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# **Green Food Product Purchase Intention: Factors Influencing Malaysian Consumers**

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#### ABSTRACT

The rising concerns for food safety and insecurity, coupled with environmental issues, push consumers to make ethical choices affecting their purchase behaviour. The demand trend for green food products is rising and fast-growing economies like Malaysia is not exempted. The green food products industry is in its infancy stage in Malaysia and stakeholders need consumer behavioural research to develop Malaysia's green food industry. Few contextual researches have been undertaken in Malaysia and therefore this study was conducted to determine the significance of the link between consumer behavioural factors and the intent to purchase green food products. An adapted extended Theory of Planned Behaviour (TPB) model was used in the study and the influence of Environmental Attitude (EA), Subjective Norm (SN), Perceived Behavioural Control (PBC), Environmental Knowledge (EK), Health Consciousness (HC) and Environmental concern (EC) on green product purchase intention was examined. A total of three hundred questionnaires were distributed in the Klang Valley and 284 usable responses received were used to examine the significance of relationships using multiple regression analysis. Findings indicated that EC, PBC, HC and SN had a significant relationship to Intent to Purchase (ITP) green food products. The factors that marketers should focus on are environmental concern, price, availability,

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health benefits and initiatives to promote environmental knowledge and attitude that may influence the purchase intentions positively.

*Keywords*: Environment, green consumerism, green food products, Malaysia, purchase intention, theory of planned behaviour

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#### INTRODUCTION

Food safety and security issues are trending topics with consumers' increased consciousness on the ecological impact of their choices. The rising concern for the future generations, increase in knowledge, health consciousness and environmental well-being has contributed to the growing popularity of the green movement. Emergence of green consumer behaviour altered the significance of various deciding factors and the attitude of consumers towards the intent to purchase a product. Hence marketers of green food products have to understand the antecedents of green food products purchase intention, to formulate appropriate marketing strategies.

Green products are produced using eco-friendly technology causing no environmental danger with several characteristics comprising of originally grown, recyclable, reusable, biodegradable, containing natural ingredient that are nontoxic or even approved chemicals, are not animal tested and have eco-friendly packaging (Mishra & Sharma, 2010). On that note, green foods are a family comprising organic and non-organic foods products (Saleki & Sayedsaleki, 2012). The United States Department of Agriculture (USDA) defines organic as a product produced without sewer-sludge, synthetic fertilisers, pesticides, genetic engineering, hormones, irradiation and antibiotics (Lim et al., 2014) while non-organic foods allow to some extent the use of chemicals (Saleki & Sayedsaleki, 2012). Therefore, there is a fine demarcation between green

and organic food products in terms of how they are grown but they both consider the environmental welfare, health and safety.

The government and citizens of Malaysia, a fast developing economy in South East Asia, support the green concept and policies were implemented to promote consumption of ecological products with the legislation of the Environmental Quality Act in 1974 and the creation of the Ministry of Energy, Green Technology and Water in 2009 (Nezakati & Hoseinpour, 2015; Rezai et al., 2013; Sinnappan & Rahman, 2011). The establishment of AFFIRM framework (Awareness, Faculty, Finance, Infrastructure, Research, development and commercialisation, and Marketing) and schemes like the Good Agricultural Practice (GAP), The Malaysian Organic Scheme (SOM) and Malaysian Farm Accreditation (SALM) to commit to green agricultural practices (Rezai et al., 2013; Sinnappan & Rahman, 2011) shows the government's commitment in this area. Since 2001 significant progress were made from 131 to 1848 hectares of organic farm in 2015 (Somasundram et al., 2016; Song et al., 2016). Despite Malaysia's governmental effort, the rising demand for green food products forces the import of green food products (70%) causing variations in quality and price which ranges from 100 to 300 % compared to Europe (Song et al., 2016). The development of the green food industry in Malaysia is crucial and information regarding consumers' green food purchase intention is a much-needed necessity.

