Chinese certified organic food consumers and the market for green food

Hong-Bo Liu[5], Breda McCarthy[6], Tingzhen Chen[7]

---

[5] Dr.Hong-Bo Liu Lecturer, Department of Economics and Marketing, James Cook University.
✉ hongbo.liu@jcu.edu.au
[6] Dr. Breda McCarthy, Lecturer, Department of Economics and Marketing, James Cook University.
[7] Dr. Tingzhen Chen, Lecturer, Department of Economics and Marketing, James Cook University.

Abstract

The objectives of this paper are to examine the demographic factors that drive demand for certified organic food, examine the reasons for buying green food in urban China and see if the Chinese green food market can be meaningfully segmented on behavioural segmentation bases. An online survey was used to collect consumer behaviour information. A total of 402 responses were obtained covering 24 provinces and municipalities in China. Binary probit analysis, ANOVA analysis, and cluster analysis are used in this paper. Income, age and gender are found to have a significant and positive impact on certified organic food purchase. Being female, young, on high incomes, and living in developed cities, are positively related to certified organic food purchase. With regard to purchase motivations, the certified organic food buyers rate the "no genetically modified food ingredients" attribute and "improves the health of my family" slightly higher in importance than the non-organic food buyers. In addition, the "informed consumer" and the "uninformed consumer" are identified for market segmentation purposes. However, no link is found between knowledge and purchase of green food; nor is knowledge related to willingness to pay a price premium. The contribution of the paper includes identifying the determinants of organic food purchase, providing some insights into how the green market can be segmented along with suggestions for marketers that would entice Chinese consumers to purchase more. A key task for food marketers is to improve consumer's knowledge of the certified organic food label in China and differentiate it from green food.

Keywords: certified organic food, green food market, China, factors influencing green food purchase, probit/logit model.

Introduction

There has been a remarkable growth in demand for organic food in China. However, the "organic" concept is poorly understood in China, whereas "green food" is popular and readily available (Zhou et al., 2004). Green food is a solely Chinese certification and is comparable to, but differs from, organic products (Marchesini, Hasimu and Spadoni, 2010). There are two standards for green food: the A grade green which represents a transitional level between conventional and organic food, allowing restricted use of chemical fertilisers and pesticides, and the AA grade green food, which represents full organic status. The majority of food sold in the domestic market is of 'A' standard, not 'AA' (Saunders, 2006). The Chinese certified organic label was set up by the *Organic Food Development Centre* and is mainly aimed at the export market (Paull, 2008a). Certified organic food products only account for 0.08% of total food consumption in China (Yin et al., 2010), and as a developing economy, price is a major barrier to purchase (Paull, 2008a). The organic label competes strongly with the green food label in terms of image and positioning in the market and they are often confused (Marchesini, Hasimu & Canavari, 2012).

The development of the market for premium, organic food has been rapid. Opportunities for exporters include processed products and food supplements, especially gourmet foods, wine, children's food, dairy products and ethnic grains (International Trade Centre, 2011). The primary driver of Chinese organic food production is trade-related: the desire to take advantage of the growing demand for organic products on the global market (Kledal et al., 2007). There are many reasons for the 'greening' of agriculture, such as problems with environmental pollution; pesticide contamination; the need to maintain a healthy population; the need to produce safe and nutritious food for the world's most populous country; the need to raise farmers income; to keep farmers on the land; the need to stymie bad press about food safety in the domestic market; to improve the image of China-produced food in the international market and overcome the called "green barrier" in international markets (Paull, 2008a). The demand for organic produce in China is estimated to exceed the world average for the following reasons (Larranga, 2013):

- Domestic food safety issues. Demand for organic/green food is driven by an acute lack of confidence in the safety and quality of Chinese produce (Morgan and Wright, 2014). The outbreak of the melamine food scandal in mainland China in 2008 eroded public confidence in the authorities responsible for food safety. It indicated major, widespread quality control problems in China's dairy industry (Geng, Trienekens & Wubben, 2013).

- The growth of the middle class. The growth of the middle class in China has led to the emergence of a niche market for high-quality food from consumers who are willing, and are able, to pay a higher price for healthier food (Zhang & Han, 2009; Zhong & Yi, 2010; Sun & Mu, 2012).
- An increase in sales channels. An increasing number of dedicated organic food stores and domestic supermarket chains are selling organic fruit, vegetables and meat to Chinese consumers (Sheng, Shen, Qiao, Yu, & Fan, 2009).

