Faculty of Technology Management and Technopreneurship

ANALYZING THE FACTORS AFFECTING CONSUMERS' INTENTION TO ADOPT ELECTRIC VEHICLES (EVs) IN SOUTH ZONE OF MALAYSIA.

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BACHELOR OF TECHNOLOGY MANAGEMENT (HIGH TECHNOLOGY MARKETING) WITH HONOURS

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DECLARATION

I declare that this thesis entitled "ANALYZING THE FACTORS AFFECTING CONSUMERS' INTENTION TO ADOPT ELECTRIC VEHICLES (EVs) IN SOUTH ZONE OF MALAYSIA" is the result of my own research except as cited in the references. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

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APPROVAL

I hereby declare that I have checked this report entitled “ANALYZING THE FACTORS AFFECTING CONSUMERS' INTENTION TO ADOPT ELECTRIC VEHICLES (EVs) IN SOUTH ZONE OF MALAYSIA” and in my opinion, this thesis it complies the partial fulfillment for awarding the award of the degree of Bachelor of Technology Management (High Technology Management) With Honours.

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DEDICATIONS

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ABSTRACT

The introduction highlights the increasing significance of electric vehicles (EVs) in the context of sustainable mobility and environmental conservation. It underscores the importance of understanding consumer behavior to foster the adoption of EVs in Malaysia. The background study provides an overview of the current automotive market in Malaysia, emphasizing the need for a transition to electric mobility to reduce carbon emissions and dependency on fossil fuels. The problem statement stresses the necessity of identifying the factors influencing Malaysian consumers' intention to adopt EVs, noting the potential economic and environmental benefits of widespread EV adoption. The research questions focus on the relationship between consumers' intention to adopt EVs and perceived usefulness (PU), the impact of perceived ease of use (PEOU), Social Influence (SI), Facilitiating Conditions (FC), Consumers' Attitude (AT) on consumers' intention to adopt EVs. The research objectives aim to analyze these relationships and evaluate the key determinants of EV adoption among Malaysian consumers.

The scope and limitations of the study specify that it concentrates on consumers in South zone of Malaysia and employs the final version of the Technology Acceptance Model (TAM 1.0) by Venkatesh and Davis (1996). The study will distribute questionnaires to a representative sample of 345 respondents, and the findings will be generalized to the regional context. Limitations include the regional focus and potential variations in consumer behavior across different areas. The significance of the study lies in providing insights into the factors driving EV adoption, which can inform policymakers, automakers, and stakeholders in developing effective strategies for promoting EV usage. This research serves as a valuable reference for understanding consumer behavior towards EVs and supporting the transition to sustainable mobility in south zone of Malaysia (Johor). Overall, this abstract offers a concise summary of the key points, setting the stage for the subsequent chapters of the research.

Keywords: electric vehicles, purchase intention, attitude, TAM (1.0)

ABSTRAK

Pengenalan menekankan kepentingan yang semakin meningkatnya kenderaan elektrik (EV) dalam konteks mobiliti lestari dan pemuliharaan alam sekitar. Ia menyoroti kepentingan memahami tingkah laku pengguna untuk memupuk penerimaan EV di Malaysia. Kajian latar belakang memberikan gambaran keseluruhan pasaran automotif semasa di Malaysia, dengan menekankan keperluan untuk beralih kepada mobiliti elektrik bagi mengurangkan pelepasan karbon dan kebergantungan kepada bahan api fosil. Pernyataan masalah menekankan keperluan mengenal pasti faktor-faktor yang mempengaruhi niat pengguna Malaysia untuk mengadopsi EV, dengan menyatakan potensi manfaat ekonomi dan alam sekitar daripada penerimaan EV secara meluas. Soalan penyelidikan memberi tumpuan kepada hubungan antara niat pengguna untuk menggunakan EV dan kegunaan yang dirasakan (PU), kesan kemudahan penggunaan yang dirasakan (PEOU), Pengaruh Sosial (SI), Memudahkan Keadaan (FC), Sikap Pengguna (AT) terhadap niat pengguna untuk menggunakan EV. Objektif penyelidikan adalah untuk menganalisis hubungan ini dan menilai penentu utama penerimaan EV dalam kalangan pengguna Malaysia.

Skop dan batasan kajian menetapkan bahawa kajian ini memfokuskan kepada pengguna di Malaysia Selatan (Johor) dan menggunakan versi akhir Model Penerimaan Teknologi (TAM 1.0) oleh Venkatesh dan Davis (1996). Kajian ini akan mengedarkan soal selidik kepada sampel wakil seramai 345 responden, dan penemuan akan digeneralisasikan kepada konteks serantau. Batasan termasuk fokus serantau dan potensi variasi dalam tingkah laku pengguna di kawasan yang berbeza. Kepentingan kajian ini terletak pada memberikan pandangan tentang faktor-faktor yang mendorong penerimaan EV, yang boleh memaklumkan kepada penggubal dasar, pengeluar kereta, dan pihak berkepentingan dalam membangunkan strategi berkesan untuk mempromosikan penggunaan EV. Penyelidikan ini berfungsi sebagai rujukan yang bernilai untuk memahami tingkah laku pengguna terhadap EV dan menyokong peralihan kepada mobiliti lestari di Malaysia Selatan (Johor). Secara keseluruhan, abstrak ini menawarkan ringkasan

ringkas tentang perkara-perkara utama, yang menetapkan asas untuk bab-bab penyelidikan yang seterusnya.

Kata kunci: kenderaan elektrik, niat pembelian, sikap, TAM (1.0)

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF SYMBOLS AND ABBREVIATIONS

PU	-	Perceived Usefulness
PEOU	-	Perceived Ease of Use
SI	-	Social Influence
FC	-	Facilitating Conditions
AT	-	Attitude
EVs	-	Electric Vehicles
IV	-	Independent Variable
DV	-	Dependent Variable
SPSS	-	Social Science Package

LIST OF APPENDICES

CHAPTER 1

1.1 INTRODUCTION

This chapter provides an overview of chapter one, which includes the problem statement, background information, research questions, research objectives, study scope, study limitations, study significance and a summary of the entire chapter.

1.2 Background Study

In order to prevent environmental degradation considering the rising global carbon emissions, it is imperative that further environmental protection measures be implemented. One effective way to do this is to encourage the use of electric vehicles. According to Alanazi (2023), the use of fossil fuels is a primary cause of global warming and, if unchecked, might lead to catastrophic climate change. The emission of carbon dioxide and temperature by traditional fuel-powered engine vehicles adversely impacts the environment and society, it significantly contributing to greenhouse gas emissions (Broadbent et al., 2017).

93% of cars in Malaysia are internal combustion engines, which is almost the highest percentage in the world (Malaysian Automotive Association, 2023). One of the causes for the low percentage of electric vehicles is also the low level of public awareness of these vehicles. First, there isn't enough demand. The Malaysian Automobile Association (MAA) projects that just 2,631 electric vehicles would be sold in Malaysia in 2022. By contrast, the nation sells roughly 720,000 vehicles overall, of which the former make up a pitiful 0.4%. Furthermore, by the end of 2022, there will be over 30 million registered cars in the country, compared to about 100,000 domestic electric vehicles.

Therefore, sales and the overall quantity of electric vehicles are still negligible when compared to fuel-powered automobiles. It is certain that foreign producers of electric vehicles will be hesitant to establish production facilities in Malaysia. Since 2022, around

18 million cars have been registered in Malaysia, with one car owned by every two individuals. There is a very high automobile density. The Malaysian electric vehicle market is fresh compared to other. Thus, by better knowing Malaysian consumers' choices, local automakers and dealers can gain from studies on their intentions to buy electric vehicles.

During the United Nations Climate Change Conference (UNFCCC) in 2009, the Malaysian government vowed to reduce its annual carbon emissions by 40% by 2020. It is noteworthy, however, that non-renewable practices and policies are absent from the green industry (Muzir et al., 2022). Since fuel-powered vehicles with inadequate emission standards are the main contributors to annual greenhouse gas emissions, new solutions must be developed. The integration of electric vehicle culture into Malaysian economics serves as an example of a feasible approach. Getting people to adopt and use EVs on a broad scale is the issue, the factors like infrastructure, after sales services, regulatory legislation, and maintenance costs that will become the key concerns when Malaysian consumers switch from fuel-powered vehicles to electric vehicles.

The government has announced initiatives including the quick construction of fast charging infrastructure, even though it still urges people to buy electric cars. These steps may be essential for swiftly reducing the amount of oil used in the transportation industry. The Malaysian government has, however, taken very few steps thus far to encourage the switch to electric vehicles. Additionally, this has made consumers less inclined to switch to EVs.

Despite the rapid growth in sales, electric vehicles still account for a relatively tiny percentage of all vehicles. In Malaysia, about 720,000 automobiles will be sold in 2022. Customers still appear to favour fuel-powered cars. It is evident that major players in the electric car industry, including Tesla and BYD, recognize the potential of the Malaysian market for electric vehicles. Furthermore, as of January 1, 2022, the Malaysian government will be offering several tax exemptions for both locally assembled EVs and imported complete EVs.

Customers should expect fewer moving parts in electric automobiles than in traditional ones. Throughout the course of the vehicle's life, this minimizes maintenance

requirements and expenses. The advantages electric cars have for the environment inspire some buyers. Air pollution and greenhouse gas emissions can be decreased by driving electric automobiles. Market employment in manufacturing, research and development, and infrastructure development has been spurred by the expanding electric vehicle industry. In these fields, skilled labour is in greater demand as the demand for electric vehicles rises. Lastly, the Malaysian government believes that electric cars achieve public health and environmental objectives. Reducing emissions contributes to better air quality, cheaper medical expenses for illnesses brought on by pollution, and a smaller total environmental effect. Governments might also spend money on infrastructure related to electric vehicles, such charging stations, which can temporarily boost the economy and add jobs.

1.3 Problem Statement

To achieve sustainable mobility and reduce the environmental impact of transportation, electric vehicle (EV) adoption is important. But even with the global trend towards more environmentally friendly transportation alternatives, Malaysia still has a comparatively low EV adoption rate. Policymakers, automakers, and other stakeholders hoping to encourage EV adoption in the nation must comprehend the elements impacting customers' intention to adopt EVs. (Muzir et al., 2022). This study explores the intention to use EVs among working adults in Malaysia to reduce greenhouse gas emissions, especially in South Malaysia (Johor).

In Malaysia, despite the government’s numerous initiatives and strategies to promote the use of EVs, such as the Malaysian government's collaboration with the private sector and plans to build 10,000 EV charging stations by 2025 and to whoever is contribute to the emerging nation in EV economy or market will get tax incentives (Energy Watch., 2023). However, although the government has been putting in effort, the results show no significant improvement, and the EV usage rate is still low compared to other regions. There is a lack of focused research on working adults’ intention to use EVs. This study aims to address this gap by employing the TAM model to investigate how perceived

usefulness, perceived ease of use, social influence, and facilitating conditions influence the intention to use EVs in South Malaysia, Johor.

Several factors potentially influence Malaysian consumers' intention to adopt EVs. Perceived usefulness, or the belief that EVs provide significant benefits such as cost savings and environmental sustainability, is one such factor. Yet, there is a lack of comprehensive understanding of how strongly perceived usefulness impacts consumers' intentions to adopt EVs in Malaysia.

Additionally, perceived ease of use, which refers to the degree to which consumers believe that using EVs would be free from effort, is another critical determinant. However, the extent to which this perception affects consumers' adoption intentions is not well-documented in the Malaysian context. (Lim, Perumal, & Ahmad, 2019).

Furthermore, the relation between perceived usefulness, perceived ease of use, social influences, and facilitating conditions intention to adopt EVs is moderated by customers' attitude towards EVs. Positivity towards EVs may amplify the benefits of perceived utility and usability, raising the possibility of adoption. While in negative attitudes, may potentially impact these effects. Despite its significance, this moderating effect has not been thoroughly explored among Malaysian consumers (Alganad et al., 2023).

Working adults' opinions and the use of EVs are likely to be influenced by social influence, its emphasis which measures the degree to which peers, superiors, or community trends impact individuals' decisions. The fundamental concept of social influence, according to Wang et al. (2020), is that individuals typically strengthen their connections with important ones by resembling their behaviors or personalities based on others' perspectives. This study will examine the relative significance of various social groups, including family, friends, and coworkers, on the social influence impacting working adults in Johor.

Moreover, facilitating conditions depends on a person's perception belief and confident about the technical infrastructure and organizational is ready to support the use of EVs (Sediyaningsih et al., 2023), this is crucial when comes to encouraging the use of EVs among working adults. Aside from that, previous studies emphasis the effectiveness of

government policies and initiatives in other countries and different samples but did not specifically target working adults. The study will discuss how various facilitating conditions such as government policies and infrastructure affect this segment which is working adults in Johor on intention to use EVs.

By assessing the influence of these TAM factors specifically in the context of working adults in areas of South Malaysia, this study can give insightful information and strategies to increase the use of EVs among working adults, this can be helpful in achieving the country's sustainable transport objectives (Ministry of Investment, Trade and industry, 2020).

1.4 Research Questions

RQ1. To what extent the factors influence the intention to adopt electric vehicles among consumers in South Malaysia?

RQ2: Which of the factors has the strongest influence on the intention to use electric vehicles among consumers in South Malaysia?

RQ3: What model of intention to use electric vehicles among consumers in South Malaysia?

1.5 Research Objectives

RO1. To propose a model of intention to use electric vehicles among consumers in south zone of Malaysia.

RO2. To investigate the factors influence consumers' intention to adopt electric vehicles in South zone of Malaysia.

RO3: To examine which of the factors has the strongest influence on the consumers' intention to adopt EVs in South zone of Malaysia.

1.6 Scope of the Study

This study investigates the factors influencing consumers' intention to adopt electric vehicles (EVs) in South Malaysian, focusing on perceived usefulness, perceived ease of use, social influence, facilitating conditions, and consumer attitudes. The research is geographically confined to Malaysia, targeting a diverse demographic group to ensure comprehensive insights.

Conceptually, the study examines:

Perceived Usefulness (PU): How consumers believe EVs will benefit their daily lives.

Perceived Ease of Use (PEOU): The convenience and simplicity of using EVs.

Social Influence (SI): The impact of friends, family, and peers on the intention to use EVs.

Facilitating Conditions (FC): The availability of infrastructure and support for EV use.

Attitude Towards EVs (ATT): Consumers' overall perceptions of EVs, including environmental impact and technology adoption.

The main research variables include the intention to adopt EVs (dependent variable), Perceived Usefulness, Perceived Ease of Use, Social Influence, and Facilitating Conditions (independent variables), with attitudes towards EVs as a moderating variable.

Methodologically, the study uses a quantitative design with structured surveys to collect data from consumers in South Malaysia (Johor). The data will be analyzed statistically to test the hypotheses. The research is cross-sectional, capturing current consumer perceptions and intentions.

This study aims to provide insights for EV manufacturers, policymakers, and marketers to promote EV adoption and support Malaysia's environmental goals.

1.7 Limitations of the Study

The study was conducted across South Malaysia (Johor), but regional differences in infrastructure, incentives, and cultural preferences may have influenced the responses. Conducting similar research in specific states or regions could provide more nuanced insights.

Furthermore, the study relied on self-reported data, which could have response bias. Objective measurements could be included in subsequent studies to validate the results and lessen the influence of response bias. Despite these drawbacks, the survey offers insightful information about the critical elements affecting Malaysian customer's decision to purchase electric cars.

1.8 Significance of the Study

This study contributes to the existing literature on electric vehicle adoption in South Malaysia by examining the changing effect of consumer attitudes towards EVs on the relationships between perceived usefulness, perceived ease of use, social influence, and facilitating conditions. The findings can help manufacturers, policymakers, and marketers better understand the unique needs and preferences of Malaysian consumers and tailor their strategies accordingly.

The study also provides insights into the Malaysian context, which is an emerging market for electric vehicles. The findings can inform efforts to promote sustainable mobility and accelerate EV adoption in Malaysia, contributing to the country's environmental goals.

The use of a quantitative research approach with a survey methodology allows for the collection of standardized data from a large sample of consumers from Johor, providing a more robust and generalizable understanding of the factors shaping EV purchase intentions.

