FACTORS AFFECTING CONSUMERS' INTENTION TO PURCHASE AN ELECTRIC VEHICLE IN KLANG VALLEY

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DECLARATION

I hereby declare that:

(1) This Research Project is the end result of my own work and that due acknowledgement has been given in the references to all sources of information be they printed, electronic, or personal.

(2) No portion of this research project has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.

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DEDICATION

This dissertation is dedicated to: My supervisor,

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For guidance throughout the completion of this research study.

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For giving the opportunity to conduct this research project.

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For showing their unlimited support, help, encouragement, and motivation throughout the completion of this research project.

TABLE OF CONTENTS

LIST OF TABLES

Page

LIST OF FIGURES

Page

LIST OF ABBREVIATIONS

NOAA	National Oceanic and Atmospheric Administration
HEV(s)	Hybrid Electric Vehicle(s)
ICEV(s)	Internal Combustion Engine Vehicle(s)
PHEV(s)	Plug-in Hybrid Electric Vehicle(s)
PEV(s)	Pure Electric Vehicle(s)
NAP 2020	National Automotive Policy 2020
MARii	Malaysia Automotive Robotics and IoT Institute
MITI	Ministry of Investment, Trade and Industry Malaysia
CPO	Charge Point Operator
AFV(s)	Alternatively Fueled Vehicle(s)
TCO	Total Cost of Ownership
DC	Direct Current
AC	Alternating Current
kW	kilowatt
kWh	kilowatt-hours
IV	Independent Variable
DV	Dependent Variable
SPSS	Statistical Package for the Social Science
QR	Quick-response
URL	Uniform Resource Locator
PUR	Purchase Intention
FIN	Financial Factors

FAC	Facilitating Conditions
PER	Performance Factors
INC	Income Level
ENV	Environmental Concerns
VIF	Variance Inflation Factor
SPM	Sijil Pelajaran Malaysia
RM	Ringgit Malaysia
N	Number
df	Degree of Freedom
ANOVA	Analysis of Variance
F	F-Statistics
SSB	Sum of Squares Between Groups
SSW	Sum of Squares Within Groups
SST	Total Variation
MSB	Mean Square Between Groups
MSW	Mean Square Within Groups
t	t-Statistics
WTP	Willingness To Pay
TPB	Theory of Planned Behaviour
TAM	Technology Acceptance Model
C-TAM-TPB	Combined Theory of TAM & TPB

ABSTRACT

The purpose of this research is to identify the factors affecting consumers' purchase intention of electric vehicles in Klang Valley, Malaysia. The researcher conducted the study based on a quantitative method and adapted convenience sampling method for data collection. The data were collected from 150 respondents living in Klang Valley who age 18 years old and above. The study adapted numerous analysis such as Correlation Analysis, Reliability Analysis and Multiple Linear Regression Analysis. The reliability of the research model was identified to be consistent and reliable and the correlation analysis revealed that only one out of five socio-demographics, income level and all independent variables correlate to the purchase intention of electric vehicles. The Multiple Linear Regression Analysis revealed that out of five predictors, only facilitating condition does not have a significant relationship with purchase intention. Financial factors, performance factors, income level, and environmental concerns is significantly affecting the purchase intention of electric vehicles.

CHAPTER 1

RESEARCH OVERVIEW

1.0 Introduction

The researcher begins this chapter with a concise introduction to the research topic. Firstly, with the description of the research background, the researcher will address the issues, which included global warming, depletion of fuel, concerns to save the environment, etc., that led to the invention and adoption of electric vehicles. Then, with the problem, it will be briefly discussed that the rate of electric vehicle adoption rate in Malaysia is significantly slower. The research questions and research objectives are to be laid out next to determine the core subject of the research and the fundamental purpose of this study. Lastly, through an explanation of the significance of this study, the researcher hopes to provide insightful information to relevant parties on the factors affecting consumers' purchase intention of electric vehicles in Malaysia.

1.1 Research Background

Global warming or environmental degradation has always been one of the highlighted matters in recent years, many causes have led to the increased global temperature. According to the 2020 Annual Climate Report by the National Oceanic and Atmospheric Administration (NOAA) (2023), the combined land and ocean temperatures have been increasing at an average rate of 0.18°C per decade since 1981 (Nadeau, et al., 2022). While various issues have been discussed to address the root causes of global warming, much research has widely regarded the constant emission of polluting substances to the atmosphere from the combustion of fuels within transportation sectors to be the major factor (Ju, Ju, Gonzalez, Giannakis, &

Wang, 2019). This has been further amplified when the increased population on a global scale has increased the demand for transportation, especially vehicles. Hence, tons of investments have been put into place to find an alternate solution that could resolve the climate crisis while accommodating the demand for cars.

Besides, human's heavy reliance on fossil fuels has also led to a foreseeable situation where such non-renewable energy will be depleted (Sabri, Danapalasingam, & Rahmat, 2016). According to Martins, Felgueiras, Smitkova, and Caetano (2019), it has been estimated in the research that approximately 14% of oil, 18% of gas, and 72% of coal proven reserves will be left in Europe by the year 2050. As such, various automotive makers have started to embark on the journey to produce vehicles adopting alternate energy that is not just environmentally friendly, but also economically feasible to power the automobile.

In the late 19th century, with the success of the Toyota Prius, Hybrid Electric Vehicles (HEVs) gained widespread attention around the world for being a substitute for the conventional Internal Combustion Engine Vehicles (ICEVs) for their capability to emit less harmful substances to the environment by using the hybrid battery to help power the vehicles. The improved fuel efficiency and extended demand in the market have spurred the other automakers to establish their own HEVs model line-up, which then introduces the Plug-in Hybrid Electric Vehicles (PHEVs). Similar to HEVs, PHEVs also use battery cells to act as an alternative power source, but the vehicles are required to be charged before usage.

Despite HEVs and PHEVs having contributed to the effort of lesser carbon emissions, the vehicles, however, do not resolve the abovementioned issues completely (Li, Khajepour, & Song, 2019). It was determined later that HEVs have higher carbon emissions than the ICEVs from the frequent re-start and the extended warm-up time (Wang, et al., 2020). Moreover, the hybrid batteries designed merely act as a support system to help power the vehicles to a limited range of mileage. A typical PHEV could run anywhere between 10 and 40 miles (1 mile = 1.6 kilometers), whereas an HEV could only run less than 2 to 3 miles (Aptiv, 2021; Midtronics, 2021). Once the hybrid battery has run out of charges, an HEV or a

PHEV will have to depend on the fuel again before it is recharged; and soon, the gasoline will be drained eventually.

As soon as carmakers realized that HEVs or PHEVs might not be able to replace ICEVs, they then started to ponder upon the concept of Pure Electric Vehicles (PEVs) commonly abbreviated as Electric Vehicles (EVs). The first EV that was mass-produced was introduced to the world by General Motors in the year 1996 (Auto Express team, 2020). Since then, many automobile manufacturers have had their funds allocated to the development of their EVs. One of the pioneers that had great success in the EVs segment of the automotive sector was Tesla when its flagship car, the Model S was released in 2012 (Wu, 2023) its revenue generated impacted the whole automobile sector, causing many other car producers to follow Tesla's footsteps, venturing into the development of EVs.

While the success of Tesla might be influential, other potential factors have catalyzed the progress of EV development. For instance, the Chinese government's policy measures and financial incentives have proven to positively impact the production and sales of EVs in its cities, as demonstrated in the studies of Qian, Grisolia, and Soopramanien (2019) and Wu, Ng, Yu, Huang, Meng, and Dong, (2021). Similar studies in other regions like Europe also shown similar findings, such as Vilchez, Smyth, Kelleher, Lu, Rohr, Harrison, and Thiel (2019) where authors concluded government incentives are important for respondents to consider the purchase of an EV. EVs will inevitably replace the conventional ICEVs soon, as aligned with the approval of legislation from European Union member states to ban the sales of new petrol and diesel vehicles by 2035 (European Parliament, 2023).

Similar to many countries, Malaysia is also adopting EVs. It is delighted to know that the government has taken approaches such as the introduction of National Automotive Policy 2020 (NAP 2020) (Ministry of Investment, Trade and Industry, n.d.) from the collaboration between Malaysia Automotive Robotics and IoT Institute (MARii) and Ministry of Investment, Trade and Industry Malaysia (MITI) and many more for the promotion of more environment-friendly vehicles. Such initiatives would likely encourage consumers to consider purchasing an EV (Asadi, et al., 2022; Mustapa, Ayodele, Ishak, & Ayodele, 2020). However, in the recent

study of Veza, Abas, Djamari, Tamaldin, Endrasari, Budiman, Idris, Opia, Juangsa, and Aziz (2022), the authors pointed out that with the statistics of registered EVs (approximately 1,500 units) in the year 2021, the adoption rate in Malaysia is noticeably low. Despite the year 2022, there are more than 10,000 EVs registered (Chan, 2022), the number only contributes to less than 2% out of the 720,658 units of vehicles registered in the same year (Malaysia Automotive Association, 2023) has indicated that EVs are considerably uncommon on the road in Malaysia.

1.2 Research Problem

Although past research has suggested that the intention of consumers to adopt EVs is influenced by various factors, e.g., the financial factor, infrastructure availability, performance, and so on, the settings of the research and consumers' behaviour also play important roles in affecting the adoption (Chanaron & Teske, 2007; Egbue & Long, 2012; Vilchez, et al., 2019). Therefore, the study of the factors affecting consumers' intention to purchase EVs in Malaysia could provide insight into the adoption rate of EVs in the country.

In Malaysia, the adoption of electric cars (EVs) is a complex subject driven by several variables. The motivations for the nation's adoption of EVs have been shed light on by a recent study conducted by Ramachandaran et al. (2023). Using a quantitative research design and the Statistical Package for the Social Sciences (SPSS) for data analysis, the study was informed by the Theory of Planned Behavior (TPB). It was discovered that EV prices and environmental concerns had a major impact on customer adoption, with environmental factors having the biggest influence and automotive prices following closely behind (Ramachandran et al.,2023).

Perceived utility and simplicity of use both positively affect consumers' intentions to buy electric vehicles (EVs), according to a different study by Zhu (2023) that developed a research framework based on the Technology Acceptance Model (TAM). The study also showed how customer views regarding EVs moderate the

association between perceived utility and purchase intention, as well as the relationship between perceived ease of use and purchase intention.
Moreover, studies show that social media, celebrity endorsements, favourable financing terms, features and designs, cost-effectiveness, and environmental concerns all positively impact consumers' intentions to purchase EVs (Zhu,2023).

A comprehensive awareness campaign about the environmental benefits of EV adoption is also recommended to change customer attitudes in favour of EV adoption (UTHM,2022). These findings highlight the difficulties in EV adoption in Malaysia and the necessity of a multifaceted strategy to overcome perceived and practical consumer adoption barriers.
In conclusion, this research is critical because it offers a thorough grasp of the variables influencing EV adoption in Malaysia. This knowledge is essential for stakeholders to make well-informed decisions that will determine the course of transportation in the nation. It is important to switch to a more ecologically friendly, economically feasible, and sustainable form of transportation rather than merely selling cars. These results can form the basis of a planned strategy to hasten Malaysia's shift to electric vehicles. Therefore, this study of the factors affecting consumers' intention to purchase EVs in Malaysia could provide insight into the adoption rate of EVs in the country.

1.3 Research Questions

While many studies have been conducted to find out the factors affecting the consumer buying an EV, a restricted number of papers have examined the relationship between the financial factors of owning an EV and consumers' purchasing decisions in Malaysia. Furthermore, every country has its distinct infrastructure, e.g., power grid supply, and architecture requirement; and this could cause an impact on the consumer purchase decision. At the same time, the performance of a car might act as a factor as well. On the other hand, it is recommended that the consumers' demographic profile, particularly income level should be taken into consideration also. Moreover, the consumers' environmental

concerns shall not be neglected too since EV resolves around cleaner energy that helps to sustain the environment. All of the abovementioned variables have led to the research questions:

1. Is there any relationship between the financial factors of an EV and consumers' purchase intention?
2. Is the current infrastructure a factor facilitating consumers' purchase intention of an EV?
3. Is the performance factor of an EV influencing consumers' purchase intention?
4. What is the relationship between consumers' income level and their purchase intention of an EV?
5. Is there any relationship between the consumers' environmental concerns and the purchase intention of EVs?

1.4 Research Objectives

This study aimed to fulfil the following objectives:

1. To determine the relationship between the financial factors of an EV and consumers' purchase intention of EVs.
2. To determine the relationship between facilitating conditions and consumers' purchase intention.
3. To determine the influence of the performance factors of an EV on customers' purchase intention.
4. To determine the relationship between the consumers' income level and purchase intention of EVs.
5. To determine the relationship between consumers' environmental concerns and purchase intention of EVs.

1.5 Significance of the Study

This paper aims to provide some insights into the factors affecting the intention to purchase EVs in Malaysia in the current context to the parties mentioned below:

1.5.1 Significance to Industry

Results from the analyses of this research could act as references for the EV carmakers to better apprehend the market needs. Understanding the relationship between the factors and the decision to purchase EVs, could help the manufacturers in terms of product development. Adjusting the selling price without jeopardizing the product performance could improve the sales of EVs, and eventually fasten the rate of adoption in the country.

On top of product development, marketing teams from EV makers could benefit from this study as well. Different approaches could be initiated to promote the EV to the public from different angles, e.g., from a perspective of reliability and/or safety concerns.

1.5.2 Significance to Government

Since Malaysia's government is in the process of promoting a more sustainable environment, perhaps from the reference to this study, relevant departments or ministries could take advantage of it to derive suitable programs to promote EVs to the end-users.

Besides, given the results if they show a promising relationship between selling price and intention of purchase, incentives of tax-relief structures could be proposed as well to the automakers. This could help lower the price of the vehicles, making them more affordable to consumers. A similar approach in terms of incentivizing the EV Charge Point Operator (CPO) that is responsible for installing and maintaining charging stations would enhance the infrastructure, making it readily prepared for more EV adoption.

1.5.3 Significance to Academic

This paper also could bring significance to academic researchers who would like to investigate more consumer behaviours, especially when it is based on EVs and the products are relatively new in the current context. Since it is a long ongoing process for Malaysia to be carbon neutral by 2050 (Pfordten, 2022), perhaps this study would serve as a guide and lead the scholars to explore the aspects that this study does not cover.

