

FOOD CHOICE FACTORS AFFECTING GREEN FOOD ATTITUDE IN KLANG VALLEY

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ABSTRACT

The purpose of this study is to determine food choice factors that influence consumers' attitude towards green food based on the Food Choice Questionnaire (FCQ) developed by Steptoe, Pollard & Wardle (1995). Data were collected by interviewing a total number of 400 respondents chosen by using simple random sampling method from four areas in Klang Valley. Pearson correlation and multiple linear regressions were used to analyze the information of a factor that affect consumers' attitude. FCQ is used in this study to determine the food choice factors that influence consumer's attitude. The results indicated that most of the factors in FCQ: sensory appeal ($r=0.115$ $p<0.022$), natural content ($r=0.202$, $p<0.000$), health ($r=0.257$, $p<0.000$), ethical concern ($r=0.169$, $p<0.001$), body weight control ($r=0.167$, $p<0.001$) convenience ($r=0.185$, $p<0.000$), mood ($r=0.186$, $p<0.000$), and price ($r=0.168$, $p<0.001$) have a significant positive relationship with green food attitude except familiarity. Multiple linear regression analysis found that health is the most significant factors more likely to affect consumers' attitude towards green food with the value of 0.009. It can

be concluded that health contributes in encouraging consumers to consume green food; and by referring to this relationship, it can also be presumed that green food consumption might improve consumer health well-being, including a positive change in their consumption. Future research should focus on a similar study with an extended scope to all states in Malaysia. Appropriate effective strategies on implementing health promotion must be done as well as in promoting green food.

Keywords: Food Choice Questionnaires (FCQ), Green Food, Attitude

Introduction

Green food consumption has become more important in our daily lives with each passing year as the food industry increases their emphasis on both global marketing and on product development. The development of this food industry have also affected consumer lifestyles, tastes and preferences, food safety awareness, environmental protection, health and animal welfare on their daily food choice (Phuah et al., 2012). Nowadays, the demand on

safety, wholesome, healthy and nutritious food has increased and drove people to choose green food (Frewer & Miles, 2001). Malaysia is one of the developing country in the world that is also facing a great challenge to ensure balance between development and environmental sustainability (Tan & Lau, 2010) due to the rapid world development which is affecting life. Malaysia is no exception on choosing green food as an alternative on their way to sustainable development. Green food is defined as food which is safe to be consumed, is of fine quality, has nutritious food products, has concern towards animal welfare and is healthy which is produced under the principle of sustainable development (Liu, 2003). Muriel et al. (2012) stated that green food is an important aspect of sustainable development. However, green food in Malaysia is still at the infancy stage and a study of a factor that affects consumer's attitude on choosing green food should been done. Previous researcher mostly focused on green food demographic characteristics (Hugner et al., 2007) rather than factors which affect green food consumption (Kotler, 2003). Steptoe, Pollard and Wardle (1995) have already developed a Food Choice Questionnaire (FCQ) tool to test consumer preferences on food. Thus, this study will investigate the green food consumer socioeconomic characteristics such as income, gender, level of education and etc. This study will also determine the relationship between factors affecting food choices (FCQ) and attitude. The most affecting factors towards consumer green food attitude will also be studied.

Review of the literature

Global food production and consumption

has left a big impact on life. It is clear that technological innovation is required to overcome this matter such as developing and innovating green food. Green food can be divided into three groups which are called Genetically Modified Food (GMF), Environmental Management System (EMS) or organic food. Added value into these agriculture products, for example green food has been used to fulfill consumer needs and wants. Green food concept is referred to foods that are safe to be consumed, fine quality and nutritious food produces under the principle of sustainable development (Phuah et al., 2012). Green food also refers to a food that is healthy to consume, use less chemicals, has more concern on food safety and environment and it achieves consistently high standard of animal health and welfare than conventional foods (Phuah et al., 2012).

Food Choice and Green Food Attitude

Food choices are influenced by many factors. The development of the 36-items food choice questionnaire (FCQ) has provided the nine factors thought to be important in food choice which are sensory appeal, natural content, health, ethical concern, weight control, convenience, familiarity, mood and price (Steptoe et al., 1995). Food choice is, however, a complex function of preferences for sensory (taste, colour, texture) characteristics, combined with non-sensory factors, including food related expectations and attitudes (Rozin, 1996; Shepherd, 1989), health claims (Vickers, 1993), price (Vickers, 1993), ethical concern (Sparks, Shepherd & Frewer, 1995) and mood (Rogers, 1996). This shows that factors on food choice also interact directly towards shaping consumer attitudes in food choice. For example, subjects who have positive attitude towards reduced

