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#### **Analysis**

# Trust to Go Green: An Exploration of Consumer Intentions for Eco-friendly Convenience Food



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#### ABSTRACT

Interest in food products with eco-friendly characteristics and certifications has grown in recent decades. Consumers are also increasingly demanding ready-to-eat products, especially in urban environs, where modern lifestyles tend to limit their available time. Understanding the pro-environmental behaviour of convenience food consumers is particularly challenging because there is often a contradiction between eco-friendly behavioural intent and time constraints imposed by modern lifestyles in large cities. It is not clear to what extent information labels on such products are trusted by consumers and considered when making food choices. This study aims at contributing to the debate investigating the determinants influencing consumer purchase intention, focusing on minimally processed vegetables labelled with integrated-pest-management standards. More specifically, the analysis investigates the role consumer trust plays in consumer intention to buy such products. The conceptual framework builds on and extends the theory of planned behaviour. The analyses are based on face-to-face interviews in a large European city (Milan, Italy). Data were analysed by means of structural equation modelling. Results confirm the important role of consumer trust, which positively affects attitudes towards the purchase of convenience food with eco-friendly attributes, and negatively affects consumer concerns around agricultural practices in relation to environmental and health impacts.

#### 1. Introduction

Interest in food products with eco-friendly characteristics and certifications has grown in recent decades in industrialised countries (Bougherara and Combris, 2009; Falguera et al., 2012; Nuttavuthisit and Thøgersen, 2017). So-called 'green' products like organic, pesticide free products, or food produced following integrated-pest-management practices, are perceived by most consumers to be low-processed, naturally grown, and healthier than conventional food products (Goetzke et al., 2014; Hemmerling et al., 2016; Lee and Yun, 2015). Consumers are also increasingly demanding ready-to-eat products. In particular, in urban environs, modern lifestyles tend to limit the time availability of consumers (Botonaki and Mattas, 2010; Brunner et al., 2010). Thus, convenience food includes 'time saving' services in addition to the good itself, meaning that it is easier and quicker to prepare. Such products are, however, often criticised for not being environmentally sustainable for their technological production (Olsen, 2012).

In response to these contrasting consumer demands, food firms have begun to introduce convenience food with eco-friendly characteristics. In many food categories, including fresh, preserved, or frozen food, products that combine convenience and (some) eco-friendly attributes are becoming more widespread (Meredith and Willer, 2016). An increase in the eco-friendly voluntary standards adopted by food firms has also become noticeable (Del Giudice et al., 2018). For some attributes, firms are able to follow specific public standards (for example, for organic produce); for others, they refer mainly to private ones (for example, integrated pest management, where there is no unified and commonly agreed on standard defining what is and what is not integrated agriculture) (Banterle and Stranieri, 2013).

Understanding the pro-environmental behaviour of convenience food consumers is particularly challenging because there is often a contradiction between eco-friendly behavioural intent and time constraints imposed by lifestyles in large cities. Moreover, the loss of connection with nature that often arises in urban areas makes it even more difficult for consumers to access sustainable options (Schösler et al., 2013). Indeed, there is the need to find organisational or market solutions able to accomplish both time-saving and eco-friendly consumer needs.

Previous research has explored extensively the role of consumer cognitive variables on consumer intention to engage in pro-environmental behaviour in relation to food choices. Specifically, consumer

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attitudes towards eco-friendly food products (Grunert et al., 2014; Honkanen et al., 2006; Lee and Yun, 2015) and consumer perceived availability of food with environmentally-friendly characteristics (Yadav and Pathak, 2016; Zhou et al., 2013) were found to be important predictors. Moreover, food-related literature has highlighted that consumer intention to buy eco-friendly products is influenced also by other variables such as food shopping habits (Menozzi et al., 2015) and consumer environmental and health concerns (Suki, 2016; Wee et al., 2014).

Trust has also been recognised as an important factor to explain food behaviour because it can represent a 'shortcut' to tackle the overwhelming amount of information that needs to be considered by consumers while shopping (Hobbs and Goddard, 2015). Indeed, in particular for food choices, heuristics are an important part of consumer decision-making processes (Chalamon and Nabec, 2016; Schulte-Mecklenbeck et al., 2013). Moreover, trust is particularly interesting in the specific case analysed in this study because the two product characteristics considered ('convenient' and with an 'eco-friendly' quality attribute) convey contrasting perceptions of the potential risks and benefits associated with buying the product. Convenience food is often perceived negatively by consumers because of its lack of 'naturalness' due to its processing (Jackson and Viehoff, 2016). Indeed, Evans et al. (2010) argued that food processing or manipulation leads to a decrease in the perceived natural content of the product, and Abouab and Gomez (2015) stressed that handmade food production is considered more natural than technology-embedded products. The lack of naturalness associated with convenience food is perceived to negatively affect the environment and human health (Asioli et al., 2017; Román et al., 2017). On the other hand, eco-friendly products evoke a higher naturalness and greater benefits associated with healthiness and taste (Agovino et al., 2017; Michaelidou and Hassan, 2008; Mondelaers et al., 2009). As trust has been found to be a factor influencing perceived risks and benefits associated with products (Prati et al., 2012; Siegrist et al., 2007), we believe that trust can be a means to guide consumer choice under such ambiguity.

