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GREEN CONSUMER PURCHASE BEHAVIOUR IN MALAYSIAN SUPER-REGIONAL MALL'S GENERAL MERCHANDISE STORES

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ABSTRACT

Since the establishment of super-regional and mega malls in Malaysia, little is known about green consumers' purchase intention and behaviour in the malls' general merchandise stores (GMS). This study first examines the profile of green consumers' purchase intention and behavior on green products in the GMS. Second, the green consumers' social classes were segmented to explore social class differences in the purchase intention and behaviour in the stores. The purposive sampling was used to collect the data from the respondents in the southern region of Malaysia. Using the SmartPLS, the data were analysed using the multi-group analysis (MGA) and the measurement invariance of composites (MICOM). The results showed the psychographic variables positively influenced

ecologically conscious consumer behaviour (ECCB) on the purchase intention and behaviour. In addition, the middle-class consumers' shopping lifestyle influences positively on the ECCB and they are more likely to purchase green products than the upper middle-class group. The outcome of the green consumer profile provides an insight into the patterns of purchasing of the consumers in the GMS and the indication of consumer's consideration of energy conservations from home.

Keywords: Green consumer, social class, green purchase behaviour, energy conservations, multi-group analysis, Malaysia.

INTRODUCTION

There has been a growing interest in the study of green consumers in the market since the 1970s. Since then, numerous factors and measurement scales have been established by academics and businesses to understand green consumers' purchasing behaviour (Akehurst et al., 2012; Ellen et al., 1991; Kinnear & Taylor, 1973). Nevertheless, the underlying factors affecting green consumers' behaviour have not been fully understood. There is still skepticism of some green consumers' distrust of manufacturers' declaration of green products and their impact on the environment (Tan et al., 2016; Adrita & Mohiuddin, 2020). Developed countries' consumerism has indicated that the ecologically related market still accounts for as little as one to three percent of the entire market (Bray et al., 2011; Joshi & Rahman, 2016). Perhaps the distrust of these products is linked to Ottman et al. (2006) explanation that no product in the market can be classified as being absolutely green or eco-friendly and that has zero impact on the environment. Most producers, however, appeal to their consumers by stating that their products are manufactured with minimal detrimental impact on the environment. This intent is known as green manufacturing practices (GMP) ((Polonsky, 1994; Adrita & Mohiuddin, 2020).

This study assesses the Malaysian consumers' behaviour on the green products by associating that with the low purchase of green products in the western countries. As a developing country, Malaysia has recently observed the growth of housing units. The statistical reports

indicated the homeownership is about 28.7 percent of the developed home in the major cities (NPCI, 2020). With more working parents and an increase in household income, the household expenditure rose to 3.9 percent. These households' expenditures are mainly credited to increase spending in water, electricity, gas and other fuel at 24.0 percent (NPCI, 2020). The increase in demand for electricity is attributed to the growing demand of electrical appliances in the urban residential households. Moreover, owning to the increase of sales for refrigerators and air-conditioning units as essential items due to the hot and humid tropical weather in the country (Kubota et al., 2011), little is known about the urban households as regards to the concern of the environment when they purchased these durable goods.

Linking this aforementioned environmental concern of consumers purchasing these durable goods sold in the shopping malls' general merchandise stores (GMS), it provides an insight into marketing information to malls' management. Most super-regional and mega malls established in Malaysia have electronic appliances such as televisions, washing machines, refrigerators, air-conditioning units and other durables are sold in the stores (Lambert, n.d.). Profiling the segments of consumers patronising the stores, especially the green consumers, can provide the malls' management and marketing managers an effective marketing strategy to increase customer sales and loyalty.

In the green consumer profile literature, Akehurst et al.'s (2012) model was built on Straughan and Roberts's (1999) study. Akehurst et al.'s (2012) model consisted of socio-demographic, psychographic variables, perceived consumer effectiveness, and environment concern (EC), that were linked to ecologically conscious consumer behaviour (ECCB). The authors aimed to determine whether these two variables were relevant in explaining the consumers' ECCB. The findings, however, indicated that the elements of the socio-demographic variable were not relevant in explaining ECCB. Similarly, Straughan and Roberts (1999) recognised the lack of explanatory power from socio-demographic variables. This could be due to too many elements in the variable, such as age, gender, income and literacy. Besides, the income element in the socio-demographic variable would not draw an accurate result (Moore & Welniak, 2000). Another reason was the engagement of students' perceptions.

The aim of this study is to replace socio-demographic variables with socioeconomic measurement for social classes. The social class should be categorised in the psychographic variables and these variables can be used for green consumer profile and could enhance the explanatory power on ECCB. The psychographic variables include sub-variables such as altruism, EC, and liberalism. However, in this study, they were substituted with attitude towards green products and consumers' shopping lifestyle. EC was excluded from the analysis due to its lack of predictive power for ECCB (Akehurst et al., 2012). Rather, it is feasible to replace it with an attitude towards the green products because the attitude of the consumer is a relatively stable affective response to an object or its attributes (Fishbein, 1967). Furthermore, altruism and liberalism were replaced with a shopping lifestyle because both variables are effective measures related to the concern of the role in political activism and individuals with liberal political orientations respectively (Akehurst et al., 2012) and it is not appropriate for identifying the green consumer profiles in GMS. Also, by choosing the working parents as respondents, a more accurate consumer profile and segmentation can be established. Lastly, in this study, the direct relationship between ECCB and green purchasing behaviour (GPB) was also excluded from the original model. An implicit assumption is made that consumers with ECCB characteristics are directly linked to the intention to purchase and purchase behaviour. Therefore, the objectives of this study were (i) to extend Akehurst et al.'s (2012) model, consisting of psychographic variables' influence on ECCB (ii) to examine the green consumer profile and (iii) to explore the social class differences in the green consumers' purchase intention and behaviour on the green products in GMS.

