

How do consumers perceive organic food from different geographic origins? Evidence from Hong Kong and Shanghai

Liz Yip^a, Meike Janssen^{b,*}

^a*Graham Company Limited, Hong Kong*

^b*Department of Agricultural and Food Marketing, University of Kassel, Germany*

Abstract

The objective of this paper is to understand how Chinese consumers perceive certified organic food, especially the differences between locally and nationally produced organic food compared to food produced overseas. In 2012, a consumer survey was conducted at supermarkets in Hong Kong and Shanghai (N=245). Participants were asked for their perception on four different food origins: locally produced organic food, organic food from China, imported organic food, and locally produced conventional food. Consumers in Hong Kong had a positive attitude towards local organic food and imported organic food. However, they were sceptical about organic food from China, in particular regarding chemical residues and the trustworthiness of producers. Consumers in Shanghai, in contrast, had a positive attitude towards all three tested geographical origins of organic food. Overall, the results suggest that it is challenging for marketers to promote and boost the sales of China-produced organic food in China. Better communication is essential to convince consumers that organic food from China is of similar quality as organic food produced elsewhere.

Keywords: consumer perception, China, organic food, local food

Abbreviations

| | |
|--------|---|
| AFCD: | Agriculture, Fisheries and Conservation Department, the Government of the Hong Kong Special Administrative Region |
| GMOs: | Genetically modified organisms |
| HKBU: | Hong Kong Baptist University |
| HKD: | Hong Kong dollar |
| HKORC: | Hong Kong Organic Resource Centre |
| RMB: | Renminbi |

* Corresponding author

University of Kassel, Dept. of Agricultural and Food Marketing,
Steinstr. 19, 37213 Witzenhausen, Germany
Email: m.janssen@uni-kassel.de

1 Introduction

The organic market in China is growing rapidly. Since the early 1980s, the concept of environmental protection and a reduced use of chemical fertilisers and pesticides were promoted by the Chinese government (Sanders, 2006). In the year 1990, the first certified organic food product was produced in China (Sheng *et al.*, 2009).¹ By the end of 2010, China was the country with the sixth largest area under certified organic agricultural cultivation worldwide. The 1.39 million hectares under organic cultivation in China represented 3.76 % of the total organic area worldwide, but it only accounted for 0.27 % of total agricultural land in China (Willer & Kilcher, 2012) and most organic area belonged to small-scale farms (Lagos *et al.*, 2010).

¹Please note that in this paper, the term 'organic food' refers to certified organic food in line with IFOAM standards.

Until 2005, organic products from China were mainly for export (Qiao, 2011). In recent years, the domestic organic food market in China has increased. The main domestic organic markets are located in first-tier or second-tier cities where consumers have higher incomes, such as Beijing, Shanghai, Guangzhou, Nanjing and Shenzhen, of which Beijing is the largest market accounting for one third of the total domestic organic market value (Qiao, 2011). Organic products are sold at higher prices compared to conventional and so-called green products (Zhao, 2007 cited in Qiao, 2011). Organic food is mainly sold in supermarkets and specialty stores followed by home delivery and farmer markets (Zhao, 2007 cited in Qiao, 2011).

In China, production, certification and imports of organic food are regulated by the “China National Organic Product Standard” (GB/T19603.1-4-2011) and the “Rules on Implementation of Organic Products Certification” (CNCA-N-009:2011). All products sold as ‘organic’ in China must comply with the National Standard and must carry the Chinese organic label (Sheng *et al.*, 2009).

In the context of the Chinese food market, it is important to distinguish between organic food and so-called ‘green food’ that has become very popular in China (Sternfeld, 2009). Green food is promoted as high quality food that is pollution-free, safe, and nutritious (Lin *et al.*, 2009). However, it is important to emphasise that green food is not identical with certified organic food.² In China, the green food label is more widely known than the organic food label. In a recent survey, half of the participants did not know how to distinguish organic food from green food (Zheng, 2009). Yin *et al.* (2010) found that consumers’ knowledge on organic food is rather limited in China when compared to developed countries. Still, knowledge about organic food may differ between cities and food categories. A study in Chengdu showed that 91 % of the participants knew about organic food in general (Lu *et al.*, 2010), while another study conducted in Shanghai and Nanjing showed that only 38 % of the participants knew about organic pork (Liu *et al.*, 2009).

Hong Kong is one of the special administrative regions of China. Hong Kong has a different political system under the principle of ‘one country, two systems’. Hence, the Chinese organic regulations are not applied to Hong Kong. By autumn 2012, governmental

regulations on organic food production were in the process of being drafted but not yet in place in Hong Kong. The results of research done by the Hong Kong Organic Resource Centre (HKORC) in 2010 showed the consequences of a lack of regulation: among the wet market stalls claiming to sell organic products, only 10 % sold certified organic products (HKORC, 2010). This circumstance was also reflected in a consumer study from Hong Kong on how to recognise organic food: only 50 % of the participants stated to look for organic certification logos, while 38 % simply looked for the word “organic”, 35 % relied on information provided by shopkeepers and 26 % would look for the word “green” (HKORC & AFCD, 2005). Against this background, it is difficult to estimate the number of organic consumers in Hong Kong. According to a study from 2008, 90 % of participants from Hong Kong had previously bought certified organic food (HKBU & HKORC, 2009).

To date, only few studies have been conducted on consumer views about organic food in China. It is therefore difficult to predict whether the Chinese domestic market for organic food will grow further and provide opportunities for domestic farmers. In particular, it is unclear whether consumers of organic food have a preference for local, national or imported organic food. It is known that many Chinese have lost their confidence in food from China after several food scandals rocked the country (Yu & Yin, 2011). The question is whether this is also true for organic products. The existing body of empirical studies only provides limited insights. Yin *et al.* (2010) carried out a consumer survey of consumers’ purchase intentions of organic food. However, these authors did not examine the influence of geographic origin on purchase intention. Sirieix *et al.* (2011) used qualitative techniques to interview 23 consumers in Shanghai about their views on local organic products, local conventional products and imported organic products. The results showed that respondents were not concerned about whether organic food was produced within China or imported from other countries (Sirieix *et al.*, 2011). In contrast, research carried out in Hong Kong in 2008 showed that only 5 % of Hong Kong respondents said they had confidence in organic products produced in mainland China (HKBU & HKORC, 2009).

The objective of this paper was to explore Chinese consumers’ perception on organic food from different geographical origins, and identify whether they prefer organic food produced locally, organic food from China or from other countries. The findings from this study could help marketers to improve their marketing strate-

²There are two kinds of green food in China, so-called grade A and grade AA green food. The latter is equivalent to certified organic food, whereas grade A green food has lower production standards and a less restrictive control system than organic food (Sternfeld, 2009).

gies for promoting the consumption of locally and nationally produced organic food in China. The following research questions were addressed to gauge Chinese consumers' perception on organic food:

- How do Chinese consumers perceive locally and nationally produced organic food compared to organic food imported from other countries?
- Are there any differences in consumer perception of organic food between consumers in Shanghai and Hong Kong?
- Are there any differences in consumer perception of organic food between regular and occasional buyers of organic food?

