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# **Consumer Behaviour towards Organic Food and Performance of Certification Standards**



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## Consumer Behaviour towards Organic Food and Performance of Certification Standards





# **Consumer Behaviour towards Organic Food and Performance of Certification Standards**

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## Introduction

Predicting consumer behaviour in food markets is a complex task. The traditional demand analysis based on economic factors, i.e. price and household income, is no longer the best approach to model consumer behaviour in modern post-industrialised food markets, as food quality aspects now dominate consumer decision-making (Senauer, 2001). This food product quality is determined by multiple characteristics (Hooker & Caswell, 1996) or, as Lancaster's (1966) utility theory states, is shaped by a combination of product characteristics (attributes) that determine the good's performance relative to price (utility).

Nowadays, consumer choice behaviour is motivated by a number of factors including taste, convenience, price, product availability, health concerns, and cultural traditions. Consumers are also more conscious about food quality attributes such as nutrition, organic farming, fair trade, animal welfare and regionality (Caswell & Joseph, 2008). The focus of consumers on these aspects has stimulated competition within the food industry, and consequently the differentiation of products and processes along the food supply chain as a marketing strategy to preserve or increase market share. Despite the efforts made by food companies to satisfy consumer demands, since the late 1980s the outbreak of several food crises (e.g. Mad Cow Disease, Foot and Mouth Disease, *E. coli*, *Salmonella*) with high media coverage and the use of some food-related technologies (e.g. genetically-modified organisms) has increased consumer risk perception in the food industry. As a result, public and private initiatives (e.g. certification standards, labelling programs, branding) to communicate and ensure quality and safety to consumers have proliferated in the food industry (Henson & Caswell, 1999; Henson & Reardon, 2005; Jahn et al., 2005). In particular, the use of certification procedures can serve as a signalling institution to overcome information asymmetries (Akerlof, 1970) and guarantee the trustworthiness of products in credence good markets (e.g. organic farming, animal welfare, fair trade). However, there is evidence that certification schemes are susceptible to fraud, as incentives (e.g. price premiums) and asymmetric information encour-



age firms to act opportunistically (Deaton, 2004; Giannakas, 2002; Jahn et al., 2005).

### ***Credence goods in the food industry and consumer behaviour***

Among credence goods or attributes, organic farming<sup>1</sup> currently enjoys a privileged position in the food industry, providing consumers with non-conventional food alternatives at high price premiums. Official statistics estimate that sales of organic food and drinks around the world reached 63 billion US dollars in 2011 (Sahota, 2013), which means a 6.4% annual increase compared to 2010. Demand is highly concentrated in North America and Europe (96% of sales), while in Asia, Latin America and Africa, organic production is mainly export-oriented (ibid.). The US has the largest organic food and drink market in the world. In Europe, Germany has the largest market (6.6 Billion Euros), whereas Denmark, Austria and Switzerland have the highest market shares. With per capita expenditures of 177 Euros per year, the Swiss led the world in organic purchases in 2011 (Schaack et al., 2013). One key issue to sustain this expansion of the organic market is the correct understanding of consumer behaviour. In this respect, however, there is conflicting evidence about the main forces driving consumer decision-making in different organic markets. The controversy between altruistic and egoistic motives as determinants of organic food consumption (Eden et al., 2008) justifies the need for more scientific research in this field to better understand the factors determining consumer behaviour in the organic food market. Consequently, marketers and policy makers will be able to base their policy and marketing decisions on more precise information.

This investigation also includes a chapter dealing with consumer behaviour towards homemade food. Surprisingly, the literature in this regard is very poor. Homemade food has been identified as playing an important social role, supporting small food producers and processors in developing countries (Barking, 1999; Boucher & Requier-Desjardins, 2005). From the consumer side, some consumer segments are motivated by romantic feelings when purchasing and

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<sup>1</sup> Alternatively, Jahn et al. (2005) classify organic production as a 'Potemkin good'.

eating food products (Jolly, 1999) and/or are interested in maintaining local customs, traditions and identity (Inwood et al., 2009; Vizcarra Bordi, 2006). Homemade food alternatives could therefore be an attractive offer for these consumers. However, empirical evidence about determinants of homemade food consumption is scarce. In addition, the effect of information about homemade food characteristics on consumer behaviour has not been addressed in the food literature. Providing this type of information may assist homemade food producers and processors in the design of effective and efficient marketing strategies to promote their products. Public authorities may also use the recommendations provided in this study in order to plan technical assistance programs for less skilled or vulnerable homemade food suppliers.

