



Consumer attitude and purchase intention towards processed meat products with natural compounds and a reduced level of nitrite



Yung Hung^a, Theo M. de Kok^b, Wim Verbeke^{a,*}

^a Department of Agricultural Economics, Ghent University, Coupure Links 653, B-9000 Ghent, Belgium

^b Department of Toxicogenomics, Maastricht University, P.O. Box 616, 6200 MD Maastricht, The Netherlands

ARTICLE INFO

Article history:

Received 3 March 2016

Received in revised form 15 May 2016

Accepted 1 June 2016

Available online 2 June 2016

Keywords:

Additives

Functional foods

Health

Marketing

Nitrite

Phytochemicals

Processed meat products

ABSTRACT

This study investigates consumer attitude and purchase intention towards processed meat products with added natural compounds and a reduced level of nitrite. The rationale for such innovation relates to nitrite's negative health image as a chemical additive among consumers, versus the perception of compounds from fruits and vegetables as being natural and healthy. Cross-sectional data were collected through online questionnaires on knowledge about, interest in, attitude and intentions towards such new type of processed meat products in Belgium, The Netherlands, Italy and Germany ($n = 2057$). Consumers generally had limited knowledge about nitrite being added to meat products. Yet, they expressed favourable attitudes and purchase intentions towards the new processed meat products. Purchase intention associated positively with: attitude; preference for natural over chemical additives; perceived harmfulness of chemical additives; risk importance; domain specific innovativeness; awareness of nitrite added; education; general health interest; and processed meat consumption frequency. Consumers from Italy and Germany had a lower level of purchase intention compared to Belgium. Four consumer segments were identified based on attitude and purchase intention: 'enthusiasts' (39.3% of the sample), 'accepters' (11.9%), 'half-hearted' (42.3%) and 'uninterested' (6.6%). This study provides valuable insight for further product development and effective tailoring of marketing communication strategies of innovative processed meat products.

© 2016 Elsevier Ltd. All rights reserved.

1. Introduction

Alongside consecutive waves of safety scares, sustainability and adulteration issues affecting meat and the meat industry in general (Barnett et al., 2016; Verbeke, Pérez-Cueto, de Barcellos, Krystallis, & Grunert, 2010), the recent debates about the health consequences of processed meat products have made meat production and consumption particularly controversial. However, owing to the trend of increased consumer demand for convenience, processed meat products remain important in the human diet despite these negative publicities (Grunert, 2006). As food healthiness is a key attribute influencing consumers' acceptance and food choice (Kraus, 2015), the development of improved meat processing techniques based on scientific knowledge is topical and offering potential benefits for both public health and processed meat marketing. Product reformulation is indeed one potential way to improve processed meat products whereby the content of possibly unhealthy ingredients and nutrients is reduced and eventually replaced by suitable alternatives. Reformulation has been flagged as "probably the private-sector action that brings the most benefits [for

consumers in terms of overall impacts on food intake and health]" (Cappacci et al., 2012, p. 196), at least if the technology, concept and the reformulated products are accepted by consumers. Therefore, this study focuses on consumers' attitude and purchase intention towards the concept of processed meat products wherein natural compounds are used and the level of nitrite is reduced.

Processed meat products with nitrite as preservative were found to be associated with possible carcinogenic risks in epidemiological studies (Oostindjer et al., 2014). A recent review has summarised the use, (bio)-chemistry and metabolism of dietary nitrite, as well as related human health concerns, benefits and perceptions (Bedale, Sindelar, & Milkowski, 2016). Meanwhile, natural compounds present in fruits and vegetables (so-called 'phytochemicals') were proposed to be a suitable candidate for partially or completely replacing nitrite. These natural compounds are bioactive and known to have health-promoting efficacy (de Kok, van Breda, & Manson, 2008), to exhibit strong antimicrobial activities (Surh, 2003), and to possess substantial anti-carcinogenic and anti-mutagenic properties (Chung, Lim, & Lee, 2013). Therefore, the concept of adding natural compounds to processed meat products and reducing nitrite levels (henceforth referred to as 'new meat products') can be a promising solution to improve both the actual healthiness and the health image of processed meat products.

* Corresponding author.

E-mail address: wim.verbeke@UGent.be (W. Verbeke).

A previous study has shown a favourable example of reducing nitrite levels without compromising the processing and quality characteristics of the product by the addition of tomato paste to frankfurter sausages (Deda, Bloukas, & Fista, 2007). Other examples such as meat products preserved with herbs and berries (Haugaard, Hansen, Jensen, & Grunert, 2014) and functional processed meat enriched with Co-enzyme Q-10 (Tobin, O'Sullivan, Hamill, & Kerry, 2014) also received overall positive reactions among consumers.

A qualitative study has explored initial reactions towards the new meat products among European stakeholders and consumers through focus group discussions (Hung, Verbeke, & de Kok, 2016). Although it was demonstrated that consumer reactions on nitrite replacement with phytochemicals were mostly positive, numerous challenges in market positioning and communication were identified. Yet, acceptance cannot be taken for granted as consumers often express uncertainty about the health impact of new meat products (De Barcellos et al., 2010; Verbeke et al., 2015), which could be due to the different perceptions regarding the derived health benefits (Chen, Anders, & An, 2013). Consumer perception, which refers to the process of selecting, organizing and interpreting information related to the new meat products in order to form a meaningful picture (Kotler, Armstrong, Harris, & Piercy, 2013), plays an important role in shaping consumer acceptance, purchase and future consumption, and industry competitiveness by extension (Grunert, Verbeke, Kügler, Saeed, & Scholderer, 2011). A lack of understanding of consumer acceptance and its determinants could lead to market failure of innovative food products. The present study will focus on awareness, knowledge, attitudes, and personal psychological and socio-demographic characteristics as possible determinants of purchase intention.