fat will have more consideration on the nutritional content of the food. Economic theory said that individual attitude in purchasing was influenced by intention and product characteristics (Mario et al., 2009). A previous study of sensory appeal factor shows that consumers are not attracted to green food visual characteristics (Radman, 2005) because most of the consumers choose visual characteristics as a minimal factor in choosing food (Thompson & Kidwell, 1998). However, not all green foods have an unattractive appearance. This is because there are several significant factors for the marketers to consider in consumers' opinion on product appearance, and this have been proven by Thompson and Kidwell (1998), which stated that there are more visual defects especially on green food which will affect consumers buying green food. Lockie et al. (2002) said that natural content is the main reason for buying green food. Natural content refers to unprocessed food, having non-additives, and free from chemical. Natural content terms could give a positive impact towards consumers' buying behavior (Zeinab & Seyedeh, 2010). Green food could be seen as different to other ordinary food which are related to health. A study by Phuah et al. (2011), found that most of the consumers are aware of the fact that green foods are healthier, safer to consume and help protect the environment under the principle of sustainable agricultural development and they also believe that green food use less chemicals, pesticide, herbicide or insecticide, for example in organic food. This is supported by Andre Leu (2003) that green food, such as organic food, is richer in vitamins, minerals, and nutrients that make people healthy, younger-looking, and cancer-free as this food is rich in antioxidants to fight cancer and also high in compounds to protect the immune system.

Green food also can help consumers' body weight control while ethical concern is stated by Ottman (1992) where the green food was produced based on consumer, government and organization attributes such as the Environmental Management System (EMS) procedure, animal welfare, environmental concern, and so on. A previous study on motives for food choice between four countries: Japan, Taiwan, Malaysia and New Zealand gave different results when consumers in these four countries chose different main factors in their food choice. Taiwan and Malaysia have some close similarities in choosing health, natural content, weight control and convenience as the factors that affect their food choice (Prescott et al., 2002). This is because of the geographical location and same ethnicity (Chinese) are in this two countries where it is generally understood that medicine may come from food (Prescott et al., 2002). New Zealand also proved that cultural and geographical location influenced food choice as New Zealand resulted sensory appeal, price, health and convenience as their food choice, the same with the UK (Steptoe et al., 1995) and Finland (Linderman & Vaananen, 2000).

Research methodology

Population, sample and sampling design

The survey was conducted using mall-intercept personal survey where green food was sold and the availability of green food within the mall locations was confirmed. Potential respondents were approached while they were shopping in supermarkets located in 4 different locations in Klang Valley, which is in Federal Territory of Kuala Lumpur, Federal Territory of Putrajaya, Ampang, and Subang

Jaya using simple random sampling. 400 respondents were requested to fill up the questionnaires by trained enumerators on average total 30 minutes by each respondent to answer the questionnaire.

Research instrument

The questionnaires were designed especially to identify factors that affecting consumer attitude toward green food. The first section asked for respondent's background such as gender, income, level of education, and etc. The next section asked about the factors that affect consumer green food attitude which is adapted from Food Choice Questionnaires (FCQ) developed by Steptoe, Pollard & Wardle (1995). The questions are related to food in general that is consumed on a typical day. The FCQ consist of nine factors, namely sensory appeal, natural content, health, ethical concern, weight control, convenience, familiarity, mood and price. Sensory appeal is when sight, smell, sound, feeling and taste were chosen as an important consideration. Natural content is concern with the use of chemical, additives and natural ingredients, while health is when the food consumption ensures consumer well-being. The factor of ethical concern is when the green food provides ethical analysis and guidance for human conduct in the production, distribution, preparation and consumption of food. Other factors such as weight control is related to consumer body weight control, convenience on purchasing and preparation of the green food, familiarity as the green food was consumed regularly or exposed to it, influencing mood for example can reduce stress or be happy, and the price factor which it is related to consumer limited resources; money. This factors was measured by using Likert Scales from four responses which is 1=least important, 2=not important,

3=important, and 4=most important. The third section will provide respondents' attitude towards green food and is measured using 10 structured questionnaire with a Likert Scales responses of 1 to 5 (1 represent strongly disagree and 5 represent strongly agree).

Data analysis

Data was analyzed using SPSS 22.0. Descriptive analyses, Pearson correlation and multiple linear regressions were used to analyze the information gathered from questionnaire. Descriptive analysis was used to summarize the socioeconomic data into simpler summary to make it easier to understand and measure, while Pearson correlation is used to indicate a relationship between food choice factors that affect consumers' green food attitude. Pearson correlation is also used to determine the relationship between factors in food choice (FCQ) and green food attitude. However, multiple linear regressions are also used to indicate the underlying factors that most influence green food's attitude. The Cronbach's alpha value which is obtained from reliability analysis for sensory appeal is 0.851, natural content is 0.507, health is 0.895, ethical concern is 0.689, weight control is 0.934, familiarity is 0.881, convenience is 0.916, mood is 0.957, and price is 0.726. However, for consumer's green food attitude, the Cronbach Alpha value is 0.711.

