

# Understanding Consumers and Green Product Purchase Decision in Malaysia: A Structural Equation Modeling - Partial Least Square (SEM-PLS) Approach

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## Abstract

The purpose of this paper is to explore the consumers' decision to purchase green products in Malaysia. Self-administered questionnaires were conducted to obtain meaningful data from 230 consumers at major shopping malls in Melaka, Malaysia from September 2015 until February 2016. Based on the analysis of SEM-PLS, the proposed model explained 92 percent of the variance of green product purchase decision. The results have shown positive significant effects between green awareness, green commitment, green companies and green product purchase decision. However, green experience and green circle produced insignificant results. Generally, the results from this study confirmed that the proposed model concisely explained the consumers' decision to purchase green products in Malaysia. This study adds another literature to the area of green marketing. The model combined the past consumer behavioural theories and models to identify the key factors that stimulate the consumers' purchase behaviour. Findings from this study have strong implications to both individual and marketing managers. It brings into light the perception of Malaysian consumers about green products and readiness to accept green products as their future way of life.

**Keywords:** green products, green consumers, green awareness, green commitment, green experience, green companies, green circle, green purchase decision and SEM-PLS

## 1. Introduction

Consumer's mindfulness about obliteration and depletion of environmental resources through irresponsible activities have outstretched the issue of environmental protection, consumption pattern and purchasing activities (Dief & Font, 2010; Mishra & Sharma, 2010; Ottman & Miller, 1999; Rahbar & Wahid, 2011; Sharma & Iyer, 2012; Tiwari, Tripathi, Srivastava, & Yadav, 2011). This has made the demand for green products increased drastically (Cronin, Smith, Gleim, Ramirez, & Martinez, 2011). Green product is a product designed to minimize the environmental impact during its whole life-cycle. In particular, non-renewable resource use is minimized, toxic materials are avoided and renewable resource use to take place in accordance to their rate of replenishment (Albino, Balice, & Dangelico, 2009). In fact, the extent of a green product depends on its complete life-cycle ranging from the acquisition of raw materials for production, distribution until purchase and post-purchase activities (Albino et al., 2009).

As consumers are becoming more educated and have a wide exposure to environmentally friendly products, researchers have been trying to comprehend the attitude of green consumers in the marketplace (Chan, 2013; Ginsberg & Bloom, 2004). Based on the consumer behavioural theories and models, review on literature was conducted to understand the consumption patterns (Miller et al., 2011; Peattie, 2001; Sharma & Iyer, 2012), the demand for green products (Mishra & Sharma, 2010; Peattie, 2001), and the commitment of business organizations to embrace environmentally friendly as their corporate culture (Grant, 2008; Ko, Hwang, & Kim, 2013). Many studies have shown an increasing trend of environmental concern among consumers (Lee, Choi, Youn, & Lee, 2012; Lee & Huang, 2011; Mishra & Sharma, 2010; Tiwari et al., 2011; Vermillion & Peart, 2010). Previous researchers were more interested in understanding the extent of consumer's involvement in acquiring green products (Florenthal & Arling, 2011; Lee et al., 2012; Matthes, Wonneberger, & Schmuck, 2014). They

have developed a number of determinants based on the consumer's attitude (Chen & Chai, 2010; Dief & Font, 2010; Tiwari et al., 2011) and the green products purchase activities (Rahbar & Wahid, 2011; Young, Hwang, McDonald, & Oates, 2010), 2010). Henceforth, behavioural studies related to purchasing activities give a special attention to the consumer's purchase intention (Ko et al., 2013; Kong, Harun, Sulong, & Lily, 2014; Montague & Mukherjee, 2010) and the actual purchase behaviour (Fuentes, 2014; Rahbar & Wahid, 2011).

Previous studies on green products focused mostly in developed countries (Luzio & Lemke, 2013; Marketing, 2008; Matthes et al., 2014; Vazifehdust, Taghipourian, & Gharib, 2011). Continuous efforts are being made to broadening the horizon of green products in developing countries to better understand the differences and similarities that exist in various types of cultural setting (Lee et al., 2012; Ritter, Borchardt, Vaccaro, Pereira, & Almeida, 2015). Currently, it can be noticed that the green consumerism is progressively moving to the developing countries (Chen & Chai, 2010; Tiwari et al., 2011). Malaysia can be regarded as one of the lucrative markets for green products (Chen & Chai, 2010; Hasan & Ali, 2015; Kong et al., 2014; Rahbar & Wahid, 2011). Studies in Malaysian context, insofar, have focused on the green firm's performance (Hasan & Ali, 2015), determinants of consumer attitude towards green products (Chen & Chai, 2010), and effective green marketing tools (Rahbar & Wahid, 2011). Findings of the previous studies disclosed that Malaysian consumers prefer to purchase products and services from reputable companies and becoming more selective during purchase activities in terms of types of green product, performance and cost (Chen & Chai, 2010; Hasan & Ali, 2015; Kong et al., 2014). Since the consumer's environmental awareness can be observed in the Malaysian market, it is of utmost important to determine the underlying factors affecting the green product purchase decision. Hence, the purpose of this study is to discover the green dimensions perceived by the Malaysian consumers and to measure their associations with the decision to purchase green products.