1.6 Chapter Summary

In conclusion, this chapter presents a summary of the research looking at what drives a consumer to have the intention to purchase an electric vehicle. The background of the research addressed the evolution of internal combustion engine vehicles to hybrid vehicles, and then the reason behind the adoption of a greener vehicle, which is an electric vehicle, to help reduce the use of natural resources and minimize the pollution to the environment. The problem statement identified the gap in understanding the factors affecting consumers' purchase intention to buy EVs in Malaysia. The research questions and research objectives were formulated to help direct the researcher in the conduct of this study. Lastly, the significance of the study has been brought up to address the potential contribution to different parties such as the industry players, relevant government bodies, and scholars with similar interests in carrying out similar research topics.

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

This chapter presents an overview of the key concepts and framework that form the foundation of this study on the purchase intention of electric vehicles. The researcher discusses the factors from the literature and their impacts on the intention to purchase EVs. There are five independent variables in this study, which are: (1) financial factor, (2) facilitating condition, (3) performance factor, (4) income level, and (5) environmental concern. The last factor to be reviewed is the dependent variable of the research, which is the consumers' purchase intention of EVs. The chapter concludes by summarizing the factors covered with an illustration of the conceptual framework and hypotheses development that allow the researcher to formulate the methodology.

2.1 Financial Factors

As of 2023, there aren't many EV models launched in Malaysia as compared to the available ICEVs in the country. Most of them are European-made, such as the Mercedes Benz, BMW, and Audi, and only a few originated from Asian countries, e.g., GWM, BYD, Hyundai, etc. The European-made EVs are typically priced ranging from RM 300,000 and above while the Asian-made EVs are much cheaper than that, usually ranging from RM 100,000 to RM 200,000. According to Chan A. (2023), the cheapest EV available in Malaysia currently is the Neta V, which was priced at RM 99,800, 100 bookings were collected on the day the model made its debut during the Malaysia Autoshow 2023 (Azmi, 2023). Looking at the number of bookings, perhaps there is no benchmark to judge if the sales are due to its price positioned to be the cheapest in the market. However, based on a past study by

Delang and Cheng (2023), the findings from the research do support the statement that the selling price of an EV is the biggest influence on the sales of vehicles in Hong Kong.

While there are chances that the above findings do not apply to other country settings, a literature review by Zhang, Yu, and Zou (2011) has revealed that in Nanjing, China, at least 60% and more of the respondents had agreed that vehicle price is an important factor for consideration of purchasing EV. A similar outcome was discovered in Ireland from the study of Caufield, Farrell, and McMahon (2010) where vehicle price has been ranked the third most important factor among the other attributes for decision-making when buying an Alternatively Fueled Vehicle (AFV). A study conducted in the United Kingdom also suggested that for retail car purchases by individual users for private usage, the determination to procure green vehicles is predominantly driven by financial factors which include the selling price (Lane & Potter, 2007).

During this literature review, it was noted that although the selling price is primarily considered by consumers before buying an EV, some research also indicated that the total costs of ownership (TCO) are also part of the financial factors. A vehicle is not an item that every individual can dispose of or replace easily, its duration of ownership is usually long-term, typically in years. Therefore, when consumers have the intention to own one, a car with a lower total cost of ownership would be favoured. There are various costs incurred in the TCO, e.g., maintenance cost, insurance cost, vehicle tax (known as road tax in Malaysia), depreciation, and many more (Bubeck, Tomaschek, & Fahl, 2016; Palmer, Tate, Wadud, & Nellthorp, 2018)

Since maintenance contributes to the TCO, it is always beneficial to understand the comparison of the cost of maintenance between EVs and ICEVs. According to Lindwall (2022), generally, an EV costs half as much to repair and maintain as fuel-powered vehicles due to the absence of a combustion engine which requires a periodical oil change or replacement of parts. Thananusak, Rakthin, Tavewatanaphan, and Punnakitikashem (2017) pointed out that seeing EVs are still not widely adopted, many people might not be able to experience the differences between an EV and an ICEV, therefore it is completely possible for them to not

know the true cost of ownership, especially in maintenance cost. Another study by Wu, Inderbitzin, and Bening (2015) also suggested that EVs will have better cost efficiency relative to traditional ICEVs. All of the above is influential enough to affect the adoption rate of EVs if the value of the vehicles is well perceived by the consumers (Rezvani, Jansson, & Bodin, 2015).

2.2 Facilitating Conditions

In this section, the facilitating condition refers to the availability of public charging facilities and the availability of home-based chargers.

At present, there are three types of chargers available in Malaysia, namely the Slow Charger, the Fast Charger, and the Direct Current (DC) Fast Charger, all operating at different power outputs and capable of charging the EV to full in different durations (Wong, 2022). Despite it being reported that approximately 1,000 units of charging stations have been set up, the government representative has pointed out that it is still far from enough to spur the continued growth of EVs in the country (Lim, 2023). This statement has given an overview of the lack of confidence of the consumers to adopt EVs, perhaps due to the worrisome of not being able to charge the car in public when needed; and this situation has been addressed as one of the most important issues by Ahmad, Iqbal, Ashraf, Marzband, and Khan (2022).

As for the reasons for worries of being unable to charge the EV when necessary, this is partly due to users habitually underestimating the number of public charging stations available as compared to the number of petrol stations. The ease of accessing the petrol stations to refuel ICEVs and the gap between expected charging infrastructure and actual charging stations available has spurred the insecurity of using an EV, thus leading to reluctance to buy the battery-powered car (Brinkmann & Bhatiasevi, 2023). While there is a limited number of charging stations available, the demand for the usage of the facility has lengthened the time users spend in the queue at the charging station. According to Saboori, Jadid, and Savaghebi (2021), impatience in users has been one of the major issues that hinders the adoption rate

of EVs. Therefore, investments in adding more public chargers are practical to resolve such issues. Research by Neubauer and Wood (2014) demonstrated that an increase in public charging facilities would significantly affect the adoption of EVs when users' fear of range problems has been solved.

Adding to the time in the queue, the charging time needed is also an aspect that frustrates users. As highlighted earlier in this section where the types of chargers were mentioned, the Slow Charger and the Fast Charger are commonly known as Alternating Current (AC) Charger which typically produce charging output ranging from 1.44kW to 22kW according to Wong (2022), whereas DC Charger could provide a charge rate of up to 360kW. Despite the high charging output of the charger, Wong (2023) has summarized that it still requires a long period to charge an EV from zero percent (0%) to eighty percent (80%) capacity, with AC charger needing seven to fifteen hours and DC charger requiring almost an hour. Hence the charging facilities are still far from offering car owners the same refueling experience as the ICEVs (Liu, Zhu, & Cui, 2019).

Apart from the charging speed and time taken, high EV charging cost is another challenge that causes consumers to hold back their purchase intention when considering switching from ICEVs to EVs. Presently there are numerous CPOs available in Malaysia offering the service of public charging at different rates subject to the charging output, some are billed by the minute used, and some rates go by total output in kilowatt-hours (kWh). According to Wong (2022), users of 180kW chargers are billed RM 3.60 per minute, a period of 30 minutes charge time would lead to a charging cost of RM 108.00. When it is compared to the cost of refuelling ICEVs and the lead time needed, road users often fail to see the economic value EVs bring (Saboori, Jadid, & Savaghebi, 2021), especially when Malaysia residents are blessed with energy subsidies from the government to have lower priced fuel (Li, Shi, & Su, 2017)

Moving on from the public charging infrastructure, home charging also plays a very important role in the adoption of EVs since residential charging accounted for 80% of charging methods among all other methods (Qiu, et al., 2022). Without having a home charger, it is nearly impossible to convince people to purchase EVs according

to Hardman, Jenn, Tal, Axsen, Beard, Daina, Figenbaum, Jakobsson, Jochem, Kinnear, Plotz, Pontes, Refa, Sprei, Turrentine, and Witkamp (2018). On the other hand, there are also studies suggesting that one reason consumers do not intend to purchase an EV for the reason of high cost incurred in the installation of a home charger (Axsen & Kurani, 2013). Thus, charging infrastructure does influence the purchase intention.

2.3 Performance Factors

This section discusses the performance of an EV which emphasizes the range, reliability, and safety of an EV. These three attributes were ranked top three in the concerns of the public on EVs in the research of She, Sun, Ma, and Xie (2017), and the authors addressed that performance barriers have significantly affected the acceptance of EVs. Other past studies such as Le Beau, et al. (2013), Lieven, et al. (2011), and Lim, Mak and Rong (2015) also drew attention to the range being the most concerned performance factor in an EV. In Egbue and Long's (2012) research, the majority of the respondents responded to the survey with battery range being the biggest concern. Contrary to this, Kim, Lee, and Lee (2017) mentioned that range anxiety could be influential to the purchase decision of EVs but it was not an important variable in the early EV market. However, the authors also further concluded that extending the driving range of the vehicle helps expedite the adoption rate.

In terms of reliability, Gandoman, et al. (2019) commented that there are many aspects to be taken into account while assessing an EV’s reliability, such as the battery pack, the electric motors, the configuration software, etc. All of the above are very much concern the purchasers before deciding to take up the EV (Caulfield, Farrell, & McMahon, 2010) because the technological differences to ICEVs remain unclear to them (Jensen, Cherchi, & Mabit, 2013). Thus, the intention to purchase an EV of a buyer would very much be different if the buyer has already developed certain knowledge on the reliability of the vehicle.

In Egbue and Long's (2012) research, it was reported that respondents were looking for safety evidence when they were asked for the primary factor as to purchase an EV. The safety not only involves driving the car around, but it pretty much also covers the safety concerns around charging publicly, where the charging facility is easily accessible and this poses a certain risk of the car being damaged unwantedly (Graham-Rowe, et al., 2012). As such, the safety of an EV, be it related to the driving of the car or the charging of the vehicle, shall be studied to investigate if this factor is related to the intention to purchase an EV, as recommended by Ng, Ariffin, Goh, and Wahid (2017).

Other than the limited range, car reliability and safety of usage, comfort, quietness and ease of driving were also some of the factors among other car features that influence consumers' purchase decisions. According to Ozaki and Sevatsyanova (2011), such 'sensual' aspects could be seen as value-added contributing to the intention of purchasing non-conventional vehicles. Since EVs are powered by electric motor(s) and not internal combustion engines, the sound generated from the mechanical movement of an engine could be avoided, this has allowed the EVs to be significantly quieter than their ICE equivalents (Pod Point, 2024). Similar research conducted in China by Zhang, et al. (2013) has further reinforced the finding that riding comfort is impacting the acceptance of EVs. Apart from that, Sang and Bekhet's (2015), and Chu and Pakir's (2022) research which primarily focuses on the Malaysia setting have supporting evidence as well.

2.4 Socio-demographics

Past research has addressed that the purchase intention of EVs varies with consumers' socio-demographics (Pothitou, Hanna, & Chalvatzis, 2016). A normal conventional ICEV is presumed to be only affordable to those who have the financial capability, not every consumer could afford to purchase one (Turrentine & Kurani, 2007), let alone buy an EV which is far more expensive than ICEV in the current context. According to Jansson et al. (2017) and He et al. (2018), the

tendency of high-income groups to purchase an EV is significantly higher than those of low-income groups.

Apart from income level, other demographics such as education level were also found to be playing a role in adopting EVs when Brownstone et al. (2000) showed that college-educated respondents were more likely to adopt alternative fuel vehicles. In terms of gender, the female was reported to be willing to pay an additional premium for green vehicles than males (Daziano & Bolduc, 2013). Similarly, other segmentation of demographics such as age is also strongly correlated to the preference for adopting new energy vehicles (Potoglou & Kanarouglou, 2007). However, due to the concentrated focus group of this study to consider the influence of income level on the purchase intention of EVs, other demographic factors will not be considered in the evaluation.

2.5 Environment Concerns

Environmental concerns refer to the awareness of people to the problems regarding the natural world, including ecosystems, biodiversity, and the climate, and their effort or willingness to contribute to help solve the problems (Sang & Bekhet, 2015). According to Zimmer, et al. (1994), the dimensions for the said term explicitly involve sensitivity to climate-change issues, energy conservation, and awareness of clean energy. When making purchase decisions, consumers with higher environmental concerns will consider their actions and the impacts they have made on society (Chu & Pakir, 2022). In fact, according to Kleiner (1991), companies that implemented proper, green-oriented marketing programs could acquire a competitive advantage, with consumers willing to purchase green products at a higher price range (Bang, Elllinger, Hadjimarcou, & Traichal, 2000; Hansla, Gamble, Juliusson, & Garling, 2008). Other studies have also confirmed that environmentally safe products have directly influenced the buying behaviours of environmentally-aware customers (Balderjahn, 1988; Martin & Simintiras, 1995; Roberts & Bacon, 1997).

Since climate change and global warming have been strongly linked to the production of automobiles, environmental-friendly has been often taken as an attribute associated whenever the adoption of alternate fuel vehicles is discussed. Before the introduction of EVs, research has shown that there was an increased share of HEVs, denoting that consumers are slowly adopting hybrid cars to help reduce the creation of harmful substances to the environment (Heutel & Muehlegger, 2015). And as EVs were slowly mass-produced, other past studies highlighted the correlation between the intention to purchase EVs and the environment awareness (Axsen & Kurani, 2013; Ng, Ariffin, Goh, & Wahid, 2017; Rezvani, Jansson, & Bodin, 2015), therefore, it was always presumed that people are buying EVs to help save the planet.

In Khazaei and Tareq's (2021) study, environmental concerns have been ranked as contributing the biggest significant positive effect on the adoption of EVs. Apart from great energy efficiency and fuel savings, the authors also discussed that environmental benefits are what car owners would seek as well. Such findings were not surprising as many other studies also have supporting results to prove consumers' positive attitudes toward using eco-friendly vehicles (Egbue & Long, 2012; Gallagher & Muehlegger, 2011).

However, despite the numerous studies that supported the influence of environmental concerns on the purchase intention of EVs, it was also during the literature review of this research that it revealed environmental factors do not correlate to the intention to purchase EVs statistically (Caulfield, Farrell, & McMahon, 2010; Delang & Cheng, 2013; Egbue & Long, 2012). Instead, other predominant factors influencing the adoption, as discussed previously the other aspects reviewed (financial factors, facilitating conditions, performance factors, and income level). Therefore, environmental factors will be taken as one of the independent variables to be researched in this paper along with other variables to find out how it was ranked statistically.