Green consumers possess ethical consumption and green consumerism principles who favour eco-products from businesses that operate in an eco-friendly manner (Mei et al., 2012). Although the area of organic food research is common, consumer behavioural studies on green food products are rare and should be given focus as new agricultural techniques are producing novel green products like Microgreen (Portilla, 2016; Robinson, 2017). Various authors who have undertaken research in the area opined that additional research is needed for researchers and stakeholders to comprehend what influences green purchase intent in Asian countries (Maichum et al., 2017; Sinnappan & Rahman, 2011). Contextually, in Malaysia, Goh and Wahid (2015) found that determinants linked to green purchase behaviours varied with geographical region and demographic profile. Hence, the goal of this research was to determine statistically the relevance of each consumers' behavioural elements (EA, SN, PBC, EK, HC and EC) to the intention of purchasing green food products, using an adaptive and extended approach to Ajzen's model of Theory of Planned Behaviour (TPB).

#### **Review of Literature**

The 1960s and early 1970s marked the emergence of the 'green' concept (Mostafa, 2007) which later led to the conceptualisation of ecological marketing that focused on customers that used green products (Zakersalehi & Zakersalehi, 2012). Emergence of this concept challenged industries to meet customer needs, proper manufacturing practices, product price and quality while ensuring environmental welfare (Zakersalehi & Zakersalehi, 2012). The continual environmental degradation affecting the food chain has caused the green movement to be more widespread among customers who were even ready to pay higher prices (Rezai et al., 2013). Thus, the rising environmental concern, health and safety lead to a higher demand of green food products from consumers (Schifferstein & Ophuis, 1998).

The term 'green' emerged after the initial workshop on ecological marketing in 1975 which later led to extensive research in environmental consumerism because of the increasing demand of eco-friendly products (Cherian & Jacob, 2012; Mishra & Sharma, 2010). Green marketing as defined by the American Marketing Association (2017) is abridged as the industrial effort to develop and market products with minimal negative consequences to the environment. Green products according to Mishra and Sharma (2010) simply means products produced using eco-friendly technology and holds characteristics such to be grown untouched, reclaimable, perishable, contain natural ingredients (non-toxic or even approved chemicals), none animal tested and have eco-friendly packaging.

This study adopted TPB model for its ability to overcome the weakness of the Theory of Reasoned Action (TRA) model. The TPB model includes a non-volitional control aspect called perceived behavioural control, which was not considered in TRA model (Ajzen, 1991). The TPB model

centres around the link of an individual's behavioural intentions with attitudes, subjective norm and perceived behavioural control which is suitable in predicting ecofriendly products behaviours (Chen, 2007; Tarkiainen & Sundqvist, 2005). Several authors have demonstrated the strength of the factors of TPB model in predicting intention. Paul et al. (2016) showed that the model optimized the link between intention and its constructs to strengthen the prediction of green products purchase intent. Interestingly, the model proved its relevance, strength and validity in several fields such as green hotels, energy efficient and organic products (Yadav & Pathak, 2016b). Furthermore, the model could even be extended beyond the standard three factors by including domain specific factors to enhance the model's predictive power in green product studies by including environmental knowledge as a construct (Yadav & Pathak, 2016a, 2016b).

Attitude depicts the likes or dislikes of a consumer through an evaluation process that can be either positive or negative having a straight link to behavioural intentions (Maichum et al., 2017; Sentot et al., 2015; Yadav & Pathak, 2017). In the environmental context, attitude consists of features that is not instinctive but learned and is a collection of beliefs that a consumer holds towards environmental activities and issues (Mark & Law, 2015; Sentot et al., 2015). Goh and Wahid (2015), Mostafa (2009), and Wahid et al. (2011) reported that environmental attitude had an effect on green purchase and the inclination of consumers to pay more for eco-products, but the results were inconclusive. The study conducted in Malaysian context by Wahid et al. (2011) showed an insignificant relationship between environmental attitude and green purchase behaviour. Thus, considering the above equivocal results, hypothesis 1 (H1) was developed: Environmental attitude positively influences intent to purchase "Green" food products.