Although there is a vast literature on organic food consumption, on who buys and why they buy (Baker *et al.,* 2004; Hughner, et al., 2007; Didier & Sirieix, 2008; Smith and Paladino, 2010; Kriwy & Mecking, 2012), comparatively little is known about organic food consumption in China. In a qualitative study, it was found that Chinese consumers perceive organic food as healthy, safe but costly (Marchesini, Hasimu & Canavari, 2012). In an exploratory study, Siuieix et al., (2011) found that Chinese consumers were much driven less by altruistic motivations (i.e. support for small-holder farmers, animal welfare and environmental preservation) than by individualistic motivations. They were worried about chemicals in conventionally produced food and trusted organic food for health reasons. They were hesitant to buy imported organic produce due to the higher price and perceived no quality difference between the locally produced and imported organic product. In a study by Roberts & Rundle-Thiele (2007), the presence of personal shoppers played a key role in influencing consumers to select organic brands. An exploratory study on the factors driving organic food consumption found that health concerns, degree of trust in organic food and acceptance of its price level, and income, were all significant motivators. Environmental concern only slightly affected purchase intention, along with age and education (Yin et al., 2010). Thøgersen & Zhou (2012) concluded that Chinese consumers are guided by the same value priorities and beliefs about organic food as consumers around the world; perceptions about healthiness, pesticide residues, taste and environmentally friendliness affected purchase intentions. Chinese studies show that gender (being female), age, family size and average household income per year, are the main socio-economic factors influencing willingness to pay for green food (Xia & Zeng, 2007; Xia & Zeng, 2008). In developed countries, there is a weak support for demographic variables for consumer segmentation (see Harris et al., 2000). Many authors argue that demographics do not distinguish between buyers of organic and non-organic/conventional products (Lockie et al., 2004; Pearson et al., 2013). In order to overcome the limitations posed by a focus on demographics, this study aims to combine demographics with behavioural segmentation variables, such as knowledge and awareness.

Given that Chinese consumers are not familiar with the certified organic label, and such foods are not widely available, the survey also covers green food consumption.

Research Design

The population of interest was consumers of certified green food and organic food. Since many consumers do not understand the distinction between organic and green food rating-systems, these labels were included in the survey. The ecological labels are shown in Figure 1.

Figure 1: Chinese Green Food and Organic Food Quality Certification Signs.

The survey instrument was originally developed in English and translated into Chinese. The survey contained a section on socio-demographic information, reasons for buying green/organic food; awareness and knowledge, sources of information used in decision-making, outlets used to buy food, willingness to pay a premium for green food and consumer attitudes towards food safety. The survey was informed by the literature and it was pilot tested on a convenience sample. Based on feedback from the participants, some questions were reworded to avoid ambiguity. An online survey was conducted in 2014. Paper-based surveys were also used to ensure that a more balanced sample, in terms of age, was recruited. Internet research is appealing because it is a cost- and time-efficient way of accessing a large number of participants (Sue and Ritter, 2007). Furthermore, China's usage rate of the internet is growing rapidly (McKinsey Global Institute, 2013) and internet surveys are a useful way of recruiting an organic/green food sample from the well-educated, high income echelons of society. The survey was promoted by a major online wine merchant in order to attract the educated and affluent Chinese consumer. A total of 402 consumers responded to the survey.

Findings

An estimated 28% of the sample is a buyer of certified organic food. Over half of the sample (57%) claim to understand the difference between organic food and green food. A third of the sample

(36%) is a self-reported buyers of green food. Table 1 offers a demographic profile of the sample. There is a female bias with 60% females and 40% males. This may be due to fact that women are more interested in the topic than men. Most respondents were young, with 62.2% of respondents in the 26-45 year age bracket. Main occupations cited were administrative/clerical (35%), teacher/researcher (16.9%), university student (17.4%), public servant (8.7%) and businessperson (8.2%). The majority of respondents were married (80%) and most respondents (68%) had a child. Household income was relatively high, with 24.1% of the sample earning between $1,732 and $3,464 a month (6 to 10,000 RMB). The respondents were well educated, with 42.3% having an undergraduate degree. Analysis of location showed that respondents came from diverse regions in mainland China, tier 1 cities, the regional capital cities and non-capital cities. Family income was higher in tier 1 cities, number of years spent in education was higher and average age was lower. Despite the one child policy, the Chinese culture of living with the extended family means average household size (3.45 persons) is much higher than Australia (see Table 2). Market reports show that wealth is concentrated in the major tier 1 cities of Shanghai, Beijing and Guangzhou and the top third (approximately 20 million people) have spending power that is similar to average Australians (Morgan and Wright, 2014).

