

Intention to Purchase Green Vehicle: Case Study in Malaysia Using Extended Theory Planned Behavior (TPB) Model

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Abstract

Across disciplines, it is common to understand habit as “learned sequences of acts that become automatic responses to specific situations, which may be functional in obtaining certain goals or end states” (Verplanken et al., 1997). They stand in for a person's conditioned reactions to a certain stimulus. It is critical to note that developing a habit requires at least weekly repetition. Once a behaviour is established, it is carried out automatically (Orbell et al., 2001; Triandis 1980), meaning that it requires little conscious thought and little mental effort (Wood et al., 2002). As a result, when a behaviour is habit-driven, a person simply does not think about it since it is non-reflective (Lindbladh and Lyttkens, 2002), which reduces the conscious focus that is frequently required when we perform it. The objective of research which is about predicting the intention to purchase green vehicles by using an extended model of Theory Planned Behaviour (TPB) comprises attitude, perceived behaviour control, subjective norm and personal moral norm. This study intended to see whether “habit” will give significant effect or vice versa in the extended TPB model as well as whether or not habit correlates to the behaviour from the previous literature. We believe it should be expanded by including the habit construct and its main predecessors so that the limitation can be overcome and the model's explanatory value improved. As a conclusion, the result of a survey among 427 respondents showed that most of the variables in the TPB extended model had a significant relationship towards intention to purchase green vehicles.

Keywords: Green Vehicles, Habit, Intention, Purchase, Extended TPB

Introduction

Intention to purchase is linked to consumer behavior, expectations and attitudes. The purchasing behavior is a key point for consumers to view and assess the particular product. Green Purchase Intention is defined as the possibility and desire of a consumer who is interested in environmental and conscious issues to choose a more environmentally friendly product compared to conventional products now that most of the production process tends to override the impact of environmental impacts. It is also an important variable to measure

consumers' current and future purchase decisions for green or environmentally friendly products. It also helps to estimate the green demand of consumers. It's important to understand the consumer decision-making process because it allows to anticipate the needs of consumers, which in turn helps to plan marketing or sales strategies based on those needs as well as this study using extended TPB model to predict adoption of green vehicles.

It is clear that reducing carbon emissions overall is a major task, especially for the transportation industry. According to research by the International Energy Agency (IEA), the transportation industry accounts for around one-fourth of all greenhouse gas emissions combined. By 2030, it is expected that their percentage will rise from 23% to 50%. (IEA, 2009). Around 8 billion tonnes of carbon dioxide were released into the atmosphere by developed countries in 2011 and 12 percent of the GDP is derived from the transportation industry (NBSC, 2012). Developed countries now consume more energy and emit more carbon than any other country (Rout et al., 2011; Zhang et al., 2013). Expanding vehicle energy efficiency and utilising energy-efficient transportation innovations are thus considered as a critical component of efforts to respond to the undoubtedly real environmental concerns (Santini and Vyas, 2005; Turrentine et al., 2007; Erdem et al., 2010; Turrentine et al., 2011).

Hybrid electric vehicles (HEVs) are a type of energy-efficient transportation advancement. They are defined as those vehicles that combine a traditional internal motor propulsion system with an electric propulsion system and can switch between the two systems (Turrentine and Kurani, 2007; Diamond, 2009; Aksen and Kurani, 2013). An HEV is the hybrid vehicle between an electric and a conventional vehicle. HEVs do not require charging and have the points of interest to reduce carbon emissions. Compared to conventional vehicles, HEVs have reduced CO₂ emissions by an average of 30% to 50% and can achieve fuel efficiencies of 40% to 60% (Romm, 2006; Fontaras et al., 2008). Other more advanced vehicles are plug-in hybrid electric vehicles (PHEVs) and electric vehicles (EVs) where they can achieve zero fuel use and zero emissions under certain conditions (Schuitema et al., 2013). However, the high cost of the battery, the insufficient charging base and the limited range make it difficult to spread and promote it among consumers for the time being (Diamond, 2009; Hidrue et al. 2011). This makes HEVs more practical for consumers (Potoglou and Kanaroglou, 2007; Erdem et al., 2010; Achtnicht, 2012).

