

REVISITING INFLUENCE OF MARKETING EFFECTIVENESS AND ENVIRONMENTAL AWARENESS ON BUYING BEHAVIOUR OF GREEN PRODUCT: A SEM APPROACH

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Abstract

Environmental sustainability become a prominent and unending issue in the third world economic countries such as Malaysia. Although, “green” and “go green” concepts were emphasized by academicians and practitioners to explain the need to save the earth but environmental consciousness is remain at beginning stage. Therefore, the purpose of this study is to determine green buying behaviour among undergraduate students using environmental awareness or concern and marketing effectiveness as independent variables and intention as a mediator. Total 375 usable questionnaires were used for the purpose of analysis. Our findings support the influence of environmental awareness and marketing effectiveness on the intention and influence of intention on buying behaviour. Similarly, environmental awareness and marketing effectiveness mediated by intention on buying behaviour. The results of this study can be used by public and marketers to encourage pro-environmental behaviours. The recommendation, limitation and conclusion are then discussed at the end of the paper.¹

Keywords: *Buying behaviour, marketing effectiveness, environmental awareness*

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Introduction

Especially over the last two decades, environmental sustainability become a prominent and unending issue in the third world economic countries such as Malaysia, Thailand, Indonesia and so on. Although, “green” and “go green” concepts were emphasized by academics and practitioners to explain the need to save the earth, environmental consciousness remains at the beginning stage. In specific, climate change, ozone layer depletion, air and water pollution, deforestation, waste management, hazardous waste, acid rain and loss of flora and fauna became the global crisis that leads to economic, social and political issue caused by business and

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individual behaviour. Media have been highlighted that 30 to 40 percent of this environmental catastrophic caused by human unhealthy living pattern Chekima, Khalid Wafa, Igau, & Chekima (2015). Thus, human moral obligation to protect and preserve limited natural resources is an essential to discard natural catastrophic. In addition, more research needed on the different perspective to achieve more holistic viewpoint on environmental issues.

In line with this alarming situation, government and non-governmental agencies had initiated various pro-environmental programmes and campaign such as “No Plastic Bag Day Campaign,” 3R campaign (Reduce, Reuse, Recycle)” and environmental education to encourage and educate and create awareness with the aims of changing people’s environmental behaviour. Surprisingly, Hosseinpou, Mohamed, Rezai, Shamsudin, & Abd Latif (2015) found the insignificant results between go green campaign and people pro-environmental behaviour in Malaysia. Apart from that, waste management or commonly known as waste segregation is another issue that has been discussed extensively in Malaysian Parliament. According to Abas (2014), research highlight that recycling rate among Malaysians at alarming stage (5%) which is significantly still left behind compared to other neighbouring countries.

In general, environmental behaviour should be instilled at very early growth of human rather than initiating post-solution. Research by Akil, Foziah, & Ho (2015) also highlighted issue that mentioned earlier, elderly people display a pro-environmental behaviour rather than younger generation whom less incline to recycle. The study shows that elder citizens (45-64 years old) are more likely to participate in recycling activity (0% would not recycle) rather than the younger age group (18-24) are rarely involved in recycling activity (20% would not recycle). Therefore, this study focused on university students at age range from 18-25. Moreover, this study assumed that university students have some fundamental knowledge about importance of green product. Thus, the main objective of this study is to identify determinant factors of green buying behaviour among university students.

Literature Review

Climate changes and depleted natural resources viewed as a global crisis that caused by humankind and industries can gradually wipe out through various green awareness programmes. Surprisingly, the level of awareness, specifically environmental awareness and concern is still low among Asian countries, including Malaysia (Qader & Zainuddin, 2011; Rahim, Zukni, Ahmad, & Lyndon, 2012). The quality of the environment and ecological system in Malaysia is expected to getting worst if the current trend of industrial growth and human behaviour does not change.

