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Boosting green cars retail in Malaysia: The influence of conditional value on consumers behaviour*

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Abstract

Purpose: This paper examined the role of conditional value in the green automotive industry. The relationships of conditional value's four factors, consumers' attitudes and consumers' intention to purchase green cars were investigated. The conditional value was extended by examining the effect of fuel prices. **Research design, data, and methodology:** This study is quantitatively designed. All variables were measured using a 7-point Likert-scale; 425 questionnaires were collected from the respondents in Malaysia. SmartPLS was utilized to examine the proposed nine hypotheses. **Result:** The results demonstrate a positive relationship between attitude and intention toward green cars. Additionally, the results of the relationships were as follows: fuel prices was the most significant predictor of Malaysian consumers' attitudes and consumers' intention to purchase green cars, followed by environmental consequences and government policy. However, retail sales promotions did not show a significant effect on both consumers' attitudes and intentions. **Conclusion:** The study's findings suggest that the Malaysian government should implement an integrated package that includes a fuel pricing policy that restricts the purchase of non-green cars, as well as a set of financial incentives for purchasing green cars. Moreover, it is valuable to conduct public awareness campaigns about the negative consequences of current consumption patterns.

Keywords : Consumption Values, Green Sustainability, Consumer Behaviour, Government Policy, Green Cars Retail

JEL Classification Code: M3, N7, Q55, Q58

1. Introduction

In the last decade, an increment of 6 million passenger cars was found on the roads in Malaysia based on the statistics from the Malaysian Automotive Association

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(MAA, 2021). This increase in the number of passenger cars has earned Malaysia one of the developing countries that contributed significantly to air pollution (Brohi *et al.*, 2018). According to the Department of Statistics Malaysia (DSM, 2018), passenger cars represent 70.4% of the total carbon emissions. Moreover, passenger cars dominated nearly half of the nation's fuel energy consumption (45.2%), which was comparably higher than other countries such as Singapore with only 5.5% (Energy Market Authority, 2018). The Malaysian government awareness of the challenges associated with the increasing number of passenger cars is embodied in, the 2014 National Automotive Policy (NAP), which addressed the urgency to reduce carbon emissions and the promotion of environmentally friendly vehicles (EFVs). As a result of the 2014 NAP, several policy initiatives and programmes related to environmental sustainability and energy challenges have been introduced and implemented. One of the recent government plans is Green Technology Master Plan (GTMP) (2017-2030), which was assigned as a

sustainable initiative to change the nation's growth path. The strategy aims to promote the use of green cars on the road with low energy consumption and carbon emission. According to the GTMP (2017-2030), the government set a target for newly registered hybrid and fully electric cars at 45% in 2025 and 100% in 2030. In promoting green cars in Malaysia, the government has been installing public electric vehicle charging stations and exempting locally assembled vehicles from sales tax. Moreover, according to the findings of the Malaysian Green Technology Corporation (MGTC, 2015), the potential total savings in opportunity cost were estimated to be RM50,808 per car in 10 years. However, despite the government's initiatives abovementioned, sales of green cars in Malaysia have been stagnant between 0% to 3% for the past 15 years. According to the recent statistics of the MAA, only 99,031 hybrid cars were sold in Malaysia between 2004 and 2018. It is important to note that International Energy Agency (2018) reported that other countries exhibited higher percentages of green car sales, with China at 60%, Norway at 49%, and Iceland at 19%.

Many scholars have indicated that the high prices of green cars was one of the most relevant barriers hindering the wide adoption of green cars (Cecere *et al.*, 2018; Ensslen *et al.*, 2017). However, the prices of green cars in both Malaysian new and used car markets show otherwise. Based on market observations and simple calculations by the authors, the prices of brand-new green cars are lower compared to their counterparts of the same models of traditional internal combustion engine cars. Another barrier contributing to the modest sales of green cars is consumers' perceived quality of green cars (Han *et al.*, 2017). However, as much as consumers exhibit concerns regarding the quality of green cars, the low popularity of green cars should not be attributed to their quality, considering most of the existing green cars models are exact replicas of conventional vehicle models, such as Toyota, Mercedes-Benz, and BMW, which have gained much acceptance among cars consumers. Previous studies have addressed the factors affecting the relationship between green cars and consumers' attitude, subjective norms, and perceived behavioural control (Adnan *et al.*, 2018; Afroz *et al.*, 2015). For instance, Degirmenci and Breitner (2017) introduced three practical factors, namely, price premium, range confidence, and environmental performance. Likewise, Barbarossa *et al.* (2017) focused on the personal values of green cars buyers, such as ecological care and moral obligation motivations. However, there is a lack of empirical evidence in some specific factors, such as the impact of fuel prices on consumer behaviour towards green cars. Although Chu *et al.* (2020) and Coffman *et al.* (2017) indicated that consumer car purchase choices must be assessed with a complete evaluation of ownership costs

components, including fuel prices and maintenance, we found that fuel prices has not been empirically examined in the existing literature.