Subjective norm is a state when someone communicate beliefs, values and thoughts to others and peer pressure arises when compliance to others is not met, affecting an individual's state of mind (Mei et al., 2012; Sinnappan & Rahman, 2011). In green context, such pressures compel individuals to be involved in different actions which has been proven to be linked to green purchase behaviours and intentions (Joshi & Rahman, 2015; Yadav & Pathak, 2017). A study conducted by Liobikiene et al. (2016) found that the influence of subjective norm varied in European countries, showing that different cross-cultural dimensions influenced green purchase behaviours. This need to be tested in Malaysian context and hence hypothesis 2 (H2): Subjective norm positively influences intent to purchase "Green" food products.

Perceived behavioural control is the extent an individual believes to have control over his/her behaviour and consists of external factors such as time, availability and recognition which is believed to influence purchase intention (Chen, 2007: Johe & Bhullar, 2016). It is the perceived ease or difficulty of performing the behaviour (Ajzen, 1991). It may also include motivational and non-motivational factors such as resources (price), opportunities and facilitators (Paul et al., 2016). Malaysian studies have not tested the influence of PBC and hence hypothesis 3 (H3): Perceived behavioural control positively influences intent to purchase "Green" food products.

Environmental knowledge allows the understanding of the decision making and information searching process that impacts how much a consumer trust a product (Hossain & Lim, 2016). It is also the knowledge of facts and relationships that affect the environment, which may lead to environmental responsibility of an individual (Maichum et al., 2016). Studies show equivocal results about the linkage between environmental knowledge and green purchase behaviour (Joshi & Rahman, 2015) including studies conducted in Malaysian context (Mei et al., 2012; Wahid et al., 2011). Therefore, hypothesis 4 (H4): Environmental knowledge positively influences Intent to purchase "Green" food products.

Health consciousness is often a crucial parameter when it comes to food product purchases and food safety issues like pesticide content in food affects consumers purchasing decisions as they are concerned about their health and their family (Yadav & Pathak, 2016a). Since green food products are considered safer, healthier and more nutritious, health conscious consumers have a more confident outlook in consuming them, driving its demand up (Hassan et al., 2015; Jeger et al., 2014). Findings from another study showed that health was a stronger motivator than environmental factors when it came to food products purchasing behaviour (Smith & Paladino, 2010). Therefore, hypothesis 5 (H5): Health consciousness positively influences Intent to purchase "Green" food products.

Environmental concern has three pillars: its emotional characteristics towards environmental issues, readiness to solve environmental problems and willingness to amass knowledge and awareness on ecological issues (Joshi & Rahman, 2015; Mark & Law, 2015; Thambiah et al., 2015). Research from around the world depicts how strong as a predictor is environmental concern (Hossain & Lim, 2016; Maichum et al., 2016; Yadav & Pathak, 2016b). Cherian and Jacob (2012) in their study found that environmental concern tended to be high in Asian countries. Hypothesis 6 (H6) tests this in Malaysian context: Environmental concern positively influences Intent to purchase "Green" food products.

Intention to purchase is an expected behavioural outcome and it includes either planned or unplanned purchase (Sentot et al., 2015). Also, other studies showed that along with the TPB framework, readiness to participate in a behaviour had a strong relationship to intent to purchase (Yadav & Pathak, 2016a, 2016b). Studies conducted in Malaysian context were mostly on general green purchase behaviour and were based on the TRA model. Furthermore, the relationship between PBC and green food product purchase intention using TPB model is yet to be explored and hence this Auroomooga Putten Yuviraj Yogananda and Praveen Balakrishnan Nair

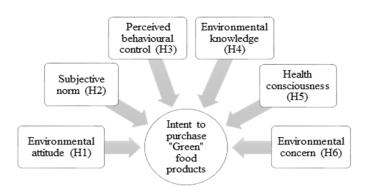


Figure 1. Conceptual model

study. Based on two models from Yadav and Pathak (2016a, 2016b), an adapted version of the TPB framework was made as shown in Figure 1.

