



**A STUDY OF HYBRID CAR SALES AND MAINTENANCE MANAGEMENT AT  
HONDA MITC MELAKA**

**BACHELOR OF TECHNOLOGY MANAGEMENT (SUPPLY CHAIN MANAGEMENT  
AND LOGISTICS) WITH HONOURS**

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**2024/2025**

## APPROVAL

I hereby declare that I have checked this report entitled “A Study of Hybrid Car Sales and Maintenance Management at Honda MITC Melaka” originally done by myself and this thesis complies with the partial fulfilment for awarding the award of the degree of Bachelor Technology Management and (Supply Chain and Logistics) with Honours.

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**A STUDY OF HYBRID CAR SALES AND MAINTENANCE MANAGEMENT AT  
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**MUHAMMAD ADAM SYAKIRIN BIN SAIRI**

**This report is presented as a requirement for the Bachelor of Technology Management  
(Supply Chain and Logistics) with Honours.**

**Faculty Technology Management and Technopreneurship**

**Universiti Teknikal Malaysia Melaka**

**14 FEBRUARY 2025**

## DECLARATION OF ORIGINAL WORK

"I at this moment declare that this thesis is entirely my work with project Title “A Study of Hybrid Car Sales and Maintenance Management at Honda MITC Melaka” and except a few clarifications and passages where every source is cited.



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## DEDICATION

Thank you, Allah Ta'ala, and praise to the Most Merciful of All, who has given me the ability and strength to successfully finish my study assignment. I express my gratitude to all those who made it possible for me to finish my thesis, particularly to Mr. Sairi Bin Surip and Mrs. Hasimah Binti Hashim. My sincere gratitude to Dr. Murzidah Binti Ahmad Murad, my cherished supervisor, for all of his support, ideas, inspiration, and direction during the course of my study and thesis preparation.

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## ABSTRAK

Kajian ini meneliti dinamik jualan kereta hibrid dan pengurusan perkhidmatan di Honda Malaysia, khususnya di cawangan Melaka International Trade Centre (MITC), dalam konteks matlamat kelestarian alam sekitar Malaysia. Kenderaan hibrid, yang menggabungkan enjin pembakaran dalaman dengan sistem pacuan elektrik, menawarkan manfaat ekonomi dan alam sekitar yang ketara tetapi menghadapi cabaran seperti kos permulaan yang tinggi serta keperluan penyelenggaraan yang kompleks. Kajian ini bertujuan untuk memahami faktor-faktor yang mendorong peningkatan jualan kereta hibrid di Honda MITC Melaka serta pendekatan syarikat dalam mengurus pembaikan dan penyelenggaraan. Kajian ini menggunakan reka bentuk penyelidikan kualitatif melalui temu bual separa berstruktur dengan pemegang taruh utama, termasuk pengurus pusat jualan Honda, pemilik kereta hibrid, juruteknik, dan pakar industri. Analisis tematik mengenal pasti faktor utama yang mempengaruhi penerimaan kenderaan hibrid, pengalaman penyelenggaraan, cabaran perkhidmatan, dan strategi pengurusan. Dapatan kajian menunjukkan bahawa kesedaran alam sekitar, insentif kerajaan, dan kemajuan teknologi telah menyumbang kepada penerimaan yang semakin meluas terhadap kenderaan hibrid. Walau bagaimanapun, cabaran seperti kerumitan sistem, kekurangan infrastruktur pengecasan, dan tahap kesedaran pengguna masih wujud. Honda MITC Melaka menangani isu-isu ini melalui program latihan yang disasarkan, strategi penyelenggaraan proaktif, dan penambahbaikan teknologi berterusan bagi memastikan prestasi serta kebolehpercayaan kenderaan hibrid. Kajian ini meningkatkan pemahaman mengenai penerimaan dan pengurusan penyelenggaraan kenderaan hibrid di Malaysia, sekaligus memberikan panduan berharga kepada pihak industri, penggubal dasar, dan penyelidik. Untuk menyokong pertumbuhan industri kenderaan hibrid serta mencapai matlamat kelestarian, kajian ini mencadangkan peningkatan kesedaran awam, pelaburan dalam pembangunan infrastruktur, dan inovasi teknologi yang berterusan.

## **ABSTRACT**

This research examines the dynamics of hybrid car sales and service management at Honda Malaysia, specifically at the Melaka International Trade Centre (MITC) branch, in the context of Malaysia's environmental sustainability goals. Hybrid vehicles, which integrate internal combustion engines with electric propulsion systems, offer significant environmental and economic benefits but face challenges such as high initial costs and complex maintenance requirements. This study aims to understand the factors driving increased hybrid car sales at Honda MITC Melaka and the dealership's approach to repairs and maintenance. A qualitative research design was employed, utilizing semi-structured interviews with key stakeholders, including Honda dealership managers, hybrid car owners, technicians, and industry experts. Thematic analysis identified critical factors influencing hybrid vehicle adoption, service experiences, maintenance challenges, and management strategies. Findings indicate that environmental awareness, government incentives, and technological advancements have contributed to the growing acceptance of hybrid vehicles. However, challenges such as system complexity, limited charging infrastructure, and user awareness persist. Honda MITC Melaka addresses these issues through targeted training programs, proactive maintenance strategies, and continuous technological improvements to ensure vehicle performance and reliability. This study enhances the understanding of hybrid vehicle adoption and maintenance management in Malaysia, providing valuable insights for industry stakeholders, regulators, and researchers. To further support the hybrid car industry and achieve sustainability goals, recommendations include increasing public awareness, investing in infrastructure development, and fostering ongoing technological innovation.



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## LIST OF ABBREVIATIONS

### ABBREVIATIONS

### MEANING

EV

Electric Vehicle

MITC

Melaka International Trade Centre

CMMS

Computerized Maintenance Management Systems

IOT

Internet of Thing

SLA

Service Level Agreement

AI

Artificial Intelligence

ML

Machine Learning

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## **CHAPTER 1**

### **INTRODUCTION**

#### **1.0 INTRODUCTION**

This chapter focuses on defining the research problem, formulating research questions and objectives, determining the study scope, and highlighting the significance of the research. It provides a clear direction for the study and its expected outcomes. A hybrid vehicle utilizes multiple power sources for propulsion, typically integrating an internal combustion engine with an electric motor and high-power batteries. Hybrid models are often introduced as extensions of existing gasoline vehicle lineups, offering improved fuel efficiency and reduced carbon emissions. However, hybrid vehicles are generally more expensive to manufacture compared to conventional non-hybrid models. Honda is one of the leading manufacturers of hybrid vehicles, continuously innovating to enhance fuel efficiency, sustainability, and performance. This study examines the factors driving hybrid car sales at Honda MITC Melaka and the dealership's approach to service and maintenance, contributing valuable insights into Malaysia's evolving automotive landscape.

#### **1.1 BACKGROUND OF THE STUDY**

This study was conducted in relation to hybrid cars. Most people were interested in buying and using hybrid cars as it helped to control environmental pollution. Melaka was chosen as the area to conduct this study. Hybrid cars had been introduced to the Malaysian market over the past decade as part of efforts to promote more sustainable transportation options. These



vehicles utilized a combination of a traditional internal combustion engine and an electric motor powered by a battery. The integration of both power sources allowed hybrids to achieve improved fuel efficiency and lower emissions compared to conventional gasoline-powered cars. In Malaysia, the government had taken steps to encourage the adoption of hybrid vehicles through incentives such as tax breaks and rebates. These incentives aimed to make hybrid cars more affordable for consumers and to stimulate the growth of the green automotive sector.

## 1.2 RESEARCH PROBLEM

Melaka was chosen as one of the states with a green environment concept that aimed to reduce various pollution types, such as water, air, noise pollution, and so on. The number of hybrid cars in Malaysia had been increasing and had become a favorite choice because hybrid cars helped reduce air pollution and improved the environment in Malaysia. Malaysia's hybrid automobile sales had recently increased significantly. In 2023, hybrid car sales in Malaysia had increased by 40% over the previous year. According to *Paul Tan's Automotive News*, this surge aligned with a larger trend in the country's automotive sector, which had also experienced significant gains in electric vehicle (EV) sales. Abdullah, A., Musa, M. Z., & Rahman, M. M. (2019) investigated the factors influencing the purchase intention of hybrid cars among Malaysian consumers, focusing on environmental awareness. Although hybrid vehicles were more fuel-efficient and emitted fewer pollutants, their complexity made maintenance more difficult. Regenerative braking system difficulties, costly battery replacements, and the requirement for specialist skills to fix the dual systems of internal combustion engines and electric motors were common challenges. In addition, software and electronic parts often malfunctioned, cooling systems for the batteries and electronics failed, and high-voltage cables and the inverter/converter required expensive repairs. Although these problems could be lessened with regular maintenance and appropriate care, they still resulted in greater maintenance expenses than with traditional cars. Limited infrastructure for charging hybrid cars was a barrier to their adoption in Malaysia, particularly in smaller towns and rural regions. Range anxiety and wait times were exacerbated by the lack of charging facilities. The overall advantages of hybrid automobiles were diminished when daily charging became difficult due to a lack of suitable urban charging stations, which deterred prospective purchasers and annoyed existing owners. As a result, managing hybrid car servicing and

maintenance at MITC Melaka required a car production firm like Honda Malaysia to apply successful techniques.