2 Literature review

A literature review of sources in Chinese and English language was carried out to collect information about previous consumer research on organic food in China. Based on the gathered information, the questionnaire for the consumer survey of the present study was designed. The literature search yielded a total number of eleven scientific studies (Yin *et al.*, 2010; Chen *et al.*, 2010; Sirieix *et al.*, 2011; Wong, 2005; HKORC & AFCD, 2005; Zhang & Jiang, 2011; HKBU & HKORC, 2009; Jiang & Zhong, 2008; Sheng *et al.*, 2009; Wang *et al.*, 2009; Liu *et al.*, 2009), eight of which investigated consumer views in mainland China and three in Hong Kong. Based on these studies, several characteristics of organic food and organic food production could be identified that seem to be relevant for Chinese consumers' perception of organic food. Those are: taste and quality; health and safety aspects; environmental benefits; local organic products; trust in organic products and the certification system; organic food prices; and availability and selection of organic food.

2.1 Taste and quality

Regarding the aspect of taste and quality of organic food, Yin *et al.* (2010) found that Chinese consumers perceive organic food as tastier than conventional food. A research conducted in Beijing and Shanghai showed that quality is an important factor for Chinese consumers when they decide to purchase organic food (Chen *et al.*, 2010).

2.2 Health and safety aspects

In-depth interviews conducted in Shanghai illustrated that consumers thought organic food was beneficial to their health due to being more natural (no pesticides

and chemicals) and nutritious (Sirieix *et al.*, 2011). Two other studies came to the same conclusion: A survey conducted in the Pearl River Delta of China (Guangzhou, Zhuhai and Shenzhen) found that lack of chemicals was the most important reason for consumers to choose organic food (Yin *et al.*, 2010). According to a study carried out in Beijing and Shanghai, food safety and the nutritional value of organic food were important factors for consumers to choose organic food (Chen *et al.*, 2010).

Health issues were also found to be important drivers for increasing demand of organic food in Hong Kong (Wong, 2005). The factors that motivated consumers to buy organic food were health, food naturalness, safety, high nutritional value and the absence of GMOs (HKORC & AFCD, 2005).

2.3 Environmental benefits

According to Sirieix *et al.* (2011), Chinese consumers believe that organic food is better for the environment since chemicals are not allowed to be used in their production.

2.4 Local organic products

A research conducted in Shanxi province showed that consumers preferred local organic food to non-local organic food (Zhang & Jiang, 2011). Similarly, a study from Shanghai suggested that consumers had concerns about lack of freshness of imported products (Sirieix *et al.*, 2011). At the same time, the participants of this study did not particularly support local small-scale organic farms and producers (Sirieix *et al.*, 2011).

2.5 Trust in organic products and the certification system

According to Chen *et al.* (2010) and Sirieix *et al.* (2011), some consumers in mainland China do not trust the Chinese labelling and control system. Some consumers are concerned whether organic products are really free of chemicals. This is confirmed by Yin *et al.* (2010) who found that 'distrust in organic food' was a major reason for consumers to not buy organic food. Previous studies from Hong Kong suggest that the level of consumer trust in organic products might depend on the food origin. Hong Kong consumers prefer locally produced organic food and imported organic food as they have more confidence in these products. More than 60% of respondents had no confidence in Chinese organic food produced outside of Hong Kong (HKBU & HKORC, 2009).

2.6 Organic food prices

Many Chinese consumers consider organic food to be expensive (Yin *et al.*, 2010). A study in the Shanxi province showed that consumers would be willing to pay a 10–20% price premium for organic food, which is far smaller than the actual price level (Zhang & Jiang, 2011). The price of organic food is around three times of the price of conventional food in China (Jiang & Zhong, 2008; Sheng *et al.*, 2009) and the price of imported organic food is even higher, which explains why consumers hesitate to buy imported organic food (Sirieix *et al.*, 2011).

2.7 Availability and selection of organic food

Limited availability of organic food is a problem in China. Organic food is only available at major supermarkets and some specialised shops in large cities (Chen *et al.*, 2010). There is only a limited range of variety and brands of organic food products (Wang *et al.*, 2009). The same situation is eminent in Hong Kong. The main barriers to purchasing organic food in Hong Kong are an insufficient supply of certified organic food on the market and limited retail outlets for organic food (HKORC & AFCD, 2005).

2.8 Animal welfare

Unlike in other countries, concern for animal welfare does not seem to be a motive for Chinese consumers to buy organic meat. No participant mentioned this aspect in the study by Sirieix *et al.* (2011). Similarly, Yin *et al.* (2010) found that ‘support of animal welfare’ was not an important reason for consumers to buy organic food. Another consumer survey conducted in Shanghai and Nanjing about consumer attitudes towards organic pork showed that only 41% of participants believed that organic production has higher animal welfare standards (Liu *et al.*, 2009).

3 Materials and methods

3.1 Target population and sampling

A consumer survey was conducted to investigate consumers’ perception on organic food in China. Data was collected in Hong Kong and Shanghai to find out whether there is a significant difference of perceptions between consumers in these two cities.

It is important to point out that our sample is a convenience sample and not representative of the Chinese population. Consumers in Shanghai and Hong Kong are presumably more likely to be aware of organic food than

consumers in other Chinese cities, due to the large number of higher income households and international exposure.

The target population of this study was consumers who had already bought organic food. People who had never bought organic food were excluded from participation. We made this limitation since our research focused on the question of organic food from different geographical origins. The aim was to identify how domestic organic food (local and national) was perceived when compared to imported organic food. It was thus necessary that the participants were familiar with the concept of organic food and had bought organic food before (at least once) so that they could provide valuable insights on their perceptions of different geographical origins of organic food.

A self-administered consumer survey was conducted at two supermarkets in Hong Kong and two in Shanghai over a period of four weeks from late March to April 2012.³ Shoppers of the selected supermarkets were the sample of the study. Consumers were approached when they came out from the supermarket. Every third consumer was approached. Three screening questions were used to select participants: “Do you live in Hong Kong (Shanghai)?” to guarantee that the participants also lived in the respective city; “Have you ever bought organic food?” to select only organic food buyers; and “How do you identify organic food when you go shopping?” to confirm that participants were aware of the concept of certified organic food.

3.2 Questionnaire design

The questionnaire encompassed four parts. First, participants were asked to rate the importance of different food attributes for their food purchasing decision by indicating a number (1 = “very unimportant” and 5 = “very important”). The twelve attributes presented in Table 1 (left hand column) resulted from the literature review presented above.