While the determinants for either convenience or eco-friendly products have been largely explored (for a review, see Pearson et al. (2011) and Brunner et al. (2010)), the variables affecting consumer intention to buy convenience food with eco-friendly characteristics is still under investigated (Sillani and Nassivera, 2015). Moreover, to the best of our knowledge, there is no investigation on the role of trust in consumer intention to buy convenience food with eco-friendly characteristics.

The present study aims at analysing the determinants of the purchase intention for such products that combine both types of quality attributes (i.e., that are convenient - thus quick and easy to prepare and have eco-friendly features - that is, they have a lower environmental impact on at least one aspect, like water use, pesticide use, energy or carbon intensity, and so on). More specifically, the study concentrates on the case of minimally processed (MP) vegetables produced with integrated pest management (IPM) practices, namely, fresh vegetables processed to be ready to eat, and whose agricultural production relates to practices that reduce the use of chemicals compared to regular production processes. MP vegetables are a healthy convenience food that falls in the categories of convenience food proposed by Geeroms et al. (2008) and Brunner et al. (2010). Minimally processed fruit and vegetables represent an interesting market because even with their limited market share, the demand for such products is growing at a very fast and steady pace (Baselice et al., 2017; Nassivera and Sillani, 2017; Stranieri and Baldi, 2017; van Rijswick, 2010). The focus of the study is on vegetables as they constitute by far the larger part of the volume of such products (about 90% according to Rabobank data (van Rijswick, 2011)).

Taking into account the abovementioned food products, the paper explores the following research questions.

RQ1. Can the variables affecting consumer pro-environmental behaviour be used to explain consumer intention to buy convenience food

with eco-friendly characteristics?

RQ2. Does consumer trust affect consumer intention to buy convenience food with eco-friendly characteristics?

The present analysis addresses the above-mentioned issues and it specifically investigates: if trust influences the intention to buy convenience food with eco-friendly characteristics, testing its relevance in an integrated behavioural framework.

The conceptual framework of the research – discussed in Section 2 – is based on the theory of planned behaviour (TPB) (Ajzen, 1985), which gives insights on the psychological determinants of behaviour that are useful for the economic analysis of consumer behaviour (Steiner et al., 2017). The study analyses the role of trust as a background factor in an extended TPB framework, which considers different variables predicting behavioural intention. To reach the aims of the study, a structural equation model (SEM) is applied to the data collected via a survey of food shoppers in a large European urban area, namely, Milan, Italy (details are reported in Section 3).

Within this context, the research questions of this study find strong support in the stream of literature that shows the significant contribution of trust to the intention to buy eco-friendly or technology-related products. Its contribution to the stream relates to investigating how trust influences consumer behavioural intentions in the case of the simultaneous presence of contrasting perceptions relating to product quality attributes. The understanding of the determinants leading consumers to buy such products is also crucial for an effective quality differentiation strategy by firms and for policy interventions aimed at encouraging and promoting sustainable practices in compliance with modern life styles, where choices are made under time pressure; specifically, focusing on consumers for whom pro-environmental behaviour is not the main priority while shopping (Aschemann-Witzel and Aagaard, 2014).

#### 2. Conceptual Framework

The conceptual framework starts from the TPB (Ajzen, 1985), which extends from the theory of reasoned action (Ajzen and Fishbein, 1980). Such a psychological-related framework allows us to integrate existing economic approaches for the analysis of consumer behaviour, which have been recognised to have limitations in the interpretation of the behaviour determinants (Johe and Bhullar, 2016; Vermeir and Verbeke, 2008; Yadav and Pathak, 2017). The TPB model was integrated by considering food-related literature. The resulting conceptual framework is presented in Fig. 1. The hypothesized associations among the variables, indicated in the figure by means of arrows, are discussed below.

#### 2.1. The TPB Theory

The TPB analyses the antecedents of specific human behaviours, evaluating the role of intention to perform the behaviour and its determinants. According to the theory, intention to perform a behaviour is influenced by: the evaluation of the possible consequences of performing that behaviour; the expectations of reference individuals; and the potential catalysts or impediments to that behaviour. In Ajzen's model, these beliefs form attitudes towards the behaviour, perceived behavioural control, and subjective norms, respectively.

Attitudes relate to consumer evaluation of the effects of having the behaviour. The more positive consumers feel about buying a certain product, the higher the probability is they will purchase such a product (Honkanen et al., 2006). On the basis of Ajzen's theory the research hypothesizes:

**H1a:.** The more positive the consumer attitude is towards IPM MP vegetables, the higher the intention to buy them.

Perceived behavioural control refers to individual perception of one's own ability to perform the behaviour. It relates to the perceived ease or difficulty of implementing the behaviour. Such consumer

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