

A Preliminary Study of Chinese Consumers' Willingness-to-Pay for Fruit Produced with Sustainable Attributes

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Abstract

Producing food in a sustainable way has become an important issue in developed countries but thus far it has been given little attention in Asian countries. Although some consumers in Asia believe sustainable food production is important, this by no means indicates that their purchase behaviour would change accordingly. To explore the relationship between sustainable fruit production and consumers' attitude and purchasing behaviour, this study conducted eight focus groups across four major cities in China. The results show that Chinese consumers had very limited knowledge of sustainable production, although they acknowledged that less carbon emission, less water use and biodegradable packaging were good for the environment. The study also revealed that consumers' willingness to pay a premium for sustainability attributes differed from attribute to attribute. Willingness to pay was also affected by income and gender, and most importantly, the level of trust consumers had in the certification issued by authorities for accrediting those sustainability attributes.

INTRODUCTION

Previous studies on food attributes have been extensively applied to production technology attributes (Morkbak and Nordstrom, 2009), health attributes (Anders and Moser, 2010), genetically modified foods (Hu et al., 2005), food safety (Angulo and Gil, 2007) and region of origin (Jaeger and Ros, 2008). There is, however, a relative lack of studies examining consumers' responses for sustainability attributes, particularly where multiple sustainability attributes are presented simultaneously (Tait et al., 2011).

Given increasing consumers concerns about the global environment, sustainable production has become a key component of innovation strategy for many firms to build competitive advantage, particularly in developed countries (EFSA, 2010). However, this issue has been given little attention in Asia. Food Facts Asia (2008) report that most Asian consumers are not familiar with the concept of sustainable food production. Less than 10% of respondents in China, India, South Korea and Japan indicated that they had heard much about it. Although many consumers in Asia believe sustainable food production is important, by no means does this indicate that their purchase behaviour will change accordingly. To better understand the relationship between sustainable food production, consumer attitudes and purchasing behaviour, more research is needed in major markets in Asia. This exploratory study conducted eight focus groups across four major cities in China, using the purchase of fresh fruit as a case study.

The objectives of the research were to examine: (1) the attitudes of Chinese consumers towards sustainability-related attributes of fruit; (2) the willingness of Chinese consumers to pay extra for those attributes; and (3) the obstacles preventing Chinese consumers from purchasing sustainably produced fruit products.

RESEARCH METHODS

This research involved a desktop study, in-depth interviews and focus groups. The purpose of the desktop study and in-depth interviews was to identify those fruit attributes associated with sustainable production. A total of eight focus groups were conducted with between six to twelve participants, chosen to represent both genders and a wide range of income levels. China is a large and complex society, with consumer attitudes and

behaviour varying between regions, particularly between inland and coastal areas (Zhou et al., 2010). To achieve a representative sample, four cities in China were identified for conducting focus groups, with two focus groups being held in Guangzhou, Shanghai, Beijing and Wuhan. These cities not only represent southern, central/eastern and northern China, but also represent different levels of disposable income (Table 1). Snowball sampling was used to select the participants. The researcher identified a small number of individuals who were interested in this research: these people were then used to recruit other participants.

RESULTS

Sustainable Fruit Attributes

Vermeir and Verbeke (2006) suggest that sustainable consumption is based on the consumer thinking about social responsibility in addition to the traditional purchase considerations such as convenience, habit, value for money, personal health concerns and hedonism. In the UK, sustainability drivers identified by Marks & Spencer, Tesco, Sainsbury and Wal-Mart can be summarised as: (i) greenhouse gas emissions; (ii) resources, including energy; (iii) waste; (iv) water; and (v) biodiversity.

The Chinese market has rapidly adopted "Green Food" and "Organic" concepts. Paull (2008) explains that green food is a Chinese innovation that dates from 1990 and is well known and readily available. Green food certification involves the regulation of inputs, particularly pesticides, and residue testing of produce. In comparison to green food, organic food is poorly understood in the domestic market, with the Chinese national organic standard only established in 2005.

Another category of food available within the Chinese market is environmentally friendly products, which are associated with the State Environmental Protection Administration of China's (SEPA) Environmental Label (Green Council, 2010). This label was developed in 1993 to promote public participation in environmental protection. Based on the literature from Europe, the UK and China, and supported by results from preliminary interviews with Chinese consumers, as well as firms involved in fruit production and marketing, six sustainability related fruit attributes were identified and considered relevant for focus group discussions: (1) environmentally friendly production; (2) no chemical residue at point of sale; (3) low carbon emissions; (4) water efficient production; (5) biodegradable packaging; and (6) pollution free production area.

Chinese Perceptions towards Sustainable Fruit Attributes and Willingness-to-Pay

Overall, the response to environmentally friendly production was more positive than negative. Participants in Guangzhou showed the least concern for this issue, while the response from the other three cities was similar, with most participants demonstrating varying degrees of concern. Of those participants who were concerned, a significant portion indicated that they would not be willing to pay a premium for environmentally responsible production, but, if the price was equal, they would choose that product with sustainable attributes over one without it. Therefore, while there appeared to be a general understanding of the issue and its importance, it did not influence the willingness to pay. Given the varying attitudes surrounding this issue, sustainability alone is unlikely to provide a sufficient marketing strategy in China however its inclusion could prove beneficial in increasing purchase frequency and quantity rather than higher prices.