Overall, the findings of this study can inform the strategies of key stakeholders, including policymakers, automakers, and marketers, as they work to overcome barriers and increase the adoption of electric vehicles in Malaysia.

1.9 Summary

This summarized the whole chapter 1 that cover the research introduction, study background, problem statement, research questions and objectives. This chapter also covers the study's significance, limitations and scope. Literature review will be explained in upcoming chapter that includes the main keywords in this study.

CHAPTER 2

2.1 LITERATURE REVIEW

This chapter will discuss the literature review of this research and will clarify the main keywords definitions in this research to guide the researcher in this study. The researcher will delve deep into understand Malaysian consumer beliefs in influencing the choice for sustainable mobility through the uptake of electric vehicles (EVs). Generally, as the world shifts to adopting sustainable means of transport in a bid to curb environmental degradation as well as use more environmentally friendly means instead of fossil fuels, is it important to know the factors that are influential in EV adoption. Introducing and gradually implementing the use of EVs into this rapidly growing economic environment is Malaysia; it is crucial to gain a working understanding of its consumers.

The review being undertaken here seeks to provide an analysis and integration of studies that link perceived usefulness, perceived ease of use, attitude towards EVs, and consumers' intention towards the adoption of EVs. This is done by evaluating previous studies to establish lesions, contradiction and eagerly needed study area. In totality, this review aims at enriching the knowledge of policy makers, industry players, and academicians with imperative findings that relate to sustainable mobility context in Malaysia.

2.2 Sustainable Mobility:

The concept of sustainable mobility encompasses various dimensions and is closely linked to social issues like sustainable development and the Sustainable Development Goals (SDG). Sustainable mobility involves topics such as smart mobility, smart cities, micromobility, shared mobility, and Mobility as a Service (MaaS) (Daniela et al., 2023). It is essential to understand the multidimensional nature of sustainable mobility and its

connection to broader social issues to effectively address challenges in this field (Manuel et al., 2022).

When defining sustainable mobility, it is crucial to consider its implications for marketing strategies like ecological or green marketing, as well as its alignment with the principles of marketing 3.0 and 4.0. Additionally, the adoption models of information systems related to sustainable mobility play a significant role in shaping consumer behaviors and preferences towards sustainable urban mobility (Gallo et al., 2020). Understanding these adoption models is vital for promoting the adoption of technological products that support sustainable mobility goals.

In the context of sustainable mobility, it is important to address research questions such as the topics frequently discussed in the scientific literature on sustainable mobility and the theoretical frameworks useful for studying adoption models of technological products in this field. By exploring these research questions, gaps in the literature can be identified and filled, leading to a better understanding of sustainable mobility and the factors influencing its adoption.

Therefore, when defining sustainable mobility, it is essential to consider its multidimensional nature, its connection to broader social issues, its implications for marketing strategies, and the adoption models that influence consumer behaviors in the context of sustainable urban mobility.

2.3 Electric Vehicles:

A vehicle that runs on electricity and is pushed by one or more electric motors utilizing energy stored in rechargeable batteries is known as an electric vehicle (EV). Internal combustion engines (ICEs) in conventional vehicles generate emissions; in contrast, electric vehicles (EVs) are quieter, more responsive, and have a higher energy conversion efficiency. (McKinsey, 2023)

Due to their ability to reduce greenhouse gas emissions and promote environmentally friendly transportation options, EVs are essential in the shift to sustainable mobility. In Malaysia, where transportation significantly contributes to national greenhouse gas

emissions, the adoption of EVs is seen as a key strategy to address environmental concerns and promote sustainable urban mobility (Kalhoro, et al., 2021).

2.4 Factor Influencing Customers' Intention:

The factors influencing customers' intention encompass a range of psychological, social, and environmental elements that impact a customer's decision-making process. It can be convenient factors like the capability of the website and availability of the product, psychological-some aspects put into usefulness and satisfaction, promotional-some elements like discounts and offers, technical with reference to the website and the product, and consumer motivation that involves the values and beliefs. For example, research findings show that attributes like satisfaction and perceived usefulness are crucial factors that affect users' continuing purchase intentions which underlines the significance of other variables into marketing initiatives. It is significant for businesses to consider these aspects since they explain the variances that ought to be managed to improve customer shopping experience.

2.5 Perceived Usefulness (PU)

Perceived Usefulness (PU) is a basic idea to comprehend consumer actions, especially in the field of technology acceptance. It comes from Davis's Technology Acceptance Model (TAM) that was suggested in 1989. The term "perceived utility" focuses on how much one person thinks using a specific system or technology would boost their work output or, more generally, make better his/her everyday tasks and actions. For electric vehicles (EVs), this concept includes advantages people link with switching to EVs such as saving money, helping environment and improving driving experience.

In Malaysia, the major issue regarding supply of electric vehicles is that electricity price doesn't compete well with gasoline price and lack in construction for charging infrastructure. When we talk about EVs (Electric Vehicles), they have less mileage on single charge compared to ICEVs (Internal Combustion Engine Vehicles). Thus, how to

charge quickly becomes a pressing problem which needs solving by electric vehicles (Thean, Hon & Sade, 2023).

According to previous studies, Table 2 shows the variables that affect consumers' perceived of usefulness. The information displays the different kinds of affecting variables and study conclusions. Based on their high performance, low maintenance costs, and environmental friendliness, electric vehicles are considered useful by most consumers.

Table 2.5 An overview of previous studies on the variables affecting consumers' perceptions of their perceived usefulness.

Sources	Context	Key Findings
Plotz, P. et al., 2014; Kihm et al., 2014; Roberts, C. 1995; Hidrue et al., 2011.	Cost and Financial incentives	Consumers' willingness to pay for electric vehicles is significantly influenced by the overall cost of ownership, including purchase price, fuel savings, and maintenance costs. Financial incentives such as tax credits and rebates are crucial in enhancing the perceived value and affordability of EVs. Financial incentives, such as subsidies and tax breaks, significantly impact consumers' perceived usefulness of electric vehicles. Cost savings from lower fuel expenses and reduced maintenance needs further enhance the attractiveness of EVs to potential buyers. Cost-related factors, including the total cost of ownership and availability of financial incentives, play a pivotal role in consumer decisions to adopt electric vehicles. Effective financial incentives

		can substantially boost the perceived usefulness and adoption rates of EVs.
Wolinetz, M. & Axsen, J. 2017; Hardman et al., 2017; Lieven et al., 2011.	Driving Experience	Consumers with positive driving experiences in electric vehicles tend to perceive them as more useful. This includes aspects like smooth acceleration, quiet operation, and innovative features which enhance the overall driving experience. Concerns about range and the performance of electric vehicles can negatively affect perceived usefulness. However, as consumers gain more experience and become familiar with the actual range capabilities and performance, their perceptions improve. Driving experience is a critical factor that can either reinforce or undermine the perceived benefits of electric vehicles. Potential buyers who have the opportunity to test drive or use an electric vehicle are more likely to develop a positive perception of its usefulness, which significantly influences their purchase decisions.
Hackbarth et al,. 2013; Carley et al., 2013; Rezvani et al., 2015; Ziegler, A. 2012.	Environmental Concern	Environmental awareness significantly boosts the perceived usefulness and intention to adopt electric vehicles. Consumers who are more aware of environmental issues tend to value the ecological benefits of EVs more highly.

		Environmental concerns and the perceived ecological benefits significantly improve the perceived usefulness of electric vehicles. Consumers who prioritize environmental issues are more likely to find EVs useful and consider adopting them. It has been discovered that ecological awareness positively affects customer purchasing intention. Socially responsible behaviour is equivalent to ecologically conscious consumer behaviour.

It is challenging to give consumers who are new to driving electric vehicles appropriate information due to their high purchase cost, short driving range, and inadequate charging infrastructure (Barth, Jugert & Fritsche 2016). Government incentives, according to some researchers, might promote the usage of electric vehicles more often. EV adoption may also be aided by their cheaper operating and maintenance expenses. In the end, the initial greater cost of buying electric cars is offset by a drop in total ownership expenses.

Government financial policies play a crucial role in promoting the use of electric vehicles. Studies have shown that purchase tax reductions have a significant impact on consumers' purchase intentions. European customers are particularly concerned about maintenance costs and import taxes for electric vehicles, as evidenced by research conducted by Plötz et al (2014) and Hidrue et al (2011). These findings suggest that these regulations could incentivize people to buy electric vehicles.

Uncertainty about the technology of batteries and costs maintaining them is the main obstacle for consumers who are thinking of buying electric vehicles. As Egbue and Long (2012), high replacement expense for battery is only a single element among other numerous points that make low ranking possible in this area, including environmental

advantages and sustainability factors when adopting electric cars. Cost of batteries also influences which type consumers select. The expense to change a battery greatly affects if the car is accepted or not, Dasharathraj et al. (2020). One of the primary factors influencing attitudes and behaviour towards EVs has been shown to be the cost of the battery. The main factor driving up the price of electric vehicles is the cost of the battery pack, which is always an important component for customers. In fact, for the past few years now there has been rapid advancement in battery technology with costs dropping significantly and range capacity of EVs seeing substantial growth too. But the battery price is still a strong factor that affects how consumers feel and their interest in adopting electric cars.

The rise of technology continues to enhance the capabilities, safety features, and driving range of electric vehicles (EVs). Consumers place significant importance on these characteristics. Practical studies indicate that, in addition to environmental and social factors, vehicle performance is crucial (Amin et al., 2020). In a study by Egbue and Long (2012), potential buyers identified EV performance aspects such as safety, reliability, and driving range as barriers to adoption. While the environmental and sustainability benefits of EVs are recognized, vehicle performance factors often have a greater influence on adoption decisions.

The findings suggest that, even though EV owners are responsive to environmental considerations, the primary factors influencing their decision to purchase another EV include safety, reliability, cost, and driving range. Consumers prioritize performance and convenience in their purchasing decisions. Dutta and Hwang (2021) demonstrated that performance attributes significantly impact consumers' intentions to buy, with individual decisions being shaped by perceptions and beliefs about vehicle performance.

The driving experience is another crucial factor influencing the decision to purchase electric vehicles (EVs). While its impact may not be as immediate as cost and financial incentives, it still plays a significant role in consumer considerations. Research by Kihm and Trommer (2014) suggests that consumers who purchase EVs often view their performance, quietness, and safety as being superior compare to those of traditional fuel-powered vehicles.

Jensen et al. (2019) conducted in-depth interviews with some electric vehicle owners in Denmark to explore the significance of their driving practices with EVs. The study examined ingrained assumptions in EV driving habits and how individuals adapt to driving electric vehicles compared to traditional fuel-powered cars. The findings revealed that all participants felt that the technologies associated with electric cars provided a more comfortable and futuristic driving experience.

Lastly, the attitudes of customers towards the environment will be covered in more detail in a later section. According to Roberts (1995), this component is quite significant. Governments everywhere are putting a lot of effort into promoting green transport options because the current worldwide trend is to minimize carbon emissions.

2.6 Perceived Ease of Use (PEOU)

Perceived ease of use deals with how easy or hard users consider a particular technology to be as identified by (Venkatesh & Davis, 1996). It takes an interest in matters concerning usability in terms of whether users consider the technology simple to use or is considered complex. Regarding the purchase intention, users with the inclination to adopt new technology accommodation, these users have a better appreciation of the new technology that would enable them to use them and their intention to purchase the new technology altogether.

In recent years, there has been a noticeable increase in the popularity of EVs, which may pose challenges for some older and less tech-savvy consumers. Transitioning from a traditional wired phone to a smartphone also requires a learning curve. This highlights the importance of public relations efforts to raise awareness and promote social acceptance of electric vehicles, as well as educate consumers on their convenient use.

Consumers' views on the ease of using electric vehicles are influenced by various factors such as awareness, education, government policies, technology, and personal experience. As the EV market expands and technology advances, it is crucial for companies in this industry to address these factors to make EVs more accessible and accepted by a wider population. A key factor that directly impacts perceived ease of use

is consumers' confidence in operating electric vehicles (Müller, 2019). If EVs are seen as user-friendly and convenient, this positive perception can significantly influence purchasing decisions and improve overall awareness and acceptance of EV technology.

Additionally, manufacturers and policymakers need to focus on simplifying the user interface and improving the charging infrastructure to further reduce barriers to adoption. Providing comprehensive education and information about the benefits and functionalities of EVs can also play a crucial role in shaping positive consumer perceptions. Effective communication strategies and hands-on experiences, such as test drives and demonstrations, can help potential buyers feel more confident in their ability to use and benefit from electric vehicles.

All of these research studies showed significant evidence supporting the moderating effect, as seen in the strong correlation between how easy people perceive new technologies to be and their intended use. As discussed in the literature review of this study, previous research has produced conflicting results about the connection between perceived ease of use and the intention to purchase electronic vehicles. Therefore, it is crucial for this study to explore this relationship.

2.7 Social Influence (SS)

The incorporated variable, Social influence (SI) for this study, is defined as an individual's perception influenced by their surroundings of people such as family, friends, colleagues, etc., and their belief they should use a particular technology or system (Venkatesh et al., 2003). Social influence is not confined to certain groups; it can be found in a variety of social contexts and shapes people's beliefs and actions through compliance, acknowledgment, and acceptance of norms and expectations (Qourrichi, 2023). In these circumstances of EV usage, social influences like subjective norms and image are the factors that impact urban areas' working adults' perception of intention to use EVs from social pressure or support from their social networks.

Previous studies have shown that social influence is a major factor in determining a person's intention to use an electric vehicle. Based on the study on intention to use electric

vehicles in the Himalayan region by using the UTAUT model, founds no impact in regards to social influence towards influencing EV intention (Singh et al., 2023). On the other hand, a study carried out to determine the impact of social influence and image towards initial technology usage, the result shows that social influence does not have a substantial impact on first-hand usage of technology while image could be a strong predicator on behavioral intention to use EV (Lampo & Silva, 2022). Although, certain studies emphasis that social influence does not show strong influence in the context, there are still studies that show intention to use EVs is positively affected by social influence as a critical factor in UTAUT which subjective norm and image are essential for EV owners (Silva et al., 2022).

2.8 Facilitating Conditions (FC)

Facilitating conditions is the extent to which a person believes that an organisational and technological infrastructure is in place to support the deployment of a system or technology (Venkatesh et al., 2003). Facilitating conditions under EV usage, supportive policies, incentives, and infrastructure are the aspects that are possible to achieve and encourage working adults in urban areas to use EVs.

Previous studies stated that facilitating conditions have a significant influence on the intention to use electric vehicles (Singh et al., 2023; Jain et al., 2022). Facilitating conditions like the accessibility of charging stations and government initiatives are the key players to drive the intention to use electric vehicles. In Malaysia, the limited coverage of public charging stations is frequently cited as a key obstacle hindering greater EV uptake (Shakir et al., 2021; Yong et al., 2021), and therefore followed by (Muzir et al. (2022), concluded that perceived accessibility of public charging stations played a significant role in shaping Malaysian' specifically working adults' intentions to use EVs. Aside from infrastructure, government efforts such as tax exemption, financial subsidies, etc. are also significant in affecting working adults in urban areas. For example, stimulus plans launched by European governments and financial incentives such as tax reductions have significantly increased the number of electric vehicle registrations in Europe (Ajanovic, 2022). Purchasing data on electric vehicles from multiple nations that provide

infrastructure and support policies such as rebates and tax reductions for EV owners has shown a positive influence on electric vehicle usage (Randmaa et al. 2017 as cited Ramachandran et al, 2023).

Despite that, a study conducted in Malaysia regarding EV usage indicates that the intention to use electric vehicles is negatively impacted by facilitating conditions, their respondent included lecturers, postgraduate students, and employees in Kuala Lumpur (Khazaei, 2019). Hence, it is essential to further study the relations of facilitating conditions whether it is significance or positive and negative influence on consumers' intention to use EVs in South Malaysia.

2.9 Changing Effect of Attitude toward EVs

Attitudes represent an individual's subjective experience concerning their intentions and inclinations, making consumer attitudes towards electric vehicles (EVs) diverse and non-uniform. Attitudes encapsulate evaluations and judgments about a product or service, reflecting an individual's assessment of a firm, product, or service. According to past research, attitudes consist of three components: behavioral, affective, and cognitive. The cognitive component relates to a person's beliefs, thoughts, and perceptions regarding an object or cause (Dasharathraj et al., 2020).

