

#### APPENDIX D

# UNIVERSITI TUNKU ABDUL RAHMAN FACULTY OF ACCOUNTANCY AND MANAGEMENT UNDERGRADUATE FINAL YEAR PROJECT

#### **Final Year Project Assessment Form - Report**

#### **Final Year Project Title:**

"Understanding the Influence of Greenwashing on Green Brand Equity and Green Purchase Intention among Electric Vehicle Consumers in Klang Valley"

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No	Criteria	Excellent (8 - 10 marks)	Good (5 - 7 marks)	Fair (3 - 4 marks)	Poor (0 - 2 marks)	Awarded
1	Title and Abstract	Clear, concise, and informative; abstract summarizes all key elements effectively.	Title and abstract are clear but may miss some key elements.	Title and abstract are somewhat unclear or incomplete.	Title and abstract are unclear and do not summarize key elements.	
2	Introduction	Comprehensive background and context; clearly stated research question/hypothesis.	Adequate background; some context missing; research question/hypothesis is stated.	Background and context are vague; research question/hypothesis is unclear.	Background and context are missing or inadequate; research question/hypothesis is absent.	
3	Literature Review	Extensive review, critical analysis, and synthesis of relevant literature.	Adequate review with some analysis of relevant literature.	Limited review with minimal analysis of relevant literature.	Inadequate or no review of relevant literature.	
4	Problem Statement & Objectives	A clear, specific, and well-defined research problem was identified, including its significance and relevance. Clearly defined, specific, and measurable objectives.	Clearly stated problem, but may lack specificity or clarity in its significance. Objectives are stated but may lack specificity or measurability.	Problem statement is present but lacks clarity, specificity, or relevance. Objectives are vague or not well-defined.	The problem statement is unclear or missing. Objectives are absent or unclear.	
5	Methodology	Detailed, appropriate methods with clear rationale and feasibility.	Methods are outlined but some details or rationale may be lacking.	Methods are mentioned but lack clarity or rationale.	Methods are unclear, inappropriate, or not stated.	
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7	Discussion	Insightful interpretation of results, connects to literature, discusses reasons for the findings.	Interpretation of results is present but may lack depth, some connection to literature.	Limited interpretation of results, minimal connection to literature.	Interpretation of results is absent or unclear, no connection to literature	
8	Conclusion	Comprehensive conclusion with discussions on implications supported by findings. Suggests future research.	Conclusion is present with key points somewhat summarized. Discussions on implications somewhat supported by findings. Suggests future research.	Weak conclusion, does not effectively summarize findings or suggest future research. Implications irrelevant to findings.	Conclusion is absent or very weak.	
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					Total	

### **HENG XIAN WEI**

# BACHELOR OF INTERNATIONAL BUSINESS (HONOURS)

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF ACCOUNTANCY AND MANAGEMENT DEPARTMENT OF INTERNATIONAL BUSINESS

DECEMBER 2024

### "UNDERSTANDING THE INFLUENCE OF

GREENWASHING ON GREEN BRAND EQUITY AND GREEN PURCHASE INTENTION AMONG ELECTRIC VEHICLE CONSUMERS IN KLANG VALLEY"

#### BY

#### HENG XIAN WEI

A final year project submitted in partial fulfilment of the requirement for the degree of

BACHELOR OF INTERNATIONAL BUSINESS (HONOURS)

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF ACCOUNTANCY AND MANAGEMENT
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Date: 9/12/24		

Firstly, I would like to express my deepest gratitude to Dr Tan Pei Meng, with her guidance, advice and dedication of time throughout this journey. Her invaluable expertise, patience and encouragement have been motivating and giving me the

confidence to complete this research.

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EV Electric Vehicles

GBE Green Brand Equity

GPI Green Purchase Intention

GW Greenwashing

GBI Green Brand Image

GBL Green Brand Loyalty

GS Green Satisfaction

GT Green Trust

CSR Corporate Social Responsibility

PLS-SEM Partial Least Square Structural Equation Modelling

SPSS Statistical Package for the Social Sciences

SEM Structural Equation Modelling

VIF Variance Inflation Factor

CR Composite Reliability

CA Cronbach's Alpha

AVE Average Variance Extracted

HTMT Heterotrait Monotrait

β Standardized Beta

R<sup>2</sup> R-Square

This research project was submitted in partial fulfillment of the requirements for the Bachelor of International Business (Honours) at Universiti Tunku Abdul Rahman. Driven by the growing importance of environmental sustainability, many organizations throughout the world implement green marketing techniques, increasing the possibility of fraudulent activities known as greenwashing. Thus, this study investigates the influence of greenwashing on green brand equity and purchase intention, emphasizing the growing electric vehicle (EV) sector in Klang Valley, Malaysia. It investigates how greenwashing affects trust, satisfaction, and loyalty, providing significant insights for companies seeking to improve transparency and build consumer trust.

This study investigates the impact of greenwashing on green brand equity (GBE) and purchase intention (GPI) among electric vehicle (EV) consumers in Klang Valley, Malaysia. Greenwashing, a prevalent issue in green marketing, undermines consumer trust and satisfaction, influencing their loyalty and perceptions of corporate social responsibility (CSR). By integrating corporate legitimacy and signaling theories, this research explores the relationships between greenwashing, green trust, green satisfaction, green brand loyalty, perceived CSR, green brand image, green brand equity, and green purchase intention. A quantitative approach was employed, collecting data from 384 EV consumers via structured questionnaires analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). Findings reveal greenwash significantly influences green brand image, green brand loyalty, green satisfaction, green trust, and perceived CSR, as well as supporting the notion that green brand equity significantly drives purchase intention. The results highlighted the importance of transparency and credible green marketing strategies to enhance brand equity and foster sustainable consumer behavior. This study provides theoretical and practical insights for policymakers and industry stakeholders to combat greenwashing and promote environmental responsibility in the EV sector.

Keywords: greenwashing, green brand equity, green purchase intention, electric vehicles, corporate legitimacy theory

#### **CHAPTER 1: INTRODUCTION**

## 1.1 Research Background

Nowadays, the global shift towards sustainability has transformed various industries, such as transportation systems, where there have been calls to electrify transportation systems. The electric vehicle (EV) sector is emerging as a key player in addressing global climate and energy issues, as they help reduce greenhouse gas emissions and dependence on fossil fuels (Wang et al., 2021 as cited in Mo et al., 2022). According to Rezaei & Peng (2024), the market for electric vehicles has experienced significant expansion and is predicted to keep growing. One of the reasons for the expansion is that advancements in battery technology have increased the range, performance, and cost of electric vehicles. Besides that, worldwide automakers are investing significantly in R&D to remain competitive in the constantly evolving landscape. Government initiatives such as tax credits, incentives, and subsidies are also a crucial part of the growth of the electric vehicle sector to encourage more consumers to adopt green products to protect the earth. Some countries also limit the manufacturing and sale of traditional gasoline and diesel automobiles through regulations that contribute to the rising demand for electric vehicles. In addition, as environmental concerns become significant issues, consumer awareness and preferences are also changing to choose electric vehicles that are more ecological and sustainable means of transportation.

In Malaysia, the government has also emphasized green growth and committed to promoting sustainability and inclusivity, as indicated in the Twelfth Malaysia Plan (12MP), to reach net zero carbon emissions by 2050 at the latest (Shahril, 2022). In addition, according to the Low Carbon Mobility Blueprint (LCMB) and the National Energy Transition Roadmap (NETR), Malaysia also expects EVs to account for 15% of total industrial volume (TIV) by 2030 and 80% by 2050 (Wahab & Zailani, 2024). In Malaysia's budget 2023, the finance ministry declared that the CBU imported EVs' import duty and excise duty exemptions would be extended until the end of 2025. EVs are also excluded from road taxes, and there is an income

tax credit for EV charger expenditures. Moreover, in Malaysia Budget 2024, an RM2400 rebate is given by the government to encourage electric motorcycle purchases (Tan, 2024).

Despite these positive developments, the EV industry, like other green industries, faces challenges in mobilizing increased consumer environmental consciousness and in developing effective green marketing strategies. Many companies are focusing on establishing a green brand image to stand out from their products and attract environmentally conscious consumers (Chen et al., 2016). Even though consumer behaviour has changed significantly in favour of sustainable products, there is growing scepticism about the legitimacy of corporate sustainability statements, which can hinder the widespread adoption of these electric vehicles (Omazić, 2024). The rapid growth of green practices to be in line with consumer expectations has increased the risk of greenwashing, as some companies utilize "green" words and labeling to mislead consumers into believing they are purchasing more sustainable products than the actual products. It has raised consumer concerns about corporations profiting from green activities without considering their impact on the environment (de Freitas et al., 2020; Dixon, 2020 as cited in Amer & Abo El Ezz, 2023). This practice potentially damages the green brand equity and further impacts the consumers' green purchase intention. It is because consumers' perception of perceived greenwashing can lead to issues that consequently undermine green trust, purchase intention, and word-of-mouth (Chen & Chang, 2013; Leonidou & Skarmeas, 2017 as cited in Amer & Abo El Ezz, 2023). Therefore, it is important to study the impact of greenwashing on green brand equity and green purchase intention in the EV market.

Brand equity can be evaluated from the company's perspective, which reinforces market value as an indicator of a company's performance, and the consumer's perspective, which focuses on communication between brands and customers (Hossien Emari, 2012; Soenyoto, 2015 as cited in Amer & Abo El Ezz, 2023). In this study, green brand equity (GBE) was described as a collection of brand assets and liabilities regarding environmental commitments and green concerns linked to a brand's name and symbol, which can either improve or distract from the value of

a product or service (Chen, 2010 as cited in Gorska-Warsewicz et al., 2021). Consumers frequently choose products with higher green brand equity as it adds value to the green products compared to other products with the same functions (Bekk et al., 2016 as cited in Ha et al., 2022). Consumers who believe the products are environmentally friendly will also increase their attachment to green brand equity and consumer satisfaction and become loyal consumers to a brand (Moise et al., 2019; Hussain & Waheed, 2016 as cited in Khan et al., 2022). Besides that, Bekk et al. (2016) discovered that green trust, satisfaction, and brand image positively impact green brand equity, as cited in Amer & Abo El Ezz (2023).

Green purchase intention (GPI) is the desire of consumers to buy ecologically friendly products and steer clear of products that are damaging the environment (Moslehpour et al., 2022). For instance, environmentally concerned consumers are willing to pay extra for green products that provide higher value, functional features, environmental concerns, and performance (Arli, 2018; Sharaf & Perumal, 2018 as cited in Ansu-Mensah, 2021). Green purchase intention is also common among consumers seeking products that do not harm the environment (Dinca et al., 2022; Gaziet al., 2023a, as cited in Gazi et al., 2024). Besides that, understanding the factors that influence consumers' green purchase intentions is also essential for developing effective marketing strategies (Zhang et al., 2021). It is because green purchasing intentions enable companies to build a favorable brand image, goodwill, and public image (Sreen et al., 2018 as cited in Wang et al., 2022).

The existing studies provide that greenwashing has a negative effect on green brand equity and green purchase intention. Greenwashing might cause consumers to doubt a company's objectives, impacting their future purchasing decisions (Parguel et al., 2011 as cited in Lu et al., 2022). According to Chen et al. (2018), they have examined the negative impact of greenwashing on consumers, company offers, and the company itself, including green purchase intentions. In addition, according to Akturan (2018), greenwashing also harms green brand associations and trust, which indirectly influences green brand equity and purchase intention. Hameed et al. (2021) also proved that greenwashing has both direct and indirect adverse impacts on green purchasing intention.

In addition, there are also inconsistent findings regarding the impact of greenwashing on consumer behavior. Ioannou et al. (2022) proved that a company's corporate social responsibility practices and capability reputation can diminish the negative impact of greenwashing on consumer satisfaction. The other study also found that brand credibility mitigated the negative effects of greenwashing on green brand equity, but this was not always sufficient to maintain green brand loyalty over the long term. Further study has shown that customers may exhibit distrust of the companies that participate in greenwashing, regardless of their CSR activities, resulting in reduced brand loyalty. This is especially important in markets where consumers are very concerned about the environment, and credibility in green claims is critical to fostering loyalty (Qayyum et al., 2023). These studies reflect how different variables, such as CSR and brand credibility, might moderate or weaken the negative impact of greenwashing, but other studies show that greenwashing still affects green brand loyalty, creating conflict in how CSR and greenwashing interact to influence customer perceptions. These inconsistencies reflect the need to include green brand loyalty and perceived corporate social responsibility in the framework for more comprehensive research into the relationship between greenwashing, green brand equity, and green purchase intention in the EV market.

#### 1.2 Problem Statement

Despite consumers' growing awareness of greenwashing, greenwashing continues growing as the market keeps increasing demand for green products (Tahir et al., 2020). It has caused consumers to become increasingly suspicious of companies that profit from environmental trends (Pomering & Johnson Lester, 2009 as cited in Ha et al., 2022). Given the market's rapid expansion for electric vehicles and the growing emphasis on sustainability, there are very few studies on understanding how greenwashing influences electric vehicle consumer behaviour, particularly in the context of green brand equity and purchase intention. Previous studies have made significant contributions to examining the perspectives of greenwashing,

brand image, satisfaction, and trust in environmental issues in an integrated manner (Ha, 2022).

However, the inconsistencies mentioned above point to the need for a more comprehensive understanding of the conditions under which CSR can effectively counteract the adverse effects of greenwashing and when it fails to protect green brand loyalty, so green brand loyalty and perceived corporate social responsibility will be incorporated into a more comprehensive framework to address the effect of greenwash on green brand equity and consequently influence consumers' green purchase intention in the electric vehicle market. In addition, the importance of corporate social responsibility (CSR) in businesses has increased in recent years. It acts as both a business opportunity and an indicator of stakeholders' expectations, demonstrating the significant connection between sustainability, competitiveness, and business success. It may influence how consumers perceive a brand's green claims, thus impacting their trust and purchase decisions (Closon et al. 2015 as cited in Rodriguez-Gomez et al., 2020). Furthermore, the perceived green value of consumers has significantly impacted consumer trust in electric vehicles, which can lead to enhanced brand loyalty in adopting electric vehicles (Uikey & Baber, 2023). In summary, green brand loyalty and perceived corporate social responsibility may influence how consumers perceive a brand's green claims, thus impacting their trust and purchase decisions. Thus, including these variables helps create a more holistic understanding of the relationship between greenwashing, green brand equity, and green purchase intention. In addition, it also provides a comprehensive understanding of consumer behaviour in the market for electric vehicles.

Besides that, the targeted population and location of the study are also a gap because Yang et al. (2020) stated that there were only a few studies on greenwashing in developing countries, especially in Asia. The majority have been carried out in Europe or North America, except the studies of Zhu et al. (2008), Du (2015) and Sun and Zhang (2019) in the case of China and Nelson and Robertson (2010) in the case of Brazil (Yang et al., 2020). Therefore, there is a significant gap in a study focused on the Malaysian market, as the research in the EV industry in Malaysia is limited. In this case, the sentiments of consumers might differ from those in other

regions. This can provide localized insights that are more applicable to Malaysian companies and policymakers through a study that focuses solely on electric vehicle consumers in Klang Valley.

## 1.3 Research Questions

- 1. How do perceptions of greenwashing impact consumers' green trust, green satisfaction, green brand loyalty, green brand image, perceived corporate social responsibility (CSR), as well as green brand equity among EV consumers?
  - Is there a significant relationship between greenwashing and green trust among EV consumers?
  - Is there a significant relationship between greenwashing and green satisfaction among EV consumers?
  - Is there a significant relationship between greenwashing and green brand loyalty among EV consumers?
  - Is there a significant relationship between greenwashing and green brand image among EV consumers?
  - Is there a significant relationship between greenwashing and perceived corporate social responsibility among EV consumers?
  - Is there a significant relationship between greenwashing and green brand equity among EV consumers?
- 2. How do green trust, green satisfaction, green brand loyalty, green brand image, and perceived CSR affect green brand equity?
  - Is there a significant relationship between green trust and green brand equity?
  - Is there a significant relationship between green satisfaction and green brand equity?
  - Is there a significant relationship between green brand loyalty and green brand equity?
  - Is there a significant relationship between green brand image and green brand equity?

- Is there a significant relationship between perceived corporate social responsibility and green brand equity?
- 3. What is the relationship between green brand equity and purchase intention for electric vehicles?
  - Is there a significant relationship between green brand equity and green purchase intention?

## 1.4 Research Objectives

- 1. To investigate the impact of greenwashing perceptions on green trust, green satisfaction, green loyalty, green brand image, perceived CSR, and green brand equity among EV consumers.
  - To determine the significant relationship between greenwashing and green trust among EV consumers.
  - To determine the significant relationship between greenwashing and green satisfaction among EV consumers.
  - To determine the significant relationship between greenwashing and green brand loyalty among EV consumers.
  - To determine the significant relationship between greenwashing and green brand image among EV consumers.
  - To determine the significant relationship between greenwashing and perceived corporate social responsibility among EV consumers.
  - To determine the significant relationship between greenwashing and green brand equity among EV consumers.
- 2. To investigate the relationship of green trust, green satisfaction, green loyalty, green brand image, and perceived CSR between green brand equity.
  - To determine the significant relationship between green trust and green brand equity.
  - To determine the significant relationship between green satisfaction and green brand equity.

- To determine the significant relationship between green brand loyalty and green brand equity.
- To determine the significant relationship between green brand image and green brand equity.
- To determine the significant relationship between perceived corporate social responsibility and green brand equity.
- 3. To investigate the relationship between green brand equity and purchase intention for electric vehicles.
  - To determine the significant relationship between green brand equity and green purchase intention.

