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THE DETERMINANTS FOR PURCHASE INTENTION OF HYBRID CARS IN PENANG, MALAYSIA

Kai-Ning Goh[1], Yen-Nee Goh[2*], Ghazanfar Ali Abbasi[3], Mao-Seng Ting[4]

[1] Graduate School of Business, Universiti Sains Malaysia, Malaysia
   Email: gohkaining@gmail.com
[2] Graduate School of Business, Universiti Sains Malaysia, Malaysia
   Email: yngoh@usm.my
[3] Graduate School of Business, Universiti Sains Malaysia, Malaysia
   Email: ghazanfar.abbasi@hotmail.co.uk
[4] Graduate School of Business, Universiti Sains Malaysia, Malaysia
   Email: tingmaoseng@gmail.com
* Corresponding Author

Article Info:

Abstract:

The purpose of this research is to identify the factors influencing the purchase intention of hybrid cars among Penang consumers in Malaysia. The study was grounded by using TPB theory. A self-administered survey was carried out, and a total of 140 completed responses were obtained from consumers in Penang, Malaysia. The adopted sampling method was convenience sampling. Four hypotheses were developed, and data were analysed with the Statistical Package for the Social Sciences (SPSS) and partial least squares structural equation modelling (PLS-SEM). The result derived from the analysis revealed that perceived value and environmentalism have significant positive relationships with the purchase intention of the hybrid car. In contrast, perceived risk has a significant negative relationship with the purchase intention of a hybrid car. Surprisingly, perceived government policy has an insignificant impact on the purchase intention of hybrid cars. Limitations and suggestion for future research are presented in the final section of the article.

Keywords:

Purchase Intention, Perceived Value, Perceived Risk, Environmentalism And Perceived Government Policy

Introduction

The world is continuously observing the rise in the earth temperature; thereby, environmental change, i.e. global warming, is viewed as foreseeable. In this global warming, road transport

contributes significantly through the abundance of carbon emission and fossil fuel consumption along with the significant share of several other industries such as manufacturing, power sector etc. Therefore, the adoption of hybrid cars acts as an antidote to cater for the negative effect of fossil fuel consumption and is viewed as a remedy to stop pollution of the planet earth. Thus, looking at the problem caused by fossil fuel to the global health and the earth, the idea of electric vehicles over internal combustion engines'-based vehicles (ICEVs) was introduced to save the planet of many developed parts of the world such as Amsterdam, London, New York, Paris and so on (Hamzah and Tanwir, 2020). Furthermore, these developed cities have further placed a restraint not to allow any vehicle which consumes fossil fuel intending to make their city, country and the world a greener and a healthier place (Ren and Jermain, 2019). In many parts of the world, governments and policymakers are setting legally binding targets for reducing carbon dioxide emissions and encouraging consumers to transition to more eco-friendly vehicles (Barbarossa et al., 2015; Jansson et al., 2017; Morton et al., 2016). Some countries such as Great Britain, Germany and France are even making plans to ban the sale of new diesel or petrol cars by 2040 (Sylvers & Stoll, 2017).

Asia, in particular, has seen tremendous growth both in terms of their population and economy. At the same time, according to the Asian Development Bank (2018), it is expected that by 2030 Asia's share about carbon-dioxide emission will rise to 31%. In a similar vein, Malaysia ratified the United Nations Climate Change Conference in 2016 intending to reduce the greenhouse green emission of GDP by 45% by 2030 (Fulton et al., 2017). Similarly, the sales of hybrid cars in Malaysia context has remained very low, i.e. 4.6 per cent (Yusof, 2019). The introduction of hybrid cars in Malaysia has not gained a significant response from consumers (Hamzah and Tanwir, 2020) as the market has not been fully harnessed (Egbue and Long, 2012). Therefore, within the context of Malaysian hybrid vehicle, there is a need to clearly understand the impact of perceived value, perceived risk, environmentalism and perceived government policy that influence purchase intention among Malaysian consumers to purchase hybrid vehicles. Hence, to close the research gap, this study aims to investigate the significant factors that influence local consumers to purchase a hybrid car as there are limited studies conducted to understand the factors that drive consumers to purchase hybrid vehicles in Malaysia.