LITERATURE REVIEW

Green Consumer Profile

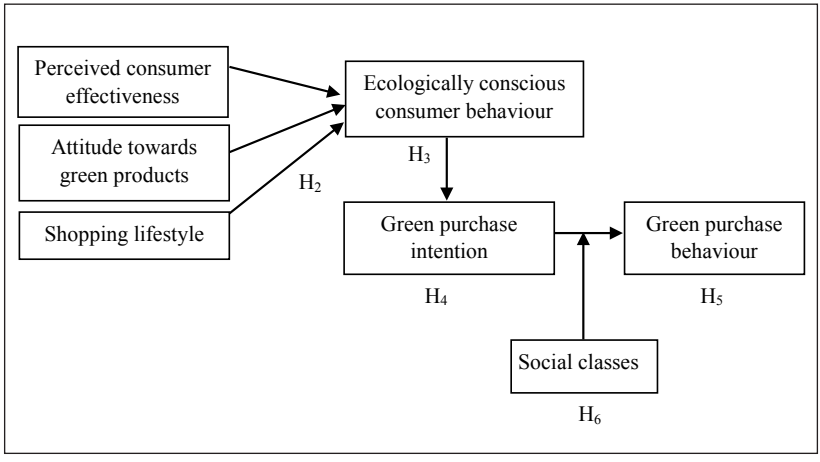
Marketers commonly profile consumers through three types of segmentation, specifically socio-demographic, behavioural and psychographic. Among them, the socio-demographic segmentation is the most commonly used (Akehurst et al., 2012; Armstrong & Kotler, 2005). Behavioural segmentation is based on the consumers' purchasing attitude towards and consumption of a product. The variables used in this segmentation comprise the occasions, benefits,

user, status, usage rate, buyer readiness stage, loyalty status and attitude (Kotler & Keller, 2009; Larsen, 2010). Psychographic segmentation, also known as lifestyle segmentation, involves understanding consumers' activities, opinions, values, attitude and lifestyle in relation to a product (Goyat, 2011). Dimitriadis (2011) stated that psychographic segmentation is a better way of describing certain customer groups that relate to a particular product category. Furthermore, Straughan and Roberts (1999) found that psychographic variables are more appropriate than using socio-demographics.

Nevertheless, in today's complex market and different consumers' demands, the utilisation of one segmentation strategy may not be sufficient (Dimitriadis, 2011). Basically, there is no one mutually exclusive segmentation method that can derive segment profiles of consumers. Most studies have adopted at least two distinctly different segmentation solutions. The main reason is that individual' beliefs and attitudes are different, conflicting and overlapping (Goyat, 2011; Gunter & Furnham, 1992; Thomas, 2017). For this reason, the psychographic and socio-demographic variables were selected in this study. The former consists of perceived consumer effectiveness, attitude towards green products and shopping lifestyle. For the latter, it is represented by the socioeconomic class.

Figure 1

Research Model of ECCB, GPI and GPB



Psychographic Variables

Perceived Consumer Effectiveness

The perceived consumer effectiveness PCE refers to the degree of an individual's belief in contributing to an environmental cause (Ellen et al., 1991; Kinnear et al., 1974), and it depends on the individual's knowledge and direct and indirect experiences of the environment (Kim & Choi, 2005). Some individuals believe that their actions can make a difference to the environmental outcomes, while others have less confidence in their actions. The first group of enthusiasts are people who score highly on PCE measures (Kim & Choi, 2005; Liang et al., 2020). Often, this group elicits actual purchase intentions and behaviour towards the green products in support of the environmental causes (Ellen et al., 1991; Kabadayia et al., 2015; Vermeir & Verbeke, 2006). Several studies have indicated that PCE is a strong predictor of ECCB and green buying behaviour (Straughan & Roberts, 1999; Verhoef, 2005; Kim & Choi, 2005). In the past, PCE has also been applied in diverse environment-related studies and has been found to have an influence on the purchase of organic goods (Cucchiara et al., 2015), sustainable products (Vermeir & Verbeke, 2006), and green products (Kim & Choi, 2005). Since PCE is relevant to identify the green consumers, this variable can be adopted to examine the green consumers in GMS and it is posited that:

H_1 : Perceived consumer effectiveness influences ecologically conscious consumer behaviour positively.

Attitude towards Green Products

As discussed, the PCE may not be adequate in explaining the ECCB (Laroche et al., 2001; Roberts, 1996; Webster, 1975). Some authors have asserted that the prediction of consumers purchase intentions and behaviour is based on their attitudes. Individuals' attitudes are often associated with their knowledge and experience of the product being purchased (Cherian & Jacob, 2012; Davidson et al., 1985). Several studies have attempted to compare the genders' attitudes towards the environment and green products. Some of these studies have obtained mixed results (D'Souza et al., 2007; Mostafa, 2007; Tan & Lau, 2010). This could be attributed to individual consumers' attitude, a dispositional factor (individuals' characteristics) that influence the behaviour on the green product purchase (Carrete et al., 2012).