2.6 Purchase Intention

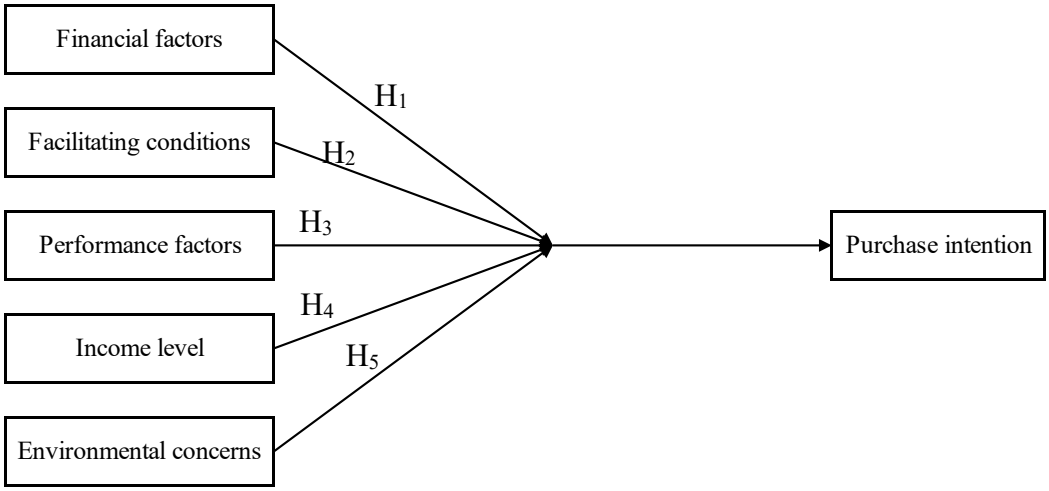
Commerce has been a human activity that people have performed since ages ago. In business, there is a party to sell and there is another party to buy. But what exactly cultivates the intention of people to perform the act of buying? According to Rezvani et al. (2012), a purchase intention was defined as the tendencies of personal action according to brand. Other scholars believe that the term could also hold the definition of the physiological action that shows a person's behaviour or the decision to act according to the product (Wang & Yang, 2008). Also, there is another journal that suggested consumer purchase intentions are very much influenced by particular product features, consumers' perception, the country of origin and the perception of that respective country (Wang, Li, Barnes, & Ahn, 2012). With all the aspects discussed above, this paper will take the consumers' purchase intention as the decision made to buy and hold the products as his or her belongings.

In summary of this literature review, this paper intends to test the effects of five independent variables: (1) financial factors, (2) facilitating conditions, (3) performance factors, (4) income level, and (5) environmental concerns on consumers' intention on purchasing EVs; The conceptual framework and hypotheses are derived and will be discussed in the following sections.

2.7 Conceptual Framework

Based on the literature review conducted for this research, a conceptual framework is developed to outline the relationship between the independent variables and the dependent variable as depicted in Figure 1.

Figure 1: Conceptual Framework



Source: Developed for research.

Referring to Figure 1, a hypothesis was developed for each of the independent variables for testing to be conducted using analysis be mentioned in Chapter 3. List of hypotheses are listed below in Table 1.

Table 1: Hypotheses Development

Hypotheses	Description
H_1	There is significant relationship between financial factors and the purchase intention of EV.
H_2	There is significant relationship between facilitating conditions and the purchase intention of EV.
H_3	There is significant relationship between performance factors and the purchase intention of EV.
H_4	There is significant relationship between income level and the purchase intention of EV.
H_5	There is significant relationship between environmental concerns and the purchase intention of EV.

Source: Developed for research.

2.8 Chapter Summary

As a summary of Chapter 2, the researcher mainly focused on the discussion of the literature review of defined independent variables and dependent variable of this research with supported citations. The researcher also presented a comprehensive framework that helped to conceptualize the relationships between five identified independent variables and dependent variable. The chapter focuses on the key factors that affect the purchase intention of electric vehicles: financial factors, facilitating conditions, performance factors, income level, and environmental concerns. By having the literature review, the researcher could gain supportive insight into the influence of the factors and it helps the researcher to plan a more appropriate methodology to conduct the research. With that, this study will contribute to a better understanding of EV adoption and inform possible strategies and interventions to promote electric vehicles to consumers.

CHAPTER 3

METHODOLOGY

3.0 Introduction

The objective of this chapter is to provide an outline of the methodology used to collect information and data to verify the relationship between the variables. Through a series of procedures that includes construct development, instrumenting the measurement, data collection and data analysis, results are referred to justify the hypotheses developed earlier. Therefore, it is critical to use proper research methodology to ensure the data validity for accurate results and findings. The methodology developed for this study is aimed to establish a research approach that meets academic quality standards. Due to the complexity of consumers' behaviour that affects the purchase intention, careful selection of research design, data collection methods, respondents' selection criteria, and types of data analysis are needed and discussed in this chapter. This research focuses on a quantitative method to investigate the relationships between five identified independent variables and consumers' purchase intention of electric vehicles. By employing a quantitative approach, the research seeks to offer a systematic, data-driven analysis that enables statistically supported conclusions.

3.1 Research Design

The research design was a cross-sectional causal study. Correlation, reliability, hypothesis testing, multiple regression, and convenience sampling techniques were employed in the conduct of this research. According to Sekaran & Bougie (2016), a causal study is a research study that is conducted to establish cause-and-effect relationships among variables, for which this research was to determine the factors affecting the decision-making of consumers to purchase EVs in Klang Valley.

Quantitative measurement was taken for the questionnaire and data was analyzed using analytical software.

3.2 Research Location

This research only focused on Klang Valley, Selangor. The mentioned location is a huge agglomeration consisting of Petaling, Klang, Gombak, Hulu Langat, and the Federal Territory of Kuala Lumpur (Isa, et al., 2022). It sits right at the central part of the West Coast of Peninsular Malaysia and has been regarded as one of the most developed and fastest-growing regions in the country (Rashid, 2017). According to Khoo & Ong (2012), compared to other states in Malaysia, Klang Valley has achieved strong economic growth over the years. A statistical report from the Department of Statistics Malaysia also revealed that the Federal Territory of Kuala Lumpur has the highest population density while Selangor has the highest population composition in the 2022 (Department of Statistics Malaysia, 2022). Hence conducting this research in Klang Valley was aimed to eliminate the risk of data dispersion from economic factors.

Table 2: Number of Population and Annual Population Growth Rate by State, 2021-2022

State	2021		2022	
	No. of population (Million)	Growth rate (%)	No. of population (Million)	Growth rate (%)
Johor	4.0	0.3	4.0	0.1
Kedah	2.2	0.9	2.2	0.9
Kelantan	1.8	1.1	1.8	0.9
Melaka	1.0	0.6	1.0	0.3
N. Sembilan	1.2	0.3	1.2	0.4
Pahang	1.6	0.6	1.6	0.7
Perak	2.5	0.8	2.5	0.2
Perlis	0.3	0.9	0.3	0.8

Pulau Pinang	1.7	-0.0	1.7	-0.1
Sabah	3.4	-0.2	3.4	-0.6
Sarawak	2.5	0.5	2.5	0.2
Selangor	7.0	0.3	7.0	0.3
Terengganu	1.2	1.8	1.2	1.4
W.P. Kuala Lumpur	2.0	-0.9	1.9	-1.0
W.P Labuan	0.1	0.9	0.1	0.9
W.P. Putrajaya	0.1	5.4	0.1	4.3

Source: From Department of Statistics Malaysia (2022).

3.3 Sampling Method

Since the research only intended to determine the relationship between the mentioned factors and intention to purchase EVs in the population, there is no concern regarding gender, ethnicity, age group as well or education level; and the research location has a huge population, so it was chosen to employ a convenience sampling method to collect information from who are conveniently available when visiting vehicle showroom. According to Sekaran & Bougie (2016), it is a nonprobability sampling method which is quick and convenient, which was very ideal and suitable for the study's setting and, at the same time more practical in terms of time consumption and cost-effectiveness for interpreting the large population. The decision to adopt this method was also due to the reference made to similar approaches carried out in the past research (Ng, Ariffin, Goh, & Wahid, 2017; Qian, Grisolia, & Soopramanien, 2019; Wang, Li, Barnes, & Ahn, 2012).

In this research, the determination of sample size will be done based on the sample-to-variable ratio of 20:1 as recommended by Hair, et al. (2018) which the method could be used for multiple regression analysis. With this method, the number of responses needed for five independent variables and one dependent variable was 120. However, to ensure the reliability of the analysis, G*Power software was utilized to determine the minimum sample size needed (Kang, 2021) and the result was 107. Therefore, the successful sample size collected of 150 for this research

has exceeded both the sample-to-variable ratio method and G*Power software requirements.

3.4 Measurement and Instrumentation

The questionnaire administered for this research was designed to attach to the purpose of the study as comprehensively as possible to have high credibility and a strong validity of the instrument (Sekaran & Bougie, 2016). Quantitative measurement was used during the design and there are two sections in the questionnaire.

The first section, section A, is constructed with questions with multiple choices in a nominal scale relating to the demographic profile of respondents, which includes gender, ethnicity, age group, education level, and monthly income level. This part of the question was designed to lay the groundwork for a better understanding of the respondents' relevant information before continuing to the second section as it was believed both sections are interrelated. While the socio-demographics of the respondents were collected, section A does not serve the purpose of filtering for matched respondents since the aim of this study was to interpret a large population.

The second section, section B, was designed and segregated into multiple sets of queries to the variables of this study, which include five independent variables: (1) financial factors, (2) facilitating conditions, (3) performance factors, (4) income level, and (5) environmental concerns. Each of the variables would consist of three to four constructs. The last section, section C, contains questions on the study's dependent variable, the purchase intention. For sections B and C, respondents would have to provide answers to the closed-ended statements in the form of an ordinal scale. A Likert scale (Sullivan & Artino Jr., 2013) is designed to examine to what extent a respondent agrees or disagrees with the statement on a five-point scale (Sekaran & Bougie, 2016), ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Section B of the questionnaire was administered by adapting the existing questionnaire developed from journals discussed in the literature review.

Table 3: Construct Measurements

Variables	Measurement Items	Sources
Independent: Financial Factors	I would consider electric vehicles if: 1. Electric vehicles are reasonably priced. 2. Electric vehicles are a good value for the money. 3. At the current price, electric vehicles provide a good value	(Ali, Wong, Hanifah, Teoh, & Nawaser, 2022)
Independent: Facilitating Conditions	I would consider electric vehicles if: 1. Charging stations for electric vehicles are available in my local surroundings. 2. Charging stations for electric vehicles are within my driving range. 3. I can get help from others when I have difficulties using electric vehicles.	(Chu & Pakir, 2022)
Independent: Performance Factors	I would consider electric vehicles if: 1. Performance of electric vehicles is better than traditional cars. 2. The range of electric vehicles is sufficient for my mobility needs daily. 3. Electric vehicles take me safely to destination 4. Electric vehicles' reliability is guaranteed.	(Lin & Wu, 2018)
Independent: Income Level	I am willing to purchase electric vehicle:	(Liu, et al., 2021)

	1. If my financial conditions permit. 2. For my family if financial conditions permit. 3. If I am confident that my current income level can afford electric vehicle.	
Independent: Environmental Concerns	I would consider electric vehicles because: 1. I love to see a green environment. 2. I want to preserve the environment. 3. Electric vehicles contribute to saving the environment for the next generation. 4. Electric vehicles cause less pollution.	(Razak, Yusof, Mashahadi, Alias, & Othman, 2014)
Dependent: Purchase Intention	1. If I had an electric vehicle available, I would favor driving it rather than a traditional vehicle. 2. If I were to purchase a vehicle within the next 5 years, I would purchase an electric vehicle. 3. I would recommend others to purchase an electric vehicle. 4. There is a high probability that my next vehicle will be an electric vehicle.	(Venkatesh, Thong, & Xu, 2012)

Source: Developed for research.

In summary, the questionnaire developed for this study comprised two sections: section A with questions querying respondents' demographic profiles to be answered in multiple choice whereas Sections B and C with questions relating to independent and dependent variables to be answered on the Likert scale. The whole questionnaire consisted of 24 questions (5 in Section A, 17 in Section B, and 4 in Section C) and analytical software, Statistical Package for the Social Science (SPSS) is used for analyzing the data. Before the launching of the formal questionnaire, a pilot survey based on 30 participants was performed for refinement of the questionnaire, which was similarly done by Wang et al. (2018). The steps include data screening for outliers, modifying the questions and a pre-test using reliability analysis. A pre-test aims to make sure that the questionnaire is reliable and to ensure the validity of the scale (He, Zhan, & Hu, 2018).

3.5 Data Collection

The questionnaire will be constructed and distributed as an online survey to possible respondents by scanning of QR Code and clicking of form URL. Through these methods, respondents will be led to a landing page of Google form where they provide the answers.

Since the sampling method employed was convenience sampling, there is no preference of respondents or preferred groups of people to take part. Thus, the questionnaire could be answered by anyone, anywhere, at any time, whichever way the respondents feel convenient and comfortable. However, there is a fundamental requirement that the respondents must at least know what an EV is, and have the basic knowledge to operate a smartphone, a tablet, or a computer.

3.6 Data Analysis

Various analyses were adopted for the interpretation of the data in this research. Firstly, the descriptive analysis was used to analyze the frequency and contribution

of the respondents' demographic profile as well as the respondents' answers in sections B and C. Results from the analysis allow numerous information to be studied, such as the mean, the median, the standard deviations, and the variances amongst the parameters. Furthermore, a normality test was carried out to examine normality assumptions for regression analysis, also by using skewness value and kurtosis value, the derived values were used to measure the symmetry of the distribution and identify the type of kurtosis in the distribution.

A reliability test was utilized to analyze the consistency of the model. By using Cronbach's alpha value, a benchmark of 0.70 or higher can be taken to measure the constructs' reliability, not only that the overall model be tested with this analysis, but each of the variables can be measured with its individual Cronbach's Alpha value. A value of 0.70 and above denotes that the model and/or the individual variable are reliable and consistent. The table below explains the levels of reliability.

Table 4: Cronbach's Alpha Level of Reliability

Cronbach's Alpha Value	**Level of Reliability**
0.0 – 0.20	Less reliable
> 0.20 – 0.40	Rather reliable
> 0.40 – 0.60	Quite reliable
> 0.60 – 0.80	Reliable
> 0.80 – 1.00	Very reliable

Source: From Adhika (2017).

Apart from reliability analysis, correlation analysis was carried out to calculate the linear relationship relative strength between the constructs, i.e., how strongly the variables correlate to each other by using a denotation of the coefficient. Along with the coefficient, the significance value (sig-value), commonly known as p-value, was referred to decide the significance of the correlation test at significance level $\alpha = 0.05$. A p-value higher than 0.05 will indicate that the result is statistically insignificant whereas a value lower than 0.05 does prove that the test result is statistically significant. Respondents' demographic profiles were tested together with the dependent variable, the purchase intention of EV (PUR); and the independent variables, financial factors (FIN), facilitating conditions (FAC),

performance factors (PER), income level (INC), and environmental concerns (ENV) were tested separately again with PUR. The coefficient of Pearson's Correlation (r) will denote the strength of the relationship and the scale is tabulated below:

Table 5: The Scale of Pearson's Correlation Coefficient

Scale of correlation coefficient	**Value**
$0 < r \leq 0.19$	Very low correlation
$0.2 \leq r \leq 0.39$	Low correlation
$0.4 \leq r \leq 0.59$	Moderate correlation
$0.6 \leq r \leq 0.79$	High correlation
$0.8 \leq r \leq 1.0$	Very high correlation

Source: From Selvanathan et al. (2022).