In this regard, the current framework is drawn from the theory of planned behaviour as the underlying theory to establish a framework comprising perceived risk, perceived value, perceived government policy and environmentalism as the independent variables and intention to purchase as the dependent variable. The findings of this research have enormous commercial and marketing implications to the automobile industry in Malaysia and help to boost the sales figure of eco-cars adopted locally. Besides, this study can serve as a guideline for the local government in identifying and evaluating the barrier as well as policy priorities in Malaysia context. The insights of this study can be further adapted by policymakers to develop a better national automotive policy that is strategic for the local action plan and much appreciated by consumers.

Literature Review

Adoption of Hybrid Vehicle
The adoption of hybrid vehicles can be divided into several categories. Firstly, financial and policy-related benefits. Consumers are driven by the interest in saving money on petrol from

the fuel-efficiency to reduce overall expenditure. Some people will even replace a larger car with a smaller, cheaper hybrid car. (Klein, 2007) Usually, with the increase in fuel price and some appropriate government incentives, consumers will opt for a hybrid vehicle due to the financial benefits that they can gauge. Besides, it is also a way of securing energy consumption in the nation. (Higueras-Castillo et al., 2019; Gallagher and Muehlegger, 2011). Secondly, some consumers are driven by the motive or awareness and knowledge of environmentalism, and thus, they would want to conserve the earth by reducing the ecological footprint. Consumers with environmentalism will express their concern towards the environment through actual commitment. For instance, consumers would like the image of "green" through driving a hybrid car (Klein, 2007). Some people would prefer a wellknown hybrid vehicle over another, like Toyota Prius rather than Honda Insight (Gallagher and Muehlegger, 2011).

On the other hand, some consumers focus more on conformation with social norms. Green consumers would like to form a community. Thus, embracing hybrid vehicle can be seen as a reflection of sharing the community social value (Higueras-Castillo et al., 2019) Fourthly, some consumers are genuinely concern about reducing petrol consumption to reduce personal expenses. Lastly, some consumers are techno-savvy and interested in technological innovation and thus attracted to adopt a hybrid vehicle (Han et al., 2017).

Purchase Intention of Hybrid Vehicle
Consumer purchase intentions are easily influenced by word-of-mouth, regardless of whether it is positive or negative feedback (Moon et al., 2018). Before making a purchase decision, a customer will go through a search process for the product (Abbasi et al., 2020). Throughout the process, the price of the product, the aesthetics, features, performance, durability and the country of origin of the products count. In the competitive world of business, a good comprehension of consumer purchase behaviour is one of the key elements for business success. However, the fact that different kinds of human characters and attitudes will influence their purchase behavior is making the studies of consumer behavior so complicated, although numerous literature is available for various aspects of consumer behavior studies. The availability of countless alternatives in the marketplace for a similar product category is making the purchasing activity multiple stages of decision-making processes (Oppewal et al., 2004). Generally, the purchasing processes starts from the identification of gap between current (existing) condition with the ideal (intended) condition which causes consumers to appreciate the existence of a problem to be solved or need to achieve his/her goal (Kolesar & Galbraith, 2000). The process then moved on to the stages of search and evaluation of available alternatives. The reason of consumers are motivated into the investigation and assessment of other options is due to the uncomfortable feeling of a potential lousy purchase. Therefore, information search and evaluation of available alternatives is engaged to help reduce the potential risk associated with the purchase before making the right decision to purchase products or services which is believed by the consumers to be the best option for them (Kolesar & Galbraith, 2000). However, Newman & Staelin (1972) argued that most consumers do not extend this search beyond a few relevant alternatives, even when buying expensive consumer durables due to the cost associated with the search. Moreover, some consumers are also said to be bypassing both search, and evaluation processes by merely relying on the experience towards a product or brand (Kolesar & Galbraith, 2000) due to the perceived risk associated with the purchase or the consequences of failure are minimal relative to the cost of a renewed search (McLeay et al., 2018).

