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Current Trends in Malaysian's Green Purchasing Behaviour in Supporting Green Economy Movement

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Abstract

The Malaysian 2021 Budget reflects the government's commitment to spurring the green economy with the emphasis to drive public awareness towards environmental conservation agenda despite the Covid-19 pandemic. However, it was recognized that contradictions exist between attitude and customer behavior balancing between lifestyle and environmental issues. Thus, the inconsistencies had created gaps between the two consumer interaction styles which would not be beneficial for market institutions and their customers. Hence, it is important to investigate how consumers interact with the representatives of marketing institutions with the customers' environmental attitude lifestyle to understand and narrow the green purchasing behavior gap for the survival of the business organizations and the satisfaction of the consumers. Therefore, for this study, a newly developed measurement tool, Environmental Quality Awareness (EQA) was utilized to test the assumptions and to recommend appropriate solutions to narrow the attitude-behavior gap. The research collected 321 Malaysian respondents who are aware of and used household technology products related to the green economy. The data was analyzed using Partial Least Square - Structural Equation Modelling (PLS-SEM) method. The result indicated that 70% of the EQA framework integrated constructs are supported by the relationship of environmental quality awareness and environmental attitude towards green purchasing. The remainder of 30% of the framework shows a non-supportive hypothesis on the relationship of environmental quality awareness towards green purchasing. Hence, the study indicates that when people are aware of environmental quality and possess an environmental attitude towards sustainable performance, they will eventually lead to trust and purchase green products, thus hence supporting the green economy drive.

Keywords: Awareness; Attitude; Environmental quality; Green economy

1. Introduction

In 2002, the director of the Environmental Quality Measurement Project at Yale University, Tanja Srebotnjak has carried out some investigations on Environmental Quality Index (EPI). The Malaysia EPI (also knowns as MYEPI) on the other hand has considered the Socioeconomic Sustainability aspect to gain perspective of the resource efficiency impact and as well to assess people's environmental awareness and behaviour along with environmental governance in terms of promoting progressive environment realization and reducing the country's pollutions.

The EPI carries several aggregate environmental indicators that are derived from observations (data) and rank on how well the countries performing towards 70% discuss

ecosystem vitality and 30% discuss health protection from harm. By 2012, the introduction of MYEPI in Malaysia carried out three principal objectives namely environmental health (EH), ecosystem vitality (EV), and socioeconomic sustainability (SS). Subsequently, the Malaysian EPI principals discuss nine core issues and Malaysia EPI has considered the Socioeconomic Sustainability aspect to gain perspective of the resource efficiency impact, to assess environmental awareness and behaviour as well as environmental governance.

With the respect to Malaysia's EPI, historically, MYEPI was gradually dropping to 50th in 2010 and currently in 75th place in the world. Hence, the insight from EPI has led to endemic problems discussions and considerable efforts from agencies, government ministries non-government organizations (NGO), private sectors, and academic institutions. There were two-fold challenges of the MYEPI, namely data and policies. However, EPI has few drawbacks on data deficiencies and incompetently reflects the environmental issues of trade flow. The insufficiency or unavailability of data hampered the development of meaningful new indicators for the EPI or the utilization of better data. Furthermore, while it is a norm for government agencies to gather data for various purposes, not all data are readily available for public consumption. As such, the opportunity for utilization of relevant data into EPI that could help long-term improvement is lost. Moreover, the lack of actual motivation and ecological-related policies about pressing issues such as renewable energy and solid waste has remained a challenge for real data to be available. As a result, the collected data from EPI has unstable data efficiency due to dynamic new data and the unavailability data-driven composite index. Hence, leaving the EPI with no choice but to omit a potential indicator or at best, utilize projection data.

Additionally, there was constructive criticism that goes beyond the index method, especially in socio-economic sustainability. First, EPI is not gaining the perspective of customers or consumers towards environmental quality. Secondly, the body of knowledge has vague information on the economic sustainability of the demand and supply. Thus, among few EPI studies demonstrated that environmental performance neither takes account of people (customers') awareness and reach the level of people sensitivity nor guarantee to make them act on it (purchasing and consuming) (Barbara, 2001). Furthermore, EPI does not examine how well the green practice or activities, as opposed to customers' viewpoint towards environment performance. Hence, it is crucial to measure environmental quality awareness (EQA) and environmental attitude (EATT) towards purchasing behaviour in order to drive a strategic direction towards positive social change and a green economy movement. Therefore, the expansion of the pro-environmental social change will fuel the green market by increasing demand to stimulate the purchasing of green products. Besides, the expansion of the green market is the indication to increase customers' demand for greener products which will help to develop environmental sustainability as well as to create future business opportunities for the nation as indicated in the purpose of this study.