In Theory of Reasoned Action (TRA), an attitude of consumer is a relatively stable affective response to an object or its attributes, which will lead to the prediction of individual's functional beliefs about the object (Fishbein, 1967). This means that the consumer's attitude is the function of the strength of his or her belief on the importance of attribute in forming an overall attitude toward the object or product. In most cases, some consumers are willing to spend more on the green products that comply with the green performance standards (Laroche et al., 2001), while others perceived the necessity for household usage and environmental contributions, resulting in purchases (Cheah & Phau, 2011).

In this study, the model is retested but selectively narrowed the scope to green durable products of refrigerators and air conditioners. The demand for these two products is growing among urban residential households due to the hot and humid tropical weather in the country (Kubota et al., 2011). These products sold in GMS are categorised as green or non-green. The green products are affixed with the energy labels issued by the Malaysian Energy Commission to the manufacturers for electrical appliances. The labels indicate the energy performance, which is rated by stars. The star rating on appliances has been developed by the US Environmental Protection Agency (EPA) since 1992. A five-star-rated appliance can possibly save up to 10 percent to 20 percent of the electrical energy consumption compared with non-rated star models. By definition, the star-rated products are considered green products (Rahman et al., 2017). The purchase of star-rated products will provide first-hand information on the consumer's attitude on the green products. According to Taufique et al. (2017) consumers with the knowledge of eco-label knowledge tend purchase the products to help solve the environmental problems. A non-star-rated appliance is relatively cheaper but this can amount to high consumption of energy by the consumers that can pollute the environment by heat generations (Waris & Hameed, 2020). Based on these studies, it is hypothesised that:

H_2 : The green consumers' attitude towards the green products influences ECCB positively.

Shopping Lifestyle

With the growing number of shopping malls in Malaysia, consumers are switching their shopping lifestyle in these establishments. The

malls contain department stores, supermarkets, general merchandise stores (GMS), Cineplex, restaurants and others. The shopping malls have created the urban identity and emerging space for public socialisation (Erkip, 2003), and the one-stop centre for wider choices of consumable and durable goods for families to purchase in a single trip (Arentze et al., 2005; Yoshimira et al., 2018). Shoppers in China perceived the importance of the location, visibility and reputation of the malls. If the two shopping malls demonstrate similar customer flow patterns, the layout, functions and locations are significant to shoppers' choice (Pei et al., 2020). In contrast, it was revealed that the location of the malls in Depok City, Indonesia, which are farther than those located in the residential did not deter the consumers to travel there for purchase owing to more complete items sold in the malls (Hanif et al., 2020). A study in South Africa found that female consumers spent more time and money in the malls and the attractiveness of the mall influenced their shopping behaviour. These studies manifest malls'consumer's different choices and complex behaviour. Some prefer specific mall because of parking space, security, cosy environment, good bargaining and memberships' benefits.

Anecdotal observation of consumers patronising malls are mainly middle-class and upper-middle-class groups because of different purchasing power. Substantiating this observation, the Malaysia Department of Statistics reported the mean monthly household income in the urban areas rose to 4.2 percent in 2019. A family with dual incomes means that the urban dwellers are mainly from the middle classes (DOSM, 2019). Profiling these groups will not only provide the characteristics of shopping lifestyle, but it also brings forth the understanding of their general awareness, knowledge, motivation and commitment to shaping their consciousness of green products purchases (Maniatis, 2016) and ecologically conscious of the products. For this reason, the hypothesis is posited that:

H_3 : The green consumers' shopping lifestyle in malls influences the ECCB positively.

Green Purchase Intention and Green Purchase Behaviour

In the theory of reasoned action, behavioural intention is associated with the way in which a consumer is likely to behave in the future regarding consumption (Southey, 2011). Consumers' intention to

purchase does not necessarily guarantee future purchase behaviour (Barber & Taylor, 2013). It depends on the consumers' satisfaction, the quality and the consumers' trust in the products (Barber et al., 2012; Ricci et al., 2018). Applying this concept to the green product purchases, there is a fine line of difference between the green consumers and the general consumers' purchase intention and behaviour. The former is likely to favour products with environmentally friendly attributes when making purchase decisions (Nik Abdul Rashid, 2009). Consequently, these green consumers weigh the environmental and economic benefits that induce their intention to purchase the green products (Imkamp, 2000; Maniatis, 2016). In essence, keen green consumers begin by matching their purchase intention with their purchase behaviour (Akehurst et al., 2012), that is, assuming all else remains unchanged, such as affordable price, quality and others, the green consumers' purchase intentions have been found to predict behaviour (Chan, 2001). Based on this, it is hypothesised that:

H_4 : Consumers' ECCB influences their GPI positively.

H_5 : Consumers' GPI influences their GPB positively.

Socio-demographic Segmentation

In green consumer profiling, Akehurst et al. (2012) used socio-demographic segmentation of age, gender, income and literacy. The study indicated that these socio-demographic variables did not explain ECCB. These consumers are those who are concerned about the environment (Kinnear et al., 1974; Tilikidou, & Delistavrou, 2014). Reviewing the analysis, the results could be different if only one variable was used and by splitting it into two groups for moderation analysis. For example, if the individual income variable was split into a lower and an upper-income bracket from the respondents' data, the finding could indicate distinct groups significant differences with a propensity to purchase green products. Furthermore, Akehurst et al. (2012) and Straughan and Roberts (1999) advocated caution to use the socio-demographic variables. In this regard, the socio-demographic variables were substituted with the socioeconomic measurements.