Second, consumer perceptions of four different food origins were investigated: local conventional food, local organic food, organic food from China (outside the local area), and imported organic food.⁴ A seven-point semantic differential scale with 12 opposite pairs of descriptive phrases was used (Table 1, right hand column).

³Since different consumers shop at different time intervals and days during the week, the interviews were conducted in the morning, afternoon and evening, both at weekends and on weekdays.

⁴In this paper, the term ‘food origin’ refers to the geographical origin as well as to the production standards of organic versus conventional farming.

Table 1: Items used in the questionnaire

| Criteria important when purchasing food | Seven-point semantic differential answer scales with the endpoints shown below* |
|---|--|
| Price | They are very cheap/ They are very expensive |
| Freshness | They are fresh/ They are not fresh |
| Taste | They taste good/ They taste bad |
| Quality | They are of high quality/ They are of poor quality |
| High nutritional value | They are high in nutritional value/ They are low in nutritional value |
| No chemical residues | They are free of chemicals/ They contain chemicals |
| Trustworthiness of producers | I trust these products/ I distrust these products |
| Food safety | They are safe for consumption/ They are unsafe for consumption |
| Support of small producers | They are from large producers/ They are from small producers |
| Low environment impact | They are environmentally friendly/ They are not environmentally friendly |
| Easily accessible | They can be bought everywhere/ They can only be bought in a limited number of places |
| Large variety and brands | There are only a small number of types and brands to choose from/ There are a lot of choices in terms of types and brands |

* The items were asked separately for each of the tested food origins (local conventional food, local organic food, organic food from China, and imported organic food)

Consumers' purchase behaviour and their buying intention formed the third part (frequency of organic food purchases and the place of purchase). Participants were also asked about their intention of buying local organic food, organic food from China and imported organic food, respectively, within the next month (multiple-choice format).

Finally, basic demographic data was collected: gender, age, marital status, number of people in the household, number of children under 15 years of age in the household, highest education level and family annual income.

A pre-test was carried out with 13 participants and the questionnaire was then slightly amended. The final questionnaire encompassed four pages and took participants five to 15 minutes to fill out.⁵

3.3 Data analysis

The statistical analysis was done with SPSS version 20.0. The collected data was first analysed with descriptive statistics and it was ascertained that the assumptions for carrying out t-tests were fulfilled (normal

distribution within the sample populations, same variance of the populations, minimum sample size). The method of t-tests was chosen since t-tests are considered robust in the case of interval scaled data like our survey data with five- and seven-point-scales (Malhotra *et al.*, 2012). Independent samples t-test analyses were performed to examine significant differences of the results between the two cities and between regular organic food buyers and occasional organic food buyers. Paired-samples t-test analyses were used to identify significant differences across the four tested food origins in terms of consumer perceptions. First, this was done for each of the twelve criteria mentioned above separately (i.e. it was compared how consumers perceived the four tested food origins in terms of 'price', afterwards the same was done for 'freshness' etc.).

Second, a so-called multiple-attitude index was calculated for each food origin, in order to combine consumer perceptions of the twelve criteria into *one* figure for each food origin. The index assumes that consumer perceptions of single product attributes alone do not necessarily allow conclusions regarding consumer preferences for a product. The importance that consumers place upon a product attribute in general also needs to be taken into account (Solomon *et al.*, 2010). The index is therefore composed of two elements, namely the consumer's perception on the product regarding particular

⁵The questionnaire was initially composed in English and afterwards translated into Chinese. Traditional Chinese characters were used in Hong Kong and simplified Chinese characters in Shanghai. For verification purposes, the questionnaire was translated back into English in order to verify the reliability of the translation.

attributes (in our case derived from the 12 semantic differential scales in the second part of the questionnaire), and the importance weights of the attributes (in our case derived from the 12 criteria in the first part of the questionnaire). The formula of the multiple-attitude index is $A = \sum P_i \times I_i$ where A is the general attitude of the consumer towards the product, i is an attribute of the product, P is the perception of the consumer on the particular attribute, and I is the importance weights of the attribute (Solomon *et al.*, 2010).

4 Results and discussion

4.1 Description of the sample

In total, 132 consumers were interviewed in Hong Kong and 119 in Shanghai. Out of these questionnaires, 245 were valid (128 questionnaires from Hong Kong and 117 from Shanghai). The composition of the sample (Table 2) in terms of age, gender, income level and education does not represent the population of Hong Kong and Shanghai (Information Services Department, 2012; Shanghai Municipal Statistics Bureau, 2012). A higher percentage of women were included in the sample as they are responsible for food purchases in most Chinese households. Moreover, the participants were on average older and had a higher family income than the average population. The percentage share of participants with a college or university degree was higher than the respective share in the general population of Hong Kong and Shanghai. These deviations from the average population are due to the fact that only organic food shoppers were included in the sample. Previous studies came to similar conclusions (HKBU & HKORC, 2009; Chen *et al.*, 2010).

4.2 Purchasing behaviour of organic food

The majority of participants in Hong Kong and Shanghai buys organic food only a few times per year (Table 3). Less than 10% of participants said they buy organic food once a week or more often.

In the present study, it was hypothesised that consumer perceptions of organic food might be different between consumers who buy organic food regularly and those who buy it only occasionally. The participants were therefore divided into two groups based on their frequency of purchase. A median split was conducted. Participants who buy organic food once per month or more often were defined as ‘regular organic food buyers’, while those who buy organic food only a few times a year were defined as ‘occasional organic food buyers’.

Supermarkets are the most popular location for organic food purchases both in Hong Kong and Shanghai (Table 3), followed by organic and health food stores.

4.3 Factors important when purchasing food

Among the twelve food attributes investigated in the questionnaire, food safety was the most important attribute for participants both in Hong Kong and Shanghai (Table 4). In Hong Kong, quality was the attribute with the second highest score followed by freshness, while in Shanghai freshness was rated second and quality third.

Independent-samples t-tests were performed to compare the results between participants in Hong Kong and Shanghai. Significant differences ($p < 0.05$) were found between participants in the two cities for the following: participants in Hong Kong placed higher importance on ‘price’, ‘high nutritional value’ and ‘support of small producers’ than their counterparts in Shanghai, while participants in Shanghai gave ‘no chemical residues’, ‘freshness’ and ‘trustworthiness of producers’ more importance than the participants in Hong Kong.

4.4 Consumer perceptions and attitudes towards food from different origins

4.4.1 Hong Kong

Figure 1 shows how participants in Hong Kong perceived the four tested food origins in terms of the twelve food attributes. Significant differences between the food origins are displayed in Table 5. The results clearly show that the four food origins were rated very differently regarding all attributes except for the attribute ‘large variety and brands’. Overall, imported organic food received the most positive mean ratings, followed by local organic food. In particular in terms of quality, nutritional value, absence of chemical residues, food safety, and low environmental impacts the participants perceived these two food origins as better than the two counterparts. The ratings of the food attribute ‘freshness’ revealed surprising results. Imported organic food was perceived as fresh as local conventional food, which might reflect the participants’ positive overall impression of imported organic food.

