

FACTORS AFFECTING IMPLEMENTATION OF GREEN TECHNOLOGY  
AMONG CAR USERS

NOR HAZWANI BINTI AZIZAN

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

## DECLARATION OF APPROVAL

I / We hereby declare that have read this thesis and in my / our \* opinion this is sufficient in terms of scope and quality for the award Bachelor of Technology Management (Innovation Technology)

Signature: .....

Supervisor: Dr. Norain Binti Ismail

Date: .....

Signature: .....

Panel: Madam Raja Huda Binti Raja Sehar

Date: .....

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NOR HAZWANI BINTI AZIZAN

This report is submitted in partial fulfillment of the requirements for the degree of  
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### DECLARATION OF ORIGINAL WORK

I declare that this project paper entitled “Factors Affecting Implementation of Green Technology among Car Users” is the result of my own research except as cited in the references. The project paper has not been accepted for my degree and is not concurrently submitted in the candidature of any other degree.

Signature: .....

Name: Nor Hazwani Binti Azizan

Date: .....

## **DEDICATION**

I would like to dedicate this dissertation to my beloved family. First and foremost this dissertation is dedicated to my beloved parents Rosliza binti Mahamad Yusop and Azizan bin Awang who devoted their whole life to raise me with courage and strength. They have shared and held my hands as usual through these years of study and also not unforgettable to my sibling for their endless love, support and encouragement. I also dedicate this work to my love, Mohd Faiz Tarmizi that always supports me through ups and downs, who shared all my sorrow and all my joys throughout the years. Thank you very much for all.

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## ABSTRACT

If the peoples today are not able to accept themselves to the changing of technology, they will lose the match. In the circumstances, the government needs to encourage the car users to use the green technology especially in transportation sector in order save the environment. This is due to the less carbon emission less risk of global warming. Green technology in automotive is the best ways to save the environment and also can give positive impact to economic growth. The aim of this study was to study the factors and strategies affecting implementation of green technology among car user in Melaka city centre. In this study, six respondents in Melaka city centre that has adequate knowledge about green technology has been selected in order to get the primary data in interview session. There are four factors affecting implementation of green technology among car user, which are environmental, knowledge, comparative cost and government policy. For strategies implementation of green technology among car users are national green technology policy, rebate for hybrid and electric cars, special parking space for hybrid cars and charging port station that government offer. Lastly is to find the most effective strategy to implement green technology for car users in Melaka.

**Keywords:** green technology, car users

## **ABSTRAK**

*Jika manusia hari ini tidak dapat menerima diri mereka kepada perubahan teknologi, mereka akan kehilangan daya persaingan. Dalam keadaan ini, kerajaan perlu menggalakkan pengguna kereta untuk menggunakan teknologi hijau dari segi pengangkutan untuk menyelamatkan alam sekitar dalam usaha untuk mengurangkan pelepasan karbon dan risiko pemanasan global. Teknologi hijau dalam automotif adalah cara terbaik untuk menyelamatkan alam sekitar dan juga boleh memberi kesan positif kepada pertumbuhan ekonomi. Tujuan kajian ini adalah untuk mengkaji faktor-faktor dan strategi yang mempengaruhi pelaksanaan teknologi hijau di kalangan pengguna kereta di pusat bandar Melaka. Dalam kajian ini, enam responden di pusat bandar Melaka yang mempunyai pengetahuan yang mencukupi tentang teknologi hijau telah dipilih untuk mendapatkan data utama dalam sesi temuduga. Terdapat empat faktor yang mempengaruhi pelaksanaan teknologi hijau di kalangan pengguna Kereta, iaitu alam sekitar, kekurangan bahan mentah, kos perbandingan dan dasar kerajaan. Untuk pelaksanaan strategi teknologi hijau di kalangan pengguna kereta dasar negara hijau teknologi telah memberikan rebat bagi hibrid dan elektrik kereta, menyediakan ruang letak kereta khas untuk kereta hibrid dan mengecas stesen port adalah tawaran daripada kerajaan. Akhir sekali adalah untuk mencari strategi yang paling berkesan untuk melaksanakan teknologi hijau untuk pengguna kereta di Melaka.*