Awareness, concern and perception of an individual is an essential behaviour that may enhance intention to practice a specific norm. Yet, these behaviour is too abstract to be measured. But, motivating factors can assist to increase the level of awareness to modify specific behaviour. Thus, green awareness or concern (Ishaswini & Kumar Datta, 2011; Rahim et al., 2012) and marketing effectiveness (Qader & Zainuddin, 2011; Rahbar & Wahid, 2011; Rahim et al., 2012) consider as a motivating factor in terms of generating green purchasing behaviour. In terms of green concept by Lee, Bonn, & Cho (2015) also used social factors derived through Theory of Planned Behaviour (TPB) to predict organic coffee purchase attitude. The same factors were used by Anvar & Marike Venter (2014) by adapting theory of reason action (TRA).

Environmental Awareness

Awareness is created through in-depth understanding of certain terminology and behaviour. The development of a certain process, technique and measures are enhancing the level of awareness in the certain field of study. Secondly, series of incidents may raise awareness in specific circumstances (Hsu, Chang, & Lin, 2016). For instance, current technology development such as biotechnology used in food industries were over-process the food until the outcome brought hazardous to human life and also environment. These incidents became a lesson for public and foster awareness about preserving the nature environment.

Apart from that, recent natural disaster due to uncontrolled economic activities has raised awareness to focus on environmentally friendly product. Nowadays, it can be clearly seen that environmental problems such as global warming, air pollution, water pollution, melting ice berg in Antarctica and so on happens due to the irresponsible human behaviour and businesses. Experts said that human unethical and irresponsible characters led to the most environmental degradation. Chekima et al.(2015) asserted that people with high moral obligations would react positively towards environmental issues. The author also added that this moral obligation was possible if an individual has been aware of ‘how’ and ‘what’ to do rather than information get through formal education and experience. For instance, Azizan & Suki (2013) talking the same issue in their study. The author believed that moral obligation about healthy lifestyle leads to awareness about green product.

Marketing Effectiveness

Although numerous research conducted in the various fields on marketing effectiveness, few different concepts exist. However, Kotler (1977, 1997) concluded marketing effectiveness consists of five components, notably: customer philosophy; integrated marketing organisation; adequate marketing information; strategic orientation; and operational efficiency. According to Rahbar and Wahid (2011), environmental advertisement is a form of knowledge about green products. Therefore, green marketers and manufacturers should pay attention in designing and promoting an eco-branded products.

However, implementation of feasible marketing strategy becomes a major constraint in establishment of green marketing. Therefore, the eco-product advertisement strategies need to be aligned with consumer behaviour. According to (Joo-Hyun, 2012), research on personal marketing, 67 percentage of the respondents responded that eco-marketing is not effective to lure customers. This issue possibly could be solved through eco-label approach on product packaging. Eco-label is an important sign that informing customers that the product is safe for person consumption and environmental friendly. However, some companies reluctant to comply with eco-label policy due to cost. Chekima et al., (2015) also argued that intention in purchase decision found through positive familiarity, perception and placement of eco-label in products.

A number of research papers have experimentally proven that green brand at a certain level could create awareness among a consumer. Although green brand is a trend in modern business, certain developing countries such as Malaysia is still lacking in the implementation. Similarly, Braimah & Tweneboah-Koduah (2011) concluded that green brand awareness at alarming stage in Ghana due to a higher product prices rather than concern about the environment. The authors also mentioned that entrepreneur and business owner use green products for marketing purposes rather than developing awareness among their consumers.

Therefore, it can be concluded that effective marketing strategy more inline with green innovations and promotions (Hasan & Ali, 2015) such as marketing campaigns, pricing strategy (Anvar & Venter, 2014) and green advertisement (Tariq, 2014).

Intention

Ajzen & Fishbein (1980) recommended a short time gap between the time to measure of intention is taken and the time the behaviour is observed. The longer the interval is the greater the probability that circumstances will occur, which results from changes in intention. In other words, a longer period of time would tend to have a harmful impact on the precision of the behavioural prediction.

In the concept of green product, previous literature highlight that environmental knowledge (Azizan & Suki, 2014) such as eco-label (Chekima et al., 2015) safety concern (Hsu et al., 2016), attractive promotion campaigns (Hosseinpou et al., 2015) and social factors (Hung et al., 2011) significantly influence purchase intention of green product. These factors develop favourable attitude towards green product. Although attitude is too subjective to elaborate those factors listed above potentially create concern and awareness towards own attitude that change the intention to purchasing a common consumer products into intention to purchase organic or green product. Similarly, Azizan & Suki (2014) found that level of health consciousness conditions had strong intention to choose green product.

