

## Factors Affecting Intention to Consume Organic Food Products: A Study Among Chinese College Students in Malaysia

**TAN POH LEONG**

Faculty of Social Science, Arts, and Humanities, Tunku Abdul Rahman University College, Kampar

Email: [Poh\\_leong2000@yahoo.com](mailto:Poh_leong2000@yahoo.com)

Tel: 05-4468012

**LAILY PAIM**

Faculty of Human Ecology, Universiti Putra Malaysia

Email: [Laily@upm.edu.my](mailto:Laily@upm.edu.my)

Tel: 03-89467051

### *Abstract*

*This study is focused on the analysis of the factors that affect Chinese college students' intention to consume organic food, namely, environmental concerns, subjective norms, and media and advertising. A systematic random sampling was employed. The population consisted of college students. An online questionnaire was adopted and adapted from previous researches cited in the literature. Information was gathered using online questionnaires mailed to 500 respondents. The data was analysed using the AMOS software. The results from the Structural Equation Modeling (SEM) analysis proved that environmental concerns do not show any significant effects on the intention to consume organic food products. Furthermore, the subjective norms variable was also identified as a non-significant predictor of the intention variable. However, only one exogenous variable, media and advertising was tested to be a significant predictor of the intention variable in this analysis. The primary contribution of this study is that the research model is relevant for implementation among the Malaysian Chinese college students. The findings would assist the Ministry of Agriculture and marketing managers in increasing the availability of local organic food products in Malaysia.*

**Key Words:** College student, Consumer Behaviour, Intention, Organic Food.

### **Introduction**

Malaysia imports US 1.7 billion chemical fertilizers, ranking number seven in the world due to its rapid expansion in agricultural farming (Mundi, 2012). More than 90 percent of these chemical fertilizers are reported to be applied in various forms of agriculture farming in Malaysia (Goh and Hardter, 2003). It was realized that these types of chemical fertilizers, herbicides and pesticides used to grow fruits and vegetables are unsafe and have side effects to consumer health (Lee, Sandler, Blair, Samanic, Cross & Alavanja, 2007). On top of that, most of the agro chemical fertilizers used by farmers cannot be absorbed by the fruits, rice paddy and vegetable plants, hence eventually creating pollution in the environment. The average Malaysian daily food comprises about 15% of vegetables. Consumers perceive that they can remove pesticides by washing the vegetables with water; in fact, pesticides are actually difficult to wash off and the vegetables end up becoming unsafe food. The unsafe food and environmental problems may have influenced consumers' purchase decision in looking for food that is safe and environmental friendly products such as organic food products (Bellows, 2007; Essoussi & Zahaf, 2008; Tsakiridou, Konstantinos & Tzimitra-Kalogianni, 2008). The advantage of the organic farm production system is that it neither creates pollution to the environment nor has side effects on the human body and on the animals. Organic

farming also focuses on producing a green environment and certified food products. Furthermore, the organic farming production procedures are insured from the production stage until consumption (Nardali & Ay, 2007). When compared to other countries in the Asian region, Malaysia still falls behind as far as the demand for organic food products is concerned. Moreover, there are no proper strategies and long term plans to help the local farmers produce more organic food products for the local market. Despite the government's initially plan to reduce chemical fertilizers and encourage local farmers to invest in organic food, not much development has been made by the Ministry of Agriculture (Indrani, 2001). Since the level of organic food consumption is still low, factors which contribute to organic food product consumption need to be further studied. An understanding of the factors contributing to the explanation of organic food product consumption is expected to be able to reduce unsafe food and environmental degradation through the increase of organic food consumption. Furthermore, the results may assist the Ministry of Agriculture in implementing policies and offering loans and the organic marketing managers in planning their strategies. Furthermore, study on organic food product consumption among Chinese college students is still lacking. The few studies done on organic food research were by Salleh, Ali, Harun, Jalil and Shaharudin (2010). Salleh et al., (2010) had employed academic staff from Universiti Teknologi MARA (UiTM) and the samples were much of Malays ethnicity (93%). Similarly study carried by Shaharudin, Rezaimy and Jalil (2010) their samples were also predominantly Malays (82.7%). Therefore, exploring the Chinese college students' intention to consume organic food products is important and the findings able to close the gap.

## **Research Questions**

This research aims to measure Chinese college students' intention to consume organic food as well as to determine the factors affecting intention.

1. What are the effects of environmental concerns on Chinese college students' intention to consume organic food products?
2. What are the effects of the subjective norms on Chinese college students' intention to consume organic food products?
3. What are the effects of the media & advertising on Chinese college students' intention to consume organic food products?