# 1.5 Scope of the Study

#### Respondents

The target audience is individuals who are potential consumers of electric vehicles. These individuals must be at least 18 years old and reside in Klang Valley. It is because the age of majority to enter into a contract in Malaysia is 18 years old according to Section 11 of Contract Act 1950 stipulates that "every individual is qualified to contract who is of the age of majority, of sound mind, and is not barred from contracting by any law."

#### Sampling location

The research is geographically confined to Klang Valley, Malaysia.

#### **Unit of Analysis**

The unit of analysis is the individual consumer as the study examines the perceptions, attitudes, and behaviors of individual electric vehicle consumers regarding greenwashing, green brand equity, and purchase intention.

### 1.6 Significance of the Study

#### Researcher (Body of Knowledge)

Since there are few studies only related to this area, this study can help to contribute to the academic field by filling the gaps in the literature on greenwashing, green brand equity, and green purchase intention in the context of Malaysia's electric vehicle industry. The integration of signalling theory and corporate legitimacy theory in the study also provides a robust theoretical framework for researchers that can be applied to further research. In addition, the results enrich the knowledge of how consumers respond to greenwashing and aid in determining the mediating roles of green brand image, perceived CSR, green trust, green satisfaction, and green brand loyalty.

#### **Practitioners (Industry)**

The insight obtained from this study significantly benefits companies operating in the EV industry. Companies can implement more authentic and transparent green marketing strategies by understanding how consumer perceptions and purchase intentions are impacted by greenwashing. Through authentic environmental commitments, companies also can improve their green brand equity and establish a stronger loyal customer base. This can lead the companies to increase their market share and have a competitive advantage in the competitive electric vehicle industry.

#### **Policymakers**

The study can provide the essential information that can influence the formulation of policies and regulations to prevent greenwashing. For instance, policymakers can use the results to enforce more stringent requirements for environmental claims, assuring that only legitimately sustainable operations are supported. This will help improve the credibility of electric vehicles in the automobile industry and protect consumers from greenwashing practices.

#### Government

Malaysia's government also can benefit significantly from this study, which intends to promote environmentally friendly transport and meet its environmental goals in

future. The results of this study can aid the government in its endeavours to establish a sustainable and transparent market environment to encourage more potential consumers to adopt electric vehicles. Other than that, the government also can understand the factors that influence consumer green purchase intention to modify the initiatives, such as tax incentives and infrastructure development to better promote green mobility.

### **CHAPTER 2:LITERATURE REVIEW**

#### 2.1 Introduction

The purpose of this chapter is to provide a thorough overview of existing literature relevant to the study. This comprises an analysis of theoretical frameworks, key concepts, and previous research findings related to the dependent variables (green brand equity and purchase intention) and independent variables (greenwashing, green trust, green satisfaction, green loyalty, green brand image, and perceived CSR) by using the corporate legitimacy theory and signalling theory. This chapter strives to establish the groundwork for understanding the relationships between these variables in the context of the electric vehicle (EV) industry in Klang Valley, Malaysia.

## 2.2 Industry/Sector Overview

Malaysia's electric vehicle market is still in its early phases of development because it faces significant challenges, such as consumers' heavy reliance on fossil fuels and insufficient charging infrastructure (Veza et al., 2022). To encourage consumers to adopt electric vehicles to achieve the country's commitments, which are the carbon target and the Sustainable Development Goals (SDGs), Malaysia has created a Low Carbon Mobility Blueprint and Action Plan (LCMB) for 2021–2030 to reduce energy use and carbon gas emissions (Kwan et al., 2023). Malaysian Green Technology and Climate Change Corporation (MGTC) Group CEO Shamsul Bahar Mohd Nor stated that the introduction of the Low Carbon Mobility Blueprint (LCMB) has driven the government to provide a variety of incentives, such as tax credits for importing EVs, tax refunds for establishing charging infrastructure, and financial assistance through the Green Technology Financing Scheme (Wahab & Zailani, 2024). In addition, according to Kwan et al. (2023), Malaysia aims to have 430,000 electric motorbikes, 885,000 electric vehicles, and 10,000 electric buses

operating on its highways as part of the LCMB by 2030 and also establish 1000 direct current charging stations and 9000 alternating current charging stations in public spaces by 2025 (Ministry of Environment and Water, 2021a, as cited in Kwan et al., 2023). Meanwhile, the CEO of Malaysia Automotive, Robotics, and Internet of Things Institute (MARii), Azrul Reza Aziz, states that the diversity of EV brands available in Malaysia may stimulate innovation and accessibility for consumers. These brands include BMW, MINI, Nissan, Renault, Ora, Hyundai, Kia, Mercedes-Benz, Volkswagen, Volvo, BYD, Audi, and Lotus, which meet various market segments and consumer needs. The government's dedication to offering incentives, along with the variety of brands available, is making Malaysia a hub for EV growth and accelerating the adoption of EVs (Wahab & Zailani, 2024).

## **2.3 Dependent Variables (Conceptualization)**

### 2.3.1 Green Brand Equity

Green brand equity, which integrates brand equity with the environmental context, is defined as intangible brand assets linked to the company's environmental policies that add value to the brand regarding consumer preferences (Chen, 2010; Yoo et al., 2000 as cited in Ha, 2020). In various contexts, green brand equity can be defined as the consumer's overall evaluation of a brand's environmental performance, encompassing factors such as brand loyalty, perceived quality, brand image, and other unique brand connections relating to sustainability. Most developing countries in emerging markets lack strong legal mechanisms to safeguard the environment and promote sustainable economic operations (Mohammed et al., 2022). For instance, in Ghana, consumers lack confidence in major energy companies, despite their commitment to environmental issues (Guo et al., 2017 as cited in Mohammed et al., 2022). This scepticism also decreases the impact of green innovation on brand equity and hinders companies from investing in green innovation. Other than that, the

emergence of environmentally conscious consumer attitudes is a challenge for international food marketing companies, particularly multinational fast-food chains (Namkung & Jang, 2013; Nguyen et al., 2019 as cited in Khan et al., 2022). Global fast-food companies must prove better corporate social responsibility levels and develop marketing strategies that promote environmental protection and human health (Jafar et al., 2019). For instance, according to Kumar et al. (2017) and Ansar (2013), McDonald's has reached the best green practices and efforts comprising sustainable beef, packaging and recycling, action on global warming, and the Happy Meal program to increase their green brand equity, as cited in Khan et al. (2022).

#### 2.3.2 Green Purchase Intention

The term "green purchase intention" describes customers' propensity to buy environmentally friendly and sustainable goods, indicating that they are willing to do business with companies that have a good reputation for the environment (Netemeyer et al., 2005 as cited in Liao & Wu, 2024). For instance, in the fashion industry, consumers are not only affected by green brand innovation and green brand experience to increase their green brand image to stimulate actual purchases; it also has to understand the target market's demand trend based on consumer demand to provide value products that meet expectations of consumers (Chen et al., 2021). However, in the food industry, it is influenced by health benefits and organic claims. For instance, Qi and Ploeger (2021) mention that Chinese consumers are significantly inclined to have purchase intentions for green foods when they have utilitarian attitudes, which are shaped favourably by assessments of the nutritional content characteristic. Therefore, making useful and objective information about nutritional content more accessible and highlighting the functional benefits and nutritional qualities of green food products can aid consumers in establishing more positive perceptions of green food.

# 2.4 Independent Variables

#### 2.4.1 Greenwashing

Greenwashing refers to companies intentionally misleading consumers regarding the environmental benefits of their products (Chen et al., 2018). The term "greenwashing" was first used in 1980 to describe the practice of making false or exaggerated environmental claims to obtain market share (Dahl, 2010 as cited in Javed, 2022). Society is becoming increasingly aware and concerned about companies' environmental conduct (Musgrove et al., 2018). Therefore, the company is under substantial pressure to address stakeholder demands. The company would be inclined to overstate, mislead, or distort its public statements about its environmental policies when its image, credibility, and reputation are compromised to create a positive image (Kim et al. 2016). However, according to Testa et al. (2015), greenwashing will deteriorate "company accountability towards stakeholders and the trustworthiness of environmental initiatives." Consumers may become more confused when trust is eroded, making them doubtful about who to believe as they frequently purchase based on the advertising and company information. Consequences, consumer mistrust, and deception negatively impact a company's brand and performance and further impact the consumer's green purchase intention (Hamann & Kapelus, 2004; Riquelme & Román, 2013 as cited in Ha, 2022). In addition, greenwashing is becoming increasingly common, and consumers' prejudices and distrust of advertising make it difficult to trust environmentally conscious marketing (Zinkhan & Carlson, 1995 as cited in Ha, 2022). Liao and Wu (2024) stated that greenwashing behaviors by a brand will have a spillover effect on the whole electric vehicle industry, including the brands that are not engaged in greenwashing practices, leading to mistrust of the brand's environmental claims among electric vehicle consumers. For instance, Volkswagen's publication of misleading and inaccurate information about its vehicle carbon emissions resulted in

UNDERSTANDING THE INFLUENCE OF GREENWASHING ON GREEN BRAND EQUITY AND GREEN PURCHASE INTENTION AMONG ELECTRIC VEHICLE CONSUMERS IN KLANG VALLEY substantial brand assault, financial losses, and a dramatic drop in the company's share price (Pimonenko et al., 2020 as cited in Moodaley & Telukdarie, 2023).

#### 2.4.2 Green Brand Image

Green brand image is a collection of brand perceptions in a consumer's mind that are associated with both environmental concerns and environmental commitments (Chen, 2009). Nowadays, consumers are becoming more knowledgeable about environmental issues increasingly making purchases of green products, so companies are trying to influence consumers' purchasing intentions by developing a green brand image (Gul et al., 2021 as cited in Tan et al., 2022). This is because a green brand image provides a competitive advantage for companies to differentiate their products from their competitors (Qomariah & Prabawani, 2020). Marketers of companies also should focus on establishing companies' green brand image because it will significantly affect the consumers' green purchase decisions (Papista et al., 2018 as cited in Kamalanon et al. (2022). However, consumers are suspicious of companies' green promises when companies use greenwashing, exaggerated or fraudulent advertising of their brands' environmental sustainability, and greenwashing could damage the green brand image of companies (Lin et al., 2017). In addition, electric vehicle consumers are able to discover high-quality information about greenwashing; therefore, the greenwashing of the company will cause much more damage to a company's green brand image than merely trying to be environmentally friendly, such as Volkswagen, where it was found that their technology lagged behind the quality of their advertising and deteriorated their company's brand image (Garhwal, 2019).

#### 2.4.3 Green Brand Loyalty

Green brand loyalty refers to the extent of repurchase intentions stimulated by a sustained brand commitment and a strong environmental attitude (Chen, 2010). With the advent of the environmental era, companies have to strategically approach green opportunities to enhance their products' environmental performance and persistently intensify their branding offerings to sustain environmentally conscious consumers' loyalty toward their brand (Rizomyliotis et al., 2021). According to Chen (2010), it also stated that companies have to improve the functioning of their eco-friendly products to increase their consumers' green brand loyalty to generate more eco-friendly product sales. However, greenwashing is the main obstacle to green marketing since it leads people to believe that all green claims are fraudulent (Horiuchi et al., 2009 as cited in Ahmad & Esposito, 2022). Therefore, consumers' loyalty to environmental preservation is eventually negatively impacted by the widespread use of greenwashing by companies because consumers find it difficult to distinguish between actual and fraudulent green claims (Chen et al., 2018).

#### 2.4.4 Green Satisfaction

Green satisfaction refers to a delightful level of consumption-related fulfilment to satisfy a customer's environmental needs, expectations, and environmental desires (Chen, 2009). Customer satisfaction is assessed by product performance experiences with expectations. If the product has features that are beyond expectations, customers are satisfied. On the other hand, dissatisfaction arises when goods are considered to be adversely contrary to customers' expectations (Ha et al., 2022). According to Chen et al. (2014), delighted consumers are likely to buy the products again, and consumer satisfaction also will encourage favourable word-of-mouth, which helps companies attract new consumers. However, in today's market, many companies exaggerate their products' environmental features or

benefits, resulting in greenwashing. This exaggeration frequently reduces consumer satisfaction because the product fails to meet the exaggerated claims. According to Junior et al. (2019), a product will lose its benefits, satisfaction, and loyalty when greenwashing is exposed, and its use creates confusion for consumers. Another study of Chen et al. (2014) also proved that greenwashing is adversely influenced by green satisfaction in Taiwanese electronic products' consumers.

#### 2.4.5 Green Trust

Green trust refers to an individual's trust in a product, service, or brand coming from their perception of its trustworthiness, benevolence, and environmental sustainability (Chen, 2010). In green marketing, green trust is a factor that establishes credibility, fosters loyalty, and can affect purchase intention and green word-of-mouth (Wang et al., 2018; Chen et al., 2014 as cited in Román-Augusto et al., 2022). Trust is essential because consumers are more likely to support brands they believe align with their ethical values, particularly those related to environmental sustainability. However, the market is overflowing with green claims and information nowadays, and customers get confused and are unlikely to believe these statements (Ha, 2022). Chen and Chang (2012) also have proved that greenwashing has been used to raise consumers' perceived risk and confusion, and it has a negative relationship with green trust. Furthermore, consumers' green purchase intentions will also be influenced by the green trust because they link themselves with reputable ethical companies and steer away from questionable ethical practices (Leonidou et al., 2012 as cited in Guerreiro & Pacheco, 2021).

#### 2.4.6 Perceived Corporate Social Responsibility

Perceived corporate social responsibility refers to a company's commitment to maximize long-term economic, social, and environmental well-being through company practices, policies, and resources (Alvarado-Herrera et al., 2015). Corporate social responsibility (CSR) is also a means by which companies self-regulate to adhere to societal norms and public regulations (Laudal, 2010 as cited in Lee & Chen, 2019). According to Soriano-Sandoval and Alarcón-Sánchez (2022), the importance of corporate social responsibility has grown in recent years. The company is increasingly adopting it as society expects the company to engage in social responsibility. However, greenwashing, in which companies exaggerate or fraudulently claim their social responsibility to mislead consumers into products that are not so eco-friendly, distorts CSR's real objective, weakening its function as an effective method for companies to satisfy the expectations of environmentally conscious consumers. (Dixon, 2020).

# 2.5 Hypotheses Development

# 2.5.1 Relationship between Greenwashing and Green Brand Image

Previous studies demonstrate that greenwashing can damage a company's green brand image (Chen et al., 2016; Chen, Huang, et al., 2018). According to Chen et al. (2018), greenwashing has harmed a company's green brand image, as confusing words in their green marketing make consumers skeptical of the company's green claims and decrease confidence in its environmental initiatives. In the context of electric vehicles, Liao and Wu (2024) highlight the necessity for companies to consistently enhance their brand reputation through transparent marketing practices to establish a

reliable brand image to mitigate potential negative impacts from greenwashing by competitors. Furthermore, given the heightened environmental awareness among EV consumers, the negative effects of

greenwashing can be even more pronounced.

H1: Green brand image is significantly impacted by greenwashing.

2.5.2 Relationship between Greenwashing and Green Brand

Loyalty

Empirical evidence supports the claim that greenwashing negatively impacts green brand loyalty. For instance, Nguyen et al. (2019) discovered that consumers who preferred to buy green vegetables had lower green brand loyalty when they believed that greenwashing was occurring. Similarity, Leckie et al. (2021) stated that greenwashing was discovered among consumers who have bought electric and hybrid cars, which moderates the indirect effect of desired self-identity and altruistic values on brand loyalty through customer engagement behaviour. It means that consumers become more sceptical of a brand's green claims and diminish green brand loyalty when greenwashing perception is higher (Leckie et al., 2021). Therefore, to develop consumers' trust and brand loyalty over their products, companies need to stop using greenwashing and focus on implementing actual solutions (Hameed et al., 2021). Given these findings, this study proposes that:

H2: Green brand loyalty is significantly impacted by greenwashing.

2.5.3 Relationship between Greenwashing and Green

Satisfaction

Some studies verify the negative relationship that exists between green satisfaction and greenwashing. For instance, greenwashing leads to consumer dissatisfaction due to misleading and influencing consumers' trust in green products in retail (Martínez et al., 2020). Another study of Chen et al. (2014) also proved that greenwashing is adversely influenced by green satisfaction in Taiwanese electronic products' consumers. In the electric vehicle sector, consumers who experience greenwashing will be dissatisfied with the companies and their products, perceiving them as profit-driven and unconcerned about social responsibility, and no longer want to purchase their products anymore (Liao & Wu, 2024). It also further decreases their desire to buy from other electric vehicle companies as they assume the other companies are doing greenwashing (Klein, 1996 as cited in Liao & Wu, 2024). Therefore, it is hypothesized that:

H3: Green satisfaction is significantly impacted by greenwashing.

#### 2.5.4 Relationship between Greenwashing and Green Trust

Several studies have confirmed the negative relationship between green trust and greenwashing. For instance, green trust is found to be negatively related to greenwashing (Isac et al., 2024). Zhang et al. (2019) also pointed out that customers' intentions to make green purchases may eventually decline as a result of the mistrust that perceived greenwashing creates, as cited in Guerreiro and Pacheco (2021). Furthermore, the apparent effectiveness of individuals' self-regulation and the perceived synergy between corporate profitability and environmental protection in Switzerland are both diminished by companies' greenwashing and further influence consumers' trust. This effect is considerably stronger in the car industry, as low rates of adoption of electric vehicles could make consumers more suspicious of green promises made by automakers (Kolcava, 2022). These findings lead to the following hypothesis:

H4: Green trust is significantly impacted by greenwashing.

