

How Does Green Products' Price and Availability Impact Malaysians' Green Purchasing Behavior?

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Abstract

Green marketing refers to all what has to do with a product or service from its production process to its purchase by consumers. This study aims to investigate the influence of products price and availability on the actual green purchasing behavior of Malaysian consumers. 394 questionnaires were distributed to Malaysians in 3 states in the northern region namely Kedah, Perlis and Penang. Both SPSS version 18.0 and PLS-SEM were used to analyze the obtained data. The results of the study showed that price has a significant relationship with purchasing behavior of green products, while product's availability showed no significant influence on green purchasing among Malaysian consumers. This paper helps in bringing more understanding on the actual purchasing behavior of green products in Malaysia.

Keywords: Green products; Consumers; Behavior; Price; Product availability; Malaysia.



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1. Introduction

One of the most critical challenges that green marketers are facing in the present day is identifying and specifying the factors that influence green consumers and eventually persuade them, this might be triggered by the issues of the attitude behaviour gap study done by [Lin and Huang \(2012\)](#) which revealed that 30% of UK consumers showed their concern towards issues facing the environment, however that concern was translated poorly into actual going green behaviour. Without knowing this attitude behavioural gap issue over environmental perspective, corporations and organizations will face several difficulties when expanding consumers' specific strategies in order to increase their market share relying on new demands related to green market.

Besides the process of manipulating the known marketing mix that consists of Product, Price, Place of Distribution and Promotion, green marketing entails a wider understanding of the public policy process. It also bonds with environmental sustainability and industrial ecology issues like life-cycle analysis, eco-efficiency, extended producers' liability, and resource flows and material use ([Khandelwal and Yadav, 2014](#)). However, the green marketing subject is wide, thus it has potential implications for public policy and business strategy. In general, some terms such as Recyclable, Environmentally Friendly, Ozone Friendly, Phosphate Free, and Refillable are some well-known titles that consumers relate them to the concept of green marketing ([Khandelwal and Yadav, 2014](#); [Singh and Pandey, 2012](#)).

As a developing country, Malaysia is a nation that aims to transform into a fully developed country by the year 2020. One of the elements that a country is categorized as developed is having more people from middle-class. Hence, the Malaysian Government has pushed its efforts in order to increase and improve the middle's class growth ([Mujani et al., 2012](#)) and has a goal of doubling the income per capita to RM48,000 by the year 2020 ([Bank Negara Malaysia, 2011](#)). As stated by [Landes \(1998\)](#), one of the driving forces that lead to a faster pace of economic development is the growth of middle class in different economies. Such a growth can lead to a stronger purchasing power for consumers since and the ability to purchase is one of the most important issues that face green products.

2. Literature Review

2.1. Consumers Behavior

Green purchasing behavior refers to individuals' or groups' actions that participate in using natural resources sustainably ([Halpenny, 2006](#); [Tan and Lau, 2011](#)), it is defined as the consumption of products that do not harm the environment ([Mainieri et al., 1997](#); [Tan and Lau, 2011](#)). Peoples' efforts to preserve energy and only buying products that have proper packaging is another type of green purchasing behavior ([Tan and Lau, 2011](#)).

According to [Chan \(1996\)](#) and [Joonas \(2008\)](#), the act of buying standard sprays or beverages that use recyclable containers are considered a form of green purchasing behavior. Other researchers such as ([Hessami and Yousefi, 2013](#); [Mainieri et al., 1997](#)) have included consuming detergents made of recyclable materials, products produced from recycled plastics and paper and purchasing CFL light bulbs to the categories of green purchasing behavior. Moreover, [Tan and Lau \(2011\)](#) suggested that biodegradable and recyclable products that are produced organically, and come with minimum packaging are exactly what green products refer to [Hessami and Yousefi \(2013\)](#).

According to Webster (1975) who is one of the earliest scholars to highlight this topic, green consumers are consumers who believe their actions can benefit the public and those consumers feel the ability of bringing social change with their purchasing power. Webster also suggested that those consumers try to relate social issues to their purchasing behavior.

2.2. Price of Green Products

Price has been simply defined as cost in the traditional economics, however, recent studies recognized that price serve to inform people about the value of the good or service (East, 1997). Price, is one of the non-product attributes of brand associations where it can be an important associations in the formation of brand perceptions, particularly with regard to value and desirability and is a criterion by which consumer often segment their knowledge of a market or category (Batey, 2008).

Price is considered one of the most influential factors in the green marketing mix. Many consumers show readiness to spend extra price if they have the perception that the bought product carry extra value. This value comes in the form of a better taste, a more creative design, and improved performance, a more attractive visual appeal or an enhanced function (Sharma, 2011).