2. Methodology

Three dimensions and 20 themes designate the policy issues adapted from MYEPI to construct EQA scales. A questionnaire was developed to determine the effects of EQA on green purchasing behaviour (GPB) and the EATT mediates the relationship between EQA and EPB. The research focuses on the expenditure on household technology green products

including household electronic appliances, electrical devices, and transportation which carry the largest consumption group.

This research approach is qualitative surveys executed using confirmatory factor analysis (CFA) to test the hypotheses in the partial least square and structural equation modelling (PLS-SEM). This method assessed items that consist of three variables and tested the relationships between factors which allowed complete investigation of all hypothesized relationships simultaneously (Barbara, 2001). The research will run a descriptive study and measurement model evaluation. Then, the extension of Heterotrait-Monotrait (HTMT) in the structural model helps the shortcomings of traditional discriminant validity assessment of cross loading and Fornell and Larker criterion where it estimates the actual correlation between two constructs would be whether it is perfectly measured or perfectly reliable. Lastly, the research will analyze the EATT mediation effect between EQA and GPB. Therefore, such issues related to the knowledge and skills gaps could help the researcher to understand and to enact the relationship between theory and the social reality related to the factors that influence green purchasing behavior issues objectively.

3. Results and Discussions

Relevant literature has been reviewed, and a qualitative method has been utilized to come up with a clearer definition and to identify relevant constructs towards purchasing behavior. The questionnaire took place via Facebook and WhatApps, where the researcher shared the survey link with approximately more than 50,000 online respondents the group doctorate support group, Malaysian environmental NGOs, and Malaysian nature society; who have different demographic backgrounds. The percentage of the usable questionnaire was high as 98% out of 327 of the total questionnaire received. Whereas 1.83% of the total responses were not usable because six respondents are not Malaysian by using nationality parameter. The result of descriptive analysis and discussion shows that all respondents are aware of the environment quality. Based on the data of 321 respondents, the majority of female (69%) and among 26-35 years old respondents (55.5%). Moreover, Malaysia presents an extraordinarily multicultural and combined ethnic structure of three dominant groups which mostly 68.6% are Malay, Chinese at 23.4% and Indians at 7.0%, and other races like Pribumi 1 % and the remaining percentage is non-citizen.

The descriptive statistics analysis describes the normality distribution of the scores of the sample that were investigated. Table 1 shows the distribution has negative skewness (-1 and -0.5) which means the date is moderately skewed. The kurtosis indicates EQA -0.55, EATT 1.73, and GPB 1.09 shows, hence it confirms that the result has a shorter distribution, tails are thinner than the normal distribution. The peak is lower and broader than Mesokurtic, which means that data are light-tailed or lack outliers which means that data are light-tailed or lack of outliers' range (Platykurtic = <3). The highest mean rating is EATT (4.66), follows by GPB (3.96), and EQA (3.72) on a 5-point Likert scale.

Table 1: Descriptive statistic

Variables	Mean	Std. Deviation	Skewness	Kurtosis
Environmental Quality Awareness	3.72	0.73	-0.06	-0.55
Environmental Attitude	4.66	0.45	-1.47	1.73
Green Purchasing Behaviour	3.96	0.69	-0.79	1.09

Meanwhile, Table 2 shows the Pearson correlation assessing five variables indicates that all data are positively correlated.