## 2. Green Products and Consumer's Purchase Decision

Consumers who take into account the environmental impact on their consumption pattern and willing to change their purchasing behaviour can be regarded as green consumers (Florenthal & Arling, 2011; Luzio & Lemke, 2013; Ritter et al., 2015; Tiwari et al., 2011). Green consumers decision to purchase green products is becoming a central issue in the present state of green marketing research. The purchase decision can be traced from the consumer's enthusiasm to support environmentally friendly companies (Laroche, Bergeron, & Barbaro-Forleo, 2001), performing the purchasing activities (Mishra & Sharma, 2010), putting into practice a sustainable consumption pattern (Young et al., 2010), and willingness to spend more money to acquire green products (Hasan & Ali, 2015; Laroche et al., 2001). According to the Theory of Planned Behaviour (TPB) (Ajzen, 1991) the actual behavioural action (i.e. the decision to purchase green product) can be shaped by three factors. *The first factor is the attitude towards behaviour such as consumer's evaluation about the benefits of purchasing green products, having an interest to protect the environment, and realization of supporting the initiative taken by the environmentally friendly companies. The second factor is subjective norm such as the existence of consumer's peer, reference groups and opinion leaders which also purchase and consume green products. And, the third factor is perceived behavioural control which is related to, for instance, the consumer's perception about the degree of easiness to acquire and utilize the green product.* Behavioural action is the response and decision made by the consumers after taking into account antecedents that influence their readiness to perform purchasing activities. Therefore, this study identifies variables from the existing literature and develops a conceptual model of a green product purchase decision as shown in Figure 1.

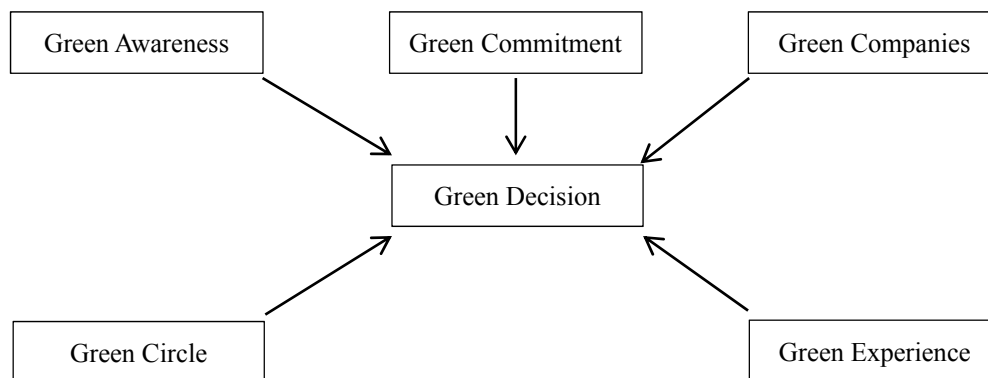


Figure 1. Conceptual model underpinning the study

### *2.1 Green Awareness*

Green Awareness has become one of the reasons for consumers to show their responsibility to protect the environment prior to purchasing activities (Cherian & Jacob, 2012). They tend to carefully evaluate the attribute of a particular product and consider its impact to the environment (Marketing, 2008; Prakash, 2002). They appreciate products which are less harmful to the human, animal, environment, and most importantly, recyclable (Borin, Lindsey-Mullikin, & Krishnan, 2013; Tiwari et al., 2011). To some extent, the consumers will make sure that there is no pollution while utilizing the product (Tiwari et al., 2011). Since they value the importance of green products to protect the environment, the consumers then translate their responsibility through purchasing activities and acquiring the green products (Moser, 2015; Young et al., 2010). Consumers with green awareness in mind also willing to pay extra because they understand the environmental benefits that can be gained from the product. In fact, green products give an impression of being compatible to the environmentally friendly lifestyle hence becoming a catalyst for a more positive predisposition in mind (Florenthal & Arling, 2011; Young et al., 2010). Therefore, it can be assumed that consumers who are really concern about environment will have a strong tendency to purchase environmentally friendly products. Hence, the following hypothesis is proposed:

H1: Green awareness significantly affects the consumer's decision to purchase green products.

