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The Role of Environmental Concern in Post-Purchase Satisfaction among Green Car Owners in Malaysia

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Abstract

Sustainable development refers to development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It takes into consideration the economic, social and environmental aspects of development. Investing in renewable energy sources is the main element in sustainable development. It reduces the dependence on fossil fuels and decreases greenhouse gas emissions, thus reducing climate change's impact. Hence, promoting sustainable development through educating the public is essential. With 90 per cent of its vehicles being fossil-fueled, Malaysia needs to catch up in its aspiration to adopt green transportation. This study looks into the mediating effect of environmental concern on the relationship between social influence and prices of the green car on the post-purchase satisfaction of green car owners in Malaysia. Education and awareness campaigns play a significant role in promoting sustainable development. The domain of study is marketing, with post-purchase satisfaction as the central idea. It is a quantitative study based on the deductive research approach. This study chose the Theory of Planned Behaviour as its underpinning theory. The sampling technique adopted would be stratified random sampling via a self-constructed questionnaire. It will collect data from 384 respondents using a questionnaire and analyse it statistically using the SPSS and SmartPLS statistical tools.

Keywords: Social Influence, Prices of Green Car, Post-Purchase Satisfaction, Green Car Adoption, Repurchase Intention, Environmental Concern

Introduction

According to MIT Sloan Management Review, by the year 2030, the world is likely to encounter nine megatrends. It will affect lives, careers, businesses, and the environment. The significant one would be extreme climate change, triggered by the increasing rate of environmental pollution. Therefore, the Paris Agreement, signed in 2016, was evidence of commitment to protecting the environment. The primary objective is to reduce the greenhouse effect through sustainable development. It must promote eco-innovation and green consumption.

As such, the government of Malaysia has pledged during the United Nations Climate Change Conference. As cited by The New Straits Times Press (2016), Malaysia has pledged to reduce carbon emissions by 45 per cent in 2030. Despite the aspiration of adopting green transportation, in 2017, Malaysia accumulated more than five billion tonnes of carbon dioxide (CO₂) emissions produced from fossil fuels, far below its targeted pledge. There are more than 10 million green cars worldwide, but the percentage of green cars in Malaysia is relatively small. It was merely 2.2 per cent out of 604,287 cars sold in 2019 were green cars.

As stipulated in the Malaysia National Electric Mobility Blueprint (2015 - 2030), the country aspires to have 100,000 electric cars, 100,000 electric motorcycles and 2,000 electric buses and establish 125,000 charging stations. Nevertheless, as of January 2021, there are only 228 charging stations in 175 locations across nine states in Malaysia, reported on the Electric Vehicle and Electric Plug-In Hybrid Car Charging Station List website. It is merely 0.18 per cent of the projected target. Pereira (2018) reported in RinggitPlus that the price of a green car is high. Comparing a Nissan Leaf (green car) and a Perodua Myvi (non-green car), purchasing a green car is equivalent to purchasing three non-green cars. Nissan Leaf is priced at RM180,000, whilst Perodua Myvi is priced at RM49,000. Hence, two pertinent challenges were identified to explain the reasons behind the low green car adoption in Malaysia. They are public confidence and the high prices of green cars.

Research Gaps

Post-purchase satisfaction is essential in the consumers' buying cycle. It functions as a determinant of their future repurchase intention (Chen et al., 2020; Mattia et al., 2021). Chauke and Duh (2019) stated that socio-psychological elements are the most substantial factor in determining post-purchase satisfaction levels. They are family influence, peer pressures, behavioural beliefs, perceived values, environmental attitude and overall image of the products. Protecting the environment for future generations is a must, often referred to as a sustainable development initiative. Hence, adopting a green car helps to achieve this objective. Therefore, consumers' trust towards a brand is elevated when their post-purchase satisfaction is high towards products that protect the environment (Ventre & Kolbe, 2020; Zhang et al., 2020). Nevertheless, the result shows the opposite in Vatsa et al (2021) study. The factors consumers evaluate in developed countries are not the same as in developing countries. These factors are subjective and culturally driven (Asadi et al., 2022; Elhoushy & Lanzini, 2021). The underlying factor is knowledge and awareness. Scholars opined that knowledge is the foundation for consumers to appreciate the importance of protecting the environment (Giansoldati et al., 2020; Stojanova et al., 2021).