The last part of the data analysis will determine the linear relationship between the independent variables and the dependent variables. Using multiple regression analysis, the value of the PUR could be predicted using the known values of FIN, FAC, PER, INC, and ENV, whose values are weighted, denoting their relative contribution to the prediction (Moore, Anderson, Das, & Wong, 2006). The linear relationship between the dependent and independent variables could be represented with the equation below:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5$$

Where, Y = Dependent variable purchase intention, PUR

β_0 = Y-intercept

β_1 = Coefficient of X_1

X_1 = Independent variable financial factors, FIN

β_2 = Coefficient of X_2

X_2 = Independent variable facilitating conditions, FAC

β_3 = Coefficient of X_3

X_3 = Independent variable performance factors, PER

β_4 = Coefficient of X_4

X_4 = Independent variable income level, INC

β_5 = Coefficient of X_5

X_5 = Independent variable environmental concerns, ENV

Translating the variables into the regression equation, the equation then became:

$$PUR = \beta_0 + \beta_1(FIN) + \beta_2(FAC) + \beta_3(PER) + \beta_4(INC) + \beta_5(ENV)$$

From the analysis of multiple regression, the significance of each variable's coefficient (β_1, β_2, β_3, β_4, and β_5) was interpreted with the p-value. Similarly, any value higher than the significance level $\alpha = 0.05$ will indicate the variable is statistically insignificant and vice versa. In terms of the relationship between the independent variables, multicollinearity will be detected when the tolerance values are less than 0.2 or Variance Inflation Factor (VIF) values are more than 5 (Shrestha, 2020). The model's overall fit shall be interpreted with the coefficient of determination, R^2 (Ozer, 1985).

3.7 Chapter Summary

This section summarizes that in Chapter 3, the researcher has provided a brief discussion on the research design, the research location, the sampling method, the instrument of research, measurement construct, data collection, and analysis of data. The research methodologies play a significant role in determining the success of the research, a well-planned methodology will ensure the collection, analysis and interpretation of data is carried out smoothly. In this study, the research design will employ quantitative measurement and convenience sampling techniques to collect responses. The conduct of the study primarily focuses on participants from Klang Valley. Analyses of data collected are done using SPSS software.

CHAPTER 4

DATA ANALYSIS

4.0 Introduction

Chapter 4 covers results from data analyses which include pre-test (reliability analysis), descriptive analysis, normality analysis, reliability analysis of actual study, correlation analysis, and multiple regression analysis. Data is collected from 150 respondents from the online questionnaire. This chapter used SPSS software for analysis to test the validity of hypotheses to examine the factors that affect consumers' intention to purchase an electric vehicle in Klang Valley.

4.1 Pre-test – Reliability Analysis

A pre-test was carried out before obtaining the extensive quantities of data from participants to make sure the research could be conducted appropriately and prevent any possible research failures. 30 samples were collected and the data were analyzed using reliability analysis, Table 6 reveals the overall model reliability and Table 7 indicates the reliability of each variable.

Table 6: Reliability Analysis of Overall Research Model (Pre-test)

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.859	0.866	6

Source: Developed for research.

Based on statistics in Table 6, it can be seen that Cronbach's Alpha was 0.859. This showed that the overall model with six variables was indeed very reliable since it exceeded the value of 0.80 and the conduct of the study could be progressed further.

Table 7: Reliability Analysis of Research Model by Variables (Pre-test)

	Scale Mean if Item Deleted	**Scale Variance if Item Deleted**	**Corrected Item-Total Correlation**	**Squared Multiple Correlation**	**Cronbach's Alpha if Item Deleted**
PUR	17.141	15.568	0.774	0.658	**0.812**
FIN	16.986	16.053	0.737	0.593	**0.820**
FAC	17.119	15.855	0.559	0.333	**0.858**
PER	16.816	17.211	0.693	0.541	**0.831**
INC	16.853	15.681	0.744	0.618	**0.817**
ENV	16.791	17.690	0.458	0.236	**0.869**

Source: Developed for research.

Table 7 further breaks down the reliability analysis of the pre-test into all variables with their individual Cronbach's Alpha. All the variables had Cronbach's Alpha of more than 0.80 or higher, indicating that all variables were reliable.

4.2 Descriptive Analysis

Descriptive analysis often is done to enhance the reader's knowledge, comprehension, and application of the research (Hussain, 2012). The data collected from the questionnaire section A consisted of respondents' gender, age group, ethnicity, education level, and income level. The data are coded in SPSS according to Table 8. They were analyzed and presented in the form of tables and charts to draw out the characteristics (Saunders, Lewis, & Thornhill, 2009).

Table 8: Code of Demographics in SPSS

Code	Gender	Age	Ethnicity	Education Level	Income Level
1.00	Male	30 and below	Malay	SPM	Less than 3,000

2.00	Female	31 – 39	Chinese	Diploma	3,001 – 5,000
3.00	-	40 – 49	Indian	Bachelor's Degree	5,001 – 7,000
4.00	-	50 and above	Others	Master's Degree	7,001 – 9,000
5.00	-	-	-	Doctoral Level	More than 9,000
6.00	-	-	-	-	Less than 3,000

Source: Developed for research.

4.2.1 Frequencies of Demographics

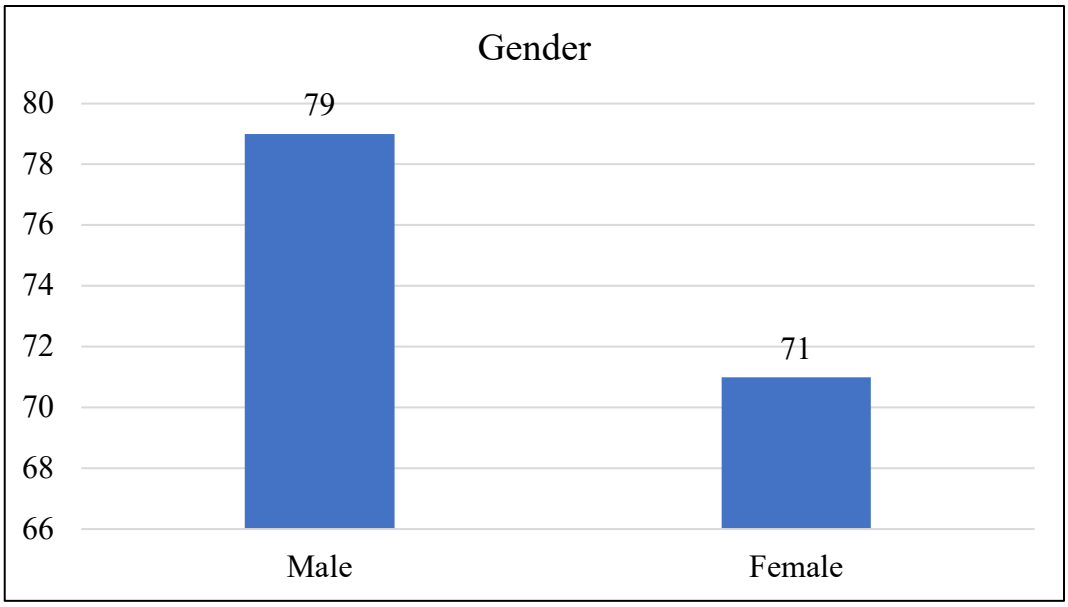
A total of 150 valid respondents were gained from the sampled data, exceeding the originally targeted sample size of 120. For gender, there are females and males. For age group, respondents were grouped by 30 years old and below, 31 to 39 years old, 40 to 49 years old, and 50 and above. In terms of ethnicity, there were four groupings, Malay, Chinese, Indian, and Others. As for education level, respondents were allowed to answer from SPM, Diploma, Bachelor's Degree, Master's Degree, and Doctoral Level. Lastly, 150 respondents were also grouped according to their income level, which included a range of less than RM 3,000, RM 3,001 to RM 5,000, RM 5,001 to RM 7,000, RM 7,001 to RM 9,000, and more than RM 9,000.

Table 9: Gender Frequencies

Gender	**Frequency**	**%**
Male	79	52.7
Female	71	47.3
Total	150	100.00

Source: Developed for analysis.

Figure 2: Gender Frequencies Bar Chart



Source: Developed for research.

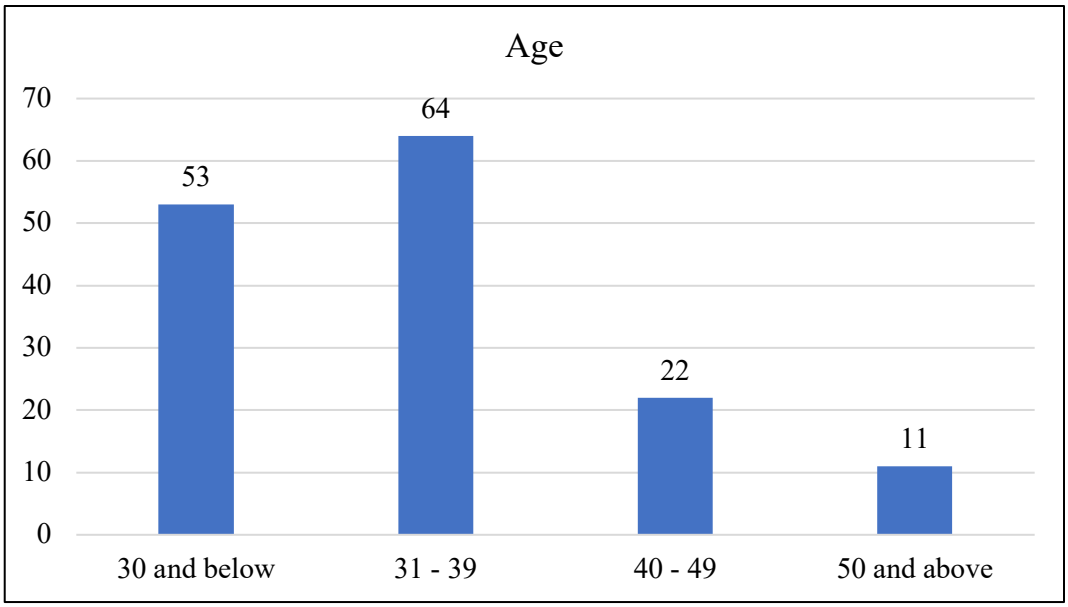
Table 9 and Figure 2 revealed the genders of the respondents to the questionnaire. A total of 79 males (52.7%) and 71 females (47.3%) participated in the study.

Table 10: Age Frequencies

Age	**Frequency**	**%**
30 and below	53	35.3
31 – 39	64	42.7
40 – 49	22	14.7
50 and above	11	7.3
30 and below	53	35.3
Total	150	100.00

Source: Developed for research.

Figure 3: Age Frequencies Bar Chart



Source: Developed for analysis.

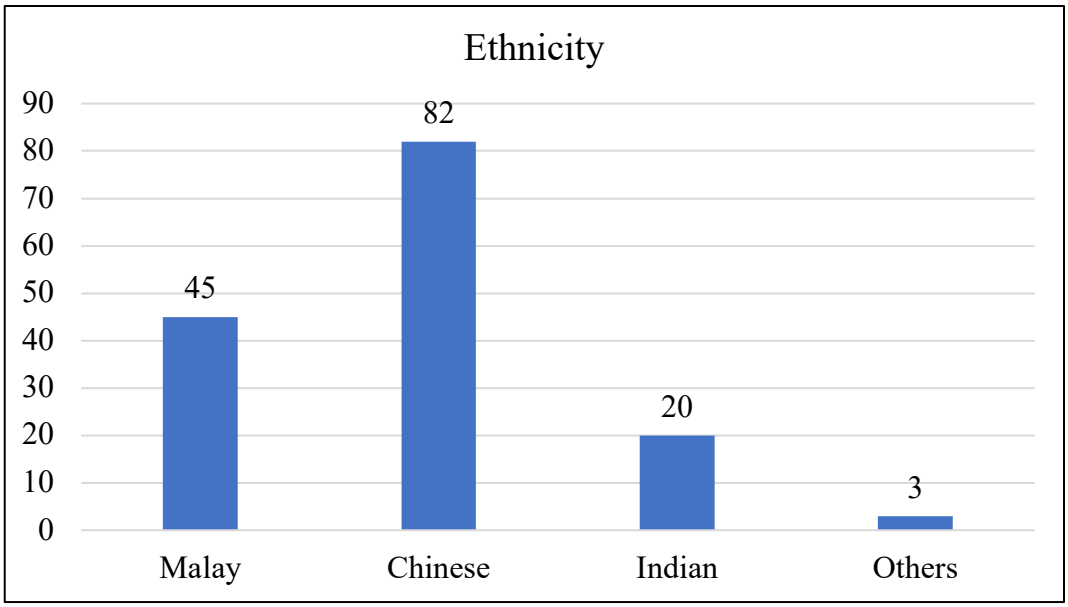
Based on Table 10 and Figure 3, out of the 150 respondents, 53 (35.3%) individuals were 30 years old and below, 64 (42.7%) individuals were from the age group of 31 to 39 years old, 22 (14.7%) individuals aged from 40 to 49 years old, and 11 (7.3%) of the respondents were in the 50 and above age group.

Table 11: Ethnicity Frequencies

Ethnicity	**Frequency**	**%**
Malay	45	30.0
Chinese	82	54.7
Indian	20	13.3
Others	3	2.0
Total	150	100.00

Source: Developed for research.

Figure 4: Ethnicity Frequencies Bar Chart



Source: Developed for research.