### *2.2 Green Commitment*

Green consumers possess a strong personal commitment to protect and improve the quality of environment in their daily routine activities (Chen & Chai, 2010; Tsen & Rita, 2006). Knowing the negative impact of pollution on human being and other living creatures, consumers are becoming more responsible towards environmental protection (Burgos-Jiménez, Vázquez-Brust, Plaza-Úbeda, & Dijkshoorn, 2013; Mobley, Vagias, & DeWard, 2010) by frequently taking self-initiative to do environmentally favourable activities such as 3R (Reduce, Reuse, Recycle), stop open burning, driving a hybrid car, and control the usage of pesticides, herbicides and fungicides (Borin et al., 2013; Gilden, Huffling, & Sattler, 2010). They are influenced by the 'attitude towards behaviour' (Ajzen, 1991) which believe in the environmental conservation through continuous individual green activities (Hosseinpou, Mohamed, Rezai, Shamsudin, & AbdLatif, 2015). In fact, consumers' environmental awareness, passionate and perception towards deteriorating quality of environment have made them to behave environmentally friendly, which in turn, change their purchasing activities towards green products. Therefore, the following hypothesis is proposed:

H2: Green commitment significantly affects the consumer's decision to purchase green products.

### *2.3 Green Companies*

For years, consumers have shown their greatest concern about environmental issues (Brent & Labuschagne, 2007; Tiwari et al., 2011). They demand companies to produce environmentally friendly products with minimum impact to the environment (Bridges & Wilhelm, 2008; Calin Gurau & Ashok Ranchhod, 2005; Hasan & Ali, 2015). Since then, many companies engage in research and development to minimize the carbon footprint and also to comply with the international standard and regulation (Chang & Fong, 2010; Ko et al., 2013). The performance of environmentally friendly product remains or in some conditions better than the existing ones (Burgos-Jiménez et al., 2013; Hasan & Ali, 2015; Lin, Tan, & Geng, 2013; Pujari, Wright, & Peattie, 2003). To create differentiation, companies usually highlight the recognition and accreditation received from related agencies to grab the attention of consumers. In countries where consumerism is high, consumers will carefully look at the accreditation to understand the product's impact to the environment. There is a tendency where they refuse to purchase products from irresponsible companies. In the worst case scenario, consumers even show their protest against companies who manipulate the green marketing campaign such as greenwashing or deceptive environmental claims (Delmas & Burbano, 2011; Gallicano, 2011; Laufer, 2003; Newell, Goldsmith, & Banzhaf, 1998; TerraChoice, 2009; Vermillion & Peart, 2010). Green companies with high reputation believe in sustainable marketing and consistently protect the environment for the benefits of next generation. Consumers in turn purchase the product for good. Thus, it can be hypothesized that:

H3: Green companies significantly affect the consumer's decision to purchase green products.

### *2.4 Green Experience*

Experience and knowledge about green products can be another reason for the consumers to purchase green products (Chen, 2010; Mobley et al., 2010). Easy access to information provides more knowledge about ecological issues (Luzio & Lemke, 2013; Ritter et al., 2015). In the meantime, product consumption offers greater understanding about the ingredient, usage and impact to the environment (Luzio & Lemke, 2013; Ritter et al., 2015; Young et al., 2010). With such involvement consumers tend to position a clearer concept of green

product in their mind (Rettie, Burchell, & Riley, 2012). This cognitive learning process enables them to evaluate the green product and making a comparison with the existing ones. As a result, the benefit of green products can be traced and the next course of action can be taken (Ajzen, 1991). It further stimulates their decision to purchase, enables them to choose the right product and develop a high degree of tolerance when paying for a higher price to obtain the green product. Based on the existing literature, it can be assumed that experience and knowledge gained by the consumers related to green product has a significant influence on their purchase decision. Thus, the following hypothesis is proposed:

H4: Green experience significantly affects the consumer's decision to purchase green products.