## **Literature Review**

The Theory of Reasoned Action prescribes that an individual's attitude may affect his or her behavioural intention (Ajzen and Fishbein, 1980). When the performance of the behaviour is likely to lead to a positive outcome, a person is more likely to perform the behaviour. Past studies have investigated various areas related to the intentions in consumer behaviour, including organic food consumption (Fotopoulos & Kryskallis, 2002; Larue, West, Gendron & Lambert, 2004; Verdurme, Gellynck & Viaene, 2002; Wier & Calverly, 2002).

### **Environmental Concern**

Some past studies have shown that a high level of environmental concern among teachers has been found to be the second top predictor of green purchase behaviour, including the consumption of organic food products (Aini, Fakhru'l-Razi, Laily & Jariah, 2003; Lee, 2008). Chen (2007) and Vermeir and Verbeke (2006) found that consumers who have high environmental concerns such as environmental protection, tend to have more intention towards organic food purchase. In contrast, some studies have portrayed that consumers who are environmentally conscious do not always end up purchasing environmental friendly products such as organic food products (Kim & Choi, 2003; Mainieri, Barnett, Valdero, Unipan & Oskamp, 1997). Furthermore, most consumers rarely take environment friendly issues into consideration when shopping for organic food (Codron, Sirieix and Reardon, 2006). Other studies have reported that environmental motivations lead to organic purchases (Tregear, Dent & McGregor, 1994). Nevertheless,

environmental concerns factoring on Chinese college students' intention to consume organic food products has not been reported in Malaysia. Thus, this study explores the possibility of the environmental concerns factor affecting Chinese college students' intention to consume organic food products. Therefore, this study has formulated the following hypothesis.

Hypothesis 1: There is a significant positive effect of the environmental concerns factor on Chinese college students' intention to consume organic food products.

### **Subjective Norms**

Past studies have either used adults from age 30 to 55 as respondents to study the influence of the parent at home (Salleh et al., 2010). In another study, Gotschi, Vogel & Lindenthal (2007) concluded that children between 14 and 20 years are much more significantly influenced by their fathers towards organic food consumption. Similarly, Stobbelaar, Casimir, Borghuis, Marks, & Zebeda (2007) used school children between 15 and 16 years old as respondents to consider organic food consumption patterns. Other studies had found that students may have fully occupied schedules, with school and extra-curricular activities and thus eat more meals out and are not able to consume organic food products (Boutelle, Birnbaum, Lytle, Murray & Story, 2003). Nevertheless, no researchers explored respondents who are 19 to 24 years Chinese adolescents in relation to the subjective norms factor in Malaysia. Therefore, an investigation on the effects of the subjective norms on Chinese college students' intention towards organic food consumption would provide information to organic food marketers. As a result, this study has formulated the following hypothesis.

Hypothesis 2: There is a significant positive effect of the subjective norms factor on Chinese college students' intention to consume organic food products.

### **Media and Advertising**

Consumers who have been declared to have lower levels of organic product knowledge have been less willing to buy organic food products (Gracie & Magistris, 2007). In fact, one of the methods to gain organic knowledge is achieved through the media and advertising. It was found that governments in European countries provide subsidies for advertising organic food (Michelsen, 1996). Besides, most consumers gain knowledge about the brands of their product of interest through the media and advertising, such as the newspaper, television, text messages or instant messages, blogs, Facebook, and the Internet (Hoyer & MacInnis, 2007). Media and advertising is important as Farooq, Muhammad, Chauhdary & Ashraf (2007) concluded that the organic food agriculture could move quickly with effectively employed media and advertising. However, at this juncture, there is a lack of research on media and advertising as a factor in the research model to test Chinese college students' intention to consume organic food products. Therefore exploration in this area is necessary. The media and advertising will construct a new independent variable in the research model to identify if the variable has a positive effect on the Chinese college students' intention towards organic food product consumption. Therefore, this study has formulated the following hypothesis.

Hypothesis 3: There is a significant positive effect of the media and advertising factor on Chinese college students' intention to consume organic food products.

### **Research Framework and Methodology**

The research model included the independent variables (environmental concerns, subjective norms, and media and advertising), and intention as the dependent variable.