Recently, Lim *et al.* (2019) thought that most Malaysians would consider buying green cars if the fuel price increased. However, Helveston *et al.* (2015) argued that fuel cost may not have a considerable impact on the decision of car consumers. The theory of consumption values identified five independent multi-dimensional values that influence behaviour to predict market choices involving a full range of products and services. This paper will examine the impact of fuel prices in the context of conditional value. Fuel prices could extend the conditional value by contributing to the conditional value and consumption values theory. The relationship between the exogenous latent variables (government policy, fuel prices, retail sales promotions, and environmental consequences) and the endogenous latent variable (consumer's intention to purchase green cars) may indicate which value has the most significant impact on consumers' attitudes toward green cars. In line with the recommendation from the United Nations (UN) and to support the Sustainable Development Goal (SDG) towards green sustainability, the use of green vehicles can reduce the world's dependence on fossil fuels and reduce the rate of greenhouse gas emissions. Therefore, the findings from this study could provide positive implications for policymakers and the automotive industry in formulating green strategic plans particularly for the production and distribution of green vehicles in an effort to increase the adoption of green cars in Malaysia. The conditional value from the theory of consumption values can examine the proposed attributes and assist in filling the related research gaps. In this work, the collected data samples involved consumers from all Malaysian states. To the best of our knowledge, this is one of the first studies which covered all of the Malaysian states.

2. Literature Review

2.1. Relationship between Consumers' Attitude and Consumer' Intention

Green consumer behaviours can be classified into two categories; the decline of energy consumption, or known as curtailing behaviours and the choices of eco-friendly purchasing or known as green purchase behaviour (Khan *et al.*, 2020). Consumers' attitudes and intentions could influence the actual behaviour toward green consumption (Nguyen *et al.*, 2019). Moreover, Kataria *et al.* (2013) found that attitude was the leading indicator of the consumers' behaviours in buying and selling. Therefore, the more favourable the situation, the more likely a

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customer buying environmentally friendly products. In the context of green cars, there were around 99,031 units of hybrid cars sold in Malaysia until December 2018, which is considered below the target ratios in the government master plan as mentioned earlier. Since the actual purchase of green cars accounts for no more than 3% of the Malaysian market, it is crucial to know the remaining 97% of consumers' intention to purchase green cars, especially for the recent buyers who have the intention after being early adopters (Noor & Wen, 2016).

Moreover, Follows and Jobber (2000) suggested purchase intention as the critical predictive construct that leads to conduct the actual purchase. Ramayah *et al.* (2010, p. 1421) stated that green purchase intention is "a substitute for the actual green purchase behaviour and a precise measure of future sales". Thus, the intention of buying ultimately leads to buying behaviour. To predict the purchase intention of green cars, this paper involves five critical factors that must be taken into consideration. The first factor is consumers' attitude to purchase a green car. Then, the four factors of conditional value (government policy, fuel prices, retail sales promotions and environmental consequences). All stated constructs are included in this study and are discussed in detail in the following sections. Assessing people's intention to carry out a specific behaviour helps academics to forecast actual behaviour. According to Beck and Ajzen (1991), the individual's intention behaviour provides clues linked to what extent a person able to perform and be involved in a specific behaviour (Beck & Ajzen, 1991). In the same context, the theories of attitude (e.g., Theory of reasoned actions and Theory of planned behaviour) regularly proposed that attitude is a determining factor of the consumers' intention to do a particular behaviour. Chung *et al.* (2012) have shown that attitude to green products is essential predictors to examine consumers green behaviour. Moreover, Suki (2016) recommended future studies to consider examining customers' attitude and behaviour relating to green consumerism by integrating multivariate relationships amongst constructs. Thus, the following hypothesis is proposed:

H₁: Consumers' attitude to purchase green cars is positively related to their intention to purchase green cars.

2.2. Relationship between Conditional Value and Consumers' Attitude

Suki (2016) highlighted that more studies should be investigated on the relationship between consumption values and consumers' green consumerism attitude, as it is an important predictor of intention and can lead to actual behaviour. According to Grunert and Juhl (1995) and Poortinga *et al.* (2004), values can influence the attitude of the individual and guide the consumers towards objects which fulfil his value. The influence of conditional value on human behaviour has been studied in the marketing discipline since the 1970s. Belk (1975) stated that the basic element that defines conditional values are time, place and context. Sheth *et al.* (1991, p.162) defined the conditional value as "the perceived utility acquired by an alternative as the result of the specific situation or set of circumstances facing the choice maker". Lin and Huang (2012) found that the conditional value was the most influential factor that influences consumers during conducting the behaviour and making choices among available products. In terms of green cars.

Coffman *et al.* (2017) and Lin and Hsu (2015) introduced a group of external factors that affect consumers' purchasing behaviour towards electric cars. The external dimensions or factors include government policy, sale promotions and environmental consequences. Also, Lim *et al.* (2019) found that the majority of Malaysian consumers would turn to green cars if the fuel price increases. Thus, this paper hypothesized positive associations between the four suggested factors of conditional value and consumers' attitudes toward green cars.