### 2.5 Green Circle

Consumers' purchase decision is commonly influenced by the opinion of people around them (i.e. family members, friends and community) (Chairy, 2012; Kong et al., 2014; Mohd Noor, Sreenivasan, & Ismail, 2013; Zhu, 2013). Social interactions and communication network have made the consumers realize the importance of green products (Qader & Zainuddin, 2011; Qader & Zainuddin, 2011). During the interaction process, they receive and share various types of information about products in the marketplace. They continuously evaluate the value of the product based on comments and opinions expressed by participants in the social system (Peattie, 2010; Tamashiro & Silveira, 2013; Tarkiainen & Sundqvist, 2005). Despite all comments and opinions, they also put in mind the perception of others once the purchasing decision is made. Gradually, consumers form and clearly identify their actual preferences and product requirements. Many of them appreciate products that portray their self-image and can be accepted by their friends and family members (Chen, 2008, 2010; Jamal & Goode, 2001). Insofar, it can be understood that consumers' circle plays a vital role to develop product preferences and there is a strong tendency that they will purchase products according to the perceptions of the circle. They want others to treat and accept them as part of the society (Griskevicius, Tybur, & Van den Bergh, 2010; Kim, Lee, & Hur, 2012).

In many developed countries, majority of the consumers perceive that it is compulsory to adopt green lifestyle as a modern way of life (Barr & Gilg, 2006; Young et al., 2010). As a consequence, if they refuse to take it as a challenge they will be viewed as not up-to-date by the society. It symbolizes the attitude of a person such as responsibility, altruism, and aspirations (Alsmadi, 2007; Baqer, 2012; Cherian & Jacob, 2012). It also leads to the development of a positive self-image such as social status and credibility. Thus, decision to purchase green product indicates the self-image of consumers, portray their concern about environmental issues and conform to the social perception (Jamal & Goode, 2001; Qader & Zainuddin, 2011). Consumers' circle plays an essential role to influence their decision to purchase green products. Therefore, it can be hypothesized that:

H5: Green circle significantly affects the consumer's decision to purchase green products.

All hypotheses in this study are developed based on the review of literature and further examined to the Malaysian consumers. The methodology applied by the researchers and findings are narrated in the following parts of this article.

## 3. Research Methodology

Prior literature on consumers and green purchase decision focused on the evaluation of behaviour based on the self-administered questionnaire. Due to its nature, the use of self-administered questionnaire is more effective because it allows the researchers to collect more responses from the consumers (Anvar, 2014; Qader & Zainuddin, 2011; Qader & Zainuddin, 2011; Young et al., 2010). Previous studies have shown some discrepancies between perceived behavioural intention (i.e. environmental concern) and behavioural action (i.e. green product purchase decision) (Albayrak, Aksoy, & Caber, 2013). However, the Theory of Planned Behaviour claimed that perceived behavioural intention has a strong influence on the behavioural action (Han & Kim, 2010; Kalafatis, Pollard, East, & Tsogas, 1999; Moser, 2015; Pickett-Baker & Ozaki, 2008). In order to assess the relationships between independent and dependent variables, a questionnaire-based approach was applied. The measured items were adapted with slight modification from the previous literature (Juwaheer, Pudaruth, & Noyaux, 2012; Kumar & Ghodeswar, 2010; Mohd Noor et al., 2013) and divided into two parts to represent the descriptive analysis and hypothesis testing. The first part collected the consumers' demographic information such as age, gender, academic qualification, occupation and level of income. The second part collected data pertaining to both independent and dependent variables that are useful for hypothesis testing. All measurements in this part used a five-point Likert-type scale (1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree; 5 = strongly agree).

The selection of sample was designed based on the convenience sampling. This method was applied due to its

convenient accessibility to the researchers. Moreover, the population size was deemed to be too large to apply the probability sampling technique. This study was conducted at major shopping malls in Melaka, Malaysia. The selection of respondents was done regardless of their profession, level of income, or social status. The respondents were personally approached to ask for permission and willingness to participate in the survey. The researcher's interference was kept at a minimum level in a non-contrived setting to ensure fair views from consumers. This study is a cross-sectional study where the collection of data took place from September 2015 to February 2016. A total of 230 valid responses were obtained for this study. Table 1 indicates the demographic characteristics of the respondents which were analysed using SPSS Version 21.