In the context of electric vehicles, cognitive aspects of attitudes may include beliefs about the environmental benefits or drawbacks of EVs, and the level of trust or distrust in the new technologies used in these vehicles. For instance, some individuals might perceive electric vehicles as environmentally friendly and technologically advanced, while others might have reservations about their reliability or environmental impact.

Research on the preferences of electric vehicle consumers in China and found that consumers' environmental attitudes indirectly impact their intention to adopt electric vehicles. The study revealed a positive association between pro-environmental attitudes and the acceptance of hybrid electric vehicles, indicating that positive environmental beliefs can positively influence consumer attitudes towards EVs (Wang et al. 2017).

The intention to adopt electric vehicles (EVs) is influenced by cognitive and subjective norms. Participants with a stronger inclination towards EVs also showed higher levels of acceptance for the new technologies integrated into these vehicles and a better understanding of environmental protection in daily life (Kim & Park, 2011).

According to Trivedi and Kishore (2020), attitudes play a crucial role in determining purchase intentions, and marketers shouldn't undervalue this influence. Sheth and colleagues (2011) noted, however, that while Indian customers indicate a propensity to buy eco-friendly products, this willingness hasn't always converted into actual purchases.

According to research by Kim & Park (2012) and Julian (2019), consumer acceptance of automobiles is strongly impacted by views towards technology and environmental protection. As a result, views of consumers towards electric vehicles can be divided into two primary groups: attitudes towards technology and attitudes towards the environment.

2.9.1 Attitude towards Environment

Concern for the environment has been listed as major relevant factor affecting consumer takeaway decision in electric vehicles. While analyzing consumers' choices to determine the factors that influence the decision of an individual to embrace the use of electric cars, studies have revealed that consumers with a higher attitude towards conservation are more likely to adapt to the use of electric cars to mitigate their carbon footprint. This is because electric vehicles are environmentally friendly and provide a sustainable solution compared to the Internal Combustion Engine vehicles, which are known to contribute significantly to the greenhouse gases emission (Bryła et al. , 2022).

In the same time, it has also been established that the consumers who are concerned with environmental issues are in a better position to be persuaded by environmental advantages that have come with the products or environmental disadvantages of not patronizing the product for instance, reduction of air and noise pollution (Higueras-Castillo et al. 2023). Also, one can identify that postconsumer enviromental awareness increases a willingness to pay a premium for electrical cars which are one of the most influential factors influencing the adoption of new technologies.

2.9.2 Attitude towards Technology

Understanding the attitudes toward technology has emerged as a core way of understanding consumer adoption of electric vehicles. According to (Chan et at, 2015) the degree of perceived innovation influences the level of technology acceptance which in this case is the propensity for individuals to purchase electric vehicles since they consider them to be technologically advanced. This is due to the fact that electric vehicles have some enhanced features like regenerative braking, enhanced safety, and enhanced performance as is always related to the improvement in technology (Bennett & Vijaygopal, 2018).

It has also been discovered that there is an increase of consumers changing their decision making on the technological qualities of electric cars due to technological fluency like; home charging or use of public terminals (Bryła et al. , 2022). Furthermore, the analysis has indicated that consumers, who are tech-savvy, are more inclined to purchase electric cars and can afford the upgraded technologies that are incorporated in the car industry (Tiwari et al. , 2020).

2.10 Technology Acceptance Model (T.A.M)

In 1989, Davis, Bagozzi, and Warshaw developed the Technology Acceptance Model (TAM), a measure of users' pre-acceptance of novel items and new technology, with the goal of improving the prediction power of the Theory of Reasoned Action (Fishbein & Ajzen, 1975). External variables are assumed to have a positive or negative impact on perceived usefulness (PU) and perceived ease of use (PEOU), as seen in Figure 2.1. PEOU highlights users' opinion of how easy it is to use the technology, whereas PU indicates how much users believe that applying technology will improve their overall performance.

According to Ajzen et al. (2008), both the PU and PEOU variables have an indirect impact on users' actual usage behaviour through their attitudes and intention to adopt the researched object (see Figure 2.0). But the original version's limited definition led to various impacts in terms of magnitude in different study scenarios (Ibrahim et al., 2018; Rarhini et al., 2013). According to King and He (2006) and Dugar (2018), the TAM

model's popularity across a range of academic fields can be attributed mostly to its clarity and simplicity (Aziz et al., 2020). TAM was found to be able to account for almost 50% of the variation in technology acceptance by Venkatesh and Davis (2000). In order to increase the model's explanatory power, Venkatesh and Davis (1996) extended it to TAM2 by include new factors such subjective norms and cognitive instrumental processes.

TAM 2.0 asserts that subjective norms and cognitive instrumental processes have a direct impact on perceived utility (PU) and perceived ease of use (PEOU). Subjective norms pertain to the societal pressure that people experience to engage in a particular behaviour or not, whereas cognitive instrumental processes are associated with the perceived significance of technology in relation to job performance.

The final version of TAM 1.0 (Venkatesh & Davis, 1996) is a relatively simple model in comparison to other models. It makes use of the fewest variables possible to explain the relationship between perceived usefulness (PU) and perceived ease of use (PEOU) variables. Furthermore, TAM 1.0 has a strong theoretical base of empirical research that has proven it. This indicates that the approach for measuring technology adoption is reliable and effective. Survey scales are easily obtained, and TAM 1.0 is a rather simple metric to take. As a result, TAM 1.0 is a useful choice for studies with less funding or when researchers are not accustomed to using complex models. TAM 1.0 is therefore suitable for this research.

This study will modify this theory model by incorporating two new variables not originally included, which are Social Influences (SI), and Facilitating Conditions (FC). This modification aims to further explore the relationship between the factors influencing the intention to use electric vehicles (EVs). The importance of environmental concern in the twenty-first century is underscored by the global implications and threats it poses, such as pollution, natural disasters, and resource depletion (Muszeros & Zsult, 2021).

In this study, we investigate the factors impacting South Malaysia's adoption of electric vehicles (EVs) using the final version of TAM 1.0. Perceived utility (PU), perceived ease of use (PEOU), Social Influence (SI), and Facilitating Conditions (FC) are the primary drivers of EV adoption in the area, and this model offers a simple yet powerful framework for examining consumer behavior in this regard.

2.11 Research Framework

Figure 2 illustrates the research framework that forms the basis of this study. This framework illustrates the relationships among the study's variables, which include intention to adopt electric vehicles, consumers' attitude, perceived usefulness, perceived ease of use, social influence, facilitating conditions, and consumers' attitude.

Perceived utility, perceived ease of use, social influence, and facilitating conditions are the main independent variables taken into account in this study. The plan to switch to electric vehicles is the dependent variable. Furthermore, the research will investigate how consumer perceptions of EVs operate as a mediating variable, impacting the connection between the IVs and the DV. This study's research framework is shown in Figure 2.1.

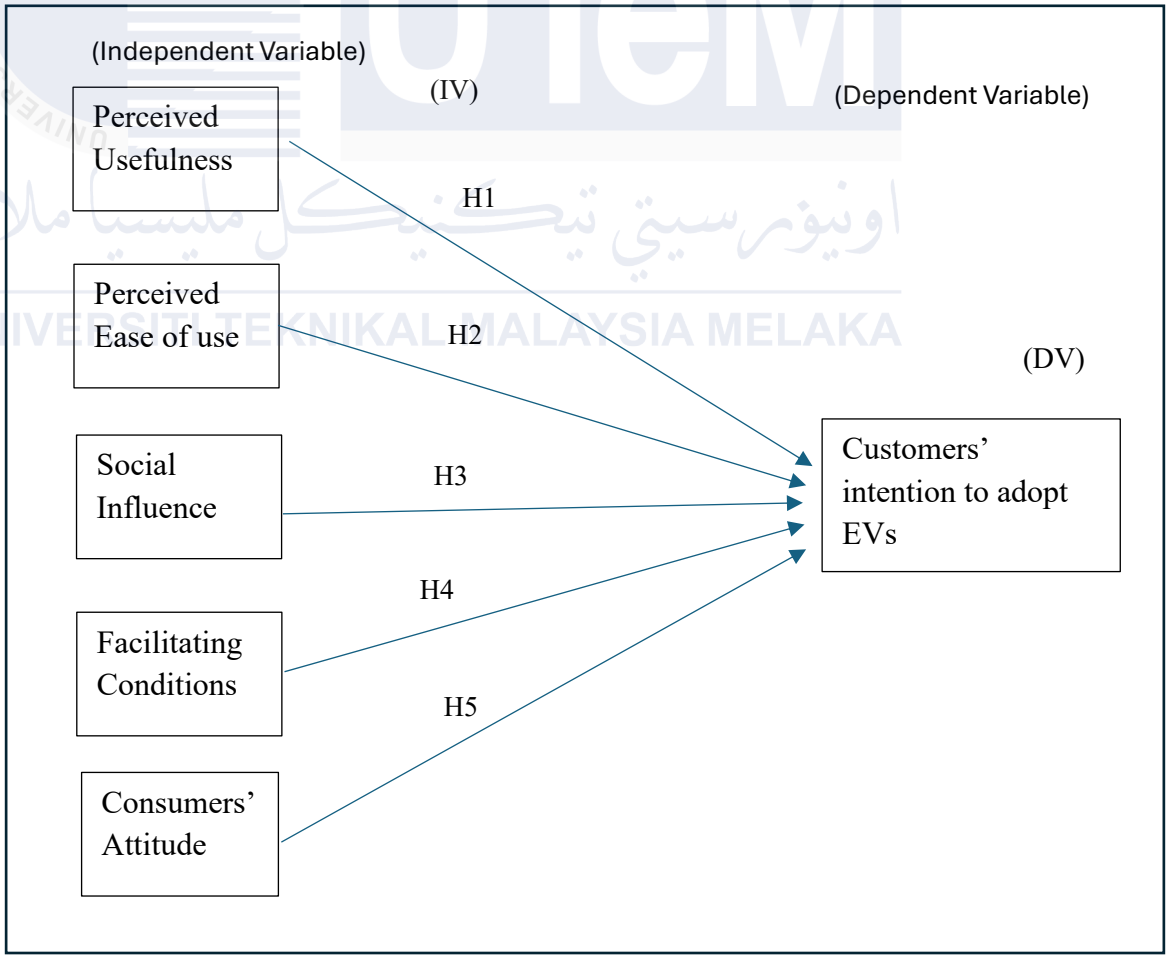

Figure 2.11: Research Framework

The aim of this research is to explore the connections among the perceived usefulness, perceived ease of use, and intention to adopt EVs, utilizing the following framework as a guide. Additionally, it will explore the role of attitudes towards EVs as a moderator in these connections.

2.12 Hypothesis

Hypothesis 1 (H1)

H0: There is no significant relationship between Perceived Usefulness (PU) and the influence consumers' intention to adopt electric vehicles.

H1: There is a significant relationship between Perceived Usefulness (PU) and the influence consumers' intention to adopt electric vehicles.

Hypothesis 2 (H2)

H0: There is no significant relationship between Perceived Ease of Use (PEOU) and the influence consumers' intention to adopt electric vehicles.

H1: There is a significant relationship between Perceived Ease of Use (PEOU) and the influence consumers' intention to adopt electric vehicles.

Hypothesis 3 (H3)

H0: There is no significant relationship between Social Influence (SI) and the influence consumers' intention to adopt electric vehicles.

H1: There is a significant relationship between Social Influence (SI) and the influence consumers' intention to adopt electric vehicles.

Hypothesis 4 (H4)

H0: There is no significant relationship between Facilitating Conditions (FC) and the influence consumers' intention to adopt electric vehicles.

H1: There is a significant relationship between Facilitating Conditions (FC) and the influence consumers' intention to adopt electric vehicles.

Hypothesis 5 (H5)

H0: There is no significant relationship between Consumers' Attitude (AT) and the influence consumers' intention to adopt electric vehicles.

H1: There is a significant relationship between Consumers' Attitude (AT) and the influence consumers' intention to adopt electric vehicles.

2.13 Summary

The literature review provides a thorough overview of earlier studies on the variables influencing consumers' inclinations to buy electric cars. It highlights the moderating role that consumer views towards electric vehicles play in determining purchase intention as well as the significance of perceived utility, perceived ease of use, social influence, facilitating conditions, and consumers' attitude in affecting purchase intention. The review also covers the application of the Technology Acceptance Model (TAM) to understand technology uptake. It also covers a number of theoretical frameworks, like rational choice theory and the planned behaviour framework, that have been used in previous studies.

CHAPTER 3

3.1 RESEARCH METHODOLOGY

The methodology for gathering the data and information for this study is covered in this chapter. It has to do with how a study is methodically designed by the researcher to ensure precise and reliable findings that meet the goals and objectives of the investigation. Selecting an appropriate research methodology is essential as it facilitates the acquisition of research findings. The study design, methodological selections, data source, sample design, research strategy, data analysis method, validity, and reliability are some of the topics covered in this chapter's explanations of the research methodology.

3.2 Research Design

A research design is the overarching approach or plan that a researcher uses to tackle a particular research topic or purpose. The framework and procedures used to gather and examine data to respond to research questions are all included. According to Nayak and Singh (2015), research design is a process that aims to establish a plan of activities to respond satisfactorily to research questions identified in the exploratory phase, including selecting research methods, operating structures of interest, and developing appropriate sampling strategies. In this context, research design serves as a strategy that utilizes empirical data to address research questions.

Furthermore, Saunders, et al. (2019) identified three types of research design that is exploratory research, this kind of study is used by analysts to identify phenomena and comprehend a subject more thoroughly. study that is descriptive seeks to accurately describe people, places, or things that are pertinent to the study questions. Explanatory study is carried out to examine a situation or problem with the aim of elucidating the link between factors.

For this study, the researcher will employ a descriptive research design to understand consumer intentions to adopt electric vehicles (EVs) in South Malaysia. This approach was chosen because descriptive research can be effectively conducted using specific data collection methods such as surveys. This design will allow the researcher to collect detailed information on consumer perceptions, attitudes, and intentions towards EV adoption.

3.3 Research Choices

This research adopts a mono-method quantitative approach, where data is collected and analyzed using a quantitative method. This choice is suitable to test the hypotheses derived from the TAM model, as its ability to measure in numerical and analyze the relationships between the independent and dependent variables.

3.3.1 Quantitative Study

The quantitative study will be employed to conduct the research methodology, the results are able to provide researcher the with assistance in identifying data in a scientific manner. The reason for applying this method by collecting quantitative data is to determine the correlations between the independent and dependent variables. Numerical form will be gathered through quantitative data for data analysis (Noyes et al., 2019). Hence, the data obtained should be aligned with objective, measurable, and statistical data.

3.4 Source of Data

The data for this study will be collected from two main sources: primary data and secondary data. The choice of data sources is crucial in ensuring the validity and reliability of the findings. Primary data will be collected through a survey of South Malaysian consumers to gather original data specific to the research questions and objectives. Secondary data, on the other hand, will be sourced from existing literature, reports, and

analyses to provide context and background information for the study (Data Types and Sources, n.d.).

3.4.1 Primary Data

For this research, primary data will be collected from working adults in Johor, Malaysia, using standardized questionnaires. The questionnaire will gauge several variables, including perceived usefulness (PU), perceived ease of use (PEOU), attitudes towards electric vehicles (EVs), and the intention to adopt EVs. Additionally, the questionnaire will assess social influence (the effect of friends and peers on the intention to use EVs), facilitating conditions (availability of infrastructure and support for EVs), and environmental concern (awareness and attitudes toward environmental issues and the perceived impact of EVs on environmental protection). This approach aims to provide comprehensive insights into the factors influencing the adoption of electric vehicles in Johor.

3.4.2 Secondary Data

Secondary data sources will be used to provide context and background information for the study. These may include existing literature on consumer adoption of EVs and the factors influencing purchase decisions, government reports and statistics related to the Malaysian automotive market and EV adoption, and industry reports and analyses on the EV market in Malaysia and Southeast Asia. While primary data is essential for addressing the specific research questions, secondary data can provide valuable insights and help contextualize the findings (Busayo.Longe, 2020).