Table 1: Summary of findings on demographics

Variable		Responses	Percentage
Gender (n=402)	Male	161	40%
	Female	241	60%
Age (n=402)	Below 18	6	1.5%
	18 - 25	82	20.4%
	26 - 35	125	31.1%
	36 - 45	125	31.1%
	46 - 55	39	9.7%
	56 and over	25	6.2%
Married (n=402)	Yes	322	80%
	No	80	20%
Children (n=402)	No children	48	11.9%
	Young children – aged below 12	176	43.8%
	Older children – aged 12 and over	98	24.4%

Household Income Per Month (n= 402)	Less than 3000 RMB	25	6.2%
	3,001 to 6,000 RMB	82	20.4%
	6,001 to 10,000 RMB	97	24.1%
	10,001 to 20,000 RMB	89	22.1%
	20,001 to 30,000 RMB	68	16.9%
	30,001 to 50,000 RMB	32	8%
	More than 50,000 RMB	9	2.2%
Education (n=402)	Senior High School or below	26	6.5%
	Technical and/or Vocational School	24	6%
	Junior colleges	81	20.1%
	Undergraduate	170	42.3%
	Post-graduate	101	25.1%
Occupation (n=402)	Company staff/clerical	141	35.1%
	Public servant	35	8.7%
	Business person	33	8.2%
	University student	70	17.4%
	Military	4	1%
	Doctor	3	0.7%
	Teacher and/or researcher	68	16.9%
	Labourer & related	13	3.2%
	Home duties	12	3%
	Retired	16	4%
	Other	7	1.7%

Note: approximately 1 Chinese Yuan/Renminbi = 0.1732 AUD.

Table 2: Basic statistics of survey samples at city tier level

City tier	Samples	Female	Family size	Family Income (RMB)	Average age	Education (years)	Household with young kids
1st	103	61	3.45	21,700	38.33	15.96	54
2nd	215	129	3.40	13,300	41.34	15.36	89
3rd	84	51	3.36	13,480	40.00	15.64	36
Total	402	241	3.40	16,160	39.89	15.65	179

The logit/probit model

Modelling is used to understand, explain, and predict the choices that are made. To do so, one can create an economic model of utility derived from the choice of each alternative. Generally, a single equation limited dependent variable model such as the probit or Logit model may be summarised by the following equation. Utility is derived from the selection of an alternative j ($j = 1,0$) by the individual i ($i = 1,......t$) and that choice is a function of the attributes (e.g., price, quality) of that alternative to the individual, and the characteristics (e.g., income, educational attainment, presence of young kids) of the individual. The binary probit/logit model is used for explaining a dichotomous, dependent variable with the empirical specification formulated in terms of a latent-response variable. It has been widely used in diverse fields; originally in toxicology, and now it has gained popularity in econometric analyses (Maddala 1983; Ben-Akiva and Lerman, 1985). In this study, the dependent variable may take on only two values to indicate whether a consumer wants to buy organic food or not.

In the binary model, we assume that the decision of the *ith* household consumer to buy green food or not depends on an unobserved utility index I_i (threshold) that is determined by explanatory variables in such a way that the larger the value of the index I_i, the greater the probability of the household buying green food (P_i). Let us define the index I_i as

$$I_i = x_i' \beta + \mu_i \qquad \ldots (1)$$

In practice, I_i is unobservable. If the threshold is set to zero (in fact, the choice of a threshold value is irrelevant, as long as a constant term is included in x_i), what we can observe is a dummy variable y_i,

$$\begin{aligned} y_i &= 1 \quad if \quad I_i > 0 \\ y_i &= 0 \quad otherwise \end{aligned} \qquad \ldots (2)$$

To capture the relationship between I_i and P_i, we model the probability of observing the values of one and zero as

$$\begin{aligned} \Pr(y_i = 1 | x_i; \beta) &= \Pr(I_i > 0) = 1 - F_{\mu_i}(-x_i'\beta) \\ \Pr(y_i = 0 | x_i; \beta) &= -F(-x_i'\beta) \end{aligned} \qquad \ldots (3)$$

F_{μ_i} is the cumulative distribution function (CDF) of μ_i, which takes a real value and returns a value ranging from zero to one. In the probit model, μ_i in the regression of latent dependent variables follows a standard normal distribution. In the logit model, μ_i in the regression of latent dependent variables follows a logistic distribution.