Buying Behaviour

According to Rahbar and Wahid (2010), green purchasing or buying behaviour is a form of act buying product that does not harm the environment and also beneficial for the customers. This behaviour has classified as a matured customer behaviour whom has environmental and behavioural knowledge by expressing their concern as well. These customers have more social responsibility compare to ordinary consumers whom reluctant regarding any environmental issues. They practice green purchase behaviour to avoid negative environmental impacts, and they involve actively to any efforts regarding protecting natural resources. A high degree of environmental awareness and concern leads to pro-environmental behaviours. However, premium or higher price of green products and lack of product substitutes or green product are the major reasons for adverse consumer purchase behaviour. Thus, Pickett-Baker and Ozaki (2008) asserted that pro environmental behaviour leads by pro-environmental values.

Furthermore, certain factors may influence this green purchase behaviours. First, ethical attitude (Lee et al., 2015) plays an important role to prepare an individual to react according to the pro-environmental behaviour. Good concern about environmental protection could lead to ethical concern about nature, and they may feel obligated to protect an environment for future generation. However, although attitude navigates consumers purchase behavioural pattern but there is certain element that enthuses buying behaviour of green product. For instance, social factors such as pricing sensitivity (Anvar & Venter, 2014), time-consuming and difficult to acquire (Johnstone & Tan, 2015) become barriers to the consumers react according to the green concept. In addition, companies also plays an important role to educate the customer regarding procedures using a product so that possible negative impact on environment easily reduced. The company owners also should be aware about the potential environmental harm that caused by their product and as a precaution it is the companies' responsibility to alert the customer about the appropriate procedure to use and dispose manner (Budhiarta, Siwar, & Basri, 2012).

Methodology

The main purpose of this study to examine the factor that influences buying behaviour of green product among students in Malaysia regardless of income and programmes. Students were chosen for this study as they are more prone to buy green product compared to others due to level of education. The data were collected from one of the largest public universities in the northern Malaysia. In specific, public university were chosen for this study because a student more likely with high health consciousness and focus market segment due to their level of education and exposure of contemporary health issues. For the purpose of this study, 450 questionnaires were distributed by using convenient sampling method. Out of 450 questionnaires, 386 (77.2%) questionnaires were returned after two-week period of time. Out of 386 returned questionnaire, 11 questionnaires were discarded due to errors in partial responses and numerous missing data.

Data Screening and Analysis

Total 375 usable questionnaires were considered and analysed by using SPSS version 21 and AMOS 21. Several statistical analyses were performed before the test structural equation modelling by using AMOS. At the outset, data screening for outlier were performed. Hence, 16 dataset were deleted based on the Mahalanobis (D2) ($\chi^2=49.73$; $n=23$, $p<.001$). Subsequently, researchers also embark on univariate normality computations using z-scores of skewness statistics, standard error of skewness and kurtosis statistics based on the recommendation by Hair, Black, Babin, & Anderson (2010) that considers Z-score skewness of more than 2 needs to be transformed. Therefore, several items were transformed (EA1, EA6, ME6 and BB5). Accordingly, all transformed variables were used for further analysis.

For the purpose descriptive statistics, descriptive analyses were conducted by incorporating frequency, percentage and mean. Then, numerous statistical tests were performed to achieve objective of the study such as reliability analysis (Cronbach Alpha and Composite reliability), validity tests using confirmatory factor analysis (CFA) for construct convergent, discriminant, and nomological validities.

Results

Demographic Profile of Respondents

Table 1 depicts the profile of respondents by gender, age, ethnic, and college. In the setting of 359 samples, female respondents were dominating (79.7%) compared to male respondents recorded only 20.3%. They were mostly 19 – 20 years old students (78.6%), followed by 21-22 years (15.6%), and 23.24 years (5.0%). On the other hand, below 19 years were recorded only 2 students (0.6%) and followed by 1 student (0.3%) for age group 25-26 years. In terms of ethnic, about 48.5% respondents are Malays and relatively Chinese (42.3%), Indian (4.5%) and others (4.7%).