### **1.3 RESEARCH OBJECTIVES**

- I. To identify the factors contributing to the increasing sales of hybrid cars at Honda Malaysia in MITC Melaka.
- II. To examine the strategies employed by Honda Malaysia at MITC Melaka in managing the service and maintenance of hybrid cars.

### **1.4 RESEARCH QUESTION**

- I. What are the factors driving the increasing sales of hybrid cars at Honda Malaysia in MITC Melaka?
- II. How does Honda Malaysia at MITC Melaka manage the service and maintenance of its hybrid cars?

### **1.5 EXPECTED OUTCOMES**

Research on hybrid cars is expected to yield several significant outcomes. Firstly, it will likely contribute to advancements in fuel efficiency and reduction of greenhouse gas emissions, aligning with global efforts to combat climate change. Hybrid technology, combining internal combustion engines with electric power, can offer insights into optimizing energy consumption and reducing dependency on fossil fuels. Additionally, the research may lead to innovations in battery technology and energy management systems, enhancing the overall performance and reliability of hybrid vehicles. Economic impacts are also anticipated, as improved hybrid models can influence market dynamics, potentially lowering costs and increasing accessibility for consumers. Furthermore, this research can spur the development of infrastructure, such as charging stations, and drive regulatory changes that support sustainable transportation solutions. Overall, the outcomes are expected to advance both technological and environmental goals, fostering a more sustainable and efficient automotive industry.

## **1.6 SIGNIFICANCE OF THE STUDY**

Research on hybrid cars held significant importance and potential impact both within the academic community and in broader societal contexts. Academically, this research advanced the understanding of sustainable transportation technologies, fostering interdisciplinary collaboration among fields such as engineering, environmental science, and economics. It drove innovation in areas like battery technology, energy management, and materials science, potentially leading to breakthroughs that extended beyond the automotive industry.

The academic contributions of this research influenced educational curricula, preparing a new generation of engineers and scientists to tackle complex environmental challenges. Furthermore, it promoted the development of new methodologies and analytical tools that could be applied to other sectors, enhancing overall research capabilities. Beyond academia, the research on hybrid cars had profound environmental, economic, and social implications. Environmentally, it supported efforts to reduce greenhouse gas emissions and air pollution, contributing to the fight against climate change. Economically, advancements in hybrid technology led to cost reductions, making sustainable transportation more accessible to the general public. This stimulated market growth and created new job opportunities in the automotive and related industries. Socially, the adoption of hybrid cars led to healthier communities by reducing pollution-related health issues. It also aligned with increasing consumer demand for environmentally friendly products, influencing market trends and consumer behavior.

In summary, the research on hybrid cars was crucial for driving technological innovation, shaping future academic endeavors, and addressing pressing global challenges. Its impact was far-reaching, promoting a more sustainable, economically viable, and healthier future.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.0 INTRODUCTION**

A literature review was essentially an extensive search for prior research on a certain subject. It was similar to reading a ton of books and articles to find out what had been researched, what had been discovered, and what questions remained unanswered. Literature reviews were a useful tool for researchers to learn what was previously known, identify knowledge gaps, and determine what needed to be researched further. It was similar to building on the work done by others to increase one's knowledge of a subject.

#### **2.1 HYBRID CARS**

Hybrid vehicles, which combined internal combustion engines with electric propulsion systems to increase fuel economy and lower emissions, emerged as a key player in the search for environmentally friendly transportation options. This literature study, which drew from a variety of academic sources, looked at the history, innovations in technology, advantages, and disadvantages of hybrid vehicles.

##### **2.1.1 Environmental and Economic Benefits**

Hybrid cars offered substantial environmental benefits by reducing greenhouse gas emissions and reliance on fossil fuels. According to research done in 2006 by Markel

and Simpson, hybrid cars produced significantly less pollution than regular gasoline-powered automobiles. Additionally, because hybrid vehicles used less gasoline, they frequently had cheaper operational expenses. According to research by Sawyers (2008), even though hybrid cars cost more to buy initially, they could have lower total costs of ownership over time since they required less maintenance and gasoline.

### **2.1.2 Consumer Acceptance and Market Trends**

Growing environmental consciousness and incentives like tax breaks and carpool lane access contributed to the steady increase in consumer acceptance of hybrid automobiles. Global market penetration, according to Gallardo et al. (2017), was still unequal, with greater adoption rates in areas with infrastructure and legislation that were helpful. Innovations in technology, shifts in gasoline prices, and competition from fully electric vehicles (EVs) all impacted the market for hybrid automobiles.

### **2.1.3 Challenges and Limitation**

Hybrid vehicles had a number of drawbacks despite their advantages. The complexity and cost of their dual powertrain systems were significant problems, as they could result in increased maintenance expenses and the requirement for expert repair knowledge (Mohamed et al., 2019). Furthermore, a major obstacle to broader adoption in places like Malaysia was the scarcity of infrastructure for plug-in hybrids, in particular (Ahmad et al., 2020). Batteries could be difficult to recycle and took a lot of energy and resources to produce, thus there were environmental issues associated with their manufacture and disposal.

## **2.2 HYBRID CARS IN MALAYSIA**

Hybrid vehicles, which combined an internal combustion engine and an electric propulsion system, received widespread interest owing to their potential to reduce greenhouse gas emissions and reliance on fossil fuels. In Malaysia, government laws, market developments, consumer behavior, and environmental concerns all had an impact on hybrid car adoption.

### **2.2.1 Market Trends**

Malaysia's hybrid automobile industry had grown as people became more aware of environmental problems and fuel efficiency. According to Abdullah et al. (2019), Malaysian customers chose hybrid automobiles from companies such as Toyota and Honda due to their dependability and established market presence. Additionally, indigenous manufacturers like Proton had begun to enter the hybrid industry, adding to total growth.

### **2.2.2 Challenges and Barriers**

The absence of suitable infrastructure, such as charging stations and maintenance facilities, was a key barrier to the broad adoption of hybrid cars in Malaysia. According to Mohamad et al. (2020), developing a strong support infrastructure, including qualified technicians and extensive availability of replacement parts, was critical to supporting the hybrid automobile industry. Despite rising environmental consciousness, Malaysian customers continued to be unaware of the benefits and functionality of hybrid vehicles. Rahman et al. (2019) contended that educational efforts and informed marketing techniques were required to close this gap and debunk myths about hybrid car performance and dependability.

### **2.2.3 Environmental Impact**

The environmental effect of hybrid vehicles in Malaysia was a major factor in their adoption. When compared to traditional automobiles, hybrid cars emitted much less CO<sub>2</sub>. Lim et al. (2021) conducted a lifecycle study and discovered that hybrid vehicles emitted fewer greenhouse gases during their lifetime, which contributed favorably to Malaysia's environmental goals. The report underlined that widespread adoption of hybrid cars had the potential to significantly lower the automotive sector's carbon footprint.

## **2.3 MANAGING SERVICES AND MAINTENANCE**

The coordinated efforts and tactics intended to guarantee the best possible performance, dependability, and lifespan of assets or goods were included in the management of service and maintenance. In order to avoid malfunctions, reduce downtime, and increase operating efficiency, maintenance operations had to be planned, scheduled, carried out, and monitored. A skilled workforce and resource allocation were necessary for effective service and maintenance management, as were proactive maintenance strategies like predictive and preventive maintenance, as well as the use of cutting-edge technologies like computerized maintenance management systems (CMMS) and Internet of Things (IoT) sensors for real-time monitoring and data-driven decision-making. In addition, maintaining compliance with regulations, fulfilling service level agreements (SLAs), and consistently enhancing procedures via performance metrics and feedback channels were all part of managing service and maintenance.

### **2.3.1 MANAGING SERVICES AND MAINTENANCE IN AUTOMOTIVE INDUSTRY**

Effective management of servicing and maintenance was essential in the automotive industry to maintain satisfied customers, dependable cars, and successful enterprises. To keep cars operating properly, it entailed doing things like inspections, maintenance, and part replacements. In order to satisfy demand while controlling costs, providers had to strategically allocate resources such as trained personnel and spare components. Digital platforms and diagnostic tools were examples of how technology had improved servicing efficiency. Keeping the appropriate parts on hand required effective supply chain management. Investing in technology and training helped firms stay competitive and deliver better service, even in the face of obstacles like recruiting trained people and adjusting to new vehicle technologies.

#### **2.3.1.1 Customer Expectations and Quality Services**

In the automobile sector, customer expectations for maintenance and servicing were always shifting due to a variety of variables including market rivalry, consumer preferences, and technical improvements. The

significance of comprehending and fulfilling client expectations for service quality, which included elements like dependability, responsiveness, and transparency, was emphasized by research conducted by Johnson et al. (2018). In addition to increasing client pleasure, providing excellent service also encouraged customer loyalty and favorable word-of-mouth recommendations.

#### **2.3.1.2 Technology and Innovation**

Technological innovations were a major influence on how the automobile industry performed maintenance and serviced its vehicles. Technology made it possible to maintain vehicles more effectively and proactively, from diagnostic tools and predictive maintenance algorithms to digital service platforms and remote monitoring systems (Brezet et al., 2020). Preemptive maintenance interventions and downtime were reduced, for instance, by providing real-time monitoring of vehicle performance and condition through the use of telematics and Internet of Things (IoT) systems.

#### **2.3.1.3 Supply Chain Management**

To guarantee the availability of spare parts and components required for repair and maintenance activities, effective supply chain management was vital. According to research by Choi and Lee (2018), in order to save costs, maximize inventory levels, and shorten lead times, all parties involved in the automotive supply chain had to work together and coordinate their efforts. Systems such as vendor-managed inventory (VMI) and just-in-time (JIT) were used to optimize supply chain operations and boost customer satisfaction.