Organic food from China received comparably low mean ratings. The participants from Hong Kong thus associated organic food from China with rather negative attributes such as low quality, contamination with chemical residues and a low trustworthiness of producers. These findings are in accordance with previous studies on scepticisms towards Chinese food among consumers from Hong Kong (HKBU & HKORC, 2009).

Table 2: Socio-demographic composition of the sample

| | | Hong Kong (n=128) (%) | Shanghai (n=117) (%) |
|---|---------------------------|-----------------------|----------------------------|
| Gender | Male: | 27.3 | 36.8 |
| | Female: | 72.7 | 63.2 |
| Age | Under 20: | 3.9 | 1.7 |
| | 20–29: | 16.4 | 13.7 |
| | 30–39: | 18.0 | 26.5 |
| | 40–49: | 20.3 | 24.8 |
| | 50–59: | 20.3 | 17.9 |
| | 60–69: | 13.3 | 10.3 |
| | 70 or above: | 7.8 | 5.1 |
| Marital status | Married: | 63.3 | 71.8 |
| | Single: | 33.6 | 28.2 |
| | Others: | 3.1 | 0.0 |
| Highest education level | Primary school or below: | 8.6 | 0 |
| | Middle school: | 39.1 | 2.6 |
| | High school: | 8.6 | 25.0 |
| | College or undergraduate: | 36.7 | 63.8 |
| | Postgraduate or above: | 7 | 8.6 |
| Family annual income (USD1= around HKD7.8; USD1= around RMB6.2) | HKD100,000 or less: | 10.3 | RMB20,000 or less: 3.5 |
| | HKD100,001–200,000: | 10.3 | RMB20,001–40,000: 7.0 |
| | HKD200,001–300,000: | 17.5 | RMB40,001–60,000: 13.2 |
| | HKD300,001–400,000: | 25.4 | RMB60,001–80,000: 14.9 |
| | HKD400,001–500,000: | 12.7 | RMB80,001–100,000: 13.2 |
| | HKD500,001–600,000: | 5.6 | RMB100,001–120,000: 15.8 |
| | HKD600,001–700,000: | 5.6 | RMB120,001–140,000: 5.3 |
| | HKD700,001–800,000: | 4.0 | RMB140,001–160,000: 14.9 |
| | More than HKD800,000: | 8.7 | More than RMB160,000: 12.3 |

Table 3: Frequency and locations of organic food purchases

| | Hong Kong (%) | Shanghai (%) |
|---|---------------|--------------|
| <i>Frequency of organic food purchases</i> | | |
| a few times per year | 51.6 | 60.7 |
| about once or twice per month | 29.7 | 25.6 |
| about every two weeks | 9.4 | 8.5 |
| once a week or more often | 9.4 | 5.1 |
| <i>Locations for organic food purchases</i> | | |
| Supermarkets | 47.7 | 75.2 |
| Organic and health food stores | 36.7 | 12.8 |
| Wet markets | 14.1 | 4.3 |
| Home delivery | 0.0 | 5.1 |
| Farmer markets | 1.6 | 2.6 |

Table 4: Importance of different food attributes

| Food attributes | Mean ratings | |
|------------------------------|--------------|----------|
| | Hong Kong | Shanghai |
| Food safety | 4.82 | 4.75 |
| Quality | 4.48 | 4.58 |
| Freshness | 4.47 | 4.68 |
| High nutritional value | 4.32 | 4.03 |
| Taste | 4.31 | 4.40 |
| Trustworthiness of producers | 4.15 | 4.40 |
| No chemical residues | 4.14 | 4.56 |
| Price | 4.04 | 3.60 |
| Low environment impact | 3.80 | 3.69 |
| Easily accessible | 3.79 | 3.96 |
| Support of small producers | 3.73 | 3.11 |
| Large variety and brands | 3.52 | 3.57 |

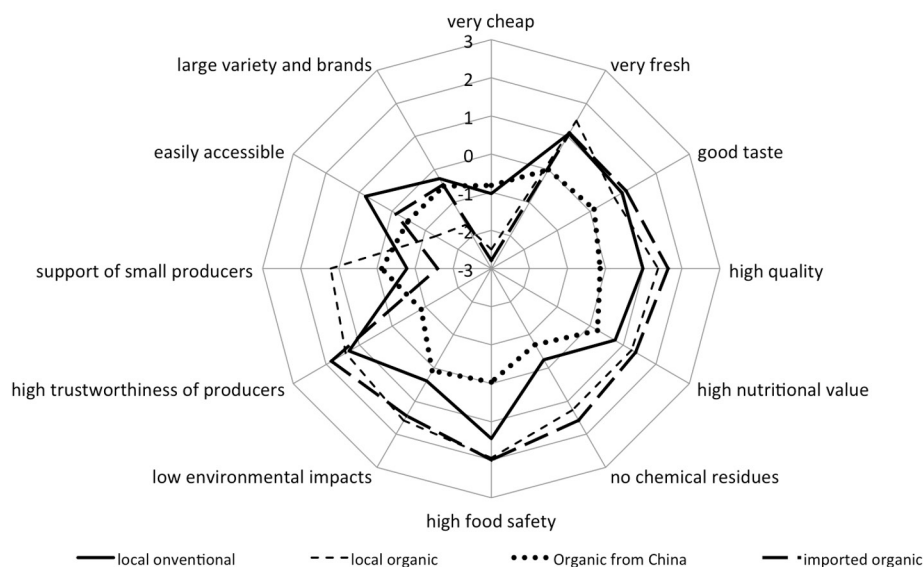


Fig. 1: Consumer perception of local organic, organic food from China, imported organic and local conventional food in Hong Kong (mean ratings)

Table 5: Significant differences between the tested food origins (sample from Hong Kong)¹

| Food attributes | Pairwise comparison of different food origins ¹ (comparison of mean ratings with paired-samples t-test) | | | | | |
|------------------------------|--|---------------------------------------|---|--|--|---|
| | local organic versus local conventional | local organic versus imported organic | local organic versus organic from China | organic from China versus local conventional | organic from China versus imported organic | imported organic food versus local conventional |
| Price | ** | ** | ** | n.s. | ** | ** |
| Freshness | ** | ** | ** | ** | ** | n.s. |
| Taste | ** | ** | ** | ** | ** | n.s. |
| Quality | ** | ** | ** | ** | ** | ** |
| High nutritional value | ** | n.s. | ** | ** | ** | ** |
| No chemical residues | ** | ** | ** | ** | ** | ** |
| Food safety | ** | n.s. | ** | ** | ** | ** |
| Low environment impact | ** | n.s. | ** | * | ** | ** |
| Trustworthiness of producers | n.s. | ** | ** | ** | ** | ** |
| Support of small producers | ** | ** | ** | ** | ** | ** |
| Easily accessible | ** | ** | ** | ** | ** | ** |
| Large variety and brands | ** | ** | ** | n.s. | n.s. | n.s. |

¹ The pairwise comparisons of the food origins were based on consumer ratings of the different food attributes, e.g. consumer ratings of the price of local organic food compared to consumer ratings of the price of local conventional food etc.