During the stage of search and evaluation, comparisons between the alternatives are being made according to a set of attributes or own expectations. Expert advice may be referred, but some may just rely on their feelings of the alternatives (Kolesar & Galbraith, 2000). The outcome of the evaluation will bring consumers into the purchase decision stage, where the intention to purchase the best-evaluated product is formed. Purchasing the intended effect will then lead to the consumption stage as well as post-purchase evaluation where the promise of the product and pre-purchase expectations are being compared with its actual performance (Kolesar & Galbraith, 2000). In the green marketing context, the purchase intention of the environmentally friendly product is defined as the likelihood and readiness of consumers to buy a product which has the green features(Hamzah and Tanwir, 2020; Choi and Johnson, 2019).

On the other hand, the purchase intention of green products can be seen as consumer behaviour which consumers express their environmental concern to the ecosystem (Yusof et al., 2013). Therefore, from the literature of purchase intention, it brings to the need to understand both perceived risk and consumer expectations where the former brings along a feeling of discomfort and anxiety due to loss perception or lousy purchase. At the same time, the latter forms a pre-purchase standard of what is believed could be delivered by the products or services under evaluation.

Perceived Value

Perceived value has a fundamental role to play in both consumer and marketing literature (Hamzah and Tanwir, 2020). Perceived value is defined as a general consumer assessment of the benefit of a product or service based on consumer appraisal. It can also be seen as an attribute with relevance to the products value perception, which helps to build positive wordof-mouth effect and stimulate purchase intention. As argued by Chang et al. (2014), perceived value played an essential role in the consumption process. The perceived value acts as a signal that triggers purchase intention when a consumer judgment is based on inadequate information. Previous research has shown that it has a positive effect on marketing performance; thus, companies need to impress consumer through product value (Chen & Chang, 2012).

Furthermore, it is repeatedly understood otherwise may not capture the environmental selflessness of potential buyers of hybrid vehicle provided if the pro-environmental characteristics of the value intentions are uncertain (Hamzah and Tanwir, 2020). Perceived value has a significant effect on sales performance and an essential attribute that affect purchase intention. A product can offer value to customers through a differentiation strategy or outperforming strategy (Zhuang et al.,2010). The definition could be further redefined in green marketing context as "an overall customer appraisal of the net benefit of a product or service between what is received and what is given based on the consumer environmental desires, sustainable expectations, and green needs". The perceived value may induce a customer to have the purchase intention when there is no complete information available for judgment before a purchase. (Chen and Chang, 2012).

Perceived Risk

There is comprehensive agreement among academics on the importance of perceived risk in consumer behaviour (Allameh et al., 2015). Perceived risk is an idiosyncratic expectancy of a loss with conceivable significances of inappropriate decision making (Abbasi et al., 2020a). It

can also be determined as the combination of negative consequence and uncertainty that will affect a consumer purchase intention. Thus, it will negatively and significantly influence customer purchase decision and behavior (Chen & Chang, 2012). The reason behind it is mainly because the new product or new technology might require its adopter to not only adopt the original product (or technology) but also to adopt new behaviors and discontinue past behaviors (McLeay et al., 2018; Castano et al., 2008). Thereby, arising uncertainties and consumers are concern about the benefit-related uncertainties (performance and symbolic uncertainties) as well as the cost-related uncertainties (switching-cost and affective uncertainties) which will affect the decision whether or not to adopt this newly introduced product or technology (Castano et al., 2008). Adoption of new product or technology is inherently risky, and many consumers are risk-averse (McLeay et al., 2018) and this is always an impediment to successful new product introductions (Abbasi et al., 2020, 2020a). Therefore, understanding the concept of consumer risk perception associated with the latest products and effective handling would be able to help facilitate new product and technology adoption. Perceived risk was initially introduced to the marketing literature by Bauer (1960) as a two-dimensional structure consisting of uncertainty and adverse consequences. It is a concept of partial ignorance where Dowling (1986) suggests that neither the effects of alternatives nor their probabilities of occurrence will be accurately known. Besides, Cunningham (1967) in his conceptualization indicated that there is a little difference between "whether the consumer knows that there is an 80 per cent chance that he will make a bad purchase or whether the consumer thinks that he just "might" make a wrong purchase." Besides, he argues intuitively that known probabilities are extremely rare in purchase behavior. Most of the time, consumers will be faced with a completely new purchase which they have never encountered before, and therefore accurate assessment of risk is almost impossible. Even if the consumer could calculate the risk involved accurately, it is not the objective risk which motivates behaviour, but subjective consumer impressions of it (perceived risk). Therefore, it can be concluded that perceived risk will create a feeling of uncertainty, discomfort and anxiety (Dowling & Staelin, 1994) because there is an expectation of loss perceived by the consumers (Stone & Gronhaug, 1993; Sweeney, Soutar, & Johnson, 1999).