### ***Performance of quality assurance schemes in the food industry***

Another key aspect in the contemporary agrifood market is the implementation of quality assurance schemes (QAS) with different purposes (Theuvsen & Spiller, 2007). In food markets characterised by high information asymmetries, i.e. those of credence goods (Caswell, 1998; Giannakas, 2002; Jahn et al., 2005), the performance of certification systems is a critical issue to achieve consumer acceptance of goods and consequently business success. For this reason, the monitoring activities in the organic food industry are carried out by independent third-party certifiers to correct for information asymmetries in the marketplace. Nevertheless, certification and monitoring procedures in the food market have shown that they are still vulnerable to opportunistic practices. A clear example is the European horse meat and the German 'organic' eggs scandals, revealed at the beginning of 2013. Some authors have reported that this type of behaviour from the supply side creates uncertainty among consumers and distrust of certification schemes, which negatively affects consumer demand in the organic market (Aertsens et al., 2009; Botonaki et al., 2006; Eden et al., 2008; Hughner et al., 2007; Janssen & Hamm, 2011; Kristallis & Chrysosoidis, 2005). However, little is known about farmers' perceptions of certification schemes. Despite the usefulness of certification systems (e.g. market access), which may generate high expectations (e.g. of improving household income), farmers may also perceive negative aspects of adopting and us-

ing them (Gawron & Thevsen, 2009, Hammoudi et al., 2009; Karipidis et al., 2009), with detrimental consequences for farmers' satisfaction with the scheme. Increasing dissatisfaction among farmers may encourage them to revert to conventional agricultural practices. There are few studies addressing issues of farmer satisfaction with certification standards. Moreover, these studies focus only on the European food market (Enneking et al., 2007; Schulze & Spiller, 2010). As Latin American countries are mainly net exporters and important suppliers of organic products to major consumption markets, i.e. USA, Europe and Japan (Flores, 2013), analysing farmers' satisfaction with their certification system in Latin America may provide information useful for predicting further adoption of the organic certification scheme in this region on the one hand, and to assess any potential threat (e.g. decrease in availability, increase in price) in organic import markets.

The fact that current certification procedures based on the checklist governance are susceptible to failure has motivated some authors to favour the adoption of alternative auditing approaches. For example, the risk-oriented approach based on the risk of non-compliance among clients can apparently improve the auditing quality (Albersmeier et al., 2009; Albersmeier et al., 2010; Jahn et al., 2005). However, this inspection approach has only rarely been implemented in the food industry (e.g. QS system in German meat industry, KKM scheme in the Dutch dairy industry) (Jahn et al., 2005). One inspection technology that is considered in some organic regulations (e.g. IFOAM organic norms; EU Regulation (EC) No 834/2007) is the use of unannounced audits. The current use of unannounced inspections in organic certification suggests that they should reinforce control procedures and improve audit quality. However, to what extent this inspection technology actually improves the audit quality remains unexplored in the certification literature.

With the globalisation of the food trade, food standards and certification systems are communicating food safety and quality claims not only in domestic food markets but also internationally. To successfully communicate claims, the

certification standard must be a credible process (Lohr, 1998). In domestic and international food supply chains, certificates issued by accredited certifiers are used to communicate quality and safety claims between suppliers and buyers. However, the certificate itself can be viewed as credence characteristic in the food market, as different actors along the marketing chain (e.g. intermediaries, processors, retailers) are not able to observe the quality of the audits *in situ*. This is maybe more critical for food companies working with suppliers from export markets, since distance and time increase information asymmetries (Lohr, 1998) and, therefore, verifying the truthfulness of claims becomes more difficult. To overcome this problem, food companies may use the reputations of third-party certifiers and/or 'country image' to assess the credibility of standards and certification procedures in foreign markets. In the market of goods and services, country image or country-of-origin is an alternative quality indicator that buyers use when purchasing products and services from foreign countries (Bilkey & Nes, 1982; Knight et al., 2007; Manrai et al., 1998; Papadopoulos & Heslop, 2002). Nevertheless, it is still unknown if country image exerts an influence on the assessment made by food companies on the credibility of food standards from different countries. In case of a negative effect, what kind of strategies could countries implement to improve the credibility of their food standards and achieve international recognition?