## 2.5.5 Relationship between Greenwashing and Perceived Corporate Social Responsibility

Companies that disclose their green performance will increase their CSR image in the perception of consumers compared to those that hide their transparency in green performance (Lee & Chen, 2019). Therefore, sustainability reporting has evolved from largely voluntary to becoming standard practice for many firms and adopting the Environmental, Social, and Governance (ESG) framework as the anchor for their sustainability reporting (KPMG, 2022). This CSR is also particularly important in the electric vehicle (EV) industry. For instance, the global top 5 manufacturers of electric cars, including Tesla, BYD, General Motors, Stellantis, and Volkswagen, make an effort to make the reporting of sustainability an important strategic objective as the performance of the electric vehicle company in sustainability becomes an important means for all stakeholders to evaluate their environmental claims (Ogrean & Herciu, 2022). In addition, new energy vehicle companies must also increase their corporate social responsibility for environmental issues to encourage consumers to purchase (Zhang et al., 2024). These insights support the hypothesis:

H5: Perceived corporate social responsibility is significantly impacted by greenwashing.

## 2.5.6 Relationship between Greenwashing and Green Brand Equity

In this study, green brand equity refers to the perceived value and strength of an electric vehicle brand's green image among Klang Valley consumers.

It also includes consumers' confidence in the brand's green commitments, satisfaction with the brand's green policies, brand loyalty, and perception of the brand's promise to environmental sustainability. According to Akturan (2018) and Chen et al. (2016), greenwashing has negatively affected green brand equity, either directly or indirectly mediated by brand credibility, green trust, green confusion, green perceived risk, and brand associations. Therefore, companies have to turn their green declarations into actual actions to establish high green brand equity (Ha et al., 2022). For instance, a greenwash index was also created by Avcilar & Demirgünes (2016) to analyze the effect on green brand equity and proved that the companies' brand equity will continue to diminish if they use too much greenwashing in their green marketing. Nowadays, the increasing popularity of electric vehicles and global trends in green consumption have created new opportunities for green branding (Mombeuil & Diunugala, 2023). Green brand equity is significant as it is the value and strength of a company's environmental brand in the consumer's perception of the electric vehicle industry. According to Mombeuil and Diunugala (2023), high green brand equity in the electric vehicle industry indicates that consumers believe the brand is committed to environmental sustainability, which can lead to customer loyalty, high purchase intention, and a competitive advantage in the long run. Their study has found that there is a significant direct effect of green brand awareness, green brand association, and green perceived quality, which are the elements of green brand equity, on consumers' intention to purchase electric three-wheelers. It also suggested that a company adopt actual green marketing to create an electric vehicle that satisfies consumers' environmentally conscious expectations to stimulate actual purchases and increase green brand equity. Therefore, these findings lead to the following hypothesis:

H6: Green brand equity is significantly impacted by greenwashing.

## 2.5.7 Relationship between Green Brand Equity, Green Brand Image, Green Brand Loyalty, Green Satisfaction, Green Trust and Perceived Corporate Social Responsibility

According to Farquhar (1989) and Keller (1993), brand equity refers to the incremental value that a brand contributes to a product through marketing efforts. The added value will provide the company with a strong brand to gain a greater competitive advantage. According to Chang & Chen (2014) and Keller (1993), a well-established brand can help a company expand its product line, license the brand, reduce adverse effects, recover from crises, and gain market share as cited in Akturan (2018). In the competitive green industry, green branding is increasingly important for companies as it positively impacts consumer attitudes and behaviours. According to Nguyen-Viet (2023), green concerns have become increasingly significant to business decision-makers as firms face rising public sensitivity, more intense regulation, and greater stakeholder pressures to preserve the natural environment. Therefore, companies should generate a green brand image, green satisfaction, green trust, and green loyalty to establish stronger green brand equity to gain considerable competitive and economic benefits (Nguyen-Viet, 2023).

Consumers' perception of a brand's environmental performance strongly influences their evaluation of the brand. A strong green brand image increases consumer trust, reduces scepticism, and builds up higher green brand equity. Some studies identified a positive association between green brand image and equity (Bekk et al., 2016; Chen, 2010; Chen et al., 2016; Ha, 2020; Ng et al., 2014; Ha, 2021). Therefore, the hypothesis is

H7: Green brand equity is significantly impacted by green brand image.

By fostering persistent relationships with consumers based on satisfaction and trust, continuous brand loyalty, particularly in environmentally UNDERSTANDING THE INFLUENCE OF GREENWASHING ON GREEN BRAND EQUITY AND GREEN PURCHASE INTENTION AMONG

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concerned markets, strengthens green brand equity. Kang and Hur (2012)

also showed that green loyalty is significantly positively related to green

brand equity. Therefore, it is hypothesised that:

H8: Green brand equity is significantly impacted by green brand loyalty.

When consumers feel their environmental needs are satisfied by a brand's

green practices, their overall perception of the brand improves, contributing

positively to green brand equity. Ha (2021), Chen (2010), and Chen et al.

(2016) also recognized a significant relationship between green satisfaction

and green brand equity. Therefore, this study proposes that:

H9: Green brand equity is significantly impacted by green satisfaction.

Green trust is essential for building goodwill with consumers. Customers

are more likely to recognise a brand with positive values when they have

faith in a company's genuine dedication to environmental sustainability.

This trust strengthens the brand's credibility, which in turn increases its

green brand equity. Moreover, some studies also proved that there is a

positive relationship between green trust and green brand equity (Bekk et

al., 2016; Butt et al., 2016; Ha, 2020; Ha, 2021). Therefore, the hypothesis

is

H10: Green brand equity is significantly impacted by the green trust.

Perceived corporate social responsibility (CSR) plays a crucial role in

shaping consumer perceptions of a brand's environmental and ethical

standards. When consumers perceive a company as socially responsible,

they are more likely to attribute higher value to its brand, especially if its

CSR initiatives focus on environmental sustainability. This perception

## UNDERSTANDING THE INFLUENCE OF GREENWASHING ON GREEN BRAND EQUITY AND GREEN PURCHASE INTENTION AMONG ELECTRIC VEHICLE CONSUMERS IN KLANG VALLEY enhances the company's green brand equity as consumers view the company as not only profit-driven but also socially conscious. Nguyen et al. (2023) indicated that corporate social responsibility has a positive association with establishing strong green brand equity through green brand satisfaction, green brand association, and green brand trust. Therefore, it is hypothesized that:

H11: Green brand equity is significantly impacted by perceived corporate social responsibility.

## 2.5.8 Relationship between Green Brand Equity and Green Purchase Intention

Green purchase intention in this study refers to the potential that Klang Valley consumers will decide to purchase electric vehicles based on their evaluations of the brand's environmental commitment and green brand equity. It is impacted by how authentic and trustworthy they believe the brand's sustainability initiatives as well as their level of trust, satisfaction, loyalty, and brand image towards the electric vehicles. For instance, research on green branding indicates that factors that contribute to green brand equity, such as green perceived value, green brand knowledge, and green trust, have a positive effect on consumers' intentions to purchase green brands (Chen and Chang, 2012; Suki, 2016 as cited in Akturan, 2018). In addition, Indonesian consumers of green brand cosmetics also have a positive association between green brand equity and their green purchase intention (V.W, 2020). The electric vehicle consumers' green purchase intention will be influenced by some brands in the electric vehicle market that engage in many greenwashing practices, such as "exaggerated carbon reduction claims," "selective disclosure of environmental information," and "subsidy cheating" (Liao & Wu, 2024). According to Goh and Balaji (2016), consumers may refrain from purchasing goods from a company if they discover any greenwashing practices about their green claims. Zhang et al.

(2018) examined the relationship between greenwashing and green purchase intention and discovered that consumers' green purchase intention will decrease significantly when consumers become more knowledgeable about greenwashing. In addition, the study of Nguyen et al. (2019) also showed a negative relationship between customers' perceptions of greenwashing and their intentions to purchase green foods. According to Tanuwijaya and Balqiah (2022), a high green purchase intention is significant for the growth of sustainable energy in the electric vehicle market because it can translate to actual sales and market penetration. Therefore, understanding the variables that drive green purchase intention, such as green brand equity, is essential for companies seeking to increase their market share in the electric vehicle market. For instance, Mombeuil and Diunugala (2023) showed a significant direct effect of different variables, such as green brand awareness and green trust on consumer green purchase intention for electric vehicles. Therefore, this study proposes that:

H12: Green purchase intention is significantly impacted by green brand equity.

#### 2.6 Corporate Legitimacy and Signaling Theories

In this study, the corporate legitimacy and signaling theories are used to provide the foundation for exploring the impact of greenwashing perceptions on green trust, green satisfaction, green loyalty, green brand image, perceived corporate social responsibility, and green brand equity, as well as further influence green purchase intention among electric vehicle consumers in Klang Valley. According to De Freitas Netto et al. (2020), the literature has linked the phenomenon of "greenwashing" to corporate legitimacy. Legitimacy is the degree to which an organization's actions are consistent with the larger social norms and values within which it operates; if a discrepancy or disagreement appears between these social principles and the organization's actions, the organization's legitimacy is compromised (Matthews, 1993 as cited in Lokuwaduge & De Silva, 2022).

According to De Freitas Netto et al. (2020), corporate legitimacy can be divided into three categories, which are moral, pragmatic, and cognitive. According to Seele and Gatti (2017), the mutually accepted presumptions of the social context in which an organization functions serve as the foundation of its cognitive legitimacy. However, the organization's moral legitimacy is dependent upon moral judgments of its conduct (Seele and Gatti, 2017). Moreover, pragmatic legitimacy is the result of the self-interested estimation made by the organization's primary stakeholders (Seele and Gatti, 2017). Pragmatic legitimacy involves the company's proactive endeavors to evaluate and refine its CSR tactics to match the specific requirements and desires of its principal stakeholders (Nielsen & Thomsen, 2018). This strategy focuses on ensuring that the company's actions satisfy stakeholders' wants and practical needs to keep their approval and support. According to Seele and Gatti (2017), greenwashing arises as a result of stakeholders' expectations that companies safeguard the environment, adhere to ethical business practices, and give back to society. Therefore, companies may engage in greenwashing, which results in deceiving stakeholders about their environmental and social initiatives; this would have a negative impact on the companies' pragmatic legitimacy. For instance, companies use symbolic communication, such as eco-friendly images or messaging, to influence stakeholders' perceptions and gain societal support, even if they lack actual sustainability practices (Seele and Gatti, 2017). However, if the companies are accused of greenwashing, it will alter the impact of green communication on legitimacy, resulting in a negative feedback loop where corporate communication ultimately undermines corporate legitimacy (Seele and Gatti, 2017). Therefore, when a company is perceived as legitimate, consumers are more likely to trust its environmental promises, which enhances brand equity and purchase intention. According to Ha (2022), her findings prove the fundamental assumption of legitimacy theory, demonstrating that companies perceived to engage in greenwashing face a significant negative influence on brand perceptions. This theory reinforces the need for true and legitimate green claims to maintain trust and brand equity.

According to Grigoriou et al. (2016), the transmission of information to communicate the positive characteristics of a company is the emphasis of signaling

theory, and brands are an important medium for facilitating the evaluation of a company's quality by customers. It is also used to address the issue of information asymmetry in a competitive market. This is because information asymmetry may raise possible conflicts between management and agents in the organizational environment, and the signal bridges the gap by conveying relevant and high-quality information to the various parties (Taj, 2016; Connelly et al., 2011 as cited in Bae et al., 2018). Besides that, signalling theory consists of a signaller, signals, receiver, and feedback, and a signaller sends a signal to a receiver, who then provides feedback to the signaller (Connelly et al., 2011). For instance, a company sends the company's CSR statement to investors. However, the signals that the market receives from the company's strategic decisions about its green dedication and initiatives will impact its reputation and relationship with stakeholders (Taj. 2016). According to Seele & Gatti (2017), two primary justifications for why deceptive or fraudulent corporate green statements or marketing can be viewed as an effective signaling tactic to deceive stakeholders. First, compared to actually altering their business procedures, organizations with weak sustainability policies find it easier and less expensive to signal green values to stakeholders. Second, information asymmetry between companies and the public enables companies to make false green claims because it is difficult for the public to compare these claims to the company's real environmental performance. This lack of transparency enables companies to use misleading CSR communication as a signal to portray themselves as more environmentally responsible (Seele and Gatti, 2017). According to Ha (2022), greenwashing perceptions have a negative influence on green brand image, satisfaction, and trust, which is attributed to the halo effect, consequently reducing green brand equity. This is aligned with signaling theory, which explains how signals like green promises change consumer views and demonstrates how greenwashing, brand image, satisfaction, and trust affect green brand equity.

#### 2.7 Proposed Conceptual Framework

Green Brand Image H7 H1 Green Brand Loyalty H8 H2 Green Brand Green Purchase Н6 Greenwashing Equity Intention H12 НЗ Н9 **Green Satisfaction** H4 H10 Green Trust H11 Н5 Perceived Corporate Social Responsibility

Figure 2.7 Proposed Conceptual Framework

Source: Developed for the study

#### **CHAPTER 3: METHODOLOGY**

#### 3.1 Introduction

This chapter discusses the research methodology used to explore the study under investigation, focusing on the research philosophy, approach, design, population, sampling, and instruments applied. The methodology outlines a structured approach to data collection and analysis, ensuring that the research questions are answered effectively. The chapter also discusses the validity and reliability of the tools employed, data collection procedures, and analytical methodologies used in the study. Specifically, a positivist philosophy with a deductive approach is applied using a quantitative method to gather data through surveys. In addition, data analysis is conducted using statistical techniques, including descriptive and inferential methods, such as Multivariate Assumption Test and Structural Equation Modelling (SEM), with the aid of Jamovi and SmartPLS software.

#### 3.2 Research Philosophy

According to Tamminen and Poucher (2020), research philosophy is a collection of fundamental beliefs that drive the design and carry-out of a research study, and various research philosophies provide distinct perspectives on scientific research.

#### 3.2.1 Positivism Approach

Positivism is a natural scientist's philosophical approach to observing reality and making generalizations about society. It emphasizes the importance of pure data and facts, avoiding human prejudice (Scotland,

# UNDERSTANDING THE INFLUENCE OF GREENWASHING ON GREEN BRAND EQUITY AND GREEN PURCHASE INTENTION AMONG ELECTRIC VEHICLE CONSUMERS IN KLANG VALLEY 2012; Saunders et al., 2012 as cited in Alharahsheh & Pius, 2020). Ryan (2018) also contends that positivism is consistent with natural science concepts, emphasizing that logical relationships exist within and between variables, as cited in Ma & Ma (2022). Therefore, this study will use the positivism philosophy by applying quantitative methods and statistical techniques to test and analyze the relationship between greenwashing perceptions and green brand equity as well as green purchase intention and also make objective generalizations based on the analysis of numerical data.

#### 3.2.2 Deductive Approach

The deductive approach is also employed in this study; it begins with a theory, develops specific hypotheses from that theory, and then collects and analyses evidence using empirical data to test those hypotheses and refine the theory (Saylor Academy, 2012). It is moving from the general (theory) to the specific (data and analysis), ensuring the research was established on established frameworks. In addition, the hypothetico-deductive model of science also aligns with positivism, which focuses on confirming a priori hypotheses and experimentation by operationalizing variables and metrics, and the results from the empirical investigation can help enhance or refine theory (Park et al., 2020). Therefore, in this study, the corporate legitimacy and signaling theories are used to develop hypotheses about the relationship between variables such as greenwashing, green brand equity, and green purchase intention. Based on these theories, this study can hypothesize that higher perceptions of greenwashing lead to lower trust and reduced purchase intention and would then be tested through data collection and statistical analysis, allowing to confirm or refute the theoretical propositions.

#### 3.3 Research Design

The research design specifies the strategy for conducting a study, covering everything from data collection to result interpretation and presentation. It also ensures that the study is well-structured, effective, and provides reliable findings that may be used to draw significant inferences (Sileyew, 2020).

#### 3.3.1 Quantitative Research

This study utilizes a quantitative research design to investigate the relationships between greenwashing, green brand equity, and green purchase intention. It is because quantitative research depends on data gathering and analysis using an analytical method with an emphasis on testing theory and hypotheses, driven by empiricist and positivist ideologies (Bryman, 2016 as cited in Ghanad, 2023). This method collects and reviews structured numerical data to draw precise and reliable conclusions, as it can be statistically analyzed with a larger sample size (Ghanad, 2023). This objective measurement and analysis of variables is well-suited for testing hypotheses and identifying patterns in electric vehicle consumer perceptions and behaviors in the Klang Valley market.

A survey method is also employed in this study to collect data from a large sample of electric vehicle consumers in Klang Valley since survey design is a quantitative method for research that is commonly employed in practical theology. In addition, the advantage of using a survey is that it allows one to obtain data from a large sample that reflects the population's diversity (Ghanad, 2023). This makes the results more credible and applicable to a larger population than data acquired through a case study. A survey is also a cost-efficient and quick way to gather information from the larger population (Regmi et al., 2016). Therefore, the questionnaires for this study were created using Google Forms and disseminated to electric vehicle

UNDERSTANDING THE INFLUENCE OF GREENWASHING ON GREEN BRAND EQUITY AND GREEN PURCHASE INTENTION AMONG ELECTRIC VEHICLE CONSUMERS IN KLANG VALLEY consumers in Klang Valley through various social media channels, including WhatsApp.

#### 3.3.2 Cross-Sectional Research

Cross-sectional study design is an aspect of observational study design. In a cross-sectional study, the researcher simultaneously measures the study participants' outcomes and exposures (Setia, 2016). In this study, a survey uses cross-sectional surveys as observational surveys to collect data from a sample of the target group at a particular time (Ghanad, 2023). This approach is effective for analysing consumers' present attitudes and behaviours toward environmental claims made by electric vehicle manufacturers. In addition, this approach also allows for an understanding of consumer attitudes in the rapidly changing eco-conscious market, offering timely and valuable information for this study and useful for developing hypotheses that can guide future studies (Setia, 2016).