### **2.3.2 MANAGING SERVICE AND MAINTENANCE OF HYBRID CARS**

Ensuring the performance, dependability, and durability of hybrid automobiles required efficient administration of service and maintenance activities. Using a range



of academic sources, this literature study examined important factors, tactics, and difficulties associated with repairing and maintaining hybrid cars.

#### **2.3.2.1 Specialized Knowledge and Training**

Battery packs, electric motors, and regenerative braking systems were just a few of the distinctive parts and systems found in hybrid vehicles that called for specialist expertise and training to service and maintain.

According to research by Jones and Somaya (2018), technician certification programs and training were essential for giving automotive professionals the knowledge and abilities they needed to safely and successfully diagnose and repair hybrid car systems.

#### **2.3.2.2 Battery Health and Maintenance**

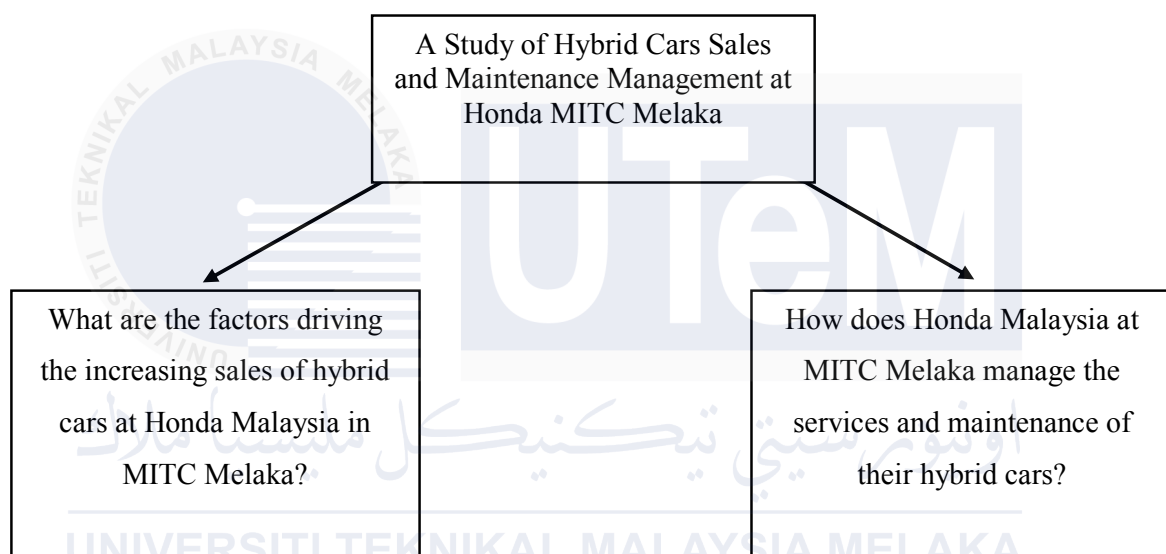
A vital component of hybrid vehicles, the battery pack's condition and upkeep had a big influence on the lifetime and performance of the automobile. Research by Lin et al. (2019) emphasized that in order to stop degradation, increase battery life, and maximize energy efficiency, regular battery examination, maintenance, and conditioning were crucial. Professionals were able to monitor battery health, spot any problems, and carry out maintenance interventions when necessary with the help of efficient battery management systems (BMS) and diagnostic tools.

#### **2.3.2.3 Challenges and Future Directions**

Hybrid vehicles had many advantages, but servicing and maintaining them could be difficult at times. These consisted of the price and accessibility of replacement parts, the coverage provided by warranties for items unique to hybrid vehicles, and the intricacy of hybrid car systems. According to research by Gao et al. (2021), by optimizing service operations, cutting costs, and raising customer happiness, utilizing data analytics, artificial

intelligence (AI), and machine learning (ML) technologies helped address these difficulties.

## 2.4 CONCEPTUAL FRAMEWORK



**Figure 1:** Conceptual Framework

## 2.5 SUMMARY

This study emphasized important advances and current problems in the hybrid automobile sector, notably in Malaysia. Hybrid cars provided significant environmental and economic benefits by lowering emissions and fuel costs; yet, they confronted challenges such as high initial purchase costs, complicated maintenance requirements, and limited infrastructure. Effective service and maintenance management, utilizing technology and specialist training, was critical to enhancing the performance and lifetime of hybrid vehicles. Addressing these obstacles through technology innovation and improved infrastructure might have increased adoption and helped to achieve environmental sustainability goals.

## CHAPTER 3

### RESEARCH METHODOLOGY



#### 3.0 INTRODUCTION

Research methodology was a systematic approach to studying a research problem that typically included defining a research design, which could be descriptive, analytical, experimental, or exploratory; deciding on a research approach, such as qualitative, quantitative, or mixed methods; and selecting appropriate data collection methods, either primary (e.g., surveys, interviews) or secondary. Sampling procedures, whether probability-based (e.g., random sampling) or non-probability-based (e.g., convenience sampling), were critical for guaranteeing representative data. Data analysis approaches ranged from qualitative (e.g., theme analysis) to quantitative (e.g., statistical testing). A robust research technique included ensuring the research's validity and reliability, addressing ethical issues (such as informed consent and confidentiality), and anchoring the study in a theoretical framework.

#### 3.1 RESEARCH DESIGN

The study design took a qualitative method, with the goal of delving into the complexity of Honda Malaysia's expanding sales of hybrid automobiles at MITC Melaka, as well as the administration of these vehicles' services and maintenance. This design promoted exploration,

with the goal of extensively understanding the underlying reasons for observable patterns and practices. The study attempted to capture the various viewpoints and experiences of players in the hybrid automobile industry using a variety of data gathering methods such as interviews, observations, and document analysis. Purposeful sampling included people with relevant knowledge and experience, whereas maximum variation sampling assured a range of opinions. A thematic analysis of the collected data revealed recurring patterns and themes, providing valuable insights into the study topics. Throughout the study process, ethical issues such as informed permission, confidentiality, and respect for participants were crucial, ensuring that the findings were valid and reliable. This thorough qualitative design provided a solid foundation for researching the complex dynamics of hybrid car sales and service management in Malaysia.

### **3.2 DATA COLLECTION METHOD**

My study used semi-structured interviews to acquire rich qualitative insights from key stakeholders involved in hybrid car sales and service management at Honda Malaysia, MITC Melaka. Semi-structured interviews were a flexible method that allowed for in-depth study of participants' viewpoints, experiences, and attitudes concerning hybrid vehicles and their maintenance. Participants included Honda dealership managers, hybrid car owners, and technicians who serviced these vehicles. The interview questions were designed to cover a variety of themes, including motivations for purchasing hybrid vehicles, experiences with maintenance and servicing, problems faced, assessments of the efficacy of Honda's service management systems, and ideas for improvement. Probing follow-up questions were used to obtain thorough replies and clarify any ambiguities. Interviews took place in a friendly and confidential environment, either in person or by video conference, to ensure that participants felt at ease expressing their ideas. The data gathered from interviews was transcribed verbatim and evaluated thematically to uncover patterns, themes, and insights related to the study objectives. Overall, the interview data collection approach served as the major source of qualitative data, yielding nuanced viewpoints and important insights into the study issues.

### **3.3 SAMPLING STRATEGY**

A purposive sampling strategy was performed to guarantee the selection of participants who possessed relevant knowledge and expertise important to the study objectives. This strategy ensured that the data obtained was extensive and insightful, drawing from individuals who could provide in-depth insights into the causes driving the development in hybrid car sales and the management strategies of their services and maintenance. The sample size for the semi-structured interviews was selected based on the notion of data saturation, which occurred when no new information emerged from subsequent interviews. Participants were selected based on particular inclusion criteria to increase the quality and usefulness of the data. Honda Malaysia personnel with at least one year of experience in the sales or service divisions dealing with hybrid automobiles were chosen to share insights into internal management practices and issues. Customers who had owned a Honda hybrid for at least six months were invited to report their experiences and satisfaction levels. Furthermore, industry specialists with extensive expertise and experience in the automotive business, particularly in hybrid cars, were chosen to provide a more comprehensive view of market trends and technical breakthroughs. This selective sampling strategy ensured a wide and educated participant pool, contributing to the robustness and validity of the study findings.

### **3.4 DATA ANALYSIS**

The data analysis for this study used qualitative methodologies to extensively investigate the intricacies of hybrid car adoption and maintenance management at Honda MITC Melaka. The qualitative data, principally gathered through semi-structured interviews with key stakeholders such as consumers, Honda service technicians, and management, was subjected to a thorough thematic analysis. Initially, the interviews were transcribed verbatim to retain the authenticity and detail of the participants' comments. Thematic analysis began with a careful reading and re-reading of the transcriptions to become comfortable with the data. This was followed by an open coding procedure, where noteworthy phrases, sentences, and paragraphs were recognized and tagged with initial codes that reflected the fundamental ideas and concepts. These codes were then examined and improved, with related codes being combined to build larger themes.