As consumers are concern about the benefit-related uncertainties (performance and symbolic uncertainties) as well as the cost-related uncertainties (switching-cost and affective uncertainties) (Castano et al., 2008), they tend to engage in some sort of risk-reducing activities including collecting new information about the brand/product being considered (Dowling & Staelin, 1994) or buying their favourite brand with confidence until the overall perceived risk level is within their acceptable risk level (Dowling & Staelin, 1994). Besides, some other product' extrinsic cue such as the warranty quality is also found to be able to reduce consumers' risk perception and hence, stimulate product evaluation, purchase and adoption.

This definition is perfectly aligned with the literature of purchasing process where information search is the second process right after the need or problem is recognised by the consumer before a purchase intention is formed (Kolesar & Galbraith, 2000). This process is said to be bypassable as long as the consumers are feeling comfortable by relying on the remembered experience where the perceived risk associated with the purchase or the consequences of failure are small enough or within their acceptable region (Dowling & Staelin, 1994). Hence, purchase intention is directly formed without going through the process of information search due to the perceived risk is small. Therefore, it can be concluded that perceived risk may

influence purchase intention and people who perceive lower risk may have greater intention to purchase (Abbasi et al., 2020).

Environmentalism

Environmentalism is an important underlying factor that determines a consumer decision. According to Kaiser et al. (1999), environmental values is an approximation of subjective norms to predict ecological behavior. The results found was environmental values has a high correlation between personal value and commitment to pro-environmental behavior (Hamzah and Tanwir, 2020). Within the context of green marketing, consumers environmental values have a significant influence on purchase intention for environment-friendly automobiles. (Hackbarth & Madlener, 2016) .Also, according to researchers, environmental factors are essential in determining the purchase intention as consumers with high ecological awareness are more willing to adopt a hybrid vehicle because it is a way in helping to conserve the environment (Hamzh and Tanwir, 2020). Some consumers would like to show their commitment to protecting the environment by reducing the ecological footprint. Consumers with high environmental consciousness are more willing to opt for alternative fuel transportation as they will perceive the act as a way to conserve the earth (Hamzah and Tanwir, 2020). The environmental factors that gain most apprehension will be a lower emission rate and less natural resource consumption.

Perceived Government Policy

There is various previous study on the relationship between hybrid vehicle adoption and government policy (Gallagher & Muehlegger, 2011). According to Sallee (2011), consumers took advantage of most tax incentives offered to Toyota Prius purchasers to coincide with the federal incentives. The tax incentive was found to be an effective method to boost hybrid vehicle sales for a Canadian province. The study conducted by Beresteanu and Li (2011) found that government incentive had a significant impact on hybrid vehicle sales. The perception of government policy is another critical determinant in the acceptance of new technology products. For example, gene technology was perceived as having higher potential risk which consumers have concern over. The trust in government regulators is an essential attribute on the acceptance of hybrid vehicle as the government is believed to hold responsibility in protecting consumers right through a well-defined and consistent policy. Malaysia's company strategy and consumer behavior will need to be bound to government policy and regulations. Thus, the local government use several incentives to encourage the personal adoption of hybrid cars. For instance, the tax exemption on import and excise duty for the Complete Knock-Down (CKD) hybrid cars is one of the government policies which aims to boost the sales of the eco-friendly personal vehicle model. It was seen as an effort by the government to conserve the environment. However, the excise and import duty on Complete Build-Up (CBU) hybrid cars had come to an end in the year 2013, leaving only CKD hybrid cars with tax exemption. Thus, this is a critical determinant if the government wants to continue the tax exemption policy for CBU cars for highly valued by consumers.