Given a sample of n observations, a likelihood function (4) can be developed from the above design and maximised with respect to β in order to obtain the maximum likelihood estimates (MLE) $\hat{\beta}$ (Maddala, 1983). The likelihood function is given by

$$l(\beta) = \log L(\beta) = \sum_{i=0}^{n} y_i \log(1 - F(-x_i'\beta)) + (1 - y_i)\log F(-x_i\beta) \qquad \ldots (4)$$

Probit regression is an approach to handle categorical dependent variables, which is based on a rational choice perspective on behaviour (Green, 2002). It consists of observable independent variables and unknown parameters. Values of unknown parameters are estimated from a sample of observed choices made by decision makers when they are confronted with a choice situation. Table 3 shows the results of the binary probit model.

Table 3: Estimates of binary probit model for organic food purchase

Variables	Coef.	Std. Err.	z	P>z
Age	-0.1825845	0.0887858	-2.06	0.040**
Gender (Male:0; Female: 1)	0.3504368	0.1674492	2.09	0.036**
Family size	-0.1564761	0.0844896	-1.85	0.064*
Education attainment below university	-0.482365	0.2234442	-2.16	0.031**
Income	0.5647558	0.0705798	8	0.001**
Location (1st tier)	0.2185908	0.1136826	1.92	0.055*
_cons (Intercept/constant term)	-2.345338	0.5497214	-4.27	0.003**
LR chi2(8)	148.84			
Log likelihood	-164.36262			
Pseudo R2	0.3117			

Note: ** indicates 5% significance, and * indicates 10% significance.

Income, age and gender, are significant at 5% level. Income, female, and living in tier 1 cities are positively related to organic food purchase. Older age, larger family size and lower levels of educational attainment are negatively related to organic food purchase.

Consumer motivations

All consumers scored medium to high on all items related to reasons to buy green food (M>3 on a 5-point Likert scale). While most of the motivating factors were considered important, the green food label, coming from humanely-treated stock; environmentally-friendly, absence of GM ingredients, health and safety, all received the highest scores. One-way Anova was performed and the certified organic food buyers rated the "does not contain genetically modified food ingredients" attribute and "improve the future health of my family" slightly higher in importance than the non-organic food buyers (see Table 4).

Table 4: Reasons for buying green food

Reasons	Overall Sample	Organic Food Buyers	Non-organic food buyers
The green food I buy is competitively priced.	3.71	3.74	3.70
The food I buy has the green label and is pesticide reduced.	4.00	4.08	3.97
The green food I buy helps support Chinese farmers.	3.77	3.84	3.74
The green food I buy has a well-known brand name or comes from a well-respected region.	3.32	3.25	3.35
Produce is fresh.	3.81	3.88	3.77
The green food I buy comes from a farmers market and there is a long-term, trusting relationship with grower.	3.48	3.43	3.50

Sourced within season.	3.73	3.62	3.77
Tastes good.	3.62	3.71	3.58
Comes from humanely treated livestock.	4.04	4.14	3.99
Environmentally-friendly in the way it is produced, packaged and transported.	4.12	4.24	4.07
Does not contain genetically modified ingredients.	4.11	4.27**	4.08
Green food will improve my future health.	4.18	4.27	4.15
Green food will improve the future health of my family.	4.23	4.37**	4.18
Green food is safe.	4.20	4.23	4.19
Green food is high quality and has high nutritional value.	4.05	4.16	4.01
Green food is easy to buy.	3.38	3.33	3.40
Green food is easy to prepare.	3.43	3.37	3.45

** sig. $p < 0.05$

Note: Purchase motivations were measured on a 5 point importance scale, where 1= not at all important and 5 = very important.