Table 1. Demographic characteristics of the respondents

Demographic Characteristics	Frequency	Percentage
<i>Gender (n=230)</i>		
Male	128	56.0
Female	102	44.0
<i>Age (n=230)</i>		
Below 21	30	13.0
21-30	92	40.0
31-40	46	20.0
41-50	23	10.0
51-60	23	10.0
61 and above	16	7.0
<i>Education Level (n=230)</i>		
Secondary school and below	30	13.0
Certificate	39	17.0
Diploma	48	21.0
Bachelor degree	94	41.0
Masters	15	7.0
PhD	4	2.0
<i>Profession (n=230)</i>		
Students	46	20.0
Self-employed	51	22.0
Private sector	79	34.0
Public Sector	54	23.0

#### 4. Analysis & Findings

The researchers had tested the proposed conceptual model using SMARTPLS 2.0 and SPSS Version 21. The results were then interpreted and compared with the previous literature. Figure 2 indicates the results of the proposed model used in this study. Green purchase decision is modelled as a reflective construct together with the green awareness, green commitment, green circle, green experience and green companies. The measured items loadings, composite reliability, and average variance extracted (AVE) of all reflective constructs are presented in Table 2.

*Factor Loadings.* High factor loading on measured items indicate that they converge on a common point of the construct (Hair, Black, Babin, Anderson, & Tatham, 2010). Generally, a good rule of thumb is that the loading estimates for PLS should be 0.70 or higher (Hair et al., 2010). Analyses have shown that, all measured items loadings in this study are greater than 0.70 (Ringle, Sarstedt, & Straub, 2012; Tenenhaus, Vinzi, Chatelin, & Lauro, 2005), indicating the convergence validity of the measured items.

*Composite Reliability.* The composite reliability (CR) estimates the extent to which a set of measured items share in their measurement of a construct. In PLS, the composite reliability (CR) should be equal or greater than 0.70 (Hair et al., 2010). This study found that all composite reliability (CR) values are greater than the threshold of 0.70 thus indicating an acceptable range of reliability.

*Average Variance Extracted (AVE).* The average variance extracted (AVE) of 0.50 or higher is a good rule of thumb to indicate adequate convergence of each construct (Hair et al., 2010). In the meantime, the average variance extracted (AVE) that is less than 0.50 signifies the existence of error in the measured items. This study discovered that all average variance extracted (AVE) values are greater than 0.50, suggesting the convergence validity of the construct.

*Discriminant Validity.* The discriminant validity measures the differences between each construct. It can be assessed by comparing the square root of a given construct average variance extracted (AVE) with the correlation of each construct (Hair et al., 2010). As shown diagonally in Table 3, the square root of each average variance extracted (AVE) is greater than the construct correlations. It thus indicates adequate discriminant validity for all constructs.