Theory of Planned Behaviour (TPB)

This research framework was formulated based on the Theory of Planned Behaviour (TPB). According to the TPB by Ajzen (1991) and Fishbein and Ajzen (2011), the behavioural intentions are generated from attitudes toward the behaviour, subjective norms and perceived behavioural control. This theory mentioned that a person's core belief will be the dominant factor to influence his or her intention, and those beliefs are generally normative, behavioural

or control beliefs. Besides, people act on intention, influenced by the belief, peer pressure to conform to the social norm and the individual perceived behavioural control. Thus, intention can be seen as the predictor of behaviour. In short, stronger intention induces a higher likelihood of performing a behaviour. (Abbasi et al., 2020; Moon et al., 2018). Attitude towards the behaviour is determined by the perceived consequences linked to the behaviour.

Moreover, TPB, in principle, is open for modification by adding domain-specific predictors or changing the path model, provided the inclusion of these domain-specific predictors captures extra variance (Ajzen, 1991). Several scholars have recommended adding variables in TPB original model to enhance its predictive power (Russell et al., 2017; MondéjarJiménez et al., 2016) as it fails to capture enough of the variance in intended behavior (Zailani et al., 2016; Hsieh et al., 2016). For example, Hsieh et al. (2016) extended the original TPB model and empirically established that the extended TPB model captures 46.2% of the variance, which was more than original TPB model 32.5% variance.

Theory of Planned Behaviour which has been used to address various issues in social science was applied to hybrid vehicle adoption researches (Shalender and Sharma, 2020; Alzubaidi et al., 2020; Wang et al., 2016). In the case of purchase intention of alternative fuel vehicles, there are previous empirical researches done to understand the "actual" hybrid vehicles purchase intention (Peters et al. 2008). In this study, attitudes can be generated by beliefs which focusing on perceived value and perceived government policy. Subjective norm was addressed through environmentalism or environmental awareness. Perceived behavioral control will be discussed under the perceived risk. The factors influencing consumer purchase intention for a hybrid vehicle will be the direct motivators for consumer purchase intention in hybrid cars. The theoretical framework of this study will be illustrated in the schematic diagram shown in Figure 1.
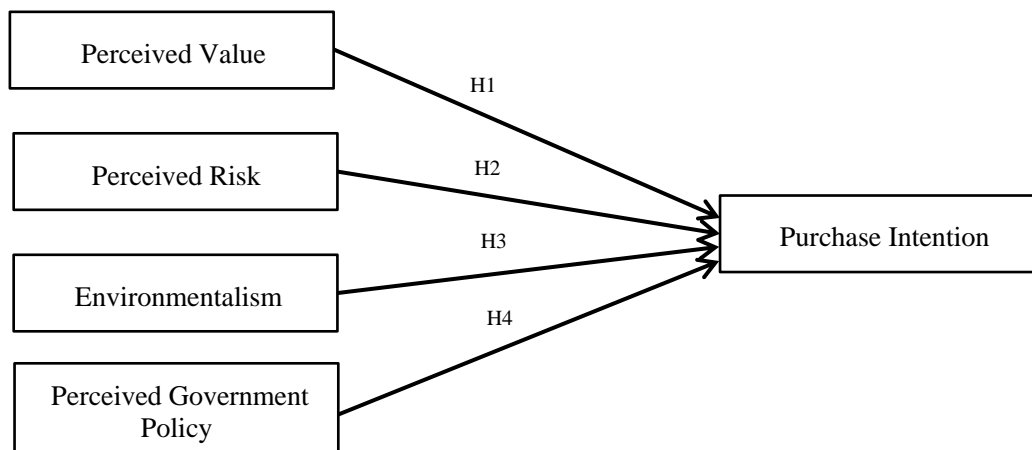

Figure 1. Proposed conceptual framework

Source: Developed for this research

Hypotheses
Review of the existing literature and the previous research gap has led to the development of the hypotheses of this research. The four hypotheses are:

H1: There is a positive and significant relationship between customers' perceived value and purchase intention of hybrid cars.

