

## Factor Influencing Consumer Willingness to Pay for Green Foods Consumption

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### Abstract

Green food is produced using environmentally friendly technology and will not harm the environment. The main objective of this research is to determine the factors that influence the willingness to pay for the consumption of green foods among Universiti Putra Malaysia (UPM) students. A total of 250 respondents were involved in this study through simple random sampling. Questionnaires were used as research instruments and distributed online using Google Forms. Data were analysed using Statistical Package for Social Science (SPSS) for Windows version 25.0. Multiple Linear Regression analysis was used to study the factors influencing consumers' willingness to pay for green foods consumption. The results of Multiple Linear Regression analysis found that the green foods attributes and green advertising significantly influenced the willingness of consumers to pay for green foods (adjusted  $R^2 = 0.876$ ,  $F = 0.000$ ,  $p \leq 0.001$ ). In conclusion, green advertising (Beta = 0.548) was the strongest significant correlation followed by green foods attributes (Beta = 0.297). The implication of this study is that it allows companies to be more focused on these factors that further influence consumers' willingness to pay for green foods.

**Keywords:** Trust, Attributes, Advertising, Purchase Intentions, Green Foods.

### Introduction

Green foods are produced using environmentally friendly technologies and will not cause harm to the environment (Hale, 2018). They have a variety of characteristics, including original planting, recyclable, reusable, biodegradable, natural ingredients containing non-toxic or even approved chemical substances, and have not been tested by animals (Hamilton, 2018). Environmentally friendly packaging (Mishra & Sharma, 2010). In this regard, green food is a family that includes organic and non-organic food (Saleki & Sayedsaleki, 2012). The United States Department of Agriculture (USDA) defines organic products as products that do not use sewage sludge, synthetic fertilizers, pesticides, genetic engineering, hormones,

irradiation and antibiotics (Lim et al., 2014), and non-organic foods to a certain extent. The use of chemicals is permitted (Saleki and Sayedsaleki, 2012). Therefore, green food and organic food have subtle differences in their cultivation methods, but they both consider environmental welfare, health and safety (Yu et al., 2014).

With the development and destruction of the environment and natural resources, the concept of "green consumerism" has flourished worldwide and has attracted increasing attention (Chekima et al., 2019). Nowadays, as people's lifestyles are affected by the COVID-19 pandemic, consumers are becoming more and more aware of the importance of green ecology (Zhao et al., 2010). They began to pay attention to the ecological impact, food safety and security issues (Zepeda & Nie, 2012). Increasing attention to future generations, increased knowledge, health awareness, and environmental well-being have contributed to the growing popularity of the green movement (Yogananda & Nair, 2019). The emergence of green consumer behaviour has changed the importance of various determinants and consumers' attitudes towards product purchase intentions (Yogananda & Nair, 2019). In order to effectively respond to the growth of the green food market, it is very important to study the purchasing behaviour of its consumers, especially paying attention to the purchase intention, which was the prerequisite for purchasing behaviour (Xin, Huaming, & Angelika, 2020). Therefore, marketers and scholars need to have an in-depth understanding of what factors will motivate consumers to buy green food (Zikmund et al., 2013).

In addition, Malaysia is a country with rapid economic development in Southeast Asia (Maichum et al., 2017). The government and citizens support green concepts and policies to promote the consumption of ecological products (Johe & Bhullar, 2016). In 1974, the "Environmental Quality Act" was passed and the Ministry of Energy and Green Energy was established (Yogananda & Nair, 2019). The development of Malaysia's green food industry is crucial, and information about consumers' willingness to buy green foods was urgently needed (Yogananda & Nair, 2019). Although the field of organic food research is widespread, consumer behavior research on green food is rare (Joshi & Rahman, 2017). Many authors who conduct research in this field believe that researchers and stakeholders need to conduct more research to understand the impact of consumers' factors of willingness to buy green foods (Yogananda & Nair, 2019).

Therefore, it is very important to investigate and determine the factors that affect consumers' willingness to buy green foods (Hassan et al., 2015). Although previous studies have provided some evidence on the consumption factors of organic and green foods (Hossain & Lim, 2016). In this study, we will verify their influence and explore other factors such as trust on green foods, purchase intention, green foods attributes and green advertising.