Socioeconomic Segmentation

Dunlop et al. (2000) defined "Socioeconomic segmentation (SES) is measured by household income adjusted for differences in family

size as it is likely to impact economic purchasing power and level of education". Considering this SES, the Malaysia median monthly household income was about RM5,873 (USD 1400) (DOSM, 2019). The statistical report, however, did not indicate the average household income of a family. If the average household income can be determined, then SES can be used to distinguish different social classes (Kogevinas et al., 1997). One method is to obtain the primary data on household income from the regional population sampling. However, based on our research experience and Moore and Welniak's (2000) perspectives concerning this approach, obtaining the household income from the general public often results in high levels of missing or incomplete data and the likelihood of falsification of data due to people reluctant to disclose this personal data. Analysing these data may result in high random error and bias. Some authors have substituted household income with possession-based measures, such as the types of furniture owned, decorative items and other household possessions, to equate a family's affordability and purchasing power (Lim et al., 2011). Nonetheless, Cowan et al. (2012) warned that this measure might not represent the individuals' household income accurately, as it varies with the family life cycle.

Here, an alternative method is proposed to assessing household income by probing into the type of house owned by a family. In the Malaysian culture, one views the type of house owned by individuals as the social standing. In fact, this approach is not new. Anthropologist Michael Smith (1987) explained that a family's total household wealth is divided into financial and physical wealth. The physical wealth is sub-divided into portable and non-portable wealth (Jones, 1980). Non-portable physical wealth consists of individuals' possession of a house and land; an asset in hand for the family. Obviously, the size and type of the asset represent the household wealth. Using the anthropological classification from Smith (1987) and Jones (1980), the residential house was selected as an asset to represent the household income. Hence, holding debts and reasons for house ownership (e.g., investments) constant, an individual's ownership of a house should reasonably provide a gauge for the family's income level or household income. In this study, the number of cars owned by a family was omitted, as the car's value depreciates over time. Based on the type of houses owned by individuals, the SES is categorised into two classes: one representing the middle-class status and the other the upper-middle-class status. Considering these backdrops, this study aims to confirm that the socioeconomic classification of social

groups is applicable for identifying group differences in the purchase intention and behaviour towards the green products in GMS and it is hypothesised that:

H_6 : There are differences between social classes' purchase intention and behaviour towards the green products.

METHODOLOGY

Research Method

Data Collection

Purposive sampling was undertaken to gather data from the southern region of Malaysia. This sampling method is a non-probability sampling technique and is mainly used in qualitative research but the method can also be used in quantitative and mixed-method research depending on the purpose of the sampling (Etikan et al, 2016; Lavrakas, 2008). In this context of quantitative research, the purpose is to produce a sample that represents a cross-section of particular characteristics of the importance of a population (Lavrakas, 2008; Henry, 1990). The questionnaires were distributed by hand to respondents based on the scope of the study that focused on working parents, owning a home, and often shopping at the GMS. A total of 330 questionnaires were collected. After the deletion of invalid questionnaires, 302 valid questionnaires were analysed. This sample size meets the recommended minimum sample size of 148 when G*Power was computed with statistical power of 0.95 for the model (Faul et al., 2009).

The questionnaire consisted of two parts: Part A contained the respondents' demographic information and Part B consisted of the following items: perceived consumer effectiveness (PCE), attitude towards green products (GPA), shopping lifestyle (SL), ecologically conscious consumer behaviour (ECCB), green purchase intention (GPI), and green purchase behaviour (GPB). The PCE and ECCB were adapted from the studies by Straughan and Roberts (1999) and Akehurst et al. (2012). The Likert format was stated as: 1 = never true to 5 = always true. The GPI items were adapted from Chan (2001) and Wang and Wu (2016) using a 5-point scale: from 1 = very unlikely to 5 = very likely. The GPB items were adapted from Lee (2008) and

Lee (2010) and a 5-point Likert scale was used. The items for attitude towards green products were adapted from Chan (2001), Laroche et al. (2001), and Nath et al. (2013). Lastly, the shopping lifestyle were operationalised from the past literature discussed earlier. A 5-point Likert scale (from 1 = strongly disagree to 5 = strongly agree) was used for the attitude and shopping lifestyle items.

Method of Analysis

The Part A demographic information was analysed using the IBM Statistical Package for Social Science (SPSS), version 24 and the hypotheses in Part B were analysed by using the Smart Partial Least Squares (SmartPLS) software, version 3.2.4. The PLS was used because the study was exploratory for social groups. In computing the structural equation model and the model's structural path coefficients, the PLS algorithm was performed. To confirm that the path coefficients were significant, the bootstrapping algorithm was computed for 5000 samples (Ringle et al., 2015). Based on the type of houses owned by the consumers, the two socioeconomic classes were categorised: Class 1 for the middle class and Class 2 for the upper-middle class. Accordingly, the report of an average home market value by location was obtained. In the southern region of Malaysia, the average price of a residential house is about RM400,000 (USD100,000) (Goh, 2017). Using this price guide, a family owns a home equivalent to this value or below is classified as the middle-class group, designated as Class 1. Families living in homes above this value are considered the upper-middle-class group, designated as Class 2. From the survey data collected, the local household prices are divided into two groups. The split data were then analysed using the SmartPLS multi-group analysis (MGA) as a moderator.

Before performing the MGA, it was important to follow the measurement invariance of composites (MICOM) three-step process, comprising (a) a configural invariance assessment; (b) the establishment of compositional invariance assessment; and (c) an assessment of equal means and variances (Hair et al., 2014; Sarstedt et al., 2011; Henseler et al., 2016). As partial measurement invariance was established from this process for both groups, the data could then be interpreted further using Henseler's MGA test (Henseler et al., 2009) and Chin's permutation test (Chin & Dibbern, 2010). The outputs from these tests were then compared to confirm the significance of the paths' coefficient.