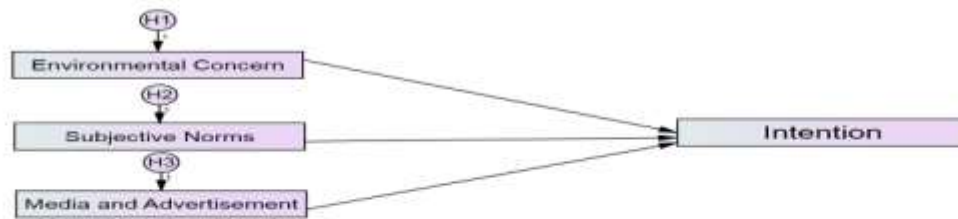


Figure 1 is the research model.

### Population and Sampling

In evaluating the hypotheses of this research, the target population for this study was 20,000 Chinese students in the college campus. The samples were selected based on a systematic random sampling method. In order to select the actual sample size, the researcher referred to Krejcie and Morgan's table. According to Krejcie and Morgan's table (1970), when the population size,  $N=20,000$ , the sample size ( $n$ ) =377. The research design was a non-experiment research design and the study applied an online survey design. Since this study employed an online survey, the email addresses of the students were gained from the college. The systematic sampling was carried out to choose the emails of 500 students to be utilised as respondent in the study. A total 500 samples was chosen because many respondents may have more than one e-mail addresses. Furthermore, the fact that systematic sampling was employed was to let all the participants have an equal chance to take part in this study.

### Instrument

The data in this research was derived from questionnaires that were adapted from several previous works, such as Lawrence (2009) and Wei (1997). The online survey instrument was designed with 19 items measured by a five-point Likert type scale and also demographic variables items. The five-point Likert type scale, which varied from 'strongly agree', 'agree', 'slightly agree,' and 'strongly disagree', was employed to measure the 19 items. The scale measured environmental concerns, subjective norms, media and advertising, and intention. A pre-test was carried out with convenient sampling from the college population to examine the respondents' understanding of the questionnaires. The result from the pre-test showed the respondents understood the survey instruments. A total of 500 questionnaires were emailed to the respondents, and 410 (82%) were returned. The collected data employed goodness of fit to test the reliability, unidimensionality and validity of the scales applied in the measurement model. Subsequently, Structural Equation Modelling (SEM) was enforced to determine the fit of the theoretical research model and the three hypotheses.

### Research Results

A total of 410 usable surveys were returned out of 500, resulting in a response rate of 82%. The samples consisted of 194 males (47.3%) and 216 females (52.7%). The age group of 18 to 21 years constituted the largest proportion of the sample with 385 respondents (94%), while 22 to 24 age group was the smallest proportion with 25 respondents (6.0%). Most of the respondents were studying diploma with 339 of them (82.7%), 41 respondents (10%) embarked on advanced diploma, and 30 respondents (7.3%) were pursuing certificates. In terms of financial support 231 (27%) respondents received the biggest financial assistance from Perbadanan Tabung Pendidikan Nasional (PTPTN). Besides, 154 respondents (37.6%) obtained their financial support from their parents. The remaining 25 respondents (6.1%) obtained their financial support from scholarships. SEM was used to measure the proposed research model and the hypotheses. In reality, the advantage of SEM is the adequacy of its estimated coefficients for the hypothesized relationships in the

research model which suggested two alternatives between the constructs that appear to agree with the goodness of fit (Byrne, 2001). This study provided a good fit of the research model to the data. The ratio  $\chi^2/df$  was 2.562, slightly lower than the value of 3.0 as recommended by Byrne (2001). Incremental fit indexes were higher than 0.90, with CFI of 0.95, and TLI of 0.94. In terms of the absolute fit indexes, they were close to the 0.08 guideline. Absolute fit indexes shown in the research model also showed the reasonable fit of the model, as the RMSEA was .062, and the RMR was .052. Together with these indexes, it is confirmed that the research model was a proper fit. Later, asserting on the fit of the research model, estimated path coefficients were derived for the examined relationships. On top of that, the research hypotheses were discussed as well. Table 1 represent the findings of the goodness of fit indexes. Some of the items in each of the construct were deleted as they were discovered to be planned in an inappropriate manner. The factor loading of each item in the four constructs were all above 0.60. Furthermore, there were a few valid criteria to be met to analyse the SEM path structure, which are unidimensionality, validity and reliability. Reliability and factor loadings are shown in Table 1 and the discriminant validity correlation between the variables is presented in Table 2. Figure 2 presents the final structural model and Table 3 shows the proven fitness index measurements and the results of the relationship between the independent variables (environmental concerns, subjective norms, and media and advertising) and the dependent variable (intention).