Furthermore, in this research also touch on the Shared Prosperity Vision (SPV 2030), one of the 8 Shared Prosperity Vision Enablers that is sustainability, Twelfth Malaysia Plan 2021-2025 (RMK-12) - environmental sustainability and Sustainable Development Goals 2020 (SDGs) at Goals 12 – ensure sustainable consumption and production patterns. These three different plans have the same goal that to protect the environment sustainability (Maichum et al., 2016). The dimension of environmental sustainability takes into account the blue economy, green technology, renewable energy, and climate change adaptation and mitigation (Liobikiene et al., 2016). So, in this new normal, due to the Covid-19 pandemic, consumer

aware about the environmental sustainability and willing to pay for green foods consumption. For this research, a study on consumer willingness to pay for green foods consumption also can help Malaysia to know more in detail of consumers that the factors' influence them to pay for green foods consumption and can further improvements and making Malaysia success the goal of SPV 2030, RMK – 12 and SDGs 2020.

### **Literature Review**

#### *Theory of Planned behaviour (TPB) and Green Foods*

The term "green" appeared after the initial seminar on ecological marketing in 1975. Later, the increasing demand for environmentally friendly products led to extensive research on environmental consumerism (Cherian & Jacob, 2012). The previous research adopted The TPB model is because it can overcome the weaknesses of the Rational Action Theory (TRA) model (Tarkiainen & Sundqvist, 2005). The TPB model includes an involuntary control aspect called perceptual behaviour control, which is not considered in the TRA model (Chen, 2007). The TPB model revolves around the relationship between personal behavioural intentions and attitudes, subjective norms, and perceived behaviour control, and is suitable for predicting environmental product behaviour (Chen, 2007). Several authors have demonstrated the advantages of the factors of the TPB model in predicting intent (Paul, Modi & Patel, 2016). The model optimizes the connection between intent and its structure to strengthen the prediction of green product purchase intent (Tavakol & Dennick, 2011). Interestingly, this model has proven its relevance, strength and effectiveness in many fields such as green hotels, energy conservation and organic products (Yadav & Pathak, 2016).

There were guarantees the protection of consumer violence and environmental resources, but consumers lack attention to protection and purchase activities (Suhaimi et al., 2019). The depletion of resources undoubtedly warns of sustainable living practices (Thambiah et al., 2015). If no measures are taken, it will affect the needs of future generations (Suhaimi et al., 2019). Therefore, Malaysian consumers urgently need to change their consumption habits to support the sustainable development of green foods (Suhaimi et al., 2019). Although some studies have shown that Malaysians are doing this, it is necessary to further explore the factors affecting this practice in order to have a more comprehensive understanding of consumer willingness to purchase green foods (Suhaimi et al., 2019). As far as consumers' purchase behaviours are concerned, consumers will first be affected by a variety of influences, which in turn will determine their willingness to buy green foods (Yogananda & Nair, 2019). Consumers will first be affected by a variety of influences, and then determine their willingness to buy green food. This includes information, knowledge and confidence (Tan, 2019). On the other hand, other researchers also described intent as being able to effectively predict the actual behaviour of an individual in the future (Teng et al., 2018). Intention is an attitude-behaviour relationship that expresses the amount of work required to accomplish something (Teng et al., 2018). The former environmental problems have been plagued all countries on the planet.

#### *Trust on Green Foods*

Trust is defined as "consumers willing to buy green food because of their belief in environmental credibility, goodwill, and ability" (Ricci et al., 2018). Consumers' purchase intentions are affected by consumer trust (Qi & Ploeger, 2019). In other words, trust has a positive effect on the willingness to purchase environmentally friendly food (Wahid et al.,

2011). In addition, consumer trust is seen as the key to help predict their long-term behaviour (Ricci et al., 2018). If buyers have trust experience in green food, they will be more inclined to buy the product (Wright et al., 2012). However, when reviewing the literature, it is found that there are not many studies on the role of green food attributes in regulating the relationship between green advertisements in determining the purchase intention of young adult consumers in Malaysia for green food (Tan, 2019).