A common concern environmentalists share is having overpriced green products, which results in a higher total environmental cost. Several companies took audits of the process conducted during production in order to find hidden expenses and in order to provide explanations for their pricing strategies. Governments use some methods to apply better environmental costing such as carbon taxes, emissions charges and increased fines. Corporations in Europe are proactive in this field as they developed environmental auditing also known as eco balance, this approach brought down the gap between standard accounting practices and qualitative environmental impact reports as in the earlier method data is expressed solely in conventional monetary terms (Sharma, 2011).

Price and cost savings are closely related to any purchasing process (Gummesson, 2008), even with an environmental conscious consumer, price is an important factor and could make this consumer avoid buying green products (Peattie, 2001). Remarkably, price has a big influence on green purchasing. According to Pedro and Lemke (2013), even when a product is in the expensive category such as washing machines or even cars, not many consumers paid attention to environmental characteristics if they found themselves forced to pay premium prices. Surprisingly, consumers who paid extra for green products spent on products that are categorized in the lower cost category such as recycled paper bags.

Consumers are less likely to purchase green products if they cost more compared to regular products as price influences consumers' decision when purchasing green products (Blend and Van Ravenswaay, 1999; D'Souza *et al.*, 2006). Price has always been an indicator of purchasing behavior of green products and this factor affects green purchasing behaviors of the consumers in a positive way (Boztepe, 2012; Kaufmann *et al.*, 2012). Hence the following hypothesis suggests that:

H1: There is a significant relationship between price of green products and purchasing behavior of green products.

2.3. Availability of Green Products

One of the criteria that can play a big role in effecting consumers' decision to purchase green products is the availability of these products (Aertsens *et al.*, 2009; Zakowska-Biemans, 2011). Despite extensive media coverage, many consumers seem to be either not informed at all or at least informed ineffectively about green products and their explicit qualities (Gottschalk and Leistner, 2013; Yiridoe *et al.*, 2005).

Even when consumers are motivated to purchase a product that carries sustainability features, sometimes the unavailability of the product stands as a barrier in front of those consumers. This issue came from the fact that local food shops and farmers' markets are decreasing in number, this often results in regularity lacking, and convenience demanded by consumers. Additionally, green products usually are limited and in some cases are not properly located in shops and markets (De-Pelsmacker *et al.*, 2003). In a recent study, it was shown that 52 percent of respondents had an interest to purchase green product however they did not go green due to the difficulty of finding these products (Robinson and Smith, 2002).

According to Vermeir and Verbeke (2006) consumers usually have the motivation to purchase green products however this desire is usually not translated in real action due to the scarcity of these products. Mainieri *et al.* (1997) went further in explaining this issue by stating that one main reason for consumer' lagging environmental consciousness behind the pre-environmental behavior is the insufficient availability together with poor marketing of green products. Furthermore, researchers agree that one main tool to turn consumers to environmentally friendly consumers is to make green products easy to reach besides having more environmentally and socially responsible corporates (Kaufmann *et al.*, 2012).

Besides that, it is also important to highlight the importance of having genuine environmental claims, and that companies that support this green movement should avoid confusing the consumers to build trust and motivate people to start purchasing green products. Together with what was mentioned, Ismail and Panni (2008), Ismail *et al.* (2006) and Panni (2006) added that these approaches are not effective unless green products were available and consumers could easily found them without having to spend extra effort to do so, such a thing can play a key role to get consumers to participate in pro-social/pro-environmental behavior.

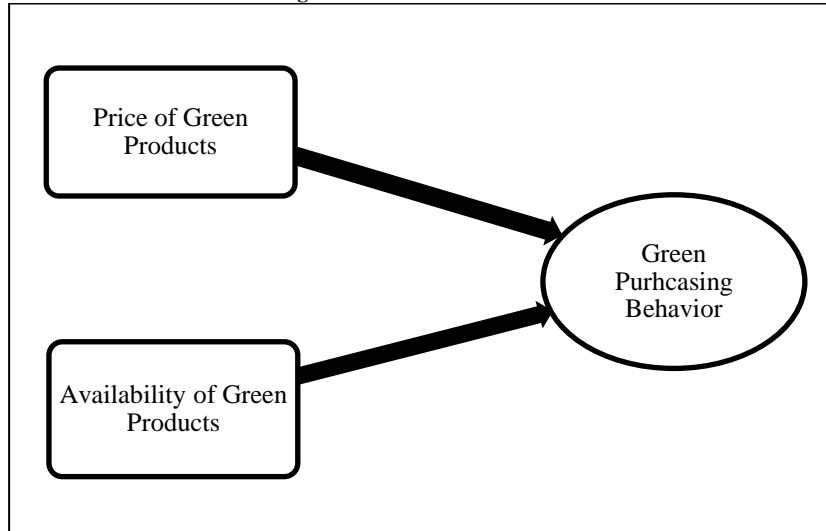
Model of purchasing decision process suggests that consumers are eager to purchase products that could save their time, thus products availability leads to a favorable purchasing behavior (Blackwell *et al.*, 2006). Furthermore,

in her study [Shahnaei \(2012\)](#) found that products availability has an influence on purchasing green products. Based on this statement, it is implied that:

H2: There is a significant relationship between green products availability and purchasing behavior of green products.