RESULTS

Demographic Information

Table 1 shows the demographic information of the respondents. The respondents' particulars include the gender, age group, ethnicity and socioeconomic status of the respondents by the type of home they own.

Table 1

Demographic Information of Respondents (N=302)

Demographic characteristics		Frequency	Percent
Gender	Male	133	44.0
	Female	169	56.0
Age Group	37-40	129	42.7
	41-44	88	29.1
	45-48	49	16.2
	49-52	36	11.9
Ethnicity	Malay	80	26.5
	Chinese	155	51.3
	Indian	66	21.9
	Others	1	0.3
Socioeconomic status (SES): By type of home			
Class 1	Flat	12	4.0
Middle	Single Storey Terrance	88	2.0
	Others	6	22.8
	Sub-total	175	57.9
	Single Storey Semi-detached	38	12.6
Class 2	Single Storey Bungalow	25	8.3
Upper Middle	Double Storey Semi-detached	32	10.6
	Double Storey Bungalow	14	4.6
	Condominium	17	5.6
	Mansion	1	0.3
	Sub-total	127	42.1
	Total	302	100.0

Among the demographic characteristics, the female respondents were slightly higher than the male group. For the age group, the category

of 37-40 group was the highest respondents. As for ethnicity, the local Chinese ethnicity formed the largest group as urban dwellers. In the socioeconomic status, there were 175 (57.95%) homes that are categorised as middle-class families and 127 (42.5%) homes as upper-middle-class families.

Assessment of Measurement Model Properties

In the assessment of the measurement model, the six variables' properties involving the items' factor loadings, variance inflation factor (VIF), average variance extracted (AVE), composite reliability (CR) and Cronbach's alpha (CA) were computed to confirm its compliance with the definition of a good model. As illustrated in Table 2, the results show that the items' factor loadings were at least 0.7. The highest VIF value was 3.174, which is between 0.2 and 5 (Garson, 2016) and the AVE exceeded the recommended threshold of 0.50 (Chin, 1998; Garson, 2016), indicating acceptable convergent validity. Lastly, the CR values were in the range from 0.848 to 0.915, and all the CAs were at least 0.8 (Hair et al., 2014). The overall results indicated that the model has attained a substantial degree of reliability and convergent validity and has an adequate degree of prediction accuracy.

Discriminant Properties

The discriminant properties of the model were evaluated by using the heterotrait–monotrait ratio (HTMT) (see Table 3). The model was computed by bootstrapping to 5000 samples and set at the confidence intervals between 2.50 percent and 97.50 percent (Henseler et al., 2015). The results indicated that the discriminant validity was achieved when all the constructs' HTMT values were less than the cut-off value of 0.90 (Teo et al., 2008).

Model Fit

Finally, to validate that the model fit between the observed correlation and the predicted correlation (Henseler et al., 2014), the standardised root mean square residual (SRMR) value was observed for its worthiness to meet the recommended benchmark of 0.08 (Hu & Bentler, 1999). This model had a value of 0.062 and thus met the requirement.

Table 2

Properties of Measurement Scales

Items	Loadings	VIF	AVE	CR	Cronbach's α
PCE			0.723	0.913	0.873
PCE1	0.820	2.383			
PCE2	0.846	2.668			
PCE3	0.892	2.768			
PCE4	0.841	2.309			
Attitude			0.642	0.915	0.889
Attitude1	0.814	2.123			
Attitude2	0.796	2.245			
Attitude3	0.811	2.339			
Attitude4	0.820	2.048			
Attitude5	0.812	2.120			
Attitude6	0.755	1.751			
Shop Life			0.625	0.892	0.848
Shop Life1	0.810	2.128			
Shop Life2	0.829	2.094			
Shop Life3	0.847	2.334			
Shop Life4	0.700	1.476			
Shop Life5	0.756	1.672			
ECCB			0.588	0.895	0.86
ECCB1	0.785	2.200			
ECCB2	0.813	2.527			
ECCB3	0.759	2.021			
ECCB4	0.735	1.853			
ECCB5	0.756	1.799			
ECCB6	0.748	1.750			
GPI			0.678	0.913	0.881
GPI1	0.783	2.088			
GPI2	0.844	2.699			
GPI3	0.860	2.540			
GPI4	0.839	3.174			
GPI5	0.786	2.699			
GPB			0.631	0.911	0.882
GPB1	0.793	2.088			
GPB2	0.750	2.249			
GPB3	0.755	2.090			
GPB4	0.871	2.977			
GPB5	0.792	2.845			
GPB6	0.798	2.684			

Table 3

Heterotrait-Monotrait Ratio (HTMT)

	Mean	Std. Deviation	ECCB	PCE	Attitude	ShopLife	GPI	GPB
ECCB	0.586	0.031						
PCE	0.722	0.024	0.648					
Attitude	0.641	0.032	0.772	0.712				
ShopLife	0.624	0.026	0.639	0.528	0.539			
GPI	0.676	0.026	0.641	0.511	0.632	0.408		
GPB	0.629	0.029	0.886	0.661	0.774	0.637	0.623	

Assessment of the Structural Model

The structural model's constructs are reflective measurements. In testing the hypotheses, Smart Partial Least Squares (SmartPLS) enabled all the path coefficients to be assessed simultaneously with consistent parameter estimates (Hemsley-Brown & Alnawas, 2016). The results indicated that PCE, attitude and shopping lifestyle have a positive influence on the ECCB (see Table 4) and that all the hypotheses were supported, with H_1 ($\beta = 0.159$, $R^2 = 0.552$, $p < 0.01$); H_2 ($\beta = 0.462$, $p < 0.01$); and H_3 ($\beta = 0.261$, $p < 0.01$). Similarly, the effects of ECCB on GPI and GPI on GPB were confirmed to be significant, with H_4 ($\beta = 0.565$, $R^2 = 0.319$, $p < 0.01$) and H_5 ($\beta = 0.551$, $R^2 = 0.303$, p 0.01). In sum, the hypotheses were all supported.