#### 3.4 Population and Sample

#### 3.4.1 Targeted Population

The targeted population for this study includes potential electric vehicle (EV) consumers in Klang Valley, Malaysia. These people are probably familiar with the green marketing and sustainability claims promoted by EV manufacturers, making them relevant as they are informed about environmental issues and are potential buyers of electric vehicles. This study's goal is to investigate how environmentally conscious consumers react to green promises by focusing on their perceptions of greenwashing, green brand equity, and green purchase intention.

#### 3.4.2 Sample Frame and Sampling Location

The sampling frame consists of potential EV customers that reside in Klang Valley. Since this study will utilize Google Forms to collect data, this frame will be distributed to target audiences through social media to reach a diverse audience in Klang Valley.

Sampling will take place in Klang Valley only. This is because Klang Valley is the major urban area in Malaysia with higher levels of environmental awareness and developed infrastructure for electric vehicles, such as the majority of charging stations in Malaysia are located in Klang Valley (Malaysian Green Technology And Climate Change Corporation, 2023).

#### 3.4.3 Sampling Element

The sampling element refers to individual potential EV consumers who meet certain criteria. These participants must be aged 18 and above, residing in Klang Valley. Participants for this survey are expected to be knowledgeable about environmental issues and electric vehicle technology with an interest in sustainability or environmentally friendly products since Klang Valley has many EV dealerships and charging stations in Malaysia. This ensures that the study collects relevant data from those who have actual experience or an interest in EVs and green marketing promises.

#### 3.4.4 Sampling Technique

Many existing studies have relied on convenient sampling techniques to collect the sample, which might not provide a representative view of the broader consumer population. This is because convenience sampling acquires information from individuals who are conveniently accessible to

the researcher. It is neither purposeful nor strategic. This is also unpredictable because of their vulnerability to strong hidden biases (Etikan, 2016). For instance, the author used Google Forms to collect the 349 Saudi respondents by using convenient sampling techniques to save cost and increase the survey's speed (Klabi & Faiz, 2022).

Therefore, in this study will use the non-probability sampling technique known as purposive sampling, which involves selecting participants based on their characteristics to generate a more impartial and representative sample of Klang Valley electric vehicle consumers. Its purpose is to identify individuals with specific characteristics who can contribute to relevant research, as this study is primarily a survey of Klang Valley electric vehicle consumers' perceptions (Etikan, 2016). Therefore, purposive sampling is used in this study to ensure that respondents are potential electric vehicle (EV) consumers, as they are more likely to be familiar with green marketing, sustainability claims, and the environmental impact of EVs. This method assures that the sample is representative of individuals with relevant knowledge of greenwashing, green brand equity, and green purchase intention claims.

#### 3.4.5 Sample Size

Figure 3.4 Krejcie and Morgan's sample size

Universe	Sample	Universe	Sample	Universe	Sample	Universe	Sample
10	10	100	80	1,250	294	6,000	361
15	14	200	132	1,500	306	7,500	366
20	19	300	169	2,000	322	10,000	370
30	28	400	196	2,500	333	15,000	375
40	36	500	217	3,000	341	20,000	377
50	40	600	234	3,500	346	30,000	379
60	44	700	248	4,000	351	40,000	380
70	59	800	260	4,500	354	50,000	381
80	66	900	269	5,000	357	75,000	382
90	73	1,000	278	5,500	359	1,000,000	384

<u>Source:</u> Krejcie, R. V., & Morgan, D. W. (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement*, 30(3), 607–610.

According to Krejcie and Morgan (1970), the sample size for this study is 384 respondents. According to their formula for a population exceeding 1 million, a sample size of 384 yields statistically significant results with a 95% confidence level and a margin of error of ±5% will be fit to select for this study as the population in Klang Valley exceeds 1 million (Department of Statistics Malaysia, 2024). This sample size ensures that the data collected is representative of the larger population of potential electric vehicle (EV) consumers in Klang Valley. This sample size was chosen to increase the study's generalisability and ensure that the insights about EV consumers' perceptions of greenwashing, green brand equity, and desire to make green purchases can be applied more widely.

#### 3.5 Instruments and Measurements

This study's data collection instrument is an online survey questionnaire created with Google Forms. This method enables collecting quantitative data from a large sample of electric vehicle (EV) users in Klang Valley more easily and cost-efficiently. The questions in the questionnaire are also adapted from existing literature to ensure validity and reliability.

The survey is divided into multiple sections, each of which is intended to collect data pertinent to the goals of the study. Basic demographic information about the respondents is gathered in Section A to aid in understanding the traits of the sample population. The questions provide background information that can be used to segment the data and examine how demographic characteristics affect opinions about greenwashing, green brand equity, and green purchase intention.

Section B focuses on the key variables examined in this study, including greenwashing perceptions, green trust, green satisfaction, green brand loyalty,

perceived corporate social responsibility (CSR), green brand image, green brand loyalty, and green purchase intention. This section intends to collect data on respondents' opinions and attitudes toward greenwashing, trust in EV brands, satisfaction with green initiatives, brand loyalty, and likelihood of purchasing an electric vehicle. These factors are also measured using Likert scale items ranging from 1 (strongly disagree) to 5 (strongly agree).

Table 3.5 The origin of construct instruments

Variables	Measurement items	Source
Greenwashing	1. Electric vehicle manufacturers use confusing	(Amer & Abo El
	words or complex terminology to make their	Ezz, 2023)
	environmental claims seem more impressive.	
	2. Electric vehicle advertisements use misleading or	
	exaggerated visuals (e.g., images of nature, green	
	leaves) to create a false impression of their	
	environmental benefits.	
	3. Electric vehicle manufacturers making	
	environmental claims that seem ambiguous or	
	apparently unprovable (e.g., "eco-friendly"	
	without providing specific details).	
	4. Electric vehicle manufacturers overstate the	
	environmental benefits of their products.	
	5. Electric vehicle manufacturers leave out important	
	information about their products to enhance the	
	credibility of their green claim.	
Green Trust	1. Electric vehicles deliver fairly reliable	(Ha, 2022) &
	environmental performance (e.g., reduced carbon	(Ha et al., 2022)
	emissions, energy efficiency).	
	2. Electric vehicles' environmental reputation is	
	reputable.	
	3. Electric vehicles make generally trustworthy	
	environmental claims.	

	4. Electric vehicle manufacturers satisfy my needs in	y The Let
	terms of environmental issues.	
	5. Electric vehicle manufacturers keep their promises	
	and responsibilities in protecting the environment.	
Green	1. I will choose to purchase an electric vehicle due to	(Ha, 2022) &
Satisfaction	its environmental impact (e.g., reducing carbon	(Ha et al., 2022)
	footprint, conserving natural resources).	
	2. Electric vehicles appeal to me because of its	
	environmental features.	
	3. The eco-friendliness of electric vehicles, such as	
	reduced emissions and energy efficiency make me	
	satisfied.	
	4. I like this electric vehicle's brand due to its	
	environmental concern.	
Green Brand	1. Electric vehicle manufacturers are required to be	(Ha, 2022) &
Image	committed in their commitment to environmental	(Ha et al., 2022)
	sustainability.	
	2. Electric vehicle manufacturers prioritize	
	environmental reputation very seriously.	
	3. Electric vehicle manufacturers are successful in	
	terms of environmental sustainability.	
	4. Electric vehicle manufacturers are well-known	
	when it comes to environmental issues.	
	5. Electric vehicle manufacturers are trustworthy	
	when it comes to environmental responsibilities.	
Green Brand	1. I prefer to purchase this brand of electric vehicle	(Lin et al., 2017
Loyalty	compared to other brands.	as cited in Uikey
	2. I intend to continue buying this brand of electric	& Baber, 2023)
	vehicle in the future.	
	3. I will recommend this brand of electric vehicle to	
	other people.	
	4. This brand of electric vehicle is always my first	
	choice.	

Perceived	1. Electric vehicle manufacturers seek to support	(Alvarado-
Corporate	environmentally friendly programs.	Herrera et al.,
Social	2. Electric vehicle manufacturers allocate resources	2015)
Responsibility	to provide environmentally friendly services.	
	3. Electric vehicle manufacturers are initiating	
	projects to reduce pollution.	
	4. Electric vehicle manufacturers aim to protect the	
	environment.	
	5. Electric vehicle manufacturers aim to appropriately	
	recycle waste resources.	
	6. Electric vehicle manufacturers are making an effort	
	to utilise only the essential natural resources.	
Green Brand	1. Choosing this brand of electric vehicle over others	(Ha, 2022) &
Equity	is desirable due to its eco-friendly promises, even	(Ha et al., 2022)
	if the items are the same.	
	2. Even though other electric vehicles provide the	
	same environmental benefits, I would still prefer	
	this brand of electric vehicle.	
	3. If another electric vehicle's environmental quality	
	is as good as this brand of electric vehicle, I would	
	purchase it.	
	4. If this electric vehicle's environmental concerns	
	are similar to those of another, it may be preferable	
	to purchase this electric vehicle.	
Green	1. I will buy an electric vehicle in the future.	(Ansu-Mensah,
Purchase	2. I plan to switch to an electric vehicle.	2021)
Intention	3. I am interested in electric vehicles for personal use.	
	4. I plan to purchase an electric vehicle for personal	
	use.	
	5. I intend to purchase an electric vehicle that does not	
	harm the environment.	

Source: Developed for the study

#### 3.6 Validity and Reliability

#### 3.6.1 Validity

Validity is the degree to which the evaluation instrument accurately measures the true value of a concept in a hypothesis (Sullivan, 2011). Thus, it is important to improve clarity and overall feasibility by utilizing appropriate languages and concepts to avoid uncertainty (Sileyew, 2020). For instance, find an expert in the relevant study area to ask for comments and provide feedback. The experts in the field of green marketing and consumer behaviour will review the questionnaire to ensure that the questions align with the study's objectives. The feedback from the experts helped refine the questionnaire, ensuring both clarity and relevance to the research goals.

In addition, conduct pilot testing with a small group of potential respondents before starting the primary study to assess the effectiveness of various data collection instruments and procedures. The pilot test is to evaluate the effectiveness of the research and make necessary improvements (Hassan et al., 2006). Therefore, a total of 30 samples were collected for this investigation, and an online questionnaire was used for the test to ask their feedback on the wording and clarity of questions, which was utilized to further improve problematic issues, ensuring the survey examines the constructs accurately (Sullivan, 2011).

#### 3.6.2 Reliability

Reliability is determined by an assessment instrument and whether it produces the same results when used in identical settings with the same types of subjects, as reliability essentially means consistent or dependable results (Sullivan, 2011). In this study, the measurement instrument used to

assess the reliability is Cronbach's alpha. Cronbach's alpha is a measure of internal consistency that indicates how closely related a set of items is within a group (Cronbach, 1951). It is frequently employed to evaluate the reliability of Likert-scale items. A Cronbach's alpha value of 0.7 or higher is considered acceptable for proving the survey items' reliability (Cronbach, 1951). Therefore, as a result as shown in Table 3.7, the above-average values indicate that all eight variables fulfilled the criterion and are sufficiently trustworthy for further study.

Figure 3.6 Rules of Thumb for Cronbach' Alpha

Table 2: Range of reliability and its coefficient of Cronbach's alpha

No	Coefficient of Cronbach's Alpha	Reliability Level
1	More than 0.90	Excellent
2	0.80-0.89	Good
3	0.70-0.79	Acceptable
4	0.669	Questionable
5	0.5-0.59	Poor
6	Less than 0.59	Unacceptable

<u>Source:</u> Arof, K. Z. M., Ismail, S., & Saleh, A. L. (2018). Contractor's performance appraisal system in the Malaysian construction industry: Current practice, perception and understanding. *International Journal of Engineering & Technology*, 7(3.9), 46.

Table 3.6 Cronbach's Alpha result

No	Variable	Items	Scale	Cronbach's Alpha Value
1.	Greenwashing	5	1 – 5	0.928
2.	Green Trust	5	1 – 5	0.918
3.	Green Satisfaction	4	1 - 5	0.944
4.	Green Brand Image	5	1 – 5	0.840
5.	Green Brand Loyalty	4	1 - 5	0.933

6.	Perceived Corporate Social	6	1 – 5	0.912
	Responsibility			
7.	Green Brand Equity	4	1 - 5	0.917
8.	Green Purchase Intention	5	1 - 5	0.888

Source: Developed for the study

#### 3.7 Data Collection Procedure

According to Taherdoost (2021), a questionnaire survey is one of the data collection methods to gather primary data directly from respondents. Primary data is also considered more valid, reliable, objective, and authentic data than secondary data because it is first-hand data and remains unchanged by human influence. In this study, data was collected through an online questionnaire disseminated using Google Forms. The questionnaire link was shared via email and social media platforms such as Facebook, Telegram, and WhatsApp to reach a broad audience of electric vehicle (EV) consumers in Klang Valley. This method was chosen for its convenience, allowing respondents to participate at their own pace while enabling efficient data collection from a large sample. The online format is also enabled to collect and organize the data in real time.

#### 3.8 Data Analysis

#### 3.8.1 Data Screening

Before performing the analysis, data screening was conducted to ensure the accuracy and reliability of the dataset. It includes data coding, checking and editing, missing value, and handling outliers.

#### 3.8.1.1 Data Coding

Before analysis, the responses were coded and analyzed. The data acquired from questionnaires were put into Jamovi and Partial Least Square Structural Equation Modelling (PLS-SEM) to be easily interpreted. The task entailed recognizing, classifying, and assigning a numeric or character symbol to data, which was done in only one way pre-coded (Sileyew, 2020). The data coding procedure has a significant impact on the study in Klang Valley because it ensures that the responses received from electric vehicle (EV) consumers are organized systematically, improving the accuracy and efficiency of the analysis. This streamlined data entry makes it easy to identify patterns and relationships across variables including greenwashing perceptions, green brand equity, and green purchase intention. By coding and analyzing the data with Jamovi and Partial least Square Structural Equation Modelling (PLS-SEM), the study can provide objective, trustworthy insights into the perceptions and behaviours of EV consumers in Klang Valley, allowing for identifying patterns unusual to this geographic area. Furthermore, proper data coding decreases errors and assures that statistical results accurately represent the study population, resulting in more reliable conclusions (Sekaran & Bougie, 2016).

#### 3.8.1.2 Data Checking and Editing

According to Sekaran and Bougie (2016), human errors can occur while coding, it is a must to conduct a thorough data checking process to check if any errors are found in the coding. Then, data editing is then detecting and correcting incorrect, inconsistent, or illegal data and omissions in information submitted by study participants to ensure the quality and accuracy of the data collected (Sekaran & Bougie, 2016). Therefore, in this study, data will be checked and edited for inconsistencies and errors, resulting in cleaner data and reduced inaccuracies in analysis.

#### 3.8.1.3 Missing Values

If there were any missing answers in the responses, and will determine the extent of missing data. Depending on the situation, this may ignore responses with missing data if gathered a large amount of data and the results will not be affected by the missing data. Additionally, use the mean value of those who answered the specific questions to fill in the gaps, or use any other strategy to manage missing information in a way that does not impact the results (Sekaran & Bougie, 2016). Thus, Jamovi in this study will help address missing data through various techniques like imputation or removal of incomplete responses, ensuring the dataset remains representative.

#### **3.8.1.4 Outliers**

Outliers were detected and investigated to determine if they were legitimate data points or errors. An outlier is an observation that deviates significantly from the observations and has a considerable impact on the study. Thus, in this study will using Jamovi to identify outliers by assessing values that are much higher or lower than other values. Extreme outliers were then removed if they were considered erroneous to minimize their impact on the study and enhance the study's overall credibility and relevance (Sekaran & Bougie, 2016).

#### 3.8.2 Multivariate Assumption Test

#### 3.8.2.1 Normality Test

According to Mishra et al. (2019), testing for normality is a crucial prerequisite for many statistical tests, as normal data distribution is a key assumption in parametric testing. Since descriptive statistics give an overview of the data, selecting appropriate statistical techniques for hypothesis testing is essential. Testing for normality is essential for continuous data, as it helps determine the appropriate measures of central tendency, dispersion, and whether to apply parametric or nonparametric tests (Mishra et al., 2019). For instance, two frequently employed visual techniques to evaluate normality are Q-Q plots and histograms. Thus, in this study, it is important to ensure the data follows a normal distribution for validating results and confirming that the correct statistical techniques are used, such as the Kolmogorov-Smirnov (K-S) test and Shapiro-Wilk test, which leads to more accurate and reliable results. (Ghasemi & Zahediasl, 2012).

#### 3.8.2.2 Linearity Test

Linearity test is a fundamental assumption in multivariate analysis, ensuring that the independent and dependent variables have a consistent linear connection (Schneider et al. 2010). This assumption is especially relevant in regression and correlation analysis, where violations can skew predictions and compromise hypothesis testing results. According to Bewick et al. (2003), visual tools like scatterplots are commonly used to test the linearity assumption by evaluating whether data points form a linear trend around a straight line. In this study, scatterplot matrices are used to visually analyze pairwise correlations between variables, allowing for the identification of any deviations from linearity. Consistent linear clustering of data points indicates adherence to this assumption. The statistical tools like correlation matrix are further used to confirm that assuming linearity in the dataset is appropriate (Tabachnick & Fidell, 2019). This step ensures reliable interpretations of the predictors' effects on dependent variables, such as those related to greenwashing perceptions in this study. By meeting

## UNDERSTANDING THE INFLUENCE OF GREENWASHING ON GREEN BRAND EQUITY AND GREEN PURCHASE INTENTION AMONG ELECTRIC VEHICLE CONSUMERS IN KLANG VALLEY the linearity assumption, this study can confidently move forward with parametric analyses, improving the precision of its findings and increasing the credibility of its conclusions.