Analysis of findings and discussion

This part will present the analysis of research findings from 600 respondents from households in the Klang Valley (Federal Territory of Kuala Lumpur, Federal Territory of Putrajaya, Ampang, and Subang Jaya)

and to identify green food choice factors that affect consumer’s attitude. Discussion will involve the following matters:

- a. Profile of Respondents
- b. Consumer’s Green Food Attitude
- c. Green Food Choice Factors and Relationship Towards Consumer’s Attitude

Profile of respondents

In this study, the majority of the respondents were female with 241 (60.3%) and male with 159 (39.8%). This is because female is more likely doing the food shopping for the household rather than male (Anne & Sally, 2000). The mean age of the respondent was 36.46 years. More than one third of the respondents were between the ages of 20-30 (40.25%). This is supported by Crask and Reynolds (1978) which stated that frequent food shoppers tended to be young, more educated, and had higher incomes.

For ethnicity, 272 (68.0%) were Malays, 94 (23.5%) were Chinese, and the remaining 34 (8.5%) were Indian. Klang Valley residents are mostly Malays and this population was reported by Department of Statistics Malaysia (2010). More than half of the respondents were married 298 (74.5%) and 87 (21.8%) were single. The respondent were highly educated as 116 (29.0%) of them are degree holders. Most of the respondents were in the private sector 164 (41.0%) and 110 (27.5%) of them in the government sector. The mean monthly income of the respondents was RM4,557.02. However, the Department of Statistics Malaysia in 2014 stated that mean monthly gross household income in urban areas is RM6,833. Thus, the respondents were generally perceived as low income group because almost half of the respondents (66.25%) received a monthly income ranging RM3,000 to RM4,000 which is below the mean gross household income as reported by the Department of Statistics Malaysia in 2014 as above.

Table 1: Profile of respondents

Items	n	%	Mean
Gender			
Male	159	39.8	
Female	241	60.3	
Age			36.46
20-30	161	40.25	
31-40	123	30.75	
41-50	66	16.5	
51-60	43	10.75	
61-72	7	1.75	
Ethnic			
Malay/Bumiputra	272	68.0	
Chinese	94	23.5	
Indian	34	8.5	
Education Level			
Primary School	8	2.0	
Lower Secondary School	54	13.5	
Higher Secondary School	92	23.0	
Certificate/Diploma	100	25.0	
Degree	116	29.0	
Master/PhD	30	7.5	

Table 1 Continue

Status			
Married	298	74.5	
Single	87	21.8	
Other	15	3.8	
Job Sector			
Government Sector	110	27.5	
Private Sector	164	41.0	
Business/Freelance	68	17.0	
Housewives/Unemployed	47	11.8	
Retire	11	2.8	
Employment Category			
Professional and Managerial	106	26.5	
Technical and Services	90	22.5	
Support Staff	91	22.8	
General Workers	30	7.5	
Others	27	6.8	
Monthly Income (RM)			
2000-2999	1	0.25	4557.02
3000-4000	265	66.25	
4001-9000	109	27.25	
9001-20000	25	6.25	

Green Food Consumers' Attitude

Generally, Table 2 shows that, green food consumers have a positive attitude towards green food. This can be proven from the statement that they trust green food have high nutrient content scored the highest mean score, 3.91. Respondents are also sure that green food have more quality (mean=3.86) and believe in green

food security (mean=3.72). They are willing to buy green food (mean=3.63) even though they think that green food is expensive (mean=3.54) but they do not mind spending their income to buy green food (mean=3.45). Green food consumer also believe that the price of green food are reasonable though expensive (mean=3.33).

Table 2: Means Score on Overall Respondent's Attitude Variable

Items	Mean
1. I trust that green food have high nutrient content.	3.91
2. I am sure that green food have more quality.	3.86
3. I believe in green food security.	3.72
4. I am willing to buy green food.	3.63
5. I think that green food is expensive.	3.54
6. I do not mind spending my income to buy green food.	3.45
7. I believe that the price of green food are reasonable though expensive.	3.33
8. I find it hard to identify green food.	3.29
9. I am not interested with green food.	2.32
10. The use of green food does not help in potecting the environment.	2.20

The lowest mean score is on a negative statement of whether they find it hard to identify green food (mean=3.29). Less of the respondents also do not really agree that they are not interested with green food (mean=2.32) and the use of green food does not help in protecting the environment (mean=2.20).

