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The driving role of consumers' perceived credence attributes in organic food purchase decisions: A comparison of two groups of consumers

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ABSTRACT

Organic foods fall into the category of credence goods because an array of attributes makes it difficult for consumers to evaluate the quality of organic foods. By focusing on two credence attributes of organic foods (food safety and eco-friendliness), the current study investigates how these attributes influence consumers' perceptions of quality and value, which in turn increase purchase intentions. The study further examines whether the proposed relationships differ by expenditure share of organic foods. We used a two-step approach of Structural Equation Modeling (SEM) to analyze data obtained from 725 consumer panel members who were primary grocery shoppers and had purchased organic foods. The results give insights on the role of two credence attributes in developing quality and value perceptions of organic foods.

We also find dynamics underlying the role of the credence attributes depending on consumers' expenditure share of organic foods. The findings of this study not only contribute to the organic food literature but also help industry, government, and consumer associations to fully understand consumer perceptions of credence attributes of organic foods and thus to enhance consumers' responses to organic foods.

1. Introduction

Consumer demand for organic foods has continued to grow. According to the Organic Trade Association (OTA) (2013), approximately 81% of US families said that they purchased organic foods at least some of the time, and nearly 42% of US parents said that they had more trust than they used to have in organic foods, a 31.2% increase from a year ago. With 6.3% growth during 2013, the US organic food industry foresees total revenues of $45.9 billion by 2018 (MarketLine, 2014). Both national and store brands of organic foods are now offered by most US retailers to satisfy increasing consumer demand for organic foods (Howell, 2006; Levine, 2008).

Because most consumers do not have reliable information allowing to evaluate the quality of organic foods, organic foods are generally considered *credence* goods (Ford, Smith, & Swasy, 1988; Janssen & Hamm, 2012). Credence goods are those with attributes that consumers cannot ascertain even after purchase or consumption of the product (Ford et al., 1988), such as the safety or environmental friendliness of organic foods. Thus, consumers often rely on third-party certifications, such as USDA organic labels, for evidence of organic content in foods (Moser, Raffaelli, & Thilmany-McFadden, 2011). Based on third-party certifications and other sources (e.g., information on the package label, consumption experiences), consumers may develop their own judgment about the quality of organic foods and build trust in organic foods. Nevertheless, one of the obstacles preventing consumers from purchasing organic foods is a lack of trust in organic food labels (Hughner, McDonagh, Prothero, Shultz, & Stanton, 2007; Worner & Meier-Ploeger, 1999). For example, Aarset et al. (2004) find that some consumers are deficient in knowledge and do not trust certifying organizations. Therefore, it is necessary to recognize how consumers assess product attributes of organic foods, such as credence attributes, because these perceptions will ultimately affect organic food consumption behavior.

In this study, we argue that personnel in industry, government, and consumer associations need to fully understand consumers' perceptions of attributes of organic foods and their impacts on organic food quality perceptions, which in turn affect value perceptions and intentions to purchase organic foods. Also, previous studies report that light and heavy organic food buyers show different perceptions and beliefs about organic foods (Saba & Messina, 2003; Squires, Juric, & Cornwell, 2001). These findings suggest that different perceptions of credence attributes of organic foods may engender different perceptions of quality and value and

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different purchase intentions, which may eventually determine expenditure share of organic foods. However, in the extant literature, little research has delved into the relative roles of credence attributes in purchase decisions of organic foods between different groups of consumers.

To fill the aforementioned research gaps, this study explores the ways in which perceived attributes, quality, and value are intertwined and how these factors influence consumers' purchases of organic foods. The findings from this study provide important insights into how governmental agencies, producers, retailers, and consumer associations can implement effective strategies and appropriate regulations to promote purchases of organic foods.

2. Conceptual background

Several researchers have addressed the importance of price, quality, and value perceptions in shopping behavior and product choice (e.g., Jacoby & Olson, 1985; Sawyer & Dickson, 1984). The relationships among price, quality, and value are well described in Zeithaml's (1988) means-end model. Extending Dodds and Monroe's (1985) model, which delineates how consumer perceptions of price, quality, and value are interrelated, Zeithaml (1988) posits that lower level attributes, such as price and intrinsic/extrinsic attributes, signal product quality, and quality influences perceived value. Finally, perception of value is conceptualized as a direct determinant of purchase.

Zeithaml (1988) uses cue utilization theory (Cox, 1967; Olson & Jacoby, 1972) as a theoretical foundation to explain the role of intrinsic and extrinsic attributes of a product in evaluating product quality. According to this theory, consumers utilize key product attributes (e.g., price, brand name, color, etc.) as cues to judge product quality. Quality perception, which is developed by assessing key product attributes, is essential to product choice decisions (Olson & Jacoby, 1972).