2.4. Framework

Figure-1. Theoretical Framework



3. Methodology

3.1. Research Respondents

For the purpose of this study, data was collected from Malaysian consumers in three states located in the northern region of Malaysia, namely Kedah, Perlis and Penang. Three hundred and ninety four (394) questionnaires were retained from the respondents and the demographic of them can be shown in the following table.

Table-1. Demographic Profile of Respondents

Demographics	Categories	Frequency
Age	below 20	24
	between 20 and 29	190
	between 30 and 39	84
	between 40 and 49	66
	more than 50	30
Gender	Male	164
	Female	230
Race	Malay	193
	Chinese	159
	Indian	38
	Others	4
Educational Level	SPM	136
	Undergraduates	153
	Postgraduates	62
	Others	43
Monthly Income	Below RM2000	169
	Between RM2000 and RM5999	206
	Between RM6000 and RM9999	16
	RM10000 and more	3

Table 1 illustrates the respondents' demographic profile. Descriptive statistics show that the majority of respondents' were between the age of 20-29 years (48%), followed by 30-39 (21%) and 40-49 (17%), this can indicate that majority of the respondents are from generation Y which is considered a young segment and hence should be exposed more to environmental knowledge.

The result also shows that 41.6% of the respondents were male while 58.4% were female, in terms of the race of the respondents, the analysis also revealed that Malay made 49% of the total respondents, followed by Chinese with (40.4%), then Indians (9.6%), 1% were from other races such as the Thais, Khmers, Chams and natives originated from Sabah and Sarawak. These characteristics "excluding the gender" are close to the actual demographic characteristics of the actual Malaysian population which makes this study fit to represent the Malaysian public in the northern region.

With regards to the respondents' education level, the result shows that majority of the respondents obtain an undergraduate degree with a total percentage of 39% followed by SPM holders who made 34.5% and this indicates that more than half of the respondents have been to college hence would be more exposed to knowledge therefore understanding environmental issues .

In order to identify the purchasing power of the respondents, they were asked to indicate their monthly income; the result shows the majority of the respondents make more than RM2000 a month with a cumulative percentage of 57.1%, while 42.9 make less than RM2000, which is considered low and hence might affect their ability to purchase green products.

3.2. Composite Reliability Test

A composite reliability test was run onto the dependent and independent variables which consisted of purchasing behavior, price and availability. Table 2 shows the (CR) of the variables.

Table-2. Results of Measurements Model-Composite Reliability (CR)

Construct	Composite Reliability (CR)
Purchasing Behavior	0.887
Price of Green Products	0.862
Availability of Green Products	0.903

As recommended by many researchers (Hair *et al.*, 2011; Henseler *et al.*, 2009), the acceptable threshold for composite reliability is 0.70. Table 2 shows the composite reliability of the constructs in this study which exceed the cut-off value of 0.70.

3.3. Average Variance Extracted

For assessing the convergent validity of the constructs, Fornell and Larcker (1981) AVE criterion was employed. The AVE refers to the average percentage of the variance extracted commonly among the observed variables of a construct. An AVE value greater than 0.50 indicates that a latent variable is able to explain more than half of the variance of its indicators on average. However, if the AVE is less than 0.5, this indicates, on average, that the construct explains less variance in the items that remains (in error) unexplained. Table 3 illustrate the results that shows the entire construct has achieved more than 0.50 values for AVE.

Table-3. Average Variance Extracted (AVE)

Variable	AVE
Purchasing Behavior	0.611
Price of Green Products	0.555
Availability of Green Products	0.652

3.4. Variable Correlation-Root Square of AVE

Discriminant validity was employed to confirm that a construct is more strongly related to its own measures than with any other construct by examining the overlap in variance. Basically, if a specific construct is more correlated with another construct than with its own measures, there is the possibility that the two constructs share the same types of measures and are not conceptually distinct. The results are shown in Table 4

Table-4. Variable Correlation-Root Square of AVE

	Purchasing Behavior	Price of Green Products	Availability of Green Products
Purchasing Behavior	0.808		
Price of Green Products	0.495	0.741	
Availability of Green Products	0.489	0.620	0.818

As apparent from Table 4 for the study construct, the square root of AVE of each latent construct exceeds the constructs' correlations.