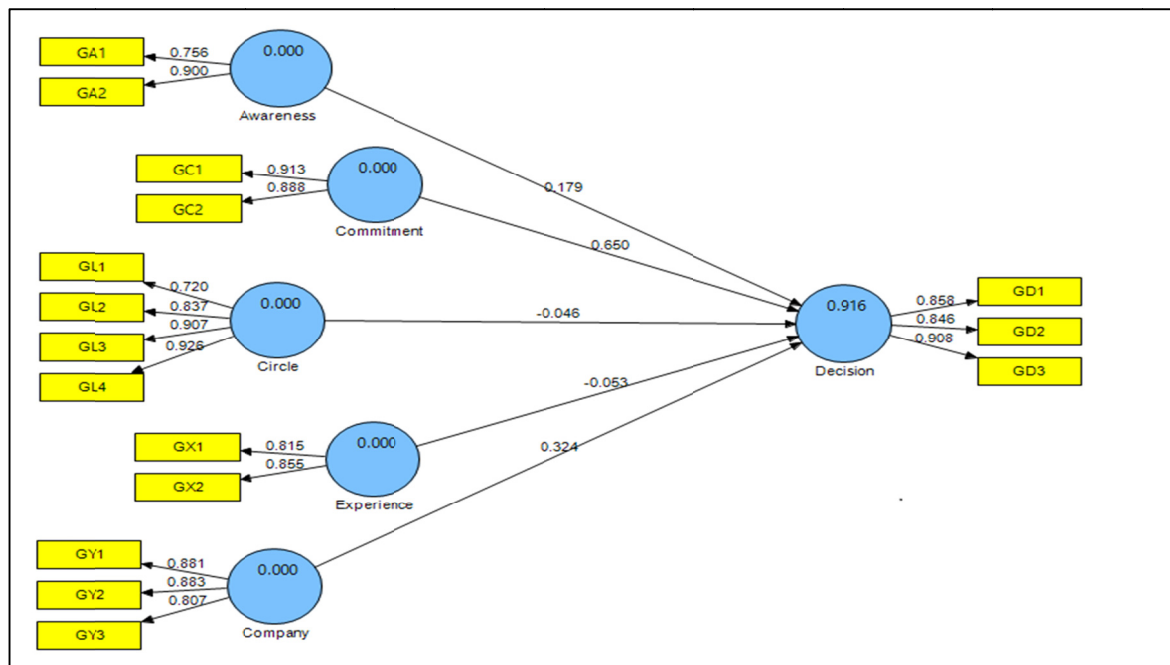


Figure 2. Results of the proposed conceptual model using SMARTPLS

Table 2. Measurement properties of the reflective constructs

Construct & Measured Items	Factor Loading (> 0.70)	Composite Reliability (> 0.70)	Average Variance Extracted (> 0.50)
<i>Green Awareness</i>			
GA1: Ingredients of green products are not harmful to the environment.	0.756	0.815648	0.690298
GA2: Green products produce the least amount of pollution in its usage.	0.900		
<i>Green Commitment</i>			
GC1: Environmental protection starts with me.	0.913	0.895830	0.811345
GC2: I practice reduce, reuse and recycle in my daily activities.	0.888		

<i>Green Companies</i>			
GY1: I refuse to purchase products from companies accused of being polluters.	0.881		
GY2: I will avoid companies who produced harmful products.	0.883	0.892809	0.735522
GY3: I will support products from a company that consistently protect the environment.	0.807		
<i>Green Experience</i>			
GX1: I strive to learn as much as possible about green products.	0.815	0.821857	0.697713
GX2: Green product is relevant to my lifestyle.	0.885		
<i>Green Circle</i>			
GL1: People who are important to me think that I should use green products.	0.720		
GL2: People in my community who consume green product is very supportive.	0.837	0.912554	0.724705
GL3: People in my community who use green products look more prestigious.	0.907		
GL4: People in my community who use green products look more prestigious.	0.926		
<i>Green Purchase Decision</i>			
GD1: I have decided to perform green product purchase activities in the future.	0.858		
GD2: I have decided to encourage others to purchase green products.	0.846	0.904143	0.758861
GD3: I have decided to consider green products as my first choice.	0.908		

Table 3. Construct correlations

	GA	GC	GY	GX	GL	GD
Green Awareness (GA)	<b>0.831</b>					
Green Commitment (GC)	0.501	<b>0.901</b>				
Green Companies (GY)	0.712	0.573	<b>0.858</b>			
Green Experience (GX)	0.777	0.415	0.795	<b>0.835</b>		
Green Circle (GL)	0.487	0.439	0.327	0.422	<b>0.851</b>	
Green Decision (GD)	0.673	0.890	0.774	0.639	0.344	<b>0.871</b>

About the green purchase decision construct, the researchers have additionally examined the weight of measured items, multicollinearity and discriminant validity. Table 4 indicates the measurement properties of the construct. At the initial stage, the factor loading for all items are greater than 0.70 hence indicating the convergence validity.

*Items Weight.* Items weight represents the measured items contribution to the reflective index (Chin, 1998). According to Chin (1998), the interpretation of the reflective construct with measured indicators in any PLS analysis is essential and should be based on their weight. Ideally, the item weight should be greater than 0.10 (Andreev, Heart, Maoz, & Pliskin, 2009). Based on Table 4, it can be observed that all item weights for green purchase decision are greater than 0.10 and consistent with the recommended value.

Table 4. Measurement properties of the green purchase decision construct

Construct & Measured Items	Items Weight (> 0.10)	Variance Inflation Factor (VIF) (< 3.30)
<i>Green Purchase Decision</i>		
GD1: I have decided to perform green product purchase activities in the future.	0.354867	2.104
GD2: I have decided to encourage others to purchase green products.	0.390656	1.767
GD3: I have decided to consider green products as my first choice.	0.401951	2.503

*Variance Inflation Factor (VIF).* According to Hair et al. (2001), low VIF values are preferred to ensure a low degree of multicollinearity among variables. Table 4 indicates that all VIF values are less than 3.30 (Diamantopoulos & Siguaw, 2006) thus indicating that multicollinearity does not exist in the formative measured items.

*Test of Structural Model.* The purpose of this study is to discover the green dimensions perceived by the Malaysian consumers and to measure their associations with the decision to purchase green products. To achieve the objective, the researchers had examined the relationships of green awareness, green commitment, green companies, green experiences and green circle towards toward green purchase decision. Overall, the model developed for this study explained 91.6 percent of the consumers’ green purchase decision. Figure 2 indicates the results of the SEM-PLS path analysis and all five hypotheses (H1, H2, H3, H4 and H5) were measured.