Table 1: Profile of the respondents (n=359)

Variable	Frequency	Percentage
Gender		
Male	73	20.3
Female	286	79.7
Age (Years)		
Below 19	2	0.6
19 - 20	282	78.6

21 - 22	56	15.6
23 - 24	18	5.0
25-26	1	0.3
Ethnic		
Malay	174	48.5
Indian	16	4.5
Chinese	152	42.3
Others	17	4.7

Reliability and Validity Measures

Table 2 comprises mean, standard deviation, Cronbach alpha and composite reliability. Cronbach alpha depicts adequate reliability of each construct more than 0.6 as recommended by Nunnally (1970), value ranges from 0.632 to 0.863. Similarly, composite reliability which represents shared variance among a set of observed variables measuring an underlying construct also plausible because all constructs more than 0.6, (Fornell & Larcker, 1981). This requirement has met by all constructs.

Table 2: Descriptive Statistics of Variables

Variable Name	No. of Items	Mean	(Std. Dev)	Cronbach Alpha	Composite Reliability
Buying Behaviour	5	3.704	0.479	0.632	0.837
Intention	3	3.910	0.630	0.863	0.905
Environmental Awareness	9	3.754	0.460	0.821	0.963
Marketing Effectiveness	6	3.874	0.492	0.806	0.893
Total Items	23				

Next, average variance extracted (AVE) was calculated for each construct based on recommended threshold value of 0.50 (Bagozzi & Yi, 1989; Hair et al., 2010), which suggest that more than one-half of the variances observed in the items were accounted for by their hypothesized constructs. In this study, average variance extracted ranges from 0.704 to 0.888. In addition, all constructs in the correlation value must be less than recommended value 0.8 (Sekaran, 2003). The evidence from the table 4 shows that correlation (without bracket) value as recommended. In conclusion, all of the constructs` AVE in this study more than correlation and correlation square. Thus, discriminant validity is supported and all constructs used in this study.

Table 3: Average Variance Extracted (AVE) Matrix of Variables

Variable Name	1	2	3	4
Buying Behaviour	1.000			
Intention	0.747	1.000		
Environmental Awareness	0.767	0.888	1.000	
Marketing Effectiveness	0.704	0.825	0.845	1.000

Table 4: Correlation & Correlation square Matrix among Variables

Variable Name	1	2	3	4
Buying Behaviour	1.000	(0.293)	(0.231)	(0.219)
Intention	0.542**	1.000	(0.343)	(0.242)
Environmental Awareness	.481**	.586**	1.000	(0.381)
Marketing Effectiveness	.468**	.492**	.617**	1.000

** Correlation is significant at 0.01 levels (2- tailed).

Note: Values below the diagonal are correlation estimates among constructs, diagonal elements are correlation and values above the diagonal are correlation square.

Goodness of Fit of Structural Model

The initial measurement models indicated a moderate poor model fit (see, Table 5). In order to achieve goodness of fit of structural model, confirmatory factor analysis was conducted. Byrne (2001), Bentler (1990) and Hair et al. (2010) recommended the indices value of comparative fit index (CFI), goodness of fit index (GFI), Tucker-Lewis index TLI were above 0.9, p-value >0.05, Ratio (cmin/df) <2 and root mean square error of approximation (RMSEA) <0.08. Table 6 shows that the goodness of fit of a structural model is better compared to the hypothesized model and indicating a satisfactory fit. This is expected as hypothesized model is usually strictly confirmatory (Byrne, 2001). For instance, GFI of a structural model is 0.967 compared to GFI of hypothesized model of 0.854. Therefore, the revised model was a good fit and considered for hypotheses tests.

Table 5: Goodness of Fit Analysis-Confirmatory Factor Analysis (CFA) of Models (N=359)

Finals Models	CMIN	Df	CMIN/df	p-value	CFI	GFI	TLI	RMSEA
Recommended Value	n/a	n/a	<2.0	>0.05	>0.9	>0.9	>0.9	<0.08
Hypothesized Model	617.880	226	2.734	0.000	0.869	0.854	0.853	0.070
Revised Model	87.578	73	1.2	0.117	0.990	0.967	0.987	0.024

Hypotheses Results

In this study, measurement model does not achieve model fit, chi-square/ratio (x2/df) (2.734), p-value (0.000), comparative fit index (CFI) (0.869), goodness of fit index (GFI) (0.854) and Tucker-Lewis index (TLI) (0.853) and only Root Mean Square Error of Approximation (RMSEA) less than 0.08 (RMSEA=0.70). Hence, researchers considered revised model for the explanation of formulated hypotheses as shown in the figure 1.