### ***Objectives of the dissertation***

Analysing survey data and official reports with statistical methods, this dissertation study intends to answer the research questions stated above. In addition, it aims to fill research gaps in the literature with respect to consumer behaviour in credence good markets (i.e. organic, home made) and food certification standards. The final goal of this investigation is to provide new market information in as well as to contribute to the debate on aspects that remain unclear in the food and certification industries. Finally, implications for marketers and policy makers are derived from the findings reported in this dissertation.

The topics addressed in this dissertation are covered in 6 research articles, which are collected here into three chapters. Table 1 outlines the content of this research document.

**Table 1.** Structure of the dissertation

<b>Introduction</b>	
<b>Chapter I. Consumer behaviour towards organic food</b>	
<i>Main topic</i>	<i>Article title</i>
Determinants of consumption	<b>I</b> Assessing determinants of organic food consumption using data from the German National Nutrition Survey II
<b>Chapter II. Consumer behaviour towards homemade food</b>	
<i>Main topic</i>	<i>Article title</i>
Determinants of consumption	<b>II</b> What factors determine consumer behaviour towards homemade food products?
<b>Chapter III. Performance of certification standards</b>	
<i>Main topic</i>	<i>Article title</i>
Farmers' perceptions	<b>III.1.1</b> Are organic growers satisfied with the certification system? A causal analysis of farmers' perception in Chile
	<b>III.1.2</b> Farmers' satisfaction with the organic certification: A cross-country analysis using PLS structural equation modelling
Effectiveness	<b>III.2</b> Assessing the impact of unannounced audits on the effectiveness and reliability of organic certification
Credibility	<b>III.3</b> Practitioners' perception of the credibility of food quality assurance schemes: a cross-cultural study
<b>Summary</b>	

After putting the scope of this investigation in context, a brief description of objectives and methodological issues addressed in each article is provided in the following.



## Chapter I. Consumer behaviour towards organic food

This chapter addresses the study of the factors driving organic food consumption. As earlier empirical evidence tends to be inconsistent regarding the relative importance of drivers of organic food purchasing behaviour, this study aims to contribute to this issue by using a large sample size combined with a highly differentiated stated behavioural measure. The article entitled (I) “**Assessing determinants of organic food consumption using data from the German National Nutrition Survey II**” is an empirical approach that uses partial least squares (PLS) path modelling to test causal relationships in a proposed research model built on a comprehensive literature review.

## Chapter II. Consumer behaviour towards homemade food

Studies of homemade food consumption are rare in the food literature. Little empirical evidence is available for homemade food suppliers and regulators for decision-making purposes. Therefore, this additional chapter focuses on the analysis of potential determinants of homemade food consumption with special focus on sensory, attitudinal and socio-demographic variables. The effect of information is also important in the evaluation of consumer behaviour, thus, the second article (I) “**what factors determine consumer behaviour towards homemade food products?**” combines sensory analysis with an information experiment to assess a potential ‘homemade labelling’ effect. In addition, using ordinary least squares regression, a set of attitudinal, socio-demographic as well as sensory variables were tested to reveal the main determinants of consumer overall degree of liking and intention to buy a homemade food product.

## Chapter III. Performance of certification standards

Food crises and scandals have shaken the food industry worldwide, increasing consumer risk perception and undermining consumer confidence in the food industry. As a result, public and private quality assurance mechanisms have been designed to protect consumers and recover consumer confidence. In addition, the focus of consumers on new food quality attributes has also contributed

to the current governance of quality assurance tools in the food industry. Food standards and certification programs are used as QAS in the marketing of credence goods (e.g. organic farming) that reduce market imperfections and communicate information to consumers about the quality of products. Unfortunately, monitoring systems in the food industry are vulnerable to opportunist behaviour of firms with detrimental consequences for the reliability and credibility of certification systems. In this context, this dissertation analyses the performance of food and certification standards from three different perspectives, namely exploratory/empirical, theoretical/empirical, and global/empirical.

The first two articles (III.1.1) **“are organic growers satisfied with the certification system? A causal analysis of farmers’ perception in Chile”** and (III.1.2) **“farmers’ satisfaction with the organic certification: a cross-country analysis using PLS structural equation modelling”** address the analysis of farmers’ satisfaction with the organic certification system and its potential determinants in Latin American countries from an exploratory perspective. Using PLS path modelling, a causal model built on a comprehensive literature review is assessed. Particular attention in testing for significant differences between path coefficients estimates is also considered to reveal potential differences between countries.