The first hypothesis, **H1** assumed that the consumers’ green awareness has a significant effect on their green purchase decision. Table 5 indicates that a positive significant effect can be traced between the green awareness and green purchase decision (PC = 0.1794, T-statistic = 2.6151, CI = 0.090, 0.187, and  $p = 0.00$ ). Therefore, **H1** can be accepted.

The second hypothesis, **H2** presumed that the consumers’ green commitment has a significant effect on their green purchase decision. Based on the analysis, **H2** can be described as significant at 0.05 where the T-statistic value is > 1.96 (T-statistic = 12.9152, CI = 0.452, 0.528, and  $p = 0.00$ ). Green consumers (GC) indicates the highest beta value ( $\beta = 0.703$ ). This means that this variable makes a salient contribution to explain the green purchase decision (GD). Hence, H2 can be accepted.

The third hypothesis, **H3** proposed that the image of a green company significantly affect the consumers’ decision to purchase green products. This study discovered that green company has a positive significant effect on the purchase decision (PC = 0.3243, T-statistic = 4.3894, CI = 0.158, 0.377, and  $p = 0.00$ ). Green company (GY) shows the beta value lower than the green consumers (GC) but still significantly explained the consumers’ decision to purchase green products ( $\beta = 0.252$ ). Thus, **H3** can be accepted.

The fourth hypothesis, **H4** assumed that the experience of consuming green product significantly affect the decision to purchase green products. Analyses have shown that, the path coefficient and T-statistic indicate insignificant values (PC = -0.0526, T-statistic = 0.9970, and  $p > 0.05$ ). The values demonstrate that green experience has no significant effect on the consumers’ decision. Therefore, **H4** is rejected within the context Malaysian consumers.

Table 5. Structural estimates of the model

Path	Path Coefficient (PC)	T-stat (> 1.96)	95% CI	$\beta$	$p$
GA → GD	0.1794	2.6151	0.090, 0.187	0.182	0.00
GC → GD	0.6502	12.9152	0.452, 0.528	0.703	0.00
GY → GD	0.3243	4.3894	0.158, 0.377	0.252	0.00
GX → GD	-0.0526	0.9970	-0.052, 0.128	-0.045	0.41
GL → GD	-0.0457	0.8476	-0.159, -0.085	-0.154	0.36



The fifth hypothesis, **H5** suggested that the influence of family and friends significantly affect the consumers' decision to purchase green products. Based on the analysis, it was found that the path coefficient, T-statistic and *p*-value produced insignificant results (PC = -0.0457, T-statistic = 0.8476, and *p* = 0.36). There is not enough evidence to support the assumption that the family and friends may influence the Malaysian consumers' purchase decision. Therefore, **H4** is rejected.

## 5. Discussion

The growing concern about environmental issue has made many companies to search information about green purchase decision among consumers (Albayrak et al., 2013; Alsmadi, 2007). Due to the continuous development of green consumer studies among researchers around the globe, current studies have focused on the aspect of green consumption pattern to understand the purchase behaviour (Azizan & Suki, 2013; Moser, 2015). This study has made an attempt to craft a better understanding about the consumers' perception on green products and its impact on their future behavioural intention and action. Malaysian consumers have shown mixed opinions about green issues and their views can be traced from the response in the questionnaires. At individual level, they have shown their greatest concern on the environmental protection, know their responsibility towards green environment, understand remedies to the environmental pollution, searching for companies who protect the environment and finally making a green purchase decision. They evaluate green products based on the existing knowledge prior to purchase activities. Therefore, it can be understood that the decision to purchase green products involve the cognitive ability, internal locus of control and external factors that influence the consumers.

This study examined the relationship of reflective constructs which in the end offer a significant contribution to the green marketing literature and implication to many companies who decided to produce green products in the future. The significant results of the green awareness and green commitment such as supporting the less harmful products and recycling activities confirm that the purchase decision requires an individual deliberate assessment associated with self-concept. It can be further understood that consumers will look after the practicality aspect and benefits of the green products to influence their decision to purchase. This reveals the adoption of environmentally friendly way of life in their daily consumption. Therefore, in the future, companies must promote how consumers' can express their obligation towards environment through purchasing, consuming and disposing green products (Desmet & Hekkert, 2007). Environmental analysis pertaining to individual characteristics is essential to understand how green products should be marketed and more importantly to meet the specific needs of the target market effectively. Such green consumers' centric approach is meaningful to switch their mind from an ordinary person who supports environmentally protection into a real consumer who purchases green products.