Table 4

Standardised Structural Estimates and Hypotheses Testing

Hypotheses	Path coefficients	*t*	Significance level (p)	R^2	Supported?
H_1: PCE -> ECCB	0.159	2.905	0.005	0.552	Yes
H_2: Attitude -> ECCB	0.462	8.678	0.001		Yes
H_3: ShopLife -> ECCB	0.261	5.689	0.001		Yes
H_4: ECCB -> GPI	0.565	11.141	0.001	0.319	Yes
H_5: GPI -> GPB	0.551	11.068	0.001	0.303	Yes

Note: *p<0.05; **p<0.01; ***p<0.001

Multi-group Analysis

Before computing the data following Henseler's (2012) MGA (Henseler, Ringle & Sinkovics, 2009), the measurement model properties for the two groups (middle and upper-middle classes) were first established for configural invariance. The results indicated that both groups met the criteria (Table 5).

Table 5

Assessment of Measurement Model Properties between Groups

	Loadings		AVE		CR	
Items	Class 1	Class 2	Class 1	Class 2	Class 1	Class 2
PCE			0.729	0.716	0.915	0.910
PCE1	0.810	0.837				
PCE2	0.849	0.850				
PCE3	0.883	0.904				
PCE4	0.870	0.790				
Attitude			0.683	0.589	0.928	0.896
Attitude1	0.813	0.819				
Attitude2	0.833	0.746				
Attitude3	0.828	0.798				
Attitude4	0.839	0.789				
Attitude5	0.838	0.775				
Attitude6	0.809	0.672				
Shop Life			0.625	0.617	0.893	0.889
Shop Life1	0.804	0.824				
Shop Life2	0.816	0.845				
Shop Life3	0.834	0.855				
Shop Life4	0.714	0.670				
Shop Life5	0.781	0.715				
ECCB			0.613	0.548	0.905	0.879
ECCB1	0.829	0.714				
ECCB2	0.842	0.757				
ECCB3	0.759	0.757				
ECCB4	0.758	0.707				
ECCB5	0.750	0.763				
ECCB6	0.757	0.743				
GPI			0.713	0.616	0.925	0.889

(continued)

	Loadings		AVE		CR	
Items	Class 1	Class 2	Class 1	Class 2	Class 1	Class 2
GPI1	0.787	0.771				
GPI2	0.860	0.806				
GPI3	0.890	0.807				
GPI4	0.854	0.812				
GPI5	0.826	0.724				
GPB			0.642	0.613	0.915	0.904
GPB1	0.818	0.740				
GPB2	0.758	0.721				
GPB3	0.771	0.731				
GPB4	0.867	0.877				
GPB5	0.800	0.792				
GPB6	0.788	0.823				

Next, computing the SmartPLS permutation feature that enabled the establishment of compositional invariance and equal means and variances for the two groups. The results showed measurement invariance for both groups (see Table 6).

Lastly, using MGA for the assessment of differences in the groups' path coefficients, the MGA and permutation results (Chin & Dibbern, 2010) were generated simultaneously in the output. These results were then compared for significant differences. The result of the GPI→GPB path coefficients for Class 1 for β was 0.629, and Class 2's β was 0.455, with an MGA path coefficient difference of β = 0.175, p = 0.028; permutation: = 0.048. The shopping lifestyle→ECCB path coefficient for Class 1 was β = 0.337, and for Class 2 it was β = 0.157; the MGA path coefficient difference was β = 0.565, p = 0.023; permutation: p = 0.045. The acceptance of the significant p values of 0.048 and 0.045 from the permutation results may be seen as accepting the "less than a bit" values and has often been critiqued in science journals (Colquhoun, 2014; de Winter & Dodou, 2015), but Dorey, (2010) queried why this interpretation has become the standard. Alternatively, it can be justified by the 95 percent confidence interval with a lower interval of 2.5 percent and an upper interval of 97.5 percent (see Table 6). If the mean difference values fall within the range of the lower and upper boundaries, then there is evidence of invariance (Mathews, 2017, p. 234). This suggested that hypothesis H_6 was supported (see Table 7)

Table 6

Permutation Results of Invariance Measurement Testing

Constructs	c value (=1)	90% Confidence interval	Composite invariance?	Diff. of the composite's mean value (=0)	95% confidence interval	Equal mean value?
Attitude	0.999	[0.999, 1.000]	Yes	-0.096	[-0.237, 0.238]	Yes
ECCB	0.999	[0.998, 1.000]	Yes	-0.215	[-0.227, 0.235]	Yes
GPB	0.994	[0.995, 1.000]	Yes	-0.121	[-0.227, 0.232]	Yes
GPI	0.999	[0.997, 1.000]	Yes	-0.286	[-0.225, 0.236]	No
PCE	1.000	[0.996, 1.000]	Yes	-0.154	[-0.227, 0.229]	Yes
Shop Lifestyle	1.000	[0.995, 1.000]	Yes	-0.260	[-0.229, 0.229]	No
Equal Variance Assessment						
Constructs	Logarithm of the composite's variances ratio (=0)		95% confidence interval		Equal variances?	
Attitude	0.112		[-0.459, 0.463]		Yes	
ECCB	0.119		[-0.423, 0.436]		Yes	
GPB	0.018		[-0.411, 0.430]		Yes	
GPI	0.209		[-0.378, 0.396]		Yes	
PCE	0.087		[-0.347, 0.373]		Yes	
Shop Lifestyle	-0.043		[-0.320, 0.324]		Yes	