Technology orientation drives consumers towards higher purchase intention, but it has a different effect on post-purchase satisfaction. The power of word-of-mouth, derived from customers' experiences, catalyses post-purchase satisfaction (Parry et al., 2021; Stojanova et al, 2021). Repurchase intention should be in the mind of car brands and manufacturers, as post-purchase satisfaction of green car owners contributes to its success. According to Parry et al (2021), word-of-mouth communication plays an essential role in determining the success or failure of a marketing effort. They reiterated that word-of-mouth consists of social bonding, comparison, and exchanging information among consumers. Wu et al (2019) revealed that environmental concern functioned as a vital stimulus to influence the acceptance of autonomous electric vehicles among its citizens. On top of that, they indicated green perceived usefulness and ease of usage as influential factors influencing consumers' behaviours. Likewise, Mladenovic et al (2020) revealed that word-of-mouth is greatly

influenced by consumers' trust and social ties, with age, gender, and educational background as the catalysts. Word-of-mouth is part and parcel of consumers' lives, i.e., their interest in specific products or services is reflected in their daily conversations with others. Hence, car brands and manufacturers must secure consumer's trust by managing post-purchase satisfaction.

Brand loyalty among green car owners ensures sustainable sales volume for car brands and manufacturers (Casteran et al., 2019; Noh et al., 2019; Panda et al., 2020). The element that sustains brand loyalty among green car owners is post-purchase satisfaction. A satisfied green car owner will likely repurchase from the same brand, thus increasing brand loyalty. Casteran et al (2019) indicated that brand loyalty would decline as consumers become heterogeneous in selection with the wide range of brands offered in the marketplace. However, this decline can be viewed as a category-specific decline. In other words, a brand may suffer a decline in a specific category of product range but not the entire brand entity. In this context, car brands and manufacturers must be cautious as brand loyalty towards the green car segment is fragile (Asadi et al., 2022). Hence, the needs to ensure sustainable post-purchase satisfaction are vital. Likewise, Colorado and Mesias (2021) stated that brand loyalty among consumers is greatly affected by these two factors, i.e. satisfaction of usage and commitment of seller. The satisfaction of usage is another term to describe post-purchase satisfaction. Hence, car brands and manufacturers must ensure high post-purchase satisfaction among their green car owners (Chen et al., 2020; Yang et al., 2019). Action and not words enhance green car owners' post-purchase satisfaction (Parker & Gok, 2021; Petzer & Roberts-Lombard, 2021).

Post-purchase dissonance is primarily dealing with consumers' negative emotions. According to Boyle et al (2021), when car brands and manufacturers set the price for their green cars, the relationship between consumers' perception of price and the quality of the products must be emphasised. Apart from the price itself, a more important aspect of product benefit should be considered (Brase, 2019; Ho et al., 2021; Kang et al., 2021). Scholars believe it is essential to understand the meaning of needs and wants, thus emphasising the importance of the post-purchase satisfaction level (Guillen-Royo, 2020; Policarpo & Aguiar, 2020). Hence, invoking emotional intelligence as a countermeasure is appropriate (Kim & Sullivan, 2019; Prentice, 2019). Emotional intelligence plays an essential element that ascertains higher post-purchase satisfaction. Prentice (2019) discovered a positive relationship between emotional intelligence and customers' satisfaction. In this context, communication is the underlying principle to achieve higher emotional intelligence, i.e. a bridge to connect brands with consumers. The concept of 'think global, act local' should be adopted. Hence, the egoistic elements in global brands must be addressed with high professionalism (Liu et al., 2020). Instead of promoting collectivism, car brands and manufacturers must indulge in marketing individualism to cater to local needs and aspirations (Liu et al., 2020; Wang et al., 2020)

