



## Modeling the factors affecting rural consumers' purchase of organic and free-range produce: A case study of consumers' from the Island of Arran in Scotland, UK

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### ABSTRACT

This paper investigates the roles of personal, product related and economic factors in predicting rural consumers' attitudes and purchase intentions towards organic and free-range produce. A conceptual model is derived and tested via structural equation modeling on a sample of 222 rural consumers. The results show that attitude is explained by consumers' food safety concern, ethical lifestyle and price perceptions. Attitude partially mediates the effects of ethical lifestyle and price on intention to purchase organic produce as well as the effect of ethical lifestyle on intention to purchase free-range produce. Attitude assumes a more central role in fully mediating the effect of food safety concern on intention to purchase organic produce, as well as the effect of price on intention to purchase free-range produce. Overall the conceptual model of consumer decision making performs well in both organic and free-range contexts yielding similar results.

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### Introduction

The market value of organic produce in Europe has been increasing in the last few years, currently estimated at €14 billion (Briz and Ward, 2009; Datamonitor, 2008). The UK is the most rapidly growing market for organic produce (as cited by Wier et al., 2008), estimated at around £3.1 billion (€3.9 billion Grocer, 2007). The range of organic produce continues to expand as a result of the growing market potential (Mintel, 2005). Organic produce derives from a farming system which restricts the use of chemical fertilizers and pesticides. Livestock is farmed with restrictions in terms of the use of drugs and antibiotics when compared to conventional farming methods ([www.soilassociation.org](http://www.soilassociation.org)). Research from the agricultural and marketing domains shows that motives driving the purchase of organic produce include social/cultural factors (e.g. societal views), economic factors (e.g. price), product factors (e.g. sensory perceptions and quality) and personal factors (e.g. health perceptions and emotions) (Grunert and Juhl, 1995; Hughner et al., 2007; Thomson, 1998; Verhoef, 2005; Williams and Hammitt, 2001).

Alike organic, the free-range market has been expanding as consumers turn away from large-scale intensively produced food and

as companies choose to adopt free-range only policies (e.g. Marks and Spencer). Free-range refers to a method of farming where animals are given freedom to roam rather than being in a restricted space as it is common in the intensive-farming system. Compared to organic, the free-range system focuses mainly on the welfare in terms of the living condition of animals and has less strict guidelines about feeding and the use of drugs and antibiotics (Mintel, 2006). A greater range of free-range produce is now available with produce like free-range eggs being strongly established (Mintel, 2008). Free-range eggs and poultry are the most popular products, with free-range hens accounting for one third of all hens and over one quarter of all eggs sold (Defra, 2007).

In spite of the proliferation of free-range produce in the market place, there is a dearth of literature which focuses on free-range produce and the factors that drive consumers to buy them. Previous studies in this area have focused on understanding taste preferences between conventional, organic and free-range produce (Lawlor et al., 2003); understanding category specific purchase decisions (e.g. eggs; Baltzer, 2004; Fearn and Lavelle, 1996) as well as examining the context of food purchases (e.g. farmers markets; Holloway and Kneafsey, 2000). Most previous research has mainly explored the individual or combined impact of factors on consumers' attitude and/or preference for organic foods (e.g. Chen, 2007; Gifford and Bernard, 2006; Lockie et al., 2002). Research examining differences in the motivating factors behind consumers choosing organic and choosing free-range produce is very limited.

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However, one cannot assume that the views, attitudes and motivations of consumers are consistent across these two behavioral contexts.

Given this research gap, the objective of this study is to investigate the roles of specific factors in shaping attitude and purchase intention towards organic and free-range produce using a sample of rural consumers. Scant attention has been paid to issues on food shopping in rural communities (McEachern and Warnaby, 2006). According to the Countryside Agency (2001) 80% of rural households live within 4 km of a supermarket with access predominantly by car or bus. However a significant number of rural communities are isolated in the sense that access to major supermarkets is prohibitively costly in terms of monetary value, time and effort. We aim to address a research gap focusing on such isolated rural communities. In particular, we aim to comprehensively model pertinent factors in consumer decision making across both organic and free-range food choice contexts and compare and contrast the results obtained. This is important as previous research has focused on specific product categories and it is not yet known whether or not the same decision-making model is relevant. To achieve this, we build a model to explore decision making in both contexts using Shepherd's (1989) categorization of food preferences and choice. Specifically, we examine product-related (food safety), consumer-related (health consciousness, ethical lifestyle) and economic-related (price) factors in shaping consumer attitude and purchase intention across organic and free-range food choice contexts. The following sections discuss the theoretical model and the research hypotheses. The methodology is then outlined and findings are presented. A discussion follows with implications and suggestions for future research.