Consumer expectations to buy such environmentally friendly vehicles are high (Turrentine et al., 2011). Numerous researchers have examined consumer intent to buy green vehicles (Coad et al., 2009). For example, Ozaki and Sevastyanova (2011) examined the variables influencing buyer intent for hybrid vehicles, while Schuitema et al (2013) examined how the perception of vehicle attributes by drivers of private vehicles influences their goal to use electric vehicles. Zhang et al (2013) conducted a study on consumer intent to adopt HEVs and found that the financial benefits, implementation characteristics, environmental awareness, and psychological needs are the main considerations influencing consumer intent to adopt. Based on these data and the extended theory of planned behavior (Ajzen, 1991), a questionnaire survey is carried out in this study. The purpose of this questionnaire survey is to examine consumer intentions to use HEVs. In addition, there are some suggestions for governments and vehicle dealers to encourage adoption.

Literature Review

According to research, particularly those seeking to explain the state of formation in the selection of green products and behaviours, Bamberg (2003); Fujii (2006) used the cognitive and normative behaviour models. Cognitive or subjective behavioural theories, for example,

are based on Ajzen and Fishbein's (1980) Theory of Reasoned Action (TRA) and Ajzen's (1991) Theory of Planned Behaviour (TPB). It focuses on the procedure by which buyers' beliefs shape the attitudes towards specific practices and prompts them to make their selection. TRA holds that an individual's attitude towards a specific conduct is controlled by his/her belief about the results of playing out the conduct (significant belief). Correspondingly, subjective norms are dictated by individuals' apparent desires of a particular reference group. A purchaser's choice to act reasonably is educated by an extensive variety of internal and external elements. According to Triandis (1977), like TRA, the theory of interpersonal behaviour, considers both the impact of attitudes and social standards to be the precursors to expectations. However, he additionally incorporates the impact of "affect". For example, unconscious, inherent reactions to a specific behaviour and the part of propensities as go between of genuine behaviour. In another vein, Fitzmaurice (2005) contends that individuals' purchasing behaviour can be libertine, self-expressive and personality consistent. All of these components ought to be consolidated into the TRA. Along these lines, in order to receive sustainable behaviour and innovation, this study proposes to investigate both perspectives, rational as well as emotional viewpoints that add to the buyers' choices.

Attitudinal elements are exceptionally effective determinants to decide the eagerness to receive eco-innovation (Jansson et al., 2010). Subjective norm alludes to "individual's observations, that is, individuals who are imperative to him surmise that he/she ought to or ought to not execute the behaviour being referred to" (Fishbein & Ajzen, 1975). Jeon et al. (2012) clarified that the higher the perceived subjective norm by buyer, the higher the expectation to buy the green vehicles by buyers. Perceived behavioural control alludes to the elements that may impede the execution of the behaviour. There are two elements of perceived behavioural control. Firstly, the element of efficacy. It is characterized as an individual's fearlessness or self-confidence in his or her capacity to execute a behaviour. Secondly, the element of encouraging conditions. It portrays the accessibility of resources expected to participate in the behaviour (Tan & Teo, 2000). Based on the socioeconomic characteristics (demographics) and intention to adopt, which are higher training, higher wage, and more youthful consumers are accepted to have a higher penchant to buy hydrogen-fuelled vehicles (Wu et al., 2010). Jansson et al (2010); Haan et al (2006) showed that higher education, and higher income were altogether connected with the willingness to embrace elective fuel vehicles. According to Sanitthangkul et al (2012), age, occupation, and individual salary are discovered to fundamentally impact the choice to utilize eco-vehicles.

The Theory of Planned Behavior (TPB) is the extension model of Theory of Reasoned Action (Ajzen, 1991). It generally serves to study behavioral intention and behavior (Bamberg et al. 2007; Kim and Han, 2010; Abou-Zeid and Ben-Akiva, 2011). In the model, real behavior is driven by behavioral intent, and behavioral intent is influenced by three determinants. It consists of the attitude towards the behavior, the subjective norm and the perceived behavioral control (Ajzen, 1991). Currently, researchers use the TPB model to study pro-environmental behavior. Chen and Tung (2010) used the TPB model to study consumer behavioral intention to reuse waste and found that the TPB is a helpful research framework to clarify consumer recycling intention. Sigurdardottir et al (2013) used the TPB model to estimate teenagers' intentions to drive or ride bicycles, as well as the fact that Klöckner et al (2013) used the TPB model and found that most psychological determinants have a significant impact on clean car acquisition expectations, such as attitudes and norms. The consequences of these investigations justify that the TPB is a suitable theory and hypothesis to anticipate environmental behavioral intentions.