Table 2: Pearson correlation

Variables	**EQA**	**EA**	**GPB**
Environmental Quality Awareness	1		
Environmental Attitude	.170**	1	
Green Purchasing Behaviour	.349**	.432**	1

Table 3: The reflective measurement models (discriminant validity) results

Model Construct	Indicator	Loadings	Average Variance Extracted (AVE)	Composite Reliability (CR)	Cronbach Alpha (α)	Discriminant Validity
		> 0.7	> 0.5	0.7	0.6 - 0.9	HTMT
EQA	EQA1	0.731	0.601	0.857	0.778	YES
	EQA2	0.833				
	EQA3	0.781				
	EQA4	0.752				
EATT	EATT5	0.720	0.652	0.848	0.729	YES
	EATT6	0.865				
	EATT7	0.830				
GPB	GPB8	0.811	0.601	0.857	0.778	YES
	GPB9	0.732				
	GPB10	0.818				
	GPB11	0.737				

Notes: *EQA; EATT; GPB; GSE, Green Self-Efficacy; GT, Green Trust; AVE, Average Variance Extracted; CR, Composite Reliability; α, Cronbach Alpha; HTMT, Heterotrait-Monotrait (Confidence interval does not include 1).*

Table 3 shows that the average variance extracted (AVE) of the overall amount of indicator reliability accounted by the latent constructs were ranged from 0.601to 0.652 which exceeded the recommended value of 0.5. Composite reliability measures of internal consistency reliability indicate the latent range from 0.848 to 0.857 which also exceed the recommended value of 0.7. Thus, the measure of 3 reflective constructs has high levels of convergent validity. By means, CFA findings show 3 constructs, namely, EQA, EATT, and green buying behaviour, are all valid measuring their construct according to the significant value and were unidimensional. Thereby, the result suggested that construct measures were established construct and discriminant validity and had surpassed the satisfactory level.

In the structural model evaluation, there were 5 steps developed. First collinearity assessment, structural model path coefficient, coefficient of determination (R^2), Effect size (f^2), and blindfolding and predictive relevance (Q^2) hair. The VIF (Table 4) below indicates that all constructs show is within the range of tolerance values that below of threshold of 5. Hence, the collinearity among the predictor construct is not a critical issue in the structural model (> 0.2).

Table 4: VIF table

Construct	VIF	
	EATT	GPB
EQA	1.048	1.559
EATT		1.619

Notes: EQA; EATT, EATT; GPB; GSE; VIF, Variance Inflation Factors

In Table 5, the study used the bootstrapping procedure with 5000 resamples to assess the significance of path coefficients to generate the t-values. In marketing research, critical values for two-tailed tests are 1.96 (significance level = 5%), whereby, for consumer research settings, research usually assumes a significance level of 1%. The Coefficient of Determination (R^2) shows that Environment Quality Awareness (β 0.403, p< 0.01) was slightly moderate explaining the 25.9% (R^2) of the variance in EATT. Meanwhile, EATT (β 0.32, p < 0.01) is moderately explaining 35.5 % of the variance in GPB.

Whereas the relationship between EQA and GPB was not significant (β -0.053, p > 0.01). In the effect size, f^2 can be observed that HT1 (0.21) and HT3 (0.12) carry medium effect, whereas HT2 carries no effect (<0.02). Therefore, the path coefficient result explains HT1 and HT3 were supported while HT2 was failed to explain the relationship of EQA towards GPB. The Q^2 values are accessed by using blindfolding and the result shows that the Q2 values exogenous construct have sufficient medium predictive relevance where all values are more than 0.157 to 0.209.

Table 5: Path coefficient and hypotheses testing

Hypothesis Testing	Relationship	Standardized Beta	Standard Error	t-Value (t> 1.65)	P-Values	Confidence Interval		Significance (p< 0.05)	R^2	f^2	Q^2
HT1	EQA → EA	0.40	0.06	6.30	0.00	0.28	0.53	Supported	0.259	0.21	0.157
HT2	EQA → GBP	-0.05	0.05	1.18	0.24	-0.14	0.04	Not Supported		0.00	0.209
HT3	EA → GBP	0.32	0.05	6.64	0.00	0.23	0.41	Supported	0.355	0.12	

Notes: *HT, Hypothesis Testing; EQA; EATT; GPB; SD, Standard Deviation; R^2, Coefficient of determination; f^2, effect size; Q^2, predictive relevance.*

In the hypothesis testing for mediation effect (Table 6), bootstrapping 5000 resamples was applied. HT4 shows that, β=0.129 was significant with t-value= 4.373, p< 0.05, Boot CI= LL= 0.08, UL= 0.193. Hence, it is proven that HT4 has a significant 'indirect-only mediation' effect, but not the direct effect.