Scholars opine that the most effective way to stay ahead of the competition is to enhance marketing strategies, but pricing remains a crucial element for consumers (Kim et al., 2020; Peschel et al., 2022; Shapiro et al., 2019). Apart from that, Peschel et al (2022) reckoned the importance of pricing mechanisms alongside product attributes. They also indicated the relevance of using market reference price as a yardstick to determine product pricing. Consistency and connectivity with targeted consumers are primary objectives for pricing the product. Willems et al (2021) proposed photographs to simulate consumers' attention and acceptance. Nevertheless, they discovered that using photographs to simulate

attention only works for the low-experience product range. Actual experience is still needed for the high-experience product range. A green car is classified as a high-experience product range; hence consumers' actual experience is significant towards their price acceptance level (Al Manun et al., 2019; Asadi et al., 2022). Zhang et al (2021) revealed that initiating a damage control mechanism through green demarketing is not as effective as the initial greenwashing marketing. Consumers may respond superficially towards the antidote, but the damage done is psychologically rooted. They reiterated the need for time and effort from brands to prove their sincerity, hence a slow-burn marketing journey (Kreye et al., 2021; Lopez-Fernandez, 2020).

Scope and Significance

This study focuses on Malaysia's post-purchase satisfaction level of green car owners. The respondents must be Malaysians owning a green car. A green car is a passenger car, excluding commercial vehicles such as vans or trucks. A green car in Malaysia refers to either an electric vehicle (EV), a plug-in hybrid electric vehicle (PHEV) or a hybrid vehicle (HV). An EV is an electric car fully powered by lithium-ion batteries without an internal combustion engine (ICE). In comparison, a PHEV is a combustion engine car fixed with an additional self-charging battery-operated electric motor with a plug-in charging capability. On the other hand, an HV is an internal combustion engine (ICE) car fixed with an additional self-charging battery-operated electric motor without the plug-in charging capability.

This study would expect more respondents in the states within Malaysia with the highest population density and the highest number of cars per square kilometre. Based on the Malaysia National census 2010 data, as published on the Department of Statistics Malaysia website, the top three states with the highest population density are Selangor (5.4 million), Johor (3.3 million) and Sabah (3.1 million). However, as per the data extracted from the Road Transport Department, Malaysia, the top three states with the highest numbers of cars per square kilometre are Selangor, Johor and Penang. The federal territory of Kuala Lumpur is included in this study because it has a high number of cars per square kilometre.

The findings of this study will assist four different types of stakeholders in accelerating the adoption of green cars in Malaysia. Firstly, the Theory of Planned Behavior adds to the body of knowledge. Secondly, the empirical data will motivate Malaysian authorities to achieve sustainable development by implementing green transportation. Thirdly, it offers Malaysian green car brands and manufacturers valuable marketing insights to match their products' market demands. Finally, it provides confidence to Malaysians for higher green car adoption.

Proposed Conceptual Model

The relationship between social influence, prices of green car, environmental concern and post-purchase satisfaction are shown in Figure 1. This study identified four variables. It consists of two dependent variables, one independent variable and one mediating variable. The dependent variable is post-purchase satisfaction, whereas the independent variables are social influence and prices of green car. In addition, the mediating variable is environmental concern. Based on the review of past literature, it was concluded that environmental concern has a mediating effect on social influence and post-purchase satisfaction. Likewise, environmental concern also has a mediating effect on prices of green car and post-purchase satisfaction. The objectives of this study are as follows

- to test the mediating effect of environmental concern on social influence and post-purchase satisfaction among Malaysian green car owners; and
- to test the mediating effect of environmental concern on prices of green car and post-purchase satisfaction among Malaysian green car owners.