Regardless of the usefulness that the TPB demonstrates, various efforts have been made to improve rendering power. Based on Beck and Ajzen (1991); Kaiser and Scheuthle (2003), they showed that individual feelings of moral responsibility or personal moral norms should expand the explanatory power of TPB while examining an individual's intention to engage in certain environmentally friendly practices. A personal moral norm has been found to play a significant role in anticipating behavioral intentions. Achtnicht (2012) found that German vehicle buyers are knowledgeable about environmental issues. They will pay a significant amount of money to own green vehicles to meet their own moral norm and responsibility. In the light of this research, it is shown that the variable personal moral norm significantly influences behavioral intention. Along these lines, despite the three essential components (attitude, subjective norm, and perceived behavioral control) that the TPB demonstrates (attitude, subjective norm, and perceived behavioral control), this investigation connects personal moral norms to the TPB model. It is designed to fabricate an augmented TPB model to predict behavioral intent.

In addition, consumer environmental concerns have increased as the environment has deteriorated in recent years (Ramayah et al., 2012; Chen and Tung, 2014). Some researchers have shown the link between environmental concerns and specific pro-environmental behavior. For example, Kahn (2007) found that environmentalists are more likely to buy HEVs than non-environmentalists. Heffner et al (2007) found that environmental concerns are a major driver of HEV purchase intent. The buyers with high environmental awareness are more willing to use HEVs. Ziegler (2012) found that environmentally conscious potential buyers were more likely to purchase green vehicles. Daziano and Bolduc (2013) used the given data on environmental concerns to analyze the trend towards green vehicles. They found that environmentally conscious shoppers pay more for low-discharge vehicles. In Bamberg (2003), personal moral norms, habits and environmental concerns were consolidated into the TPB model to conduct a comprehensive analysis and better understand consumers' intention to buy green vehicles. An extended TPB model is to be produced. The after-effect of this study confirmed the adequacy of the extended TPB model. They confirm that the extended TPB model has great explanatory facts to anticipate consumers' intention to buy green vehicles.

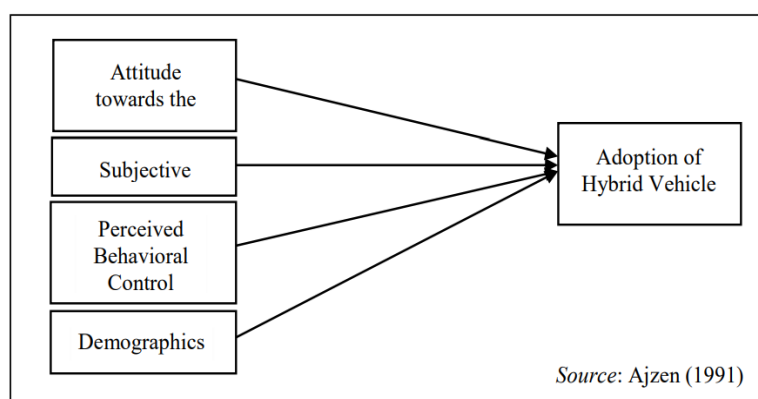


Figure 1: Theory Planned Behaviour (TPB)

This study examines the Malaysian consumer's perceptions towards green technology which is green vehicles. There are various advantages as a result of owning a green vehicle. In any case, the vast majority of the general population these days do not understand it. The green vehicle is not just about a vehicle. It is for the environment too. The concern for a green environment will indirectly expand the sales of green vehicles. Since the environmental issues

are currently growing to be a distinctly worldwide issue, changing to the green vehicle represents a step to keep up a greener environment (Ottman et al., 2006).