#### 3.8.2.3 Multicollinearity Test

Multicollinearity is a potential problem in all regression analyses when predictor variables in a regression model are highly correlated (Thompson et al., 2017). It causes a strong interdependence among predictors, which can distort regression outcomes, and complicate result interpretation. For instance, despite strong predictor-outcome correlations and a high R², multicollinearity can create exaggerated standard errors and hinder independent variables from showing statistical significance (Thompson et al., 2017). To address potential multicollinearity issues, the Variance Inflation Factor (VIF) and Tolerance as reciprocal of VIF are commonly used measures to detect multicollinearity in a regression model and ensure the reliability and stability of regression coefficients (Thompson et al., 2017). In this study, VIF analysis will be conducted for each construct to identify potential multicollinearity. The following table provides guidelines for interpreting VIF values:

Table 3.8 VIF interpretation

VIF - value	Conclusion
VIF = 1	Not correlated
1< VIF ≤ 5	Moderately Correlated
VIF > 5	Highly correlated

<u>Source:</u> Daoud, J. I. (2017). Multicollinearity and regression analysis. *Journal of Physics Conference Series*, 949, 012009.

#### 3.8.3 Proposed Data Analysis Tools

#### 3.8.3.1 Descriptive Analysis

Descriptive analysis is the initial stage before undertaking experimental functional assessments of pragmatic behaviour (Sloman 2010). Descriptive analyses are used to summarize and illustrate the distribution patterns of demographic data such as gender, age, ethnicity, and so on. For instance, descriptive analysis uses certain pictorial or graphical representations of the data, such as a histogram, box plot, radar plot, stem-and-leaf display, icon plot, or line graph, or the mathematical calculation of an index or number intended to summarise a specific characteristic of a variable or measurement, such as frequency counts, measures of central tendency, variability, or standard scores (Cooksey, 2020). It can also be used to explain a single variable (univariate) or multiple variables (bivariate/multivariate analysis) (Cooksey, 2020). Therefore, this study is used to summarize the demographic data collected from respondents and provide an overview of the respondents' characteristics and general perceptions related to greenwashing, brand equity, and purchase intention.

In this case, Jamovi is applied as the main instrument to perform descriptive analysis. Jamovi has an easier-to-use interface than SPSS, which is especially convenient for beginners or non-statisticians. Although SPSS is a powerful and well-known statistical analysis tool, accessibility issues may arise due to its more difficult learning curve and reliance on licensing fees (Field, 2017). In contrast, Jamovi is open-source, which makes it a less costly alternative that offers strong statistical capabilities. Additionally, Jamovi supports the creation of graphical representations such as bar charts, histograms, and box plots, making it easier to present the distribution and trends within the collected data. The software also supports both univariate and bivariate analysis, ensuring a thorough comprehension of the variables and their connections (Pajankar, 2022).

Inferential analysis explores the relationship between variables and provides interpretations (Kotronoulas et al., 2023). Structural Equation Modelling (SEM) is able to measure complex relationships between latent and observed variables for inferential analysis (Sarstedt and Cheah, 2019). Partial least squares structural equation modelling (PLS-SEM) is a subset of SEM and a widely used data analysis tool for examining the relationship between latent variables and measured by sets of observed variables (Hair et al., 2019). Therefore, in this study, prediction-oriented nature of PLS-SEM enable to evaluate how greenwashing perceptions affect green brand equity, purchase intention, and other mediating factors.

The PLS-SEM analysis was performed using SmartPLS version 4 (Hair et al., 2019). PLS-SEM is a two-step analysis that begins with evaluating the measurement model and moves to the structural model. First, measurement model assessment is testing the reliability and validity of the measurement model (Hair et al., 2019). For instance, the indicator reliability is determined by the outer loadings, Internal consistency reliability can be assessed using composite reliability (CR) and Cronbach's Alpha (CA). Furthermore, the convergent validity is determined by the Average Variance Extracted (AVE), the discriminant validity is determined by the heterotrait monotrait (HTMT) ratios (Hair et al., 2019).

Second, structural model assessment will examine the path coefficient, the coefficient of determinant, and the collinearity assessment. Variance Inflation Factors (VIF) are used to measure the collinearity evaluation in order to find out whether a collinearity problem exists. The significance of the path coefficients and the connection between the exogenous variables and endogenous variables will next be evaluated using the p-value. Additionally, Coefficient of Determination (R<sup>2</sup>) is used to determine the extent to which the independent variables in the model affect the dependent variable's variance (Hair et al., 2017).

#### **CHAPTER 4: ANALYSIS AND FINDINGS**

#### 4.0 Introduction

This chapter discusses the data analysis and findings based on survey responses from potential electric vehicle consumers in Klang Valley. The analysis builds on corporate legitimacy and signaling theories, examining relationships between greenwashing, green trust, green satisfaction, green brand loyalty, perceived CSR, and green brand image and their effect on green brand equity and purchase intention. It begins with an outline of the data collection process and screening procedures, followed by demographic insights, descriptive statistics, multivariate assumption tests, and hypothesis testing.

#### **4.1 Data Collection Process and Response Rates**

Google Forms was used to distribute the survey, targeting potential consumers of electric vehicles (EVs) in Klang Valley, Malaysia. The survey link was disseminated across social media applications such as WhatsApp, Facebook, Instagram, and Xiaohongshu to reach a diverse audience. Data collection was initially conducted over 3 weeks to allow sufficient time for respondents to participate. However, due to issues encountered during the collection period, such as low engagement or unanticipated non-responses, the survey extended the data collection period to 1 month. For instance, the response rate was 51.2% to achieve the 384 target respondents of this study, while the survey link was sent to around 750 target respondents.

#### 4.2 Data Screening

#### 4.2.1 Treatment of Missing Data

Data screening is essential to ensure the data's accuracy and integrity before conducting the analysis because incomplete responses might distort results; handling missing data is essential to preserving the quality of the research (Kang, 2013). In this study, Google Forms' "Required" option was turned on for every question to minimize missing responses and prevent incomplete data points. As a result, the dataset should ideally have no missing values. However, if the responses have more than 15% of items missing, the responses would be removed to ensure data integrity (Alam et al., 2023). For instance, if 15 responses had more than 15% of items missing, these would be marked for removal from 384 respondents. However, imputation techniques were applied to fill in the gaps for responses with minor missing data below 15%. Imputation is the process of replacing missing data with acceptable approximations to improve data analysis and deliver unbiased results by using imputation techniques such as mean, median, mode of the dataset as well as more complex classification-based methods (Alam et al., 2023).

#### 4.2.1 Detection of Outliers

#### **4.2.1.1** Univariate Outliers

Univariate outliers were detected using z-scores. According to Hair et al. (2019), data points having a z-score above  $\pm 3$  standard deviations were identified as outliers, and they will be removed to ensure that only responses within an acceptable range are maintained. However, in this study, univariate outliers are not detected.

#### **4.2.1.2** Multivariate Outliers

Multivariate outliers were discovered using the Mahalanobis Distance, which considers the dataset's multidimensionality to identify responses that deviate significantly from the central data pattern (Leys et al., 2019). The threshold for detecting multivariate outliers was set at a p-value of 0.001 (Tabachnick & Fidell, 2019). Any case that exceeded this threshold was defined as an outlier to be removed. In this study, multivariate outliers are also not detected.

#### 4.3 Demography of Respondents

Table 4.3 Respondent Profile

Frequency	Percentage
	39.8%
231	60.2%
312	81.3%
63	16.4%
)	2.3%
202	52.6%
72	18.8%
101	26.3%
)	2.3%
41	10.7%
3 5 7 1 9	31 12 3 02 2 01

Suburban	ELECTRIC VEHICLE	104	27.1%
Urban		239	62.2%
Croan		237	02.270
Income level			
Below RM4,999		240	62.5%
RM10,000 and above		24	6.3%
RM5,000 - RM9,999		120	31.3%
How familiar are you with e	lectric vehicles (EVs)?		
Not familiar		22	5.7%
Somewhat familiar		303	78.9%
Very familiar		59	15.4%
What is your primary source	e of information about		
EVs?			
Dealerships		13	3.4%
Family/friends/colleagues		48	12.5%
News/websites		57	14.8%
Social media		266	69.3%
What is your perception	of EVs compared to		
traditional gasoline vehicles	?		
Less convenient due to chargi	ng infrastructure	111	28.9%
More cost-effective in the lon	g run	58	15.1%
More environmental friendly		215	56.0%
Do you currently own a vehi	icle?		
No		86	22.4%
Yes		298	77.6%
If yes, what type of vehicle d	lo you own? (N=298)		
Electric		12	4.0%
Gasoline		255	85.6%
Hybrid		31	10.4%

### Have you ever considered purchasing an electric vehicle?

No	202	52.6%
Yes	182	47.4%

If yes, what factors influenced your consideration?		% of	% of
(N=182) (Multiple choice questions)		responses	cases
Environmental concerns	138	34.0%	75.8%
Cost savings on fuel	97	23.9%	53.3%
Government incentives	97	23.9%	53.3%
Technological advancements	74	18.2%	40.7%
Total	406	100.0%	223.1%

If not, what are the main reasons for not considering					
an electric vehicle? (N=202) (Multiple choice		% of	% of		
questions)		responses	cases		
High purchase price	96	24.2%	47.5%		
Limited charging infrastructure	181	45.7%	89.6%		
Concerns about battery life	70	17.7%	34.7%		
Lack of information	49	12.4%	24.3%		
Total	396	100.0%	196.0%		

#### Do you currently own an electric vehicle?

No	333	86.7%
Yes	51	13.3%

### If yes, how satisfied are you with your electric vehicle? (N=51)

Very dissatisfied	1	2.0%
Dissatisfied	1	2.0%
Neutral	13	25.5%
Satisfied	19	37.3%
Very satisfied	17	33.3%

If no, do you plan to purchase an electric vehicle in the next 5 years ? (N=333)

No	29	8.7%
Not sure	242	72.7%
Yes	62	18.6%

Source: Developed for the study

There are 384 usable samples collected for data analysis. Referring to Table 4.3, there were 231 male respondents (60.2%) and 153 female respondents (39.8%). The majority of respondents, 312 (81.3%) are between the ages of 18 and 34, with 63 (16.4%) aged 35 to 60 and 9 (2.3%) aged 60 and above. In terms of race, 202 Chinese respondents represent the majority (52.6%), followed by 101 Malays (26.3%), 72 Indians (18.8%), and 9 others (2.3%).

The data also shows that the majority of respondents, 239 (62.2%) live in urban areas, with 104 (27.1%) in suburbs and 41 (10.7%) in rural areas. In terms of income, the majority, 240 (62.5%) earn less than RM4,999, 120 (31.3%) earn between RM5,000 and RM9,999, and 24 (6.3%) earn RM10,000 or more.

In terms of familiarity with electric vehicles (EVs), 303 respondents (78.9%) are somewhat familiar, 59 (15.4%) are very familiar, and 22 (5.7%) are not familiar. Social media is the primary source of EV information for 266 respondents (69.3%), followed by 57 respondents for news/websites (14.8%), 48 respondents for family/friends/colleagues (12.5%), and 13 respondents for dealerships (3.4%).

When comparing EVs to gasoline vehicles, 215 respondents (56.0%) believe EVs are more environmentally friendly, 111 (28.9%) think they are less convenient due to limited charging infrastructure, and 58 (15.1%) believe they are more cost-effective in the long run.

Regarding vehicle ownership, 298 respondents (77.6%) own a vehicle, while 86 (22.4%) do not. Among 298 vehicle owners, 255 (85.6%) own gasoline vehicles, 31 (10.4%) own hybrids, and 12 (4.0%) own electric cars. Then, for the multiple choice questions, among 182 (47.4%) respondents who have considered purchasing an EV, the most frequently selected influencing factor was environmental concerns, which comprised 34.0% of responses and 75.8% of cases. Cost savings on fuel and

government incentives were identified by 23.9% of respondents and affected 53.3% of cases. Technological advancements were stated by 18.2% of responses and influencing 40.7% of cases. In contrast, among those 202 respondents (52.6%) who have not considered purchasing an EV, the main reason was limited charging infrastructure, which accounted for 45.7% of responses and was noted in 89.6% of cases. High purchasing prices were mentioned by 24.2% of respondents and 47.5% of cases. Concerns about battery life contributed to 17.7% of responses and were highlighted in 34.7% of cases, whereas lack of information accounted for 12.4% of responses and was mentioned in 24.3% of cases.

For 51 respondents (13.3%) who currently own an EV, 17 respondents (33.3%) are very satisfied, 19 respondents (37.3%) are satisfied, 13 respondents (25.5%) are neutral, 1 respondent (2.0%) is dissatisfied, and 1 respondent (2.0%) is very dissatisfied. Among those who do not own an EV, 62 respondents (18.6%) plan to purchase one in the next five years, while 242 respondents (72.7%) are unsure, and 29 respondents (8.7%) do not plan to do so.

# 4.4 Multivariate Assumption Test

# 4.4.1 Normality

The normality test normally assesses the skewness, kurtosis, and others (Uyanık & Güler, 2013). According to Hair et al. (2010), data are considered normally distributed if skewness falls between +2 to -2 and kurtosis falls between -7 and +7. Table 4.4.1 indicates all constructs are within acceptable ranges, indicating normally distributed. However, the result of Shapiro-Wilk test the p-values for all constructs (e.g., GW: <.001, G\_Trust: <.001, G\_PI: <.001) are very small, which indicates rejection of the null hypothesis that the data is normally distributed. Therefore, based on the Shapiro-Wilk test, it concludes that the data for all constructs significantly deviates from normality. But the large sample size of 384 ensures that minor deviations from normality detected by the Shapiro-Wilk test will not significantly

impact the validity of your results. According to the Central Limit Theorem, large samples lead to a sampling distribution that approximates normality, even if the data is not perfectly normal (Field, 2013). While the Shapiro-Wilk test is sensitive in large samples, small deviations are practically negligible, and the slight skewness and kurtosis values are unlikely to affect the robustness of parametric analyses (Mishra et al., 2019). Thus, the findings can still be considered valid and reliable for statistical analysis.

Table 4.4 Skewness, Kurtosis, and Shapiro-Wilk test

			Shapiro-Wilk test
Construct	Skewness	Kurtosis	(p-values)
GW	-1.010	0.004	< 0.001
G_Trust	-1.160	0.412	< 0.001
G_Sat	-0.968	-0.051	< 0.001
G_BI	-1.190	0.465	< 0.001
G_BL	-1.130	0.197	< 0.001
P_CSR	-1.250	0.636	< 0.001
G_BE	-0.812	-0.253	< 0.001
G_PI	-1.500	1.710	< 0.001

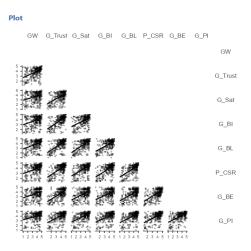
Source: Developed for the study

# 4.4.2 Linearity

In this study, the pairwise scatterplot matrix is used to determine the linearity between several variables (GW, G\_Trust, G\_Sat, G\_BI, G\_BL, P\_CSR, G\_BE, and G\_PI) to conform to the linearity assumptions. Based on the results, the pairwise scatterplot matrix indicates that most variable pairs exhibit linear trends, such as GW vs. G\_Trust, G\_Sat, and G\_BE. Pairs involving P\_CSR often show weaker linearity compared to other pairs but still indicate some positive trends. In addition, the scatterplots mostly show consistent trends without large deviations or non-linear curves. Overall, these results confirm that the assumption of linearity has been satisfied to

meet the assumption of linearity, with strong linear interactions in several critical pairs.