Consumers' willingness to buy green products can be changed by consumers' trust in green products (Yadav & Pathak, 2016). The more confident consumers are in green products, the higher their willingness to buy (Yadav & Pathak, 2016). Therefore, it is undeniable that producers of green foods need to maintain trust, because this will help maintain consumers' purchase intentions and may create significant customer lifetime value through these consumers' purchase increments (Yazdanpanah & Forouzani, 2015).

H1: Trust on green foods has a significant influence on the willingness to pay for green foods consumption.

#### *Purchase Intention*

Purchase intentions result from a trade-off of the advantages and disadvantages of a product or service, as perceived by consumers (Luce et al., 2001). People who are highly concerned about the environment may not necessarily buy green food (Eles & Sihombing, 2017). Consumers usually seek more information about green foods until they are more confident in their choices (Eles & Sihombing, 2017). They will search for the required information until they reach a satisfactory saturation point (Eles & Sihombing, 2017). Once consumers have met their demand for green food, they are willing to pay more regardless of the price (Li et al., 2019).

More consumers tend to support environmentally friendly products, which may indicate that consumers are willing to pay more for green food (Li et al., 2019). An important study proves that high prices of green foods inhibit actual purchases (Marin et al., 2016). According to literature review, there are inconsistencies in the results of previous studies on willingness to pay (Zakersalehi & Zakersalehi, 2012). In addition, the role of green food attributes as an intermediary variable between willingness to pay more and willingness to buy has been rarely mentioned in previous studies in the context of Malaysian consumers (Tan, 2019).

H2: Purchase intention has a significant influence on the willingness to pay for green foods consumption.

#### *Green Foods Attributes*

When consumers realize the importance and benefits of this concept, the concept of green food can be more and more instilled into the minds of Malaysians (Tan, 2019). Consumers prefer green food because it is rich in nutrients and safe to eat, produced in a human animal treatment environment, and healthier (Schifferstein & Ophuis, 2019). The attributes of green food products include different aspects such as good quality, safe food, providing health benefits, protecting animal welfare, environmentally friendly, and having appropriate labels (Tan, 2019). For most consumers, one of the most important attributes is food safety, which reflects that food has been properly handled and of appropriate quality (Petljak et al., 2018).

In this age and era, consumers are getting better Much information and knowledge about pesticides, insecticides, fungicides and herbicides used in food production (Teng, 2011). Therefore, food safety is important to any food industry operator, because consumers are now looking for safe, high-quality and healthy food (Leong & Mariadass, 2019).

In addition, previous studies have extensively studied the health benefits of different foods and products (Zhen & Mansori, 2012). Previous research has proved that health-conscious consumers seek healthy foods and products that benefit them (Mai & Hoffmann, 2012). These consumers value healthy dishes that are organic, natural, fresh or wholesome (Tan, 2019). In addition, these health-conscious consumers are aware of and concerned about the health benefits of green foods because they attribute green foods to health and a better quality of life (Yeon et al., 2011). Previous studies on labelling, health benefits, animal welfare and environmental friendliness have found that the attributes of green food have a significant impact on consumers' purchase intentions (Ahmad & Judhi, 2010). However, Malaysian consumers have a lesser role in influencing the relationship between green advertising, trust, willingness to pay, and willingness to purchase with the attributes of green food as an intermediary (Tan, 2019).

H3: Green foods attributes has a significant influence on the willingness to pay for green foods consumption.

#### *Green Advertisement*

Advertising is described as the clarity of advertising to portray consumers' desire to persuade and introduce purchase intentions (Chan et al., 2009). Green advertising can be seen as an advertisement linking food to the natural environment (Schmuck et al., 2018). Consumers usually obtain information related to green food through information activities and publicity (Tan, 2019). There is little research on the impact of green advertising on young adult consumers in Malaysia (Ali et al., 2018). Due to the limited research on the relationship between green food attributes and green advertising to determine consumers' willingness to buy green food, it is necessary to further explore the impact of this effect on consumers (Tan, 2019).