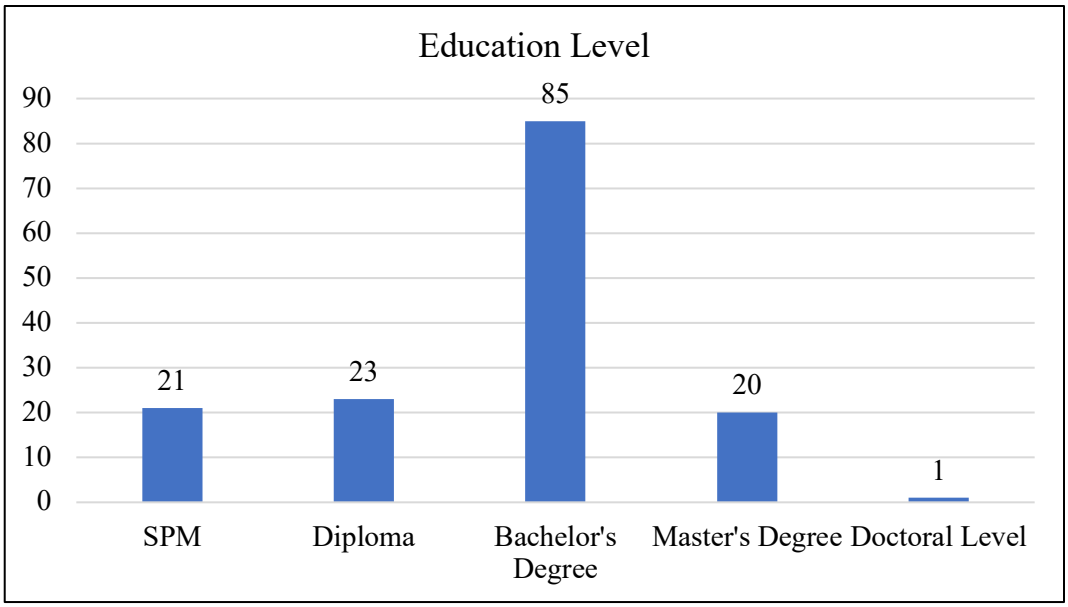
Table 11 and Figure 4 represented the data for ethnicity, 45 (30.0%) of the respondents were Malays, Chinese contributed 54.7% with 82 respondents, 20 (13.3%) individuals were Indians and there were 3 (2.0%) Others.

Table 12: Education Level Frequencies

Education Level	**Frequency**	**%**
SPM	21	14.0
Diploma	23	15.3
Bachelor's Degree	85	56.7
Master's Degree	20	13.3
Doctoral Level	1	0.7
Total	150	100.00

Source: Developed for research

Figure 5: Education Level Frequencies Bar Chart



Source: Developed for research.

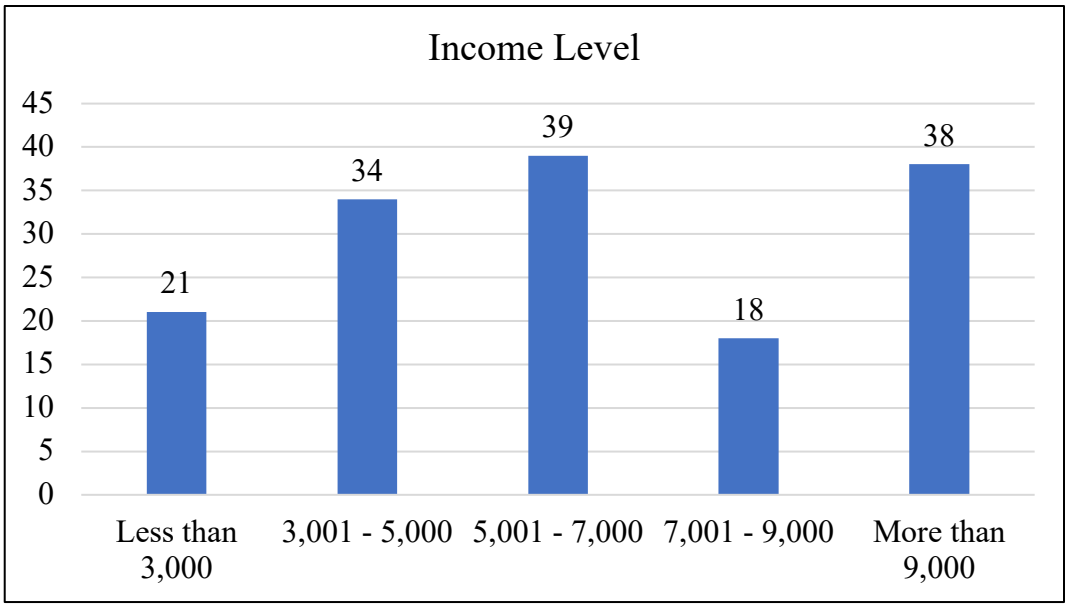
From Table 12 and Figure 5, the data showed that there were 21 (14.0%) respondents with an SPM education level, 23 (15.3%) in Diploma and more than half of the respondents which is 85 (56.7%) individuals had an education Bachelor's Degree. 20 (13.3%) respondents studied Master's degree and only 1 (0.7%) respondent was Doctorate level.

Table 13: Income Level Frequencies

Income Level	**Frequency**	**%**
Less than 3,000	21	14.0
3,001 – 5,000	34	22.7
5,001 – 7,000	39	26..0
7,001 – 9,000	18	12.0
More than 9,000	38	25.3
Less than 3,000	21	14.0
Total	150	100.00

Source: Developed for research.

Figure 6: Income Level Frequencies Bar Chart



Source: Developed for research.

Looking at income level based on Table 13 and Figure 6, 21 (14.0%) respondents earned less than RM 3,000, 34 (22.7%) individuals earned between RM 3,001 and RM 5,000, 39 (26.0%) respondents income ranged from RM 5,001 to RM 7,000 while 18 (12.0%) individuals earn their income in the range of RM 7,001 to RM 9,000. Lastly, 38 (25.3%) respondents have the highest income level which is more than RM 9,000.

4.2.2 Descriptive Analysis of Demographics

This section will discuss about results from descriptive analysis of respondents' demographics, which include the mode, standard deviation, skewness, and kurtosis.

Table 14: Descriptive Analysis of Demographics

	Gender	Age	Ethnicity	Education Level	Income Level
Sample	150	150	150	150	150
Mode	1.00	2.00	2.00	3.00	3.00
Standard deviation	0.501	0.892	0.708	0.892	1.385

Skewness	0.108	0.752	0.531	-0.549	0.043
Kurtosis	-2.015	-0.107	0.278	-0.091	-1.233

Source: Developed for research.

From Table 14 it can be observed that the Mode of Gender is 1.00, which implies that more than half of the respondents were Male. Age had a mode of 2.00, indicating that responses were mainly contributed by respondents aged between 31 to 40 years old. Chinese have been the main respondents to the questionnaire since the mode for ethnicity was 2.00. The education level had a mode of 3.00, indicating that respondents with a Bachelor's degree education level were the most. Income had a mode of 3.00, showing that the monthly income level of between RM 5,001 and RM 7,000 had the highest frequency.

The mean of Gender for 150 respondents was 1.4733 with a standard deviation of 0.5010. The mean age was 1.9400 with a standard deviation of 0.8917. The mean of Ethnicity was 1.8733 with a standard deviation of 0.7076. The mean of Education was 2.7133 with a standard deviation of 0.8925. Finally, the mean of Income was 3.1200 with a standard deviation of 1.3851.

In terms of skewness, it is confident to comment that the distributions of Gender and Income were nearly symmetrical as their skewness values were between -0.5 and 0.5, whereas Age and Ethnicity were slightly positively skewed as their skewness value was 0.752 and 0.531 respectively, which was between 0.5 and 1.0 (Blanca, Arnau, Lopez-Montiel, Bono, & Bendayan, 2013). Education has a slightly negative skewness with a value of -0.549.

Looking at the kurtosis values of every demographic profile, all of the categories had having kurtosis value of less than 3, showing that they were platykurtic or short-tailed distribution, which was flatter than the bell-shaped as portrayed by a normal distribution curve.

4.2.3 Descriptive Analysis of Independent Variables

This section will discuss about results from the descriptive analysis of independent variables, which include the mode, standard deviation, skewness, and kurtosis.

Table 15: Descriptive Analysis of Independent Variables

	FIN	FAC	PER	INC	ENV
Sample	150	150	150	150	150
Mean	3.211	3.115	3.642	3.584	3.913
Median	3.330	3.000	3.750	3.670	4.000
Standard deviation	0.952	1.157	0.867	1.002	0.916
Skewness	-0.282	-0.018	-0.426	-0.498	-0.957
Kurtosis	-0.33	-0.934	0.021	-0.215	1.208

Source: Developed for research.

The mean of FIN for 150 respondents was 3.2111 with a standard deviation of 0.9416. The mean of FAC was 3.1154 with a standard deviation of 1.1573. The mean of PER was 3.6417 with a standard deviation of 0.8672. The mean of INC was 3.5842 with a standard deviation of 1.0019. ENV had a mean of 3.9133 and its standard deviation was 0.9164.

In terms of median, all independent variables have a median ranging from 3.000 to 4.000. FIN was 3.330, FAC was 3.000, PER was 3.750, and INC was 3.670. It was interesting to note that ENV has the highest median among all the independent variables with a value of 4.000. This provided an insight that the majority of the respondents have answered to the constructs in environmental concerns with a Likert scale of 4, which was Agreed.

All of the variables except ENV had skewness values of between -0.5 and 0.5, the data are nearly symmetrical, while ENV were slightly negatively skewed because of its skewness statistics of between -1.0 and -0.5. All the variables were proven to be platykurtic with their kurtosis value of less than 3 (Blanca, Arnau, Lopez-Montiel, Bono, & Bendayan, 2013).

4.2.4 Descriptive Analysis of Dependent Variable

This section will discuss about results from descriptive analysis of respondents' demographics, which include the mode, standard deviation, skewness, and kurtosis.

Table 16: Descriptive Analysis of Dependent Variable

	PUR
Sample	150
Mean	3.407
Median	3.500
Standard deviation	1.001
Skewness	-0.249
Kurtosis	-0.500

Source: Developed for research.

Table 16 describes that a mean PUR of 3.407 with a standard deviation of 1.001 has been computed out of 150 respondents. The median that separates the higher half from the lower half of the data samples was 3.500. The skewness value was -0.249, showing that the distribution of the data was nearly symmetrical and the kurtosis value of -0.500 proved that the PUR was platykurtic as well.

4.3 Pearson Correlation Coefficient Analysis

This section shall discuss the relative strength of the linear relationships between the dependent variable and respondents' demographics, and of the linear relationships between dependent variable and independent variables. The Pearson correlation coefficient was used to denote the strength by using values in the close interval [-1, +1] and the signs of the values ("+" and "-") will interpret the

correlation between variables if it is a positive or negative correlation (Profillidis & Botzoris, 2018).

4.3.1 Correlation between PUR and Demographics

Table 17: Correlation between PUR and Demographics

		Purchase Intention (PUR)
Purchase Intention (PUR)	Pearson Correlation	1.000
	Sig. (2-tailed)	
	N	150
Gender	Pearson Correlation	**0.152**
	Sig. (2-tailed)	0.063^{ns}
	N	150
Age	Pearson Correlation	**0.108**
	Sig. (2-tailed)	0.187^{ns}
	N	150
Ethnicity	Pearson Correlation	**-0.121**
	Sig. (2-tailed)	0.140^{ns}
	N	150
Education Level	Pearson Correlation	**-0.055**
	Sig. (2-tailed)	0.507^{ns}
	N	150
Income Level	Pearson Correlation	**-0.161**
	Sig. (2-tailed)	0.049*
	N	150

Note: ns = not significant at any α level, * Statistically significant at α = 0.10, ** Statistically significant at α = 0.05, *** Statistically significant at α = 0.01

Source: Developed for research.

Table 17 indicates the coefficient of Pearson Correlation that measured the relative strength of the linear relationship (Benesty, Chen, & Huang, 2008) between PUR and the demographics. Only Gender and Age were positively correlated to PUR while the other demographical factors were negatively correlated to the dependent variable. Four out of five demographic profiles involved in this research were determined to be weakly correlated to PUR or there were negligible correlations as their absolute values ranged from 0.055 to 0.152, starting with Education (r =0.055), Age (r = -0.108), Ethnicity (r = -0.121), and lastly Gender (r = 0.152), showing that perhaps no linear relationship observed between the demographic profile and the Purchase Intention. However, by observing the significance values in Table 17, it could be concluded that only Income Level is statistically significant at the significant level of α = 0.05 with a Pearson Correlation coefficient of -0.161.

4.3.2 Correlation between PUR and Independent Variables

Table 18: Correlation between PUR and Independent Variables

		Purchase Intention (PUR)
Purchase Intention (PUR)	Pearson Correlation	1.000
	Sig. (2-tailed)	
	N	150
FIN	Pearson Correlation	**0.532**
	Sig. (2-tailed)	0.000***
	N	150
FAC	Pearson Correlation	**0.434**
	Sig. (2-tailed)	0.000***
	N	150
PER	Pearson Correlation	**0.639**
	Sig. (2-tailed)	0.000***
	N	150
INC	Pearson Correlation	**0.650**

	Sig. (2-tailed)	0.000***
	N	150
ENV	Pearson Correlation	**0.423**
	Sig. (2-tailed)	0.000***
	N	150

Note: ns = not significant at any α level, * Statistically significant at α = 0.10, ** Statistically significant at α = 0.05, *** Statistically significant at α = 0.01

Source: Developed for research.

Table 18 revealed the coefficients of correlation between PUR and FIN, FAC, PER, INC, and ENV. Among all the independent variables, INC had the highest positive correlation with the dependent variable (r = 0.650). PER came next with a coefficient, *r* of 0.639, then it was FIN next with *r* = 0.532. FAC placed after with a coefficient, *r* of 0.434 while the weakest independent variable correlating to PUR was ENV with only *r* = 0.423. All the independent variables were statistically significant with a sig-value less than α = 0.05 and positively correlated to PUR.

4.4 Normality Test

Since the main objective of this research model employed multiple linear regression, a basic assumption has to be made to assume that the residuals are normally distributed (Tsagris & Pandis, 2021). To determine if the samples from this study are of normal distribution, a normality test was carried out, and with a sample size of more than 50, Kolmogorov-Smirnov sig-values were referred to (Mishra, et al., 2019; Razali & Yap, 2011); whereas for sample size lesser than 50, sig-values from Shapiro-Wilk will be referred instead. Three out of five demographics were selected for this normality test, namely the Age, the Ethnicity, and the Education Level.

4.4.1 Normality Test on Age

Table 19: Normality Test on Age

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Age	Statistics	df	Sig.	Statistics	df	Sig.
PUR	30 and below	0.098	53	0.200*	0.963	53	0.100
	31 to 39	0.098	64	0.200*	0.963	64	0.055
	40 to 49	0.165	22	0.124	0.910	22	0.047
	50 and above	0.171	11	0.200*	0.971	11	0.896

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Source: Developed for research.

