A STUDY ON SOCIAL INFLUENCES TOWARD PUBLIC AWARENESS ON GREEN CITY IN MELAKA STATE

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Report submitted
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DECLARATION

I declare that this project entitled "A Study on Social Influences toward Public Awareness on Green City in Melaka State" is the reuslt of my own research except as cited in the references. The project paper has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

Signature : .....
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Date : .....

DEDICATION

Specially dedicated to my beloved family members

Thanks to my dear friends

Thank you to my supervisor

Dr. Norhidayah Binti Mohamad

For all the spirituals and moral support that had been given to me all the time.

ACKNOWLEDGEMENT

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ABSTRACT

Rapid urbanization and human activities nowadays bring negative impact on environment and cause to environment degradation. Government has implemented many sustainable development and green incentives to conserve natural environment and resources. The purpose of this research is to study the level of public awareness on green city based on social influences. The study contributes to the understanding of factors influence toward public awareness. Based on the Theory of Planned Behaviour and Model of Determinants of Behaviour Relevant to Climate Change, a research framework is developed to understand the factors that influence level of public awareness on green city in Melaka state with the variables of demographic factors, media exposure, incentives and public awareness. The survey data was collected from 330 Melaka citizens in Malaysia through distribution of questionnaire. The gathered data were analysed by using Statistic Package for Social Science (SPSS) version 22.0 software for descriptive analysis and regression analysis. The results of the analysis show that partially factors of demographic have significant impact whereas media exposure and incentives have significant impact on the level of public awareness in Melaka state. Demographic factors, media exposure and incentives are significant variables to public awareness. This research also gives implications to knowledge and practical contribution. Limitations and recommendation also proposed for the future research.

Keywords: public awareness, social influences, Melaka state

ABSTRAK

Perbandaran yang pesat dan aktiviti manusia pada masa kini membawa kesan negatif kepada alam sekitar dan menyebabkan pencemaran alam sekitar. Kerajaan telah melaksanakan banyak pembangunan mampan dan insentif hijau untuk memulihara alam semula jadi dan sumber. Tujuan kajian ini adalah untuk mengkaji tahap kesedaran awam terhadap bandar hijiau berdasarkan pengaruh sosial. Kajian ini menyumbang kepada pemahaman faktor mempengaruhi ke arah kesedaran awam. Berdasarkan Theory of Planned Behaviour dan Model of Determinants of Behaviour Relevant to Climate Change, satu rangka kerja penyelidikan adalah membangunkan untuk memahami faktor-faktor yang mempengaruhi tahap kesedaran awam terhadap bandar hijiau di negeri Melaka dengan pembolehubah ciri-ciri demografi, pendedahan media, inisiatif dan awam kesedaran. Data kajian telah dikumpulkan daripada 330 responden warga *Melaka di Malaysia melalui pengedaran borang soal selidik. Data yang dikumpul dianalisis dengan menggunakan Pakej Statistik Untuk Sains Sosial (SPSS) versi 22.0 untuk analisis deskriptif dan analisis regresi. Keputusan analisis menunjukkan bahawa sebahagian faktor demografi mempunyai impak yang besar manakala pendedahan media dan insentif mempunyai kesan yang besar ke atas tahap kesedaran awam di negeri Melaka. Faktor demografi, pendedahan media dan insentif adalah pembolehubah penting kepada kesedaran awam. Kajian ini juga memberi implikasi kepada pengetahuan dan sumbangan praktikal. Had dan cadangan juga dicadangkan untuk penyelidikan masa depan..*

Kata Kunci: kesedaran awam, pengaruh sosial, negeri Melaka

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LIST OF ABBREVIATION & SYMBOL

NASA	National Aeronautics and Space Administration
RM	Ringgit Malaysia
YAB	Yang Amat Berhormat (The Most Honorable)
UNESCO	United Nation Educational, Scientific and Cultural Organization
HFCs	Hydrofluorocarbons
PFCs	Perfluorocarbons
SF_6	Sulphur Hexafluoride
GHG	Greenhouse Gas
GCAP	Green City Action Plan
TPB	Theory of Planned Behaviour
SPSS	Statistical Package for the Social Sciences
ANOVA	Analysis of Variance
SPM	Sijil Pelajaran Malaysia
STPM	Sijil Tinggi Pelajaran Malaysia
EAAP	Environmental Awareness & Active Participate Scale
PEA	Public Environmental Awareness

CHAPTER 1

INTRODUCTION

This chapter is about the introduction of the research. In this research, the elements of the background of research, problem of statement, research objectives, research questions, hypothesis, significant of research, scope of research and limitation of research are discussed.