The themes were evaluated to understand the linkages and patterns within the data. This entailed studying how multiple themes interacted and impacted one another, offering a thorough knowledge of the research topics. The investigation focused on generating rich, detailed information that highlighted the intricacies of hybrid car adoption and maintenance at Honda MITC Melaka. Furthermore, the themes were checked against existing literature to uncover consistencies and differences, contributing to a greater understanding of the issue. This comparative study served to contextualize the findings within the wider body of research on hybrid cars and sustainable transportation. The final stage was to synthesize the findings into cohesive narratives that addressed the study objectives. These narratives provided in-depth insights into the factors driving the increase in hybrid car sales, customer experiences and expectations, as well as the operational difficulties and methods used by Honda MITC Melaka to service hybrid vehicles. This qualitative study delivered a deep and thorough understanding of the research topic, establishing the framework for practical recommendations and further investigation.

### **3.5 SUMMARY**

This report highlights the growing significance of hybrid cars in Malaysia, driven by environmental concerns, government incentives, and technological advancements. However, challenges such as high upfront costs, maintenance complexities, and limited infrastructure need to be addressed to optimize hybrid technology's potential. The study, conducted through semi-structured interviews at Honda MITC Melaka, aimed to understand the factors behind the rise in hybrid car sales and the company's service management strategies. The insights gained contribute to improving industry practices, policy decisions, and customer satisfaction, supporting the broader goal of advancing sustainable mobility and creating a more environmentally friendly automotive sector in Malaysia.

## CHAPTER 4



### 4.0 INTRODUCTION

This chapter presents the study's findings based on a thematic analysis of qualitative data gathered through interviews with key stakeholders at Honda MITC Melaka. The findings are consistent with the research objectives: (1) to identify the causes of the increase in hybrid car sales at Honda Malaysia and MITC Melaka, and (2) to understand the strategies used to manage the services and maintenance of these hybrid vehicles. The transcripts were carefully examined to identify themes and sub-themes, which were supported by direct quotations from respondents.

### 4.1 DEMOGRAPHIC INFORMATION

This section provides an overview of the study's participants, focusing on their backgrounds and roles in relation to hybrid cars. Each respondent provided unique insights based on their knowledge and experience at Honda MITC Melaka. The following are detailed profiles of the participants.

#### **4.1.1 Respondent 1**

Respondent 1 has over 5 years of experience in hybrid car sales and holds a diploma in Business Administration. This background has equipped them with in-depth knowledge of customer behavior and effective sales strategies, particularly in the context of environmentally friendly vehicles. Their expertise lies in understanding customer preferences and leveraging government incentives to boost sales.

#### **4.1.2 Respondent 2**

Respondent 2 has been using a Honda hybrid vehicle for over a year. They hold a degree in Environmental Science, which influences their preference for environmentally friendly transportation options. Their insights provide a customer-centric perspective on the performance, maintenance, and overall ownership experience of hybrid cars.

#### **4.1.3 Respondent 3**

Respondent 3 has over 8 years of experience in automotive services, specializing in hybrid vehicles. They hold a degree in Mechanical Engineering, which has provided them with a strong foundation in technical knowledge and managerial skills. Their role involves overseeing service operations, ensuring efficiency, and implementing specialized training programs for technicians.

#### **4.1.4 Respondent 4**

Respondent 4 has 4 years of hands-on experience servicing hybrid systems and holds a diploma in Automotive Technology. They have received specialized training in hybrid technology, focusing on battery diagnostics, electric motor maintenance, and safety protocols. Their responsibilities include conducting regular diagnostic tests and addressing technical challenges unique to hybrid vehicles.



Respondent	Working Position	Years of Experience	Education Level
1	Sales representative	5 years	Diploma
2	Hybrid Car's Owner	1 year	Degree
3	Service Manager	8 years	Degree
4	Hybrid Car's Technician	4 years	Diploma

**Table 1: Demographic information of Respondent**

#### 4.2 RESPONDENT SUPPORT FOR KEY THEMES

Findings	Themes	Sub-Themes	Respondent's support
Factors contributing to the increasing sales of hybrid cars at Honda Malaysia in MITC Melaka.	Economic Factors	Fuel cost	R#1, R#2, R#4
		Incentives	R#1
	Environmental Awareness	Greener alternative	R#1, R#3
	Technological and Performance Factors	Technology	R#1, R#3, R#4
		Accessible	R#1, R#2
		Positive	R#1, R#4
Managing Services and Maintenance of Hybrid Cars	Efficient Servicing	Appointment system	R#2, R#3
		Service bay	R#2, R#3
	Technical Maintenance	Battery Care	R#4
		Components care	R#2, R#3

	Training and Expertise	Specialized training programs	R#2, R#3
	Customer Feedback	Follow-up	R#2, R#3
		Feedback	R#2, R#3
	After-Sales Programs	Extended warranty	R#2, R#3
		Roadside assistance	R#2, R#3

**Table 2: Respondent's support for key themes**

#### 4.3 FACTORS CONTRIBUTING TO THE INCREASING SALES OF HYBRID CARS

The first research objective sought to explore the reasons contributing to the growing popularity of hybrid cars at Honda Malaysia, MITC Melaka. Through thematic analysis, several key themes emerged, shedding light on customer motivations and market trends. At first, the interviewees were asked about reasons for increasing sales of hybrid car at Honda MITC Melaka and they named four major reasons in general.

Findings	Themes	Sub-Themes	Respondent's support
Factors contributing to the increasing sales of hybrid cars at Honda Malaysia in MITC Melaka.	Economic Factors	Fuel cost	R#1, R#2, R#4
		Incentives	R#1
	Environmental Awareness	Greener alternative	R#1, R#3
	Technological and Performance Factors	Technology	R#1, R#3, R#4
	Customer Perception	Accessible	R#1, R#2
		Positive	R#1, R#4

**Table 3: Respondent's support of findings in objective 1**

Economic incentives, environmental awareness, technology developments, and changed customer views all contribute to the growth of hybrid vehicle sales. Rising fuel costs and government incentives, like as tax breaks, make hybrids an affordable option for consumers. At the same time, their eco-friendliness appeals to ecologically minded shoppers who want to lessen their carbon impact. Technological developments such as greater battery efficiency, quieter engines, and regenerative braking have improved performance and dependability, dispelling worries about hybrids' underperformance. Furthermore, favorable word-of-mouth and increasing consumer education have normalized hybrid vehicles, making them a more accessible and viable alternative for a larger population. All of these factors contribute to the rising popularity of hybrid vehicles.

Further discussion on the specific and detailed reasons based on categories related to each theme as mentioned above is presented in the next section. The discussion seeks to verify the framework proposed earlier based on secondary sources, previous research and literature review.

#### 4.3.1 Theme 1: Economic Factors

Themes	Sub-Themes	Respondent's Support
Economic Factors	Rising Fuel Cost	R#1, R#2, R#4
	Government incentives	R#1

**Table 4: Respondent's support of economic factors**

Economic considerations influence the demand and supply for goods and services, and the automobile sector is no different. In the case of hybrid cars, economic considerations like as gasoline prices, government subsidies, and inflation can have a substantial impact on client purchase decisions. When fuel costs rise, people are more inclined to choose fuel-efficient vehicles such as hybrids, which provide long-term fuel savings. The majority of respondents identified 'fuel cost' as a primary concern when making decisions about vehicle purchases.

*"The rising cost of fuel has made people more conscious about saving money, and hybrids are incredibly fuel-efficient." R#1*

*"With the way fuel prices keep rising, I feel like I'm saving so much more with my hybrid." R#2*

*"When customers bring in their hybrids for service, they often mention how much money they're saving on fuel. This is a huge selling point for hybrids—fuel efficiency is one of the main reasons people are making the switch." R#4*

Furthermore, government subsidies or tax breaks for purchasing environmentally friendly automobiles might increase the appeal of hybrid cars. In Malaysia, government measures focused at decreasing carbon emissions or supporting green technologies can help to encourage the hybrid market. Economic downturns, on the other hand, may result in a fall in discretionary expenditure, prompting customers to postpone or rethink their car purchases. This makes it critical to consider the overall economic climate when assessing the possibility for hybrid car sales. Respondent 1 was mentioned about it.

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*"There's the exemption of excise duties and import taxes for hybrid cars. These incentives significantly reduce the overall cost of ownership." R#1*

This is consistent with Gallardo et al.'s(2017)findings, which stress that the economic benefits from lower fuel usage make hybrid vehicles a cost-effective alternative over time. Furthermore, government incentives such as exemptions from excise tariffs and import taxes have greatly decreased the overall cost of ownership. This is similar with the findings of Rahman et al. (2019), who discovered that tax refunds and subsidies in Malaysia decrease the entry barrier for environmentally friendly automobiles.

*"There's the exemption of excise duties and import taxes for hybrid cars. These incentives significantly reduce the overall cost of ownership." R#1*

#### 4.3.2 Theme 2: Environmental Awareness

Themes	Sub-Themes	Respondent's Support
Environmental Awareness	Greener Alternative	R#1, R#3

**Table 5: Respondent's support of environmental awareness**

Environmental consciousness has emerged as a critical driver in the car industry, as customers seek more sustainable alternatives. Rising concerns about global warming, air pollution, and the loss of natural resources have prompted many consumers to choose environmentally friendly automobiles. Hybrid vehicles, which utilize a combination of internal combustion engines and electric motors, are advertised as a more ecologically friendly alternative to conventional automobiles since they generate less greenhouse gases and require less gasoline. This movement in consumer behavior is mostly driven by rising environmental awareness, particularly among younger generations, who are more prone to emphasize sustainability. Respondent 1 and 3 were highlighted the words 'greener alternative' and it was the reason why the numbers of hybrid car sales was increased.