Getting a green vehicle has its own particular benefits despite the fact that the cost can be higher than the normal cars. It is the duty of the buyer to get the vehicle, which is equipped with the innovations that are furnished with fuel saving benefits (Simpson, 2006). As green vehicles are a little, yet developing, part of the vehicle fleet, it might emerge as a critical segment of a national strategy to manage the atmosphere or energy security. It is essential to comprehend what impacts consumer choices have on their purchase of green vehicles as opposed to the conventional vehicles (Green et al., 2011). Since hybrids are a newer technology, issues emerge whether or not consumer behaviour affects the choices towards it. Hence, this situation implies a consumer's intention to purchase green vehicles in Malaysia. This study would portray the effect of environmental concern which is attitude, subjective norm, perceived behavioural control, personal moral norm and habit that would influence the intention to purchase green vehicles among consumers as refer to framework below:

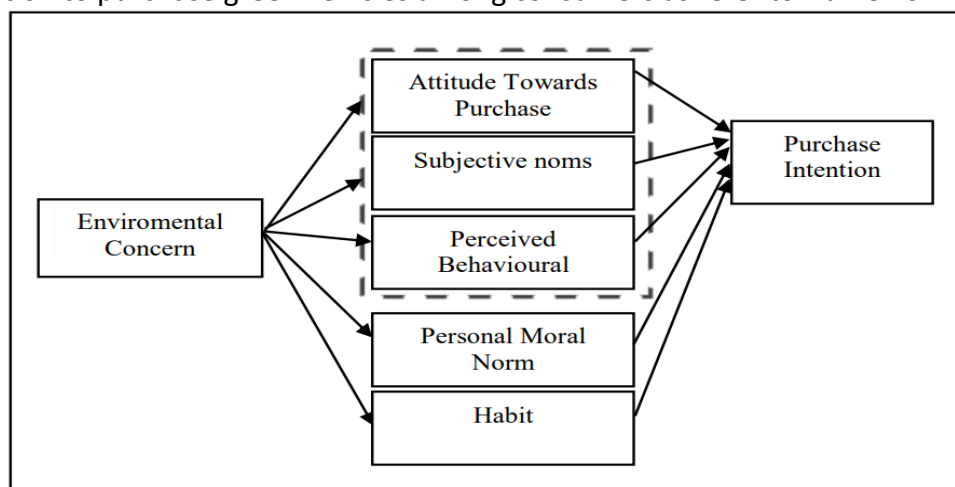


Figure 2: Framework

Methodology

In this study, convenience sampling was utilized and also this kind of sample is the most essential of the non-probability sampling techniques. In quantitative research (survey research) which is structured interview, the researcher asks a standard set of questions. There were several ways and locations had been used to distribute the questionnaires among target populations. The total number of vehicle users for 2015 and above is 14,764,527 people. According to Krejcie and Morgan (1970), the number of populations exceeds 100,000, resulting in a 384-target sample to be surveyed. Thus, the total number of samples is around 400 of Malaysian vehicle owners. However, the number of sample sizes has been increased to obtain more reliable and accurate results depending on cost and time constraint. The survey was conducted all over Malaysia which is more focused on specific areas (urban) in Malaysia where the areas have bad traffic congestion problems and high total vehicles on the road particularly WP Kuala Lumpur, Johor and Selangor.

The detailed distribution is in Table 1. The total number of respondents surveyed is 427; respondents from which 215 are males and 212 are females. The age of the respondents ranges from 17 years old till above 60 years old. From total respondents, (58.1%) of the respondents are married while the rest is either single (40.3%), divorced (0.9%) or widowed (0.7%). The majority of our respondents are Malay (62.3%) and the rest are Chinese (18.7%), Indian (17.6%) and Others (1.4%). The respondents also include a fair number of

undergraduates (57.4%). Second in the list are Diploma holders (23%), followed by postgraduates (15.7%) and lastly, (4.0%) of the respondents have secondary level education. Their income level ranges from below RM2000 till above RM7000. From the list in Table 1, a significant number of the respondents are working in private sectors (64.6%); where 22.2% of them are working in government sectors and the rest is either self-employed (7.0%), working in semi-government sectors (4.4%) or having other working experience (1.6%).