1.1 Background of Research

Sun is important for Earth because living things on the Earth are all reliant on the energy from the sun (NASA, 2016). For an example, green plants absorb sunlight for the process of photosythesis to produce glucose from carbon dioxide and water. Around 90% of the sun's heat is assimilated by greenhouse gases and released back toward the surface which is average of 59°F (15°C) warmed to a life-supporting. Unfortunately, Earth is becoming warmer which resulting from the altering of natural greenhouse gases at atmosphere. Natural greenhouse gas has changed due to the impact from activities of human. This condition of warmer will cause the ocean getting warm and partially glaciers and ices melting that increasing the sea level of the earth nowadays.

The animals which are most influenced by the effect of seasonal and year after year decline in Arctic sea ice extent are polar bears with their habitat being affected. Sea ice is the place for polar bears to do their key activities likes breeding, hunting

and travelling (Ma, 2016). Thus, changing of sea ice breakup and freeze up in all areas is detrimental for polar bears. Availability of normal diet for polar bear is altered because of the ice melting that drives other marine wildlife and seals migrating to other places which results in polar bears having difficulty hunting for food. Subsequently, this causes polar bears facing malnutrition and do not hibernate (Bird, 2016). Besides that, Global Seed Vault which is buried in a deep inside mountain in Arctic circles also has been breached by melted ice water surging into the entrance tunnel (Carrington, 2017). It shows that climate change is now threatening the capability of rock vault that support the failsafe protection which designed initially to defend against all disasters in the future.

Natural environment is decomposing due to chemicals and toxic substances resulting from consumption of fossil fuel, wastes of industrial and utilities from household activities (Madaan, 2016). These environmental pollutions influenced the quality of natural environment and causing environment degradation. Degradation of environment is degeneration of natural environment by utilization of natural resources, ruination of environments and extirpation of flora and fauna (Rinkesh, 2016). In Malaysia, rapid urbanization and human seeking for better quality of life causes degradation of environment (Mei, Wai, & Ahamad, 2016).

Water is covering 71% on the surface of earth (USGS, 2016) and river is a limited and only fountainhead of water in the earth for living things. But, more than half of 1800 rivers in Malaysia have been contaminated and destroyed by pollutions impact from human activities (Global Environment Centre, 2016). The Compendium of Environment Statistics 2015 highlighted the statistics of pollution on air, water and predestined waste in Malaysia (Department of Statistics Malaysia, 2015). From the statistic, the pollutants which were released from power plant and motor vehicles increased by 20% and 14.3 % to the atmosphere in year 2014 as compared to year 2010 as shown in Table 1.1 below.

Table 1.1: Sources of Emission

Sources of Emission	Year	
	2010 ('000 tonnes)	2014 ('000 tonnes)
Industrial	**113.9**	**101.9**
Motor Vehicles	**1,829.7**	**2,092.0**
Power Plant	**619.2**	**742.9**

(Source: Department of Statistics Malaysia, 2015)

The Survey of Environmental Protection Expenditure 2015 reported the statistics on the expenditure of environmental protection in sectors for the reference year 2014 (Department of Statistics Malaysia, 2016). This survey report covered on the sectors of forestry & fishing, agriculture, mining & quarrying, construction, manufacturing and service sectors. Figure 1.1 below shows that a total of RM 2.244 billion was expended for environment protection in year 2014 which rose up 0.3 % compared to year 2013 (Department of Statistics Malaysia, 2016).