The third article entitled (III.2) **“assessing the impact of unannounced audits on the effectiveness and reliability of organic certification”** assesses the effectiveness of the implementation of unannounced inspections in the organic control system from theoretical and empirical perspectives. Certification reports provided by the German Competent Authority (i.e. the Federal Office for Agriculture and Food, the BLE) in combination with statistical analyses (e.g. frequency, correlation) are used to test the performance of non-scheduled inspections.

The fourth and last paper focuses on food standards from a global perspective. The article (III.3) **“practitioners’ perception of the credibility of food quality assurance schemes: a cross-cultural study”** aims to show whether country



image affects the credibility of food standards operating in different regions of the globe. In particular, this article focuses on potential differences in credibility assessments between countries and between practitioners from different regions of the world. For this purpose an on-line survey and the info-mail contacts of GLOBALG.A.P. were used. Statistical procedures for data analysis included descriptive statistics, independent samples *t*-test and factor analysis.

In the following, the articles forming this dissertation are presented in full, indicating in each case the names of the author and co-authors. After the presentation of the research articles, a comprehensive summary including (i) remarks about the main findings; (ii) discussion of the main findings with emphasis on market and policy implications; and (iii) description of research limitations and potential topics for further research in each field is presented. Finally, a list of publications and presentations at scientific events carried out during the doctoral period is attached.



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## **Chapter I. Consumer behaviour towards organic food**

### **I     Assessing determinants of organic food consumption       using data from the German National Nutrition Survey II**

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                         Spiller***

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## Abstract

The organic food industry is continuously growing worldwide. Critical for sustaining this expansion is an adequate understanding of consumer behaviour. However, reported results of the numerous studies on factors determining consumer decisions are not very consistent. Therefore, we develop a comprehensive causal model to analyse data from 13,074 German consumers gathered through the representative German National Nutrition Survey II (Nationale Verzehrsstudie II). The findings indicate that altruistic motives are the major factors affecting consumer attitude and purchasing behaviour, making socio-demographic variables appear less important. Implications for the organic food industry and recommendations for further research are derived.

**Keywords:** Organic food, Partial least squares, Purchasing motives, Germany

## 1. Introduction

The organic food industry is continuously growing worldwide, with Germany as one of the most important organic markets in Europe (Sahota, 2009). Sales volume in Germany increased from 4.60 to 5.80 billion Euros between 2006 and 2009 (Agrarmarkt Informations-Gesellschaft, 2010). To sustain this tendency over time, a clear understanding of the factors influencing consumer behaviour is critical. According to Gracia and de Magistris (2008) numerous studies have addressed a wide range of topics in several organic food markets. Perhaps most numerous are those studies trying to elucidate the role that psychographic, socio-demographic and economic factors play in consumer choice (e.g. Chen, 2007; de Magistris & Gracia, 2008; Haghiri et al., 2009; Honkanen et al., 2006; Magnusson et al., 2003; Michaelidou & Hassan, 2010; Schifferstein & Oude Ophuis, 1998; Squires et al., 2001; Tarkiainen & Sundqvist, 2005; Zanolli & Naspetti, 2002). However, reported results in this field vary considerably across studies. For example, some researchers argue that altruistic aspects, such as environmental awareness, animal welfare and fair trade, are the most important reasons determining organic food consumption (Chen, 2007; Durham & Andrade, 2005; McEachern & Willock, 2004; Michaelidou & Hassan, 2008,

2010; Tarkiainen & Sundqvist, 2005). For others, individual aspects, such as health concerns, nutrition, food safety, food taste and product freshness, are major determinants (Chen, 2009; Haghiri et al., 2009; Magnusson et al., 2003; Makatouni, 2002; McEachern & McClean, 2002; Mondelears et al., 2009; Padel & Foster, 2005; Zanolli & Naspetti, 2002). In addition, there is also empirical evidence reporting that neither altruistic considerations nor egoistic aspects determine organic purchasing behaviour (Li et al., 2007). Instead, search costs, dietary patterns and awareness of organic food labelling are reported to be strong predictors of organic food purchases (ibid.). Reasons for these inconsistencies may be differences in the sample size and representativeness, regional focus, type of assessed products, market development or measurement. In previous studies, sample size varies between 100 and 1,600 respondents. As far as we know, the only study using a larger sample size (above 10,000 observations) analyses a covariance-based structural equation model and reports that health-related, nutritional and quality aspects are the main determinants of organic food purchase in Germany (Buder et al., 2010). This investigation analyses household panel data and thus provides very good behavioural data in a shopping context. Wier et al. (2008) using household panel data with a smaller sample size ( $n = 1,165$ ) report similar results in the Danish market. Most studies, however, are survey-based and thus have to rely on stated buying behaviour, which is likely to be biased by phenomena such as wishful thinking and social desirability, among others.