2.2.1. Conditional Value Government Policy

Cochran *et al.* (2009, p. 2) defined government policy "as an intentional course of action followed by an official institution to resolve an issue of public concern. In other words, government policy is a course of government action or inaction taken in response to social problems". Zailani *et al.* (2019) suggested that governments are required to take the necessary measures to boost conditional value to motivate friendly modes of transport. likewise, Hessami and Yousefi (2013) stated that government policy is one of the key predictors that causes conducting green purchase behaviour. The incentives, subsidy and cash rebates play a decisive role in grabbing the consumers' attention and bringing consumers to explore the products or services. Confirmed that Gallagher and Muehlegger (2011) estimated 5% growth in green cars sales when offering a tax incentive of $1000. Furthermore, Sierzchula *et al.* (2014) analyzed the sales of green cars in 30 countries, and they found financial incentives one of the most important factors boosting the sales of green cars. In Malaysia, the transportation sector considered the first air polluter, as explained earlier. The phenomena of environmental pollution increase the government's anxiety to impose new regulations to reduce pollution (Brohi *et al.*, 2018). Literature notes that government policies have a positive impact on consumers' buying decision towards green cars (Sang & Bekhet, 2015). Scholars believe that the

government's role is an essential predictor of buying behaviour. In that sense, numerous studies have been written to present the influence of government policy on consumer adoption of hybrid cars. The adoption of green cars is largely determined by economic incentives (Odeck & Aasness, 2015).

Also, Sinnappan and Rahman (2011) stated that the purchase intention for electric and hybrid cars was driven by actions such as price subsidy and that green car buying subsidies were a vital tool to encourage buyers to adopt them. However, the impact of financial incentives was not as strong as anticipated by other studies. Specifically, Hoen and Koetse (2014) work has shown, but less effective than other variables, those tax incentives mediate the intentions of adoption. Green *et al.* (2014) further argue that current policies are costly and inefficient to promote the buyer, suggesting that focusing on marketing is more efficient. Considering all of the above, the current paper examines the effect of government policies as one of the factors of conditional value. Thus, the following hypothesis is proposed:

H2: Conditional value government policy positively affects consumers' attitudes toward green cars.

2.2.2. Conditional Value Fuel Prices

Beresteanu and Li (2011) and Gallagher and Muehlegger (2011) stated that fuel prices are the most influential factor for green cars adoption, and a 10% increase in the regular price of fuel would result in a 70-90% increase in green cars' market share. Paswan *et al.* (2014) confirmed that the rise in fuel prices could include a change in consumers' behaviour by buying more fuel-efficient cars such as hybrids. Elaborating that once consumer heard about there is an increase in fuel prices, they turn out to be very anxious. Those concerns and anxiety found to have the most significant impact on the changes in consumers' lifestyle, cars technology and transportation pattern. Fuel price increases are not new. It becomes a common thing in most countries of the world, as a result of external factors such as wars and disasters, or when some countries undertake reforms in their economies by reducing expenditures on fuel subsidies (Hakim, 2016; Paswan *et al.*, 2014). Not to mention, Gilmore and Lave (2013) found that in the USA, alternative cars with better and lower fuel consumption rise in resale price compared to conventional cars during high fuel price's seasons. These findings were consistent with Keefe *et al.* (2008) results, which concluded that green cars have lower total costs compared to conventional cars at higher fuel prices.

A recent Bloomberg report compared fuel prices in different countries showed Malaysia ranks 5th place in the lower fuel prices countries. Thus, it might explain the low

sales of green cars in Malaysia and make them the irrational choice for most consumers. Similarly, Lim *et al.* (2019) assumed that the majority of Malaysians would turn to green cars if the fuel price increases. This assumption found to be consistent with other countries status. For instance, Kihm and Trommer (2014) found that when petrol prices are rising more strongly in Germany, the market share of green cars increased to 40%. Another example from the USA, that the rising in fuel prices found associated with higher green cars sales (Gallagher & Muehlegger, 2011). For instance, the results of their calculations showed that the adoption of green car is positively linked with higher fuel prices. They estimated that a 13% increase in green cars sales when a $100 growth in annual fuel savings.

All in all, previously studied confirmed the results of Diamond (2009), who stated that fuel prices play an incentive role to boost green cars market share even more than cars price and tax incentives. However, the effect of fuel prices on consumer intention towards green cars has not empirically tested yet. Thus, this study extends conditional value by introducing fuel prices. Thus, the following hypothesis is proposed:

H3: Conditional value fuel prices positively affects consumers' attitudes toward green cars.

2.2.3. Conditional Value Retail Sales Promotions

Blattberg *et al.* (2010, p.2) defined a sales promotion as "an action-focused marketing event whose purpose is to have a direct impact on the behaviour of the firm's customer". Miklautsch and Prem (2010) described sales promotion as a straight encouragement that proposed more incentive for the product to the sales force, distributor and customer with the main aim of escalating an immediate sale. Also, promotions and sales are approaches taken by a firm to communicate with the proposed consumers, and sales promotion is exceptional in that it offers extra incentives for action (Adrian, 2004). According to Kotler *et al.* (2013), sales promotion is a temporary incentive that boosts the customer to purchase the product or service. It can rouse consumer courtesy and deliver information that may lead to purchase. Moreover, Aderemi (2003) clearly stated that sales promotion plays a role as a competitive instrument by providing an extra incentive to consumers to arouse them to purchase the product. Similary, Green *et al.* (2014) suggested that focusing on marketing activities is more efficient to promote green cars sales. Likewise, Kyung and Hwang (2015) found that retail sales promotion among South Korean consumers significantly affected the purchase amount.

Kotler and Kelvin (2014) clarified that sales promotion could be categorized as a communication tactic that offers

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extra value to consumers, suppliers and retailers. Similarly, Ashraf *et al.* (2014) concluded that sales promotion had a major connection with buyers purchasing behaviour. Furthermore, In the context of TCV, sales promotion considered as one of the conditional value dimensions (Zailani *et al.*, 2019). Thus, the following hypothesis is proposed:

H4: Conditional value retail sales promotions positively affects consumers' attitudes toward green cars.