Past studies have found that green advertising has complementary partial mediation effects, which helps increase the list of new discoveries in the green food literature (Cherian & Jacob, 2012). This shows that consumers are indeed paying attention to green advertising and affect their willingness to buy green food (Yaowarat et al., 2015). Therefore, green food producers and marketers need to further utilize various advertising media, such as social media sites, because the results show that these young adult consumers obtain their green foods information through online channels (Phuah et al., 2011). Using these channels, marketers can also increase the publicity of green food to improve consumers' awareness of green products under eco-labels, informing consumer about the meaning and availability of green food, and the use of green food in the minds of consumers which is the positioning of the benefits (Shaharudin et al., 2010). Therefore, this research proposes the following hypotheses. Green advertisement has a significant influence on the willingness to pay for green foods consumption (Cleaveland et al., 2005).

H4: Green advertisement has a significant influence on the willingness to pay for green foods consumption.

#### *Factors Influencing Consumer Willingness to Pay*

First, consumers' willingness to pay is the core input of the price response model, which provides information for optimal pricing and promotion decisions (Lea & Worsley, 2005). Second, the introduction price of new products must be carefully selected, because poorly considered introduction prices can jeopardize their development investment and threaten innovation failure (Ahmad et al., 2010). Although previous studies have identified several variables, such as altruism, price awareness, reference prices, income and the perceived fairness of the price paid, affect consumers' willingness to pay (WTP) (Schmidt & Bijmolt, 2020). However, many of these variables may function in complex interactive ways. In addition, other variables such as trust on green foods, purchase intention, green foods attributes and green advertising may also affect consumers' willingness to buy.

Academically, perceptual behaviour control has been shown to have a significant relationship with the intention to purchase "green" food (Magnusson, Arvola, Hursti, Aberg & Sjoden, 2001). In addition, previous studies have proved that consumers' willingness to purchase green products is not only affected by trust on green foods, green advertising, green foods attributes and purchase intention (Padel & Foster, 2005). For example, the environmental concerns, health awareness, and subjective norms that previous studies have shown are also significantly related to green food purchase intentions (Zeinab & Seyedeh, 2012). Therefore, the influencing factors that marketers should pay attention to are environmental welfare, price, availability, health benefits, and finally marketing information that may affect others to buy more green foods based on the current results (Aschemann & Aagaard, 2014).

H5: Predictor factors have significant influence on the willingness to pay for green foods consumption.

#### **Methodology**

This research consists of a quantitative approach by providing a questionnaire to consumers in Universiti Putra Malaysia (UPM). A total of 250 respondents were involved in this study through simple random sampling. Questionnaires were used as research instruments and online distributed by using Google Forms. Data were analysed using Statistical Package for Social Science (SPSS) for Windows version 25.0. Pearson correlation test was used to examine the relationship between the two variables and Multiple Linear Regression (MLR) analysis was used to study the factors influencing consumers' willingness to pay for green foods consumption.

#### **Result and Discussion**

##### *Demographic Information*

Based on Table 1, the result of demographic information, a total of 250 respondents which consists males (36.8 percent) and females (63.2 percent). For the age category, 12.0 percent were 21 years old, 70.0 percent were 22 years old and 18.0 percent were 23 years old. For the ethnic category, 68.8 percent of the respondents were Malay, followed by 13.6 percent of the respondents were Chinese and the 17.6 percent of the respondents were India.

For educational level, it can be seen that the majority of the respondents were at Bachelor's degree holders (99.6 percent). Other than that, it can be seen that the most of the respondents had 4-6 members in their family (61.2 percent), 1-3 members in their family (27.2 percent) and 7 and above members in their family (11.6 percent).

Table 1  
*Demographic Information*

<b>Characteristics</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Gender (N = 250)</b>		
Male	92	36.8
Female	158	63.2
<b>Age (N = 250)</b>		
21	30	12.0
22	175	70.0
23	18	18.0
<b>Ethnic (N = 250)</b>		
Malay	172	68.8
Chinese	34	13.6
Indian	44	17.6
<b>Level of Education (N = 250)</b>		
Foundation	1	0.4
Diploma	0	0
Bachelor	249	99.6
Master	0	0
PhD	0	0
<b>How many members in your family (Include yourself) (N = 250)</b>		
1 - 3	68	27.2
4 - 6	153	61.2
7 and above	29	11.6

### **Pearson Correlation**

Pearson's correlation coefficient was used to examine the direction and strength of the relationship among the variable in this study. It ranges from value of -1 to +1. The higher the correlation coefficient indicated the stronger the relationship between the independent variables with the dependent variable. Positive one means a perfect linear relationship and negative one represents perfect negative relationship. Pearson's correlation coefficient was used when the variables were measured using interval or ratio scales. In this study, both dependent and independent variables were measured in Likert scale method that was an interval scale.