Knowledge clusters in the green food market

Another objective of this paper was to examine if the Chinese green food market could be meaningfully segmented on behavioural segmentation bases, such as familiarity and perceived knowledge. The technique of quick cluster analysis (K-means) was carried out on one set of food-related variables. Two clusters were identified, the "informed consumer" and the "uninformed consumer". One cluster perceived that they possessed some knowledge and awareness of green

food (n=298) and the second did not (n=100), which is shown in Figure 1. After the clusters were identified, the next step was to run cross tabulation analysis with chi square testing to explore the relationship between various socio-demographic factors and the clusters. The results are shown in Table 5. The following variables were significant: age, household income, purchase of certified organic food, overseas experience and location. People aged 35 to 54, who are on high incomes, who live in tier 1 and 2 cities, who are non-buyers of organic food, tend to fall into the "informed" cluster; this cluster consists of almost equal numbers of people with, and without, overseas experience. In contrast, the "uniformed" cluster consists mainly of people who do not have overseas experience. With cross tabulations, causality can go both ways – on the one hand, knowledge may be related to overseas experience but on the other hand, overseas experience (exposure to Western lifestyles, novel foods, etc.), may be related to knowledge. There was no significant relationship between knowledge of green food and purchase of green food. Furthermore, knowledge was not linked to willingness to pay a price premium.
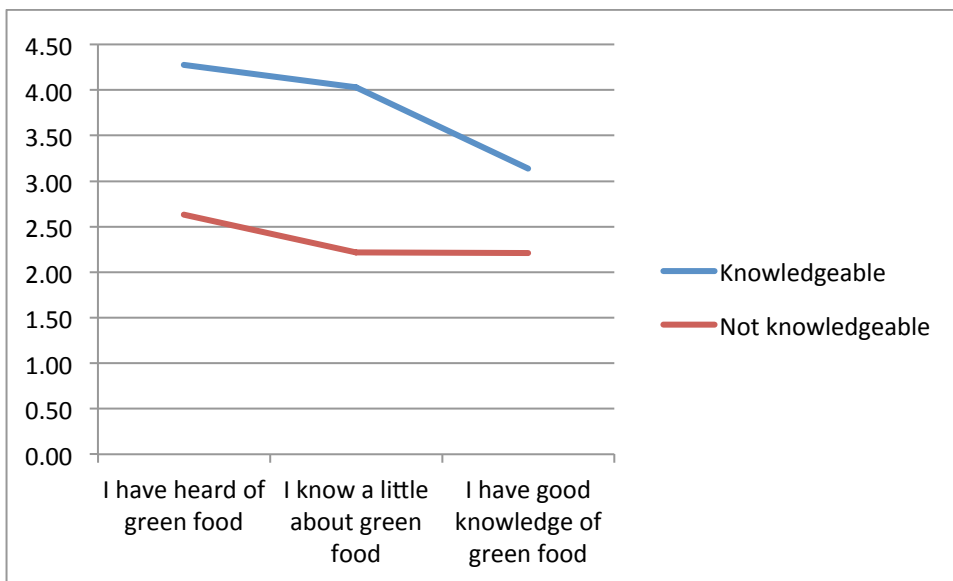
Figure 1: Knowledge Clusters

Table 5: Clustering Chinese consumers based on knowledge of green food

Variable		Clusters		
		(1)	(2)	Chi Square
		Informed	Uninformed	
		(n=298)	(100)	
Gender	Male	116	43	Chi Square =
	Female	181	57	0.484
				Sig.=.486
Age	0-34	60	27	Chi-
	35-54	196	52	Square=6.150
	Over 55	42	21	***Sig.=0.046**
Education	High School/Vocational	90	41	Chi Square = 4.062
	Undergraduate	132	36	Sig.=.131
	Post-graduate	76	23	
Marital Status	Yes	243	75	Chi-Square = 1.996
	No	55	25	Sig.=.158
Married with Children	Yes	206	64	Chi-Square = 0.14.
	No	37	11	Sig. = .906
Household Income*	< 6,000 RMB	67	40	Chi-Square = 12.073
	6,001 – 10,000	74	21	

	RMB			***Sig.= .007**
	10,001 – 30,000 RMB	123	32	
	More than 30,000 RMB	34	7	
Willingness to pay more	Yes – Below 30%	123	38	Chi-Square=0.391
	Yes – Above 31%	173	62	Sig.=.532
Green Food Purchase	Yes	170	51	Chi Square = 1.109
	No	128	49	Sig.=.292
Certified organic food purchase*	Yes	91	20	Chi Square = 4.134
	No	207	80	**Sig.= .042**
Overseas Experience*	Yes	146	29	Chi Square = 12.149
	No	152	71	***Sig.=0.000**
Location*	Tier 1	71	13	Chi Square= 28.892
	Tier 2	135	176	
	Tier 3	92	11	***Sig. = 0.000**

* Sig. p <0.05

n=398, with a few missing values.