Table 1

The socio-demographic findings

No.	Demographic Variable	n	%
1	Gender		
	Male	215	50.4
	Female	212	49.6
2	Age		
	17-29 Years old	82	19.2
	30-39 Years old	129	30.2
	40-49 Years old	102	23.9
	50-59 Years old	88	20.6
	60 and Above	26	6.1
3	Race		
	Malay	266	62.3
	Chinese	80	18.7
	Indian	75	17.6
	Others	6	1.4
3	Income		
	RM0-RM2000	37	8.7
	RM2001-RM3000	29	6.8
	RM3001-RM4000	99	23.2
	RM4001-RM5000	102	23.9
	RM5001-RM6000	85	19.9
	RM6001-RM7000	42	9.8
	RM7001 and above	33	7.7
4	Marital		
	Single	172	40.3
	Married	248	58.1
	Divorced	4	.9
	Widowed	3	.7
5	Education		
	Secondary School	17	4.0
	Diploma	98	23.0
	Undergraduate	245	57.4
	Postgraduate	67	15.7
6	Employment		
	Government	95	22.2
	Semi-Government	19	4.4
	Private	276	64.6
	Self-Employed	30	7.0

A regression model was built to compare the effect of factors on the prediction of the consumer's intention towards green vehicles. The environmental concern on green vehicles, coded as '1-individual concerns, and 0-individual do not concerns'; was used as the dependent variable. The following specification on this consumer's intention study can be stated below:

$$\text{ENV.CONCERN} = \beta_0 + \beta_1 (\text{ATT}) + \beta_2 (\text{SUB}) + \beta_3 (\text{PBC}) + \beta_4 (\text{PMN}) + \beta_5 (\text{HAB}) + \varepsilon_i \quad (4)$$

Where:

ATT = Attitude

SUB = Subjective Norm

PBC = Perceived Behavioural Control

PMN = Personal Moral Norm

HAB = Habit

Hypothesis test is regarded as the main inferential approach used in scientific research. Based on the literature reviews from previous studies of extended TPB models, the hypotheses in this study are proposed as H1, H2, H3, H4, H5 which are positively related to purchase intention (Wang et al., 2014). Bamberg (2003), suggested that environmental concern does have some influence on an individual's behavioural intention through norms, belief and attitudes. In other words, environmental concern is an indirect determinant of behavioural intention and an anterior factor of elements of the extended TPB model. The model is adopted from previous studies by Wang et al (2016) which is the study regarding the intention to adopt hybrid cars using the TPB extended model while this study adds a new construct namely "habit" to the existing literature. Habit could also be the most important element in human behaviours towards purchase intention (Triandis, 1977). Below are the hypotheses developed for this study

H1 = Attitude is positively associated with the purchase intention

H2 = Subjective norm is positively associated with the purchase intention

H3 = Perceived behavioural control is positively associated with the purchase intention

H4 = Personal moral norm is positively associated with the purchasing intention

H5 = Habit is positively associated with the purchasing intention

H6 = Environmental concern is positively associated with the attitude

H7 = Environmental concern is positively associated with the subjective norms

H8 = Environmental concern is positively associated with the perceived behavioural control

H9 = Environmental concern is positively associated with the personal moral norm

H10 = Environmental concern is positively associated with the habit

The proposed model has six inactive constructs, each being measured by the indicators. A five-point Likert scale (1 = Strongly Disagree and 5 = Strongly Agree) is used. It is important as the reaction design for every indicator variable. In the first part of questionnaire, the survey will need the respondents to provide information on the socioeconomic qualities (e.g. sex, age, employment, education level and wage). In the second part, the survey will focus on the respondent's learning and behaviour. The questionnaire design was adapted from the established instrument previously developed by other researchers (Chiou et al., 2011).

This study adopts a descriptive research design in order to address the research objectives. Burns and Bush (2000) suggest that descriptive research can give answers to the inquiries of who, what, where and how. In addition, the descriptive research also creates pieces of knowledge and delivers generalization as an additional goal. In particular, the study adopts

cross-sectional research. It is regularly called social study research. Curiously, one of the descriptive studies is termed as cross-sectional study (Churchill, 1992), which is also portrayed as a "snapshot of the population". Cross sectional research is firmly associated with surveys and structured interviews with various people.