Food Choice Factors and Relationship towards Consumer’s Attitude

Table 3 shows the result of analysis in identifying the relationship between factors that affect consumers towards green food attitude which include nine factors as stated in Food Choice Questionnaires (FCQ) by Stephoe, Pollard & Wardle (1995) and attitude. The relationship is shown as below:

Table 3: Relationship between food choice factors affecting green food attitude

Items	Green Food Attitude	
	r	p
Factors (FCQ)		
Sensory Appeal	0.115*	0.022
Natural Content	0.202**	0.000
Health	0.257**	0.000
Ethical Concern	0.169**	0.001
Weight Control	0.167**	0.001
Convenience	0.185**	0.000
Familiarity	0.048	0.342
Mood	0.186**	0.000
Price	0.168**	0.001

Notes:

*p<0.05, **p<0.10

From the nine factors in FCQ, there are eight factors which are significantly and positively related to green food practices which are sensory appeal, natural content, health, ethical concern, weight control, convenience, mood and price. Correlation analysis shows the relationship between two variables; digits that are nearer to 1 show the better relation between two variables. The relation between sensory appeal and attitude was 0.115; this is positive and shows a positive relation. Natural content and attitude were 0.202, health was 0.257, ethical concern was 0.069, weight control was 0.167, convenience was 0.185, mood was 0.186, and price was 0.168. The highest digit was for health and lowest was for sensory appeal. This shows that green food consumers rated health, natural content and mood as more important. The result is consistent with other studies of health-related behavior and belief which typically shows healthier dietary choices and more positive attitudes towards the health (Stephoe et al., 1995). Past studies also found that Malaysians rated health as an important factor in food

choice (Prescott et al., 2002). The value of familiarity was not related to the attitude.

Results from the multiple linear regression analysis in Table 4 were performed to identify the most influential factors affecting green food attitude. Eight independent

variables were included in the model, namely sensory appeal, natural content, health, ethical concern, body weight control, convenience, mood and price. As shown in the table, the F value is 4.425 with p-value 0.000. It shows that the regression model fit the data and was significant where p-value is less than alpha (0.05).

Table 4: Regression analysis of food choice factors towards green food attitude

	b	β	t	Sig.
Sensory Appeal	0.020	0.009	0.164	0.870
Natural Content	0.179	0.064	1.022	0.307
Health	0.278	0.164	2.592*	0.010
Ethical Concern	0.074	0.030	0.481	0.631
Body Weight Control	-0.041	-0.015	-0.241	0.810
Convenience	0.034	0.021	0.300	0.764
Familiarity	-0.246	-0.108	-1.813	0.071
Mood	0.123	0.109	1.603	0.110
Price	0.197	0.088	1.586	0.113

Notes:

R=0.304, R-square=0.093, Adjusted R-square=0.072, F=4.425, Sig. F=0.000

*p<0.01

In terms of the strongest factor affecting consumer’s attitude, healthy was found to be the strongest factors as the beta value was the highest (0.164) compared to the other factors. The result showed that health is the most significant determinant where their respective p-value was less than alpha (0.10) and it is 0.010 more likely to affect consumer’s attitude towards green food. Based on the result, concern on green food, and health must be at the top of the priority among green food producers in meeting the consumers’ needs and wants. The details of b-value, beta, and Sig (p-value) are tabulated in Table 4.

Conclusion, implications and direction for future research

From the findings, consumers show a positive attitude towards green food consumption which can lead to promotion of green food and influence on others to consume green food for better health and well-being. However, there are some consumers who show negative attitude towards green food, and it may be due to the price and unfamiliarity with the products. However, it is obvious that health has a positive impact on affecting green food attitude. It indicates that people have the intention to purchase green food for its benefits to health and well-being. Details

show that health could be one of the good items in encouraging individuals to purchase healthier foods like green food and predict a better future from their consumption where mood also received a highest response and have strong relationship with attitude. Many people purchase green food because they believe it is healthier than conventionally grown food (Andre Leu, 2003). Findings from the Pearson correlation analysis exposed that eight items (sensory appeal, natural content, health, ethical concern, weight control convenience, mood and price) have a significant relationship with green food attitude. From all of these factors, multiple linear regression analysis indicated that health is the only one of many considerations relevant to food choice.

This study serves to reach a better understanding about factors that affect Malaysian consumers have on green food. It helps to distinguish the existing regulation and government support on green food consumption. In addition, this study also helps to provide good information about the taste preferences of local consumers, especially to manufacturers and marketers. With this, this study can help to produce better green food for consumers.

In summary, future research could yield useful insights by studying different product categories based on the factors that affect green food attitude and investigating how this practice would impact their well-being. Appropriate strategies for green food promotion may perhaps be developed for sectors with different priorities. Besides that, more effective awareness campaign or event should be done to promote green food and its benefits. More effective implementation of health promotion strategies may depend on the recognition of the status of health in comparison with

other factors in the selection of food.

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