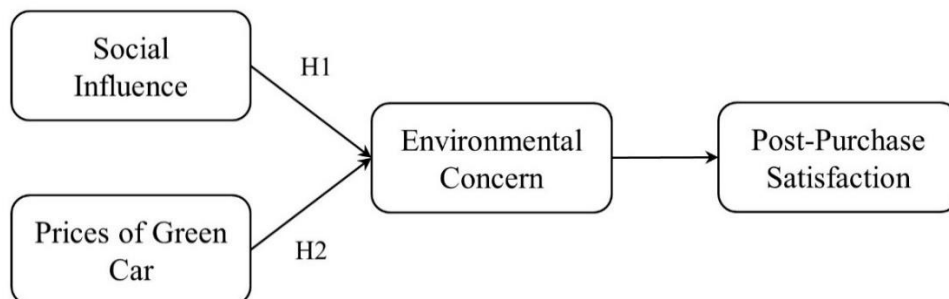


Figure 1. Proposed conceptual model

Hypotheses Development

Purchase intention is the driver, and post-purchase satisfaction is the reinforcer in the consumer purchase cycle (Agmeka et al., 2019; Chae et al., 2020). Hence, educating consumers on the importance of environmental protection is crucial. It can be accelerated via the enhancement of social influence. Social influence refers to the rules and expectations that are socially obligated (Baptista et al., 2020; Davis et al., 2019; Gangneux, 2021). Conforming behaviour is the actual outcome derived from social influence. It is caused by a person or group's influence, i.e. peer pressure (Velde, 2022). Using environmental knowledge, ownership status, and value-added consciousness help create awareness of environmental concerns among consumers (Selvakumar & Arthi, 2019; Silva et al., 2021; Trivedi & Kishore, 2020). Hence, group identity prevails over individual identity (Prentice et al., 2019; Saleki et al., 2019). Hence, the first proposed hypothesis tests the mediating effect of environmental concern on the relationship between social influence and post-purchase satisfaction of Malaysian green car owners.

H1: *Environmental concern has a mediating effect on social influence and post-purchase satisfaction among green car owners in Malaysia.*

A green car's high initial purchase price is a concern for prospective purchasers. Without solid backing of reason, it will affect the purchase intention of prospective purchasers. Hence, the data generated from green car owners' post-purchase satisfaction is crucial to substantiate the need to pay a premium (Asadi et al., 2021; Guillen-Royo, 2020; Policarpo & Aguiar, 2020). Climate change is a non-reversible process. Hence, projecting green cars as capitalizing on renewable energy helps elevate consumers' confidence levels (Kim et al, 2020; Xin et al., 2021). Responsible consumption is the foundation for a socially responsible society. Such understanding will erase the suspicious feeling of being overcharged by car brands and manufacturers. Working on reinforcing the benefits of green cars to prospective purchasers is a wise strategy to uplift their purchase intention (Belisle-Pipon, 2022; Ferrell & Ferrell, 2021). Hence, the second proposed hypothesis tests the mediating effect of environmental concern on the relationship between the prices of green cars and the post-purchase satisfaction of Malaysian green car owners.

H2: *Environmental concern has a mediating effect on prices of green car and post-purchase satisfaction among green car owners in Malaysia.*

Research Methodology

The nature of this study and the intended technique of knowledge growth are all topics covered by research philosophy. Assumptions, perceptions, and knowledge are all discussed. This study falls within the category of business studies. Recognising and accepting three critical responsibilities within the research philosophy is vital. They educate, debunk, and methodically assist (Roje et al., 2021; Zhang, 2020). Post-purchase satisfaction is the leading research issue in this study. The positivist belief approach was used in this paper's research methodology. The belief in research is the conviction of truth; it is a subjective mental and cognitive interpretation based on observing perceptions and reflecting through analysis and grounded communication. The objective understanding of the social world is the cornerstone of positivism. Based on this methodology, this study would dissociate from the researchers' values, fostering objectivity (Madden, 2021; Matta, 2021).

In terms of research methodology, this study employs a deductive research strategy. It is highly valued and used by researchers in a range of sectors. Researchers commonly link deductive reasoning and scientific inquiry. It happens when researchers read the theories proposed to explain the phenomenon and review earlier findings. In the deductive research method, it is usual to create hypotheses based on relationships discovered and then test them to guarantee their validity (Vicente, 2021).

Therefore, a quantitative approach would be the best choice for this study's technique. It focuses on a quantitative investigation with a single method and employs a correlational research methodology. Statistical data is also used in correlational research methods. It measures how tightly two or more variables are related (Saunders & Bristow, 2015). Interpretations of the findings are made by mapping the strengths of the existing relationship. The ability to identify trends and patterns resulting from data analysis sets the correlational research approach apart. In the cross-sectional survey that served as the basis for this study's research, an individual served as the analytical unit. In order to conclude, cross-sectional study analyses the study populations (respondents) at a specific point (Ortman & Cooper, 2021; Thompson et al., 2021).

