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Consumers' willingness to pay for organic chicken breast: Evidence from choice experiment

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ABSTRACT

This paper assesses consumers' willingness to pay (WTP) for organic chicken using a choice experiment. Specifically, we examined consumers' WTP for a general organic label and a USDA certified organic label on chicken breast. Our results indicate that consumers are willing to pay a premium of 1.193$/lb (34.8%) for the general organic label and 3.545 $/lb (103.5%) for the USDA organic label. WTP also differs between demographic groups as well as between different types of consumers based on the purchase frequency of organic meat products. The WTP premium for a general/USDA organic label was lowest for the non-buyers (−29.6% and 26.2%), followed by the occasional buyers (35.7% and 97.3%). The habitual buyers were willing to spend a premium of 146.6% for general and 244.3% for USDA certified organic labeled chicken breast. For all buyer types, USDA organic certification was valued more than the general organic label implying that consumers trust the USDA organic products more than a general organic label.

1. Introduction

The willingness to pay a price premium for organic foods has been studied in the past. Ureña, Bernabéu, and Olmeda (2008) noted that organic consumers are willing to pay approximately a 10–25% premium on organic foods. According to Bonti-Ankomah and Yiridoe (2006), most consumers are not willing to pay a price premium higher than 10–20%. Gifford, Bernard, Toensmeyer, and Bacon (2005) conducted a study in the US and found that half of the respondents were offering on average 20–30% premium. Willingness-to-pay (WTP) can be influenced by many factors such as the country, organic product category, and socio-demographic factors (gender, age, income, and education) (Bonti-Ankomah & Yiridoe, 2006; Turco, 2002; Ureña et al., 2008; Yiridoe, Bonti-Ankomah, & Martin, 2005). Turco (2002) reported organic price premiums ranging from 10% to as high as 100% depending on the country.

Very few studies, however, reported on WTP for a specific organic meat. Considering that consumers think of high price premiums as the strongest limiting factor when purchasing organic meat (Van Loo et al., 2010), it is then important to know consumers' WTP for these products. WTP estimates can also provide insights on how consumers value the organic attribute in meat products and can be used as input in analyzing the marketability of the products. O'Donovan and McCarthy (2002) concluded that the high premiums charged for organic meat in conjunction with the limited availability might restrict the organic meat market growth. O'Donovan and McCarthy (2002) found in an Irish study that 13% of the respondents were not willing to pay extra for organic meat. However, most respondents (44%) were willing to pay 1–5% extra. Approximately 29% of the respondents were willing to pay 6–10% premium, 3% were willing to pay up to 50% extra (26–50%) and 1% were willing to pay more than 50%. Ureña et al. (2008) reported a WTP of 17.6% for meat and sausages in a Spanish survey study. Krystallis, Arvanitoyannis, and Chryssohoidis (2006) reported that most Greek consumers were willing to pay 85–130% extra for organic chicken. However, consumers in these studies were simply asked how much extra they were willing to pay if the organic meat product would be available. We deviate from the approach of these previous open-ended WTP studies by using a choice experiment and a cheap talk script to elicit consumers' WTP for organic meat (i.e., chicken breast). A choice experiment is characterized by the inclusion of several options of the same product carrying different

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attributes and prices, with the subject selecting the option or alternative which better reflects his/her preferences. This procedure is similar to the typical shopping decision consumers typically face when buying products in the market.

A product label is a quality signal for the consumer. The organic food label is then an important tool to help consumers identify organic products. Without an organic label, the consumer might not be aware that the product is organic because differentiation between conventional and organic food may not be that discernable. According to Yiridoe et al. (2005) product labels can help buyers assess product quality by transforming credence characteristics into search attributes. They also argued that mislabeling and product misrepresentation can discourage consumers from buying organic foods. The WTP for organic foods depends strongly on the trust of consumers on the certification (Krystallis & Chryssohoidis, 2005). It is necessary to have defined rules for organic production methods and organic food labeling. The consumers can trust that the organic labels guarantee that the products are organic. Therefore, it is important to have uniform organic standards and certification procedures resulting in clear and non-misleading organic labels. Numerous different organic certifying agencies exist each with their own standards and certification methods. In the US, the USDA Certified Organic program is the most important one. In the US, Congress passed the Organic Foods Production Act (OFPA) in 1990, which led to the USDA starting the National Organic Program (NOP). The NOP and USDA established national standards for the production, handling, and processing of organic food as well as labeling of organic foods (i.e., USDA certified organic label). This label assures that the products marketed as organic meet the USDA organic requirements for production, handling and processing. Only products that are produced under the authority of the OFPA and the NOP can be labeled as "USDA certified organic". USDA-accredited certifying agents inspect the farm as well as the handling and process companies, to make sure that the rules necessary to meet the USDA organic standards are followed (USDA National Organic Program, 2008).