3.5 Research Location

This study will be conducted in Johor, a key state in South Malaysia. Johor is an ideal location for this research due to its dynamic economic growth and significant automotive market, which mirrors the broader trends in South Malaysia. The selection of Johor allows

for an in-depth exploration of consumer perceptions and attitudes towards electric vehicles (EVs) in a rapidly developing region. (Institusi Kerajaan, R&D).

The study will select participants from various parts of Johor to ensure a comprehensive sample that reflects the diverse demographics of the state. By recruiting participants from different urban and rural areas within Johor, the research aims to capture a wide range of consumer perspectives on EV adoption. This approach will help in understanding the key determinants influencing the uptake of EVs in this specific region.

Survey participants will be chosen to represent a variety of regional, ethnic, income, and urban-rural backgrounds within Johor. This diversity is crucial for generalizing the study's findings and ensuring their applicability to the broader Malaysian consumer market.

The research will be conducted in compliance with the regulations and guidelines set forth by the Malaysian government for conducting research in the country. This includes obtaining necessary approvals, adhering to ethical standards, and collaborating with local institutions and organizations as required (Official Portal of Ministry of Economy, n.d.).

Focusing on Johor will provide valuable insights into EV adoption in a significant and representative part of Malaysia. The findings from this study will contribute to a broader understanding of EV adoption in South Malaysia and offer recommendations beneficial to automakers, and other stakeholders involved in promoting sustainable mobility in the region. (Institusi Kerajaan, R&D).

3.6 Sampling Design and Population

The research will use a basic random sampling design to choose participants from the South Malaysian (Johor) consumer community. With simple random sampling, every member of the population has an equal chance of being chosen for the sample. This is a probability sampling technique.

Given that the current study is to explore the factors influencing customers' intentions to use electric vehicles (EVs) in Johor, this sample strategy is appropriate. The study can

ensure that the sample is representative of the larger population of Johor consumers by employing simple random sampling, enabling more broadly applicable conclusions within this particular area.

The goal of the study is to gather information that appropriately depicts the variables influencing Johor customers' decision to purchase electric automobiles. All members of the public can participate equally in this method, which makes it possible to identify any patterns or differences in the responses of consumers from various Johor demographics. Every individual in this population will be given a unique identifier, and the number of survey participants will be chosen at random using a random number generator.

The study plans to collect responses from 300 participants respondents to ensure a robust and statistically significant sample size. This approach will help ensure that the findings are reflective of the diverse consumer base in Johor and provide valuable insights into the regional factors affecting EV adoption, which can then inform broader national strategies and policies.

3.6.1 Key Respondent

The key respondents for this research are employed working adults residing in urban areas of Johor, South Malaysia. This target population is particularly relevant as their steady income influences decision-making regarding vehicle purchases, and their accessibility within a densely populated area makes them ideal candidates to explore the factors influencing electric vehicle (EV) adoption. Surveys and questionnaires will be distributed among this target population to gather data on their perceptions, attitudes, and intentions regarding EV usage.

3.6.2 Sample Selection

In this study on the intention to adopt electric vehicles (EVs) among working adults in urban areas of Johor, South Malaysia, choosing a representative sample is significant.

Sampling refers to the process of selecting a group of individuals from a larger population to collect data and draw inferences about the entire population (McCombes, 2022).

Given the quantitative method conducted in this research, a probability sampling technique is appropriate and suitable for this study. This ensures that each working adult in Johor has the possibility of being selected, minimizing bias and enhancing the reliability of the findings (McCombes, 2022).

Among probability techniques, this study will utilize simple random sampling. Thus, every working adult in urban Johor is likely to be included in the sample. This approach promotes fairness and reduces the risk of bias in the data collection process (McCombes, 2022).

3.7 Data Collection

This research will employ a survey method for data collection. Questionnaires will be distributed to participants through various channels. Primarily, a digital version of the questionnaire, accessible via a Google Form link, will be shared with respondents through social media and other online platforms. This approach ensures rapid distribution, reduces research costs, and facilitates quick responses.

To enhance the accuracy of the responses, the questionnaires will be distributed in locations such as car dealerships and shopping malls where vehicles are displayed. Respondents will be invited to scan a QR code to access the Google Form questionnaire. However, due to concerns about privacy and data security associated with QR codes, paper versions of the questionnaire will also be provided upon request.

To maximize the response rate, efforts will be made to distribute questionnaires in person whenever possible, in addition to online distribution. Before respondents complete the questionnaire, the purpose of the study will be clearly explained, emphasizing that the collected data will be used solely for academic research. This clarification is intended to encourage greater participation in the survey.

3.8 Research Strategy

A research strategy refers to a general plan or approach that guides the overall direction of a research study. It outlines the key steps, methods, and techniques to be employed to address the research objectives and answer the research questions. One common research strategy is the survey method, which involves collecting data from a sample of individuals using questionnaires or interviews. Surveys are often used when researchers aim to gather information from a large population and seek to quantify opinions, attitudes, behaviours, or characteristics (DeFranzo, 2019).

3.8.1 Questionnaire Design

The researcher went for closed ended questions that resulted to same and structured answers from the participants. A 5-point Likert scale were used in this study to be assess respondents' perspectives and attitudes towards the adoption of electric vehicles (EVs). The questionnaire included sections on demographics and questions covering perceived usefulness, perceived ease of use, attitudes towards EVs, and intention to adopt EVs. The objective of the questionnaire is to collect comprehensive information on respondents' perspectives, attitudes, and intentions regarding the adopting of EVs. The structured nature of the Likert scale and the multiple sections of the questionnaire will provide significant insights for analyzing the factors influencing consumer behavior and the intention to adopt electric vehicles in Malaysia.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Table 3.8.1: 5-point Likert Scale

3.8.2 Pilot Test

The researcher will conduct a pilot test in this study to ensure that all respondents understand the questions and get a better result. A pilot test is a small preliminary study used in research to test a proposed study before full implementation. The pilot test's goal

is to identify the respondents' lack of clear items (Aslam et al., 2020). Besides, it will find any errors or weaknesses in the questionnaire, which can be corrected later by the researcher before being distributed to respondents. The researcher will conduct a pilot test in this study to ensure that all respondents understand the questions and get a better result. A pilot test is a small preliminary study used in research to test a proposed study before full implementation. The pilot test's goal is to identify the respondents' lack of clear items (Aslam et al., 2020). Besides, it will find any errors or weaknesses in the questionnaire, which can be corrected later by the researcher before being distributed to respondents.

3.9 Data Analysis

After collecting data through the online survey, the researcher will use the Statistical Package for Social Science (SPSS) to examine the data. The comprehensive statistical program SPSS can perform efficient data analysis. The researcher's interpretation of the findings is also rather straightforward. Several techniques, including descriptive analysis, reliability analysis, and regression analysis, will be used by the researcher to assess the data in this study.

3.9.1 Pearson's Correlation Coefficient Analysis

The degree of the linear relationship between the independent and dependent variables will be tested using Pearson's correlation analysis. To achieve this study’s objective, it is necessary to apply this technique to measure the collected data to clarify the probability of the correlation coefficient from a sample. When the value of Pearson’s correction coefficient is in the range between -1 to +1, it illustrates negative and positive correlations. While a value of 0 means a completely independent correlation (Saunders et al., 2019).

Correlation Coefficient Value (r)	Direction and Strength of Correlation
-1	Perfectly negative
-0.8	Strongly negative
-0.5	Moderately negative
-0.2	Weakly negative
0	No association
0.2	Weakly positive
0.5	Moderately positive
0.8	Strongly positive
1	Perfectly positive

Figure 3.9.1: Pearson's Correlation Coefficients

Source: Saunders et al., (2019)

3.9.2 Cronbach's Reliability Analysis

Cronbach's alpha analysis can also be used to evaluate the reliability for internal consistency of measurement scales used. This method ensures that the elements on each scale are interconnected to accurately measure the intended characteristics. This study will use this method of analysis to determine the strength of relationships and evaluate the accuracy.

Cronbach's Alpha Coefficient	**Internal Consistency**
$\alpha \geq 0.9$	Excellent
$0.7 \leq \alpha < 0.9$	Good
$0.6 \leq \alpha < 0.7$	Acceptable
$0.5 \leq \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

Table 3.9.2: Cronbach's Correlation Coefficient

3.9.3 Regression Analysis

A collection of statistical techniques called regression analysis is used to calculate the correlation between one or more independent variables and a dependent variable. Four independent factors are included in this study: perceived utility, perceived usability, social influence, and facilitating conditions. It can assist in determining if the independent and

dependent variables have a positive or negative connection. This testing will examine to a certain extent the independent variable affects the dependent variable. The study will also investigate how consumer perceptions of EVs moderate these associations.

3.10 Validity and Reliability

Evaluating the study, reliability and validity are used. They refer to a process, a procedure, or a test for evaluating the goodness or unfavorability of something. Reliability and validity are the terms used to describe how consistently a measurement is made. When designing our study design, selecting a methodology, and summarizing the findings, reliability and validity are crucial factors to consider, particularly in quantitative research.

3.10.1 Validity

Validity means that the data obtained is appropriate for the measuring instrument's intended use (SÜRÜCÜ, & MASLAKI, 2020). The precision of the analysis's findings is guaranteed by the use of certified measurement tools. How accurately the independent variable may be explained to produce the observed effect is known as internal validity. When the independent variables are the only factors influencing the dependent variable, internal validity is achieved. This is the extent to which an outcome can be changed.

3.10.2 Reliability

The term "reliability" refers to a method of determining the consistency of something. A measurement is reliable if the same results can be obtained consistently using the same method under the same conditions (Middleton, 2022). The Cronbach's Alpha method is used by the researcher in this study to assess the research's reliability. The Alpha Coefficient ranges between 0 and 1. To indicate study reliability, the result must be greater than 0.6. If the result is less than 0.6, there is an issue with the data. For this study, reliability will be assessed for the scales measuring perceived usefulness, perceived ease of use, and attitudes towards EVs to ensure consistent and dependable results.

3.11 Proposed Conceptual Framework

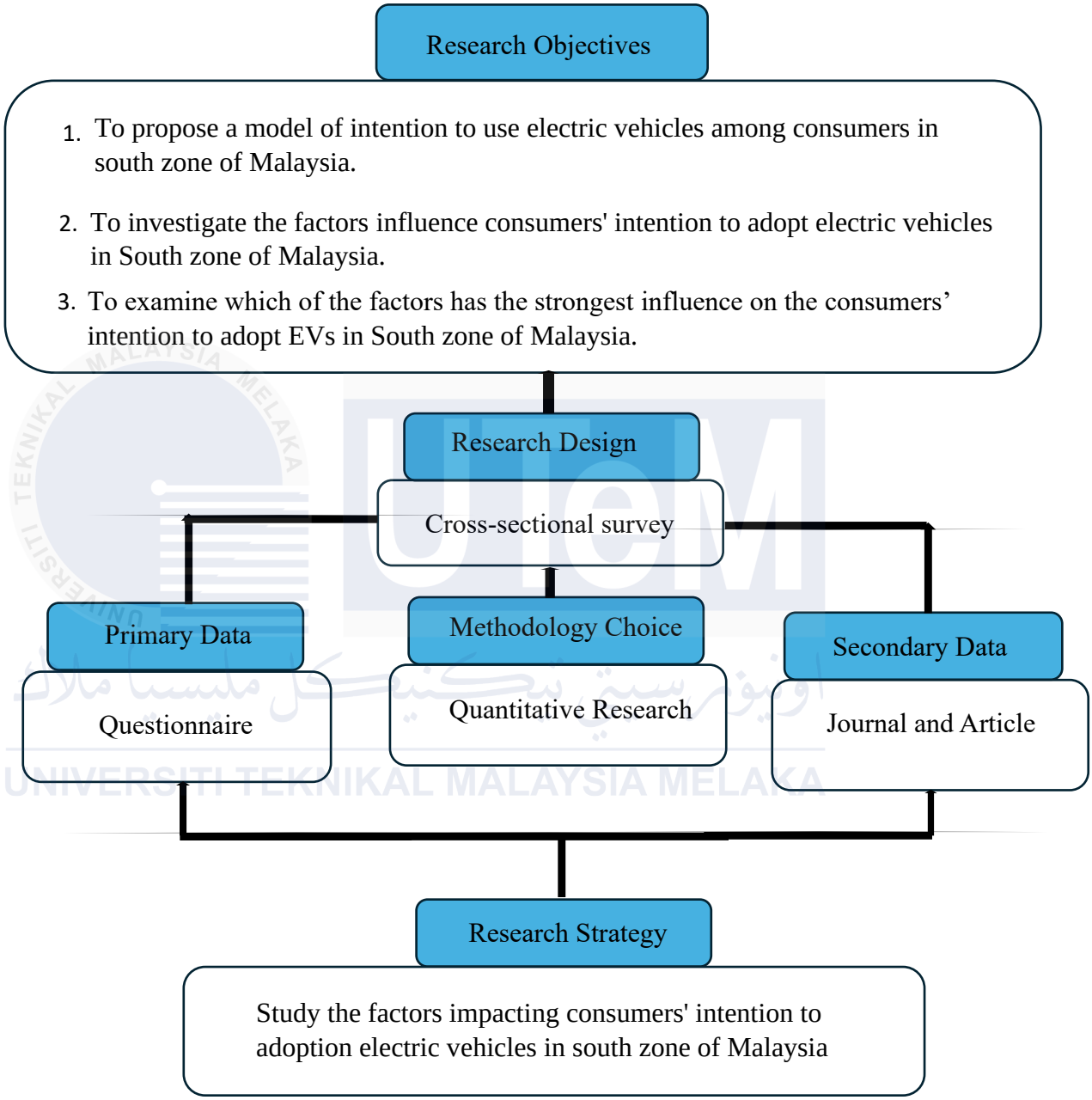

Figure 3.11 : Proposed Conceptual Framework

3.12 Summary

The research approach used for this study is described in this chapter. Techniques for collecting and analyzing quantitative data were employed in a quantitative methods approach. Customers in south zone of Malaysia (Johor, Melaka, Negeri Sembilan), were surveyed as part of the study to learn more about their opinions of electric cars (EVs), including their views on their utility, usability, and attitudes towards them. The online questionnaire survey was disseminated, and statistical software (SPSS) was used to analyze the results. Simple random sampling of Johor customers was the sampling strategy used for the investigation. Descriptive analysis, reliability analysis, regression analysis, and validity and reliability tests were all part of the data analysis approach.

CHAPTER 4

4.1 RESULTS AND DISCUSSIONS

In this chapter, the researcher analyzed and developed the data gathered from the distributed questionnaire. The overview used in this chapter is the demographic profiles of the respondent, survey reliability test, descriptive analysis, Pearson's correlation analysis, and multiple regressions to determine the relationship between the constructs. Data analysis is generated based on the Social Science Statistical Package (SPSS) version 27.

4.2 Descriptive Analysis

4.2.1 Background of The Respondents

The researcher used to the descriptive statistics to describe the data collected such as basic characteristic by questionnaire. The details of demographic from 345 respondents, which involved results of the factors affecting consumers' intention to adopt electric vehicles in south zone of Malaysia will be defined by the data analysis. Descriptive statistics are one method that used table, graph and overview the study. Furthermore, the data analysis reveals that the basic demographic data collected from 345 respondents who completed the questionnaire, as shown in Table 4.2.