Table 6: Hypothesis testing for mediation effect (indirect effect)

HT	Relationship	Indirect Effect (a x b)	SD	t-value	CI		Decision
HT4	EQA→EATT→GPB	0.129	0.029	4.373	0.08	0.193	Supported

Notes: *HT, Hypothesis Testing; EQA; EATT; GPB; SD, Standard Deviation; CI, Confidence Interval.*

Based on these results, shows that HT1 is supported by the three paradigm models where EQA has significantly influence EA with a t-value = 6.30. Therefore, people who are aware of environmental quality will continuously improve their quality of life by preventing environmental scarcity. This complements a prior study that indicates the people who aware will be more exposed to an efficient and favourable attitude (Simmons and Widmar, 1990).

For example, when the customers are aware of the environmental degradation that has an impact on their health and surrounding, such as family, friends as well as the country's condition; they are likely to involve in participating in green activities in their daily life. Therefore, environmental awareness is positively encouraged people to engage more frequently in ecological behaviors in their everyday life (Han, 2011).

However, in HT2, EQA has failed to translate into GPB with t-value= 1.18; where shows that the relationship could be related to more broad and complex customers' behavior faculties. Although, HT1 shows if consumers who are aware of the environmental problems (EQA) tend to have an EATT. In the western environmental study, for example, the people who perceived more severe environmental challenges are likely to take more initiatives to control and manage environmental issues including purchasing green products (Boztepe, 2012). This result supported a prior study which argues that individual hardly change their behaviour when their lifestyle and habits are deep-rooted in a social context. Moreover, in the Malaysian context, Sinnappan et al., (2011) studies show that although environmental degradation and received considerable attention by government and academicians; whilst consumers acknowledge and possess high concern about sustainable issues; it still does not necessarily stimulate GPB (Adham et al., 2014; Sinnappan and Rahman, 2011).

Remarkably, HT3 (t-value= 1.18) and HT4 (t-value = 4.373) show that the people who embodied EATT are inclined in purchasing green products. These relationships have proven again that the attitude antecedent has been a great indicator for behavior in Theory Planned Behaviour. For example, the people who are practicing sustainable activities like recycling, carpooling, re-planting will not have a problem purchasing green products. Hence, the research supports Kotler's study which stated 'to dictate the desired behavior, people must possess the environment attitude towards environmental responsibility, for example like purchasing the green product.

4. Conclusion

The purpose of this study was to investigate the purchasing of green household products including green transportation in Malaysia. Generally, the pro-environmental people are sensitive, voluntarily participating in the green movements, and would not leave the responsibility of environmental issues on the government and others (Thøgersen et al., 2012). However, people have different segments of green interest, for instance, outdoor enthusiasts, resource conservers, health fanatics, and animal lovers; which is well elaborated by Ottman (2011). People have different degrees of identity, commitment, perception, ability to perform green activities. Unfortunately, there was a discrepancy between an individual's intrinsic values and behavior commitment which does reach their sensitivity to translate into ecological purchasing. This research supports prior studies claimed by Kollmuss and Agyeman (2002), who stated that environmental awareness does not lead to pro-environmental behavior nor has a sustainable lifestyle (Kollmuss and Agyeman, 2002). Furthermore, studies that involving Malaysia setting by Ramayah et al. (2010) and Chan et al. (2000) indicate that there was an existence of environmental concern and awareness towards environmental issues, unfortunately, it was not significant enough to guarantee the customer will purchase the green product (Chan and Lau, 2000, Ramayah et al., 2010).

Furthermore, it seems to achieve green consumerism country is still pretty far-fetched when the individual is lacking the necessary resources (Rahbar and Wahid, 2010; Sinnappan and Rahman, 2011). For instance, money commitments and vague green product promise that portrayed by profit-making companies. Environmental Performance Index is underachieved if the demand for green products green is still low and putting environmental degradation is at stake. Therefore, it is necessary to recognize the specific variable that will have a specific effect on green purchasing (Mat Said et al., 2003; McMurray, 2014; Rahbar and Wahid, 2010; Sinnappan and Rahman, 2011). In conclusion, this research has contributed to the EQA novelty that essentially gives the body of knowledge and marketers a better understanding of the broad and complex customers' behaviour spectrum that could be adapted in another research context. Furthermore, it is recommended for future studies to examine other intrinsic variables such as green trust, self-efficacy, motivation, and satisfaction towards green purchasing behaviour.

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