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Table 7

MGA Results of Hypothesis Testing

Hypothesis	Path relationship	Path Coefficient		Confidence Internal (95%)	
		Class 1	Class 2	Class 1	Class 2
Hypothesis 6	GPI -> GPB	0.629**	0.455**	[0.521,0.721]	[0.279,0.582]
	PCE -> ECCB	0.186**	0.092	[0.06, 0.316]	[-0.089, 0.258]
	ATT -> ECCB	0.409**	0.552**	[0.264,0.533]	[0.405,0.695]
	Shop -> ECCB	0.337**	0.157**	[0.222,0.453]	[0.019, 0.284]
	ECCB -> GPI	0.625**	0.455**	[0.500,0.727]	[0.260, 0.604]
				p-value (2-tailed) Diff.	
		Path Coeff. Difference	MGA	Permutation	Supported?
Hypothesis 6	GPI -> GPB	0.175	0.028	0.048	Yes/Yes
	PCE -> ECCB	0.094	0.198	0.382	No/No
	ATT -> ECCB	0.143	0.925	0.157	No/No
	Shop -> ECCB	0.18	0.023	0.045	Yes/Yes
	ECCB -> GPI	0.17	0.048	0.086	Yes/No

Note:

MGA (Henseler, et al 2016) – p value <0.05 or >0.95 indicates at the 5% level significant differences between specific path coefficients across two groups. *p<0.05; **p<0.01; ***p<0.001

DISCUSSIONS

This study extended Akehurst et al.'s (2012) model and examined the psychographic variables of the ecologically conscious consumer behaviour of consumers patronising GMS. In addition, it aimed to explore the social class difference in the GPI and behaviour (GPB). The results confirmed the importance of psychographic variables; specifically, PCE, attitude and shopping lifestyle positively influenced ECCB. Additionally, the study identified ECCB as significant in explaining the GPI leading to GPB. By segmenting consumers into two social classes and analysing them as moderators using the MGA, the results specified group differences in the GPI and the GPB and the green consumers' shopping lifestyle and ECCB. The findings are further discussed below.

Interrelationship among Variables

Influence of Psychographic Variables (PCE, Attitude and Lifestyle) on ECCB

This study confirmed that knowledge about the environment and belief in environmental causes influenced ECCB positively and that ECCB explained the GPI and the GPB). This finding is consistent with Straughan and Roberts' (1999) and Akehurst et al.'s (2012) studies. By extending the psychographic variables with attitudes towards green products and shopping lifestyles in malls' GMS, it identified an alternative segment profile of green consumers (Barber et al., 2012; Thomas, 2017). Furthermore, with the inclusion of PCE in the psychographic variables, PCE augmented the consumers' degree of belief in contributing to the environmental causes (Ellen et al., 1991; Kinnear et al., 1974). The finding indicated that local green consumers believe their purchases of green durable products will make a difference in serving to alleviate environmental problems and is consistent with Nath et al.'s (2013) research.

Corresponding to assessing the consumers' attitude, the findings also confirmed that the green consumers value the quality of green products it brings to the environment. They have a favourable attitude towards environmentally friendly products and are willing to spend

more for the products. Interestingly, the study confirmed that shoppers did contemplate on those products that have more stars rating stickers. The consumers' perceived intention to purchase the green products imply their contributions to alleviate the environmental problems from their home. The effort and commitment of consumers to purchase the stars-rated products is a good predictor of green product purchase behaviour (Deloitte GMA, 2009) for energy conservation.

In this era, it can be observed that the consumer shopping lifestyle has changed. The establishment of GMS in shopping malls with the concept of one-stop stores has changed the shopping orientations. Consumers with different characteristics and shopping behaviour can be observed in the stores. More importantly, the findings identified green consumers with ECCB characteristics have the intentions to purchase specific choices of green electrical appliances (Akehurst et al., 2012).

Influence of ECCB on GPI and GPB

This study excluded the ECCB–GPB direct link from the original model. The main reason was to ascertain whether ECCB influences GPI and in turn leads to GPB. Past studies have indicated that the green consumers may have the intention to purchase the green products but their scepticism about the green products affected the purchasing behaviour (Bray et al., 2011; Joshi & Rahman, 2016). Nevertheless, the results indicate that the ECCB positively influences GPI and subsequently the GPI influences GPB. Thus, the findings validated the assumption made earlier that the consumers with ECCB characteristics are directly linked to their intention to purchase and purchase behaviour. However, the statistically significant findings of ECCB on GPI and GPB are a representation of the overall consumers' profile (Bray et al., 2011; Joshi & Rahman, 2016; Yarimoglu & Binboga, 2019). By splitting the consumers into two social groups, the findings indicated the group differences in the purchasing behaviour.