Table 19 revealed the statistics from the Normality Test of PUR on Age. Since ages 30 and above and ages 31 to 39 have sample sizes of more than 50, Kolmogorov-Smirnov values were referred. The sig-values of the respondents' age group (30 and below = 0.200, 31 to 39 = 0.200) were much higher at the significance level α = 0.05, therefore there wasn't sufficient evidence to support that all the samples from these two age groups were not normally distributed. For the age group of 40 to 49, and 50 and above, samples size exceeding 50 was not detected. The sig-value of age 40 to 49 of 0.047 was lower than the significance level α = 0.05, hence there is enough evidence to conclude that this age group was not normally distributed. Lastly, sig-values of age 50 and above being 0.896, was higher than the significance level α = 0.05, this indicated that the 50 and above age group was normally distributed.

4.4.2 Normality Test on Ethnicity

Table 20: Normality Test on Ethnicity

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Ethnicity	Statistics	df	Sig.	Statistic	df	Sig.
PUR	Malay	0.096	45	0.200*	0.963	45	0.155
	Chinese	0.097	82	0.054	0.967	82	0.035

	Indian	0.122	20	0.200*	0.967	20	0.681
	Others	0.337	3	0.000	0.855	3	0.253

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Source: Developed for research.

Table 20 revealed the statistics from the Normality Test of PUR on Ethnicity. Due to the sample size of less than 50, Malay, Indian and Others used Shapiro-Wilk data to determine its normal distribution while the Chinese used Kolmogorov-Smirnov's. The sig-values of the respondents' ethnicity (Malay = 0.155, Chinese = 0.054, Indian = 0.681, Others = 0.253) were much higher at the significance level α = 0.05, therefore there was not enough evidence to support that all the samples contributed by all the ethnicities were not normally distributed.

4.4.3 Normality Test on Education Level

Table 21: Normality Test on Education Level

Education Level		**Kolmogorov-Smirnov[a]**			**Shapiro-Wilk**		
		Statistics	**df**	**Sig.**	**Statistic**	**df**	**Sig.**
PUR	**SPM**	0.163	21	0.148	0.902	21	0.038
	Diploma	0.133	23	0.200*	0.975	23	0.813
	Bachelor's Degree	0.085	85	0.187	0.975	85	0.103
	Master's Degree	0.144	20	0.200*	0.945	20	0.298

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Note: PUR is constant when Education = Doctoral Level. It has been omitted.

Source: Developed for research.

Referring to Table 21, all of the education levels except Bachelor's Degree had sample sizes of not exceeding 50 (Doctoral Level has been omitted due to only one

sample and the PUR was constant), therefore sig-values from Shapiro-Wilk were used for indication of normal distribution in this test. The sig-value of 0.038 of SPM has shown that it was lower than the significance level α = 0.05, indicating SPM was perhaps, not normally distributed. On the other hand, Diploma (sig-value = 0.813) and Master's Degree (sig-value = 0.298) were statistically insignificant at any α level, therefore there was not enough evidence to conclude that these two education levels were not normally distributed. As for Bachelor's Degree, the sig-value obtained from the Kolmogorov-Smirnov test indicated a value of 0.187. It could be agreed that the Bachelor's Degree distribution was indeed normal.

4.5 Reliability Analysis

Reliability analysis uses Cronbach Alpha's value to verify the consistency of the model of the 150 respondents' data values (Tavakol & Dennick, 2011). Following Table 4 from section 3.6, the range of 0.00 to 0.20 indicated that the model is less reliable; a range of 0.20 to 0.40 suggested the model is rather reliable; the range of 0.40 to 0.60 indicated the model is quite reliable; the range of 0.60 to 0.80 showed that the model is reliable; whereas the range of 0.80 to 1.00 is the best as it indicated the model is very reliable (Adhika, 2017). This section will discuss the reliability of the research model overall and the reliability of the research model by variables separately.

4.5.1 Reliability Analysis of Overall Research Model

Table 22: Reliability Analysis of Overall Research Model

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.828	0.831	6

Source: Developed for research.

Based on statistics in Table 22, it can be seen that Cronbach's Alpha was 0.828. This showed that the overall model with six variables was indeed very reliable since it exceeded the value of 0.80.

4.5.2 Reliability Analysis of Research Model by Variables

Table 23: Reliability Analysis of Research Model by Variables

	Scale Mean if Item Deleted	**Scale Variance if Item Deleted**	**Corrected Item-Total Correlation**	**Squared Multiple Correlation**	**Cronbach's Alpha if Item Deleted**
PUR	17.466	12.565	0.732	0.574	**0.770**
FIN	17.661	13.746	0.592	0.386	**0.801**
FAC	17.757	13.075	0.520	0.300	**0.821**
PER	17.231	13.835	0.647	0.469	**0.792**
INC	17.288	12.764	0.698	0.517	**0.778**
ENV	16.959	14.892	0.429	0.231	**0.832**

Source: Developed for research.

Table 23 further breaks down the reliability test into all variables with their individual Cronbach's Alpha. All the variables had Cronbach's Alpha of at least 0.770 or higher, indicating that all variables were reliable. Among all the variables, ENV has the highest Cronbach's Alpha value of 0.832, FAC came next with 0.821, and then FIN with a value of 0.801. Despite PUR, PER, and INC having a value of less than 0.80, their values were not far from 0.80 with only minimal differences. PER had the fourth-highest Cronbach's Alpha value, with the statistics indicating a value of 0.792. INC was 0.778 and PUR had the lowest Cronbach's Alpha value, which was 0.770.

4.6 Multiple Linear Regression Analysis

Multiple linear regression analysis was employed to examine the relationship between the dependent variable, PUR and the independent variables. The whole analysis included the results of the model summary of the research, the results from the analysis of variance, and the coefficients of variables computed from the multiple linear regression analysis.

4.6.1 Interpretation of R square

Table 24: Interpretation of R Square

Model Summary[b]				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	0.758[a]	0.574	0.559	0.665

a. Predictors: (Constant), ENV, FIN, FAC, PER, INC

b. Dependent Variable: PUR

Source: Developed for research.

Table 24 indicated a R square value of 0.574 and an adjusted R square value of 0.559. This simply means that the explanatory variables or the five independent variables accounted for about 57.4 percent (57.4%) of the variation in the PUR model (Cameron & Windmeijer, 1997); in other words, there were other variables which can contribute to 42.6 percent (42.6%) of dependent variable variance which was not included in the research.

4.6.2 Analysis of Variance (ANOVA)

Table 25: Analysis of Variance (ANOVA)

ANOVA[a]						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	**Regression**	85.682	5	17.136	38.777	0.000[b]

	Residual	63.637	144	0.442		
	Total	149.318	149			

a. Dependent Variable: PUR

b. Predictors: (Constant), ENV, FIN, FAC, PER, INC

Source: Developed for research.

The analysis of variance was carried out to test the following hypotheses:

H_6: There is a significant difference of means among the groups.

Based on the statistics from Table 25, the sum of squares between groups (SSB) was 85.682 with a degree of freedom of 4, the sum of squares within groups (SSW) was 63.637 with a degree of freedom of 144 and the total variation (SST) was 149.318. The mean square between groups (MSB) was 17.136 and the mean square within groups (MSW) was 0.442. Dividing MSB by MSW yielded the result of F-statistic which was 38.777. Results in Table 25 also indicated that the sig-value was 0.000, which is less than $\alpha = 0.05$. Therefore, hypothesis H_6 was supported, the difference of means among the groups is significant and the value indicates the overall significance of the regression model, the independent variables (FIN, FAC, PER, INC, and ENV) significantly explain the variance of the dependent variable, PUR.

4.6.3 Parameter Estimated

Table 26: Parameter Estimated

Coefficients[a]						
Model		**Unstandardized β**	**Coefficients Std. Error**	**Standardized Coefficients β**	**t**	**Sig.**
1	(Constant)	-0.338	0.298		-1.134	0.259
	FIN	0.196	0.072	0.184	2.719	0.007
	FAC	0.055	0.056	0.063	0.979	0.329
	PER	0.367	0.081	0.318	4.547	0.000
	INC	0.292	0.074	0.292	3.921	0.000

	ENV	0.144	0.067	0.132	2.166	0.032

a. Dependent Variable: PUR

Source: Developed for research.

Based on the data from Table 26, the unstandardized coefficients were translated into the multiple regression equation formed earlier in section 3.6 to explain the effect of independent variables on the dependent variables, Purchase Intention:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5$$

Where, Y = Dependent variable Purchase Intention (PUR)

β_0 = Y-intercept

β_1 = Unstandardized coefficient of X_1

X_1 = Independent variable Financial Factor (FIN)

β_2 = Unstandardized coefficient of X_2

X_2 = Independent variable Facilitating Condition (FAC)

β_3 = Unstandardized coefficient of X_3

X_3 = Independent variable Performance Factor (PER)

β_4 = Unstandardized coefficient of X_4

X_4 = Independent variable Income Level (INC)

β_5 = Unstandardized coefficient of X_5

X_5 = Independent variable Environment Concern (ENV)

The equation yielded:

$$Y = -0.338 + 0.196X_1 + 0.055X_2 + 0.367X_3 + 0.292X_4 + 0.144X_5$$

$$[2.719^{**}] \quad [0.979^{ns}] \quad [4.547^{***}] \quad [3.921^{***}] \quad [2.166^{**}]$$

Note: ns = not significant at any α level, * Statistically significant at α = 0.10, ** Statistically significant at α = 0.05, *** Statistically significant at α = 0.01

Judging from the t-statistics and sig-value from Table 26, ENV with a sig-value of 0.032 is statistically significant at the significant level of α = 0.05; FIN, PER, and

INC were statistically significant at the significant level of α = 0.01; whereas FAC was the only variable that was not statistically significant at any α level.

β_1 = 0.196: PUR will increase, on average, by 0.196 for each 1 unit increase in FIN while holding other variables constant.

β_2 = 0.055: PUR will increase, on average, by 0.055 for each 1 unit increase in FAC while holding other variables constant.

β_3 = 0.367: PUR will increase, on average, by 0.367 for each 1 unit increase in PER holding all other variables constant.

β_4 = 0.292: PUR will increase, on average, by 0.292 for each 1 unit increase in INC, holding all other variables constant.

β_5 = 0.144: PUR will increase, on average, by 0.144 for each 1 unit increase in ENV, holding all other variables constant.

With all the parameters estimated, standardized coefficients were translated into the standardized multiple linear regression equation as below:

$$\hat{Y} = 0.184X_1 + 0.063X_2 + 0.318X_3 + 0.292X_4 + 0.132X_5$$

PER has the highest unstandardized coefficient β value (0.367) and standardized coefficient β value (0.318). It was indicated that PER contributes the most to the variation of PUR among the other four independent variables. Subsequently, INC was the second influential independent variable to affect the PUR with an unstandardized coefficient β value of 0.292 and standardized coefficient β value of 0.292. Next was FIN (unstandardized coefficient β value = 0.196, and standardized coefficient β value = 0.184). ENV was placed fourth among all the independent variables in terms of contributions to the variations of PUR, for which it had an unstandardized coefficient β value of 0.144 and standardized coefficient β value of

0.132. Lastly, FAC had the least effect on PUR with the least value in both unstandardized and standardized coefficient β, respectively at 0.055 and 0.063.

4.6.4 Collinearity Statistics

Table 27: Collinearity Statistics

Model		Collinearity Statistics	
		Tolerance	**VIF**
1	**FIN**	0.646	1.548
	FAC	0.704	1.420
	PER	0.607	1.548
	INC	0.534	1.781
	ENV	0.794	1.259

Source: Developed for research.

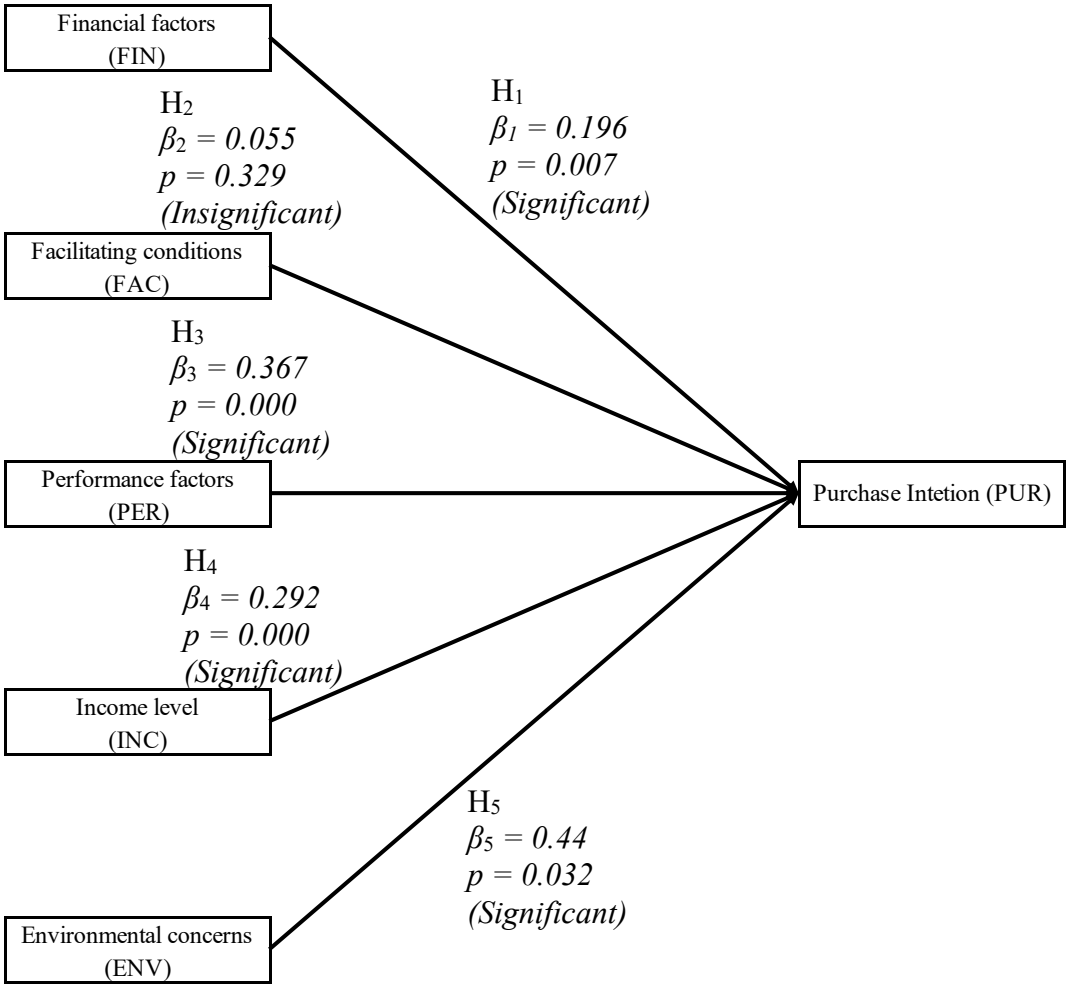
Next, the multicollinearity of the model could be determined to explain if the variables are highly correlated with each other by using the Tolerance and VIF values in Table 27. Multicollinearity was detected when there are high Variance Inflation Factors (VIFs) which are typically more than five (Shrestha, 2020) or there are small tolerance values which are typically less than 0.19.