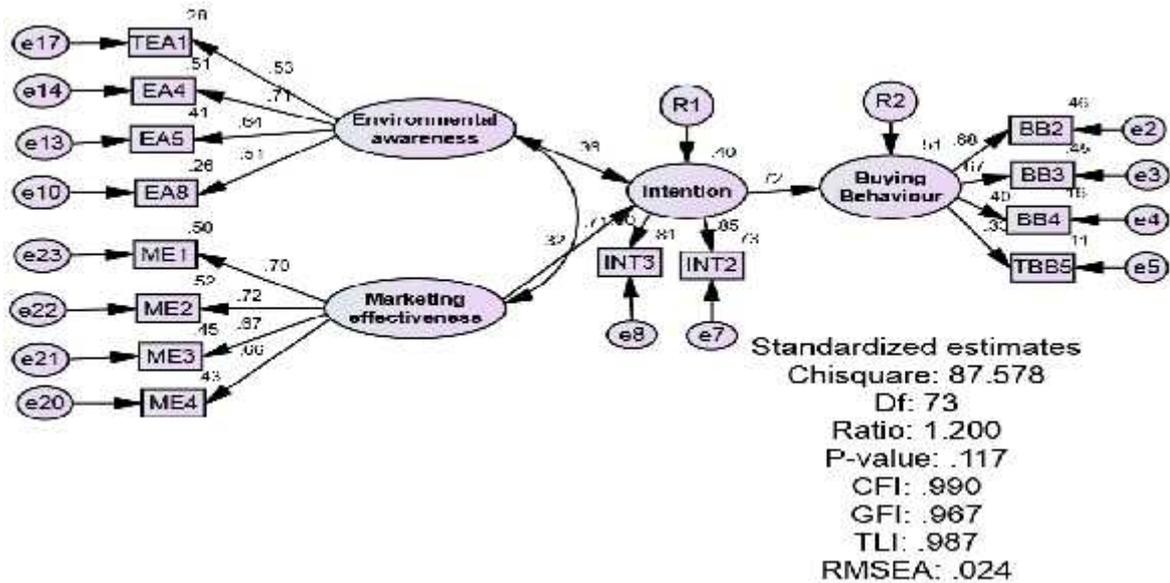


Figure 1

Table 5 and figure 1 depicts that the effect of environmental awareness on intention was significant at p -value < 0.001 level ($\beta=0.361$; $CR=3.513$). Thus, H1 is supported. Similarly, H2 also supported – marketing effectiveness has a positively related and significant effect on intention to buy green products ($\beta=0.310$; $CR=3.146$; p value= 0.002). Interesting, H3 also supported and significant at p value <0.001 level ($\beta=0.704$; $CR=9.173$).

For the mediating effects, as for path in the Table 6, two relationships were tested by using intention as a mediator. It is apparent from the table 6 that H4 and H5 were supported and mediating the relationship between environmental awareness and buying behaviour and marketing effectiveness and buying behaviour.

Table 5: Direct Impact of Revised Model: Standardized Regression Weights

H			Std. Estimate	S.E.	C.R.	p-value	Status
	Endogenous	Exogenous					
H1	Intention	<-- Environmental awareness	0.361	0.130	3.513	0.001***	Significant
H2	Intention	<-- Marketing effectiveness	0.310	0.148	3.146	0.002	Significant
H3	Intention	<-- Buying behaviour	0.704	0.055	9.173	0.001***	Significant

Table 6: Indirect Effect of Variables Interaction

H	Exogenous		Mediation		Endogenous	Direct Effects Estimate-No link	Direct Effects Estimate-link	Mediating Hypothesis
H4	Environmental awareness	-->	Intention	-->	Buying behaviour	EA → INT=0.361(S) INT → BB=0.704(S)	0.365(S) 0.601(S)	mediating
H5	Marketing effectiveness	-->	Intention	-->	Buying behaviour	ME → INT=0.301(S) INT → BB=0.704(S)	0.308(S) 0.601(S)	mediating

In addition, relatively squared multiple correlations of a revised model higher than hypothesized model. Hypothesized model explains 44.7% variance in intention and 50.9% variance in buying behaviour. The revised model squared multiple correlation slightly higher than hypothesized model, intention (40.2%) and buying behaviour (51.2%).