The relationship between environmentally friendly companies and consumers' green purchase decision is found to be significant. In fact, the influence to purchase behaviour is derived from the way how the company treats the environment (Albino et al., 2009; Dangelico & Pujari, 2010). Consumers' perception tends to be positive if the company produces less harmful products while at the same time protect the environment. Based on the previous studies, consumers always perceived company as an entity that must ethically portray good governance. Therefore, consumers who are very concern about environmental issue will use their power to force the company to be more responsible when producing new products. Within the context of Malaysia, consumers will refuse to purchase products from a company who make known to be a polluter. With regards to business sustainability, this has creates an impact for the company to fulfil the consumers' demand. This also means companies must comply with the rules and regulations gazetted by the authority to stimulate the consumers' green purchase behaviour.

Consumers' green experience and green circle are the two constructs that show insignificant results in this study. Green product experience requires purchasing, exploring, consuming and understanding the real product (Desmet & Hekkert, 2007). Unfortunately in Malaysia, green products can be positioned at the early stage of product life-cycle (PLC) (Hasan & Ali, 2015; Suki, 2013). The number of advertisement promoting green products is also inadequate to influence the consumers' purchasing behaviour (Azizan & Suki, 2013; Har, Yaw, Ai, & Hasan, 2011; Kong et al., 2014). Previous studies revealed that experience can be gained through consumers' self-experience or from their circles. Later, the experience will turn into a better perception about green product (Desmet & Hekkert, 2007). However, the sluggish green experiential learning has made the consumers' rate of adoption become slower than the other countries. Therefore, the insufficient of information and exposure of green products have made these two factors become irrelevant to create an impact on the green purchasing decision.

## 6. Conclusion

The current study developed and validated a model of a green product purchase decision in Malaysia. It can be concluded that the Malaysian consumers are aware of the environmental protection. Slowly but surely, they have shown their support by purchasing and utilizing the environmentally friendly products. Despite its infancy stage, at the very least, they still purchase the product. It actually sends a meaningful message to the industry that the consumers are ready for the environmentally friendly lifestyle in the future. At the individual level they have portrayed their commitment through positive green activities such as reduce, reuse and recycle. Malaysian consumers continuously search for information about green products. High consumers' involvement about green-product related knowledge requires companies to create more advertisement about green product. The consumers also prefer to purchase products from companies who consistently protect the environment and in contrary they will show less consideration for companies who accused to be a polluter or producing harmful products. However, it can be obviously seen that the influence of family and friends are not strong enough to motivate the consumers to purchase green products. Therefore, companies should integrate green products with other elements such as product's functionality and emotional attachment. Environmental activities initiated by a company must be highlighted together with the projection of green lifestyles. With a right strategy and direction, companies shall be able to understand their market segment very well and effectively positioning the image of green products in consumers' mind. The findings of this study conclude that, the consumers' awareness and their commitment to the environment together with the green initiative by the industry contribute as the main driver for the consumers' green purchase decision.

### 6.1 Limitations

This study has some limitations. Data for this study were collected from the consumers at major shopping mall in Melaka, Malaysia. The generalizability of research findings is only relevant within the context of this population. It may not represent the general situation of consumers in Malaysia. Also, this study is based on the self-reporting of consumers' existing behaviour and perception. Therefore, it may involve over or under estimation of perception which gives considerable impact to the findings. Nevertheless, this study is still able to obtain analytical generalization to ensure a significant contribution to the body of knowledge.

### 6.2 Future Research Direction

Further studies on green consumers can be conducted to understand the reason of performing the green purchase behaviour such as for health, self-concept or social visibility. It is also notable to comprehend the perception of consumers about green products across races and culture. Green studies in different country also relevant to broadening the horizon of green consumers. Understanding the different country's culture and perception can be a challenge but it will provide a direction to a meaningful result and beneficial to both academic and green industry. Profiling the green consumers would be another interesting area of research endeavour. Future studies should also examine the situation how behavioural changes happen and predict the next course of action. This can be obtained through in-depth structured interview with consumers to gather unbiased opinion about green products. To-date, the number of consumers who really concern about the environment and consuming green products are growing exponentially. Therefore, researchers can also examine various models and marketing theories to explore another dimension of green consumers and their decision to purchase. Lastly, it is noteworthy to believe that green consumerism is becoming an interesting topic to explore in the future due to the growing environmental consciousness among consumers around the globe.

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