With a sample of 13,074 German consumers surveyed in the German National Nutrition Survey II (NVS II), this study differs from previous investigations with respect to sample size and measurement of purchasing behaviour. Compared to other survey-based studies, a much larger data set is used, which is representative for the German population aged above 18 (see section 3.1). Second, compared to other surveys using stated purchasing behaviour, our behavioural measure is much more differentiated, asking how often a person would choose the organic alternative when shopping for 12 different food categories. Thus, the measure of organic food shopping frequency is probably more reliable compared to measures used in previous survey-based studies. By contrasting our



results with the results of household panel data studies using recorded purchasing behaviour, we investigate whether survey data providing a more differentiated measure of stated behaviour can lead to comparably reliable results. We consider this point very important, since household panel data (i) often are not easy to obtain, or very costly; (ii) do not necessarily provide attitudinal information of respondents in the panel or provide aggregated information that does not allow an individual-based analysis. Thus, it is important to develop methods for survey-based studies. In this attempt, however, we are restricted to the selection of variables compiled by the researchers of the NVS II. Therefore, no specific behavioural theory can be tested; instead, we develop a theoretical model of determinants of organic food purchase based on a comprehensive literature review and estimate it using partial least squares (PLS) analysis.

## 2. The organic food purchase decision-process

The question of how behaviour is determined by people's values and attitudes has been a centre of interest in consumer research for decades (Ajzen & Fishbein, 1970, 2005). Organic food consumption is not an exception in this context. Several quantitative studies testing different behavioural theories<sup>2</sup> as well as qualitative studies have tried to determine the main drivers of organic food consumption. In the following subsections we summarise the current state of knowledge regarding the determinants of organic food choice and consumer behaviour, and develop the hypotheses for the empirical analysis.

### 2.1 Attitude towards organic food

Several authors have found that consumer attitudes towards organic food can predict purchase intention (see Chen, 2007; de Magistris & Gracia, 2008; Dean et al., 2008; Honkanen et al., 2006; Michaelidou & Hassan, 2008, 2010; Saba & Messina, 2003; Tarkiainen & Sundqvist, 2005). The direct effect of attitude on consumer purchasing *behaviour*, on the other hand, has seldom been investi-

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<sup>2</sup> According to Aertsens et al. (2009) the most frequently used theoretical approaches to model organic food choice are the Theory of Planned Behaviour (Ajzen, 1985, 1991), and the Values Theory of Rokeach (1973) and Schwartz (1992).

gated. One of these rare studies (see Smith & Paladino, 2010) suggests that the effect of attitude on behaviour is not significant. Considering that the attitude-intention relationship has been frequently investigated, and that the number of studies focusing on the attitude-behaviour relationship is scarce, we want to shed light on the latter issue. Therefore, assuming that the perceived importance of organic food on the consumer's food purchasing decisions is a good proxy for the attitude towards organic food purchase, we hypothesise that:

**H1:** The perceived importance of organic food has a positive impact on actual purchasing behaviour.

## *2.2 Price*

The high price premium has been identified as one of the main obstacles to an increase in organic food consumption (Aertsens et al., 2009; Buder et al., 2010; Durham & Andrade, 2005; Fotopoulos & Krystallis, 2002).<sup>3</sup> Therefore, we hypothesise:

**H2:** The perceived price importance when shopping negatively influences (a) the perceived importance of organic food and (b) consumer purchasing behaviour.

## *2.3 Organic purchasing motives*

Several purchasing motives have been identified in the organic food market as influencing organic food consumption.<sup>4</sup> In this section we focus on those variables which relate to the aspects included in the NVS II.

### *2.3.1 Healthiness*

Health concerns are reported in the literature as affecting organic food purchase. Studies using household panel data conclude that the perceived health-

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<sup>3</sup> Other authors who address this issue are Hughner et al. (2007), Magnusson et al. (2001), McEachern and Willock (2004), Michaelidou and Hassan (2010), Padel and Foster (2005), Roitner-Schobesberger et al. (2008), Wier and Calverley (2002) and Zanolli and Naspetti (2002).

<sup>4</sup> An extended literature review on this topic is provided by Aertsens et al. (2009), Hughner et al. (2007) and Yiridoe et al. (2005).