*Kata kunci: teknologi hijau, pengguna kereta*



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## LIST OF ACRONYMS

GTMP	: Green Technology Master Plan
CGC	: Credit Guarantee Corporation Malaysia Berhad
GGP	: Green government procurement
UNEP	: United Nations Environment Programme
KeTTHA	: Kementerian Tenaga, Teknologi Hijau dan Air
GTFS	: Green Technology Financing Scheme
KLIA	: Kuala Lumpur International Airport
EV	: Electric Vehicle
HEV	: Hybrid Electric Vehicle
GHG	: Greenhouse gases
CO <sub>2</sub>	: Carbon dioxide
CO	: Carbon monoxide
PTHM	: Perbadanan Teknologi Hijau Melaka
MWSV	: World Solar Valley
GBI	: Green Building Index
IGEM	: International Greentech & Eco Products Exhibition & Conference Malaysia
GLC	: Government-linked company



## CHAPTER 1

### INTRODUCTION

#### 1.1 Background Of Study

In this study, the researcher will discuss about green technology, factors and strategies affecting implementation of green technology among car users. In this globalization era, the inventors around the world need to create something new and efficient technology in order to attract the consumers to buy their product and potentially to compete in current and future markets. The product must give positive impact to society, environment and abide the government requirement policy.

According to National Green Technology Policy 2009, green technology is the advancement and use of tools, products and frameworks that used to preserve the common environment and resources, which is to reduces the bad effect of human activities. Green technology in Malaysia has four sector which are building sector, energy sector, water and waste management sector and transportation sector. The researcher focuses on transportation sector in this study. The subject for this study is car users around Melaka city centre.

Transport activities have displayed the most particular issues for academic and administration request on account of their generous commitment to pollution issues and environmental changes. The maintainability idea has turned into a common strategy supporting both created and building up nations' arranging plans. This is the after effect of externalities for instance, environmental change, non-renewable fuel consumption, air, water and land contamination, quick and sprawling urbanization and social imbalance that are regularly not considered until they achieve the level where neglecting outcomes of these externalities may imperil the general abundance of the natives. According to Malaysian Ministry of Transportation, 2013, the numbers of newly registered vehicles in Malaysia have increased rapidly. In the year 2013 alone, the new registered motor vehicles have increased to 1,202,674 compared to the year 2003 where there were only 458,293 new registered motor vehicles. This shown there has been an increase of 54.5 percent increase within a span of ten years. The pattern of developing urban populace and related subject needs has highlighted the significance of moves which ought to be made to achieve the objectives of manageable groups.

## **1.2 Problem Statement**

It is globally well-known that automotive industries are the one of the main contributors towards the global air pollution. Based on Compendium of Environment Statistics Malaysia, in 2014, motor vehicles was the main sources of emission of pollutants to the atmosphere that is 2,092.0 thousand tons of emission. According to (Show, k. y, 2010) the air pollution is the presentation of chemicals, particulate matter, or natural materials that cause negative effect or distress to people or other living beings, or make harm the common habitat or assembled environment, into the atmosphere.

Lack of natural resources like petroleum is one of the factors that motivate car manufacturers to switch their focus to produce cars with low fuel consumption. Furthermore, the price of petrol is volatile at present putting pressure on consumers because this will have an impact on the cost of living. The maintenance cost for conventional car is high compare to electric or hybrid car because electric car does not use any fuel or any lubricant oil.

Besides, the lack of knowledge about the green technology among the society also comes to play. This technology is more accepted among young generations compared to older generations because the young generations are more exposed to the information with regards to the green technology compared to older generation. The demand of green car still low in Malaysia because of the price of the car itself and the lack of information with regards to green technology.