*"Hybrid cars are seen as a greener alternative, which appeals to customers who want to reduce their carbon footprint." R#1*

*"Many of our customers mention how much they like that hybrids and the technologies are seen as a greener alternative because it produces fewer emissions compared to regular cars." R#3*

In summary, hybrid cars appeal to a growing demographic of environmentally aware consumers who prioritize sustainability in their purchasing decisions.

#### 4.3.3 Theme 3: Technological and Performance Factors

Themes	Sub-Themes	Respondent's Support
Technological & Performance Factors	Improved hybrid technology	R#1, R#3, R#4

**Table 6: Respondent's support of technological and performance factors**

Technological advancements over the years have played a pivotal role in increasing the popularity of hybrid automobiles. The continuous improvement in hybrid technology has not only made these vehicles more efficient but also more appealing to a broader range of consumers. Modern hybrid systems now offer enhanced fuel efficiency, reduced emissions, and improved overall reliability. Furthermore, these advancements ensure that drivers no longer need to compromise between performance and comfort, as hybrid cars are now designed to deliver a smooth, powerful, and enjoyable driving experience. This combination of innovation and practicality has made hybrid vehicles an increasingly attractive option in today's automotive market. When surveyed, most respondents pointed to the word 'technology' as a significant factor influencing their preferences.

*"Hybrid technology has improved so much that customers don't have to compromise on performance or comfort," R#1*

*"Over the years, the technology behind hybrid systems has improved a lot. Today's hybrids are more powerful and efficient than ever, which has helped attract customers who were previously skeptical about the performance of hybrid vehicles." R#3*

*"Today's hybrid technology offers smooth handling and advanced features like regenerative braking and quieter engines, which not only enhance the driving experience but also contribute to a healthier environment by reducing carbon emissions and improving energy efficiency." R#4*

According to Jones and Somaya (2018), advances in battery technology, electric motors, and energy management systems have made hybrid vehicles comparable with traditional vehicles in terms of performance and dependability. These advances have also dispelled early myths about hybrids being underpowered or difficult to maintain. In conclusion, technical developments have been essential.

#### 4.3.4 Theme 4: Customer Perception

Themes	Sub-Themes	Respondent's Support
Customer Perception	Accessible	R#1, R#2,
	Positive	R#1, R#4

**Table 7: Respondent's support of customer perception**

Customer perception is important in the automobile business since it affects their propensity to buy hybrid vehicles. While many customers are becoming more conscious of environmental issues, they may still be wary of hybrid cars owing to perceived drawbacks such as increased purchase prices, restricted availability, or worries about long-term dependability. Overcoming these preconceptions entails teaching buyers about the advantages of hybrid vehicles, such as cheaper maintenance costs, lower pollutants, and the emerging infrastructure to support electric vehicles, such as charging stations. Furthermore, as more manufacturers enter the hybrid market and expand production, the stigma associated with hybrid vehicles has faded, and they have grown more popular. Respondent 1 and 2 were mentioned the word 'accessible' and the word 'positive' was mentioned by respondent 1 and 4.

*"As more people buy hybrids, their positive experiences encourage others to consider them." R#1*

*"Customers see hybrids as more practical and accessible." R#1*

*"I heard from a friend about how much they save on fuel with their hybrid, practical, accessible and that's what convinced me to buy one." R#2*

*"I often hear positive feedback from customers who bought hybrids because their friends or family recommended them. When people have a good experience with their hybrid, they naturally want to share it with others." R#4*

Hashim et al. (2021) found that consumer education and peer endorsements had a substantial impact on hybrid technology acceptability. As hybrids gain foothold in mainstream markets, their stigma as specialist or luxury goods fades, making them a feasible alternative for a wider audience.

#### 4.4 MANAGING SERVICES AND MAINTENANCE OF HYBRID CARS

The management of services and maintenance for hybrid cars at Honda Malaysia, particularly at the MITC Melaka dealership, involves a structured and comprehensive approach aimed at ensuring vehicle performance and customer satisfaction. Through interviews with sales representatives and service managers, it became evident that Honda Malaysia is committed to providing high-quality after-sales service, focusing on efficiency, technical maintenance, technician expertise, customer feedback, and after-sales programs.

Findings	Themes	Sub-themes	Respondent's support
Managing Services and Maintenance of Hybrid Cars	Efficient Servicing	Appointment system	R#2, R#3
		Service bay	R#2, R#3
	Technical Maintenance	Battery Care	R#4
		Components care	R#2, R#3
	Training and Expertise	Specialized training programs	R#2, R#3
	Customer Feedback	Follow-up	R#2, R#3



		Feedback	R#2, R#3
	After-Sales Programs	Extended warranty	R#2, R#3
		Roadside assistance	R#2, R#3

**Table 8: Respondent's support of findings in objective 2**

#### 4.4.1 Theme 1: Efficient Servicing

Themes	Sub-Themes	Respondent's Support
Efficient Servicing	Appointment system	R#2, R#3
	Service bay	R#2, R#3

**Table 9: Respondent's support of efficient servicing**

Honda Malaysia has devised an efficient service procedure to guarantee that hybrid car owners have little disruption when their cars require repair. This system is built on a systematic appointment scheduling procedure that aims to minimize wait times and increase service efficiency. The scheduling system is critical for controlling the service center's operations, particularly when dealing with hybrid cars' complicated systems. Setting up appointments in advance allows the service team to dedicate the required time and resources to each vehicle, ensuring that no client is kept waiting for an extended amount of time and that all service jobs are done on time. Respondent 2 and 3 were mentioned the word 'appointment'.

*"We prioritize efficiency by using a well-organized appointment system to avoid long queues." R#3*

*"I love the fact that I can schedule my service appointments in advance. It saves me time, and I never have to wait for too long when I arrive." R#2*

A well-organized service environment contributes significantly to this efficiency. The service facility is constructed with hybrid-specific bays, each equipped with the tools and diagnostic

equipment needed to work on hybrid systems. This customized arrangement enables service specialists to operate more effectively and guarantees that all maintenance operations are carried out to the highest standards. For example, hybrid cars need more cautious handling of components such as the electric motor and battery systems, which typical service bays may not be adequately suited to handle. Honda Malaysia's focus on specialized hybrid service bays ensures that these cars receive the maintenance they require. Respondent 2 and 3 were mentioned 'service bay' that specialized for hybrid cars.

*"We have dedicated service bays equipped with advanced tools specifically designed for hybrid systems," R#3*

*"It's great to know that my hybrid car is being serviced in a bay designed specifically for it. I feel like it gets the attention and care it deserves." R#2*

This system not only benefits customers by reducing wait times but also enables Honda Malaysia to manage the workflow of their service department more effectively, optimizing both customer satisfaction and operational efficiency.

#### 4.4.2 Theme 2: Technical Maintenance

Themes	Sub-Themes	Respondent's Support
Technical Maintenance	Battery	R#4
	Component checks	R#2, R#3

**Table 10: Respondent's support of technical maintenance**

Technical maintenance of hybrid cars is another essential component of Honda Malaysia's service management strategy. Hybrid vehicles are more sophisticated than traditional automobiles because they mix internal combustion engines (ICE) with electric motor systems. This dual system needs frequent maintenance and close monitoring to ensure that both systems function properly. Hybrid battery care is an essential part of technical maintenance. The hybrid

battery is the core of any hybrid car, with its performance influencing fuel efficiency, driving range, and overall vehicle lifetime. Honda Malaysia's service specialists utilize sophisticated software to evaluate hybrid battery life and maintain maximum performance. Respondent 4 was mentioned the word 'battery'.

*"We start with regular diagnostic tests to ensure everything is running smoothly. Honda provides us with specialized software to monitor the battery's health and performance." R#4*

Hybrid cars also rely on an electric motor and a regenerative braking system, which must be checked on a regular basis to maintain optimum operation. The regenerative braking system, for example, collects kinetic energy during braking and turns it into electrical energy to charge the hybrid battery. If these systems are not properly maintained, the vehicle may lose efficiency and performance. Honda Malaysia's service professionals examine these components on a regular basis to ensure that the vehicle operates smoothly and effectively. The survey data showed that the word 'components' were specifically mentioned by two respondents.

*"We also check other hybrid-specific components like the electric motor and regenerative braking system," R#3*

*"The regenerative braking system in my car is vital to its efficiency. I'm glad to see Honda checks all the important components regularly during service." R#2*

This focus on technical maintenance ensures that customers experience the full benefits of hybrid technology, such as fuel efficiency and low emissions, while minimizing the likelihood of breakdowns or expensive repairs.

#### 4.4.3 Theme 3: Training and Expertise

Themes	Sub-Themes	Respondent's Support
Training and Expertise	Specialized training programs	R#2, R#3

**Table 11: Respondent's support of training and expertise**

The provision of specific training programs for Honda Malaysia's service personnel is a key component of the company's hybrid car service strategy. These programs are critical since hybrid cars require specialized technical knowledge and experience to operate. The intricacy of hybrid technology, with its blend of electric and internal combustion engines, necessitates a highly qualified staff that knows the specific requirements of hybrid cars. Honda Malaysia works with the company's headquarters to give extensive training to its technicians. This course provides both academic understanding of hybrid technology and hands-on experience with the most recent hybrid models. Technicians are trained to handle hybrid cars' sensitive systems, such as the battery management system, electric motors, and engine. The survey data showed that the word 'training' were specifically mentioned by Respondent 2 and 3.