** significant difference at p-value < 0.05; * significant difference at p-value < 0.1; n.s. no significant difference

Regarding the attributes ‘price’ and ‘availability and variety of food’, the results reflect the situation on the food market in Hong Kong. Imported organic food and local organic food were perceived to be the most expensive, whereas organic food from China and local conventional food were considered to be much cheaper. To the authors’ best knowledge, local organic food and imported organic food are generally much more expensive than conventional food, whereas organic food from China is cheaper than the aforementioned ones. Regarding

availability and variety of food, all food origins received rather low ratings, even local conventional food. Local organic food was perceived as the food origin with the most limited availability and smallest variety. Similar results were found in previous studies (HKORC & AFCD, 2005; Wong, 2006). The food supply in Hong Kong depends heavily on imports, not only for organic but also for conventional food. Local farmers and food producers only offer a relatively small quantity and variety of food to consumers (Wong, 2006).

4.4.2 Shanghai

The perception of the tested food origins by consumers in Shanghai can be found in Figure 2 and Table 6. It becomes obvious that the ratings of the four food origins are much closer together compared to the results from Hong Kong, in particular the ratings of the three organic food origins. In Shanghai, imported organic and local organic food also received the most positive mean ratings in terms of ‘quality’, ‘nutritional value’, ‘absence of chemical residues’, and ‘food safety’. In terms of ‘price’, imported organic food was perceived as the most expensive, while local conventional food was perceived to be the cheapest. When it comes to ‘accessibility and variety’, local conventional food was perceived to be more easily accessible and with a larger variety of brands. Imported organic food was perceived as the least accessible with a limited amount of choice.

It is interesting that participants in Shanghai rated local conventional food as significantly tastier than local organic food and organic food from China. This result is not in line with previous research which found that Chinese consumers perceived organic food to be tastier than conventional food (Yin *et al.*, 2010).

All tested food origins were perceived to stem from rather large producers, in particular imported organic food. At the same time, the trustworthiness of producers was perceived to be the highest for imported organic food.

4.4.3 Comparison between consumers in Hong Kong and Shanghai

For a direct comparison of the results from Hong Kong and Shanghai, a multiple-attitude index was calculated for each food origin to find out consumers’ overall attitudes on the tested food origins (see Section 3 ‘Materials and methods’). In line with the results on consumer perceptions, participants in Hong Kong showed a very positive attitude towards imported organic food and local organic food (Figure 3). Local conventional food was also evaluated positively, while consumers had a clearly negative attitude towards organic products from China. In Shanghai, the four product types received relatively similar index values.

The comparison between the index values in Hong Kong and Shanghai revealed significant differences regarding two food origins, namely imported organic food and organic food from China ($p < 0.05$). Participants in Hong Kong had a more positive attitude towards imported organic food than participants in Shanghai. In Hong Kong, imported organic food was perceived better in terms of chemical residues, freshness, trustworthiness of producers, accessibility, taste, and variety and brands when compared to Shanghai. The opposite was observed for organic food from China, which was evaluated positive by participants in Shanghai while participants in Hong Kong had a negative attitude towards this food origin. In Shanghai, organic food from China was

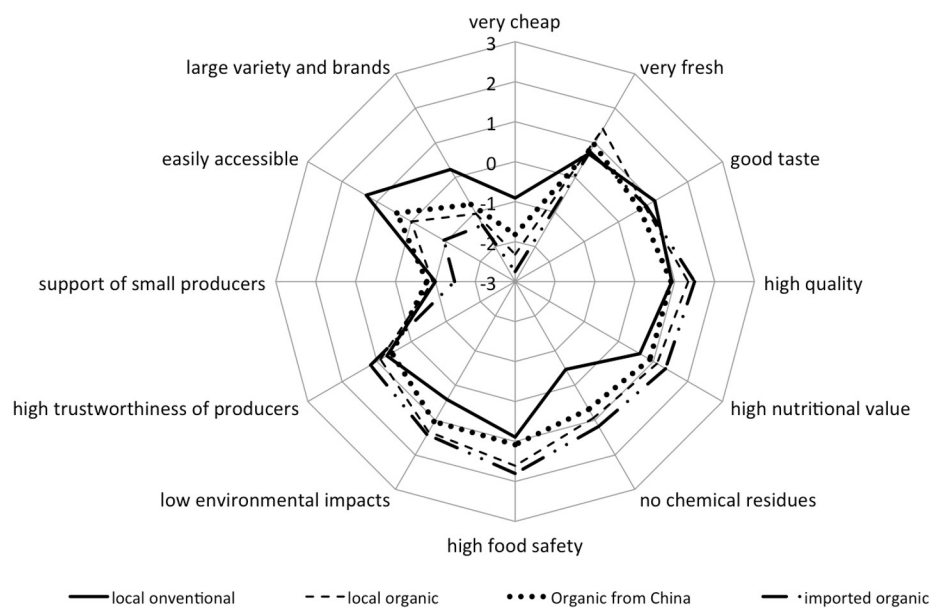


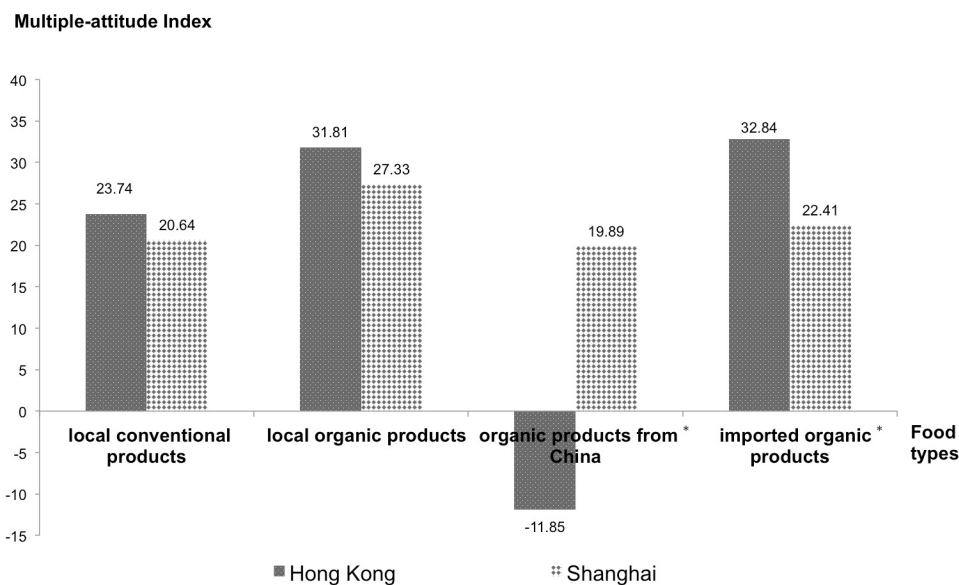
Fig. 2: Consumer perception of local organic, organic food from China, imported organic and local conventional food in Shanghai (mean rating)