The National Green Technology policy of Malaysia was introduced in 2009, in order to help citizens understand the benefits of green technology. In 2012 National Budget, the government chose to offer a full exclusion on import and extract charges for electric or hybrid cars till the end of 2013 in conjunction with the national green policy to encourage citizens to buy the green cars. This step had shown significant increases in the sale of the hybrid vehicles in 2013. By 2020, Malaysia targets to have 100,000 electric vehicles on the road and wanting to set up 25,000 public electric vehicles charging stations domestic and is bringing in 100 units of Tesla S, which fully powered by electric, to raise awareness of the green technology in Malaysia.

### **1.3 Research Questions**

From this study, the researcher has distinguished three questions to be answered in order to meet the objective of this research. Some of the questions need to take concern to accomplish better clarification of this research:

- i. What are the factors affecting the implementation of green technology among car users?
- ii. What are the strategies in implementing green technology for car users?
- iii. What is the most effective strategy in implementing green technology for car users?

### **1.4 Research Objectives**

The main objective of this research is to determine the factors affecting implementation of green technology among car users. To make it more detail, three research objectives that will be focusing in this research are as follows:

- i. To study the factors affecting the implementation of green technology among car users.
- ii. To study the strategies in implementing green technology for car users.
- iii. To study the most effective strategy in implementing green technology for car users.

## **1.5 Scope Of Study**

The scope of the research is to study the factors and the strategies affecting implementation of green technology among car users. The research contributed to study the most effective strategy and factor to implement green technology. The subject respondent for this research is car users in Melaka city centre area. The target respondents are six respondents for this research are those people who have knowledge and understanding about green technology that come from car users in Melaka. The researcher chooses Melaka as a scope to do the research because Melaka is a green city and the Melaka policy is 'Melaka Maju Negeriku Sayang Negeri Bandar Teknologi Hijau'. Even though Melaka practice green technology, but still, not many people in Melaka using car that have green technology.

## **1.6 Limitation Of Study**

Green technology in car is still a new thing to most of the car users. The respondents might not really understand about the presence of this technology in cars nowadays. To find the right respondents that correctly understood about the green technology is quite difficult because mostly people just know how to use but did not know why. These green technology cars such as hybrid vehicles and electric vehicles are not so familiar in Malaysia because of the high price and the introducing these types of vehicles in Malaysia still low in the current market.

### **1.7 Key Assumption**

The researcher assumes that the respondents provide the honest answer. The researcher assumes that the respondents have adequate knowledge to be part of the respondents for primary data collection. The researcher also assumes the respondents have more experience to handle this topic and he or she can provide justifiable answer.

### **1.8 Important Of Study**

This study aims to bring benefits to the environment in order to reduce the pollution and give positive impact to environment and society. Apart from that, this research also can emphasize the importance of green technology as it is becoming more importance nowadays. In order to instill the awareness of this technology to the society, the government has introduced the National Green Technology Policy back in 2009. With this policy, it will encourage more cars developers to produce and implement the enhanced green technology in their product. By using cars that have green technology, it can also help to reduce carbon monoxide emission and risk of global warming.

## 1.9 Summary

The roles of the car users and government ought to be noted as it is imperative for implementation of green technology among car users in Malaysia. This research will show the green technology in transportation sector and focuses on factors and strategies to implement the green technology among car users. One of the key features of implementation of green technology is an insistence on the environmental factor to car users about green and creates the strategies to encourage car users to use green technology vehicles in future.

## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 Introduction

The discussion in this chapter a comprehensive review of the literature was conducted keeping in mind to recognize and misuse holes in the literature and build up a strong reason for answering the research question concerning. This study review based on factors and the strategies affecting implementation of green technology among car user. The researcher reviews the author's statement, theory and suggest on a new model in making a decision regarding green technology among car users. It also has comparing the similarity and contrast from the researches review. Chosen literature review and research model given the researcher believed to reflect the objectives and goals of this study. In this chapter, the researcher focuses on green technology policy and green development initiatives strategy in Malaysia as a theoretical framework for further study.