#### **MATERIALS AND METHODS**

The sampling design and statistical test performed in this study was based from Sinnappan and Rahman (2011) whereby a non-probability convenience sampling method was used. The target population was Klang Valley with a population of 7.2 million (World Population Review, 2017) that represented the diverse characteristics of the Malaysian population. Hence, the method adopted was more economical, faster and convenient (Zhen & Mansori, 2012) and helped to minimise constraints of time, budget and accessibility during the period of study. Data was collected in and around ten shopping malls spread throughout Klang Valley to improve the representativeness of the population, which most of the past studies lacked.

The questionnaires consisted of structured closed-ended questions with

items generated from existing literature using deductive approach. The source of the items is shown in Table 1. To measure the items, a 5-point Likert Scale (1- Strongly Disagree to 5- Strongly Agree) was used as a standard benchmark (Maichum et al., 2017). The unit of analysis for this study were Malaysians of 18 years old and above. According to Zhen and Mansori (2012), respondents with high education level (Diploma, Bachelor and Master level) were more inclined to purchase organic food that would benefit their health in terms of safety. Also, it was assumed that people below 18 years old might not be generally involved in household purchase decision.

A pilot test was conducted along with debriefing questions to rate the overall survey, to obtain feedbacks and to set time measurement criteria. The sample size was calculated using the formula proposed by Pallant (2016) and the formula from SurveyMonkey (2017) at 95% confidence level at 6% margin of error that resulted to 267. Thus, 300 surveys would be distributed and collected throughout Klang Valley. A

Construct	Source
EA	Maichum et al. (2017); Sinnappan and Rahman (2011)
SN	Maichum et al. (2016); Sinnappan and Rahman (2011)
PBC	Maichum et al. (2016); Zhen and Mansori (2012)
EK	Yadav and Pathak (2016b)
HC	Hassan et al. (2015); Kai et al. (2013); Ueasangkomsate and Santiteerakul (2016)
EC	Maichum et al. (2016); Kai et al. (2013); Sinnappan and Rahman (2011); Yadav and Pathak (2016a)
ITP "Green" food products	Maichum et al. (2016, 2017); Ueasangkomsate and Santiteerakul (2016); Yazdanpanah and Forouzani (2015)

Table 1Literature sources of item generation

supervised self-completed survey approach was used to prevent biasness, clear out any ambiguity and to enhance response rate by prompting respondents for missing data. Following data collection, surveys were removed according to the survey criteria set. Data was entered and analysed using the IBM Statistical Package for the Social Sciences 24.

#### **RESULTS AND DISCUSSION**

From the 300 questionnaires collected, 16 surveys had to be removed for reasons such as: respondents completing the questionnaire below the minimum time requirement of 2 minutes, incomplete responses, responses by non-Malaysians and respondents who duplicated answers from their peers. Therefore 284 usable questionnaires were used for statistical analysis. Demographic analysis revealed that out of 284 respondents, 48.6% were males and 51.4% females. Race distribution showed that 55.99% were Malay, 22.89% were Chinese, 19.01% were Indian and 2.11% were classified as Others. Household size showed that 47.5 % had one to three members, 45.8% had four to six, 5.6% had seven to nine and 1.1% had 10 and above members in the family. Age distribution shows that 42.6% were 18-25 years old, 34.5% were 26-35 years old, 13.4% were 36-45 years old and those above 46 years old constituted 9.6%. The salary distribution showed those below RM2000 were 27.8%, RM2001-RM4000 were 32.7%, RM4001-RM6000 were 18.7% and those earning above RM6001 were 20.9%. Education wise, 59.2% had a Bachelor degree followed by 24.3% with a diploma/certificate and 10.9% with a postgraduate degree. Also, 69.7% were employed, 16.9% were students and 1.8% unemployed.