2.2.4. Conditional Value Environmental Consequences

Lin and Huang (2012) concluded that conditional value is impacting consumer choice behaviour in as much as consumers being aware of warnings about environmental consequences through their purchase. Moreover, Afroz *et al.* (2015) confirmed Lin and Huang (2012) findings that environmental consequences have significantly affected attitudes in the context of green cars. Similar findings of the recent study conducted about green cars purchase intention in Malaysia, Asadi *et al.* (2020) found that consumers' awareness of consequences toward green cars plays a significant role in consumers' intention to adopt green cars. It was also highlighted that although Malaysians may be ethically aware of the environmental impacts, they may not feel morally obliged to demonstrate their intention to purchase green cars, which explains the increase in non-green cars. Furthermore, although most of the previous studies confirm that there is a positive relationship between environmental consequences and green car buying behaviour, transport accounts for 70.4% of the environmental pollution issue. Passenger cars remain the primary source of air pollution in Malaysia (Brohi *et al.*, 2018). This reflects the inconsistency between literature and what is going on in reality. Thus, the following hypothesis is proposed:

H5: Conditional value environmental consequences positively affects consumers' attitudes toward green cars.

Consumers' attitude is one of the many variables that has been studied extensively with green purchasing behaviour (Barber *et al.*, 2012; Chen & Tung, 2014; Huang *et al.*, 2014). In many previous studies involved green cars, attitude played an effective mediator between the examined factors and consumer behaviour. For example, Adnan *et al.* (2018) and Afroz *et al.* (2015), have found that attitude positively affected the consumers' intention toward green cars, and mediated the relationship between subjective norms, perceived behavioural control, and intention to purchase green cars. Moreover, scholars have found that attitude mediates the relationship between consumption values and consumer behaviour (Noor & Wen, 2016). Furthermore, government policy, fuel prices, retail sales promotions and environmental consequences could be critical factors that affect the consumers' attitude towards green cars. Therefore, the following hypothesis was developed:

H6: The attitudes of consumers towards green cars will mediate the relationship between government policy and the intention to purchase green cars.
H7: The attitudes of consumers towards green cars will mediate the relationship between fuel prices and the intention to purchase green cars.
H8: The attitudes of consumers towards green cars will mediate the relationship between retail sales promotions and the intention to purchase green cars.
H9: The attitudes of consumers towards green cars will mediate the relationship between environmental consequences and the intention to purchase green cars.

Thus, this paper aims to examine the effect of government policy, fuel prices, retail sales promotions, environmental consequences, and consumers attitudes towards green cars on the consumers' intention to purchase green cars in the Malaysian context. The model proposed for the hypothesis is illustrated in Figure 1.
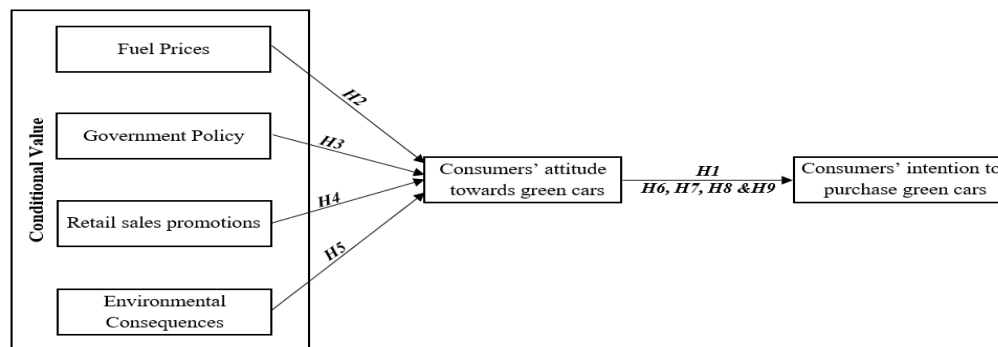

Figure 1. Proposed model

3. Methods and Questionnaire Development

A quantitative method was applied in this paper and used for data collection in Malaysia. First, twenty-four items were adapted to measure the examined constructs. fuel prices were adapted from Paswan *et al.* (2014), and the items of government policy were adapted from Qu *et al.* (2014) and Wang *et al.* (2017). Consumers' attitude measurements were adapted from Taylor and Todd (1995). Finally, the measurements of independent variable "consumers' intention to purchase green cars" were adapted from Adnan *et al.* (2018). All variables were evaluated using multiple items with 7-point Likert scales. The individuals who are eligible to drive cars aged 17 years old and above represents unit of analysis in this study. According to the DSM (2021), The current population estimate of Malaysia is 32.7 million, comprises 29.4 million citizens and 3.2 million non–citizens. The population structure showed that 23.3% are children and underage. Thus, the total population of this study comprised 21.8 million people after excluding the ineligible categories of underage and non-Malaysian citizens. To overcome the Covid-19 outbreak obstacles and ensure the respondents are the targeted ones, the researcher hired a high reputation marketing company to distribute the questionnaire. Vase.ai has its proprietary panel consisting of over 357,000 Malaysian consumers who sign up to become its respondent. According to Dommeyer and Moriarty (1999), using a consumer database as a test frame prevents obsolete or unused e-mail addresses from being problematic and guarantees knowledge accuracy on potential respondents. Besides, Survey e-mails from unknown sources are usually regarded as unwelcome by users (Michaelidou & Dibb, 2006).