3.5. Hypothesis Testing (Path Coefficient)

To test the hypothesized relationships PLS algorithm and bootstrapping was run in Smart PLS 2.0 3M. Table 5 contains the path coefficient and the bootstrapping results, where the hypothesized relationships below were tested:

H1: Result showed a strong association between price of green products and purchasing behavior of green products ($\beta = 0.192$, $t = 1.695$) and hence the hypothesis was supported.

H2: Result offered no support for H2 because green product availability was not significant in determining green purchasing behavior ($\beta = 0.039$, $t = 1.107$)

Table-5. Results of Hypothesis Testing

Relationship	Path coefficient	Standard error	t-value	Results
Price – purchasing behavior	0.192	0.113	1.695	Supported
Availability – purchasing behavior	0.039	0.035	1.107	Not Supported

4. Discussion

The final result from the empirical data analysis shows that price of green products was significant (H1) while green products' availability was found to be not significant (H2). These results indicate that green products availability has no impact on Malaysian consumers green purchasing behavior, but price has a strong impact among Malaysians.

For the hypothesis that received empirical support (H1), the findings are theoretically consistent with those of [Pedro and Lemke \(2013\)](#), who demonstrated a direct significant impact between price of green products and consumers' purchasing behavior of green products. In addition, the present study's findings provide support for previous research that examined price of green products and its relationship to consumers actual behavior ([Fotopoulos and Krystallis, 2001](#); [Peattie, 2001](#); [Shahnaei, 2012](#); [Sharaf and Isa, 2017](#); [Verhoef, 2005](#)), this relationship exists due to consumers' price sensitivity.

On the other hand, green products availability showed no significant impact on consumers' purchasing behavior. This indicates that availability of green products is not something Malaysian consumers are concerned about and hence it does not impact their actual behavior of green products. This means Malaysian tend to find green products in their local supermarkets however this does not motivate them to go green. The reason for such a result can be related to either the primary issue of green products which is their premium price, hence despite having green products available consumers do not find themselves preferring to purchase them, another explanation could either be blamed on the eco-label of green products which can be critical in the practical marketing implications, as if the packaging of the products does not attract consumers then some serious revision should be conducted to improve the eco-label and packaging of those products. Many studies suggested that availability of green products play a major role in effecting consumers' decision to purchase environmentally friendly products ([Zakowska-Biemans, 2011](#)) and some stated that consumers find it difficult to locate green products in their local markets ([De-Pelsmacker et al., 2003](#)) however in the Malaysian context it can be seen that the green wave has taken its part in the market and those products are now easier to find, however such a factor is not enough to motivate consumers to go green and other factors should be considered in order to come out with the desired outcome.

5. Limitations

Firstly, this paper work only used sample from hypermarkets and supermarkets in Kedah, Perlis and Penang, and their responses may not represent consumers from different age brackets living in different locations. While this impedes the generalizability of the study, it must be noted that this is a common limitation of most survey research which has constraints in both time and budget.

Another limitation comes from the fact that a cross-sectional survey was adopted for this study in which data was collected within the period of four months. This issue of doing a cross-sectional survey is that the studied variables could change over time, such a change such as economic situation as mentioned in the previous point could have an impact on the research variables, and because this study is not longitudinal, it has a specified expected period of completion, hence a longer period for data collection is not feasible.

6. Contribution

The shopper profile in this study falls predominantly in the young age range (between 20 and 40 years old) which makes nearly 70% of the respondents, and thus, with this understanding, green campaigns should focus more on this age group and the proper ways and means of reaching them should be considered such social media, while traditional means could be used less such as televised campaigns.

Corporates manufacturing green products and their marketing teams should identify the segmented groups and design and come out with appropriate branding and pricing. Additionally, it is suggested that retailers contribute in changing consumers' negative perception of premium prices green products have and make these products more affordable to a wider range of consumers, as the respondents have strongly linked price to their purchasing behavior, which can shape their perception in favour of green products believing their prices are reasonable.

In practical terms, this study's results brings recommendations for policy makers as well as marketers who promote environmentally friendly products "green products" or programs associated to the green concept which aims to shift consumers to a pro-environmental behavior.

7. Conclusion

This study highlights the importance of green purchasing in Malaysia. The main factors studied in this paper are price and availability which covers two of the four P's in the marketing mix which are place and price. Price will always be an issue for consumers as they always tend to look for that is more affordable and with the growth of the market and with the wide range of products in the market consumers get more price sensitive. On the other hand, product's availability did not influence Malaysian consumers purchasing behavior of green products and this

explains a lot about the purchasing habits of Malaysian consumers and how different what influences Malaysian consumers behavior is from other consumers.

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