The demographic for this study is defined as Malaysians with current driver's licences and driving green cars. Driving in Malaysia is prohibited without a valid driving licence, as per the provisions of the Road Transport Act of 1987. A Class D licence, which covers vehicles with unladen weights at most 3500kg, is considered valid if it has not expired. Owning an electric vehicle (EV), a plug-in hybrid electric vehicle (PHEV), or a hybrid car (HV) is referred to as driving a green car. The term car ownership includes owned vehicles financed through a hire-purchase arrangement. The sampling frame comes next. This study refers to Malaysians who are citizens of Malaysia, have a Class D driver's licence, and drive green cars. The Road Transport Department of Malaysia registration is where one may find it. A sample is analysed to represent the population by generalising findings in quantitative deductive research. A sample is a selection of units drawn from the entire population. Generalisation is used to determine the sample size, according to (Krejcie and Morgan, 1970). As the population grows, fewer people are required to collect a representative sample. Since more than 5,000 people are in the population, a sample size of 384 responses is required. Stratified random sampling procedure is selected (Castro-Pearson et al., 2022; Detmer & McCutchan, 2021). A customised questionnaire will be used to gather the study's data. Data will be gathered via a

questionnaire and statistical analysis will be performed using the SPSS and SmartPLS statistical tools. Pre and post-tests will be conducted to gauge the instrument's validity and dependability.

Discussion and Conclusion

Consistent social influence creates conforming behaviours. It triggers matching values based on approval seeking from the groups one perceives belongs to (Baptista et al., 2020; Gangneux, 2021). As protecting the environment for future generations is crucial, the data from green car owners' post-purchase satisfaction levels is crucial. Adopting a green car helps to achieve this objective (Akram, 2021; Lee et al., 2022). Hence, prospective purchasers will likely seek green car owners' advice, opinions, and recommendations. Trust is built via the sharing of user-generated content. A visible action and not words will enhance their post-purchase satisfaction, thus elevating their brand loyalty for repurchase (Chu et al., 2019; Parker & Gok, 2021; Petzer & Roberts-Lombard, 2021). A high trust level accelerates prospective purchasers' involvement in product testing, thus uplifting purchase intention (Chen et al., 2020; Shapiro et al., 2019). Being a trustworthy brand is crucial in socially responsible marketing (Ivanova et al., 2019; Pauluzzo & Mason, 2021; Prendergast & Tsang, 2019). Conformity is high when prospective purchasers are exposed to other green car owners' experiences. Hence, based on the review of past literature, environmental concern is likely to mediate the relationship between social influence and post-purchase satisfaction (Asadi et al., 2022; Wang et al., 2021).

Car brands' and manufacturers' ability to be consistent is the hallmark of success. A solid, intrinsically motivating backing is vital because a green car's high initial purchase price is a concern. Hence, the data generated from post-purchase satisfaction is crucial for why consumers need to pay a premium price (Asadi et al., 2021; Guillen-Royo, 2020; Policarpo & Aguiar, 2020). Such understanding will erase the suspicious feeling of being overcharged by car brands and manufacturers. Connectivity with targeted consumers is another factor that must be considered. Working on reinforcing the benefits of green cars onto prospective purchasers is an endurance journey (Hur et al., 2020; Wang et al., 2021). The tussle between price competition and technology improvement is the fundamental debate among car brands and manufacturers (Amoussouhoui et al., 2022; Bigazzi & Berjisian, 2021; Kim et al., 2020; Tausif et al., 2019). Selling green cars by slashing prices is not a sustainable marketing strategy. Post-purchase satisfaction reinforces brand image, thus contributing to brand sustainability (Beatson et al., 2020; Hameed et al., 2021).

Without empirical studies supported by underlying theories, opinion remains an opinion. In this study, the Theory of Planned Behaviour (TPB) has been selected to ground the proposed conceptual model. TPB aims to predict and explain one's beliefs and behaviour (Ajzen & Fishbein, 1969). It believes that attitude, subjective norms and perceived behavioural control affect an individual's behavioural intentions and behaviours. It asserts that behavioural intentions are determined by attitudes toward behaviour, subjective norms, and perceived behavioural control. The primary mechanism is the intention of the consumer itself. Based on TPB, subsequent behaviours depend on the initial intention of the consumer. Therefore, this study strives to improve Malaysia's green car adoption level by analyzing post-purchase satisfaction levels among green car owners.

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