Table 4.2.1: Summary of total Demographic Information

Demographic	Demographic details	Percentage
Gender	Male	56.2%
	Female	43.8%
Age	below 18	4.3%
	18 to 24	32.5%
	25 to 34	37.4%
	35 to 44	20%

	45 to above	5.8%
Ethnic	Malay	51%
	Chinese	33.3%
	Indian	14.2%
	Other	1.4%
Education level	Primary education	2%
	Secondary education	49.3%
	Tertiary education	47%
	others	1.7%
Income level	Under RM 2,000	11%
	RM 2,000 to RM 3,999	39.1%
	RM 4,000 to RM 5,999	33.%
	RM 6,000 to RM 9,999	14.2%
	RM 10,000 above	3%
States	Johor	44.9%
	Melaka	38%
	Negeri Sembilan	17.1%
Having own a vehicle	No	23.8%
	Yes (Petrol)	69%
	Yes (Hybrid)	4.1%
	Yes (Electric)	1.4%

4.2.1.1 Gender

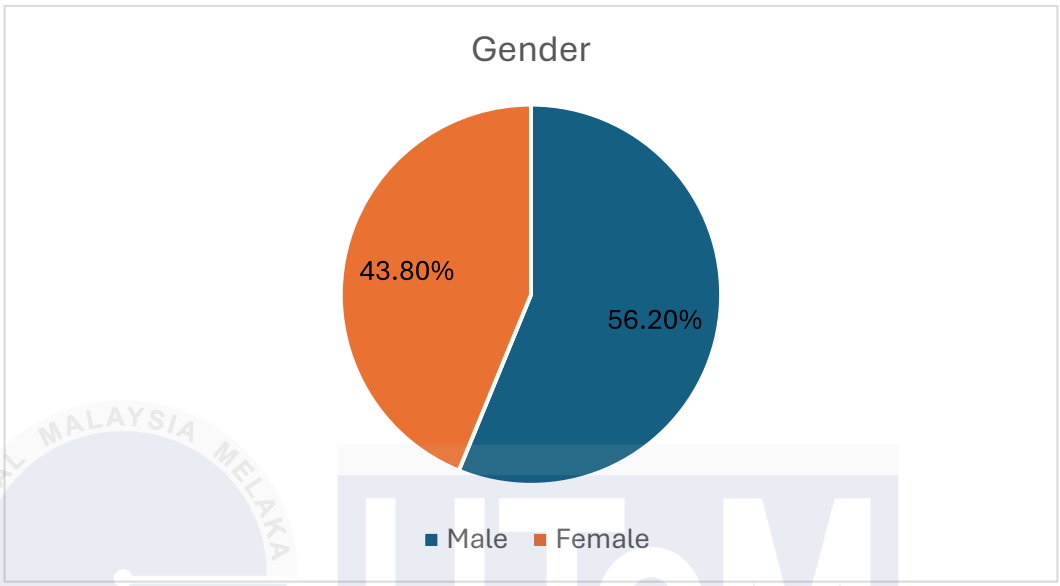

Figure 4.2.1.1: Gender of Respondents

(Source: Data Analysis of SPSS)

In the sample of 345 respondents shown Figure 4.1 above, there are a total of 194 (56.2 %) male respondents and 151 (43.8%) female respondents. The percentage shows that male respondents are much higher than female respondents.

4.2.1.2 Age

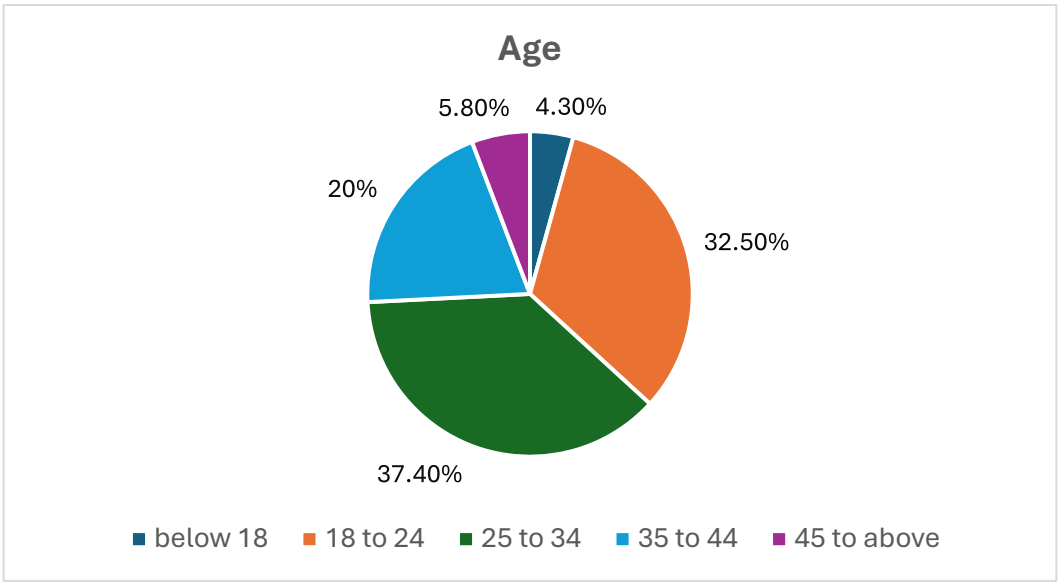

Figure 4.2.1.2: Age of Respondents

(Source: Data Analysis of SPSS)

Figure 4.2 shows the age group who took part in answering the questionnaire. In this study, most of the respondents are from the age group 18 – 24 years, with 112 respondents (32.5 %), followed by 25 – 34 years with 129 respondents (37.4 %), and 35 - 44 years with 69 respondents (20 %) and 20 and 15 respondents representing 5.8 % and 4.3 % respectively. Most of the respondents are from the age groups, 25 – 34 years old with 129 respondents (37.4 %).

4.2.1.3 Race

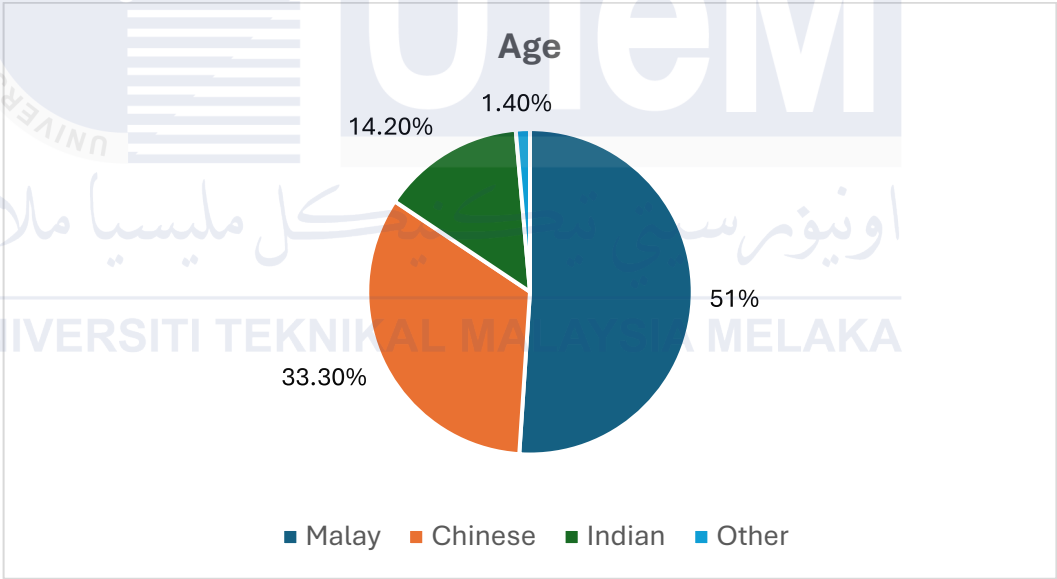

Figure 4.2.1.3: Race of Respondents

(Source: Data Analysis of SPSS)

Based on Figure 4.3, majority of respondents came from Malay race with 176 (51%), followed with Chinese race with 115 (33.3%). The second lowest respondents are from Indian race which is 49 out of 345 respondents (14.2%) and lastly the minority is from other with 5 number of respondent (1.4%).

4.2.1.4 Level of Education

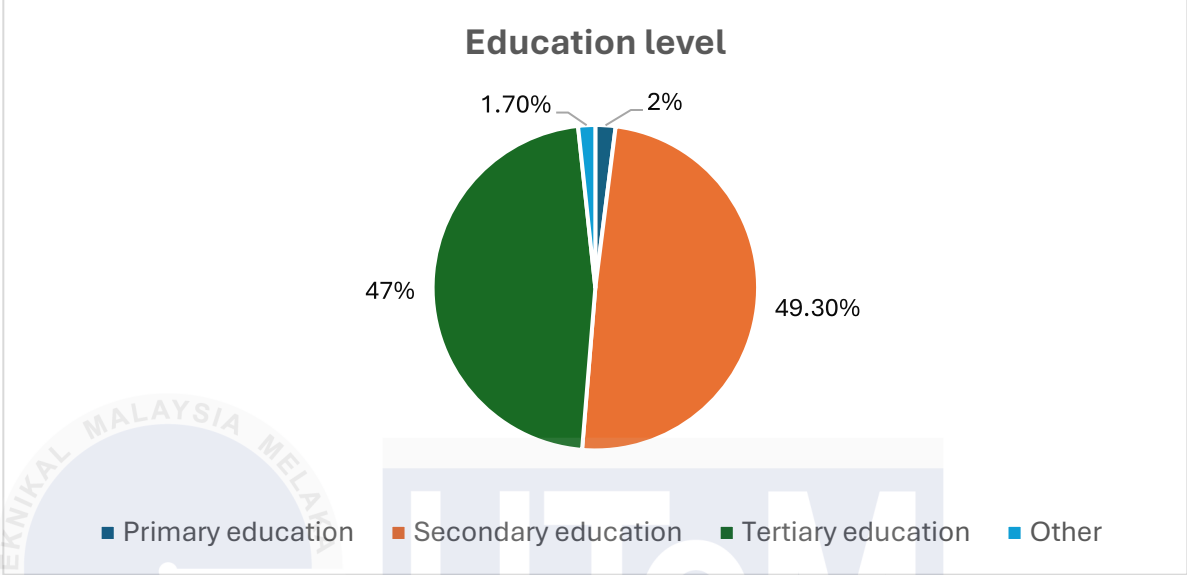

Figure 4.2.1.4: Respondents' Level of Education

(Source: Data Analysis of SPSS)

Figure 4.4 illustrates the secondary education as the majority with total number of 170 respondents (49.3%). The second highest number of respondents are tertiary education with 162 respondents (47%), followed second lowest with 6 respondents (1.7%) and the least with 7 respondents (2 %) from primary education level.

4.2.1.5 Monthly Income

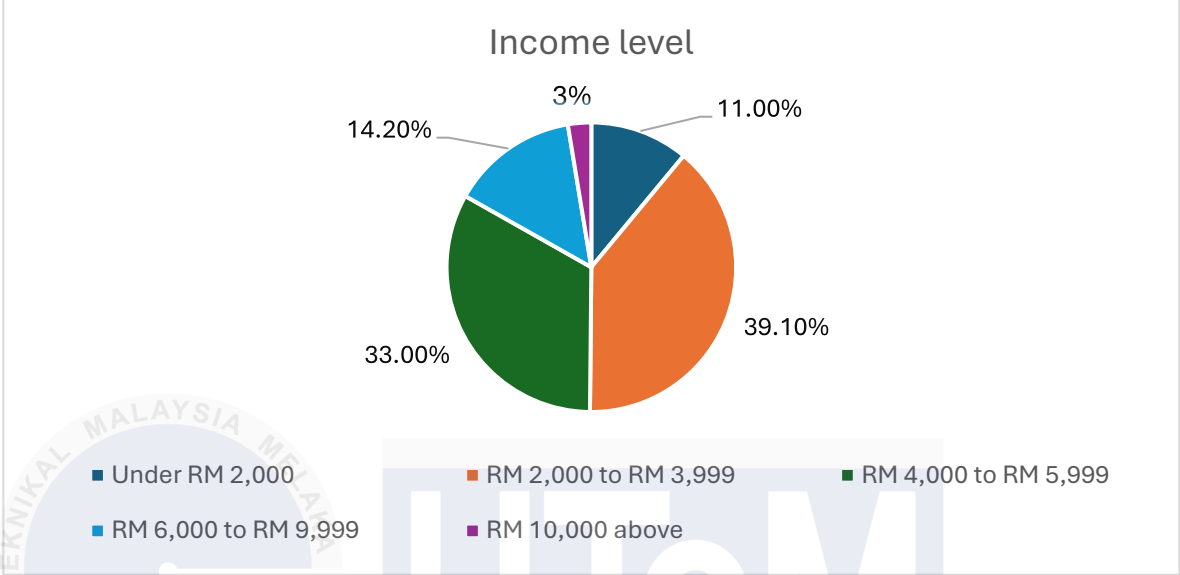

Figure 4.2.1.5: Respondents' Monthly Income

(Source: Data Analysis of SPSS)

Based on Figure 4.5, majority of respondents monthly income are RM 2,000 to RM 3,999 with 135 out of 345 respondents (37.4%), followed by RM 4,000 to RM 5,999 with 114 respondents (33%). Next, there are 49 respondents (14.2%) for monthly income level of RM 6,000 to RM 9,999. The second minority belongs to level under RM 2,000 above which is 38 respondent (11%) and the lowest number of respondents are 9 respondents (3%) from RM 10,000 above level monthly income.

4.2.1.6 Having own a vehicle

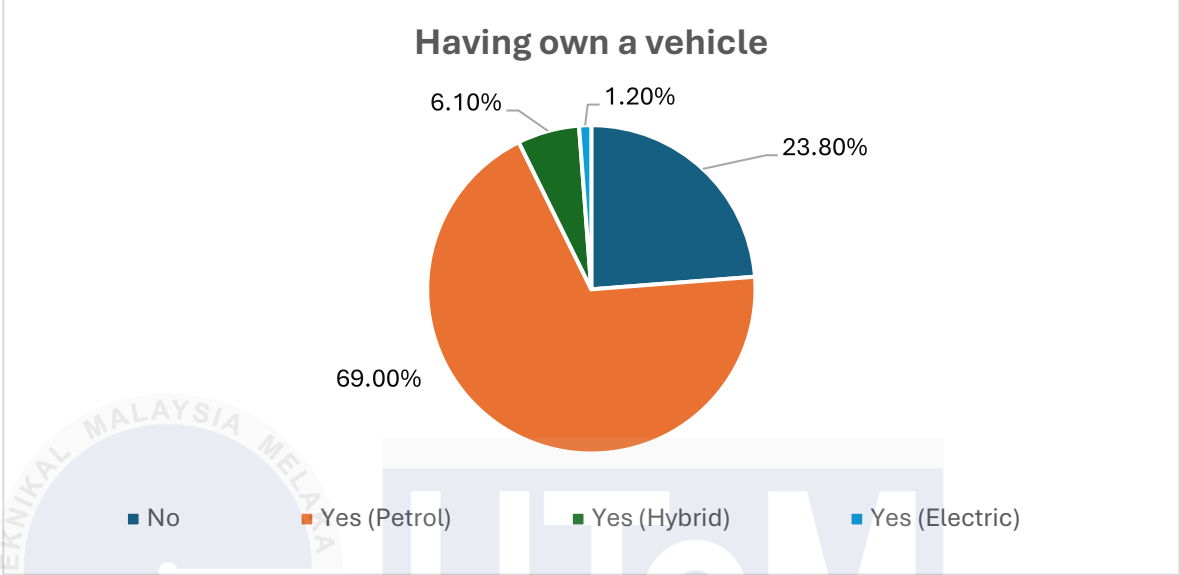

Figure 4.2.1.6: Respondents' Monthly Income

(Source: Data Analysis of SPSS)

Based on Table 4.9 and Figure 4.6, majority of respondents have their vehicle, for the petrol 238 out of 345 respondents (69%), followed by hybrid with (6.1%), and the electric vehicle with (1.2%.). The rest of the respondents doesn't have own vehicle which are (23.8%).

4.2.2 Research Question Analysis

Based on the descriptive analysis results, the mean and standard deviation values provide insights into how respondents perceive various factors related to the adoption of electric vehicles (EVs).