The tolerance values of the independent variables revealed that there wasn't multicollinearity between the variables with FIN's tolerance value being 0.646, FAC's tolerance value being 0.704, PER's tolerance value being 0.607, INC's tolerance value being 0.534, and ENV have a tolerance value of 0.794. Additionally, the VIF values of independent variables further supported this finding. FIN's VIF value was 1.548, FAC had a VIF value of 1.420, the VIF value of PER was determined to be 1.648, INC's VIF value was 1.871, and lastly the value of 1.259 was ENV's VIF.

4.7 Hypotheses Testing

This section discusses the results of testing the hypotheses from the conceptual framework developed in Chapter 2.

Figure 7: Hypotheses Results of Conceptual Framework



Source: Developed for research.

H_1: There is a significant relationship between financial factors and the purchase intention of EVs.

The independent variable Financial Factors had a sig-value of 0.007 at the significance level $\alpha = 0.05$. Therefore, the null hypothesis was rejected and H_1 was accepted. There was enough evidence to support that the coefficient of independent

variable X_1 is not zero, and there was a linear relationship between Financial Factors and Purchase Intention.

H_2: There is a significant relationship between facilitating conditions and the purchase intention of EV.

It could be observed that independent variable Facilitating Conditions' sig-value was 0.329. At significance level $\alpha = 0.05$, the null hypothesis was accepted and H_2 was rejected. Therefore, there was evidence that the coefficient of X_2 is zero and no linear relationship was discovered between Facilitating Conditions and the Purchase Intention.

H_3: There is a significant relationship between performance factors and the purchase intention of EV.

The third independent variable Performance Factors' sig-value was 0.000. The value was very significant at significance level $\alpha = 0.05$. The null hypothesis could not be rejected and H_3 was rejected. Hence, a linear relationship between Performance Factors and the Purchase Intention was discovered.

H_4: There is a significant relationship between income level and the purchase intention of EV.

The independent variable Income Level has a sig-value of 0.000 too. The value was very significant at significance level $\alpha = 0.05$. The null hypothesis was accepted and H_4 was rejected. Hence, there was also a linear relationship between Income Level and Purchase Intention.

H_5: There is a significant relationship between environmental concerns and the purchase intention of EVs.

Lastly, despite the sig-value of the independent variable Environment Concerns is slightly higher compared to the others with the value of 0.032, however at significance level $\alpha = 0.05$, the null hypothesis could not be rejected, and H_5 was

rejected. Hence, there was also a linear relationship between Environment Concerns and Purchase Intention.

4.8 Chapter Summary

This chapter provided a comprehensive analysis of data collected from the survey conducted by 150 respondents located in Klang Valley. By using coded variables, SPSS software was utilized to process descriptive analysis, reliability analysis for pre-test and actual test, Pearson correlation analysis, normality test, and multiple linear regression analysis. The results yielded provide a detailed understanding of the relationships between independent variables and dependent variable. Findings on results contribute significantly to the overall understanding of factors affecting consumers' purchase intention of electric vehicles.

The results from the reliability analysis conducted on the survey instrument demonstrated evidence of robustness and consistency of the responses, foundationally providing confidence in subsequent analyses. The Pearson correlation analysis revealed the relative linear strength between variables, it was determined that all independent variables involved in this study were correlated to the purchase intention of EV. As for the normality test, the normality of participants' demographic profiles was tested. The multiple linear regression analysis revealed that a significant portion of the variance in this research model was explained with a substantial R Square value. Furthermore, the parameter estimated from regression analysis showed that facilitating conditions were the only independent variable not significantly influencing consumers' intention to purchase an electric vehicle. The relationship between other predictors (financial factors, performance factors, income level, and environmental concerns) and the dependent variable (purchase intention) was statistically significant.

The researcher will further discuss the major findings obtained from the results in Chapter 4 in the next chapter, which includes a discussion of major findings,

implications of the study, the research's limitations, and suggestions to be recommended for future research, and the author will also conclude the whole study.

CHAPTER 5

DISCUSSION, CONCLUSION AND IMPLICATIONS

5.0 Introduction

Chapter 5 outlines the results from the analyzed data and discusses on major findings of the research. The study's implications, limitations of the research along with possible recommendations for forthcoming studies will be discussed. At the end of this chapter, the relationship between the independent variables and dependent variable will be addressed too.

5.1 Discussion on Major Findings

Table 28: Summary of Hypothesis Testing Results

Hypothesis Statement	Results	Significance	Remarks
H_1: There is significant relationship between financial factors and the purchase intention of EV.	$\beta_1 = 0.196$ sig-value = 0.007 sig-value < 0.05	Significant	Supported
H_2: There is significant relationship between facilitating conditions and the purchase intention of EV.	$\beta_2 = 0.055$ sig-value = 0.329 sig-value > 0.05	Insignificant	Rejected
H_3: There is significant relationship between performance factors and the purchase intention of EV.	$\beta_3 = 0.367$ sig-value = 0.000 sig-value < 0.05	Significant	Supported
H_4: There is significant relationship between income	$\beta_4 = 0.292$ sig-value = 0.000	Significant	Supported

level and the purchase intention of EV.	sig-value < 0.05		
H_5: There is significant relationship between environmental concerns and the purchase intention of EV.	$\beta_5 = 0.144$ sig-value = 0.032 sig-value < 0.05	Significant	Supported

Source: Developed for research.

Table 28 summarises the results of the hypothesis testing on the relationships between independent variables (financial factors, facilitating conditions, performance factors, income level, and environmental concerns) and the purchase intention of electric vehicles. It was summarized that financial factors (H_1), performance factors (H_3), income level (H_4), and environmental concerns (H_5) have a significant influence on the purchase intention of EVs at significant values of 0.007, 0.000, 0.000, and 0.032 respectively. Performance factors are the most influential predictor of purchase intention with a coefficient value β of 0.367. Contrary to the others, facilitating conditions are the only independent variable that has no significant influence on the dependent variable. Hypothesis H_2 was rejected since the significant value was 0.329, way greater than the significance level α of 0.05.

5.2 Findings on Hypotheses

5.2.1 Financial Factors on Purchase Intention

H_1: There is a significant relationship between financial factors and the purchase intention of EVs.

Results from Table 28 show that H_1 of $\beta = 0.196$, a significant value of 0.007 which is less than the significance level α of 0.05, indicating that financial factors had a significant effect on the purchase intention of EV. Thus, H_1 was supported at a 95% confidence interval. The test result was supported by previous literature. In Chu and

Pakir's (2022) research, respondents relatively considered price value before they decided to buy EVs and it was shown that a strong correlation was determined between both factors in the setting of Malaysia. Similar findings in the same country by other scholars also indicated that the purchase price of electric cars has a significant impact towards the adoption of EVs (Ramachandaran, Ng, Rajermani, & Raman, 2023). Moreover, Brinkmann and Bhatiasevi (2023) tested their hypothesis that a reduction in initial purchase price is strongly associated with the purchase intention of electric vehicles in Thailand. The results turned out to indicate that the hypothesis was supported with a very low significant value (0.009). This further strengthens the finding on H_1 in this research.

While the abovementioned studies have backed the finding on H_1, it is also beneficial to refer to the research of other regions. For instance, Vilchez, et al. (2019) have identified that purchase price has been ranked as the top (i.e., first) factor influencing the decision to purchase a car in Europe. Out of six countries in the region where 1,248 respondents were surveyed, five nations' respondents answered that they would not opt for electric vehicles due to their cost of purchasing. Similarly, Palmer, Tate, Wadud, and Nellthorp (2018) have provided the same insight for policymakers into the adoption of EVs in the United Kingdom, United States, and Japan. It was strongly recommended by authors that price point be one of the considerations to fasten the adoption of EVs with the results that show strong and significant linkage between hybrid electric vehicles' total cost of ownership with the market share.

Besides, researchers from China have demonstrated that perceived monetary benefit is statistically significant, positively influencing consumers' purchase intention of EVs in their home country (He, Zhan, & Hu, 2018). Corresponding to that, She, Sun Ma, and Xie (2017) have highlighted in their research that reduced purchase subsidies in China that led to higher cost of purchase, could hinder the acceptance of the public towards EVs, with supporting data that showed respondents frequently mentioned financial barriers to purchase the electric vehicle. A study in Taiwan has hypothesized that a higher initial buying price could negatively influence consumers' attitudes and perceived behavioural control toward owning an EV

(Dutta & Hwang, 2021). The results showed that the hypothesis was supported indeed.

5.2.2 Facilitating Conditions on Purchase Intention

H_2: There is a significant relationship between facilitating conditions and the purchase intention of EV.

Results from Table 28 show that H_2 of $\beta = 0.055$, a significant value of 0.329 which was much higher than the significance level α of 0.05, indicating that facilitating conditions had no significant effect on purchase intention of EV. Thus, H_2 was rejected at a 95% confidence interval. These findings aligned with previous works of literature. Ramachandran, Ng, Rajermani, and Raman (2023) highlighted with the evident results from their research that in Malaysia there was little to no apparent relationship between consumers' adoption of electric cars and the availability of charging stations (which is referred to as facilitating conditions in this research). Another study by Chu and Pakir (2022) that employed Spearman's Correlation has also identified that facilitating conditions have the weakest relationship with consumers' buying intention of EVs among five other factors available in the research. The finding was further supported by the descriptive data that the average mean score of the facilitating conditions was considered moderate as compared to other factors. Similarly in this research, the mean and median of facilitating conditions (FAC), as displayed in Table 15 which were 3.115 and 3.000 respectively, were also the lowest mean and median among the variables.

According to Lin and Wu (2018), the availability of charging stations was ranked as the second last factor (before usage cost) being influential in affecting the purchasing intention of electric vehicles in cities in China. Authors further mentioned that the weak correlation was probably due to the preference of home charging as the main option of EV users to recharge their vehicle because of its convenience and cost advantage, which was highlighted in previous studies as well (Andreas & Traber, 2012; Madina, Zamora, & Zabala, 2016), hence the reason for

limited influence on the purchasing intention of electric vehicle; and another reason that caused such phenomenon was revealed by Hou, Wang, and Ouyang (2013) that home charging is sufficient to cater to the daily demand of short distance travelling in city. Thnanusak and Punnakitikashem (2017) suggested a similar finding in Thailand with samples collected showing results that respondents were not concerned with the number of charging stations available. They further concluded that it is perhaps the Thai respondents were hoping the charging facilities were adequately provided in place by the time they adopted electric vehicles.

Contrary to the above-supporting literature, some studies revealed the significance of facilitating conditions affecting the consumers' acceptance of EVs. Research by She, Sun, Ma, and Xie (2017) suggested that greater concerns regarding charging station availability led to higher intention to purchase electric vehicles, possibly due to the induced confidence in buyers. Moreover, Dutta and Hwang (2021) expressed that facilitating conditions play a very major role in helping to eliminate consumers' range anxiety. The improved attitude and behavioural control encourage consumers to adopt EVs. Nonetheless, both articles also highlighted that the participation of the government in installing more charging stations is directly related to EV adoption. Perhaps the reason for the low influencing effect of facilitating conditions in this research is due to the limited number of charging stations available in the country, which were way much lower compared to China and Taiwan, as highlighted by Chu and Pakir (2022).

5.2.3 Performance Factors on Purchase Intention

H_3: There is a significant relationship between performance factors and the purchase intention of EV.

Results from Table 28 show that H_3 of $\beta = 0.367$, a significant value of 0.000 which is less than the significance level α of 0.05, indicating that performance factors had a significant effect on purchase intention of EV. Thus, H_3 was supported at a 95% confidence interval. As reviewed in Chapter 2, performance factors included range,

reliability, safety, and comfort of the ride. The results are in line with past studies such as Thailand scholars, Thnanusak and Punnakitikashem (2017) had concluded that the performance of EVs is directly linked to the purchase intention of car buyers in the country. The authors also expressed their respondents' concern about the safety of electric vehicles, particularly in the condition of driving them around Bangkok, which is one of the busiest cities in the nation with terrible traffic congestion and a high possibility of flash floods. The worrisome of not being able to reach the destination safely has made the performance factors (i.e. range, safety, reliability) an utmost important factor to consider before buyers adopt EVs.

A study based in the United Kingdom revealed private car purchases were predominantly influenced by performance. On top of the price value and energy consumption, other factors such as comfort, practicality, and reliability came next for users to consider before they decide to buy any cleaner cars (Lane & Potter, 2007). The most common finding from many literatures revolves around the range of the electric vehicle as well. According to Khazaei and Tareq (2021), range anxiety has significantly and negatively influenced consumers' intention to use EVs. Research showed that rejection of electric vehicles tends to be higher in the group of individuals with a high degree of range anxiety, and the scepticism could be improved and reduced by having a higher travelling range in one fully charged battery (Khazaei & Tareq, 2021).

Apart from range being reviewed, reliability is also often taken as an aspect to judge an electric vehicle's performance (She, Sun, Ma, & Xie, 2017). In their study, the safety and reliability of EVs are grouped as the measurement items in the construct which is the perceived risk. The hypothesis of perceived risk negatively affecting consumers' purchase intention was supported by significant results. This revealed that consumers are perhaps still lacking confidence in the performance of electric vehicles, especially in the reliability and safety of the battery pack, as presented by Gandoman, et al. (2019) in the assessment of EVs development. The significant relationship between performance factors and purchase intention in this study was supported again with such works of literature as backing,

However, interestingly it is also worthwhile to note that a study before this revealed that users of EVs in a 6-month field trial were satisfied with the range provided, despite there being times that users felt anxious about the range but the frequency that it happened was somehow very low (Franke & Krems, 2013). This is also in line with another field test conducted by BMW that confirmed that EVs' battery capacities have been underestimated by drivers (Franke, Neumann, Buhler, Cocron, & Krems, 2012). It was suggested that users be comfortable using 75% to 80% average of the available range (Franke & Krems, 2013). Moreover, another research addressed that there is a tendency for range anxiety to diminish significantly with experience driving a car over time (Buhler, Franke, & Krems, 2011).

5.2.4 Income Level on Purchase Intention

H_4: There is a significant relationship between income level and the purchase intention of EV.