Table 2 shows the result of Pearson correlation coefficient between independent variables and dependent variable. The independent variables were trust on green foods, purchase intention, green foods attributes and green advertising. The dependent variable was willingness to pay for green foods consumption.

Firstly, the Pearson correlation coefficient between trust on green foods and willingness to pay for green foods consumption is 0.843 indicates that trust on green foods was positively influence the willingness to pay for green foods consumption. There was a high correlation between trust on green foods and willingness to pay for green foods consumption. The p-value equal to 0.000 which is less than 0.01, there is a significant relationship between trust on green foods and willingness to pay for green foods consumption in new normal. So, the hypothesis 1 of this study was accepted and it shows that there was a positive relationship between trust on green foods and willingness to pay for green foods consumption. This result also was found in previous study (Tan, 2019; Nguyen 2019), this indicates that the trust on green foods and consumer willingness to pay for green foods consumption in new normal had strong positive relationship.

Secondly, the Pearson correlation coefficient between purchase intention and willingness to pay for green foods consumption is 0.849 indicates that purchase intention will positively influence the willingness to pay for green foods consumption. There is a high correlation between purchase intention and willingness to pay for green foods consumption in new normal. The p-value equal to 0.000 which is less than 0.01, there is a significant relationship between purchase intention and willingness to pay for green foods consumption. So, the hypothesis 2 of this study is accepted and it shows that there was a positive relationship between purchase intention and willingness to pay for green foods consumption. This result also was found in previous research (Tan, 2019 and Zikmund, Babin, Carr & Griffin, 2013). This indicates that the trust on green foods and consumer willingness to pay for green foods consumption had strong positive relationship.

Furthermore, the Pearson correlation coefficient between green foods attributes and willingness to pay for green foods consumption was 0.908 indicates that green foods attributes positively influencing the willingness to pay for green foods consumption. There is a very high correlation between green foods attributes and willingness to pay for green foods consumption. The p-value equal to 0.000 which is less than 0.01, there is a significant relationship between green foods attributes and willingness to pay for green foods consumption. So, the hypothesis 3 of this study was accepted and it shows that there is a positive relationship between green foods attributes and willingness to pay for green foods consumption. This result also was found in previous research (Tan, 2019; Phuah et al., 2011). This indicates that the trust on green foods and consumer willingness to pay for green foods consumption had strong positive relationship.

Moreover, the Pearson correlation coefficient between green advertising and willingness to pay for green foods consumption is 0.926 indicates that green advertisement will positively influence the willingness to pay for green foods consumption. There is a very high correlation between green advertising and willingness to pay for green foods consumption. The p-value equal to 0.000 which is less than 0.01, there is a significant relationship between green advertising and willingness to pay for green foods consumption. So, the hypothesis 4 of this



study was accepted and shows a positive relationship between green advertising and willingness to pay for green foods consumption.

Table 2

*Pearson Correlation*

Variables	Pearson Coefficient (r-value)	Correlation p
Trust on green foods	0.843	0.001
Purchase intention	0.849	0.001
Green foods attributes	0.908	0.001
Green advertisement	0.926	0.001

\*Correlation is significant at the 0.01 level (2-tailed)

**Multiple Linear Regression**

Based on the Table 3, a Multiple Linear Regression was performed to test which variable is the most dominant factor in influencing the willingness to pay for green foods consumption in new normal among UPM students. The result shows that the green advertising was the most important factors that influence UPM students' the willingness to pay for green foods consumption in new normal because of carries beta of 0.548. While, green foods attributes were the second highest factors that influencing UPM students' the willingness to pay for green foods consumption in new normal with the beta of 0.297. While, trust on green foods and purchase intention were among the factors that no influence UPM students on their willingness to pay for green foods consumption in new normal. This result of coefficient Table 2 shows the important of factors influencing the willingness to pay for green foods consumption in new normal were green advertising and green foods attributes. While trust on green foods and purchase intention did not influencing the willingness to pay for green foods consumption in new normal among UPM students.