Krejcie and Morgan (1970) proposed a sample size of 384 as an appropriate number to represent a population of between 75,000 and 1,000,000. Also, Sekaran (2016) specified that sample sizes between 30 and 500 are suitable for most research. Additionally, Salkind and Rainwater (2006) suggested in mailing surveys, to overcome the unresponsive issue, researchers should increase the size of the sample by 40% to 50%. Therefore, this study applied a sample size of 400, which is in line with all the above sources. Furthermore, Salkind and Rainwater (2006) stated that using e-mails allows researchers to survey a broad geographical area. Thus, the present study could extend the cities to cover entire Malaysia.

The questionnaire link was launched on June 3, 2020, at 5:01 PM and ended on June 10, 2020, at 6:57 PM. The raw data report showed that 1,000 questionnaires were sent via e-mail, and 425 were qualified that the answers to the screening question met the targeted criteria of respondents, and those only continued to the following stages of data screening and analysis. The response rate for the accepted 425 questionnaires was 42.5%. The respondent's profile statistics in this analysis are shown in Appendix 1.

The collected data were screened to ascertain the presence of any ambiguous data characteristics that might affect the results (Sekaran, 2016). Hair *et al.* (2010) stated that some of the issues arising from post data collection were missing data, outlier, normality, and common method variance (CMV). Thus, 425 usable questionnaires were coded and inserted into the SPSS 25. All questions were made compulsory to answer, and no missing value was found in the data collected. By using Mahalanobis values, 57 multivariate outliers were detected and removed from the dataset. Moreover, SPSS indicated that the kurtosis values in this paper were between 0.543 and 3.036, This revealed that some kurtosis values in this study not within the range of -3 and +3, such as an intention to purchase green cars. Thus, the criteria of normality proposed by Coakes and Ong (2011) and Kline (2015) was not accomplished, which lead this study to employ PLS-SEM due to SmartPLS does not require normally distributed data. Lastly, Harman's single factor testing method was applied to detect any false relationships from the constructs. To obtain the Harman single factor, SPSS 25.0 was applied. From the results, the first factor expounded 47.8% of the constructs' variance, which indicated a satisfactory CMV.

4. Results and Discussion

Smart PLS 3.3.3 was used to analyze the proposed model as it can be applied to a complex model. Hair *et al.* (2017), the data analysis in structural equation modelling divides into two main steps. The first step involved the evaluation of the measurement model validity and reliability of the items. The second step included the assessment of the structural model, where the relationships were tested, and the proposed hypotheses were examined.

4.1. The Measurement Model

The original model of research included 24 reflective measurement indicators (MVs or items) for a total of five variables (LVs or constructs), including four independent variables (government policy, fuel prices, retail sales promotions, environmental consequences), consumers' attitude towards green cars as the mediator. Figure 2 shows the measurement model.

Hair *et al.* (2017) indicated that the accepted CR value should be above 0.7, AVE value should be above 0.5, and HTMT values should be below the conservative upper limit of 0.9 (Hair *et al.*, 2017). Therefore, the findings from

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this paper, as shown in Table 1 and Table 2, verified the assessment of the measurement model and can be proceeded to the structural model tests.

Table 1. Convergent validity and reliability for the constructs

Construct	CR	AVE
Intention toward green cars	0.951	0.828
Attitude toward green cars	0.959	0.854
Government Policy	0.965	0.902
Fuel Prices	0.920	0.699
Retail Sales Promotions	0.965	0.828
Environmental Consequences	0.965	0.902

Table 2. Heterotrait-Monotrait (HTMT)

	Att	EC	FP	GP	Int	RSP
Att						
EC	0.790					
FP	0.766	0.697				
GP	0.802	0.834	0.702			
Int	0.863	0.775	0.751	0.794		
RSP	0.724	0.722	0.644	0.881	0.723	

Att= Attitude, EC= Environmental Consequences, FP= Fuel Prices, GP= Government Policy, Int= Intention, RSP= Retail sales Promotions.
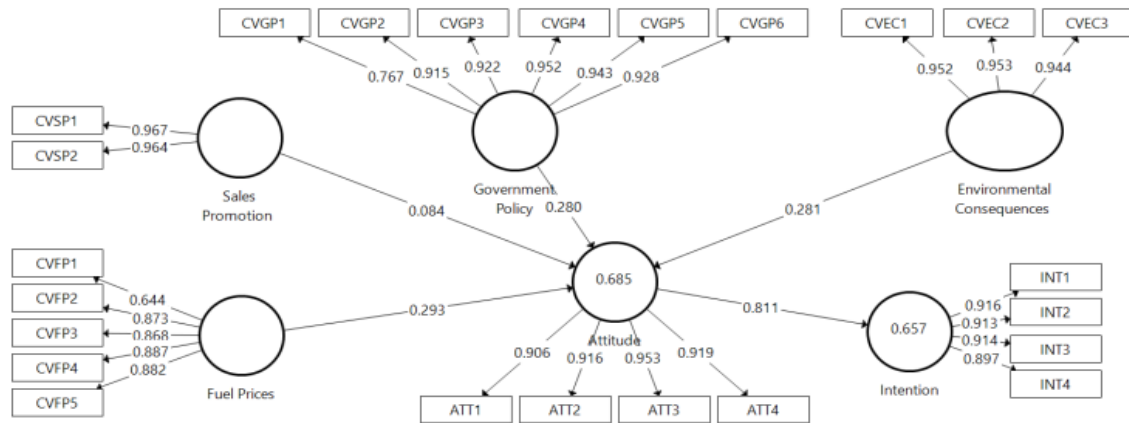
Figure 2. Measurement model

4.2. The Structural Model

Hair *et al.* (2017) indicated that the next step after the measurement model should be the assessment of the structural model. In the evaluation of the structural model, the hypotheses were tested. Both R^2 values and path coefficients were obtained from the PLS algorithm by bootstrapped with 5000 samples and 386 cases.