*"All our technicians undergo specialized training programs provided by Honda Malaysia." R#3*

*"I can tell that the technicians at Honda really know what they're doing. After every service, my car runs like new. It's clear they're highly trained in hybrid technology." R#2*

Furthermore, continual training is a key component of the program. As hybrid technology advances, so must the abilities of service professionals. Honda Malaysia keeps technicians up to date on the latest improvements by delivering refresher training whenever new hybrid vehicles or hybrid technology updates are released.

*"Whenever a new hybrid model is launched or there are updates to the technology, our team attends refresher courses in training programs held by Honda." R#3*

*"I recently had my hybrid serviced, and the technician was able to explain some of the newer features. It shows they're constantly learning and improving their skills in training programs." R#2*

This continuous learning process enables the technicians to keep pace with the evolving nature of hybrid vehicles, ensuring they are well-prepared to handle the latest technological innovations.

#### 4.4.4 Theme 4: Customer Feedback

Themes	Sub-Themes	Respondent's Support
Customer Feedback	Follow-up	R#2, R#3
	Feedback	R#2, R#3

**Table 12: Respondent's support of customer feedback**

Customer feedback is an important tool for Honda Malaysia to ensure high-quality service and customer happiness. The organization understands that listening to consumers and acting on their input is vital to retaining a loyal client base. Honda Malaysia collects feedback through a variety of sources, including as questionnaires, online reviews, and follow-up calls following each service visit. These strategies ensure that they collect a diverse variety of client ideas and experiences, resulting in a clear image of service performance. Two respondents which are Respondent 2 and 3 both mentioned the word 'follow-up'.

*"We use multiple channels to collect it, like surveys, online reviews, and follow-up calls after a service." R#3*

*"I received a follow-up call after my service, and I was asked how everything went. It shows that Honda cares about my experience and wants to make sure I'm satisfied." R#2*

Once collected, input is examined and discussed during weekly team meetings. This frequent evaluation approach enables Honda Malaysia to address any reoccurring issues quickly and adjust as needed. For example, if consumers repeatedly notice service time delays, the team can analyze the root reasons and apply corrective steps. Acting on feedback allows Honda Malaysia to develop its operations, ensuring that customers are always happy with the quality of service they receive. Respondent 2 and 3 also mentioned the word 'feedback'.

*"We review all feedback during weekly team meetings. If there are any recurring complaints or suggestions, we take immediate action," R#3*

*"I heard that they fixed the long waiting times at the service center after they got feedback from customers. It's great to see that they listen to us and make changes accordingly." R#2*

This proactive approach ensures that the service team continually enhances its performance based on customer insights.

#### 4.4.5 Theme 5: After-Sales Programs

Themes	Sub-Themes	Respondent's Support
After-Sales Programs	Extended warranties	R#2, R#3
	Roadside assistance	R#2, R#3

**Table 13: Respondent's support of after-sales programs**

Honda Malaysia offers a range of after-sales programs designed to enhance the ownership experience for hybrid car buyers. These programs not only provide peace of mind for

customers but also contribute to the long-term performance and satisfaction of their vehicles. The survey data showed that the word ‘extended warranties’ were specifically mentioned by two respondents which are Respondent 2 and 3.

*"We offer several programs to enhance the ownership experience. One of our most popular offerings is the extended warranty for hybrid batteries," R#3*

*"The extended warranty on my hybrid battery was a major factor in my decision to purchase the car. It gives me peace of mind knowing that I'm covered for a longer period." R#2*

One of the primary after-sales offers is an extended warranty for hybrid batteries. Hybrid batteries are expensive to repair, and buyers are concerned about their durability when purchasing a hybrid car. By providing an extended battery guarantee, Honda Malaysia reassures consumers that they are covered in the case of a battery failure, which might result in costly repairs.

*"We offer several programs to enhance the ownership experience. One of our most popular offerings is the extended warranty for hybrid batteries." R#3*

This program has been well-received by customers, as it helps to alleviate concerns about the long-term cost of maintaining hybrid vehicles.

Another key feature of Honda Malaysia's after-sales service is their 24-hour roadside assistance program. This service is especially beneficial to hybrid vehicle owners, who may be apprehensive about potential malfunctions owing to the complexity of hybrid systems. Customers have access to rapid support in the event of an emergency, ensuring that they are not trapped in strange locations, thanks to 24/7 roadside assistance. The provision of this service improves the entire client experience by delivering value beyond servicing and maintenance. Respondent 2 and 3 also mentioned the word ‘roadside assistance’.

*"We provide 24/7 roadside assistance for hybrid car owners," R#3*

*"I had an issue with my car while on a road trip, and I was able to call Honda's roadside assistance. It was so convenient to have that support, especially since I drive a hybrid." R#2*

#### **4.5 SUMMARY**

The increasing popularity of hybrid cars is largely driven by economic, environmental, and technological factors. Economically, hybrid vehicles offer significant cost-saving benefits through superior fuel efficiency, making them an attractive option for consumers facing rising fuel prices. Additionally, government incentives such as tax rebates and subsidies have made hybrid vehicles more affordable, further encouraging their adoption. Environmentally, hybrids produce fewer emissions than traditional gasoline-powered vehicles, making them an appealing choice for eco-conscious consumers looking to reduce their carbon footprint. Technologically, advancements in hybrid car systems, including improved battery technology, regenerative braking, and smooth handling, have addressed past concerns about performance and reliability. These innovations ensure that consumers do not have to sacrifice performance for sustainability, making hybrid cars a reliable and efficient option for modern drivers.

Honda MITC Melaka has played an essential role in supporting the growth of hybrid vehicles through effective service and maintenance strategies. The company has invested in state-of-the-art workshops equipped with specialized tools and diagnostic equipment designed for hybrid cars, ensuring high-quality service tailored to these vehicles' specific needs. Furthermore, Honda emphasizes continuous employee training to keep technicians well-versed in the latest hybrid technologies. Customer feedback is a vital component of Honda's service approach, allowing the company to adapt its offerings based on consumer needs. Proactive maintenance strategies, such as service reminders and detailed maintenance plans, help ensure hybrid vehicles remain in optimal condition over time. By prioritizing customer satisfaction and maintaining high service standards, Honda MITC Melaka plays a crucial role in promoting hybrid vehicles and fostering long-term customer loyalty, positioning itself as a key player in the future of sustainable transportation.



## **CHAPTER 5**

### **CONCLUSION AND RECOMMENDATIONS**

#### **5.0 INTRODUCTION**

This chapter serves as the final section of the research, synthesizing the major findings of the study. It critically assesses whether the research aims and objectives have been met, outlines the significant contributions made by the study to the field, and acknowledges the limitations that may affect the generalizability of the findings. Additionally, the chapter offers valuable recommendations for future research and concludes with a comprehensive summary of the study's key takeaways, highlighting its relevance to both academic research and practical applications in the automotive industry.

#### **5.1 ACHIEVEMENTS OF RESEARCH AIMS AND OBJECTIVES**

The primary aim of this research was to explore the factors driving the increase in sales of hybrid vehicles at Honda Malaysia in MITC Melaka, with a particular emphasis on understanding how the company manages the services and maintenance of these vehicles. To achieve this, the study employed a qualitative research methodology, including in-depth interviews and thematic analysis, to gather rich, detailed insights from a range of stakeholders involved in the hybrid vehicle market. By focusing on these elements, both research objectives were successfully fulfilled. The study's findings revealed key motivations that drive customer interest in hybrid vehicles, including economic factors such as rising fuel prices, attractive government incentives, and the overall cost-effectiveness of hybrid cars in the long term.

Environmental concerns also emerged as a significant factor, with many consumers increasingly aware of the ecological benefits of hybrid vehicles, such as reduced carbon emissions and fuel consumption. Additionally, technological advancements in hybrid vehicle design, including improved performance, comfort, and reliability, were found to contribute to the growing appeal of these vehicles.

Furthermore, the research provided a detailed examination of the operational practices at Honda MITC Melaka, focusing on how the company manages the maintenance and service aspects of hybrid vehicles. The findings indicated that Honda has implemented a specialized service system that ensures both the efficient management of hybrid vehicle services and the delivery of high-quality customer support. This system includes well-trained technicians, specialized workshops, advanced diagnostic tools, and proactive maintenance programs aimed at ensuring the longevity and performance of hybrid vehicles. These practices reflect Honda's commitment to customer satisfaction and operational excellence, contributing to the company's success in the hybrid vehicle market.

Overall, this research not only addressed the core research questions but also expanded the understanding of hybrid vehicle adoption and maintenance practices in the Malaysian automotive industry. The insights gained contribute to the broader body of knowledge on hybrid vehicle market dynamics, providing a foundation for future studies and offering valuable guidance for automotive companies seeking to enhance their sales and service operations in the growing hybrid vehicle sector.

## **5.2 FULFILLMENT OF THE FIRST OBJECTIVE**

The first objective of this study was to identify the key factors that are driving the increasing popularity of hybrid cars in Malaysia, with a particular focus on the Honda MITC Melaka dealership. The study found that several factors were central to the rise in hybrid car adoption. Economic considerations, such as rising fuel prices and attractive government incentives, played a pivotal role in shifting consumer preferences towards hybrid vehicles. The escalating cost of conventional fuel sources has made hybrid cars an appealing option for cost-conscious consumers seeking long-term savings on fuel expenses. In addition to these economic factors,

a growing environmental consciousness among consumers has significantly contributed to the shift toward more sustainable modes of transportation. As awareness of climate change and air pollution increases, more customers are opting for eco-friendly alternatives like hybrid cars, which offer reduced emissions and improved fuel efficiency.