Figure 4.4 Pairwise scatterplot matrix

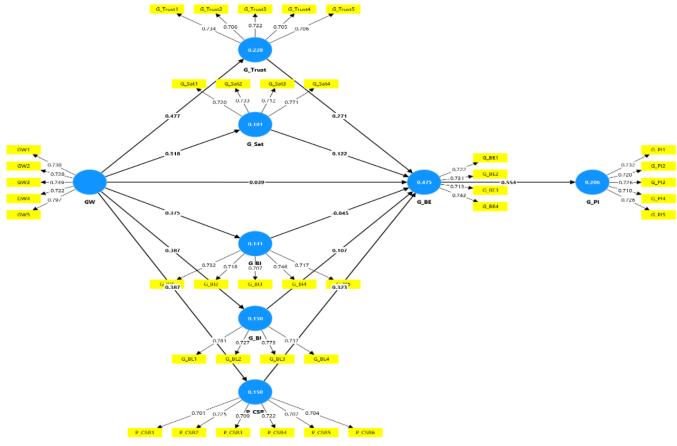


Source: Developed for the study

# 4.5 Inferential Analysis

# 4.5.1 Measurement Model Assessment

Figure 4.5 Measurement Model



Source: Developed for the study

# 4.5.1.1 Convergent Validity

Table 4.5.1 Measurement Model Assessment

				Composite	Composite	Average
		Factor of	Cronbach	reliability	reliability	variance
Constructs	Items	loading	's alpha	(rho_a)	(rho_c)	extracted (AVE)
GW	GW1	0.738	0.804	0.816	0.863	0.558
	GW2	0.728				
	GW3	0.749				
	GW4	0.722				
	GW5	0.797				
$G_BE$	G_BE1	0.722	0.703	0.703	0.818	0.529
	G_BE2	0.731				

		ELEC	TRIC VEHIC	LE CONSUMI	ERS IN KLAN	IG VALLE
	G_BE3	0.713				
	G_BE4	0.743				
G_BI	G_BI1	0.732	0.773	0.773	0.846	0.524
	G_BI2	0.718				
	G_BI3	0.707				
	G_BI4	0.746				
	G_BI5	0.717				
G_BL	G_BL1	0.781	0.749	0.753	0.841	0.569
	G_BL2	0.727				
	G_BL3	0.773				
	G_BL4	0.737				
G_PI	G_PI1	0.732	0.772	0.773	0.845	0.522
	G_PI2	0.720				
	G_PI3	0.726				
	G_PI4	0.710				
	G_PI5	0.726				
G_Sat	G_Sat1	0.720	0.716	0.721	0.824	0.539
	G_Sat2	0.733				
	G_Sat3	0.712				
	G_Sat4	0.771				
<b>G_Trust</b>	G_Trust1	0.734	0.761	0.761	0.839	0.511
	G_Trust2	0.706				
	G_Trust3	0.722				
	G_Trust4	0.705				
	G_Trust5	0.706				
P_CSR	P_CSR1	0.701	0.805	0.807	0.86	0.506
	P_CSR2	0.725				
	P_CSR3	0.709				
	P_CSR4	0.722				
	P_CSR5	0.707				
	P_CSR6	0.704				

Source: Developed for the study

According to Hair et al. (2021), with values greater than 0.708, all of the indicators' outer loadings within each construct are considered acceptable. The results shown in table 4.5.1 indicated that the majority of the factor loadings of the indicators are >0.708. However, a few items have loadings slightly below the threshold value of 0.708. According to Hair and Alamer (2022), when other requirements under convergent validity had been met, lower factor loadings could be justified such as the constructs demonstrating a good Composite Reliability greater than 0.7 and Average Variance Extracted greater than 0.5. The Cronbach Alpha also showed a value higher than 0.7, which fulfilled the threshold value. Thus, convergent validity is still established even if one of the items had a lower loading. As a result, convergent validity had been established.

#### 4.5.1.2 Discriminant Validity

Construct GW G BE G BI G BL G\_PI G Sat  $G_{\text{Trust}}$ P\_CSR GW  $G_BE$ 0.468 G\_BI 0.460 0.636 0.716 G BL 0.485 0.752 G\_PI 0.393 0.748 0.643 0.698 G Sat 0.898 0.405 0.717 0.682 0.664 G\_Trust 0.593 0.817 0.860 0.838 0.691 0.747 P CSR 0.469 0.810 0.781 0.782 0.712 0.725 0.804

Table 4.5.2 HTMT Criterion

Source: Developed for the study

After examining the convergent validity, HTMT was carried out to examine the discriminant validity of the model. According to Hair et al. (2019), a value of 0.90 or below would suggest the presence of discriminant validity.

However, Henseler et al. (2015) suggest a more conservative cut-off value, which is a threshold value of less than 0.85. In table 4.5.2, the results showed that the majority of constructs have met the threshold value of less than 0.85. However, there were two correlations between the constructs with HTMT values of 0.860 and 0.898, which were both greater than 0.85 but less than 0.90. The HTMT threshold value indicated that the value was acceptable.

#### 4.5.2 Structural Model Assessment

After assessing the measurement model, the next step is assessing the structural model assessment. Before assessing the structural model, the VIF had to be examined to determine the multicollinearity issue of the variables. According to Kock & Lynn (2012), they argue that in PLS-SEM, a VIF > 3.3 may indicate multicollinearity, which can distort path coefficient estimations. The result shown in table 4.6, all variables had fulfilled the threshold value, which is <3.3, therefore it is concluded that there are no issues. It can then proceed to structural model assessment.

Table 4.6.1 Collinearity Statistics

Constructs	VIF
GW -> G_BE	1.328
$GW \rightarrow G_BI$	1
$GW \rightarrow G_BL$	1
GW -> G_Sat	1
GW -> G_Trust	1
GW -> P_CSR	1
$G_BE \rightarrow G_PI$	1
$G_BI \rightarrow G_BE$	2.061
$G_BL \rightarrow G_BE$	2.342
G_Sat -> G_BE	1.970
G_Trust->G_BE	2.495
P_CSR ->G_BE	2.123

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#### 4.5.2.1 PLS Estimation

This study followed Guenther et al.'s (2023) suggestion and used a 10,000 bootstrap sample with a one-tailed setup. In this study, a p-value will be observed; p-values less than 0.05 are considered statistically significant (Hair et al., 2019).

Table 4.6.2 Hypotheses Testing Result

	Path		Standard			
	Coefficient	Sample	deviation	T statistics		
Hypotheses	(β)	mean (M)	(STDEV)	( O/STDEV )	P values	Decision
H1:GW -> G_BI	0.375	0.379	0.054	6.938	0	Supported
H2:GW -> G_BL	0.387	0.390	0.053	7.235	0	Supported
H3:GW -> G_Sat	0.318	0.321	0.054	5.940	0	Supported
H4:GW -> G_Trust	0.477	0.481	0.051	9.269	0	Supported
H5:GW -> P_CSR	0.387	0.390	0.054	7.156	0	Supported
H6:GW -> G_BE	0.039	0.039	0.041	0.963	0.168	Not Supported
H7:G_BI -> G_BE	-0.045	-0.042	0.064	0.702	0.241	Not Supported
$H8:G_BL \rightarrow G_BE$	0.107	0.105	0.069	1.552	0.060	Not Supported
H9:G_Sat -> G_BE	0.122	0.126	0.063	1.939	0.026	Supported
H10: G_Trust -> G_BE	0.271	0.270	0.067	4.017	0	Supported
H11:P_CSR -> G_BE	0.323	0.323	0.068	4.748	0	Supported
H12:G_BE -> G_PI	0.554	0.557	0.044	12.502	0	Supported

Source: Developed for the study

H1 explores the relationship between Greenwashing (GW) and Green Brand Image (G\_BI). The result indicated a  $\beta$  of 0.375, a high t-value of 6.938, and a p-value of 0.000, demonstrating strong statistical significance. Thus,

# UNDERSTANDING THE INFLUENCE OF GREENWASHING ON GREEN BRAND EQUITY AND GREEN PURCHASE INTENTION AMONG ELECTRIC VEHICLE CONSUMERS IN KLANG VALLEY H1 was supported, indicating a significant relationship between

Greenwashing and Green Brand Image.

H2 examined the relationship between Greenwashing (GW) and Green Brand Loyalty (G\_BL). The result showed a  $\beta$  of 0.387, a t-value of 7.235, and a p-value of 0.000, indicating a statistically significant relationship. As a result, H2 was supported, suggesting a significant relationship between Greenwashing and Green Brand Loyalty.

H3 investigated the relationship between Greenwashing (GW) and Green Satisfaction (G\_Sat). The result yielded a  $\beta$  of 0.318, a t-value of 5.94, and a p-value of 0.000, demonstrating statistical significance. Therefore, H3 was supported, indicating a significant relationship between Greenwashing and Green Satisfaction.

H4 explores the relationship between Greenwashing (GW) and Green Trust (G\_Trust). The analysis revealed a  $\beta$  of 0.477, a t-value of 9.269, and a p-value of 0.000, suggesting a strong statistical significance. As a result, H4 was supported, indicating a significant relationship between Greenwashing and Green Trust.

H5 investigates the relationship between Greenwashing (GW) and Perceived Corporate Social Responsibility (P\_CSR). The analysis showed a  $\beta$  of 0.387, a t-value of 7.156, and a p-value of 0.000, demonstrating statistical significance. Therefore, H5 was supported, suggesting a significant relationship between Greenwashing and Perceived Corporate Social Responsibility.

H6 investigates the relationship between Greenwashing (GW) and Green Brand Equity (G\_BE). The analysis showed a path coefficient (β) of 0.039, a t-value of 0.963, and a p-value of 0.168, indicating that the relationship between Greenwashing and Green Brand Equity is not statistically

# UNDERSTANDING THE INFLUENCE OF GREENWASHING ON GREEN BRAND EQUITY AND GREEN PURCHASE INTENTION AMONG ELECTRIC VEHICLE CONSUMERS IN KLANG VALLEY significant. Therefore, H6 was not supported, suggesting no significant relationship between Greenwashing and Green Brand Equity.

H7 examined the relationship between Green Brand Image (G\_BI) and Green Brand Equity (G\_BE). The analysis revealed a β of -0.045, a t-value of 0.702, and a p-value of 0.241, indicating no statistical significance. Thus, H7 was not supported, suggesting no significant relationship between Green Brand Image and Green Brand Equity.

H8 investigated the relationship between Green Brand Loyalty ( $G_BL$ ) and Green Brand Equity ( $G_BE$ ). The result yielded a  $\beta$  of 0.107, a t-value of 1.552, and a p-value of 0.060, marginally above the conventional significance level. Therefore, H8 was not supported, indicating no significant relationship between Green Brand Loyalty and Green Brand Equity.

H9 investigates the relationship between Green Satisfaction (G\_Sat) and Green Brand Equity (G\_BE). The analysis showed a  $\beta$  of 0.122, a t-value of 1.939, and a p-value of 0.026, indicating statistical significance. Thus, H9 was supported, suggesting a significant relationship between Green Satisfaction and Green Brand Equity.

H10 examined the relationship between Green Trust (G\_Trust) and Green Brand Equity (G\_BE). The result revealed a  $\beta$  of 0.271, a t-value of 4.017, and a p-value of 0.000, indicating a strong statistical significance. Therefore, H10 was supported, suggesting a significant relationship between Green Trust and Green Brand Equity.

H11 explores the relationship between Perceived Corporate Social Responsibility (P\_CSR) and Green Brand Equity (G\_BE). The result showed a  $\beta$  of 0.323, a t-value of 4.748, and a p-value of 0.000, demonstrating statistical significance. As a result, H11 was supported,

# UNDERSTANDING THE INFLUENCE OF GREENWASHING ON GREEN BRAND EQUITY AND GREEN PURCHASE INTENTION AMONG ELECTRIC VEHICLE CONSUMERS IN KLANG VALLEY indicating a significant relationship between Perceived Corporate Social Responsibility and Green Brand Equity.

H12 examined the relationship between Green Brand Equity (G\_BE) and Green Purchase Intention (G\_PI). The analysis yielded a  $\beta$  of 0.554, a t-value of 12.502, and a p-value of 0.000, indicating strong statistical significance. Therefore, H12 was supported, suggesting a significant relationship between Green Brand Equity and Green Purchase Intention.

# **4.5.2.2** Coefficient of Determination (R<sup>2</sup>)

The structural model's explanatory power could be obtained by employing R<sup>2</sup>. Hair et al. (2021) suggest a greater explanatory power is indicated by a higher R<sup>2</sup>. As a general guideline, a R<sup>2</sup> of 0.75 indicates high power, 0.50 suggests moderate power, and 0.25 may be seen as weak power in this context.

Table 4.6.3 Coefficient of Determination

Construct	$\mathbb{R}^2$	<b>Explanatory Power</b>
G_BE	0.475	Weak
G_BI	0.141	Weak
G_BL	0.150	Weak
G_PI	0.306	Weak
G_Sat	0.101	Weak
G_Trust	0.228	Weak
P_CSR	0.150	Weak

Source: Developed for the study

According to the table 4.6.1.2, it shows that G\_BE has R<sup>2</sup> values of 0.475, meaning that the exogenous variables (i.e., GW, G\_BI, G\_BL, G\_Sat, G\_Trust, P\_CSR) had explained 47.5% of the variance of G\_BE, indicating

# UNDERSTANDING THE INFLUENCE OF GREENWASHING ON GREEN BRAND EQUITY AND GREEN PURCHASE INTENTION AMONG ELECTRIC VEHICLE CONSUMERS IN KLANG VALLEY weak explanatory power. After that, G\_BI had a R² value of 0.141, meaning that GW had explained 14.1% of the variance of G\_BI, indicating weak explanatory power. Besides that, G\_BL and P\_CSR had a R² values of 0.150, meaning that it is explained by 15% through GW, also indicating weak explanatory power. In addition, G\_Sat had a R² value of 0.101, meaning that GW had explained 10.1% of the variance of G\_Sat, indicating weak explanatory power. In addition, G\_Trust had a R² value of 0.228, meaning that GW had explained 22.8% of the variance of G\_Trust, indicating weak explanatory power. Lastly, G\_PI had a R² value of 0.306, meaning that G\_BE had explained 30.6% of the variance of G\_PI, indicating weak explanatory power.

# CHAPTER 5: DISCUSSION, IMPLICATIONS, AND CONCLUSIONS

# 5.0 Introduction

This chapter summarises the discussion and results of this research project. Also, this chapter included the implications, limitations of this study, and recommendations for future research.

# **5.1 Discussion of Major Findings**

Table 5.1 Summary of Hypotheses Testing

No.	Hypotheses	Decision
H1	There is a significant relationship between greenwashing and green brand image.	Supported
H2	There is a significant relationship between greenwashing and green brand loyalty.	Supported
НЗ	There is a significant relationship between greenwashing and green satisfaction.	Supported
H4	There is a significant relationship between greenwashing and green trust.	Supported
Н5	There is a significant relationship between greenwashing and perceived corporate social responsibility.	Supported
Н6	There is a significant relationship between greenwashing and green brand equity.	Not Supported
Н7	There is a significant relationship between green brand image and green brand equity.	Not Supported

Н8	There is a significant relationship between green brand loyalty and green	Not Supported
	brand equity.	
Н9	There is a significant relationship between green satisfaction and green	Supported
	brand equity.	
H10	There is a significant relationship between green trust and green brand	Supported
	equity.	
H11	There is a significant relationship between perceived corporate social	Supported
	responsibility and green brand equity.	
H12	There is a significant relationship between green brand equity and green	Supported
	purchase intention.	

Source: Developed for the study

# 5.1.1 Greenwashing

Empirical analysis of the path coefficient in this study revealed that there are positive relationships between greenwashing and green brand image, green brand loyalty, green satisfaction, green trust, perceived corporate social responsibility, and green brand equity. However, the literature review conducted in this research reveals that a negative relationship between greenwashing and the variables is obtained in many studies. Whereas greenwashing might negatively affect the brand credibility which could undermine the trust and loyalty in a market when greenwashing is widely recognized (Mombeuil & Diunugala, 2023). The inconsistency between the results of this research and prior research might be due to a lower awareness of greenwashing among the respondents of this study. They may not recognize greenwashing practices due to limited knowledge to identify misleading claims. This problem may be due to the low penetration of electric vehicles in Malaysia, as only approximately 2% of the automobiles in Malaysia are electric vehicles (Zahin & Shauqi, 2024). This is supported by previous studies which showed that greenwashing may have different consequences across different contexts due to strong corporate social

# UNDERSTANDING THE INFLUENCE OF GREENWASHING ON GREEN BRAND EQUITY AND GREEN PURCHASE INTENTION AMONG ELECTRIC VEHICLE CONSUMERS IN KLANG VALLEY responsibility and brand credibility. For instance, a company's strong corporate social responsibility practices and reputation can diminish the negative impact of greenwashing (Ioannou et al., 2022). In addition, brand credibility can reduce the negative impact of greenwashing on green brand equity (Qayyum et al., 2023).

# H1: There is a significant relationship between greenwashing and green brand image.

Since the results show H1 is a significant relationship between greenwashing and green brand image. This aligns with findings by Liao and Wu (2024) that greenwashing not only damages the green brand image of the offending company but can also spill over, adversely affecting the other electric vehicle manufacturer's green brand image. Thus, it implies that greenwashing significantly harms green brand image of electric vehicles because customers will perceive misleading environmental claims as detrimental to brand authenticity and trustworthiness and industry-wide impact of greenwashing on brand perception.

# H2 There is a significant relationship between greenwashing and green brand loyalty.

H2 is also revealed as a significant relationship between greenwashing and green brand loyalty. The results signified that greenwashing will reduce consumer loyalty. According to Leckie et al. (2021), when consumers find deceptive environmental practices in electric vehicles, it will erode trust and impair the emotional connection consumers have to the brand, ultimately diminishing their commitment and loyalty. This finding supports the notion that greenwashing can undermine consumer loyalty, as false environmental actions can erode trust and reduce consumers' emotional connection to the electric vehicle brand.

# H3 There is a significant relationship between greenwashing and green satisfaction.

The findings of H3 show a significant link between greenwashing and green satisfaction, consistent with earlier research such as Martínez et al. (2020) and Chen et al. (2014). This demonstrates that greenwashing reduces customer satisfaction by undermining trust and causing disappointment with the company's environmental promises. Liao and Wu (2024) also proved that greenwashing in the electric vehicle sector has both direct and indirect effects on consumer satisfaction, not just for the offending firm but also for the entire industry. This emphasizes the significance of real environmental initiatives in electric vehicles to maintain green satisfaction and consumer confidence.

# H4 There is a significant relationship between greenwashing and green trust.

H4 indicates a significant relationship between greenwashing and green trust. This highlights that greenwashing damages consumer trust in a brand, as fraudulent environmental statements can be seen as dishonest and manipulative, in line with previous study by Guerreiro and Pacheco (2021). According to Kolcava (2022), Greenwashing undermines the effectiveness of self-regulation and the perceived link between company profitability and environmental protection in Switzerland, thus impacting consumer trust. In the context of this study, the findings show that greenwashing not only undermines trust in the offending firm but also creates widespread scepticism about corporate sustainability efforts. Thus, it is important to demonstrate transparency and accountability in environmental claims in order to retain and re-establish consumer trust.