Discussion

Our study found that organic food seems to be favoured by wealthy Chinese females living in developed cities. This finding is in accordance with the literature on demographics and organic food consumption. Torjusen at al. (2001) found a significant relationship between income and organic food purchasing. Chinese studies show that gender (percentage of female respondents) and household income are important socio-economic factors influencing willingness to pay for green food (Xia & Zeng, 2007; Xia & Zeng, 2008). Interestingly, having a child was not related to organic food purchase in this survey. Studies on Western consumers show that concern for young children is likely to increase organic food consumption (Kriwy & Mecking, 2012); the organic food buyer is likely to be female (Lockie *et al.,* 2004), female with children (Dettmann & Dimitri, 2009; Van Doorn &Verhoef, 2011) and is likely to be highly educated (Govidnasamy & Italia, 1990; Kriwy & Mecking, 2012). Qualitative research is needed to explore the link between no children and organic food consumption. Perhaps a new segment of consumers is emerging in tier 1 cities, females who delay having a child, and who are willing and able to buy certified organic food.

The certified organic food buyers rated the "no genetically modified food ingredients" attribute and "improves the health of my family" slightly higher in importance than the non-organic food buyers. There is a debate in the literature about whether egocentric motives (such as health) or altruistic motives (such as environmental concern and animal welfare) are dominant in organic food choices (Sirieix et al., 2011; Thøgersen & Zhou, 2012; Zhu et al., 2013). This study lends some supports to the argument that the adoption of organic food in China is based on egocentric drivers.

The paper suggests that consumer knowledge of green food can be related to demographics, such as age, income and location. This finding is not surprising given that organic/green food is more visible in the wealthy cities. Premium organic foods are sold mostly through premium specialty retailers and hypermarkets in tier 1 cities (Morgan and Wright, 2014). Aertsens et al., (2011) found that knowledge (both objective and subjective) is not related to demographics such as education, age and income, but this was a study of Western consumers. This study found no relationship between knowledge and purchase of green food; furthermore, knowledge was not linked to willingness to pay a price premium. This is surprising since some form of appropriate knowledge is needed to drive purchase and willingness to pay (see Rezai et al., 2013). Although, there is controversy around the attitude-behaviour link, research (Aertsens et al., 2011; de Magistris and Gracia, 2008) shows that a

consumers' organic food knowledge is important because it positively influences consumers' attitudes towards organic food products, along with information-seeking and experience with organic food. Perhaps Chinese consumers do not have access to knowledge on green production methods, and simply rely on the label, the type of outlet, price and information available at the point of purchase. This survey found that consumers' awareness of the difference between certified organic food and green food was low. This is an interesting finding, but not surprising given the geographic spread of the sample. Futhermore, having multiple labels, such as green food, A, AA and certified organic, may serve to confuse the Chinese buyer. This paper has implications for marketing practitioners and retailers. Successful promotion of certified organic food is important, and marketers need to communicate the benefits of organic food and its superiority over green food.

Conclusion

This study is an exploratory one that attempts to identify and describe the organic food consumer in China, which is an important and emerging export market for the US, Australia and Europe. Results show that demographic variables, notably, income, age and gender, have a significant and positive impact on certified organic food purchase. Being female, on high incomes, and living in developed cities, are positively related to certified organic food purchase. The certified organic food buyers rated the "no genetically modified food ingredients" attribute and "improve the health of my family" slightly higher in importance than the non-organic food buyers. A second objective was to examine if the Chinese green food market could be meaningfully segmented on behavioural segmentation bases, such as familiarity and knowledge. Two clusters were identified, the "informed consumer" and the "uninformed consumer". Cross tabulation analysis with chi square testing showed there was a relationship between the segments and certain demographics variables. Consumers' awareness of the difference between certified organic food and green food was low. The contribution of the present paper includes identifying the factors that lead to the purchase of organic food, along with providing some insights to food marketers on how to segment the market, position their brands and develop sales. This study had its limitations, such as the sample size and reliance on self-reported data. Future studies should use more precise measures of knowledge (i.e., factual and subjective) and use multiple and more complex segmentation bases.