H2: There is a negative and significant relationship between customers' perceived risk and purchase intention of hybrid cars.
H3: There is a positive and significant relationship between environmentalism and purchase intention of hybrid cars.
H4: There is a positive and significant relationship between perceived government policies and purchase intention of hybrid cars.

Research Methodology

Measurements

A quantitative approach is adopted for this study with a research survey. All the constructs were adapted from the past literature and were modified to fulfil the objectives of the study. The questionnaire consists of 3 sections. The first section is questions measured the perceived value, perceived risk, environmentalism and perceived government policy. The second section measured the purchase intention of consumers towards hybrid cars. Lastly, Section 3 consists of questions about the demographic information of respondents. The questionnaires were adapted from previous research paper Zhang et al. (2013) and Bertea (2010). Five points Likert scale was used for both Section 1 and 2 where anonymous respondents have five options: 1- strongly disagree, 2- disagree, 3- neutral, 4- agree and 5- strongly agree.

Sampling and Data Collection Procedure

Non-probability sampling technique was used in this study where samples gathered does not give all the individuals in the population equal chances of being selected. The type of nonprobability sampling chosen to collect the sample was convenience sampling because the response can be obtained quickly and efficiently from the members of the population that were conveniently available to provide it. (Hair et al., 2019). The sampling frame for this study is based on the consumer's age, education level, occupation, income level, etc. The unit of analysis in this study is the individual consumer who own a car. With regards to the number of respondents based on the rule of thumb, the sample size is within the range of 10 to 20 observations for each variable (Sekaran and Bougie, 2016). The sample size for this current study is approximately 50 to 100, as there are five main variables in the study. A total of 150 self-administrated questionnaires were distributed through face-to-face via direct distribution to postgraduate students from a public university. Most of the postgraduate students are working adults who owns a car hence they are deemed appropriate as the respondent.

Result

Descriptive Statistics

Based on this survey, there was relatively a low number of respondents who had the experience of purchasing a hybrid car (12.9%). Majority of the respondents are Malaysian (97.1%). Female participants dominated (66.4%) in this study. Besides, from the sample collected, it was skewed toward younger consumers where 68.6% of respondents fell between 21-30 years old category. On the other hand, the respondents in this survey were relatively highly educated, with 80% of the overall respondents were with a bachelor's degree or postgraduate. In terms of monthly income, the result shown that respondents with a monthly income > RM 3000 were 56.4% and 22.9% were with monthly income > RM5000. From marital status and household size perspective, 72.9% of respondents were single, and the household size was mainly having 2 - 4 persons in a family, which constitutes 53.6%.

Results

The current study used the partial least squares structural equation modelling (PLS-SEM) approach by using SmartPLS 3.2.6 software for model estimation and multivariate analysis. The adoption of PLS-SEM approach is considered useful for various reasons such as it can detect cause and effect relationships (Reinartz et al., 2009). Moreover, PLS-SEM via SmartPLS was chosen owing to the current study prediction-oriented nature (Kurniawan et al., 2017), which aims to evaluate how well the exogenous constructs can predict the endogenous variables.

Measurement Model Evaluations

According to Hair et al. (2013), the composite reliability (CR) values is the criterion used to evaluate the internal consistency reliability. Traditionally, Cronbach Alpha has been sued as the criterion for internal consistency assessment. Still, there are limitations where: (1) All items are assumed to be equally reliable or having identical primary loadings on the construct, (2) Cronbach Alpha is sensitive to the number of items in the scale and (3) It is more conservative or likely to underestimate the measure of internal consistency reliability. Thus, it is more appropriate to apply the measure of composite reliability (CR) method due to CR consider the different outer loadings of the indicator variables and varies between 0 and 1(Hair et al., 2019). The composite reliability values were range from 0.831 to 0.935, which are greater than the suggested value of 0.708 by Hair et al. (2019). On the other hand, the alternative method (Cronbach's alpha value) to examine the inter-item consistency of the measurement items, the result also indicated that alpha value were all ranged from 0.750 to 0.913, *see table 1,* which are greater than the recommended value of 0.6 by Nunnally and Berstein (1994). Therefore, the measurements can be concluded as reliable.