Table 6: Significant differences between the tested food origins (sample from Shanghai)¹

| Food attributes | Pairwise comparison of different food origins ¹ (comparison of mean ratings with paired-samples t-test) | | | | | |
|------------------------------|--|---|---|--|--|---|
| | local organic versus local conventional | local organic versus imported organic | local organic versus organic from China | organic from China versus local conventional | organic from China versus imported organic | imported organic food versus local conventional |
| | Price | ** | ** | ** | ** | ** |
| Freshness | ** | ** | ** | n.s. | n.s. | n.s. |
| Taste | ** | n.s. | n.s. | ** | * | n.s. |
| Quality | ** | n.s. | ** | n.s. | ** | ** |
| High nutritional value | ** | ** | n.s. | ** | ** | ** |
| No chemical residues | ** | n.s. | n.s. | ** | ** | ** |
| Food safety | ** | n.s. | ** | n.s. | ** | ** |
| Low environment impact | ** | n.s. | ** | ** | ** | ** |
| Trustworthiness of producers | n.s. | n.s. | ** | n.s. | ** | ** |
| Support of small producers | n.s. | ** | n.s. | n.s. | ** | ** |
| Easily accessible | ** | ** | n.s. | ** | ** | ** |
| Large variety and brands | ** | * | * | ** | ** | ** |

¹ The pairwise comparisons of the food origins were based on consumer ratings of the different food attributes, e.g. consumer ratings of the price of local organic food compared to consumer ratings of the price of local conventional food etc.

** significant difference at p-value < 0.05; * significant difference at p-value < 0.1; n.s. no significant difference

**Fig. 3:** Mean of multiple-attitude index of each food origin in Hong Kong and Shanghai

* indicates the difference between Hong Kong and Shanghai participants is significant at p-value < 0.05.

rated significantly better than in Hong Kong in terms of quality, taste, freshness, nutritional value, free of chemical residues, food safety, low environmental impact and accessibility. Only the price of organic food from China was rated better in Hong Kong than in Shanghai.

These findings confirm the results of previous research conducted in Hong Kong by HKORC and

HKBU, according to which only 5% of participants said they had confidence in organic food from mainland Chinese companies (HKBU & HKORC, 2009). The negative perception of food from China is probably related to the occurrence of various food scandals in China, including the melamine-tainted milk powder and cadmium-tainted rice scandals, and the extent to which the local media in Hong Kong covered them.

Previous studies from mainland China also revealed that some consumers lacked trust in organic food from China (Chen *et al.*, 2010; Sirieix *et al.*, 2011). In our study from Shanghai, the mean ratings of organic food from China were very positive. However, the standard deviation was also relatively high (34.7). It is thus interesting to further look at the proportion of participants with a negative attitude towards organic food from China (i.e. an attitude index below zero), which accounted for 20.5%. In fact, every fifth participant in Shanghai thus had a negative attitude towards organic food from China, which is in line with the findings by Chen *et al.* (2010) and Sirieix *et al.* (2011).

4.4.4 Consumers' buying intention

Figure 4 shows consumers' intention to buy local organic food, organic food from China and imported organic food. Interestingly, in both cities, participants showed the highest buying intention for imported organic food. Regarding local organic food, the share of participants who stated an intention to buy it within the next month was slightly lower. For organic food from China, only about 25% of the participants in Hong Kong and around 36% of the participants in Shanghai would probably or definitely buy it within the next month. While for Hong Kong, the results on buying intentions were completely in line with the results on at-

titudes and perceptions, it is surprising that the share of participants from Shanghai who stated an intention to buy organic food from China was relatively low. The latter finding could be a manifestation of the so-called attitude-behaviour gap, according to which a person's positive attitudes do not necessarily lead to corresponding behaviour (Solomon *et al.*, 2010).

4.5 Comparison between regular and occasional buyers of organic food

Figure 5 shows that in Hong Kong, regular buyers of organic food had a more positive attitude towards the three tested organic origins than occasional buyers of organic food (t-test, $p < 0.05$), whereas no significant difference between the two groups of buyers was identified for local conventional food. Overall, the findings from Hong Kong are in line with common marketing theory. In Shanghai, in contrast, no significant differences were found between regular and occasional buyers regarding their attitudes towards the tested food origins. Nevertheless, regular organic food buyers showed a higher buying intention for all three organic food origins. In Shanghai, it would thus be interesting to find out why positive attitudes among occasional buyers of organic food did not translate into higher levels of actual purchases, which could be subject of future research.

