framing (i.e. the context within which information is presented) is known to play an important role in consumer perceptions of claims on food. Levin (1998) showed that positive framing of a meat product attribute (e.g. "75% lean meat") resulted in more positive product evaluations than its equivalent negative framed description ("only 25% fat"). According to Prospect Theory (Kahneman and Tversky, 1979) decisions are influenced more by expected losses than expected gains, implying that consumers have a preference for avoiding a possible loss compared to achieving a possible gain. This is in line with health framing literature, confirming that negative information tends to attract more attention than positive information (Baglione et al., 2012; Hoefkens et al., 2011; van Kleef et al., 2005) and also has a disproportionate stronger impact on consumer decisions (Verbeke and Ward, 2001). The higher value attached to the avoidance of possible losses implies greater preferences for nutrition and health claims when outcomes are expressed as possible losses than as possible gains, as shown by Levin et al. (1998) and confirmed by a meta-analysis by Piñon and Gambara (2005).

Consumer preferences differ between nutrition claims and health claims. Nutrition claims state that a food has particular beneficial nutritional properties due to the caloric value it provides (or does not provide) and/or the nutrients it contains (or does not contain). Health claims are statements about a relationship between food and health, which can be related to functions of the body or disease risk reduction (EC Regulation 1924/2006). Although both nutrition and health claims are based on nutritional factors and share associative knowledge networks that consumers use when processing information (Lähteenmäki, 2012; Lawson, 2002), several research findings have illustrated that health claims outperform nutrition claims. Barreiro-Hurlé et al. (2009) showed that health claims were valued significantly higher than claims about nutritional attributes in pork Frankfurter sausages. Also in enriched fruit juice, spread and cereals, consumers valued health claims higher than nutrition claims (Verbeke et al., 2009). Furthermore, health claims are accepted more easily on products with a healthy image (Bech-Larsen and Grunert, 2003) and on products with previous health claim labelling, as was illustrated by Lähteenmäki et al. (2010) in a study investigating claims on yoghurt and bread versus raw pork chops. However, claiming health in food products might also induce a negative expectation barrier, lower hedonic value to consumers (Verbeke, 2006; Lähteenmäki et al., 2010), and trigger scepticism owing to perceived associations with marketing scams by the food industry (Verbeke, 2010). Furthermore, studies have revealed that the simultaneous presence of more than one piece of nutrition-related information on a product label can lead to lower total utility levels (Barreiro-Hurlé et al., 2008, 2010). A more comprehensive overview of the literature on nutrition labelling can be found in Hieke and Taylor (2012).

Several studies have investigated consumer preferences for nutrition and health claims in different countries. In a study comparing physiological function claims and disease-risk reduction claims, Bech-Larsen and Grunert (2003) found a common pattern between claim perceptions in Denmark, Finland and the US. However, in comparison to Denmark and Finland, the US consumers perceived the disease-risk reduction claim as more beneficial to health, which was possibly related to the greater familiarity with this claim type among US consumers. Saba et al. (2010) found geographical differences in consumer perceptions of the healthiness of cereal-based products with beneficial compounds between Finland, Germany, Italy and the UK. In a large-scale study in Italy,