Table 3

*Multiple Linear Regression*

Variables	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	-1.935	1.071		-1.806	0.072
Trust on green foods	0.99	0.067	0.085	1.485	0.139
Purchase intention	0.039	0.070	0.035	0.568	0.571
Green foods attributes	0.332	0.074	0.297	4.480	0.000***
Green advertisement	0.582	0.066	0.548	8.849	0.000***

a. Dependent Variable: willingness to pay for green foods consumption

Significant:  $p < 0.001$ \*\*\*

According to the Table 4, the R value is 0.937, R Square is 0.878 and Adjusted R Square is 0.876. Adjusted R Square shows that 87.6 percent of the willingness to pay for green foods consumption can be explained by trust on green foods, purchase intention, green foods

attributes and green advertising. This also indicates that the relationship between the dependent variable and independent variables were strong. However, there were 12.2 percent of the variation in willingness to pay for green foods consumption is explain by other factors which are not mentioned in this study. A high Adjusted R Square value suggested that mode can predict the response variable with less incaccuracy.

Table 4  
*Model Summary*

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	0.937 <sup>a</sup>	0.878	0.876		1.91253

a. Predictor: (Constant), Trust on green foods, Purchase intention, Green foods attributes, Green advertising

b. Dependent Variable: Willingness to pay for green foods consumption

### Conclusion

The purpose of this study is to determine the consumer willinges to pay for green foods consumption among University Putra Malaysia students. Specifically, this study was conducted to examine the relationship between trust on green foods, purchase intention, green foods attributes, green advertisement and willingness to pay for green foods consumption. Data gathered from students of University Putra Malaysia. Five hypotheses were presented to test the relationship between the independent variables (trust on green foods, purchase intention, green foods attributes and green advertising) with dependent variable (consumer on willingness to pay for green foods consumption).

This study confirmed that trust on green foods was significantly and positively related to consumer willingness to pay for green foods consumption. Therefore, the first hypothesis (H1) was accepted. The finding showed that there a significant and positive relationship between trust on purchase intention and consumer willingness to pay for green foods consumption. Thus, the second hypothesis (H2) was accepted. This study indicated that consumer willingness to pay for green foods consumption was influenced by green foods attributes so the third hypothesis (H3) was accepted. Besides, the green advertisements also affected the consumer willingness to pay for green foods consumption. Hence, the fourth hypothesis (H4) was accepted. Lastly, all of the independent variables (trust on green foods, purchase intention, green foods attributes and green advertisements) was significantly and positively related to dependent variables (consumer willingness to pay for green foods consumption). So, the fifth hypothesis (H5) was accepted. While according to Multiple Linear Regression, trust on green foods and purchase intention did not influence consumer willingness to pay for green foods consumption.

In conclusion, the present research helps to understand the importance of trust on green foods, purchase intention, green foods attributes and green advertisements on consumer on willingness to pay for green foods consumption. Future studies need to be carried out to investigate other factors which may influence consumer willingness to pay for green foods consumption in new normal among UPM students. The results of this study suggested that it is very important for the University Putra Malaysia students to understand what determinants

their willingness to pay for green foods consumption because they represent the future main consumers of green foods.

Since, green advertisement is the most important factors that influence consumer on willingness to pay for green foods consumption. The green advertisements provide many information on the green concepts on green foods which can assist markets in developing appropriate marketing strategies for influence consumer on willingness to pay for green foods consumption. Therefore, the companies need to come out a green concept in green foods need to focus in green advertisements. For example, green advertisements can be a promotional message that attracts consumer's needs and desires related to the environment. Green advertisement is a specific type of advertising that the benefits and implication when purchase and eat green foods in future. This can be a sign that inadvertently enhance consumers' awareness of green food and thus increase consumers' desire to consume green food. If this display continues, there will also be more and more consumers consuming green foods in the market.

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