Table 1. Convergent Validity

Latent Variable	Measurement Item	Loading	Composite Reliability (CR)	Cronbach's alpha	Average Variance Extracted (AVE)
Perceived Value	PV 1	0.818	0.846	0.768	0.528
	PV 2	0.798			
	PV 3	0.757			
	PV 4	0.695			
	PV 5	0.529			
Perceived Risk	PR1	0.870	0.887	0.833	0.663
	PR2	0.831			
	PR3	0.771			
	PR4	0.781			
Environmentalism	E1	0.845	0.935	0.913	0.743
	E2	0.919			
	E3	0.844			
	E4	0.813			
	E5	0.886			
Perceived Government Policy	PGP1	0.550	0.831	0.750	0.502
	PGP2	0.631			
	PGP3	0.824			

	PGP4	0.807			
	PGP5	0.692			
	PI1	0.876			
	PI2	0.728			
Purchase Intention	PI3	0.898	0.920	0.891	0.698
	PI4	0.816			
	PI5	0.849			

Discriminant Validity

Discriminant validity measures how much a construct correlates with other constructs and how much indicators represent a single construct. It also defines the extent of how a construct is distinct from other constructs (Hair et al., 2013). The discriminant validity was assessed by studying the correlation between the measures of potentially overlapping construct. Items should load more intensely on their specific constructs in the model. Furthermore, according to Fornell-Larcker criteria, the square root of average variance shared among each construct should be more significant than the variance shared between the construct and other constructs (Fornell and Larcker, 1981; Hair et al., 2013). The result presented in Table 2 suggested that the squared correlation for each construct are less than the square root of the average variance extracted by the indicators. Thus, all the constructs have fulfilled the criteria of discriminant validity as the overall measurement model of this study proved adequate discriminant validity.

Table 2. PLS Result of Discriminant Validity Measures

Model Construct	E	PGP	PR	PV	PI
Environmentalism	**0.862**				
Perceived Government Policy	0.405	**0.708**			
Perceived Risk	-0.320	-0.261	**0.815**		
Perceived Value	0.452	0.507	-0.257	**0.727**	
Purchase Intention	0.441	0.408	-0.391	0.528	**0.836**

Note: Bold values represent the square root of average variance extracted (AVE) while the other entries represent the squared correlations using Fornell-Larcker criterion (Fornell and Larcker, 1981).

Structural Model Evaluations

After examining the validity of the measurement model, the current study tested the hypotheses using the structural model. The R square value for purchase intention was 0.386. This suggests that the variance in purchase intention of 38.6% can be explained by perceived value, perceived risk, environmentalism and perceived government policy. To examine the result of hypotheses testing, bootstrapping was performed, and the minimum number of 5,000 bootstrap samples were selected. Bootstrapping was run in PLS to examine the statistical significance. A minimum number of bootstrap samples of 5,000 were used. Critical values for a one-tailed test were applied where 1.65 (significance level = 5%) and 2.33 (significance level = 1%) (Hair et.al., 2013).

Table 3. PLS Results of Path Coefficients and Hypothesis Testing

Hypothesis	Relationship	Coefficient	SE	T Value	p-Value	Supported
H1	Perceived Value (PV) -> Purchase Intention (PI)	0.338	0.096	3.516***	0.000	Supported
H2	Perceived Risk (PR) -> Purchase Intention (PI)	-0.220	0.084	2.631***	0.005	Supported
H3	Environmentalism -> Purchase Intention (PI)	0.173	0.088	1.962**	0.026	Supported
H4	Perceived Government Policy (PGP) -> Purchase Intention (PI)	0.109	0.077	1.407	0.081	Not supported

Note: **p < .05. *** p < .01

The result presented in Table 3 shows that perceived value (β= 0.338, p<0.01) positively influence consumers purchase intention towards the hybrid car. The perceived risk (β= -0.220, p<0.01) was also supported that it negatively influenced the purchase intention of a hybrid car. Environmentalism (β = 0.173, p<0.05) was supported to have a positive relationship towards the purchase intention of a hybrid vehicle. Perceived government policy (β=0.109, p>0.05) was not supported to influence consumers purchase intention on a hybrid vehicle positively. In short, the perceived value was found to be the most significant predictor of consumers purchase intention in hybrid cars, followed by perceived risk and environmentalism.