Results from Table 28 show that H_4 of $\beta = 0.292$, a significant value of 0.000 which is less than significance level α of 0.05, indicating that income level had a significant effect on purchase intention of EV. Thus, H_4 was supported at a 95% confidence interval. Such findings were further supported by Pearson's correlation coefficient between income level and purchase intention shown in Table 18 which is statistically significant at the significance level of 0.05. The results from hypothesis H_4 testing are in line with results from research by Nayum & Knockner (2014) where authors addressed that household income had significant direct impacts on selecting a more fuel-efficient car. According to Javid and Nejat (2017), the probability of consumers buying an alternate-fueled car increases when there is an increment in income level. This was due to higher income groups showing a greater willingness to invest in EVs as they have better capacity to manage the higher initial costs. A supporting study revealed that willingness to pay (WTP) increases with increasing income, and income has proven to be the most important socioeconomic factor among other variables, eventually, it leads to higher WTP for electric vehicles (Ramos-Real, Ramirez-Diaz, Marrero, & Perez, 2018). Not only

that the discovery of higher WTP found in the adoption of EVs, but it was also found in the purchase of hybrid vehicles. Erdem, Senturk, and Simsek (2010) addressed that consumers with higher income, higher education levels, and higher environmental concerns tend to have higher will to pay premiums for hybrid vehicles as well.

Interestingly, research conducted by Figenbaum, Assum, and Kolbenstvedt (2014) revealed that as compared to the general population and ICEV owners, electric vehicle owners in Norway have higher education and higher income. It was also suggested that the socioeconomic status of owners is strongly linked to the adoption of EVs and shall be taken into consideration to compare with the socioeconomic status of ICEV buyers to realize the actual impact of income level on purchase power (Bjerkan, Norbech, & Nordtomme, 2016). The same research also pointed out that the impact of income level on purchase decisions is somewhat subject to the incentives available, such as tax exemptions, and others. The reason for that is that despite the difference between the income groups, reduced fixed-cost incentives are equally important in all groups to increase EV adoption. However, when users have to decide to purchase either an EV or ICEV of similar purchase cost, the lower income group are more influenced significantly to favour the one with reduced use costs (Bjerkan, Norbech, & Nordtomme, 2016). Therefore, further supporting the finding of this research on the effect of income level significantly affects the purchase intention.

5.2.5 Environmental Concerns on Purchase Intention

H_5: There is a significant relationship between environmental concerns and the purchase intention of EVs.

Results from Table 28 show that H_4 of $\beta = 0.144$, a significant value of 0.032 which is less than the significance level α of 0.05, indicating that environmental concerns had a significant effect on purchase intention of EV. Thus, H_5 was supported at a 95% confidence interval. Many works of the literature revealed similar results that

supported the findings on the relationships between environmental concerns and the purchase intention of EVs. Firstly, Chu and Pakir (2022) have the highest mean on the environmental concerns scale among all other variables (social media factor, celebrity factor, facilitating condition factor, feature and design factor, and price value factor). Authors addressed that greater intention to purchase the EV is exhibited when consumers noticed the zero emissions of dangerous substances from electric vehicles compared to traditional cars (Chu & Pakir, 2022). Similarly, according to the results of having the biggest significant positive impact on EV adoption, Khazaei and Tareq (2021) pointed out that environmental concern as the evaluative response towards environmental benefits, influences customers' attitudes towards EVs and their purchasing intention to have one, aside from great energy efficiency and fuel savings that is already associated with the car (Khazaei & Tareq, 2021).

In another empirical study that focuses on the influences of price value, environmental performance and range confidence, the evident results revealed that environmental performance is indeed, the strongest determinant of consumers' attitudes and hence influences the purchase intention the most (Degirmenci & Breitner, 2017). Against this backdrop, the article also highlighted that great emphasis has been placed by respondents of the survey on the production of electricity as the source to power the EV should be based on renewable energy to allow the vehicles to be a complete alternative to traditional combustion engine cars (Degirmenci & Breitner, 2017). Here it shows that one of the true intentions of consumers purchasing EVs is to help reduce pollution fundamentally, thus contributing to shaping a greener environment, and such perceived benefit is aligned with the definition of environmental concerns as reviewed in Chapter 2. This is in line with statements from Dutta and Hwang (2021) that Taiwanese consumers who usually purchase green products have their thinking process shaped by environmental concerns, and they are eager to buy the products to express their attitudes toward the environment (Dutta & Hwang, 2021).

In Tianjing, China, based on a large-scale study of consumers' perceived ease of use of EVs, the green perceived usefulness of EVs, the environmental concern, and buying intention of EVs, scholars have considered that environmental concern can

not only impact buying intention directly, but it also indirectly influences the buying attention via green perceived usefulness and perceived ease of use of EV (Wu, Liao, Wang, & Chen, 2019); and as a total effect, green perceived usefulness is much significant than perceived ease of use, while environmental concern is a critical criterion to stimulate the adoption of electric vehicles in public. As such, it is safe to say that consumers placed the environmental performance of an EV before its perceived ease of use. On the other hand, research conducted by Vongurai (2020) has discovered that attitude and fuel efficiency have a significantly positive impact on brand preference towards environmentally friendly products for electric vehicles. The green purchasing behavior was significantly interrelated with the mentioned variables and this provided a relevant reference for marketers to emphasize green marketing for successful product promotion.

5.3 Implications of the Study

5.3.1 Theoretical Implications

In this research, the Theory of Planned Behaviour (TPB) plays a significant role in explaining the respondents' purchase intention of electric vehicles. According to Ajzen (1991), the theory predicts consumers' intentions via attitude, subjective norm, and perceived behavioural control. Many scholars have done their studies based on this theory. Rezvani et al. (2015) have done literature reviews, particularly on the adoption of electric vehicles and it was found that numerous research models were carried out with the basis of TPB. One of them was Moons and Pelsmacker's (2012) study where the authors applied TPB to investigate the usage intention of an EV. There were some factors discovered to be correlated (Moons & Pelsmacker, 2012), for which the results were in line with Ajzen's (1991) TPB explanation. During Sang and Bekhet's (2015) exploration of EV acceptance in Malaysia, authors discovered that seven key predictors significantly impact consumers' intention to use EVs in the country. All these studies suggested the mentioned variables (attitudes, subjective norms, and perceived behavioural control) are

essential in shaping purchase intentions and authors have emphasized the need for intervention targeting these factors to encourage EV adoption.

On the other hand, another theory that was heavily related to this study was the Technology Acceptance Model (TAM). The theory explains that personal behavioural intention towards new technology was much affected by perceived usefulness and perceived ease of use (Davis, 1989). According to Davis (1989), perceived usefulness refers to the subjective perception found in users when they are certain that when using technologies the performance of their work can be improved, whereas the definition of perceived ease of use is the degree to which people believe that it is effortless mentally and physically to using certain technology (Davis, 1989). TAM is often used by many scholars to explore public acceptance towards new technologies. Wang et al. (2018) employed TAM to investigate the effect of policy on the promotion of electric vehicles in cities in China, and it was discovered that the theory applies to significantly affect the users' adoption of EVs. Wu et al. (2019) also used TAM to understand the public acceptance of to use of autonomous electric vehicles (AEV) in China. The study discovered a favourable association between perceived ease of use, green perceived usefulness, and environmental concern and consumers' intention to use AEV. Another research by Wang et al. (2018) also linked the relationship between customers' knowledge of EVs and the intention to use EVs with TAM. Last but not least, a combined theory of TAM and TPB (C-TAM-TPB) was adopted in another study to discover the purchase intention of electric vehicles among Generation Y consumers in Malaysia (Vafaei-Zadeh, Wong, Hanifah, Teoh, & Nawaser, 2022).

5.3.2 Practical Implications

The findings of the results in this research were to understand the factors affecting the purchase intention of electric vehicles in Klang Valley. Among all the independent variables, facilitating conditions were found to be the only independent variable that has no significant relationship with the dependent variable, purchase intention, whereas the other independent variables (financial factors, performance

factors, income level, and environmental concerns) were revealed to be significantly affecting consumers' purchase intention of an electric vehicle.

Firstly, the findings on the significant influence of financial factors on purchase intention could contribute to automakers deriving a better pricing strategy. Understanding that price value is what drives a customer to purchase an EV and offering a product with a competitive price allows car makers to sustain their business in the challenging automotive industry (Ramachandaran, Ng, Rajermani, & Raman, 2023), especially in Malaysia where the market is relatively smaller size compared to other nations in the same region. All the same time, it was also revealed to the government that initial cost or the price premium was considered influential to mass EV adoption, therefore effective policies such as purchase subsidies, tax reliefs, etc. could be considered to promote the electric vehicles' adoption rate (She, Sun, Ma, & Xie, 2017). Also, since income level significantly influences the purchase intention of EVs, with the government's access to Malaysia's income level database, specific policies could be introduced to make electric vehicles a more affordable car to cater to pricing-sensitive customers.

While the facilitating conditions such as the public charging infrastructure do not significantly impact consumers' purchase intention, this paper served to provide a practical suggestion to automotive dealerships to offer complimentary home chargers. Since it was highlighted that home charging accounted for 80% of all charging methods (Qiu, et al., 2022), the complimentary charger at home might be useful to encourage more EV buyers (Hardman, et al., 2018). Moreover, considering that customers usually evaluate the performance of electric cars before deciding to buy one as discovered in this study, carmakers should take into consideration to prioritize improving the EVs' car features, especially in range, safety, and reliability. A consistent tactical marketing strategy that puts emphasis on product innovation and guaranteed safety is ideally useful to stimulate the growth of the EV adoption rate (Khazaei & Tareq, 2021).

Another important contribution of this research is the findings on the influence of environmental concerns on the purchase intention of EVs. The results help to deliver a strong message to the government that to speed up the adoption rate of

electric vehicles, the effort to heighten the public's environmental awareness shall not be neglected. This not only helps to reduce the carbon emission from ICEVs, but it also helps in many other different aspects of shaping a green environment. Commercially, car distributors or dealerships are expected to establish more educational campaigns that teach consumers about the importance and benefits of driving an electric vehicle as it does not produce harmful pollution to the air (Khazaei & Tareq, 2021). Therefore, it is strongly advised that government and carmakers shall work hand in hand to encourage more consumers to purchase EVs, ultimately leading to a safer environment in the future.

5.4 Limitations of the Study

Numerous limitations were discovered in this study. Firstly, due to a lack of time and resource constraints, along with the complexity of the study, only 150 pieces of data were able to be collected and analyzed. It could not represent the entire population of Malaysia. Moreover, the current investigation only surveyed the respondents living in Klang Valley. While it is possible that different purchasing behaviours could be observed in different locations, the findings of this research only explain the phenomenon happening in surveyed areas. Also, geographically different buyers have substantial differences in income level and environmental concerns, therefore the results might not be able to correctly represent other states, especially the suburban areas that are less developed as compared to Klang Valley. This also led to another limitation of this study, which is the relevancy of educational background. Since universities are easily found in Klang Valley and at least 70.7% (Bachelor's Degree, Master's Degree, and Doctoral Level combined) of the respondents received higher education, the increase in less educated respondents might produce a different result as education is strongly associated to technology acceptance as explained by TAM (Davis, 1989). Interestingly, during the conduct of the survey, it was noticed that the driving experience of electric vehicles significantly impacts the purchase intention (Franke, Gunther, & Trantow, 2017; Khazaei & Tareq, 2021; Schmalfub, Muhl, & Krems, 2017), driving

experience has not been included as a moderating variable to moderate the purchase intention of EVs in this study.

A quantitative analysis of Malaysian consumers' intentions to buy electric cars (EVs) is essential for influencing market tactics, policy, and environmental initiatives. Nevertheless, there are drawbacks to this approach, including a shallow comprehension of consumer motives, the possibility of misinterpreting statistical data, and problems with sample representation that could compromise the findings' generalizability. In order to address these issues and offer a more thorough and nuanced understanding of the variables impacting EV adoption in Malaysia, a mixed-methods approach incorporating both quantitative and qualitative research is advised.

5.5 Recommendation for Future Research

Based on the limitations and constraints identified in Section 5.3.3, the researcher of this study would like to recommend that future research increase the sample size. This could indeed be very helpful in providing more solid results that should generalize the population in Malaysia. Moreover, if time and resources are available, other geographical locations that cover all types of areas in Malaysia shall be included as well. Not only this could allow the findings to represent all areas, but more detailed studies could also be carried out at the same time, such as comparisons of purchase intention due to the influence of the independent variables of different states, or how different income levels due to locations could bring different impact to the purchase intention of EV, etc. Furthermore, since the current results were heavily contributed by highly educated respondents, it is also proposed to consider having more lower-level educational background participants as well. Despite there might be difficulties in collecting such data due to the limitation of understanding the questionnaire, in-person contact with a professional who helps explain the questionnaire would be beneficial to solve this issue. Last but not least, future scholars are also encouraged to consider driving experience as a moderating variable in similar studies. Constructs from prior literature should be adopted into

the questionnaire to find out how the relationships between independent variables and purchase intention of electric vehicles could be affected by the presence of a moderating variable.

5.6 Conclusion

In conclusion, the aim of the research was to determine the relationship between the five independent variables (financial factors, facilitating conditions, performance factors, income level, and environmental concerns) and the dependent variable (purchase intention of electric vehicles). Multiple linear regression analysis was employed and the results revealed that all of the five independent variables except facilitating conditions, have a positive relationship with the DV. The relationships were also statistically significant at the significance level of $\alpha = 0.05$. Unstandardized and standardized coefficient β denoted that performance factors had the strongest effect on contributing to the variation in purchase intention, followed by income level, financial factors and then environmental concerns. On the other hand, facilitating conditions were the only predictor that showed no significant impact on the purchase intention of electric vehicles. Its unstandardized and standardized coefficient β were the lowest among all with a sig-value of 0.329 showing insignificant impact on the variation of purchase intention at any significance level.

Additionally, by executing correlation analysis, Pearson's Correlation coefficients determined that out of all demographical factors, income level was the only one significantly correlated to DV despite its weak linear strength. In terms of the independent variables, all of them showed moderate to high correlation to the purchase intention at a very significant level. Reliability analysis was conducted to determine that the results obtained in this study overall are consistent and reliable.

Major findings of this research were identified to have brought theoretical implications as well as practical implications. The Theory of Planned Behavior and Technology Acceptance Model were indeed very helpful for readers to understand

better about the discovery of this study. As for practical implications, government bodies are strongly urged to develop effective policies such as tax reliefs, purchase subsidies, etc. to fasten the adoption rate of electric vehicles. Besides, this article also served the purpose the encouraging automakers to strategize more attractive priced green vehicles to foster EV adoption in mass. Last but not least, both parties shall collaborate actively to create more environmental-related campaigns to increase public awareness in saving the environment. All these would help the world to build a greener and safer place.

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