### Theoretical model and development of hypotheses

Several models have been proposed to categorize complex food choice behavior (e.g. Furst et al., 1996; Wadolowska et al., 2008; Steptoe et al., 1995). Most notably among these is the conceptualization of Shepherd (1989). This approach classifies food choice factors into three distinct groups. First, product-related factors concerned with the sensory, chemical and physical aspects of the food as well as nutrient content and functional aspects of the product. The second group contains consumer-related, physiological effects and psychological factors while the third group contains external social and economic factors such as culture, societal views, and the price of the product. We draw on this conceptualization of the determinants of food choice in framing our conceptual model (see Fig. 1).

The model is utilized across the contexts of organic and free-range produce to uncover potential differences in the factors which drive attitude and intention in these two contexts. Given the lack of previous research which specifically models consumers' decision making with regard to free-range produce, we use literature from general and other specific food choice contexts to justify our hypotheses. Specifically, we take as a priori that the same choice model can be applied across these two contexts, albeit the salience of the factors affecting attitude and intention may differ between the two contexts. Hypotheses are thus posited to be the same across both organic and free-range contexts.

#### *Food safety concern*

Food safety refers to consumers' concern about residues in food resulting from chemical sprays, fertilizers, artificial additives and preservatives and is linked to farming methods (Yee et al., 2005). Previous research suggests that food-safety perceptions are important considerations in food policy that can have an impact on food

choice (Grunert, 2005). The concept of food safety can be conceptualized in terms of pesticides and food additives (e.g. Dosman et al., 2001; Knight and Warland, 2004). Although food safety can incorporate other factors such as microbiological and animal disease-related safety issues (e.g. BSE, Foot and Mouth etc.), as a result of the intensification process in agriculture considerations such as the use of additives, chemicals, preservatives and hormones in vegetables, fruits and processed foods, are pertinent factors in the conceptualization of food safety concern (de Jonge et al., 2008; Mergenthaler et al., 2009). Williams and Hammitt (2000) found that consumers believe organic produce poses fewer risks than conventional food and that lower pesticide-related mortality risks are associated with the production and consumption of organically grown produce.

Similarly, consumers who buy free-range are concerned with safety issues in relation to large scale production methods. Consumers may be concerned about the conditions the animals are kept since these affect the state of health of the animals and can pose food safety risks (Harper and Makatouni, 2002). Free-range produce such as poultry and eggs are considered safer foods since the free-range production system requires that farmers comply with a series of strict guidelines to ensure safety standards, including vaccination of the animals against salmonella, a 'best before date' on every egg and a code of practice on how animals are fed (Mintel, 2006). Further, previous research has shown that food safety concerns drive attitudes towards organic produce (Michaelidou and Hassan, 2008). Within the context of value-based meat purchasing, food safety has been found to explain purchase behavior (McEachern and Schroder, 2004) but in the context of organic produce Michaelidou and Hassan (2008) did not find a relationship between food safety concern and purchase intention. Given these findings, we believe that consumers' concerns about food safety will affect their attitudes toward organic and free-range produce but will not influence intention to purchase organic or free-range produce. As such we hypothesize that:

*H<sub>1</sub>. Food safety concern positively affects attitude towards (a) organic produce and (b) free-range produce.*

*H<sub>2</sub>. Attitude fully mediates the effect of food safety concern on intention to purchase (a) organic produce and (b) free-range produce.*

#### *Ethical lifestyle*

Organic produce consumption is related to an 'ethical lifestyle' sustained by personal values and moral beliefs (Schifferstein and Oude Ophuis, 1998). Previous research has found that compared to conventional food buyers, organic food buyers were more likely to report engaging in a variety of environmentally friendly behaviors (Williams and Hammitt, 2000). Similarly, previous research shows that consumers of organic, free-range, green or health products are motivated by ethical and environmental issues (e.g. Honkanen et al., 2006; McEachern and McClean, 2002). These consumers are likely to have adopted an ethical lifestyle, manifested via a range of behaviors including consumption of environmentally friendly, ethical, fairly-traded or locally-produced products, pro-environmental behaviors (e.g. recycling) or even product boycotting (Brom, 2000; Carrigan et al., 2004; Laroche et al., 2001).

Previous research links the concept of lifestyle to food consumption (e.g. Brunso et al., 2004; Chen, 2009). Lifestyle which can be viewed as comprising of both cognitive and conative elements (e.g. disposition to behave in a certain way) has been found to explain attitude (Chen, 2009) and behavior (Brunso et al., 2004). Specifically, Chen (2009) found that adopting a healthy lifestyle had a direct impact on attitude towards organic foods. While

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