4.2.2.1: Independent Variable 1: Perceived Usefulness (PU)

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
PU1 (EV) would give a dynamic driving experience	345	1	5	4.08	.808
PU2 (EV) has the potential for safer and quiet driving experience	345	1	5	4.07	.732
PU3 Overall costs of an EV are lower than a petrol/gasoline car. (including maintenance, charging, and spare parts)	345	1	5	3.72	.833
PU4 I believe that EVs are more suitable for short-distance drives than long journeys	345	2	5	4.13	.708
Valid N (listwise)	345				

Table 4.2.2.1: Independent Variable 1: Perceived Usefulness (PU)

[Source: Data Analysis of SPSS]

Based on table 4.10, agreed that (PU4) they believe that EVs are more suitable for short-distance drives than long journeys, because it got the highest mean value mean that is 4.13 with standard deviation 0.708. The next, followed by statement "(EV) would give a dynamic driving experience." and "(EV) has the potential for safer and quiet driving experience.", the value mean are 4.08 and 4.07 and the standard deviation respectively 0.808 and 0.732. Lastly, "Overall costs of an EV are lower than a petrol car." was the lowest mean value that is 3.72 with 0.833 standard deviation value.

4.2.2.2: Independent Variable 2: Perceived Ease of Use (PEOU)

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
PE1 I feel confident that I have enough knowledge to drive an EV comfortably.	345	1	5	4.22	.794
PE2 It is easy for me to learn to use EV.	345	1	5	4.09	.811
PE3 The interaction with EV would be clear and understandable.	345	2	5	4.08	.622
PE4 The process of charging EV is easier than the petrol/gasoline car.	345	1	5	3.82	.865
Valid N (listwise)	345				

Table 4.2.2.2: Independent Variable 2: Perceived Ease of Use (PEOU)

[Source: Data Analysis of SPSS]

Based on Table 4.11, majority of the respondents agree that (PEOU1) "I feel confident that I have enough knowledge to drive an EV comfortably." are the most important with mean value of 4.22 and 0.794 standard deviation. Followed by second highest PE2 with 4.09 mean value and 0.811 standard deviation. Next, "The interaction with EV would be clear and understandable." with 4.08 mean value along with 0.622 standard deviation respectively. Lastly, (PEOU4) The process of charging EV is easier than the petrol car that influences customer purchase intention with mean value 3.82 and 0.865 of standard deviation.

4.2.2.3: Independent Variable 3: Social Influence (SI)

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
SI1 It gives a good impression on me when driving EV	345	1	5	3.72	1.065
SI2 It gives a positive influence on community when using EV	345	1	5	3.57	1.077
SI3 It inspires me to turn to EV when others are using it	345	1	5	3.93	.878
Valid N (listwise)	345				

Table 4.2.2.3: Independent Variable 3: Social Influence (SI)

[Source: Data Analysis of SPSS]

According to respondents, (SI3) “It inspires me to turn to EV when others are using it.” has the greatest influence on increasing customer purchase intention with social influence with mean value 3.93 and standard deviation 0.878. (SI1) “It gives a good impression on me when driving EV." content is the second highest with mean value of 3.72 and standard deviation of 1.065. Followed by mean of 3.57 as well as 1.077 standard deviation given to (SI2) “It gives a positive influence on community when using EV." respectively.

4.2.2.4 Independent Variable 4: Facilitating Conditions (FC)

FC Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
FC1 Using EV is easy due to the availability of charging infrastructure and other facilities in my area.	345	1	5	3.93	.861
FC2 Using EV is easy due to the availability to access the knowledge, resources, services, and facilities.	345	1	5	4.03	.874
FC3 Using an EV is easy due to the availability of government incentives (such as tax reductions or subsidies)	345	1	5	3.91	.841
Valid N (listwise)	345				

Table 4.2.2.4: Independent Variable 4: Facilitating Conditions (FC)

[Source: Data Analysis of SPSS]

According to respondents, (FC2) “Using EV is easy due to the availability to access the knowledge, resources, services, and facilities.” has the greatest influence on increasing customer purchase intention with mean value 4.03 and standard deviation 0.874. (FC1) “Using EV is easy due to the availability of charging infrastructure and other facilities in my area." is the second highest with mean value of 3.93 and standard deviation of 0.861. Lastly, (FC3) Using an EV is easy due to the availability of government incentives (such as tax reductions or subsidies) influences customer purchase intention with mean value 3.91 and 0.841 of standard deviation.

4.2.2.5 Independent Variable 5: Consumers' Attitude

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
AT1 I think electric vehicle has better performance than petrol cars	345	1	5	4.00	.884
AT2 I think I can wait longer process of EV charges than to refuel a petrol car	345	1	5	3.23	1.079
AT3 Using EV because I consider it gives a positive environmental impact if using EV	345	1	5	3.85	.957
AT4 I prefer using an EV because I consider it more environmentally friendly than traditional vehicles (including petrol, diesel, NGV)	345	1	5	3.67	.982
Valid N (listwise)	345				

Table 4.2.2.5: Independent Variable 5: Consumers' Attitude (AT)

[Source: Data Analysis of SPSS]

Based on Table 4.13, (AT1) "I think electric vehicle has better performance than petrol cars" has the highest mean value 4.0 with standard deviation of 0.884. Closely followed by (AT3) "Using EV because I consider it gives a positive environmental impact if using EV" with mean value 3.85 with standard deviation of 0.957. The mean of 3.67, (AT4) "I prefer using an EV because I consider it more environmentally friendly than traditional vehicles (including petrol, diesel, NGV)" came next with 0.982 standard deviation, whereas(AT2) "I think I can wait longer process of EV charges than to refuel a petrol car" was l the lowest with mean of 3.23 and 1.079 standard deviation.

4.2.2.6 Dependent Variable 6: Intention to Purchase

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
DV1 EV is more beneficial to me.	345	1	5	4.03	.921
DV2 Have intention to purchase EV in the near future.	345	1	5	4.12	.838
DV3 Purchase EV will be my top consideration.	345	1	5	3.86	.929
DV4 EV is cheaper in a long-term usage.	345	1	5	3.94	.849
Valid N (listwise)	345				

Table 4.2.2.6: Independent Variable 5: Consumers' Attitude (AT)

[Source: Data Analysis of SPSS]

Based on Table 4.11, majority of the respondents agree that (DV2) "Have intention to purchase EV in the near future" are the most important with mean value of 4.12 and 0.838 standard deviation. Followed by second highest DV1 with 4.03 mean value and 0.921 standard deviation. Next, the DV4 "EV is cheaper in a long-term usage" with 3.94 mean value along with 0.849 standard deviation respectively. Lastly, the lowest is (DV3) "Purchase EV will be my top consideration" with mean value 3.86 and 0.929 of standard deviation.

4.3 Reliability Analysis

The researcher performed Cronbach's Alpha analysis to test the reliability of the set of items used in the study. The researcher used SPSS version 27 for the testing of this Cronbach Alpha value. A good reliability of variables is shown through 0.7 and above, while 0.6 value and below has a lack of correlation or poor reliability. Hence, the Cronbach's Alpha value of this study is presented in the table below.

Variable	Cronbach's Alpha	Number of items
Perceived Usefulness	0.758	4
Perceived Ease of use	0.858	4
Social Influence	0.855	3
Facilitating Conditions	0.822	3
Consumers' Attitude	0.831	4
Purchase Intention	0.812	4

Table 4.3 Reliability analysis of variables in the research survey

According to the table 5, the results show that the Cronbach's alpha of perceived usefulness is 0.758, which means that all the questions included in this variable are sufficient for academic research. The remaining Cronbach's alphas of perceived ease of use, social influence, facilitating conditions, attitude and purchase intention are 0.858, 0.855, 0.822, 0.831 and 0.812 respectively. Therefore, there is no problem with the reliability of all variables related questions in this study and they can be used for research. The reliability of the questions in this questionnaire is high because most of the questions were modified and adapted from previous studies, and some of the questions were adopted by the author from online reports. These studies have all done reliability analysis, but in order to ensure the credibility and integrity of the entire experiment, a reliability analysis was still done. The final result was a near miss, and all variables can be used for academic research.

4.4 Pearson Correlation Analysis

Correlations

		DV	PU	PEOU	SI	FC	AT
DV	Pearson Correlation	1	.641**	.599**	.587**	.796**	.872**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	345	345	345	345	345	345
PU	Pearson Correlation	.641**	1	.638**	.535**	.647**	.559**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	345	345	345	345	345	345
PEOU	Pearson Correlation	.599**	.638**	1	.427**	.648**	.528**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	345	345	345	345	345	345
SI	Pearson Correlation	.587**	.535**	.427**	1	.609**	.543**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
	N	345	345	345	345	345	345
FC	Pearson Correlation	.796**	.647**	.648**	.609**	1	.700**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	345	345	345	345	345	345
AT	Pearson Correlation	.872**	.559**	.528**	.543**	.700**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	345	345	345	345	345	345

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4.4: Pearson Correlation Analysis

[Source: Data Analysis of SPSS]

Table 4.15 depicts the Pearson Correlation Analysis of Perceived Usefulness, Perceived Ease of use, Social Influence, Facilitating Conditions, Consumers' Attitude toward EVs as independent variable, where dependent variable is Consumer Purchase Intention. Based on the table result, it shows that all the independent variables have positive correlation with dependent variable. The consumer's attitude toward EVs (AT) strongly correlates with consumer purchase intention (DV) with r value of 0.872. Next, there is relationship between Facilitating Conditions (FC) and purchase intention (DV) where r value is 0.796. Next, there a moderate relationship between Perceived Usefulness (PU) and purchase intention (DV) with r value of 0.641. For the Perceived Ease of use

(PEOU) between purchase intention (DV) with r value of 0.599. Lastly, the relationship between Social Influence (SI) and purchase intention (DV) with r value of 0.587.

In conclusion, the independent variables are statistically significant while the dependent variables are in the strong positive range. All the correlation coefficients at the level of 0.01(2-tailed) allow the researcher to determine the relationship between the independent and dependent variables.

4.5 Multiple Regression Analysis

A technique for estimate the value based on two or more independent and dependent variables is known as multiple regression analysis. The effect of the independent variable on the dependent variable is analysed by multiple regression analysis in this study, with five independent variables (perceived usefulness, perceived ease of use, social influence, facilitating conditions, consumers' attitude) and one dependent variable (consumer purchase intention toward EV). Consequently, the table below presents the results of the multiple regression analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.914[a]	.836	.833	.28901

a. Predictors: (Constant), AT, PEOU, SI, PU, FC

Table 4.5: Model Summary

[Source: Data Analysis of SPSS]

Table 4.16 presents the model summary for the multiple regression analysis. A relationship between the dependent and independent variables is indicated by the R-value of 0.914. Furthermore, the R Square value of 0.836 indicates that the total variance of the variables (perceived usefulness, perceived ease of use, social influence, facilitating conditions, consumers' attitude) reported 83.6% of the variation in the dependent variable

(consumer purchase intention). This suggests that the four independent variables in the model accounted for 83.6% of the variation in the impact.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	144.056	5	28.811	344.922	.000[b]
	Residual	28.316	339	.084		
	Total	172.372	344			

a. Dependent Variable: DV

b. Predictors: (Constant), AT, PEOU, SI, PU, FC

Table 4.5.2: ANOVA

[Source: Data Analysis of SPSS]

Table 4.17 above is an ANOVA table that depicts a significant result with p-value of 0.000 and F-test value of 344.922. This finding is evidence of using the multiple regression model to forecast effects on the dependent variable. The independent variables which are perceived usefulness (PU), perceived ease of use (PEOU), social influence (SI), facilitating conditions (FC), consumers' attitude (AT) have a significant impact on the dependent variable. As a result, these variables play a major role in explaining variances in the impact, showing that the variables have a considerable impact on the model's impact variable's outcome.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.324	.114		2.842	.005
	PU	.105	.039	.087	2.708	.007
	PEOU	.037	.034	.034	1.082	.280
	SI	.027	.023	.033	1.156	.249
	FC	.270	.036	.286	7.615	.000
	AT	.521	.028	.587	18.353	.000

a. Dependent Variable: DV

Table 4.5.3: Coefficients

[Source: Data Analysis of SPSS]

Based on Table 4.15, the beta for Perceived Usefulness (PU) is 0.105, for Perceived Ease of Use (PEOU) is 0.037, Social Influence (SI) is 0.027, Facilitating Conditions (FC) is 0.270 and Consumers' Attitude (AT) is 0.521 respectively. Based on beta, Consumers' Attitude (AT) has the highest beta value while Social Influence (SI) is the lowest and has the lowest beta value. From the result of table 4.15, the researcher noticed that there is no independent variable with a negative sign, it indicates the absence of variable, which has negative relationship with the benefits of using virtual reality in the company. The constant is 0.324. Therefore, the researcher formed the following equation as shown as below:

$$y = a + bx1 + cx2 + dx3 + ex4 + fx5$$

$$a = 0.324,$$

$$b = 0.105,$$

$$c = 0.037,$$

$$d = 0.027,$$

$$e = 0.270,$$

$$f = 0.521,$$

The benefits of using virtual reality in the company = 0.324 + 0.105 (Perceived Usefulness) + 0.037 (Perceived Ease of Use) + 0.027 (Social Influence) + 0.270 (Facilitating Conditions) + 0.521 (Consumers' Attitude)

The equation shows the positive relationship between the independent variables (Perceived Usefulness, Perceived Ease of Use, Social Influence, Facilitating Conditions and Attitude) and Dependent variable (Consumers' intention to adopt EVs). According to the table 4.19, there are three independent variables has significant relationship between the dependent variable which is Facilitating Conditions (FC), Consumers' Attitude (AT), and Perceived Usefulness (PU) as indicated by p value that are 0.000 for (FC) and (AT), then the p value for (PU) as 0.007, which is lesser than 0.05. However, for Perceived Ease

of Use (PEOU) and Social Influence (SI) has no significant relationship as the p value are 0.280 and 0.249 respectively.

4.6 Hypothesis Testing

Hypothesis 1 (H1)

H0: There is no significant relationship between Perceived Usefulness (PU) and the influence consumers' intention to adopt electric vehicles.

H1: There is a significant relationship between Perceived Usefulness (PU) and the influence consumers' intention to adopt electric vehicles.

Reject H0 if the p value less than 0.05, t value more than 1.96.

Based on Table 4.15 the p value of Perceived Usefulness (PU) is 0.007 which is lower than 0.05, and t value is 2.708 which is higher than 1.96. Thus, H1 is accepted. There is a relationship between Perceived Usefulness (PU) and the consumers' intention to adopt electric vehicles.

The positive impact of perceived usefulness on the consumers' intention to adopt EVs, as observed in the current study, is in line with the study of Jia et al. (2018). If people believe that using EVs adds an overall value to their lives, they will be more likely to shift to electric vehicles (Krishnan & Koshi, 2021). Electric vehicles have a lot of benefits ranging from cost-cutting and low dependence on fuel, and they are much more sustainable with regard to the environment. Knowledge of these benefits increases customers' attitudes and beliefs towards EVs, which drives adoption (Stone & Baker-Eveleth, 2013).

Hypothesis 2 (H2)

H0: There is no significant relationship between Perceived Ease of Use (PEOU) and the influence consumers' intention to adopt electric vehicles.

H1: There is a significant relationship between Perceived Ease of Use (PEOU) and the influence consumers' intention to adopt electric vehicles.

Reject H0 if the p value less than 0.05, t value more than 1.96.

Based on Table 4.15 the p value of Perceived Ease of Use (PEOU) is 0.280 which is higher than 0.05, and t value is 1.082 which is less than 1.96. Thus, H1 has rejected. However, the result of Pearson Correlation analysis shows that there is no significant relationship between Perceived Ease of Use (PEOU) and the consumers' intention to adopt electric vehicles.

Zhang et al. (2021) investigated the mediating role of perceived ease of use between external factors and consumer intentions for EVs. The study found that while perceived ease of use is important, it does not directly influence the intention to adopt EVs as strongly as other factors like perceived usefulness. This suggests that consumers may prioritize the practical benefits and overall usefulness of EVs over their ease of use. Huang (2023) explored the influence of perceived ease of use on user attitudes towards autonomous vehicles. The study found that perceived ease of use has a direct positive impact on user attitudes but does not significantly affect the intention to adopt the technology. This indicates that while ease of use can shape positive attitudes, it may not be a decisive factor in the adoption decision.

Hypothesis 3 (H3)

H0: There is no significant relationship between Social Influence (SI) and the influence consumers' intention to adopt electric vehicles.

H1: There is a significant relationship between Social Influence (SI) and the influence consumers' intention to adopt electric vehicles.