Table 1: Reliability and Factor Loading

Constructs	Items	Factor Loading	C.R	AVE	C. Alpha
Environmental Concern	Environc1	0.603	0.791	0.62	0.84
	Environc2	0.802			
	Environe3	0.821			
	Environc4	0.681			
Subjective Norms	SubjectN1	0.745	0.919	0.68	0.90
	SubjectN2	0.798			
	SubjectN3	0.767			
	SubjectN4	0.740			
	SubjectN5	0.752			
	SubjectN6	0.868			
Media/ Advertising	Media2	0.787	0.930	0.81	0.87
	Media3	0.876			
	Media4	0.767			
	Media5	0.704			
Intention	Intent2	0.866	0.844	0.80	0.94
	Intent3	0.885			
	Intent4	0.903			
	Intent5	0.925			
	Intent6	0.902			

C.R= Composite Reliability, AVE= Average Variance Extract

Table 2: Discriminant Validity Correlation between Variables

	Environmental Concern	Subjective Norm	Media and Advertising	Intention
Environmental	1.000			
Subjective Norms	0.325	1.000		
Media and advertising	0.377	0.348	1.000	
Intention	0.257	0.293	0.550	1.000



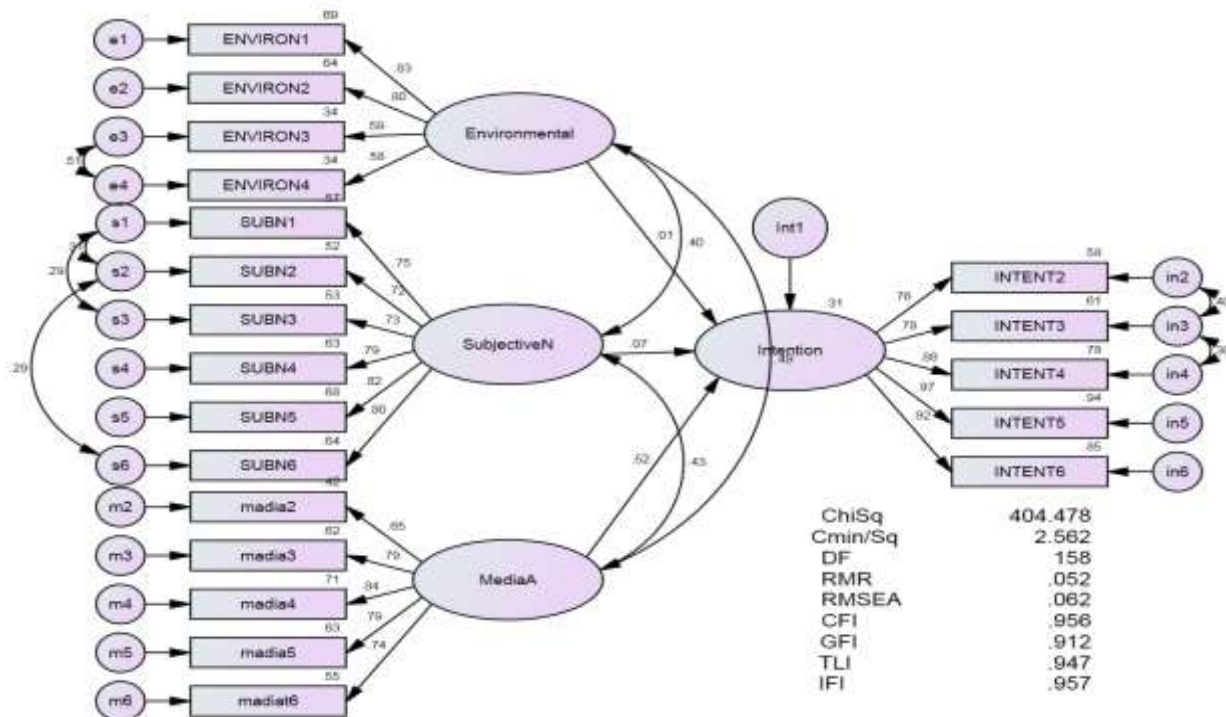


Figure 2: Figure of SEM Measurement Model

Table 4 Summary of Research Hypotheses Result

Path			Est	S.E	C.R	P < value	Result
Intention	←	Environmental concern	0.014	0.081	0.169	0.866	Not Accepted
Intention	←	Subjective norms	0.061	0.047	1.287	0.198	Not Accepted
Intention	←	Media/advertising	0.491	0.062	7.889	***	Accepted

