

# Factors That Affect the Green Technology Awareness in Melaka

N.Nazir Ali<sup>1</sup>, M.Ahmad Murad<sup>1</sup>, J.Jabar<sup>1</sup>

<sup>1</sup>Fakulti Pengurusan Teknologi dan Teknousahawanan, Universiti Teknikal Malaysia Melaka, Hang Tuah Jaya, 76100 Durian Tunggal, Melaka, Malaysia.

*murzidah@utem.edu.my*

**Abstract**—Nowadays, in this era of globalization, the world keeps on developing day by day. Our earth is now becoming more polluted than before due to the environmental effects caused by human being. The greed of human being had caused them to ignore the consequences of their decision and how far it would affect the environment. In accordance with this, Melaka has decided to start going green by practicing Green Technology that will not only improve the quality of environment but as well as the quality of life for the citizen in Melaka. The objective of this research is to find out factors that affect the awareness towards Green Technology. This research was held in Melaka as the respondents are all Melaka citizens. Based on the conceptual framework, the independent variables are knowledge, attitude towards environment, and government policy and regulation. Meanwhile for the dependent variables is awareness towards Green Technology. The data was gained from questionnaire session, journals, articles which had been analyzed by using the SPSS system. As the results of this research, it stated that Government Policy and Regulation is the most effective factors towards awareness of Green Technology. The result also showed that mostly people in Melaka are already aware about the Green Technology, but they just lack in practicing the green practices. Therefore, hopefully Melaka citizens will become more alert and aware towards the Green Technology which will lead to aspiration of Melaka to achieve greatly as the title of Melaka Green City on 2020.

**Keywords**—*green technology; awareness*

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## I. INTRODUCTION

**N**OWADAYS, in this era of globalization, the world keeps on developing day by day. Our earth is now becoming more polluted than before due to the environmental effects caused by human being. The greed of human being had caused them to ignore the consequences of their decision and how far it would affect the environment. In accordance with this, Melaka has decided to start going green by practicing Green Technology that will not only improve the quality of environment but as well as the quality of life for the citizen in Melaka. It was stated in 2014 [1]. Melaka was one of the first city that are involved in Urban Environmental Accords (UEA) in Malaysia. Urban Environmental Accords (UEA) can be described as a series of approaches recognized by the United Nations (UN) which support a city towards the world of green technology initiatives as to reduce the effects of climate change by human [2]. Basically, what does it mean by Green Technology? Green technology is a concept introduced through the term “green”, one of the hot topics in this century, especially in the context of development, innovation and technology. Green technology refers to the application of product, equipment, systems in protecting the environment and the nature in order to decrease the negative effect caused by human being [3]. Melaka is one of the city that had chosen to go further in Green Technology World. As the saying goes, “An apple a day, keeps the doctor away”, we can bring it up same like our sight regarding to the environmental issues. If the citizen of Melaka could start to be more alert from now about

their city, then a more positive outcomes could be seen in the future.

## II. LITERATURE REVIEW

### A. Green Technology

The word "green" particularly refers to the concern on protecting the environment, including the plants and animals that grows in it. The word 'Green' refers more to natural perception, while the phrase 'technology' highlights the application of knowledge for practical functions. Word of technology can be described as the 'practical application of knowledge' or a manner of achieving a work [4]. 'Green technology' is the use of environmental sciences in utilizing the natural resources and preserving the environment in order to minimize and reduces the negative effects of human actions [5; 19].

The implementation of Green Technology in today's world is a must in order to achieve the future goals [7]. This is because green technology has the ability that allows the switching-back of few mistakes committed by human being in the past decade. High expectations are placed in the future for this field as this green technology field is expected to be able to bring more innovation and changes especially to the lifestyles and routine of peoples.