Reliability analysis is seen as a method to measure the precision or lack of distortion of the indicators. Reliability deals with the consistency, precision, and repeatability of the indicator (Kline, 1998). Through the value of Cronbach's Alpha, the reliability of each construct and items established in the study can be confirmed.

1. Cronbach's Alpha: Range between 0.00 (without any reliability) and 1.00 (perfect reliability) inclusive. The larger the Cronbach's Alpha, the better the consistency in the measurement (Vogt, 1999). Nunnally (1978) suggests that the Cronbach's Alpha should be at least equal to 0.5 and preferably larger than 0.7.
2. Composite Reliability (CR): Measures the internal consistency of a single construct. The reliability is higher if the value of the composite reliability is greater than 0.6 (Hatcher, 1994). However, a minimum of 0.7 is recommended (Fornell & Larcker, 1981).
3. Average Variance Extracted (AVE): Measures the internal consistency of the model. If the AVE is greater than 0.5, the reliability would be regarded as good (hatcher, 1994).

The Cronbach's Alpha (CA) for latent constructs were calculated to test the questionnaire's reliability. The reliability measures for both cases consumers and industry are listed in Table below. The CA of each item is more than 0.7 and less than 1.0, indicating that the questionnaire boasts off high reliability and consistency. Concerning the Composite Reliability (CR), the values for all constructs are greater than the recommended value of 0.7 which means that the measures of constructs are highly reliable in terms of their internal consistency. Additionally, the AVE values for the variables are all greater than the recommended value of 0.5 implying that the indicator variables in the questionnaire have been understood.

Table 2
Reliability Analysis

Constructs	Composite Reliability (CR)	Average Variance Extracted (AVE)	Cronbach's Alpha	N of Items
Environmental Concern	0.899	0.689	0.825	4
Attitude	0.933	0.799	0.793	4
Subjective Norms	0.921	0.775	0.943	3
Perceived Behavioural Control	0.946	0.876	0.939	3
Personal Moral Norms	0.866	0.889	0.888	3
Habit	0.834	0.766	0.925	4
Intention to Purchase	0.811	0.832	0.893	3

Result & Discussion

This section will discuss the result of intention to purchase green vehicles based on environmental concern, attitude, subjective norms, perceived behavioural control, personal moral norms and habit.

a) Environmental Concern

Table 3.1 presents the means and standard deviations for the construct 'Environment Concern' used in this research. The variable shows a positive result. The mean values range from 4.24 until 4.52 while the standard deviation values between 0.45 until 0.65. The respondents are concerned with the environment so that they agree to all the items found to be really in the questionnaire as shown in Table 1. The respondents would like the society to be aware of the environmental issues. The highest mean value among the items is EC4 (4.52) which implies that the respondents think the society should be more responsible in protecting the environment.

Table 3.1
Distribution of Environment Concern

No.	Environmental Concern	Mean	SD
EC1	I think environmental problems are becoming more and more serious in recent years	4.24	0.45
EC2	I think human beings should live in harmony with nature in order to achieve sustainable development	4.39	0.65
EC3	I think we are not doing enough to save scarce natural resource from being used up	4.37	0.65
EC4	I think individuals have the responsibility to protect the environment	4.52	0.56
AVE MEAN_EC		4.38	0.41

b) Attitude Towards Purchasing a Green Vehicle

From Table 3.2, it appears that the respondents have the opinion that buying a green vehicle is desired as it has a predominantly positive outcome (4.30 ± 0.60). And purchasing a green vehicle is both pleasant and positive to some respondents (4.28 ± 0.64 and 4.28 ± 0.65). A number of respondents also feel that purchasing a green vehicle is favourable (4.24 ± 0.68). AT1 has the least mean for this variable. The total mean for this construct is 4.28 ± 0.62 which shows a positive result because possessing a green vehicle indicates that an individual is concerned about the environment. The findings of this section add to the entire research which argues the importance of attitude when making a tough decision, and in this case, it is to purchase a green vehicle.