# H5 There is a significant relationship between greenwashing and perceived corporate social responsibility.

The results for H5 confirm a significant relationship between greenwashing and perceived corporate social responsibility. This shows that greenwashing has a detrimental impact on consumers' perceptions of a company's commitment to CSR, as fraudulent environmental statements may cause customers to mistrust the brand's legitimacy and integrity in meeting its social and environmental responsibilities. According to Ogrean and Herciu (2022), the sustainability performance of electric car companies is crucial for stakeholders to assess electric car manufacturers' environmental claims. In addition, new energy vehicles must prioritize corporate social responsibility and environmental concerns to attract consumers (Zhang et al., 2024). In conclusion, the findings emphasize the significance of transparent and credible CSR policies for electric car manufacturers in order to build trust and enhance consumer confidence in their sustainability efforts.

# H6 There is a significant relationship between greenwashing and green brand equity.

However, there is an unexpected finding in this study, as greenwashing does not show a significant relationship with green brand equity. The result is surprising and contradicts the expectations of this study because it differs from the previous research, such as Avcilar & Demirgünes (2016) and Chen et al. (2016). The reason why this happened may be due to the halo effect, which is a cognitive bias that influences how people perceive a person or brand's characteristics (Park et al., 2020). This means that a positive brand perception can overshadow negative incidents (Ha et al., 2022). In this study, this halo effect might happen because consumers value electronic brands as symbols of innovation and modernization, leading to loyalty and support for their preferred brands. Thus, this might positively impact consumers'

UNDERSTANDING THE INFLUENCE OF GREENWASHING ON GREEN BRAND EQUITY AND GREEN PURCHASE INTENTION AMONG ELECTRIC VEHICLE CONSUMERS IN KLANG VALLEY attitudes and evaluations regardless of other considerations. This finding implies that the strength of a brand's positive attributes may offset the negative effects of greenwashing on green brand equity.

# 5.1.2 Green Brand Equity

# H7 There is a significant relationship between green brand image and green brand equity.

The results of H7 show that green brand image does not significantly influence green brand equity. This may indicate that a positive perception of a brand's environmental image alone is insufficient to build brand equity. Alternatively, it could be due to inconsistencies in communication or a lack of customer trust in the validity of green branding initiatives. For instance, the study found that discrepancies in sustainability messages or perceived inauthenticity can impair the relationship between green brand image and consumer perceptions, affecting the brand's ability to develop equity (Rahman et al., 2015; Parguel et al., 2011). Chen and Chang (2013) also found that trust and authenticity mediate the relationship between green brand image and brand equity. Without these mediating factors, the positive influence of brand image may not be realized. In addition, consumers may believe that brand image is insufficient to promote equity unless supported by consistent experiences, contentment, or trust (Ha & Perks, 2005). Thus, electric vehicle manufacturers should focus on consistent sustainability messaging, building trust, and ensuring transparency to engage consumers and strengthen green brand equity.

H8 There is a significant relationship between green brand loyalty and green brand equity.

The findings of H8 also show that green brand loyalty does not significantly influence green brand equity. This could imply that consumer loyalty to a green brand does not directly convert into brand equity unless combined with additional characteristics such as satisfaction or trust. For instance, loyalty is frequently viewed as a behavioural effect rather than a source of brand equity. Unless loyalty is accompanied by trust or satisfaction, the influence on equity may be limited (Chaudhuri & Holbrook, 2001). Aaker (2012) also stated that brand equity is a multidimensional construct, and loyalty alone may not make a substantial contribution after being combined with other characteristics such as perceived quality or associations. The study of Liao and Wu (2024) emphasizes the importance of combining loyalty with credibility and environmental authenticity in order to significantly increase green brand equity. Thus, this highlights the need for electric vehicles to reinforce loyalty with authentic sustainability efforts and strong consumer trust to build equity.

# H9 There is a significant relationship between green satisfaction and green brand equity.

H9 shows a significant relationship between green satisfaction and green brand equity, indicating when consumers are pleased with a brand's environmental performance, it will increase the green brand equity. Customers are expected to remember the products that satisfy them more than other competing companies (Chen, 2010). Ha (2021), Chen (2010), and Chen et al. (2016) studies also revealed a positive relationship between green satisfaction and green brand equity. Thus, electric vehicle consumers' satisfaction with the electric car will drive positive perceptions, leading consumers to associate greater value with the brand.

# H10 There is a significant relationship between green trust and green brand equity.

The results of H10 confirm a significant relationship between green trust and green brand equity. It is aligned with many studies such as Bekk et al. (2016) and Butt et al. (2016), which proved that there is a positive relationship between green trust and green brand equity. It means if consumers believe the brands' environmental promises are credible, they are more likely to attribute higher value to the brand. In this study, it is important for electric vehicle manufacturers to build green trust to foster stronger consumer loyalty and enhance the overall equity of the brand by emphasizing authenticity in environmental commitments.

# H11 There is a significant relationship between perceived corporate social responsibility and green brand equity.

The findings of H11 demonstrate a significant relationship between perceived corporate social responsibility and green brand equity, indicating that authentic and well-communicated CSR efforts enhance consumer perceptions of brand value. Nguyen et al. (2023) also showed that corporate social responsibility has a positive association with establishing strong green brand equity through green brand satisfaction, green brand association, and green brand trust. This highlights the importance of CSR in building consumer trust and strengthening a brand's environmental value proposition. Thus, electric vehicle manufacturers must establish CSR focusing on environmental initiatives to shape value consumer perceptions.

#### 5.1.3 Green Purchase Intention

H12 There is a significant relationship between green brand equity and green purchase intention.

The results confirm a significant relationship between green brand equity and green purchase intention. This shows that consumers who believe a brand has great green brand equity are more willing to make environmentally conscious purchases. According to Chen and Chang (2012), green brand equity, such as green perceived value, green brand knowledge, and green trust, have a positive effect on consumers' intentions to purchase green brands. Then, high green purchase intention is significant for the growth of sustainable energy in the electric vehicle market because it can translate to actual sales and market penetration (Tanuwijaya and Balqiah, 2022). Thus, when green brand equity of electric vehicle manufacturers is high, it reflects positive consumer perceptions of the brand's environmental value, credibility, and trustworthiness, which directly influence their willingness to purchase.

# 5.2 Implications of Findings

# **5.2.1** Theoretical Implications

The study confirms the applicability of signaling theory and legitimacy theory in understanding the dynamics of greenwashing and green brand equity. Signaling theory explains how stakeholders interpret "signals" like greenwashing, green brand image, green brand loyalty, green satisfaction, green trust, perceived CSR, green brand equity, and green purchase intention to make decisions in the face of uncertainty. Legitimacy theory emphasizes the importance of societal expectations and how firms' symbolic behaviors can secure legitimacy. This dual-theory framework enriches the greenwashing literature, as few prior studies have integrated both perspectives.

The findings of this study show that green brand equity is significantly influenced by the green brand image, green brand loyalty, green satisfaction,

ELECTRIC VEHICLE CONSUMERS IN KLANG VALLEY green trust, and perceived CSR except for greenwash due to the halo effect. In a similar vein, greenwash also adversely influences green brand image, green brand loyalty, green satisfaction, green trust, and perceived CSR. The study also supports the notion that green brand equity significantly drives purchase intention, underscoring its relevance in influencing environmentally conscious consumer behavior. This study contributes to the under-researched area of green branding in electric vehicle industries in Klang Valley, offering insights into the interaction between greenwashing, green brand image, green brand loyalty, green satisfaction, green trust, perceived CSR, green brand equity, and green purchase intention.

# **5.2.2 Practical Implications**

#### **5.2.2.1 Researcher (Body of Knowledge)**

For researchers, this study fills gaps in greenwashing and green brand equity literature, notably in Malaysia's EV industry. It combines signaling and legitimacy theories, providing a foundation for future research. The findings contribute to a better knowledge of green consumer behaviour and stimulate additional research into green branding across industries, markets, and demographics, thereby promoting sustainable development.

#### **5.2.2.2 Practitioners (Industry)**

Practitioners in the EV industry must ensure transparency in environmental claims to avoid greenwashing, which undermines trust and decreases brand equity. Investing in significant social responsibility (CSR) initiatives, implementing renewable energy, and developing recycling programs are critical for establishing consumer confidence. Engaging consumers through

transparent communication and sustainability initiatives such as trade-in

recycling or eco-driving programs can help enhance brand loyalty.

**5.2.2.3 Policymakers (Government)** 

Governments should enforce stricter regulations against greenwashing,

encourage standardized green certifications, and provide incentives for

environmentally friendly innovations. Public education efforts can help

customers make informed decisions by understanding sustainability

certifications and validating green claims.

**5.3** Limitations of study

5.3.1 Geographical Limitation

The study includes a number of limitations that should be emphasized. First,

it focuses on consumers in Klang Valley, Malaysia, which may not

accurately reflect consumer attitudes in other areas or worldwide markets,

limiting the findings' generalisability.

5.3.2 Cross-Sectional Design

Furthermore, the survey used a cross-sectional approach, which captures

consumer perceptions at a specific point in time and may not reflect how

attitudes change over time or in response to industry changes.

# 5.3.3 Online Survey Method

In addition, the study collected data primarily through an online survey. While online surveys are simple and cost-effective, they are vulnerable to common method bias, which occurs when respondents exhibit response bias as a result of the uniform collecting data process. This potential bias may have an impact on the validity of the findings and should be taken into account when duplicating the study.

#### **5.3.4 Limited Variables**

Finally, the absence of variables such as consumer education, environmental awareness, and brand credibility in the current study results in an incomplete understanding of the factors influencing the relationships between greenwashing, green brand equity, and purchase intention. These variables are important because they may mitigate or influence how customers perceive greenwashing and how it affects their opinions toward brands. Without taking these aspects into account, the study risks overlooking fundamental drivers of consumer behaviour in sustainable markets, potentially leading to a restricted interpretation of the findings.

# 5.4 Suggestion for Future Research

# 5.4.1 Expanding Geographical Scope

To improve the robustness and comprehensiveness of future studies, it is recommended to broaden the geographical scope by incorporating participants from various locations or countries. This would allow researchers to investigate how cultural and geographical characteristics

influence perceptions of greenwashing and brand equity, providing a more

complete knowledge of these dynamics across markets.

5.4.2 Conducting Longitudinal Studies

Furthermore, longitudinal research could provide useful insights into how

consumer attitudes toward greenwashing and brand equity change over time,

especially as sustainability knowledge grows.

5.4.3 Incorporating Paper Surveys Alongside Online Surveys

In addition, future studies could examine combining paper and online

surveys to reduce common method bias. This strategy may provide a more

inclusive representation of the target demographic, reaching individuals

who may not be accessible via online platforms.

**5.4.4** Incorporating New Variables in Future

Finally, adding new variables like consumer education, environmental

awareness, and brand credibility as potential moderators or influencers of

the relationships between greenwashing, green brand equity, and purchase

intention could improve the study's findings and provide a better

understanding of the factors that shape consumer behaviour in sustainable

markets.

#### 5.5 Conclusion

This study emphasizes the crucial role of green branding in the EV industry by illustrating how greenwashing affects consumer trust, satisfaction, loyalty, and brand equity. It confirms that green brand equity is a key driver of green purchase intention, emphasizing the need for authentic and transparent sustainability practices. While green brand image and loyalty did not significantly affect brand equity, the findings suggest that consistent communication and impactful actions are essential to building consumer trust and satisfaction.

For EV manufacturers, investing in authentic sustainability initiatives and communicating these efforts can enhance consumer perceptions and increase environmentally conscious purchase behavior. Policymakers and marketers should work together to promote transparency and discourage greenwashing, ensuring that the industry aligns with consumer expectations for environmental responsibility. By addressing these issues, the EV industry in Malaysia can strengthen its position in the green market and contribute to the global shift toward sustainable consumption.

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Appendix A Questionnaire

Dear respondents,

I am Heng Xian Wei from the Bachelor of International Business (Hons) of

Universiti Tunku Abdul Rahman (UTAR). I am currently working on my final year

project titled "Understanding the Influence of Greenwashing on Green Brand

Equity and Green Purchase Intention among Electric Vehicle Consumers in

Klang Valley".

The purpose of this questionnaire is to examine the perceptions, attitudes, and

behaviors of electric vehicle consumers in Klang Valley on the impact of

greenwashing perceptions on green trust, green satisfaction, green loyalty, green

brand image, perceived corporate social responsibility, and green brand equity, as

well as further influence green purchase intention.

The questionnaire consists of two sections:

**Section A: Demographics** 

Section B: Survey Questionnaires (Greenwashing, Green Trust, Green

Satisfaction, Green Loyalty, Green Brand Image, Perceived Corporate Social

**Responsibility, Green Brand Equity, and Green Purchase Intention)** 

I sincerely ask for your voluntary participation in this study. Before participating in

this study, please take your time reading the purpose. It's important to understand

the purpose and processes involved as mentioned above.

Your responses will be kept STRICTLY CONFIDENTIAL and used only for

academic purposes. The data collected will be analyzed in aggregate, and no

individual's identity will be disclosed. This survey should take approximately 5 to

10 minutes to complete. Your response is much appreciated. Feel free to contact

me if you have any questions or concerns about the survey.

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Yours sincerely, Heng Xian Wei 018-9533279 xw20021024@1utar.my

#### **Personal Data Protection Statement**

Please be informed that in accordance with Personal Data Protection Act 2010 ("PDPA") which came into force on 15 November 2013, Universiti Tunku Abdul Rahman ("UTAR") is hereby bound to make notice and require consent in relation to collection, recording, storage, usage and retention of personal information.

#### **Notice:**

- 1. The purposes for which your personal data may be used are inclusive but not limited to:-
  - For assessment of any application to UTAR
  - For processing any benefits and services
  - For communication purposes
  - For advertorial and news
  - For general administration and record purposes
  - For enhancing the value of education
  - For educational and related purposes consequential to UTAR
  - For the purpose of our corporate governance
  - For consideration as a guarantor for UTAR staff/ student applying for his/her scholarship/ study loan
- 2. Your personal data may be transferred and/or disclosed to third party and/or UTAR collaborative partners including but not limited to the respective and appointed outsourcing agents for purpose of fulfilling our obligations to you in respect of the purposes and all such other purposes that are related to the purposes and also in providing integrated services, maintaining and storing records. Your data may be shared when required by laws and when disclosure is necessary to comply with applicable laws.

3. Any personal information retained by UTAR shall be destroyed and/or deleted

in accordance with our retention policy applicable for us in the event such

information is no longer required.

4. UTAR is committed in ensuring the confidentiality, protection, security and

accuracy of your personal information made available to us and it has been our

ongoing strict policy to ensure that your personal information is accurate, complete,

not misleading and updated. UTAR would also ensure that your personal data shall

not be used for political and commercial purposes.

**Consent:** 

1. By submitting this form you hereby authorise and consent to us processing

(including disclosing) your personal data and any updates of your information, for

the purposes and/or for any other purposes related to the purpose.

2. If you do not consent or subsequently withdraw your consent to the processing

and disclosure of your personal data, UTAR will not be able to fulfill our

obligations or to contact you or to assist you in respect of the purposes and/or for

any other purposes related to the purpose.

3. You may access and update your personal data by writing to us

at **xw20021024@1utar.my**.

1. Acknowledgement of Notice

I have been notified by you and that I hereby understood, consented and

agreed per UTAR above notice.

☐ I disagree, my personal data will not be processed.

**Section A: Demographics** 

1. Gender

□ Male

□ Female

2.	Ag	e
		18 - 34 years old
		5 - 60 years old
		60 years old and above
		•
3	Ra	ce
٠.		Malay
		Chinese
		Indian
		Others
4	Lo	cation
	П	Urban
		Rural
	ш	Kulul
5	Inc	come level
٦.		
		RM5,000 - RM9,999
		RM10,000 and above
_		
6.		w familiar are you with electric vehicles (EVs)?
		Very familiar
		Not familiar
7.	Wl	nat is your primary source of information about EVs?
		Social media
		News/websites
		Family/friends/colleagues
		Dealerships
8.	Wl	nat is your perception of EVs compared to traditional gasoline vehicles?
		More environmental friendly
		More cost-effective in the long run
		Less convenient due to charging infrastructure
9.	Do	you currently own a vehicle?
		Yes
		No

If yes,	what type of vehicle do you own?
	Gasoline Hybrid
	Electric
Ц	Electric
10. Ha	ave you ever considered purchasing an electric vehicle?
	Yes
	No
If yes,	what factors influenced your consideration?
	Environmental concerns
	Cost savings on fuel
	Government incentives
	Technological advancements
	Other:
If no,	what is the main reasons for not considering an electric vehicle?
	High purchase price
	Concerns about battery life
	Lack of information
	Other:
11. Do	you currently own an electric vehicle?
	Yes
	No
If ves	how satisfied are you with your electric vehicle?
	Very satisfied
	•
	Neutral
	Dissatisfied
	Very dissatisfied
Ц	· ory organismou
If no,	do you plan to purchase an electric vehicle in the next 5 years?
	Yes
	No
11	Not sure

#### **Section B: Survey Questionnaires**

This section is to obtain opinion of respondents about influence of Greenwashing on Green Brand Equity and Green Purchase Intention among Electric Vehicle Consumers in Klang Valley".

This section is using the Likert Scale (Strongly Agree – 5, Agree – 4, Neutral – 3, Disagree – 2, and Strongly Disagree – 1).

#### Greenwashing

Greenwashing refers to companies intentionally misleading consumers regarding the environmental benefits of their products (Chen et al., 2018).