Discussion

This study investigated the factors that influence university students buying behaviour of green product. Results revealed that environmental awareness and marketing effectiveness was an important predictor to green product buying behaviour among university students. In particular, the significant effect of environmental awareness on intention to buy green product, found in this study, give symptom of future market prospect of green products in Malaysia. These findings consistent with studies such as Aman, Harun, & Hussein (2012) and Lasuin & Ching (2014). This supporting hypothesis, suggesting that government need to take into account this predictor to create more advertisement and green purchasing recommendation to increase their awareness and save the earth from continuously deteriorated due to unsustainable economic development. Results (H2) also suggest that marketing effectiveness has significant influence on intention to buy green products, which is consistent with prior studies such as Ansar (2013) and Balakrishnan, Dahnil, & Yi (2014). From the findings and results, young consumer especially tertiary institution students more aware and knowledge intensive to perceive marketing contents pertinent to green products (Osman, Isa, Othman, & Jaganathan, 2014). Furthermore, Hypothesis 3 was assessed to determine the relationship between intention and buying behaviour was significant as expected. However, some previous studies (Kanonuhwa & Chimucheka, 2014; Kumar & Ghodeswar, 2010; Pickett-Baker & Ozaki, 2008; Rahbar & Wahid, 2011; Tan, 2011) were examined direct relationship factor influencing purchase behaviour of green product. Thus, this study attempted to test intention to buy green product as a mediator due to a characteristic of respondents as a non-earner and age. Next, the relationship between green purchase behaviour and environmental awareness is mediated by intention. Hence, it can be concluded that the impact of purchase behaviour of green product dependent on intention of consumer to buy green product. In addition, this relationship also revealed that students need an intention prior to purchase green products possibly due to their lifestyle factors such as peer influence and price of the green product which is relatively higher than non-organic products. (Mei, Ling, & Piew, 2012; Sharaf, Isa, & Al-Qasa, 2015). Similarly, H5- the relationship between marketing effectiveness and green purchase behaviour also mediated by intention to buy green product. In this context, respondents articulated that marketing effectiveness utmost important to create an intention prior to purchase green product. Some past

studies (Brooks & Simkin, 2012; Gharibi, Danesh, & Shahrodi, 2012; Sallam & Wahid, 2012) marketing effectiveness is very important to create attention, interest, desire and action (AIDA) especially among digital generation who more likely to change their behaviour due to overloaded information on the internet.

Limitation and Conclusion

The main findings of this study can be concluded that environmental awareness and marketing effectiveness plays a significant role in creating the intention to perform green buying behaviour. While we believe objectives of this study met, yet, it's subjected to few limitations. Firstly, due to time constraints, this study only able to focus only one public university's students. Furthermore, it has led to another limitation that focus only non-earners in general. In addition, this study utilized convenience sampling and should be extended to other type younger generation. Therefore, it can be concluded sample was so constricted since single university students were responded to this study, and the findings of this study is not fit to be generalize for younger generation (Jaganathan, Mustapa, Hasan, Mat, & Alekam, 2014).

This study identified and investigated few factors inducing the buying behaviour of green products, yet there are other factors found in the literature of previous studies to motivate consumers' buying behaviour in other field of product categories. For instance, marketing strategy, psychological factor, demographic factors and product-related attributes possibly influence buying behaviour of green products. Furthermore, his study were conducted by filling the questionnaire. This method possibly unable to provide accurate responses since some filling up the questionnaire without knowing the contemporary perspective of green concept.

Apart from that, this study has investigated the determinant of green buying behaviour of green products in general. Thus, future research can be focused on a specific product. It is possible by concentrating specifically on electric and electronic appliances, recycle items or on the industry basis.

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