Furthermore, technological advancements in hybrid vehicle technology have made these cars more appealing by improving performance, driving comfort, and overall reliability. Hybrid cars now offer comparable, if not superior, driving experiences to traditional internal combustion engine vehicles, thus attracting a wider range of customers. The study also found that evolving customer perceptions, which have been influenced by positive word-of-mouth and increased exposure to hybrid vehicles through media and advertising, have helped to normalize hybrid car ownership. This has been essential in overcoming initial skepticism toward hybrid technology.

These findings are consistent with existing literature on hybrid vehicle adoption, underscoring the importance of economic, environmental, and technological factors in the growing demand for hybrid cars in Malaysia.

### **5.3 FULFILLMENT OF THE SECOND OBJECTIVE**

The second objective of the research focused on examining how Honda MITC Melaka manages the services and maintenance of its hybrid vehicles. The research revealed that Honda has implemented a robust and effective service management system that ensures the continued performance and reliability of hybrid cars.

A key feature of this system is the establishment of specialized workshops designed specifically for hybrid vehicles, which are equipped with the latest tools and technologies to handle the unique requirements of these cars. Honda also invests in training and certification programs for its technicians to ensure they possess the necessary expertise to work on hybrid vehicles, which have different mechanical systems and components compared to traditional vehicles. Moreover, the dealership utilizes advanced diagnostic equipment to perform regular checks on hybrid vehicles, ensuring any potential issues are identified and addressed promptly.

This proactive maintenance approach helps to prevent major breakdowns and ensures that the vehicles remain in optimal condition.

In addition to routine servicing, Honda MITC Melaka places a strong emphasis on customer satisfaction through comprehensive after-sales programs. These include extended warranties that offer customers peace of mind, as well as 24/7 roadside assistance, which is crucial for hybrid car owners who may require immediate support in case of an emergency. The combination of specialized service offerings, expert technicians, and excellent customer support mechanisms has contributed to Honda's ability to maintain high levels of customer satisfaction and ensure the continued success of its hybrid vehicle offerings.

This approach highlights Honda's commitment to enhancing the overall ownership experience for its customers, ensuring that hybrid vehicles remain a reliable and attractive choice for Malaysian consumers.

## **5.4 SIGNIFICANCE AND LIMITATION OF THE STUDY**

### **5.4.1 Significance**

This study's significance lies in its substantial contribution to understanding the factors influencing hybrid vehicle adoption and the management of related services in the Malaysian automotive market. By concentrating on the rising sales of hybrid cars at Honda MITC Melaka, the research provides critical insights into the motivations behind consumer decisions when purchasing hybrid vehicles. These insights are invaluable for automotive companies seeking to optimize their strategies for capturing and retaining customers in an increasingly competitive market. The research presents practical recommendations that can enhance sales efforts and streamline operational processes to improve efficiency, especially for businesses targeting the hybrid vehicle segment.

Furthermore, the findings are of notable relevance to policymakers. They underscore the importance of government incentives, such as tax rebates, and the rising public awareness about environmental issues as key drivers behind the transition to more sustainable transportation. This research highlights the potential of hybrid vehicles in

reducing carbon emissions and promoting eco-friendly transportation solutions. By understanding these dynamics, policymakers can implement more targeted and effective strategies to encourage the adoption of hybrid vehicles. Ultimately, the study's results can be leveraged to inform future policy frameworks that not only foster greater consumer adoption of hybrid vehicles but also contribute to broader goals of environmental sustainability and reducing the carbon footprint of the automotive industry in Malaysia.

This comprehensive understanding of hybrid vehicle adoption, supported by the study's insights, could play a pivotal role in shaping the future of the automotive industry in Malaysia, paving the way for a more sustainable and environmentally conscious transportation landscape.

#### **5.4.2 Limitation**

Despite its significant contributions to the understanding of hybrid vehicle adoption and service management, this study has several limitations that should be acknowledged. One of the primary limitations is the qualitative nature of the research, which inherently limits the generalizability of the findings. As the study was conducted at a single location—Honda MITC Melaka—its results may not fully capture the diverse experiences and perspectives of hybrid car owners or dealerships operating in other regions of Malaysia. The unique characteristics of the MITC Melaka dealership, such as its customer demographics, regional factors, and local market conditions, may not necessarily reflect those of other Honda dealerships or automotive brands in different parts of the country.

Additionally, the research relied on a relatively small sample size, which may not have been representative of the broader population of hybrid car owners or potential buyers. The small sample size limits the diversity of viewpoints captured, and certain customer segments, such as those from rural areas or lower-income groups, may not have been adequately represented. This limitation affects the depth and breadth of the study's findings, as it may not encompass the full spectrum of consumer experiences with

hybrid vehicles. For example, customers from different socioeconomic backgrounds or with varying levels of environmental awareness might have different motivations for adopting hybrid vehicles, but these variations may not have been fully explored in the study.

In light of these limitations, future research should consider expanding the sample size to capture a more diverse range of perspectives. Conducting research across multiple regions of Malaysia, with a focus on both urban and rural areas, could provide a more comprehensive understanding of hybrid vehicle adoption and the factors that influence consumer decisions nationwide. Moreover, including hybrid owners from various income groups and customer segments would help to ensure that the study's findings are more representative of the broader Malaysian population. By addressing these limitations, future studies would be able to offer a richer and more generalized view of hybrid vehicle adoption trends and service management practices in Malaysia.

## **5.5 RECOMMENDATIONS FOR FUTURE RESEARCH**

To build upon the findings of this study and address its limitations, future research could expand the scope of investigation by conducting similar studies across a broader range of locations. This could include various Honda dealerships as well as those representing other automotive brands that offer hybrid vehicles. A multi-location approach would enable researchers to gather a more diverse range of perspectives, thereby capturing the variations in consumer behavior, dealership strategies, and regional factors that might influence hybrid vehicle adoption across different parts of Malaysia. By comparing the experiences and strategies of multiple dealerships and brands, future research could provide a deeper understanding of the factors that drive the success of hybrid vehicles in different market segments.

In addition to expanding the geographical scope, future studies could incorporate quantitative research methods to complement the qualitative findings of this study. By gathering data from a larger and more representative sample of hybrid vehicle owners and potential buyers, researchers would be able to obtain statistically significant insights into the key drivers behind

hybrid vehicle adoption. Quantitative studies could help quantify the influence of various factors, such as economic incentives, environmental concerns, and technological advancements, on consumers' decisions to purchase hybrid vehicles. This would provide a more robust analysis of the relationships between these factors and their impact on the hybrid vehicle market in Malaysia.

Moreover, future research could explore long-term customer experiences with hybrid vehicles to gain a deeper understanding of ownership dynamics over time. This could include examining the costs associated with maintaining hybrid vehicles, the durability and reliability of hybrid technology, and how customer satisfaction evolves throughout the lifespan of the vehicle. Longitudinal studies could track customer experiences over several years, offering valuable insights into the long-term benefits and challenges of hybrid vehicle ownership. These studies could shed light on issues such as the frequency of repairs, the costs of replacement parts, and the effectiveness of maintenance programs in ensuring the longevity of hybrid cars. In doing so, longitudinal research would provide crucial information on the sustainability and overall performance of hybrid vehicles in the Malaysian market, helping both consumers and industry stakeholders make more informed decisions.

Ultimately, by broadening the focus to include multiple locations, diverse brands, and long-term customer experiences, future research could offer a more comprehensive and nuanced understanding of hybrid vehicle adoption in Malaysia. These insights could guide policymakers, automotive manufacturers, and service providers in shaping strategies to promote sustainable transportation and enhance the overall hybrid vehicle ownership experience.

## **5.6 CONCLUSION**

In conclusion, this study has successfully identified the key factors driving the increasing popularity of hybrid vehicles in Malaysia, with a particular focus on the critical roles of economic incentives, environmental awareness, and technological advancements. The findings indicate that the convergence of these factors has significantly influenced consumer behavior, leading to a growing demand for hybrid cars as more Malaysians recognize the

financial, environmental, and technological benefits of these vehicles. Furthermore, the research explored the service management strategies employed by Honda MITC Melaka, which have proven to be crucial in ensuring the reliability and satisfaction of hybrid vehicle owners. The dealership's commitment to excellent maintenance services, skilled technicians, and customer support systems exemplifies best practices in the automotive industry and is integral to the continued success of hybrid vehicles in the market.

While the study's qualitative approach and small sample size limit the generalizability of the findings, the research provides meaningful insights that enrich the understanding of hybrid vehicle adoption and service management. The findings not only contribute to the academic literature on the subject but also offer valuable practical knowledge for automotive companies, policymakers, and other stakeholders involved in the promotion of sustainable transportation solutions. The insights gained from this study can inform strategies to enhance the adoption of hybrid vehicles, improve after-sales services, and support the development of policies aimed at promoting cleaner and more efficient transportation alternatives.

This research sets the stage for future studies on hybrid vehicle adoption and management, particularly in the context of Malaysia's evolving automotive market. By expanding the scope to include a larger, more diverse sample and exploring long-term ownership experiences, future research can further advance understanding of the hybrid vehicle market. Ultimately, the findings from this study could play a pivotal role in informing policies and practices that encourage the widespread use of environmentally friendly vehicles, contributing to a greener, more sustainable future for Malaysia's transportation sector.