No.	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	Electric vehicle manufacturers use confusing words or complex terminology to make their environmental claims seem more impressive.	5	4	3	2	1
2.	Electric vehicle advertisements use misleading or exaggerated visuals (e.g., images of nature, green leaves) to create a false impression of their environmental benefits.	5	4	3	2	1
3.	Electric vehicle manufacturers making environmental claims that seem ambiguous or apparently unprovable (e.g., "eco-friendly" without providing specific details).	5	4	3	2	1
4.	Electric vehicle manufacturers overstate the environmental benefits of their products.	5	4	3	2	1
5.	Electric vehicle manufacturers leave out important information about their products to enhance the credibility of their green claim.	5	4	3	2	1

#### **Green Trust**

Green trust refers an individual's trust in a product, service, or brand comes from their perception of its trustworthiness, benevolence, and environmental sustainability (Chen, 2010).

No.	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	Electric vehicles deliver fairly reliable environmental performance (e.g., reduced carbon emissions, energy efficiency).	5	4	3	2	1
2.	Electric vehicles' environmental reputation is reputable.	5	4	3	2	1
3.	Electric vehicles make generally trustworthy environmental claims.	5	4	3	2	1
4.	Electric vehicle manufacturers satisfy my needs in terms of environmental issues.	5	4	3	2	1
5.	Electric vehicle manufacturers keep their promises and responsibilities in protecting the environment.	5	4	3	2	1

#### **Green Satisfaction**

Green satisfaction refers a delightful level of consumption-related fulfillment to satisfy a customer's environmental needs, expectations, and environmental desires (Chen, 2009).

No.	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	I will choose to purchase an electric vehicle due to its environment impact (e.g., reducing carbon footprint, conserving natural resources).	5	4	3	2	1
2.	Electric vehicles appeal to me because of its environmental features.	5	4	3	2	1
3.	The eco-friendliness of electric vehicle, such as reduced emissions and energy efficiency make me satisfied.	5	4	3	2	1
4.	I like this electric vehicle's brand due to its environmental concern.	5	4	3	2	1

#### **Green Brand Image**

Green brand image is a collection of brand perceptions in a consumer's mind that are associated to both environmental concerns and environmental commitments (Chen, 2009).

No.	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	Electric vehicle manufacturers are required to be committed in their commitment to environmental sustainability.	5	4	3	2	1
2.	Electric vehicle manufacturers prioritize environmental reputation very seriously.	5	4	3	2	1
3.	Electric vehicle manufacturers are successful in terms of environmental sustainability.	5	4	3	2	1
4.	Electric vehicle manufacturers are well-known when it comes to environmental issues.	5	4	3	2	1
5.	Electric vehicle manufacturers are trustworthy when it comes to environmental responsibilities.	5	4	3	2	1

#### **Green Brand Loyalty**

Green brand loyalty refers the extent of repurchase intentions stimulated by a sustained brand commitment and a strong environmental attitude (Chen, 2010).

No.	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	I prefer to purchase this brand of electric vehicle compare to other brands.	5	4	3	2	1
2.	I intend to continue buying this brand of electric vehicle in the future.	5	4	3	2	1
3.	I will recommend this brand of electric vehicle to other people.	5	4	3	2	1
4.	This brand of electric vehicle is always my first choice.	5	4	3	2	1

#### **Perceived Corporate Social Responsibility**

Perceived corporate social responsibility refers a company's commitment to maximize long-term economic, social, and environmental well-being through business practices, policies, and resources (Alvarado-Herrera et al., 2015).

No.	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	Electric vehicle manufacturers seek to support environmentally friendly programs.	5	4	3	2	1
2.	Electric vehicle manufacturers allocate resources to provide environmentally friendly services.	5	4	3	2	1
3.	Electric vehicle manufacturers are initiating projects to reduce pollution.	5	4	3	2	1
4.	Electric vehicle manufacturers aim to protect the environment.	5	4	3	2	1
5.	Electric vehicle manufacturers aim to appropriately recycle waste resources.	5	4	3	2	1
6.	Electric vehicle manufacturers are making an effort to utilise only the essential natural resources.	5	4	3	2	1

#### **Green Brand Equity**

Green brand equity refers a collection of brand assets and liabilities regarding environmental issues and green commitments associated with a brand, its name, and a symbol that enhances or diminishes the value provided by a good or service (Chen, 2009).

No.	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	Choosing this brand of electric vehicle over others is desirable due to its eco-friendly promises, even if the items are the same.	5	4	3	2	1
2.	Even though other electric vehicles provide the same environmental benefits, I would still prefer this brand of electric vehicle.	5	4	3	2	1

3.	If another electric vehicle's environmental quality is as good as this brand of electric vehicle, I would purchase it.	5	4	3	2	1
4.	If this electric vehicle's environmental concerns are similar to those of another, it may be preferable to purchase this electric vehicle.	5	4	3	2	1

#### **Green Purchase Intention**

Green purchase intention is the desire of consumers to buy ecologically friendly products and steer clear of products that are damaging the environment (Moslehpour et al., 2022).

No.	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	I will buy an electric vehicle in the future.	5	4	3	2	1
2.	I plan to switch to an electric vehicle.	5	4	3	2	1
3.	I am interested in an electric vehicle for personal use.	5	4	3	2	1
4.	I plan to purchase an electric vehicle for personal use.	5	4	3	2	1
5.	I intend to purchase an electric vehicle that do not harm the environment.	5	4	3	2	1

#### **Appendix B Ethical Clearance Approval Letter**



### UNIVERSITI TUNKU ABDUL RAHMAN DU012(A)

Wholly owned by UTAR Education Foundation Co. No. 578227-M

Re: U/SERC/78-352/2024

9 September 2024

Dr Fitriya Binti Abdul Rahim Head, Department of International Business Faculty of Accountancy and Management Universiti Tunku Abdul Rahman Jalan Sungai Long Bandar Sungai Long 43000 Kajang, Selangor

Dear Dr Fitriya,

#### Ethical Approval For Research Project/Protocol

We refer to your application for ethical approval for your students' research project from Bachelor of International Business (Honours) programme enrolled in course UKMZ3016. We are pleased to inform you that the application has been approved under Expedited Review.

The details of the research projects are as follows:

No.	Research Title	Student's Name	Supervisor's Name	Approval Validity
1.	Strategic Approaches to Enhance Consumer Engagement and Traction Through Livestreaming Content: A Comparative Analysis of Effective Tactics and Best Practices	Adeline Kong Qing Qing	Pn Ezatul Emilia Binti Muhammad Arif	
2.	Factors Influencing Customers Acceptance of Malaysian Traditional Bank's Digital Channels	Chan Huey Teng	Dr Tee Peck Ling	
3.	Relationship Marketing Affecting the Customer Experience in Using AI-Chatbot	Chan Pei Yee	Dr Yeong Wai Mun	
4.	Factors that Influence Employee Performance in the Workplace	Chen Kar Him	Dr Komathi a/p Munusamy	
5.	Social Media Advertising Format that Affect Consumer Behaviour in Malaysia	Cheong Yi Qian	Dr Fok Kuk Fai	
6.	Consumer Intentions to Switch Accommodations from Traditional Hotels to Airbnb	Chia Rong Wei	Dr Law Kian Aun	
7.	Engulfed by Recommendation Systems: Walking Away Empty-handed Becomes a Challenge	Chin Kai Ning	Pn Ezatul Emilia Binti Muhammad Arif	9 September 2024 – 8 September 2025
8.	The Interrelations Between Artificial Intelligence (Al) Usage and Academic Performance	Chin Wie Jane	Dr Low Mei Peng	
9.	Factor Affecting University Students' Behavioural Intention to Use ChatGPT for Academic Purpose	Chock Yee Fai	Pn Farida Bhanu Binti Mohamed Yousoof	
10.	The Impact of ESG Initiatives on Green Product and Consumer Purchase Intentions	Choi Yoon Qi	Dr Foo Meow Yee	
11.	Factors Influencing Gender Entrepreneurial Intention Among Malaysian Undergraduate Students	Chong Chean You	Dr Kalaivani a/p Jayaraman	
12.	The Influence of Technological Infrastructure on the Success of Digital Reading Platforms Globally Among Students	Chong Li Xian	Dr Komathi a/p Munusamy	

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No.	Research Title	Student's Name	Supervisor's Name	Approval Validity
13.	The Impact of Social Sustainability Awareness on Consumer Buying Behavior	Fang Yu Mei	Dr Komathi a/p Munusamy	
14.	The Effect of Social Media Influencer Marketing on the Purchase Intention of Young Consumers in the Skincare Product Industry	Foh Zhi Hui	Ms Goh Poh Jin	
15.	University Student's Intention to Adopt Mobile Payments in Malaysia	Foo Yong Yi	Pn Farida Bhanu Binti Mohamed Yousoof	
16.	Modernisation and Transformation in SMEs: A Case Study Exploring Owner Perspectives on Process Transformation and Technological Adaptation	Grace Lim Wei Qi	Mr Lee Yoon Heng	
17.	Understanding the Influence of Greenwashing on Green Brand Equity and Green Purchase Intention Among Electric Vehicle Consumers in Klang Valley	Heng Xian Wei	Dr Tan Pei Meng	
18.	Adoption of Digital Marketing on SME Service Sector in Klang Valley	Jordan Wue Bin Hassan Wue	Ms Puvaneswari a/p Veloo	
19.	Exploring Determinants of Malaysian Purchase Intention for Electric Vehicles	Joyce Yap Jie Ni	Dr Malathi Nair a/p G Narayana Nair	
20.	Sustainable Shopper: Linking ESG with the Shopping Carts	Julia Look Hui Sian	Dr Abdullah Sallehhuddin Bin Abdullah Salim	
21.	Investigating Influential Factors on Female Consumers' Purchase Behavior or Organic Perfumes in Malaysia	Kang Karen	Dr Ooi Bee Chen	
22.	Factors Influencing Consumer Purchase Intention Towards Green Household Products	Kok ZiLi	Dr Ooi Bee Chen	
23.	Winning in Cross-border E-commerce: Factors That Influence Strategic Platform-based Product Selection Among Sellers	Lai Kah Shen	Pn Ezatul Emilia Binti Muhammad Arif	
24.	Employee Retention's Impact Factors Within the Retail Industry	Lee Yee Hong	Dr Foo Meow Yee	9 September 2024 – 8 September 2025
25.	Factors Influencing the Employee Turnover Rate Among Fresh Graduate Employees	Leong Weng Kent	Dr Kalaivani a/p Jayaraman	
26.	The Factors Influencing the Purchase Intention of Electric Vehicles Among Malaysian Young Adults	Lew Hui Ching	Dr Foo Meow Yee	
27.	Exploring Factors Influencing Customer Loyalty in Malaysia's Traditional Coffee Shop (Kopitiam)	Lew Zhi Qing	Dr Malathi Nair a/p G Narayana Nair	
28.	Green Purchase Intention Towards Reusable Shopping Bag in Malaysia	Lim Khang Xian	Ms Tai Lit Cheng	
29.	What Type of E-commerce Advertising Method Impact Customer Purchase	Lim Qi Yi	Pn Ezatul Emilia Binti Muhammad Arif	
30.	Unlocking Cross-Border Growth: Exploring Digital Free Trade Zones' Impact on International Trade	Lim Ying Ze	Pn Ezatul Emilia Binti Muhammad Arif	
1.	Consumer Behavior Trends and Preferences in the Malaysia Car Spare Parts Market: A Case Study of Perodua Bezza	Loh Eng Kang	Dr Fok Kuk Fai	
32.	Impact of Sustainable Packaging on Consumer Buying Behaviour in Malaysia	Loh Yan Min	Dr Fok Kuk Fai	
33.	Explicating the Influence of Artificial Intelligence (AI) Literacy on Employee Performance	Loke Li Ying	Dr Low Mei Peng	
34.	Leveraging Artificial Intelligence (AI) Competencies for Organisational Performance	Loke Xin Yu	Dr Low Mei Peng	
35.	The Influence of Culture on Consumer's Intention to Purchase Personalized Products	Loo Ci Ting	Dr Choo Siew Ming	
36.	Exploring The Financial Benefits and Risks of Allocating Additional Income Towards Investment Opportunities	Loo Su Yu	Dr Choo Siew Ming	
37.	Factors Influencing Consumer's Purchase Behaviour Towards Organic Food Among Malaysian University Students in Klang Valley	Low Chan Guan	Dr Ooi Bee Chen	
38.	Adoption AI in Logistics Industry: Improved Efficiency and Fault Tolerance	Low Sam Yee	Mr Khairul Anuar Bin Rusli	

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No.	Research Title	Student's Name	Supervisor's Name	Approval Validity
39.	Impact of Digital Marketing Strategy on Purchase Intention	Lum Jia Mei	Dr Komathi a/p Munusamy	
40.	Unveiling the Elements of Employee Motivation for Thriving Workplaces in Malaysia	Michelle Tan Hui Shan	Dr Kalaivani a/p Javaraman	
41.	Women's Entrepreneurship Success in the Technological Industry	Ooi Xin Yi	Dr Law Kian Aun	
42.	Social Media Strategies for Business Success Maximizing Impact through Navigating Channels and Engaging Audiences	Poon She Kei	Pn Ezatul Emilia Binti Muhammad Arif	
43.	Measuring the Impact of Organizational Factors on Turnover Intention of Fast-Food Industry Employees in Malaysia	Rachel Ong Pei Lyn	Ms Puvaneswari a/p Veloo	
44.	Impact of Transformational and Authentic Leadership on Innovation in Higher Education in Malaysia: The Contingent Role of Trust in Leader	Robin Wong Woon Ping	Ms Puvaneswari a/p Veloo	
45.	Social Media Influencers on Consumer Purchase Intention: The Sportswear Products	Sam Yu Xiang	Dr Sia Bee Chuan	
46.	The Influence of Customer Relationship Management on Customer Loyalty in Insurance Sector	Seah Chee Keong	Dr Komathi a/p Munusamy	
47.	Impact of Social Media Influencers (SMIs) on Purchase Intention of Young Adults in Malaysia	Seow Gin See	Dr Foo Meow Yee	
48.	Understanding University Student's Behavioral Intention in using 'Smart Technology'	Sin Chee Leong	Ms Goh Poh Jin	
49.	The Challenge of Consumer Adoption of Battery Electric Vehicle (BEV) in Malaysia	Siow Huang Ming	Dr Sia Bee Chuan	
50.	Customer Motivation in Choosing Preferred Courier Service	Syamini Syazwani Devi A/P Muraleidaran	Dr Komathi a/p Munusamy	
51.	Digital Platform: Do Data Privacy Concerns and Transparency Affect User's Trust and Loyalty?	Tai Buo Ting	Pn Ezatul Emilia Binti Muhammad Arif	
52.	A Study of the Impact of Flexible Work Arrangement on Employees' Turnover Intention Among Generation Z in Klang Valley	Teh Jia Chuen	Dr Lee Siew Peng	9 September 2024 – 8 September 2025
53.	The Role of E-training, E-compensation and E- recruitment in Enhancing Employee Productivity in International Companies in Malaysia	Teo Wen Ping	Dr Omar Hamdan Mohammad Alkharabsheh	
54.	Factors Influencing the Sustainable Tourism Intentions Among Generation Z in Malaysia	Tey Xin Tong	Dr Tiong Kui Ming	
55.	Motivation Factors Impact the Employee Performance in the Retail Industry in Malaysia	Thiang Zhen Wu	Dr Law Kian Aun	
56.	Factors Motivating Malaysian Consumers' Intention Using QR Code Payment when Purchasing Movie Tickets	Wang Kean Seng	Pn Faridah Hanum Binti Amran	
57.	Entrepreneurial Orientation Relationship with Firm Performance Among F&B Industry: Perspective of Malaysian SME	Wong Chean Huai	Mr Mahendra Kumar a/l Chelliah	
58.	Resilience of Global Challenges: A Study of Manufacturing Resilience in Malaysian Manufacturing Industry	Wong Jin Mun	Dr Law Kian Aun	
59.	Impact of Customer Service Automation on the Performance of Customer Relationship Management in the Retail Sector	Yap Pui Man	Dr Law Kian Aun	
60.	The Influence of Social Media Marketing on Purchase Intention of Sportswear Among Malaysian Youth	Yap Seng Fui	Ms Cheah Lee Fong	
61.	Impact of Social Media Marketing on Consumer Purchase Intention in Food and Beverage Industry in Malaysia	Yee Kar Hung	Dr Sia Bee Chuan	
62.	Exploring the Relationship Between Organizational Culture and Customer Retention in E-commerce: A Study of Online Shoppers	Yeoh Chin Hui	Dr Choo Siew Ming	
63.	Factors Affecting Patient Satisfaction on Service Quality: An Investigation of Government Hospital in Klang Valley	Yoong Pooi Lim	Dr Tey Sheik Kyin	

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No.	Research Title	Student's Name	Supervisor's Name	Approval Validity
64.	The Connection Between Gig-Economy Employees and Personal Well-Being	Yu Kay Ciek	Dr Law Kian Aun	9 September 2024 –
65.	Role of Brand Communities in Building Brand	Yuvarani a/p	Dr Komathi a/p	8 September 2025
	Loyalty	Suresh	Munusamy	

The conduct of this research is subject to the following:

- The participants' informed consent be obtained prior to the commencement of the research;
- (2) Confidentiality of participants' personal data must be maintained; and
- (3) Compliance with procedures set out in related policies of UTAR such as the UTAR Research Ethics and Code of Conduct, Code of Practice for Research Involving Humans and other related policies/guidelines.
- (4) Written consent be obtained from the institution(s)/company(ies) in which the physical or/and online survey will be carried out, prior to the commencement of the research.

Should the students collect personal data of participants in their studies, please have the participants sign the attached Personal Data Protection Statement for records.

Thank you.

Yours sincerely,

Professor Ts Dr Faidz bin Abd Rahman

Chairman

UTAR Scientific and Ethical Review Committee

c.c Dean, Faculty of Accountancy and Management
 Director, Institute of Postgraduate Studies and Research



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