While one way to categorize product cues is to divide them into intrinsic and extrinsic attributes (Olson & Jacoby, 1972; Zeithaml, 1988), the seminal studies of the categorization of product cues have suggested that attributes of a product can be better divided into search, experience, and credence attributes (Darby & Karni, 1973; Nelson, 1970). Search attributes are those that consumers can evaluate before purchase through direct examination (e.g., color, size, and price). Experience attributes are those that are hard to evaluate without direct experience, so that consuming the product is necessary for accurate evaluations (e.g., taste and texture). Finally, credence attributes are those which consumers cannot ascertain even after purchase or consumption of the product (Ford et al., 1988). Organic foods commonly fall into the credence good category because organic production, which fundamentally differentiates organic foods from conventional foods, makes a substantial number of attributes of organic foods to be credence attributes (Fernqvist & Ekelund, 2014; Moser et al., 2011). For example, credence attributes of organic foods include production methods, environmental and animal friendliness, and origin. Previous studies have shown that product attributes such as health and food safety attributes (e.g., nutritional value, free from chemical residues) (Lee & Yun, 2015; Tsakiridou, Boutsouki, Zotos, & Mattas, 2008), animal welfare and environment protection attributes (e.g., animal well-being, concern for the environment) (Honkanen, Verplanken, & Olsen, 2006), price (Lea & Worsley, 2005), quality (Krystallis & Chryssohoidis, 2005), sensory attributes including appearance, taste, and texture (Lee & Yun, 2015), and brand name (Krystallis & Chryssohoidis, 2005) are important influencers of consumer attitudes and purchase intentions of organic foods. Many of these attributes are credence attributes.

2.1. Overview of the current study

Guided by Zeithaml's (1988) model, this study investigates how the credence attributes of organic food influence consumers' perceptions of quality and value and their purchase intentions. The current study particularly focuses on two credence attributes of organic foods: food safety and eco-friendliness attributes. These attributes were chosen because they are the most important factors driving consumers to choose organic foods. In this study, food safety attributes are concerned with whether organic foods are free from additives or chemical ingredients while eco-friendly attributes pertain to whether organic foods are processed in a way that environment is protected and the well-being of animals is considered. Table 1 summarizes key findings in previous studies relating to the essential roles of food safety and eco-friendliness attributes in organic food consumption.

Along with food safety and eco-friendliness attributes, we incorporate price in the model as a key product attribute. This approach, consistent with Zeithaml (1988), allows assessing how price, as compared to credence attributes (i.e., food safety and eco-friendliness), affects quality and value perceptions. In order to gain more precise insights into consumers' organic food purchase behaviors, this research further examines whether the proposed relationships differ between light and heavy organic food buyers. Fig. 1 presents the proposed model of this research. The model delineates the role of two credence attributes of organic foods, food safety and eco-friendliness, in affecting consumers' perception of quality and value, perceptions which further influence purchase intentions.

3. Hypotheses development

3.1. The effects of credence attributes on quality and value

According to Zeithaml (1988), perceived quality is defined as "the consumer's judgment about a product's overall excellence or superiority" (p. 3) while perceived value is defined as "the consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given" (p. 14). Zeithaml posits that value is a higher level abstraction than quality because value is based more on idiosyncratic and personal disposition than is quality. Also, value commonly represents a tradeoff between "give" components (sacrifices) and "get" components (benefits). Quality is one of the "get" components (Woodruff & Gardial, 1996; Zeithaml, 1988). In Zeithaml's (1988) model, perception of quality is a function of intrinsic and extrinsic attributes, including brand name, price, level of advertising, reputation, etc. On the other hand, the model posits that "get" components affecting perception of value can include intrinsic and extrinsic attributes, perceived quality, and other higher level abstractions.

In previous studies, researchers have attempted to identify food attributes as quality signals of organic foods (McCluskey, 2000; Yiridoe, Bonti-Ankomah, & Marin, 2005). In Yiridoe et al.'s (2005) study, food safety attributes, nutrition attributes, value attributes, package attributes and production process attributes are some examples of quality attributes of organic foods. According to this conceptualization, it is likely that consumers do not develop overall quality perception of organic foods but assess some organic food attributes. However, in Kyriakopoulos and Ophuis's (1997) study, overall quality perception is conceptualized as a combination of the various types of attributes perceived by consumers. In other words, consumers evaluate attributes of organic food and then develop a separate overall evaluation of quality for the organic food. This concept of overall quality is coherent with Zeithaml's (1988) model, in which intrinsic and extrinsic attributes are