The response to low chemical residue on fruit was overwhelmingly positive, with participants across all four cities indicating that they would prefer to purchase fruit with no chemical residue at the point of sale. However, while consumers indicated a strong willingness to choose and pay more for fruit with no chemical residues, they also expressed strong reservations about their ability to determine if the fruit labelled as having no chemical residue was actually residue free. This response highlights a lack of trust associated with food labelling in the Chinese market. However, the overall positive response to the concept of no chemical residue at the point of sale suggests that this is one

attribute that firms could target in developing a marketing strategy for Chinese consumers.

Attitudes towards low carbon emission were neutral, as the majority of participants indicated that consumers had limited or no understanding of the concept of carbon emissions. Some participants demonstrated negative attitudes, as they believed carbon emissions were an issue for producers alone. Attitudes were reasonably uniform across all four cities, with most participants indicating that they were unwilling to pay more for a product associated with low carbon emissions. Despite the overall response to carbon emissions currently being neutral or slightly negative, participants believed that through continuing Chinese government promotion, consumers would become increasingly aware of this issue. Firms need to monitor any such activity and be ready to align promotion and marketing with this issue.

Attitudes towards more water efficient fruit production ranged from neutral to negative, with most participants either not interested or concerned that less water would negatively influence fruit quality. The majority of participants were not willing to pay a premium for fruit produced in a more water efficient production system. This attitude was uniform across the four cities, with very few participants indicating they would consider buying fruit that was promoted on the basis of this attribute.

With regard to biodegradable packaging, most focus group participants saw the function of packaging as maintaining product quality and eliminating the risk of contamination. Concern for how packaging was disposed of was far less important. However, a number of participants in Wuhan, Shanghai and Beijing indicated they would choose biodegradable packing over conventional packaging, but only if the price was equal. Some participants obviously understand the benefits of biodegradable packaging, but price was ultimately the deciding factor in the decision to purchase. Thus, the overall attitude to this concept was considered neutral and is currently not beneficial in promoting fruit products.

Almost all participants agreed that fruit produced in a pollution free environment would be safer and healthier and indicated that they would be willing to pay more for it. This suggests that countries with a reputation for clean production environments, such as Australia and New Zealand, could take advantage of this perception in their promotional strategies.

Obstacles

The results revealed that the biggest obstacle preventing people from purchasing sustainably produced fruits was the consumers' low level of trust in claims about sustainability attributes in the market. During focus group discussions, participants frequently returned to the issue of how they could be sure that they were purchasing fruit which genuinely had the attributes claimed. This emanated from serious concerns about the frequency of counterfeit products in the Chinese fruit market, a concern supported by the research of Sun and Collins (2004).

Although the Chinese government has issued many certifications of green, organic and environmentally friendly food labels, the majority of participants indicated limited trust in these labels. Many participants believed that such certification could be purchased through the government without meeting regulations. While participants indicated varying degrees of trust for different types of certification, all expressed concern for the legitimacy of the actual labels presented on fruit. The issue of counterfeit labels prompted participants to suggest that when considering certification labels, consumers thought about the certifying organisation and the retail outlet at which the product was available. Participants indicated that they had much greater trust of the authenticity of products available in reputable supermarkets and hypermarkets.

Despite this limited trust, participants seemed to hold the attitude that 'something is better than nothing'; that is, while they believed the chance of certified fruit being produced in compliance with associated regulations to be small, the probability was still greater than no chance of meeting regulations in the case of conventionally produced

fruit. Interestingly, participants indicated that the only situation in which they would trust product claims was if it was on the recommendation of a friend or family member.

DISCUSSION AND CONCLUSION

The attributes of sustainability that elicited a positive response from most focus group participants were no chemical residues at the point of sale, originating from a pollution free production area, and an environmentally friendly production system. Both the chemical residue and pollution free attributes demonstrated a strong positive response from the majority of participants, indicating they would be willing to pay more for these attributes. Environmentally friendly production, on the other hand, demonstrated a response closer to neutral, with participants clearly interested in the concept, but not willing to pay more. However, the key issue facing business is the lack of trust in the certified sustainable attributes of fruit.

Given the lack of trust in attributes associated with sustainably produced fruit, firms should attempt to reduce the opportunity for counterfeiting by: (i) regulating packaging for Chinese distribution; (ii) obtain both domestic and international certification such as the "Green Food" label and its international equivalent; and (iii) target supply to reliable and reputable retailers. These recommendations could be further enhanced by developing closer relationships with firms along the supply chain to improve the traceability of products.

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Tables

Table 1. Focus group participant selection.

City	Female	Male	Income range (yuan/year)
Guangzhou	6	9	36,000-480,000
Wuhan	5	13	10,000-200,000
Shanghai	8	8	48,000-180,000
Beijing	8	12	7,500-150,000

Total focus group participants = 69.