Conclusion

Implications of Research Findings

The study of hybrid vehicles has enormous commercial and marketing implications to the automobile industry in Malaysia and help to boost the sales figure of eco-cars adopted locally. According to Hamzah and Tanwir (2020) and Yee and San (2011), automobile companies should strengthen the value of hybrid cars manufactured. This is because customers will look for durability and reliability when purchasing a car. Thus, if hybrid cars are incorporated with more advance technology, better fuel consumption and able to suits to the status, lifestyle and personality of consumers, then all these valuable attributes would be appreciated by the consumers. Furthermore, a higher quality car is perceived to be able to sustain a longer lifetime, which is a valuable bargain to customers. Examples of other value-added services which can increase customers' perceived value would be providing special body kit, tinted window, polite in-house service with complimentary food and drinks served for test-driving, cash rebate and free milestone services.

However, customers will have some perceived risk in considering purchasing a hybrid car because a car is considered one of the expensive assets a person can possess (Yee and San, 2011). Also, customers are uncertain if the decision they make will be a mistake that the car will have poor performance, create negative self-image or unsafe. Generally, perceived risk is inclusive of financial risk, physical risk, social risk and performance risk. Thus, with limited knowledge one has with this new high-tech vehicle in the market, customers will be somewhat

sceptical in the adoption. Hence, automobile companies can further persuade and convince customers that the perceived risk they have is relatively low due to a high standard of performance and safety features instilled in the hybrid car. The raw materials used, the advance technology and safety features like Anti-Lock Brake System (ABS) and airbag installed in the car which ensure the safety of customers are all relevant to decrease the perceived risk by customers.

In terms of environmental conservation, the adoption of more hybrid cars locally will reduce the CO2 emission from the transportation sector by 21% of the total greenhouse gas (GHG) emissions in Malaysia based on the statistics provided by the Ministry of Natural Resources and Environment Malaysia. Therefore, with the rapid growth of personal vehicle ownership in Penang, it is of no doubt that the carbon dioxide emission is one of the major concerns by the environmentalist. From this study, the result has shown that generally, local respondents have a high level of environmentalism and are willing to adopt an environmentally-friendly car. Thus, automobile manufacturers can continue to strive and advertise the concept of environmentalism of hybrid cars in the upcoming newly invented models with even better environmental conservation properties that suit customers' preference. From the perspective of government policy, this study can serve as a useful template in identifying and evaluating the barrier as well as policy priorities in Malaysia context.

In brief, the insights of this study can be further adapted by policymakers to develop a better national automotive policy that is more localized and meet the needs of local customers. Besides, the car manufacturers could launch the awareness campaign that raised the consumer awareness on the potential benefits (i.e. perceived value from owning a hybrid car) that would subsequently impact the consumer purchase intention on hybrid car.

Limitations
Finally, a number of potential limitations need to be considered. The data collected for this study may not represent the actual population of the targeted respondent. This study was conducted in Penang, and respondents were mainly locals; thus, it will be more appropriate if all the states in Malaysia were incorporated into this study. Besides, a survey questionnaire which was distributed was unable to represent a mixture of customers segment and the entire market. As hybrid cars are still selling at a premium price in Malaysia, there was relatively a low number of respondents who had the experience of purchasing a hybrid car. lastly, as this research was cross-sectional, which fails to detect the changes over time in human behaviour.

Recommendations for Future Research
There are few variables and improvement could be done for similar researches in the future. For instance, other theoretical models like the Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT) could be used to investigate the purchase intention of hybrid cars. Also, future researchers can pursue country of origin studies by targeting customer perspective and use a comprehensive approach that includes potential interactions and interconnectedness. Future research can also incorporate moderator variables that will help to differentiate the potential impact such as product type. Also, future studies can conduct longitudinal studies which will help researchers to detect the complexities of human behaviour.

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