Reject H0 if the p value less than 0.05, t value more than 1.96.

Based on Table 4.15 the p value of Social Influence (SI) is 0.249 which is higher than 0.05, and t value is 1.156 which is less than 1.96. Thus, H1 has rejected. This means there

is no significant relationship between Social Influence (SI) and the influence consumers' intention to adopt electric vehicles. There is not enough statistical evidence of the data that can explain the moderate correlation relationship in this study.

Hoang et al. (2022) conducted a systematic literature review and found that social influence is not a consistent predictor of EV adoption intention. The study highlighted that other factors, such as perceived usefulness and facilitating conditions, play a more significant role.

Hypothesis 4 (H4)

H0: There is no significant relationship between Facilitating Conditions (FC) and the influence consumers' intention to adopt electric vehicles.

H1: There is a significant relationship between Facilitating Conditions (FC) and the influence consumers' intention to adopt electric vehicles.

Reject H0 if the p value less than 0.05, t value more than 1.96.

Based on Table 4.15 the p value of Facilitating Conditions (FC) is 0.000 which is lower than 0.05, and t value is 7.615 which is higher than 1.96. Thus, H1 is accepted. There is a relationship between Facilitating Conditions (FC) and the consumers' intention to adopt electric vehicles.

Khazaei and Khazaei (2016) emphasized that facilitating conditions, such as the availability of charging infrastructure and government incentives, significantly impact the intention to use EVs. The study highlighted the importance of supportive infrastructure and resources in encouraging EV adoption. Alwadain et al. (2024) integrated the Task Technology Fit (TTF) model and the Unified Theory of Acceptance and Use of Technology (UTAUT) to study EV adoption. The study found that facilitating conditions play a significant role in establishing a positive relationship with behavioral intentions.

Hypothesis 5 (H5)

H0: There is no significant relationship between Consumers' Attitude (AT) and the influence consumers' intention to adopt electric vehicles.

H1: There is a significant relationship between Consumers' Attitude (AT) and the influence consumers' intention to adopt electric vehicles.

Reject H0 if the p value less than 0.05, t value more than 1.96.

Based on Table 4.15 the p value of Consumers' Attitude (AT) is 0.000 which is lower than 0.05, and t value is 18.353 which is higher than 1.96. Thus, H1 is accepted. There is a relationship between Consumers' Attitude (AT) and the consumers' intention to adopt electric vehicles.

Wang et al. (2017) conducted a study examining factors influencing EV adoption and found that a positive attitude towards EVs significantly boosts consumers' adoption intentions. The study highlighted that consumers with favorable attitudes towards EVs, driven by environmental concerns and perceived benefits, are more likely to adopt EVs. This aligns with your finding that attitude is the strongest predictor of the intention to adopt EVs. Lashari et al. (2021) found that environmental and economic perceptions concerning EV use were the strongest predictors for an EV purchase. The study highlighted that positive attitudes towards EVs significantly influence the intention to adopt them.

Hypothesis	Result
Hypothesis 1	Accepted
Hypothesis 2	Rejected
Hypothesis 3	Rejected
Hypothesis 4	Accepted
Hypothesis 5	Accepted

Table 4.6: Hypotheses Results

4.7 Summary

To conclude, the researcher going over the findings in this chapter. SPSS version 27 was used to calculate the reliability analysis, descriptive analysis, Pearson correlation analysis and multiple linear regression analysis. Through the analysis, the researcher determined how the five independent factors and the dependent variable were related. The hypothesis testing resulted to the acceptance of three hypothesis and rejection of the remaining two hypothesis. The researcher will go over the findings and recommendations in the upcoming chapter.

CHAPTER 5

5.1 CONCLUSION AND RECOMMENTIONS

This chapter consists of thorough synopsis if the overall study, which includes methodology and main findings. The outcomes from the previous chapter are explained in detail in this chapter to fulfil all of the stated goals. This chapter will discuss explores the reasoning for accepting or rejecting theories. In addition, the researcher also provides additional suggestions for future researchers working in the same area.

5.2 Summary of Research Objective

The aim of this research was to examine Perceived Usefulness, Perceived Ease of Use, Social Influence, Facilitating Conditions, and Attitude influence consumers' intention to adopt electric vehicles in south zone of Malaysia. There were five independent variables examined, and the findings address the three research objectives.

1. To propose a model of intention to use electric vehicles among consumers in south zone of Malaysia.

2. To investigate the factors influence consumers' intention to adopt electric vehicles in South zone of Malaysia.

3. To examine which of the factors has the strongest influence on the consumers' intention to adopt EVs in South zone of Malaysia.

5.2.1 Discussion on the Research Objectives

Objective 1: To propose a model of intention to use electric vehicles among consumers in south zone of Malaysia.

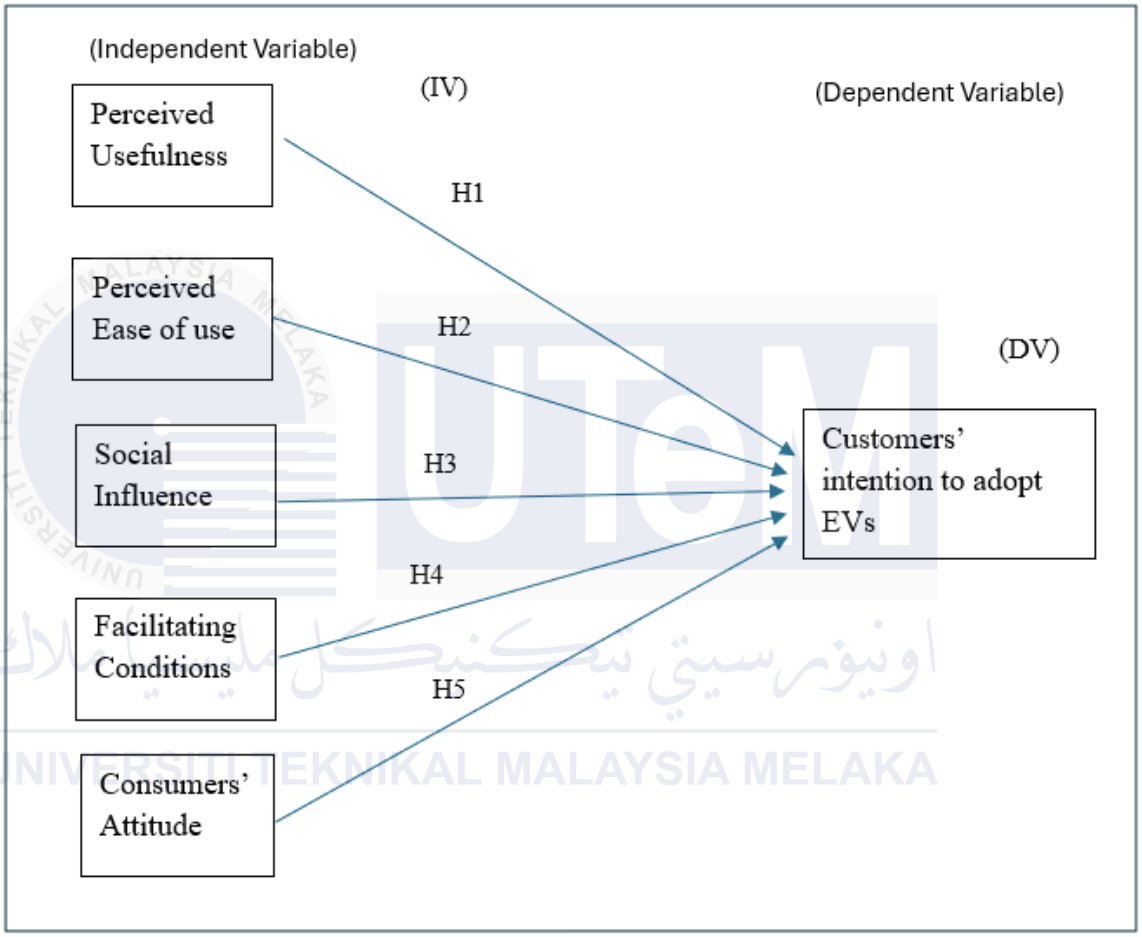

Figure 5.2.1: Model of intention to use electric vehicles among consumers in south zone of Malaysia.

The first objective of this study was to propose a model for understanding the factors influencing customers' intention to use electric vehicles among consumers in the south zone of Malaysia.

The selected independent variables—Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Social Influence (SI), Facilitating Conditions (FC), and Consumers' Attitude (AT)—were included based on their theoretical and practical relevance to EV adoption. The framework aligns with established technology acceptance theories (e.g., TAM and

UTAUT) and the unique attributes of EVs as an emerging technology. Here's the rationale for including each element:

Perceived Usefulness (PU), introduced in the Technology Acceptance Model (TAM) by Davis (1989), examines whether consumers perceive EVs as beneficial, such as by reducing costs or improving environmental outcomes. This factor is critical in shaping consumer intention, as shown in studies like Kumar and Alok (2020), where the perceived benefits of EVs, such as lower operational costs, were major drivers for adoption.

Perceived Ease of Use (PEOU) reflects the simplicity or complexity of using EVs. Davis (1989) emphasized its role in reducing the cognitive effort required for technology adoption. In the EV context, Rezvani et al. (2015) found that concerns about the complexity of charging and operating EVs negatively impacted their acceptance, highlighting the importance of user-friendly technology to encourage adoption.

Social Influence (SI) evaluates how social pressures or recommendations affect decisions. Venkatesh et al. (2003), in the Unified Theory of Acceptance and Use of Technology (UTAUT), identified SI as a key determinant of behavioral intention. In Malaysia, cultural and social norms significantly influence consumer behavior. Studies like Noppers et al. (2015) demonstrated that societal trends and peer recommendations play a crucial role in the adoption of sustainable innovations like EVs.

Facilitating Conditions (FC) refer to the availability of resources and support systems necessary for adoption, such as charging infrastructure and government incentives. Venkatesh et al. (2003) noted that adequate facilitating conditions reduce barriers to technology usage. Sovacool et al. (2018) emphasized that a lack of infrastructure often deters consumers, even if they have a positive attitude toward EVs.

Finally, **Consumers' Attitude (AT)**, based on the Theory of Reasoned Action by Fishbein and Ajzen (1975), assesses consumers' overall evaluation of EVs. Zhang et al. (2014) found that positive attitudes, such as environmental awareness or interest in innovative technology, are strong predictors of adoption.

These elements were chosen for their robust theoretical foundation, practical relevance, and contextual applicability. Drawing from established models like TAM and UTAUT, the

model reflects specific challenges in Malaysia, such as limited infrastructure and evolving social norms. By integrating individual perceptions, external influences, and practical enablers, the model provides a comprehensive framework for understanding the factors influencing EV adoption.

5.2.2 Conclusion on Second Objective

Objective 2: To investigate the factors influence consumers' intention to adopt electric vehicles in South zone of Malaysia.

The first objective of this study was to explore how perceived usefulness (PU), perceived ease of use (PEOU), social influence (SI), facilitating conditions (FC), and attitude (AT) impact consumers' intention to adopt electric vehicles (EVs) in the South Zone of Malaysia. Multiple regression analysis was employed to test the relationships between these independent variables and the dependent variable, intention to adopt electric vehicles (DV).

The findings revealed that perceived usefulness (PU) was found to have a significant positive influence on consumers' intention to adopt EVs ($p = 0.007$). This indicates that when consumers perceive EVs as beneficial and capable of enhancing their daily activities or productivity, their intention to adopt EVs increases. This aligns with the hypothesis that PU plays a critical role in shaping behavioral intentions. Studies in Malaysia and other regions confirm that consumers who recognize the functional advantages of EVs are more inclined to adopt them. For example, a study by Wang et al. (2021) demonstrated that the perceived economic and environmental benefits of EVs positively influence adoption behavior.

Facilitating conditions (FC) and attitude (AT) have a significant positive influence on consumers' intention to adopt EVs, with p-values of 0.000 for both variables. Facilitating conditions, such as access to charging infrastructure, government incentives, and technical support, have a significant positive influence because they reduce the perceived barriers to EV adoption. When consumers feel that resources and support systems are readily available, they are more confident about adopting new technologies. Research by Azad et

al. (2023) found that the availability of EV infrastructure significantly impacts consumers' willingness to transition from traditional vehicles to EVs, particularly in developing countries. This is especially true in the South Zone of Malaysia, where the expansion of EV-related infrastructure is a critical factor in encouraging adoption. Similarly, a positive attitude (AT) toward EVs plays a critical role in driving their adoption. A positive attitude toward EVs significantly influences adoption because attitudes are directly linked to intentions and behaviors. Consumers with favorable perceptions of EVs, driven by environmental concerns, technological curiosity, and perceived prestige, are more likely to adopt them. The Theory of Planned Behavior (TPB) suggests that attitudes strongly predict behavioral intentions. For example, Lim et al. (2022) found that Malaysian consumers who held positive attitudes toward the sustainability and technological sophistication of EVs demonstrated higher adoption rates.

However, Perceived Ease of Use (PEOU) and social influence (SI) were found to have no significant influence on consumers' intention to adopt EVs, as their p-values (PEOU = 0.280, SI = 0.249) were above the significance threshold of 0.05. These factors may be influential but not as strong as the main factors when it comes to influencing the intention to use electric vehicles such as the steps to learn to use electric vehicles. Similarly, social influence (SI) indicates that peer or social pressure may not be a decisive factor for EV adoption in this region. Consumers appear to rely more on their individual perceptions and practical considerations rather than social influence when making decisions about EVs.

In conclusion, the findings indicate that perceived usefulness, facilitating conditions, and attitude are the key factors influencing consumers' intention to adopt EVs in the South Zone of Malaysia. These results emphasize the importance of highlighting the practical benefits of EVs, improving infrastructure, and fostering positive consumer attitudes. On the other hand, the lack of significance for perceived ease of use and social influence suggests that these factors may be less relevant in shaping adoption intentions and may require less emphasis in future strategies or campaigns.

5.2.3 Conclusion on Third Objective

Objective 3: To examine which of the factors has the strongest influence on the consumers' intention to adopt EVs in South zone of Malaysia.

The second objective of this study aimed to identify the factor with the most significant impact on consumers' intention to adopt electric vehicles in the south zone of Malaysia. Based on the multiple regression analysis results, attitude (AT) emerged as the strongest predictor, with the highest unstandardized coefficient ($B = 0.521$) and a significant p-value ($p < 0.001$). This finding indicates that the consumer's positive attitude towards electric vehicles plays a critical role in their adoption decision.

Facilitating conditions (FC) also demonstrated a significant influence ($B = 0.270$, $p < 0.001$), highlighting the importance of supportive infrastructure and resources for adoption. On the other hand, perceived usefulness (PU), while statistically significant ($B = 0.105$, $p = 0.007$), showed a relatively smaller effect compared to attitude and facilitating conditions.

Perceived ease of use (PEOU) and social influence (SI) did not have significant effects on consumers' intention to adopt electric vehicles, with p-values of 0.280 and 0.249, respectively. These results suggest that while ease of use and social factors may contribute to shaping opinions, they are not the primary drivers for the adoption of electric vehicles in this region.

In conclusion, the findings emphasize that fostering a positive attitude and ensuring adequate infrastructure and support systems are crucial strategies for encouraging electric vehicle adoption in South Malaysia.

5.3 Summary of Research Hypotheses

5.3.1 H1: Perceived Usefulness (PU) and Intention to Adopt EVs

H1 states a significant relationship between perceived usefulness (PU) and consumers' intention to adopt electric vehicles (EVs). The results support this hypothesis as PU was found to have a significant positive impact on intention ($p = 0.007$). This indicates that consumers perceive EVs as beneficial and advantageous for their daily activities, including economic and environmental benefits.

This aligns with the Technology Acceptance Model (TAM), which posits that perceived usefulness is a primary driver of technology adoption. Previous studies, such as Wang et al. (2021), also found that consumers are more likely to adopt EVs when they recognize benefits such as fuel cost savings, lower maintenance, and environmental sustainability. In regions where awareness of EV benefits is high, PU often serves as a critical motivator.