References

Aertsens, J., Mondelaers, K., Verbeke, W., Buysse, J., & Van Huylenbroeck, G. (2011). The influence of subjective and objective knowledge on attitude, motivations and consumption of organic food. *British Food Journal*, *113*(11), 1353-1378.

Baker, S., Thompson, K. E., & Engelken, J. (2004). Mapping the values driving organic food choice. *European Journal of Marketing*, 38 (8), 995-1012.

Ben-Akiva, M., & Lerman, S. (1985), *Discrete Choice Analysis: Theory and Application to Travel Demand*, The MIT Press, Cambridge, MA.

Dettmann, R., & Dimitri, C. (2009). Who's buying organic vegetables? Demographic characteristics of US consumers. *Journal of Food Products Marketing,* 16, (1), 79-91.

Didier, T., & Sirieix, L. (2008). Measuring consumer's willingness to pay for organic and fair trade products. *International Journal of Consumer Studies*, 32 (5), 479-490.

de Magistris, ., & Gracia, A. (2008). The decision to buy organic food products in Southern Italy, *British Food Journal*, 110 (9), 929-947

Green, W. (2002), *Econometric Analysis*, Prentice Hall, New Jersey.

Govidnasamy, R., & Italia, J (1990). Predicting willingness to pay for organically grown fresh produce. *Journal of Food Distribution Research*, 30 (2), 44-53

Harris, B.*,* Burress, D. *&* Eicher, S. *(*2000*).* Demand for Local and Organic Produce: A Brief Review of the Literature*. Institute for Public Policy and Business Research. University of Kansas, Lawrence, KS*

Morgan, B. & Wright, C. (2014). *The Market Opportunities for Australian Vegetables in China*.: Sydney, Australia: HAL - Horticulture Australia.

Hughner, R.S., McDonagh, P., Prothero, A., Shultz, C.J., & Stanton, Julie (2007). Who are organic food consumers? A compilation and review of why people purchase organic food, *Journal of Consumer Behaviour*, 6, (2-3), 94-110.

International Trade Centre (2011). *Organic Food Products in China: Market Overview*. Geneva: ITC.

Kledal, P., Hui, Q., Egelyng, H., Yunguan, X., Halberg, N. & Xianjun, L., (2007). Organic food and farming in China. In: Willer, H., and Yussefi, M., (Eds.) *The world of organic agriculture - statistics and emerging trends 2007* (pp. 114-119). Bonn: International.

Kriwy, P., & Mecking, R.A., (2012). Health and environmental consciousness, costs of behaviour and the purchase of organic food. *International Journal of Consumer Studies,* 36, 30–37.

Larranga, J. (2013). Exporting organic to China. Australian Organic News, August 2013. Retrieved March 14th 2015 from:

https://austorganic.wordpress.com/2013/08/06/exporting-organic-to-china/

Lockie, S., Lyons, K., Lawrence, G., & Grice, J., (2004). Choosing organics: a path analysis of factors underlying the selection of organic food among Australian consumers. *Appetite,* 43, 135–146.

Maddala, C. (1983), *Limited-dependent and qualitative variables in econometrics*, Cambridge University Press, Cambridge.

Marchesini, S., Huliyeti, H. & Canavari, M. (2012). Perceptual maps analysis for organic food consumers in China: a study on Shanghai consumers. In *22nd Annual IFAMA World Forum and Symposium, The Road to 2050: "The China Factor", Shanghai, China June 10 - 14, 2012*. Retrieved 1 March 2013 from: https://www.ifama.org/events/conferences/2012/cmsdocs/Symposium/PDF%20Symposium %20Papers/703_Paper.pdf

Morgan, B. & Wright, C. (2014). *The Market Opportunities for Australian Vegetables in China*. 2014 AUSVEG National Convention, Cairns Convention Centre, 19-21 June 2014. Retrieved 8 July, 2014, from: http://ausveg.com.au/events/convention-2014/2014-speaker-sessions.htm

Paull, J. (2008a). China's Organic Revolution. In: Bhaskaran, S. and Mohanty, Suchitra (Eds.) *Marketing of Organic Products: Global Experiences* (pp. 260-275). Hyderabad, India: The Icfai University Press.