Table 3.2
Distribution of Attitude towards purchasing a green vehicle

No.	Attitude towards purchasing a green vehicle	Mean	SD
AT1	For me, purchasing a green vehicle is favourable	4.24	0.68
AT2	For me, purchasing a green vehicle is desirable	4.30	0.60
AT3	For me, purchasing a green vehicle is pleasant	4.28	0.64
AT4	For me, purchasing a green vehicle is positive	4.28	0.65
AVE MEAN_AT		4.28	0.62

c) Subjective Norms

Respondents sometimes feel pressured to follow what the society wants them to do. Subjective norms reflect an individual's perception of social pressure to perform or not perform the behaviour (Ajzen, 1991). Young people may be under a strong influence by their peers or elders, and therefore may modify their behaviour accordingly. Some respondents wonder whether their significant others seriously want them to carry out the action. These subjective norms are exactly what this study wants to find out. For some respondents, they are influenced by their significant others' opinions. They feel that those people who are important to them would like them to buy a green vehicle in the near future (4.04 ± 0.45). Furthermore, many respondents perceived that if they buy the green vehicle, a few close friends or relatives would follow them by purchasing green vehicles (4.06 ± 0.51). After seeking advice from significant others, a number of respondents have the opinion that their significant others would definitely prefer the respondents to purchase a green vehicle in the future (4.05 ± 0.45). This study found that the decision made by respondents is under the influence of external factors, that is, the people that are important to them. The respondents may not only be concerned with what people think, but also with how other people behave. Therefore, the opinions and actions of others provide information that respondents may use in deciding how to behave themselves (Rivis & Sheeran, 2003).

Table 3.3

Distribution of Subjective Norms

No.	Subjective Norms	Mean	SD
SN1	Most people who are important to me think I should purchase a green vehicle in the near future	4.04	0.45
SN2	If I buy a green vehicle, then most people who are important to me would also buy green vehicles	4.06	0.51
SN3	People whose opinions I value would prefer that I purchase a green vehicle in the near future	4.05	0.45
AVE MEAN_SN		4.05	0.42

d) Perceived Behavioural Control

Perceived behavioural control (PBC) refers to people's perceptions of their ability to perform a given behaviour (Ajzen, 1991). It is described as having a high probability to succeed in performing a specific task, that is in this case, it may facilitate the purchase of the green vehicle. However, PBC might change over time. Thus, before one makes any decision, he will often weigh his decision thoroughly. For example, even before purchasing the green vehicle, respondents have thoughts of maintaining the vehicle if it broke down in the future (refer to Table 3.4) (4.55 ± 0.65). However, the highest mean of this variable is PBC3 (4.57) on the venue of purchase of the green vehicle. To many respondents, this is crucial as not many showrooms sell environmental-friendly green vehicles.

Table 3.4

Distribution of Perceived Behavioural Control

No.	Perceived behavioural control	Mean	SD
PBC1	The price of a green vehicle is important to me and I can afford it when I decide to purchase	4.57	0.60
PBC2	The maintenance and repair of a green vehicle is important to me when I decide to purchase	4.55	0.65
PBC3	I can find where to buy a green vehicle if I wanted to own it	4.59	0.60
AVE MEAN_PBC		4.57	0.59

e) Personal Moral Norms

Table 3.5 relates the personal moral norms that influence the respondents' choice if they were to buy a green vehicle. There is no social pressure as far as personal moral norms are concerned. Respondents do not require any approval from any individual if they decide to purchase a green vehicle. In regard to PMN2 which carries the lowest mean value in this section (3.95 ± 0.37), it shows that those respondents may have stronger attitudes and may pay less attention to what other people think. Respondents will encounter less of a resistance socially, if they are firm in their decision. To them, environmental knowledge is essential in order to make a perfect decision. Thus, this study should highlight on the environment-oriented behaviour of certain people in the future studies.