5.3.2 H2: Perceived Ease of Use (PEOU) and Intention to Adopt EVs

H2 posits no significant relationship between perceived ease of use (PEOU) and consumers' intention to adopt EVs. This hypothesis was supported as PEOU did not show a significant impact ($p = 0.280$). This suggests that ease of use is not a primary consideration for consumers in the South Zone of Malaysia when deciding to adopt EVs.

As noted by Venkatesh and Bala (2008), in contexts where a technology is perceived as user-friendly by default, ease of use becomes a less critical factor in decision-making. Additionally, EVs share many similarities with conventional vehicles, and consumers may assume they are easy to operate. Research by Zhang et al. (2022) found that in established markets, perceived ease of use becomes secondary to utility and practicality.

5.3.3 H3: Social Influence (SI) and Intention to Adopt EVs

H3 proposes no significant relationship between social influence (SI) and consumers' intention to adopt EVs. This was confirmed as SI was not significant ($p = 0.249$),

indicating that social pressure or influence from peers and family does not heavily impact consumers' decisions in this region.

The lack of significance can be explained by the Unified Theory of Acceptance and Use of Technology (UTAUT) which acknowledges that in certain high-cost, utilitarian decisions, personal attitudes and perceived control outweigh social influence. Studies, such as by Wang et al. (2020), highlight that in emerging markets for EVs, practical and individual considerations take precedence over societal norms or peer pressure.

5.3.4 H4: Facilitating Conditions (FC) and Intention to Adopt EVs

H4 states a significant relationship between facilitating conditions (FC) and consumers' intention to adopt EVs. The findings supported this hypothesis, with FC showing a strong positive influence ($p = 0.000$). This indicates that the availability of charging infrastructure, technical support, and government incentives are essential factors for EV adoption.

Facilitating conditions align with the Unified Theory of Acceptance and Use of Technology (UTAUT), which emphasizes that resource availability significantly affects adoption. Azad et al. (2023) found that access to reliable infrastructure and incentives were critical for EV uptake in regions with developing infrastructure, such as Malaysia. Without these conditions, even interested consumers may hesitate to adopt EVs.

5.3.5 H5: Attitude (AT) and Intention to Adopt EVs

H5 posits a significant relationship between attitude (AT) and consumers' intention to adopt EVs. The findings supported this hypothesis as AT had a strong positive influence ($p = 0.000$). This shows that consumers with favorable opinions about EVs are more likely to adopt them.

According from Unified Theory of Acceptance and Use of Technology (UTAUT) highlights attitude as a key predictor of behavioral intention. Positive attitudes, often shaped by environmental consciousness, perceived modernity, and technological curiosity, have been shown to drive EV adoption. A study by Lim et al. (2022) found that Malaysian

consumers with strong pro-environmental attitudes and an affinity for innovative technologies were more inclined to adopt EVs.

5.4 Implication of study

5.4.1 Theoretical Implications

The findings of this study offer significant theoretical implications by integrating constructs from the Technology Acceptance Model (TAM) with social influence (SI) and facilitating conditions (FC). Firstly, the study validates the relevance of TAM constructs, specifically perceived usefulness (PU) and attitude (AT), in understanding EV adoption. The significant positive influence of PU and AT supports their roles as critical factors shaping behavioral intentions, reinforcing the applicability of TAM in sustainable technology adoption contexts. However, the insignificance of perceived ease of use (PEOU) challenges the general assumption within TAM that ease of use is always a critical determinant. In this study, PEOU was found to have no significant influence, suggesting that consumers in the South Zone of Malaysia may perceive EV technology as inherently user-friendly or may prioritize other considerations, such as utility and infrastructure.

The study also provides insights into UTAUT constructs. The significant positive influence of facilitating conditions (FC) demonstrates the importance of access to infrastructure, resources, and knowledge in driving EV adoption. This aligns with UTAUT's framework, confirming the pivotal role of FC in determining technology adoption. On the other hand, the finding that social influence (SI) has no significant impact highlights the context-specific nature of UTAUT constructs. In the South Zone of Malaysia, consumer decisions seem to be driven more by individual practical considerations than by societal or peer pressure, indicating that SI's influence may vary depending on cultural and market contexts.

By combining constructs from TAM (PU, PEOU, AT) and (FC, SI), this study highlights the value of an integrated approach for understanding technology adoption. It emphasizes that theoretical frameworks should be adapted to include context-specific factors, particularly when applied to the adoption of sustainable technologies like EVs in

developing regions. Furthermore, the study contributes to sustainability research by demonstrating the role of TAM and UTAUT in promoting green technologies. The focus on the South Zone of Malaysia provides valuable region-specific insights, emphasizing how infrastructural support and positive attitudes are more influential than ease of use or social influence in this market. These findings refine and extend the theoretical applicability of TAM and UTAUT, particularly in sustainability and technology adoption research within emerging markets.

5.4.2 Practical Implications

The findings of this study provide valuable insights for stakeholders aiming to enhance the adoption of electric vehicles (EVs) in the South Zone of Malaysia. The significant influence of perceived usefulness (PU) demonstrates that consumers prioritize the practical benefits of EVs, such as cost savings and environmental sustainability. This aligns with the findings of Davis (1989) and Ozaki and Sevastyanova (2011), who emphasized that products perceived as beneficial and valuable are more likely to influence behavioral intentions. Manufacturers and marketers should emphasize the tangible benefits of EVs, such as reduced fuel expenses, lower maintenance costs, and positive environmental impacts, through targeted advertising campaigns and promotional strategies.

The significant role of facilitating conditions (FC) highlights the necessity of developing adequate infrastructure and resources to support EV adoption. This is consistent with Venkatesh et al. (2003) and Wang et al. (2020), who found that facilitating conditions, including infrastructure and resources, significantly influence the adoption of new technologies. Policymakers and industry stakeholders should prioritize expanding EV charging networks, offering subsidies, and increasing public awareness about the availability and convenience of EV infrastructure. These efforts will help mitigate perceived barriers and enhance consumer confidence in adopting EVs.

Similarly, the strong influence of attitude (AT) underscores the importance of fostering positive consumer perceptions toward EVs. This finding aligns with Ajzen (1991), who posited that positive attitudes are crucial drivers of behavioral intention. Additionally,

Rezvani et al. (2015) emphasized that promoting environmental awareness and framing EVs as modern and innovative solutions can shape consumer attitudes. Collaborations between government agencies and environmental organizations can further amplify these efforts by launching campaigns that highlight the environmental and societal benefits of adopting EVs.

On the other hand, the insignificance of perceived ease of use (PEOU) suggests that consumers may already perceive EVs as user-friendly, as supported by Davis (1989), who argued that ease of use becomes less relevant when technology is perceived as useful. Consequently, stakeholders should focus their resources on addressing other consumer concerns, such as infrastructure and cost.

Finally, the lack of influence from social influence (SI) indicates that societal norms and peer pressure are not key determinants for EV adoption in the South Zone of Malaysia. This finding aligns with the study by Silva et al. (2022), which suggested that personal preferences and practical considerations often outweigh social factors in technology adoption. Rather than relying on social norms, manufacturers and policymakers should focus on individual-centric marketing strategies that emphasize the personal benefits of EVs, such as convenience, cost savings, and sustainability.

In conclusion, the findings emphasize the need for a multi-stakeholder approach involving manufacturers, policymakers, and marketers. By addressing infrastructure gaps, promoting practical benefits, and fostering positive attitudes, stakeholders can effectively encourage EV adoption in the South Zone of Malaysia. These strategies, grounded in previous studies, provide a comprehensive roadmap for accelerating the transition to sustainable transportation solutions.

5.5 Limitations of Study

Some limitations of this study are explained as followed. During the survey, a relatively sufficient number of sample data was collected in only three states based on travel cost considerations. There are very few data from other states, which may not be suitable to represent the entire Malaysian consumer's views on electric vehicles. At the

same time, because most of the distributed questionnaires are obtained by scanning the QR code of Google Forms, some consumers are missing this part of the data because they are afraid of leaking their personal information. Also, the sample size is just enough to have a medium effect. Maybe the research results are not very accurate. The sampling method used in this study was non-random interception, which could have introduced bias. The participants were primarily those who voluntarily scanned the QR code or received the questionnaire link through social networks. This approach may exclude certain consumer groups, such as older individuals or those less active on digital platforms, further affecting the representativeness of the findings. The sampling method for this experiment was non-random interception, which may have introduced bias. Finally, there are many other factors that influence consumers' intention to purchase EV besides the factors in this research, which are often difficult to capture and leaves it to future researchers to continue the investigation of this topic.

5.6 Recommendation for Future Study

To address the limitations encountered in this research, several suggestions have been developed for future studies to consider. Firstly, it is recommended that future research broaden the geographical scope to include respondents from rural areas, other regions in Malaysia, or even different countries. This expansion would contribute to a more comprehensive understanding of electric vehicle (EV) adoption across varied socio-economic and cultural contexts.

Secondly, future researchers could incorporate additional variables, such as price sensitivity, policy effectiveness, brand recognition, and technological advancements. Including these variables would provide a more holistic perspective on the factors influencing EV adoption and enhance the robustness of the predictive model.

Furthermore, conducting longitudinal studies is suggested to observe how consumer attitudes and behaviors toward EVs evolve over time. This approach would offer valuable insights into how advancements in technology, improvements in infrastructure, or changes in government policies affect consumer perceptions and decision-making processes.

Lastly, future studies should aim to involve a wider range of demographic groups, including students, retirees, and low-income households, to uncover the specific challenges or motivators unique to these populations. Exploring these diverse perspectives can help develop targeted strategies to encourage EV adoption among different segments of society.

In conclusion, these recommendations aim to build on the findings of this study and provide a deeper understanding of the factors that shape consumers' intentions to adopt electric vehicles.

5.7 Conclusion

In the conclusion, this research was focusing on the importance virtual reality to the success of the company. In this chapter all objectives had been explained. Furthermore, this chapter also discussed the implication of the study such as managerial implications to clarify what the research's contribution is to future research and how it will be used. The researcher also stated the limitation and recommendation in this chapter as a reference for future research. The researcher believes that this study contributes to the broader understanding of sustainable mobility and offers actionable strategies for stakeholders to enhance the adoption of electric vehicles. In the end, the findings are anticipated to benefit various parties, including policymakers and industry players, in advancing the transition toward a more sustainable transportation system in Malaysia.

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APPENDICES

APPENDIX A GANTT CHART PSM 1

No.	Activities	PSM 1														
		Weeks (Target within 15 weeks)														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Briefing PSM 1								SEMESTER BREAK							
2	Topic Selection															
3	Write Chapter1: Introduction															
4	Correction of Chapter 1:															
5	Write Chapter 2: Literature Review															
6	Correction of Literature Review															
7	Write Chapter 3: Research Method															
8	Correction of chapter 3: Research Method															
9	Final Draft submission															
10	Report Correction															
11	Slide preparation															
12	Presentation PSM 1															
13	Report Submission															

APPENDIX B GANTT CHART PSM 2

No	Activities	PSM 2														
		Weeks (Target within 15 weeks)														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Completion of Questionnaire															
2	Distribute Questionnaire															
3	Data collection and pilot test															
4	Data analysis															
5	Completion of data analysis															
6	Chapter 4: Discussion, Analysis															
7	Completion:Chapter 4															
8	Write Chapter 5: Conclusion															
9	Complete Chapter 5															
10	Turnitin and report correction															
11	Submit Final Draft															
12	Slide preparation															
13	Presentation															
14	Report correction															
15	Report Submission															

APPENDIX C QUESTIONNAIRE

Bachelor of Technology Management (High Technology Marketing) with Honours
Faculty of Technology Management and Technopreneurship
Universiti Teknikal Malaysia Melaka (UTeM)

Research Project Survey Questionnaire:

ANALYZING THE FACTORS AFFECTING CONSUMERS' INTENTION TO ADOPT ELECTRIC VEHICLES (EVs) IN SOUTH ZONE OF MALAYSIA.

Electric vehicles (EVs) are considered an eco-friendly alternative to conventional vehicles. This research aims to investigate the factors influencing the intention to adopt EVs, focusing on various aspects such as perceived usefulness, ease of use, social influence, and consumer attitude. Your participation in completing this questionnaire will greatly contribute to understanding consumer perspectives and potential challenges in EV adoption.

This questionnaire consists of **five sections (A, B, and C)**. Please answer all the questions. Your time and effort are greatly appreciated.

Thank you!

Statement of Confidentiality:

All of the information is confidential and only will be using for research purposes.

References:

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SECTION A: DEMOGRAPHIC PROFILE

This section relates with your background in brief.

Q1: Gender

- ☐ Male
- ☐ Female

Q2: Age

- ☐ 18–24
- ☐ 25–34
- ☐ 35–44
- ☐ 45 and above

Q3: Race

- ☐ Malay
- ☐ Chinese
- ☐ India
- ☐ Others

Q4: Education Level

- ☐ Primary education
- ☐ Secondary education
- ☐ Tertiary education
- ☐ others

Q5: Income level

- [ ] Under RM 2,000
- [ ] RM 2,000 to RM 3,999
- [ ] RM 4,000 to RM 5,999
- [ ] RM 6,000 to RM 9,999
- [ ] RM 10,000 above

Q6: States

- [ ] Johor
- [ ] Melaka
- [ ] Negeri Sembilan

Q7: Do you currently own a vehicle?

- [ ] Yes (Petrol/Gasoline)
- [ ] Yes (Hybrid)
- [ ] Yes (Electric)
- [ ] No

SECTION B: INDEPENDENT VARIABLE

Rate accordingly.

	Perceived Usefulness (PU)	Strongly Disagree **(1)**	Disagree **(2)**	Neutral **(3)**	Agree **(4)**	Strongly Agree **(5)**
PU1.	(EV) would give a dynamic driving experience.					
PU2.	(EV) has the potential for safer and quiet driving experience.					
PU3.	Overall costs of an EV are lower than a petrol/gasoline car. (including maintenance, charging, and spare parts)					
PU4.	I believe that EVs are more suitable for short-distance drives than long journeys.					

	Perceived Ease of Use (PEOU)	Strongly Disagree **(1)**	Disagree **(2)**	Neutral **(3)**	Agree **(4)**	Strongly Agree **(5)**
PEOU1.	I feel confident that I have enough knowledge to drive an EV comfortably.					
PEOU2.	It is easy for me to learn to use EV.					

PEOU3.	The interaction with EV would be clear and understandable.					
PEOU4.	The process of charging EV is easier than the petrol/gasoline car.					

	Social Influence (SI)	Strongly Disagree **(1)**	Disagree **(2)**	Neutral **(3)**	Agree **(4)**	Strongly Agree **(5)**
SI1.	It gives a good impression on me when driving EV.					
SI2.	It gives a positive influence on community when using EV.					
SI3.	It inspires me to turn to EV when others are using it.					

	Facilitating Conditions (FC)	Strongly Disagree **(1)**	Disagree **(2)**	Neutral **(3)**	Agree **(4)**	Strongly Agree **(5)**
FC1.	Using EV is easy due to the availability of charging infrastructure and other facilities in my area.					

FC2	Using EV is easy due to the availability to access the knowledge, resources, services, and facilities.					
FC3	Using an EV is easy due to the availability of government incentives (such as tax reductions or subsidies)					

	Consumer Attitude (AT)	Strongly Disagree **(1)**	Disagree **(2)**	Neutral **(3)**	Agree **(4)**	Strongly Agree **(5)**
AT1.	I think electric vehicle has better performance than petrol cars.					
AT2.	I think I don't like to wait longer process of EV charges than to refuel a petrol car.					
AT3.	Using EV because I consider it gives a positive environmental impact if using EV.					
AT4.	I prefer using an EV because I consider it more environmentally friendly than					

	traditional vehicles (including petrol, diesel, NGV).					
AT5	I prefer local brand EV.					
AT6	I prefer international EV brand.					

SECTION C: DEPENDENT VARIABLE

	Intention to purchase	Strongly Disagree **(1)**	Disagree **(2)**	Neutral **(3)**	Agree **(4)**	Strongly Agree **(5)**
DV1.	EV is more beneficial to me.					
DV2.	Have intention to purchase EV in the near future.					
DV3.	Purchase EV will be my top consideration.					
DV4.	EV is cheaper in a long-term usage.					

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