The Cronbach's alpha test performed on the variable produced satisfactory results as follows; EA (0.847), SN (0.834), PBC (0.593), EK (0.807), HC (0.845), EC (0.724) and ITP "Green" food products (0.883). Usually, Cronbach's alpha values of 0.7 and above are considered acceptable but values below 0.7 may be accepted in some situations (Bryman & Bell, 2015; Field, 2009). Studies like Cleaveland et al. (2005) and Zhen and Mansori (2012) both used a construct below 0.7. According to Tavakol and Dennick (2011), the low number of items and the dimensionality may have contributed to the low Cronbach's alpha value which is true for the two mentioned cases.

Data collected need to be assumed as normal as according to Field (2009), the data must prove to be normally distributed to perform parametric tests. During normality testing, data cleaning was performed. Based on Pallant (2016) and Field (2009) normality results were satisfactory as Skewness and Kurtosis values were close to zero, a bell-shaped histogram curve for sample size larger than 200 and QQ plots near the diagonal line was obtained. In line with studies from Sinnappan and Rahman (2011) and Zhen and Mansori (2012), multiple regression analysis was then performed.

The variance inflation factor (VIF) values obtained from the multiple regression

analysis revealed that independent variables ranged from 1.609 to 1.787 while the tolerance values ranged from 0.560 to 0.621. Pearson correlation test revealed some relationship between the dependent and independent variables (above 0.3) while the link between the independent variables were not high (below 0.7). This proves the non-existence of multicollinearity (Pallant, 2016). Table 2 summarises the results of the multiple regression analysis.

The model summary revealed an R square value of 0.575. From the results in Table 2, EC, PBC, HC and SN have a p value of less than 0.05 which means they are uniquely contributing to predicting the dependent variable. Furthermore, their Beta values of 0.286, 0.270, 0.265 and 0.105 respectively make them the strongest contributors to explain the dependent variable. In such order, H6, H3, H5 and H2 hypotheses were supported. However, the Sig. value of Environmental attitude and Environmental knowledge are higher than 0.05 (P > 0.05) and as such, they are not uniquely contributing to predict the dependent variable.

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Hypothesis	Variables	Standardised Coefficients Beta	Sig. value	Decision
H1	EA	0.067	0.181	Not supported
H2	SN	0.105	0.047	Supported
Н3	PBC	0.270	0.000	Supported
H4	EK	0.042	0.424	Not supported
Н5	НС	0.265	0.000	Supported
Н6	EC	0.286	0.000	Supported

Multiple	regression	analysis	results	
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Table 2

Environmental attitude and Environmental Knowledge had an insignificant relationship to Intent to purchase green food products. Cleaveland et al. (2005) opined that the complexity and multidimensionality of the EA construct could be a cause of such insignificant relationships. The EA construct was developed using items from works of Maichum et al. (2017) and Sinnappan and Rahman (2011), but the results contrasts with the findings of their studies. The reason could be attributed to the unidimensional nature of constructs used by them and the usage of items from multiple sources, for this study, might have consequently resulted in a multidimensional construct, having stability problems (Wright et al., 2012). Similarly, Wahid et al. (2011) segregated the EK construct into three constituent parts and obtained significant relationships to green purchase intention. Another reason could be the respondent criteria. The results contrasts with the study by Yadav and Pathak (2016b) albeit the same construct was used. The latter's study had skewed demographics; 18-25 years old (69.3%), bachelor's degree (63.8%) and male gender (59.8%). In contrast, this study used a more balanced and broader range of respondent criteria to enhance representativeness. These parameters might have influenced the outcome of this study. Nevertheless, Malaysian marketers must identify the constituent elements of EA and EK and leveraging these can have a positive impact on purchase intention.

Subjective norm has a significant relationship with the dependent variable and such results has been shown by several studies. Mei et al. (2012) showed the relationship of peer pressure to intent to purchase green products. Joshi and Rahman (2017) explained that sustainable purchase behaviour might be due to the extensive effect of subjective norm on young consumers highlighting "group effect". According to Paul et al. (2016), Ajzen (1991) identified subjective norm as the weakest link. This is true in this study as subjective norm is ranked 4<sup>th</sup> among the positive hypotheses.