Previous studies have reported that price is the most important reason not to purchase organic food, especially the price difference between organic and conventional food products (Bourn & Prescott, 2002; Krystallis et al., 2006; Magnusson, Arvola, Hursti, Aberg, & Sjoden, 2001; O'Donovan and McCarthy, 2002; Tsakiridou, Boutsouki, Zotos, & Mattas, 2008; Van Loo et al., 2010; Yiridoe et al., 2005). As a result the willingness to pay (WTP) is an important characteristic to be assessed. Van Loo et al. (2010) identified price premium as the strongest limiting factor for organic meat purchases. In their study, most of the consumers (89%) strongly agreed (54%) or agreed (35%) that the high price charged for organic meat is a limiting factor in purchasing organic meat. Non-buyers were even more discouraged by the price premium (Van Loo et al., 2010).

Considering the efforts attached to USDA organic certification, a goal of our study is to assess whether consumers indeed value a USDA certified label vis-à-vis a general and generic organic label that is not awarded by a specific certifying agency. Consequently, in our choice experiment, we ask respondents to make trade-offs between price and product label, namely (1) not organically produced, (2) general organically produced, and (3) USDA certified organically produced. All other attributes are the same in the product options. The only attributes respondents are asked to consider are prices and label information. To our knowledge, no other study has evaluated consumers' valuation for these types of labels in organic meat, specifically chicken. In addition to estimating the average WTP of the respondents, we also estimated the WTP across different segments of consumers based on frequency of buying organic meat (non-buyers, occasional buyers, and habitual buyers) and across demographic groups. Our results generally suggest that there are differences in WTP between these groups or market segments. This information is important in development of marketing and pricing strategies for organic chicken as well as in identification of target markets or market niches.

2. Theory

2.1. Willingness-to pay estimation with the use of a choice experiment

Consumer preferences for certain food attributes are important for food producers and processors as well as policy makers (Gao & Schroeder, 2009). In the past, different preference elicitation methods have been used by economists and market researchers to obtain the willingness to pay (WTP) for certain product attributes. Some of those methods, such as conjoint valuation and choice experiments are defined as stated preference methods because respondents are asked to make hypothetical choices rather than real market choices. In consumer WTP studies, non-hypothetical incentive compatible elicitation mechanisms can be used as well, for example, experimental auctions, where real money is exchanged for actual products. For new product ideas, non-hypothetical studies often cannot be done since the product does not exist yet. If the product is available, non-hypothetical preference methods such as experimental auctions are preferred since those methods are theoretically incentive compatible. However, the cost of conducting experimental auctions is significantly higher since the participants are involved for a longer period of time. Oftentimes, because of budget constraints for this type of research, hypothetical methods are chosen to calculate WTP.

In choice experiments respondents are asked to make repeated choices between alternatives described by varying attributes. It is an established approach for understanding and predicting consumer trade-offs and choices in marketing research based on a household survey (Gracia, Loureiro, & Nayga, 2009). The choice experiment is consistent with the random utility theory (McFadden, 1974) which assumes that decision makers are rational and individuals make choices to maximize their utility subject to their budget constraints. Choice experiments are also based on the Lancasterian consumer theory (Lancaster, 1966) which assumes that utility of a good can be segregated in utilities of different attributes of a product and proposes that consumers make choices based on preferences for attributes of these goods. Goods are made up of attributes and the total utility gained from a product or service is the sum of the individual utilities provided by the attributes of that good. As a result, choices are determined by particular combinations of product attributes. Utility is derived from the attributes and attribute levels of product. In making choices, respondents make trade-offs between different attributes and attribute levels (James & Burton, 2003).

Individuals are asked to choose their preferred alternative amongst hypothetically constructed scenarios, where each scenario is a function of different attributes of product (including price) and each attribute varies at different levels. The response data are modeled within a utility function which provides information on: whether the given attributes chosen are important; the relative utility of different attributes and combination of it; the rate at which individuals are willing to trade between attributes (trade-off) and the total satisfaction or utility that respondents derive from the product.

2.2. Cheap talk in choice experiment

Hypothetical WTP studies are based on stated preferences. Hence, a potential issue with hypothetical experiments is hypothetical bias in the WTP estimates since hypothetical and real