From Table 3, one can conclude that four hypotheses were accepted, and one hypothesis was rejected. Results show that consumers' attitude towards green cars has a significant, positive impact on consumers' intention to purchase green cars (β=0.881, t=23.770, p<0.001). Therefore, the 1st hypothesis on the effect of consumers' attitude towards green cars on consumers' intention to purchase green cars was supported. The four remaining direct hypotheses were on the effect of conditional value on consumers' attitude towards green cars. The findings were government policy (β=0.280, t=3.419, p<0.001); fuel prices (β=0.293, t=6.289, p<0.001); retail sales promotions (β=0.084, t=1.167, p>0.1); and environmental consequences (β=0.281, t =5.188, p<0.001). Thus, H2, H3 and H5 were supported, and H4 was not supported or rejected.

Table 3. Path coefficients and hypothesis testing

H	Relationship	Path Coefficients	Std. Error	P-value	Decision
H1	Att -> Int	0.811	0.034	0.000	**S**
H2	GP -> Att	0.280	0.082	0.000	**S**
H3	Fuel Prices -> Att	0.293	0.047	0.000	**S**
H4	RSP -> Att	0.084	0.072	0.244	**NS**
H5	EC -> Att	0.281	0.054	0.000	**S**

Att= Attitude, EC= Environmental Consequences, FP= Fuel Prices, GP= Government Policy, Int= Intention, RSP= Retail sales Promotions.
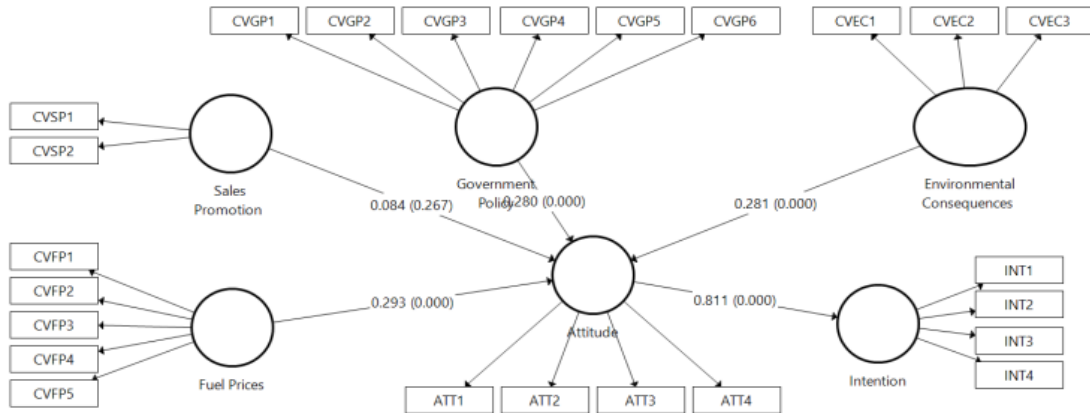
Figure 3. Structural Model

Further evaluating, known as effect size (f^2), was investigated. Effect size (f^2) is the change in R^2 value when a particular exogenous construct is deleted from the model (Hair *et al*., 2017). It is to weigh whether the deleted construct has a substantive effect on the endogenous construct (Hair *et al*., 2017). According to Cohen (2013), the f^2 values of .02 represent a small effect, while 0.15 represent a medium effect, and 0.35 represent a large effect.

SmartPLS 3.3.3 automatically generates effect size values (f^2) during the algorithm. The f^2 effect of conditional values on consumers' attitude towards green cars was government policy (f^2=0.051), fuel prices (f^2=0.144), and environmental consequences (f^2=0.086), which indicated that in conditional value, fuel prices had the largest effect on consumers' attitude towards green cars compared to other variables.
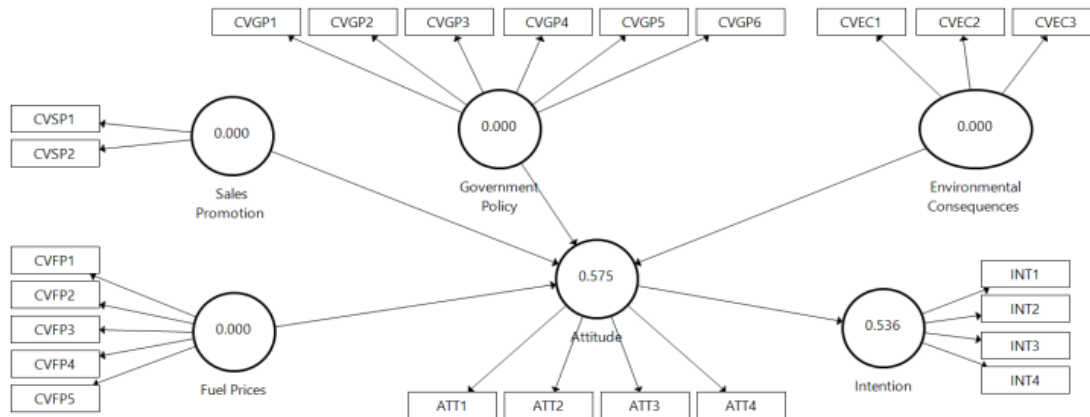