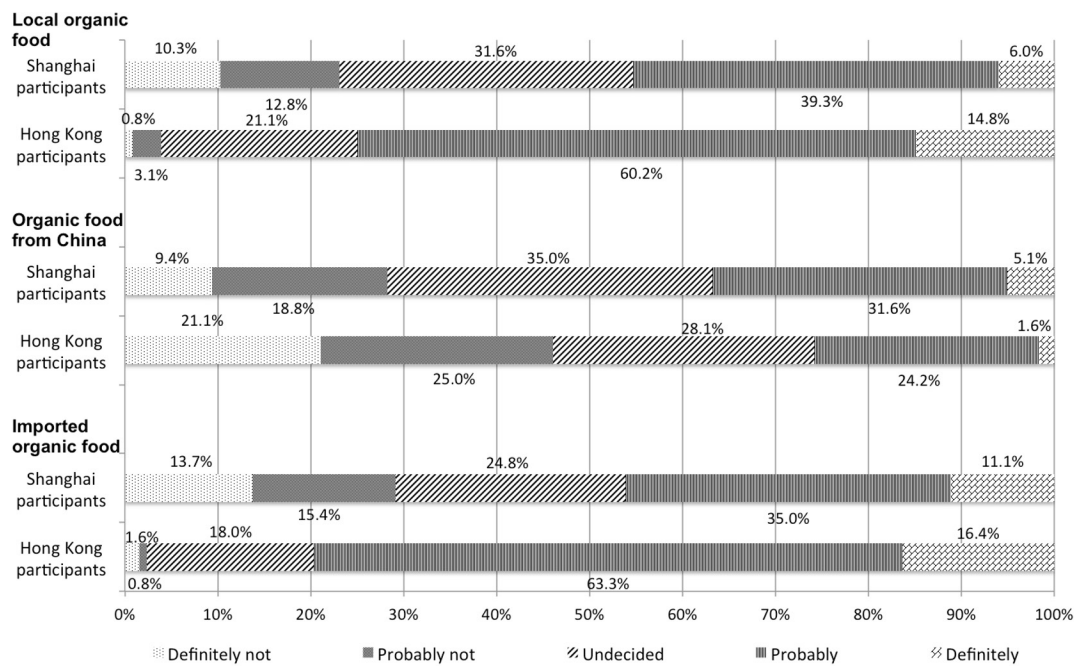


Fig. 4: Consumers' buying intention of organic food from different origins

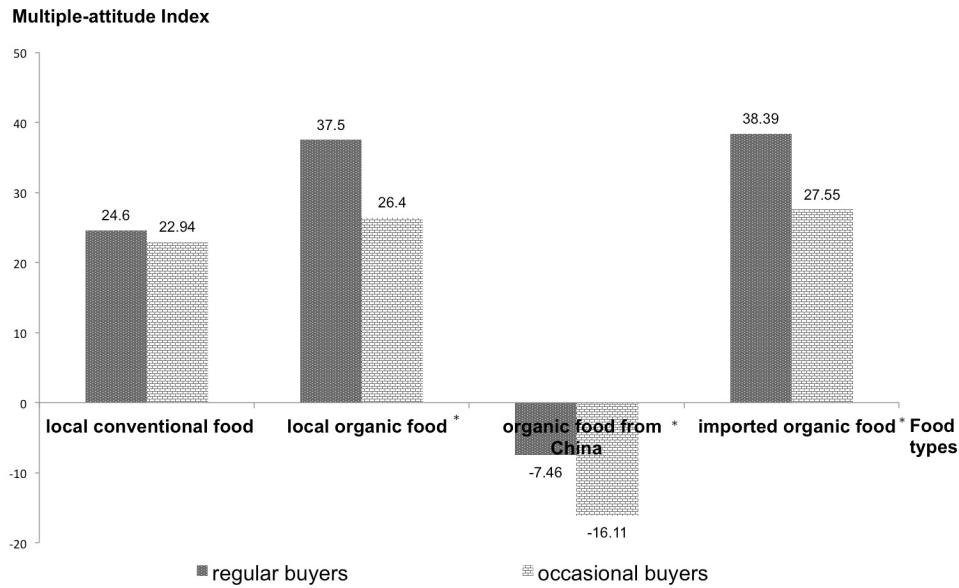


Fig. 5: Mean of multiple-attitudes index for regular ($N=62$) and occasional ($N=66$) organic food buyers in Hong Kong

* indicates the difference between regular and occasional organic food buyers is significant at p -value < 0.05 .

5 Conclusions and recommendations

We conclude that local organic food, organic food from China, imported organic food and local conventional food were perceived differently by consumers in Hong Kong. Among these four product types, consumers in Hong Kong had a positive attitude towards local organic food and imported organic food, while they were sceptical about organic food from China, in particular regarding chemical residues and the trustworthiness of producers. They would prefer local conventional food to organic food from China. We further conclude that the perception and attitude of consumers in Shanghai, in contrast, did not show much deviation between the different types of organic products. Consumers in both cities showed more positive attitudes towards local organic and imported organic food than towards local conventional food and they perceived local organic and imported organic food as safe and high quality food. In both cities, local organic food was also perceived to be the freshest. These three attributes (high food safety, high quality and freshness) turned out to be the most important aspects for consumers when purchasing food in general.

Nevertheless, the current consumption of organic food in China is very limited. According to our findings and previous studies, high prices, difficult accessibility and lack of variety of organic food are major factors that hinder consumers from purchasing it.

The ultimate goal of this paper was to help marketers to better promote domestic organic products in China. This research showed that consumers in Hong Kong had a negative attitude and a low intention to buy organic food from China, and consumers in Shanghai did not particularly prefer it to organic food produced elsewhere. Further investigation is necessary to find out more about the reasons behind this phenomenon. From the current results, the following recommendations can be given to Chinese marketers of organic food. It seems essential to convince consumers that organic food from China is of similar quality as organic food produced elsewhere. According to our results, high food safety, high quality and freshness are the most important aspects for consumers when purchasing food. We therefore recommend that marketers should put effort into providing organic products from China that fulfil consumer expectations in terms of food safety, quality and freshness. Moreover, marketers should focus on these aspects when they design marketing messages and campaigns. Marketing communication in the form of advertising, events and public relations could assist to enhance the image of Chinese organic food in the minds of consumers. In addition, in Hong Kong it turned out that many consumers did not trust regulations and enterprises from China. Marketers should thus focus on enhancing the transparency of the certification process in order to eliminate the doubts of consumers.

Limitations of the study

In addition to the 12 food attributes that were used in this research, many other possible factors such as trendiness and social status (Bähr *et al.*, 2004), trust in regulations (Bähr *et al.*, 2004) and consumers' knowledge about organic food (Roitner-Schobesberger *et al.*, 2008; Grzelak & Maciejczak, 2013) can also influence consumers' attitudes towards organic food.

Furthermore, it is important to mention that perceptions and purchase intention might not result in final purchase decisions. There are many other aspects such as pricing and availability that may affect consumers' final purchase decisions. In order to get a better understanding of consumer behaviour in relation to organic food in China, future research should not only include these factors but, in particular, try to measure real purchasing behaviour.

Further studies should be performed in other first-tier cities such as Beijing, Shenzhen and Guangzhou. This would help to find out whether there are differences of consumer perception across cities, giving a more comprehensive view of the Chinese market.

In the present study, the participants were asked for their perceptions on organic food in general without any further distinction between different kinds of food. In future research, it should be differentiated between specific food categories such as dairy products, fresh vegetables or processed meat in order to get a more detailed view of consumer perception and buying behaviour of organic food.