### B. Green Technology in Malaysia

Malaysia is a speedily developing nation but being a developing nation is not an easy task as there are many challenges that need to be faced especially the challenges in implementing Green Technology Strategies and blue print as one way to minimize effects of negative environment in the energy supply chain [7]. On the other hand, Malaysia try to encourage efficient application of energy efficiency. This was highlighted in the Ninth Malaysia Plan where exertions in the application of renewable energy (RE) resources and effective use of the energy will be promoted extra in the upcoming time.

In order to make sure Malaysia will be one of the growth countries with green technology, there are few government strategies. One of the main goals by having this strategy is to improve a conducive and exclusive environment of

Green Technology development. Based on [8], this study are includes the debut and operation of the innovative economic, as well as the founding of effective financial and monetary mechanisms to be part of the progress of the green industries: "We are devising for a better opportunity of the Foreign Direct Investments (FDI) on green technology, and local industry participation, "as said by the Ex- 6th Prime Minister.

### C. Factors Affecting Awareness of Green Technology

#### *Knowledge about the Green Awareness*

Knowledge are one of the factors that influence Melaka citizens towards awareness of Green Technology. Claimed by [9], knowledge is the outcome of an idea which is happened once people experimental an exact purpose. Knowledge also can be stated as an information managed by every single person, so the nature of knowledge will be more useful and unique for a person. According to the previous study [10], the knowledge also linked to the assessment, observation, thought, opinion, action, plan, and ideas. There are one quotes saying that "Knowledge has a beginning but no end".

One of the ways to gain the knowledge is by participating the media. Nowadays, many people are spending their time by scrolling all the media social such as Facebook, Instagram and twitter. The television, radio, social media, are few media that famous in delivering the information or knowledge about the green practices. Based on the previous study by the [11], proved that the desired media for green publicity or campaigns of the highest three are television, social networking and the websites. These media vehicles are famous to be setting up extra inclusive data, such as the television are delivering the real and affecting illustrations to be realised.

#### *Attitude towards environment*

Environmental attitude was stated as created on a persons' intellectual evaluation and assessment towards the value of environmental protection [12]. This mean that the person can

assess by their own on how they are ranking the importance of environment based on their own evaluation. Based on the previous research by [13], expressed that an environmental attitude as “an educated leaning to make a respond steadily complimentary or unfavourable means with reverence to the environment”. Eco literacy can be described as skill to recognize the nature system of our earth that can make our life on earth to be more realizable. This can be used to evaluate the consumers’ potential to classify dissimilar environmentally correlated signs, behaviours and thoughts. Nevertheless, there still a need to control the degree to which Malaysian users are truly aware of the green concept, their insight near to go green and unexpressed advantage to go green [14].

### *Government Policy and Regulation*

Government regulation and policy are one of the factors that influence people to become more awareness towards green technology. According to [15], in order to accomplish strategy goal towards Green Technology, government also offers importance towards all the growth and the concepts of going towards a country that give emphasis to environmental health. Moreover, political issues also bounce the result for the green applies whereby political force comes from government regulations [16]. One of the ways are Government consuming social media to work together with citizens are an effective vehicle to improve government services, improve decision, policy making, sharing ideas. This will lead many people to become more concerns in privacy, access and security.

From the time of introduction of the National Green Technology Policy, government has continuously presented several programs and incentives. In the same time, promotion of green technology and its spreading awareness are very active and critical to certify that the green technology agenda will spread all Malaysians with the belief that Malaysians will accept a green culture and leave a ‘green’ Malaysia for the future generations [17].

### III. THEORETICAL FRAMEWORK

Framework shows the independent variable and dependent variable for this research. The independent variable is the factor that Influencing citizen awareness towards the green technology in Melaka, which are knowledge, attitude towards environment and lastly about government policy and regulation. For the dependent variable are factors influencing awareness towards green technology in Melaka.