Figure 4. Blindfolding

4.3. Assessment of Mediation Model

Lastly, the assessment of the mediation role of attitude was included to test the remaining hypotheses of the indirect relationship between the conditional value variables and consumers' intention to purchase green cars. SmartPLS 3.3.3 was applied to examine the interaction effect of consumers' attitude towards green cars. Table 4 shows the results of the indirect effect.

The results of the bootstrapping show that the consumers' attitude towards green cars is a significant mediator for the relationships between three out of the four proposed variables of the conditional value and consumers' intention to purchase green cars. As the mediation results between government policy and consumers' intention to purchase green cars (β=0.227, t=3.358, p<0.001); fuel prices and consumers' intention to purchase green cars (β=0.237, t=5.977, p=0.001); environmental consequences and consumers' intention to purchase green cars (β=0.227, t=5.029, p<0.001); while there was no mediation effect between retail sales promotions and consumers' intention to purchase green cars (β=0.068, t=1.170, p>0.1).

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Moreover, Preacher and Hayes (2008) specified that the indirect effect of 97.5% bootstrapped confidence interval, as Table 4 shows, which means there is mediation between government policy and the dependent variable "consumers' intention to purchase green cars" (lower=0.096, Upper=0.348). likewise, fuel prices (lower=0.160, Upper=0.320), environmental consequences (lower=0.137, Upper=0.311. On the other side, retail sales promotions (lower=-0.040, Upper=0.182) reflects there was no mediation effect with consumers' intention to purchase green cars. Therefore, the supported hypotheses were H6, H7, and H9, while H8 was not supported or does not have a mediation effect.

Table 4. Mediating Effect of Attitude

H	Relationship	Beta	t-value	Confidence Intervals		P-value	Decision
				Lower 2.5%	Upper 97.5%		
H6	GP -> Att -> Int	0.227	3.358	0.096	0.348	0.000	**S**
H7	FP -> Att -> Int	0.237	5.977	0.160	0.320	0.000	**S**
H8	RSP-> Att -> Int	0.068	1.170	-0.040	0.182	0.242	**NS**
H9	EC-> Att -> Int	0.227	5.029	0.137	0.311	0.000	**S**

Att= Attitude, EC= Environmental Consequences, FP= Fuel Prices, GP= Government Policy, Int= Intention, RSP= Retail sales Promotions.

4. Discussion

The primary motivation behind this paper was the relatively low sales trend of green cars in Malaysia as compared to other countries. Therefore, this paper was carried out to investigate and understand the importance of conditional value from consumption values theory and the consumers' attitudes toward green cars on consumers' behaviour to purchase green cars. From the results, the direct empirical findings revealed that consumers' attitude had a positive impact on consumers' intention to buy green cars, and the conditional value fuel prices had the most significant impact on consumers' attitudes toward green cars. Followed by environmental consequences and government policy. On the contrary, retail sales promotions had not any significant effect on consumers' attitude toward green cars.

It has been started with proof that a significant relationship exists between consumers' attitude and intention to purchase green cars, indicating that the higher favourable consumers' attitude toward green cars would lead to stronger intention to purchase green cars. Therefore, the consumers' environmental attitude contributes to the consumers' intention to purchase. The findings were in line with the outcomes of Kim and Kim (2019). According to the findings of this research, some consistent explanations for acquiring a significant relationship between consumers' attitude and intention to purchase green cars can be discovered. A favourable attitude can greatly influence purchase intention, i.e., if consumers have a positive attitude about the green car, the possibility is that the consumers' intention to purchase green cars will be increased. Also, consumers are found to have a more favourable attitude regarding the benefits that green cars can deliver to them and the environment.

An important detail from the results was proving that an increase in fuel price would increase the preference for green cars in Malaysia, which consistent with the argument of Lim *et al.* (2019) that an increase in fuel price would accelerate the adoption of green cars in Malaysia. Moreover, Lin and Huang (2012) concluded that conditional value is impacting consumer choice behaviour in as much as consumers being aware of warnings about environmental consequences through the purchase decision-making process. However, transport accounts for 70.4% of the environmental pollution issue as mentioned earlier. In particular, passenger cars remain the primary source of air pollution in Malaysia (Brohi *et al.*, 2018). This reflects the inconsistency between literature and what is going on in reality. Additionally, Biswas and Roy (2015) also found that the conditional value reinforced the sales of green products and also highlighted the importance of factors like financial incentives. Whitehead *et al.* (2014), for example, found that Stockholm's tax credit for congestion on electric cars has promoted sales by 10.7%. Other than the US federal income tax credit incentive, which was accounted for 20% of the sales of green cars in the year 2006, the income tax credits for hybrid cars have also promoted high demand for green cars.