References

- Bähr, M., Botschen, M., Laberenz, H., Naspetti, S., Thelen, E. & Zanoli, R. (2004). *The European Consumer and Organic Food. Organic Marketing Initiatives and Rural Development, Vol.4*. School of Management and Business, University of Wales Aberystwyth, Wales, United Kingdom.
- Chen, J., Lobo, A. & Mascitelli, B. (2010). Buyer behaviour of organic food in China: Consumers have their say. In *Global Business and Technology Association in the Twelfth Annual International Conference, July 5-9, South Africa* (pp. 87-94).
- Grzelak, P. & Maciejczak, M. (2013). Comparison between the United States and Poland of consumers' perceptions of organic products. *Studies in Agricultural Economics*, 15, 47-56.
- HKBU & HKORC (2009). 2008 Research of Hong Kong Consumers' Purchase Behaviour of Organic Food (2008本港消費者購買有機食品的行為研究). HKBU (Hong Kong Baptist University) & HKORC (Hong Kong Organic Resource Centre). URL http://www.hkorc.org/doc/resources/02/2008/090114consumer_sur_report_chi.pdf (last accessed: 28.01.2012).
- HKORC (2010). Sales situation of organic products in wet markets 2010 (濕街市販商「有機產品」的銷售實況調查 2010). HKORC (Hong Kong Organic Resource Centre). URL http://www.hkorc.org/doc/resources/02/2010/13a2Wetreport_100328s.pdf (last accessed: 03.06.2012).
- HKORC & AFCD (2005). Organic Food Consumer Market Survey (有機食品消費市場調查). HKORC (Hong Kong Organic Resource Centre) & AFCD (Agriculture, Fisheries and Conservation Department). URL <http://www.hkorc.org/doc/resources/02/2005/2005%20MKT%20Survey%20Report%202005%20Jan.pdf> (last accessed: 07.06.2012).
- Information Services Department (2012). HONG KONG: THE FACTS. Information Services Department, Hong Kong Special Administrative Region Government. URL <http://www.gov.hk/en/about/abouthk/factsheets/docs/population.pdf> (last accessed: 09.06.2012).
- Jiang, Q. & Zhong, J. X. (2008). Problems and solutions of China organic food development. *Guangdong Agricultural Sciences*, 9, 172-173. Cited in: Sheng, J., Shen, L., Qiao, Y., Yu, M. & Fan, B. (2009) Market trends and accreditation systems for organic food in China. *Trends of Food Science & Technology*, 20, 396-401.
- Lagos, J. E., Scott, R. R., Rasmussen, K., Wu, B. & Chen, U. (2010). Gain Report. Peoples Republic of China Organics Report (Gain Report Number: 10046). Beijing: USDA Foreign Agricultural Service. URL http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Organics%20Annual_Beijing_China%20-%20Peoples%20Republic%20of_10-14-2010.pdf (last accessed: 11.05.2012).
- Lin, L., Zhou, D. & Ma, C. (2009). Green food industry in China: development, problems and policies. *Renewable Agriculture and Food Systems*, 25 (1), 69-80.

- Liu, J., Wang, K. & Han, J. (2009). Consumer research on the cognitive level of their consumption behaviour of the organic pork – Based on survey data from Shanghai and Nanjing (消費者對有機豬肉的認知水平及其消費行為調研——基于上海與南京的調查數據). *Modern Economic Research*, 4, 50–58.
- Lu, Y., Wang, H. & Zou, H. (2010). Consumers behaviour of buying organic vegetables and its influencing factors - Consumer survey in Chengdu (消費者購買有機蔬菜的行為及其影響因素分析——基于成都市消費者的調查). *Public Communication of Science and Technology*, 18, 69–71.
- Malhotra, N. K., Birks, D. F. & Wills, P. (2012). *Marketing Research: An Applied Approach. 4th ed.*. Pearson Education, Harlow.
- Qiao, Y. (2011). Organic Agriculture Development in China. In H. Willer, & L. Kilcher (Eds.), *The World of Organic Agriculture - Statistics and Emerging Trends 2011* (pp. 132–136). Research Institute of Organic Agriculture and International Federation of Organic Agriculture Movements, Frick, Switzerland and Bonn, Germany.
- Roitner-Schobesberger, B., Darnhofer, I., Somsook, S. & Vogl, C. R. (2008). Consumer perceptions of organic foods in Bangkok, Thailand. *Food Policy*, 33, 112–121.
- Sanders, R. (2006). A Market Road to Sustainable Agriculture? Ecological Agriculture, Green Food and Organic Agriculture in China. *Development and Change*, 37 (1), 201–226.
- Shanghai Municipal Statistics Bureau (2012). Shanghai Statistical Yearbook 2012. URL <http://www.stats-sh.gov.cn/data/toTjnj.xhtml?y=2012e> (last accessed: 20.12.2012).
- Sheng, J., Shen, L., Qiao, Y., Yu, M. & Fan, B. (2009). Market trends and accreditation systems for organic food in China. *Trends of Food Science & Technology*, 20, 396–401.
- Sirieux, L., Kledal, P. R. & Sulitang, T. (2011). Organic food consumers' trade-offs between local or imported, conventional or organic products: a qualitative study in Shanghai. *International Journal of Consumer Studies*, 35, 670–678.
- Solomon, M. R., Bamossy, G., Askegaard, S. & Hogg, M. K. (2010). *Consumer Behaviour. A European Perspective, 4th ed.*. Prentice Hall, Harlow, England.
- Sternfeld, E. (2009). Organic Food “Made in China”, Hintergrundinformationen 10/2009. EU-China Civil Society Forum. URL http://eu-china.net/web/cms/upload/pdf/materialien/eu-china_2009_hintergrund_10.pdf (last accessed: 05.06.2012).
- Wang, X., Xiao, X., Zhang, A. & You, W. (2009). Study on Consumers' Attitude towards Organic Food in Nanjing, China (我國消費者對有機食品的態度研究——以南京市調研結果為例). *Journal of Anhui Agricultural Sciences*, 14, 6795–6796.
- Willer, H. & Kilcher, L. (Eds.) (2012). *The World of Organic Agriculture - Statistics and Emerging Trends 2012*. Research Institute of Organic Agriculture and International Federation of Organic Agriculture Movements, Frick, Switzerland and Bonn, Germany.
- Wong, J. W. C. (2005). The Opportunities for Hong Kong Organic Market Development. IFOAM. URL http://www.hkorc.org/doc/resources/03/2005_8%20Abstract-0rgFoodOpportunity.pdf (last accessed: 07.06.2012).
- Wong, J. W. C. (2006). Organic Market and Certification in Hong Kong. URL http://www.hkorc.org/doc/resources/03/2006_3%20Biofach%20Article-061004k.pdf (last accessed: 11.05.2012).
- Yin, S., Wu, L., Du, L. & Chen, M. (2010). Consumers' purchase intention of organic food in China. *Journal of the Science of Food and Agriculture*, 90 (8), 1361–1367.
- Yu, Z. & Yin, Y. (2011). Reference of foreign food safety management measures on China's food safety (外食品安全管理措施中食品安全的借). *Market Research*, 6, 49–53.
- Zhang, Z. & Jiang, Y. (2011). Consumer willingness to pay and preferences based on joint analysis (基于聯合分析法的消費者對產品支付意願和偏好研究). *Statistics and Decision*, 3, 112–114.
- Zhao, C. (2007). Primary study of organic production, marketing and policy in China. unpublished. Cited in: Qiao, Y. (2011) *Organic Agriculture Development in China*. The World of Organic Agriculture - Statistics and Emerging Trends 2011, pp. 132–136, Research Institute of Organic Agriculture and International Federation of Organic Agriculture Movements, Frick, Switzerland and Bonn, Germany.
- Zheng, Y. (2009). Empirical analysis of consumer awareness of organic food and buying behaviour (有機食品消費者的認知及購買行為實證分析). *Jiangsu Commercial Forum*, 12, 44–45.