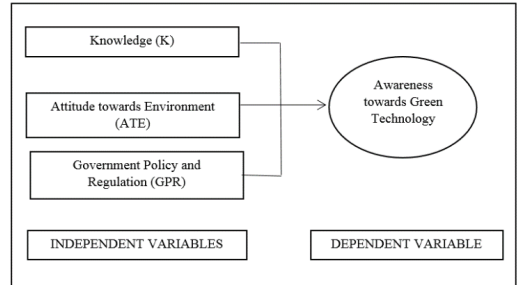


Fig. 1. Theoretical Framework

### IV. METHODOLOGY

Explanatory Research design chosen by the researcher for this research. This is because explanatory research is to study a situation or a problem in order to explain the relationship between the variables. This method is exceptionally valuable in deciding the best way to deal with the research problems in order to accomplish the research goals. Therefore, in order to determine the best research design, data collection method and the right information needed to accomplish this study, explanatory study was chosen.

Quantitative research deals with the measuring of a phenomenon and quantifying such measurement with figures or statistics. The use of this method allows the gathering of depth information through several data collection techniques over a constant period of time and determine whether the hypothesis was accepted or not.

Questionnaire survey was used in order to get the respondent feedback. The questionnaire was distributed to Melaka citizen in two ways which is by the Google form and by hand. There are around 410 respondents are selected to

answer this questionnaire. Data collected by this questionnaire were analysed using the SPSS. The Cronbach alpha were used to test the reliability of the factors and the researcher found that all the factors were reliable with values larger than 0.7. Furthermore, Multiple Regression Analysis were run to find the strongest predictor for green technology awareness in Melaka.

## V. RESULT AND RECOMMENDATION

TABLE I. COEFFICIENTS OF MULTI REGRESSION ANALYSIS

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	1.702	.198		8.611	.000
K	.001	.040	.001	.029	.977
ATE	.225	.044	.240	5.139	.000
GPR	.394	.036	.492	11.036	.000

Government Policy and Regulation is the strongest predictors,  $\beta = 0.492$ ,  $t(410) = 11.036$ ,  $p < 0.05$ , showing that government policy and regulation factors most affecting factors in awareness towards Green Technology in Melaka. Attitude towards Environment has the moderate predictors as  $\beta = 0.240$ ,  $t(410) = 5.139$ ,  $p < 0.05$ , showing that attitude towards environment is the second highest factor which affecting the awareness towards Green Technology. Meanwhile knowledge is the lowest independent contribution to awareness towards Green Technology as  $\beta = 0.001$ ,  $t(410) = 0.029$ ,  $p > 0.05$ . Therefore, the most significant factor is Government Policy and Regulation. The government policy is crucial in monitoring the quality of environment [18]. All this policy and regulation have affected Melaka as to becoming one of the first green technology in Malaysia by 2020.

As a recommendation, in order to establish a positive perception of the green technology concept in Melaka for the consumers, the government and others involved institutes should carry out effective programs at exhibitions, trade shows, campaigns, conferences and seminars to introduce the advantages and benefits of the green concept

to various groups of consumers. In addition, as a future recommendation for the upcoming research, the future researchers must put more or different factors that will influence the awareness towards Green Technology.

## VI. CONCLUSION

As a conclusion, it is important to increase the information on Green Technology in Melaka as Melaka will become one of the Green Technology cities in 2020 which is less than 6 months from now. In the same time, it will help the Melaka citizen to be more aware about Green Technology's importance and their positive impact on earth in the long-term result. Melaka could also collaborate or join with other state or country in order to have brighter future direction and in facing global challenges. As overall conclusion, Melaka citizen were aware of the Green Technology from government policy and regulation as the most effective factor in influencing citizens awareness towards Green Technology. All the research objectives and research questions were also answered in this research.

## VII. FUTURE RESEARCH

This study is only focusing on three factors, which are Government policy and regulation, attitude and knowledge as predictor for green technology awareness in Melaka. Future studies can incorporate the technological factors affecting awareness of green technology. Similarly, future studies can improve the theoretical model by adopting different adoption theories. Moreover, the study can be extending to a wider or different population to have more understanding of the phenomenon.

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