Perceived behavioural control was found to be the second strongest link to green food purchase intention. This construct took into consideration price, availability and perceived control. Johe and Bhullar (2016) stated that perceived behavioural control might solely predict intentions, but it mostly depended on the motivation on the individual. Respondents were willing to pay for green food products which is in-line with the findings of Smith and Paladino (2010). The availability concept tallies with Hossain and Lim's (2016) study whereby ease of access may increase consumption. The results show that by making the products conveniently available, Malaysian marketers can increase green food purchase intention, even at a higher price.

Health consciousness had the third strongest link to green purchase intention. According to Smith and Paladino (2010) and Yadav and Pathak (2016a) consumers who are more concerned about their health will have a better inclination towards purchasing healthy foods and egoistic motives made such construct to have significant relationship. In Klang Valley, Ahmad and Judhi (2010) found that consumers perceived organic food as healthier and more eco-environmentally. This highlights the importance of projecting green foods as a healthier choice, for marketing success.

Lastly, Environmental concern has a significant relationship to Intent to purchase "Green" food products correlating with studies such as Sinnappan and Rahman (2011) and Lee (2008) as being a top ranked predictor. Mark and Law (2015) stated that increase in environmental concern and attitude might enhance purchasing intent of eco-products and might even be an incentive to pay more for them. Interestingly, a study of Malaysian background from Thambiah et al. (2015) showed no statistically significant relationship which might be due to the sample frame chosen of only Y generation respondents. This substantiates the researcher's intention to restrict the respondents to those aged 18 and above. Marketers should join hands with the government and relevant non-governmental organisations to work towards enhancing environmental concern of the public which in turn increase the eco-friendly purchase intent. From a marketing perspective, the group effect highlighted by Joshi and Rahman (2017) could be a viable strategic direction for marketers. 77.1% of the respondents was from 18 to 35 years old. In line with the work of Smith and

Paladino (2010) and Hossain and Lim (2016), this age group might feel more motivated and disposed to look for and purchase eco-friendly products. Therefore, tailoring marketing communication to such age group to convey information about health benefits and availability of green food products can be a strategy to motivate them and may result in spill over effects. They may in turn encourage their family members on the health benefits of green food products as demographic statistics found that 47.5 % had 1-3 and 45.8% had 4-6 family members. The opportunity to marketers is that with the group effect and the education that youngsters possess, they may increase the societal knowledge and concern on environmental issues which may in turn promote a favourable intention towards green food purchase.

#### CONCLUSION

This study has contributed to the body of knowledge both academically and practically by addressing the research gaps in the green food industry of Malaysia. Academically, perceived behavioural control has been shown to have a significant relationship with intent to purchase 'Green' food products. This was not tested before as most studies used TRA model. Furthermore, environmental concern, health consciousness and subjective norm also had a significant relationship to green food purchase intention. Practically, marketers, may understand how to formulate their marketing strategies to approach the green food segment to increase intent to purchase. The influential factors that marketer should focus on are environmental welfare, price, availability, health benefits and lastly a marketing message that may influence others in purchasing more green food products based on present results. To reinforce all aspect, business firms along with the government could work towards enhancing and promoting environmental attitude along with environmental knowledge which may eventually promote green purchase intent.

# Limitations, Recommendations and Directions for Future Research

Limited resources and time at disposal led researchers to employ convenience sampling method and this might limit the generalisation of results to whole of Malaysia. Language was a barrier and non-English speaking people were not comfortable in taking part in the survey. Certain level of bias is expected as respondents could not be prevented from situations like asking for opinions of friends, which may have an impact on the originality of the answers. As a survey, respondents were only willing to answer if the survey was short or not time consuming which limits the number of items per construct. Recommendation for prospective studies would be the use of random probability sampling method for generalisation of results. Furthermore, multidimensional environmental constructs could be broken to a simpler unidimensional construct to determine the exactitude of factors having significant relationship to a dependent variable.

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