Paull, John (2008b). The Greening of China's Food - Green Food, Organic Food, and Eco-labelling. Paper presented at: *Sustainable Consumption and Alternative Agri-Food Systems* Conference, Liege University, Arlon, Belgium, 27 - 30 May 2008.

Pearson, D., Henryks, J., Sultan, P. & Anisimova, T. (2013). Organic food consumers: Exploring purchase frequency to explain consumer behaviour, *Journal of Organic Systems*, 8(2), 50-63.

Rezai, G., Tend, P., Mohamed, Z., and Shamsudin, N. (2013). Consumer willingness to pay for green food in Malaysia, *Journal of International Food & Agribusiness Marketing*, 25 (1), 1-18.

Roberts, J.A., and Rundle-Thiele, S.R., (2007). Organic food: observations of Chinese purchasing behaviours. In *The Australian and New Zealand Marketing Academy (ANZMAC) Conference 2007: 3Rs: Reputation, Responsibility & Relevance*, December 3-5, 2007, Dunedin, New Zealand: 3430-3436.

Sue, V. M., & Ritter, L. A. (2007). *Conducting online surveys.* Sage Publications, Thousand Oaks, California.

Thøgersen, J., and Zhou, Y. (2012). Chinese consumers' adoption of a 'green' innovation – The case of organic food**.** *Journal of Marketing Management*, *28* (3-4), 313-333.

Torjusen, H., Lieblein, G., Wandel, M. and Francis, C. (2001). Food System Orientation and Quality Perception Among Consumers and Producers of Organic Food in Hedmark County, Norway. *Food Quality and Preference*, *12*, 207-216

Saunders, R. (2006). A Market Road to Sustainable Agriculture? Ecological Agriculture, Green Food and Organic Agriculture in China. *Development and Change*, *37* (1), 201-226.

Sheng, J., Shen, L., Qiao, Y., Yu, M., & Fan, B. (2009). Market trends and accreditation systems for organic food in China. *Trends in Food Science & Technology, 20*(9), 396-401

Sirieix,L., Kledal, P., & 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.

Smith, S., and Paladino, A. (2010), 'Eating clean and green? Investigating consumer motivations towards the purchase of organic food', *Australasian Marketing Journal* (AMJ)*,* 18 (2): 93-104

Sun, Q., & Mu, Y. (2012). Analysis of Vegetable Consumption Features and Consumption Demand System of Beijing Residents. *Chinese Agricultural Science Bulletin*, *28* (12), 257-263.

Van Doorn, J., & Verhoef, P.C., (2011). Willingness to pay for organic products: differences between virtue and vice foods. *International Journal of Research in Marketing*, 28 (3), 167-280.

Xia, W., and Zeng, Y. (2007). Consumer's attitudes and willingness-to-pay for Green food in Beijing. Paper presented at the *6th International Conference on Management* (ICM), August 3-5, 2007, Wuhan, China, Vol. iii, Science Press.

Xia, W., & Zeng, Y. (2008). Consumer's Willingness to Pay for Organic Food in the Perspective of Meta-analysis. Paper presented at: *International Conference on Applied Economics. ICOAE* (pp. 933-943).

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*, 1361-1367.

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*, 1361-1367

Zhang, L., & Han, L. (2009). An analysis on consumer perception of safe food and purchase behaviour - a survey on fresh food in Shanghai. *Chinese Agricultural Science Bulletin*, *25* (4), 50-54.

Zhong, F., & Yi, X. (2010). Analysis on difference between consumers' concerns and actual purchasing behaviour regarding food safety: case study of vegetable consumption in Nanjing. *Journal of Nanjing Agricultural University*, *10* (2).

Zhou, Y.H., Huo, L., and Peng, X.J. (2004). Food Safety: Consumer attitudes, willingness to pay and the impact of information. *Chinese Rural Economy*, *11*, 53-59.

Zhu, Q., Li, Y., Geng, Y., & Qi, Y. (2013). Green food consumption intention, behaviours and influencing factors among Chinese consumers. *Food Quality and Preference*, *28,* 279-286.