Est= Estimate, S.E= Standard Error, C.R= Critical Ratio, Note: \*\*\* p < 0.001

## Findings, Discussion and Implication

Table 4 indicates the estimate research hypotheses and the results of that significant relationship level. For H1, the hypothesis interprets that the environmental concerns factor is a non-significant predictor of the intention to consume organic food products (Environmental concern:  $\beta = 0.014$ , C.R. = 0.169,  $p = 0.866 > 0.05$ ); the hypothesis is not accepted. The finding is consistent with a past study carried out by Codron, Sirieix and Reardon (2006), which concluded that most consumers rarely take environmental issues into consideration when shopping for organic food. Likewise, H2 hypothesis explains that the subjective norms exogenous variable ( $\beta = 0.061$ , C.R. = 1.287,  $p = 0.198 > 0.05$ ) is proven to be an insignificant predictor of the intention variable in this study. As a result, the hypothesis is not accepted. With regards to the subjective norms, past studies concluded that young adults' primary socialization, for instance, the norms and values learnt at home, had a significant influence on the development of a positive intention to consume organic food (Gotschi et al., 2007; Stobbelaar et al., 2007). Surprisingly, previous studies did not support the present subjective norms. The subjective norms in this study have been proven to be

insignificant with the intention to consume organic food products, which means that the subjective norms factor is not a vital factor influencing Chinese college students' intention to consume organic food products. Others possible explanations for the insignificance of the subjective norms is that college students may have busier schedules, in addition to extra-curricular activities, and may have more away-from-home meals, hence the consumption of organic food products are not possible (Boutelle et al., 2003). Furthermore, since organic food products are expensive, parents' lack of resources may hinder their children's intention to consume the products. H3 provides that the media and advertising construct has been indicative as a significant predictor of the intention to consume organic food products (media and advertising:  $\beta = .470$ , C.R. = 6.076,  $p = 0.000$   $p < .05$ ). Therefore, the hypothesis is accepted. The present finding confirms that the media and advertising are discovered to have a significant and positive relationship with intention.

The findings of this study are consistent with the results of Michelsen (1996) in which they concluded that governments in the European countries have subsidies for advertising organic food such as in Denmark, France and Netherlands. This helps the growth of the organic food market in the European region (Michelsen, 1996). The media and advertising are important, and this is further supported by the notion made by Farooq et al. (2007) which concluded that organic food agriculture could effectively employ the media and advertising to disseminate the benefits. As a result, in order to increase Chinese college students' intention to consume organic food, the media and advertising should be improved. This research model added in media and advertising, making it different from previous studies, as a result it contributed new knowledge to the literature.

## Conclusion

The result of this study acts as a suggestion for marketers, food developers and food industry managers to understand the various factors that influence Chinese college students' intention to consume organic food products. This study contributes in formulating the research methodology for studies covering the interconnections between the various factors (e.g. environmental concerns, subjective norms, and media and advertising) and intention in the research model. The findings of this study showed a positive significant relationship between media and advertising and intention. The finding should be very practicable for marketing managers and the government. If the Malaysian government and marketing managers utilise this finding by advertising the essentials of organic food in suitable internet sites, education books, radio programs, television and magazines, then these certainly will contribute to an increase in organic food consumption. Another possible way of disseminating the organic messages is through the adoption by colleges, universities and high school newspapers, college-based websites, school-based media boards, university guides, sponsored university prospectus and sponsored on- and off-campus events. Perhaps this approach may contribute to increase the current Chinese college students' intention to consume organic food products. However, the environmental concerns and subjective norms surprisingly in this study were found to be not predictors for intention.

## Limitation and Future Research

The limitation of this research is that it is targeted at students of only one college. Furthermore, this study only paid attention to Chinese college students' intention towards organic food product consumed at home. The result might not be similar to the intention and behaviour of other races such as the Malays and the Indians. First, application of the research would be best practiced to cover the other races in future studies in Malaysia. Second, future studies need a qualitative method to explore more in-depth how adolescents view different types of organic foods. The future researches should use the research model to evaluate the relationship among the other factors that may influence senior citizens in Malaysia. Third, the argument of the generalization of the discovery of different countries could provide academics and researchers a strong foundation for applying the research model in a similar business research context. Besides, factors influencing Chinese college students' intention towards frequent organic food product consumption during

college have not been discovered. The study was limited by time, financial constraints and work commitments. The current study was also limited by the fact that the analysis was done with data collected from only one cohort of university college students. The findings are also limited to the general Chinese college students in this country, but not to other countries in the region of the South East Asia. Regardless of the employment of only a cohort of college students, this research leaves a strong foundation for further exploration.

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