Comparing benefits and financial exemptions given to green cars in Malaysia, it can be found that in contrast to other countries, they are very modest. In Malaysia, the only incentive provided by the government is tax incentives for locally-assembled models (Lim *et al.*, 2019). Likewise, in some countries, the government's policy was not limited to providing incentives or increasing fuel prices; some

governments have made direct investments in the electric vehicle industry, such as Egypt and China. Similarly, Malaysia has the potential to lead the local and regional market of green cars if such moves were taken. Finally, not all the factors examined had a significant impact on consumer behaviour. In terms of retail sales promotions, this paper found that the impact on consumer attitudes towards green cars was insignificant, which was not in line with Gonçalves *et al.* (2016). Anyways, promotional campaigns should be implemented to encourage consumers to purchase green products by emphasizing the positive part of environmental consequences.

The last four hypotheses were on the mediating effect of consumers' attitude towards green cars between the four proposed factors and consumers' intention to purchase green cars. SEM's finding showed that three of the four factors had a significant mediating effect. They are government policy, fuel prices and environmental consequences, while retail sales promotions was significant with mediating, as it was in the direct relationship with consumers' attitude towards green cars. In the context of green cars, these findings were consistent with Afroz *et al.* (2015) and Sang and Bekhet (2015), as they found environmental consequences also had a significant indirect effect on consumers purchasing behaviour towards green cars. Furthermore, Sang and Bekhet (2015) found that government interventions considered as a very essential and key element of green car usage intentions. Thus, to raise the sale demand for green cars in Malaysia, the government should implement car tax exemption fees for green cars. It is also recommended to increase the fuel consumption tax to make green cars more feasible as environmentally friendly alternatives.

5. Conclusion

Within the transport sector, fuel demand and carbon emissions are growing rapidly. In order to reduce the increasing carbon emissions and fuel consumptions, the adoption of green cars on the roads are considered an effective alternative and an efficient application for cleaner energy. Malaysia is one of the advocates for the adoption of green cars on the road. Unfortunately, the adoption level is reported to be at a low level. One of the main obstacles hindering the adoption of green cars in Malaysia is low fuel prices. As a result, the adoption of green cars on the road seems to be an unfeasible option from the consumers' perspective. From the results, the benefits of adopting a green car were not the priority of many respondents. The results of this study indicated that potential price savings and operating costs were not enough to stimulate consumer behaviour towards green cars. Moreover, the small size of

incentives in Malaysia reflected that green cars as an alternative to fuel-consuming cars are still not a priority. Chu *et al.* (2020), for example, stated that the need for green cars in Korea is related to the problem of air quality, so the Korean government has implemented significant incentives. From the results, three of four from the proposed factors of conditional value showed significant impact, i.e., fuel prices, government policy, and environmental consequences. However, retail sales promotions had an insignificant effect on consumers' intention to purchase green cars.

6. limitations and Recommendations

Although this paper achieved the objectives and contributed to the conditional value, there were some limitations. Firstly, the insignificant effect of retail sales promotions requires additional measurement items or other methods such as direct interviews. Secondly, the data was collected during the Covid-19 pandemic, which made it impossible to interact with the respondents face-to-face. Besides, the population type applied as a proxy population considered one of the limitations of the current study. However, it was the appropriate and practical solution to do the data collection during the Covid-19 pandemic lockdown. Finally, consumer intention may not show consumers' actual behaviour.

Future research is needed to measure the actual behaviour of consumers. In future studies, the actual behaviour of the current and previous adopters of the green car should be examined and compared. Moreover, the moderation role of conditional value should be investigated in detail by combining it with external factors. Furthermore, as mentioned earlier, MGTC (2015) estimated the financial benefits of using green cars at about 1,500 USD per year to both consumers and the nation. In the future, economic researchers can study the opportunity cost of not replacing cars running on fossil fuels with green cars. Lastly, as mentioned previously, since more and more charging points are being added, future studies are invited to investigate the effect of the expanding infrastructure on consumers' behaviour towards green cars.

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Appendixes

Appendix 1. Respondent's profile

Variable	Category	Frequency	Percentage %
State	Selangor	105	24.7
	Sabah	21	4.9
	Johor	36	8.5
	Sarawak	36	8.5
	Perak	26	6.1
	Kedah	25	5.9
	Kelantan	18	4.2
	Penang	45	10.6
	WP Kuala Lumpur	49	11.5
	Pahang	18	4.2
	Terengganu	12	2.8
	Negeri Sembilan	16	3.8
	Melaka	10	2.4
	Perlis	3	.7
	W.P Putrajaya	2	.5
	W.P Labuan	3	.7
Gender	Female	168	39.5
	Male	257	60.5
Race	Malay	225	52.9
	Chinese	180	42.4
	Indian	20	4.7
Age	17 to 30 years old	196	46.1
	31 to 45 years old	167	39.3
	46 to 60 years old	60	14.1
	60 years old above	2	.5
Marital status	Single	228	53.6
	Married	192	45.2
	Divorced	4	.9
	Widow	1	.2
Education	High school	72	16.9
	Diploma	117	27.5
	Bachelor's Degree	193	45.4
	Master's Degree	38	8.9
	PhD	5	1.2
Monthly income	Below RM 2,000	80	18.8
	RM 2,001 - RM 4,000	155	36.5
	RM 4,001 - RM 6,000	87	20.5
	RM 6,001- RM 8,000	49	11.5
	RM 8,001 and above	54	12.7