Table 3.5

Distribution of Personal Moral Norms

No.	Personal Moral Norms	Mean	SD
PMN1	Because of my own principles I feel an obligation to use a green vehicle to reduce carbon emissions and improve air quality	4.01	0.35
PMN2	If I buy a vehicle, I feel morally obliged to buy a green vehicle and regardless to what other people do	3.95	0.37
PMN3	I feel obliged to take the environmental consequences of vehicle use into account when making purchasing choices	4.00	0.35
AVE MEAN_PMN		3.99	0.32

f) Vehicle Habit

In practical terms, respondents may feel the convenience of driving a private car instead of taking public transport due to time constraint and accessibility of the destination (4.22 ± 0.54). This means that respondents are satisfied with driving a private car to travel to their destination (4.30 ± 0.65). The environment in which the respondents act and live, as well as family, friends and colleagues, significantly impact the way the respondents make their decisions. In summary, the findings provide evidence that respondents' phenotypical habits may have influenced their decisions to drive private cars to urban and suburban trips rather than taking the public transport which may be a hassle to them and their families. The total

mean and SD is at 4.26 ± 0.52 which is considered as acceptable because of these reasons stated in Table 3.6.

Table 3.6

Distribution of Vehicle Habit

No.	Vehicle Habit	Mean	SD
H1	It is unimaginable for me not to use private vehicle for urban or suburban trips	4.22	0.54
H2	Using private vehicle much more pleasant for me than using another mode of transportation	4.30	0.65
H3	I feel the best mode for transportation for urban and suburban trips is private vehicle	4.27	0.65
H4	So far, I have seldom used public transport	4.25	0.57
AVE MEAN_Habit		4.26	0.52

g) Intention to Purchase

Table 3.7 presents the means and standard deviations for one of the variables used in this research which is 'Attitude'. Results from this analysis revealed that the respondents' attitude towards performing a certain behaviour represents one of the most important predictors of the behaviour (Voon et al., 2011). After all, personal attitude remains the strongest predictor of purchase intention. According to Bird (1988), intentionality is a determination or condition of mind that guides a person's focus on a particular matter in order to accomplish a specific goal. Thus, the confidence that respondents possess is made clear with their intention to purchase the green vehicle in the future (4.60 ± 0.50). The highest mean, among the variables is ITP2 (mean 4.7) which states the intention to purchase the green vehicle. It is then followed by ITP1 (mean 4.66) and lastly, ITP3 (mean 4.5).

Table 3.7

Distribution of Intention to Purchase

No.	Intention to purchase	Mean	SD
ITP1	I am willing to purchase a green vehicle in the future	4.66	.55
ITP2	I intend to purchase a green vehicle in the future	4.7	0.6
ITP3	I plan to purchase a green vehicle in the future	4.5	0.6
AVE MEAN_ITP		4.6	0.5

As a conclusion, this study discussed the intention to purchase green vehicles among Malaysians using an extended model of the theory of planned behaviour (TPB). The result showed that most of the variables in the model had a significant relationship towards intention to purchase green vehicles. Unfortunately, habit did not influence the intention among respondents to purchase green vehicles in this study. It means, habit did not have a

significant effect on purchasing of green vehicles. All of the variables showed the significant values as well as positive relationship among constructs as expected.

Conclusion

The findings demonstrated for consumer side in this study as the five factors that most influenced people's intention to purchase the green vehicles had been identified, namely "Attitude", "Subjective Norm", "Perceived Behavioural Control", "Personal Moral Norm" and "Habit". These factors contained items that serve as confirmatory variables in this analysis. This study determined the effect of socio-demographic and all five factors in purchasing of green vehicles. The results suggest that all factors are significant towards green vehicle purchase as well as it helps to understand the behaviour of people on purchasing green vehicles and look at the factors that influence the importance of it towards environmental awareness. The main strength of the study includes economic, demographic and psychological drivers of green vehicle purchase intentions such as income, age, gender and attitude. Therefore, the findings of this study are likely to be more reliable for understanding of green vehicles towards environmentally friendly products. The results suggest that attitudinal variables play important roles in influencing consumers' behaviour besides the demographic variables such as age, income and education. However, this study focused on consumer's intention rather than actual behaviour, and when an appropriate measure of intention is achieved, it will provide the most accurate prediction of behaviour. As a result, there is a gap between intention and actual behaviour. A consumer's actual behaviour may not always be equivalent to intention. At the same time, there could be differences between respondents in rural and urban areas of Malaysia. Thus, we do expect that future study will be conducted with sample data from multiple areas of Malaysia.

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