Moderation of Social Class Purchase Intention and Behaviour

The tactical use of advanced statistical techniques on consumers' profiles differentiates the specific group of consumers who are keen

on green electrical appliances in the GMS. Seemingly, in malls' GMS, the result for the middle-class group' path coefficient was significantly higher than the upper-middle class group, indicating the middle-class group was predominantly motivated to purchase green products rather than the upper-middle-class group. This implies a specific group contribution to the environment. The MGA results also highlighted the changing behaviour of green social groups' shopping lifestyle in preference for the malls' GMS assorted green durable products. Thus, this information provides valid feedback for marketers and green manufacturers regarding the major consumers in GMS. Moreover, in GMS, the product mix of refrigerators and air conditioners brands are aplenty and in this high level of competitive environment, the marketers can establish bases for targeting this segment of green consumers (Dolnicar et al., 2005). The findings that indicated differences in social classes' purchase intention and behaviour imply that the consumers are well informed of the existence of energy saving appliances. The malls managers or marketers should continue to display printed product information on energy saving appliances in leaflets, store placards, or promotional campaigns to more consumers. The main aim is to educate and encourage consumers to purchase the green products (Khare, 2014). After all, past studies have shown that the knowledge of eco-labels information corelates with the purchase intention of green products (Cucchiara et al, 2015; Taufique et al., 2017; Liang et al., 2020).

Practical Implications

With the right profiling technique, the outcome benefits marketers immensely in delivering customised products and services to consumers in a pragmatic green marketing mix (Song-Turner & Polonsky, 2016). Specifically, the psychographic variables provide the malls' management with the opportunity to learn how the new products can be positioned in GMS (Thomas, 2017).

Since the study specified more middle-classes family are purchasing green durable goods, the marketers should not neglect the upper middle-class group. The indication of the upper-middle-class groups lesser interest in green durable products in the GMS is inconclusive of their purchase intention and behaviour. This could be due to the absence of attractive models available on display. For this reason,

the malls' GMS management should position more range of options of appliances in the stores to attract this group. While it seems viable to include all ranges of durable goods to serve all social-class consumers, GMS are often constraint by the floor space available to display these large appliances. Alternatively, the management can consider introducing the appliances catalogues corner for consumers to view and order. With the right promotional strategies, it attracts more purchase in the GMS (Hooi & Leng, 2008). The ultimate aim is to promote larger groups of consumers with environmental knowledge and perceived environmental consequences (Kautish & Sharma, 2020; Choong, et al., 2020) to make a greater ecological contribution from the households' energy conservation. Lastly, while technology and costs may be the implication for the manufacturers of green electrical appliances to produce the five-star-rated appliance, the R&D department should innovate the appliances' components to improve energy efficiency. Improving the components energy efficiency is likely to improve the annual energy consumptions of each household, thus render a mass contribution to the environment (Energy Commission, 2021).

Theoretical Implications

The proposed extension of psychographic variables to include PCE, attitudes towards green products and shopping lifestyles in ECCB was found to be relevant for understanding the green consumers' purchase intention and behaviour. This study confirmed that the attitudinal and lifestyle factors of psychographic segmentation are relevant for the modern malls' green consumer profile. Furthermore, by substituting the socio-demographic variables with the socioeconomic variables and splitting the SES into two social classes, this study validates an alternative method to analyse specific group behaviour regarding the purchase of green products in GMS. This evidence validates the social class theory for consumer behaviour (Fisher, 1987). In addition, Coleman (1983) and Henry (2002) assured that social class is still important as one of the mixed segmentations as it explains the consumption behaviour.

Contemporary studies of social class have utilised income, education level and occupational status to differentiate social classes (Drentea, 2000; Moschis & Moore, 1979; Shavitt, et al, 2016). This paper presents

an alternative method for differentiating the classes by identifying the type of home owned by consumers that represent the household income. Additionally, this study used the advanced Henseler's MGA to differentiate the social group segments and lifestyle profile of the two social classes' shopping lifestyle. This approach has the advantage that the subsamples were exposed to separate the bootstrap analyses.

LIMITATIONS AND RECOMMENDATIONS FOR FUTURE STUDY

Although the sample size was adequate for this study (Hair et al., 2014), the respondents were from the urban cities in the southern regions of Malaysia. Wider coverage of respondents from different cities may draw different perspectives, especially on ECCB, GPI and GPB. It is important to note that the use of social class segmentation is a complex construct (Williams, 2002). The author cautioned that what is seemingly applicable in one country may not necessarily be applicable in affluent society or other advanced countries due to different social mobility. What is more, this study was aimed to identify specific local social classes patronising the malls' GMS. Since the study was idiographic (Colquitt & Zapata-Phelan, 2007) the study should be extended to other cities in Malaysia to validate the findings. Furthermore, this study used expensive products of refrigerators and air-conditioning units to examine the green consumer profile, future study can re-test this model for other less expensive green products sold in GMS such as, LED bulbs and high-energy halogen bulbs, electric cooking utensils and apparatus.

CONCLUSION

This study contributes to the psychographic variables and socioeconomics variables of the green consumer profile in the modern shopping malls. The study was rooted in the ECCB model to identify the local green consumers' purchase intention on green products. This study excluded the ECCB–GPB direct link to ascertain whether the green consumers' GPI has a positive direct influence on the GPB. The results confirmed that there is a direct influence for both variables. This study also identified that the social class segmentation

can be determined from the type of residential houses owned by the consumers. In addition, the MGA approach was used as an alternative analytical method to analyse two social classes' purchase intention and behaviour. The profile of social class difference provides a cue to marketers for effective product positioning and targeting of green consumers. Undoubtedly, in a tropical country like Malaysia, reliance on air-conditioning and refrigerators is inevitable. Therefore, electrical appliance manufacturers should strive to produce more energy-efficient products to meet the needs of consumers.

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