When consumers are aware or have knowledge about the use of nitrite in meats and perceive negative health impacts to be associated with diets high in processed meat products containing nitrite, they may tend to make a more rational decision such as opting for healthier meat products (Ajzen, 2005; Wilcock, Pun, Khanona, & Aung, 2004). We hypothesize that consumers who are aware and have knowledge about nitrite in meats show more interest in the new meat products.

Attitude reveals the psychological tendency of consumers' liking or disliking of the new processed meat products across an evaluative range. Attitudes towards an object could influence the related information processing, judgements and resulting behaviour. Negative or more extreme attitudes could be more impactful or durable compared to positive or neutral attitudes (Petty & Krosnick, 2014). As purchase intention and actual purchase behaviour are clearly correlated (Van Lange, Kruglanski, & Higgins, 2011), it is expected that consumers with more favourable attitudes and purchase intention would be more likely to accept, purchase and consume these new meat products.

In addition to attitudes towards the new meat products, a wide range of other psychological characteristics have been shown to influence consumers' purchase intention towards new, functional or processed meat products. Attitudes towards meat products with chemical additives are relevant, as consumers are increasingly concerned about chemical food additives (Shim et al., 2011) and perceive food additives of natural origin as being safer (Koyratty, Aumjaud, & Neeliah, 2014). Consumers who prefer natural over chemical additives in meats or perceive chemical additives as harmful might favour the concept of new meat products, as the chemical additive nitrite is partially replaced by natural compounds.

Involvement is another important characteristic shaping consumer response to food products. It reflects the perceived personal interest or importance evoked by certain products, e.g. processed meats in relation to consumers' enduring or situation-specific goals (Mitchell, 1979), which helps to understand and explain how consumers make decisions towards meat products (Verbeke & Vackier, 2004). Four facets of involvement in meat products have been proposed in literature: (1) Pleasure value refers to the factor encompassing how important meat is to a person and how much feelings of pleasure it can provoke; (2) symbolic

value indicates how much meat is related to the expression of the individual's self-concept; (3) risk importance refers to how important the possible negative consequences of a poor choice of meat are perceived; (4) risk probability denotes the perceived likelihood of making a wrong choice of meat (Laurent & Kapferer, 1985; Verbeke & Vackier, 2004).

As the new processed meat products result from innovation with a possible impact on healthiness or health image, domain specific innovativeness (DSI) and general health interest (GHI) are two more personal psychological characteristics that may shape purchase intention. Domain specific innovativeness shows consumers' tendency to try a new or unfamiliar food product (Goldsmith & Hofacker, 1991). Consumers generally express a certain level of resistance to adopting new or unfamiliar food products (De Barcellos, Aguiar, Ferreira, & Vieira, 2009; Verbeke, 2015). As the new meat products are currently not common in the market, consumers with a higher DSI may be more prompted to purchase and try these products. General health interest refers to consumers' orientations towards the healthiness of food and dieting behaviour (Roininen, Lähteenmäki, & Tuorila, 1999). Consumers with a higher level of GHI tend to believe more that health promoting behaviour is important (Wardle & Steptoe, 1991), and make healthier food choices (Pohjanheimo, Luomala, & Tahvonena, 2010). Since consumers tend to view more natural meats as healthier meats (Verbeke et al., 2010), consumers with a higher level of GHI may be more interested in the new meat processed products.

This study serves as a quantitative follow-up study to the exploratory study by Hung et al. (2016) with a threefold objective. First, to explore consumers' current knowledge and perception about nitrite and processed meat products. Second, to investigate consumer attitude and purchase intention for this new type of processed meat products, as well as to elucidate how purchase intention is associated with various personal characteristics. Third, to identify market segments based on different consumer interests, and to profile these segments in terms of personal characteristics. Along with the aforementioned psychological characteristics, a series of socio-demographic characteristics such as age, gender, educational level and country of residence will be assessed.

2. Materials and methods

2.1. Study design and sampling

Data were collected in December 2014 through a cross-sectional quantitative online survey with samples representative for age, gender and region in four European countries: Belgium (BE, $n = 532$), The Netherlands (NL, $n = 501$), Italy (IT, $n = 502$) and Germany (DE, $n = 522$). These countries were selected based on the importance of

Table 1
Sample characteristics (% of respondents or Mean $\pm$ SD, $n = 2057$).

		Percentage of sample
Country (%)	Belgium	25.9
	The Netherlands	24.3
	Italy	24.4
	Germany	25.4
Gender (%)	Male	49.8
	Female	50.2
Age (%)	18–24 years	8.9
	25–34 years	18.3
	35–44 years	18.4
	45–54 years	21.4
	≥ 55 years	33.0
	Mean $\pm$ SD (years)	45.5 $\pm$ 14.3
Education (%)	Below Bachelor's degree	65.3
	Bachelor's degree or above	34.7
BMI (%)	Underweight	3.8
	Normal weight	50.2
	Overweight	31.8
	Obese	14.2

Download English Version:

<https://daneshyari.com/en/article/5791059>

Download Persian Version:

<https://daneshyari.com/article/5791059>

[Daneshyari.com](https://daneshyari.com)