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## APPENDICES

### University Interview Permission Letter



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#### FAKULTI PENGURUSAN TEKNOLOGI DAN TEKNOUSAHAWANAN

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Rujukan Kami (Our Ref): UTeM.700-2/2/8 ( 50 )

Rujukan Tuan (Your Ref):

Tarikh (Date): 23 Oktober 2024 /20 Rabiulakhir 1446H

#### KEPADA PIHAK YANG BERKENAAN

اَللّٰهُمَّ صَلِّ وَسَلِّمْ وَرَحْمَةً اَللّٰهِ وَبَرَكَاتِهِ

Dan Salam Sejahtera,

Tuan/Puan,

#### MEMOHON MENDAPATKAN MAKLUMAT DAN KAJIAN KES UNTUK MENYIAPKAN TUGASAN PROJEK

Dengan segala hormatnya perkara di atas adalah dirujuk.

2. Adalah dimaklumkan bahawa pelajar berikut adalah merupakan pelajar Program Ijazah Sarjana Muda Fakulti Pengurusan Teknologi dan Teknousahawanan (FPTT), Universiti Teknikal Malaysia Melaka (UTeM):

No	Nama	No. Matrik	Kursus
1	MUHAMMAD ADAM SYAKIRIN BIN SAIRI	B062110271	Ijazah Sarjana Muda Pengurusan Teknologi Dengan Kepujian (Pengurusan Rantaian Bekalan Dan Logistik) - BTMS

3. Pelajar tersebut perlu menyiapkan satu tugas bagi Projek Sarjana Muda (PSM II) - BTMU 4084 untuk tahun akhir pengajian. Sehubungan dengan ini pihak kami amat berbesar hati sekiranya pihak tuan dapat memberi peluang kepada pelajar berikut untuk menyempurnakan tugas tersebut di organisasi tuan.

Sekian, harap maklum.

"MALAYSIA MADANI"

"BERKHIDMAT UNTUK NEGARA"

"KOMPETENSI TERAS KEGEMILANGAN"

DR. MOHD AMIN BIN MOHAMAD

Timbalan Dekan (Akademik)

b.p : Dekan

Fakulti Pengurusan Teknologi dan Teknousahawanan

SEBUAH UNIVERSITI TEKNIKAL AWAM



## Interview Protocol

Fakulti Pengurusan Teknologi dan Teknousahawanan  
Universiti Teknikal Malaysia Melaka

### SEMI-STRUCTURED INTERVIEW PROTOCOL

#### Project Title:

A CASE STUDY ABOUT HYBRID CARS AT HONDA MITC MELAKA FOR BETTER ENVIRONMENT.

1. Interviewer Name	
2. Participant ID#	
3. Participant's name	
4. Participant's position	
5. Interview Date (dd/mm/yyyy)	<input type="text"/> / <input type="text"/> / <input type="text"/>
6. Participant agrees for interview to be digitally recorded	Yes <input type="checkbox"/> No <input type="checkbox"/>
7. Time Interview Began (24hr clock)	<input type="text"/>
8. Time Interview Ended (24hr clock)	<input type="text"/>

#### Semi-structured Interview Guide

- Room setup – locate in a quiet place to improve the recorded sound quality. The interview may be conducted at the interviewee's office or premise (to suit the interviewee's convenience).
- Follow the following steps to complete the interview session:
  - Step 1:** Complete Q1 – 5 above before the interview.
  - Step 2:** Read Section A below to participant.
  - Step 3:** At the beginning of the interview, introduce yourself; thank participant for taking part in the interview.
  - Step 4:** Request permission from interviewee to record the conversation; tick the appropriate box for Q6.
  - Step 5:** Turn on audio recorder if acceptable, document time the interview begins in Q7 above, and conduct an interview.
  - Step 6:** Complete demographic questions that can be find in Section A.
  - Step 7:** Proceed with the interview questions.
  - Step 8:** At the end of the interview, thank the participant and ask if she/he has any further questions; document the time the interview ended in Q8 above.
  - Step 9:** Ask if the participant is interested in being re-contacted with study results; if yes, document appropriate email. Inform participant that her/his email address will not be linked with her/his study data.

## Consent Form

### A CASE STUDY ABOUT HYBRID CARS AT HONDA MITC MELAKA FOR BETTER ENVIRONMENT

#### CONSENT FORM

I have read, or have had read to me, and I understand the Information Sheet. I have had the details of the study explained to me, any questions I had have been answered to my satisfaction, and I understand that I may ask further questions at any time. I have been given sufficient time to consider whether to participate in this study and I understand participation is voluntary and that I may withdraw from the study at any time. **Signing this form means that you have agreed to be a part of the study.**

- I confirm that I have read and understand the information sheet for the study and have had the opportunity to ask questions
- I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason.
- I agree to take part in the above study.
- I agree to the interview being audio recorded
- I agree to the interview being video recorded
- I agree to the use of anonymized quotes in publications

Please tick box	
YES	NO
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

#### Declaration by Participant:

I \_\_\_\_\_ hereby consent to take part in this study.

\_\_\_\_\_  
(Signature of participant)

Date: \_\_\_\_\_

\_\_\_\_\_  
(Signature of researcher)

Date: \_\_\_\_\_

#### Contact Information

Name of researcher:

Full address:

Tel:

E-mail:

## **Interview Questions**

### **SECTION A: REASONS FOR INCREASING SALES OF HYBRID CARS**

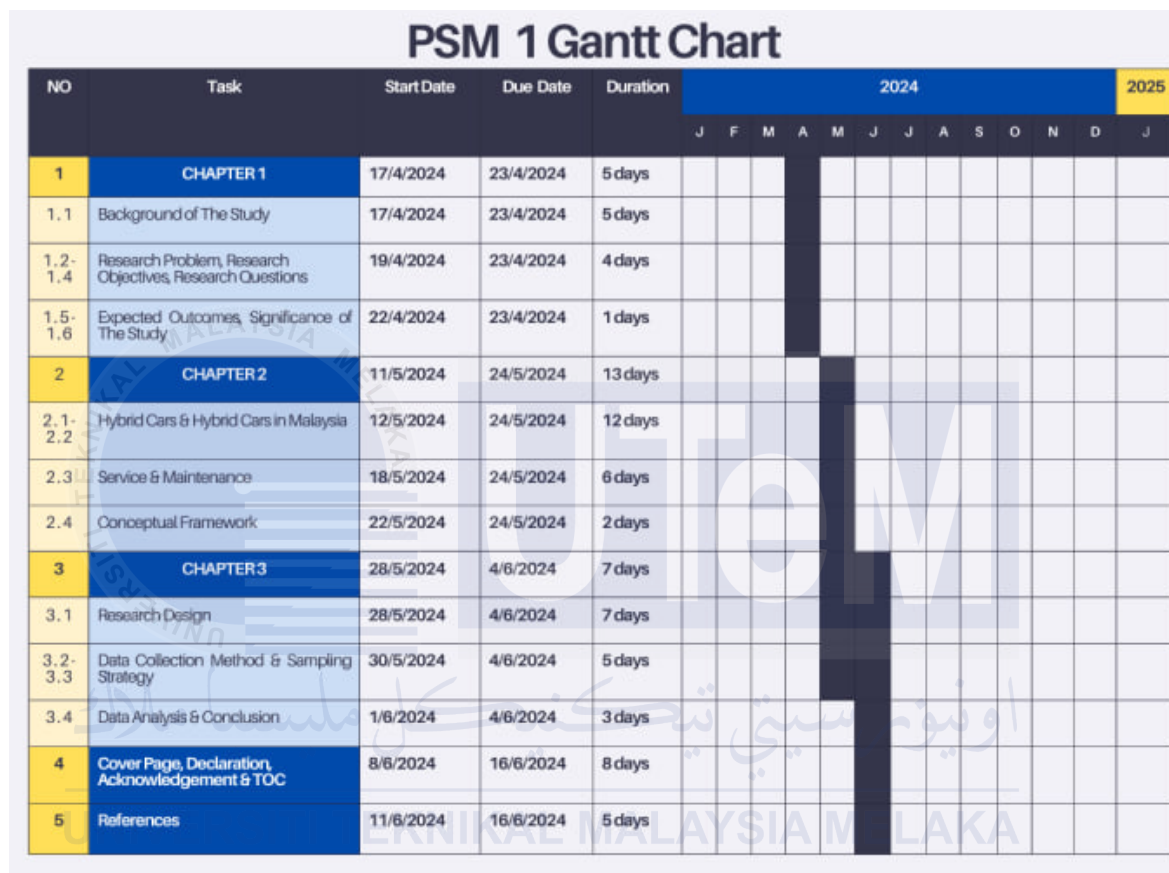
1. What are the main factors contributing to the growing popularity of hybrid cars in MITC Melaka?
2. How has customer perception of hybrid cars changed in recent years?
3. What marketing strategies does Honda Malaysia at MITC Melaka use to promote hybrid cars?
4. Are there any government policies or incentives that have influenced the increase in hybrid car sales?

### **SECTION B: MANAGING SERVICES AND MAINTENANCE**

5. What steps does Honda Malaysia at MITC Melaka take to ensure efficient servicing of hybrid cars?
6. How do you address the technical challenges of maintaining hybrid car batteries and systems?
7. What kind of training or expertise do service center employees receive to handle hybrid vehicles?
8. How does Honda Malaysia collect and respond to customer feedback regarding hybrid car maintenance services?
9. Are there any specific after-sales programs or support services offered for hybrid car owners?



## Gantt Chart of Final Year Project (FYP) 1



## Gantt Chart of Final Year Project (FYP) 2