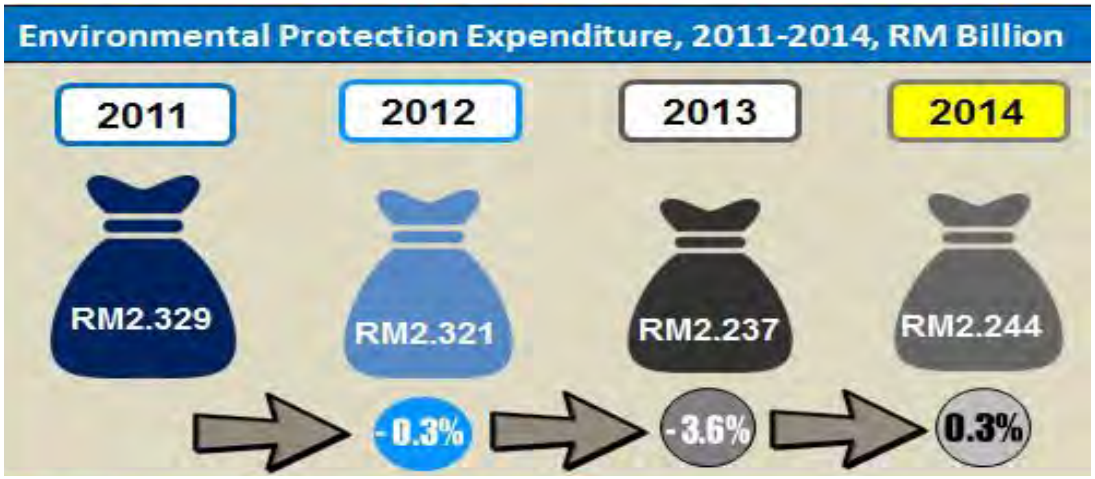

Figure 1.1: Environment Protection Expenditure, 2011-2014 (RM billion)

In year 2014, the operating expenditure exceed that of expenditure for environmental protection which amounted to RM 1.365 billion (60.8%) whereas capital expenditure only amounted to RM0.879 billion (39.2%) for the expenditure shows as Figure 1.2 below (Department of Statistics Malaysia, 2016). The highest expenditure was consumed to the manufacturing sector which amounted to RM 1.619 billion (72.1%) whereas the lowest expenditure was on agriculture, forestry & fishing

which only expend 1.4%. The services sector was second highest expenditure which at RM 0.327 billion (14.6%) and followed by the mining & quarrying sector at RM 0.193 billion (8.6%) which shows as below Figure 1.3 below (Department of Statistics Malaysia, 2016).

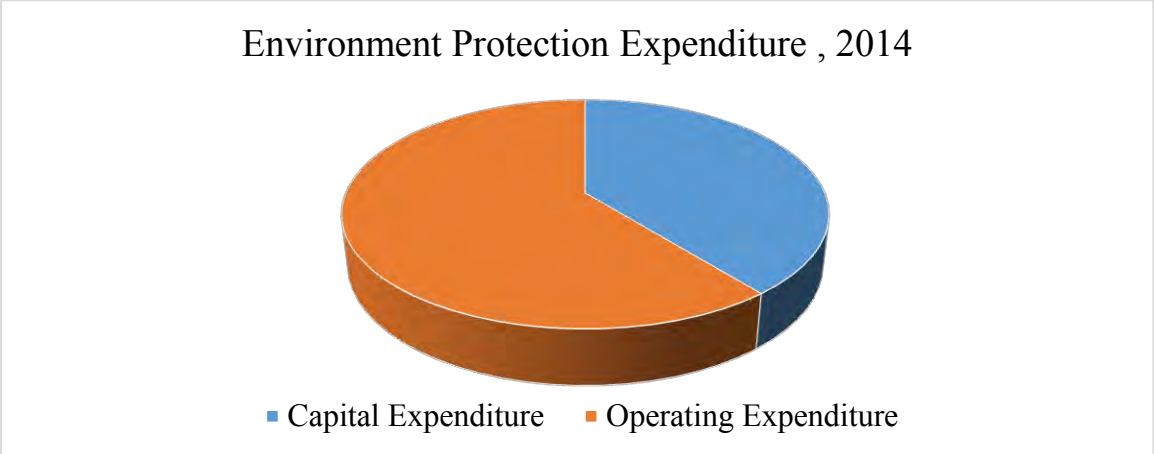

Figure 1.2: Environment Protection Expenditure

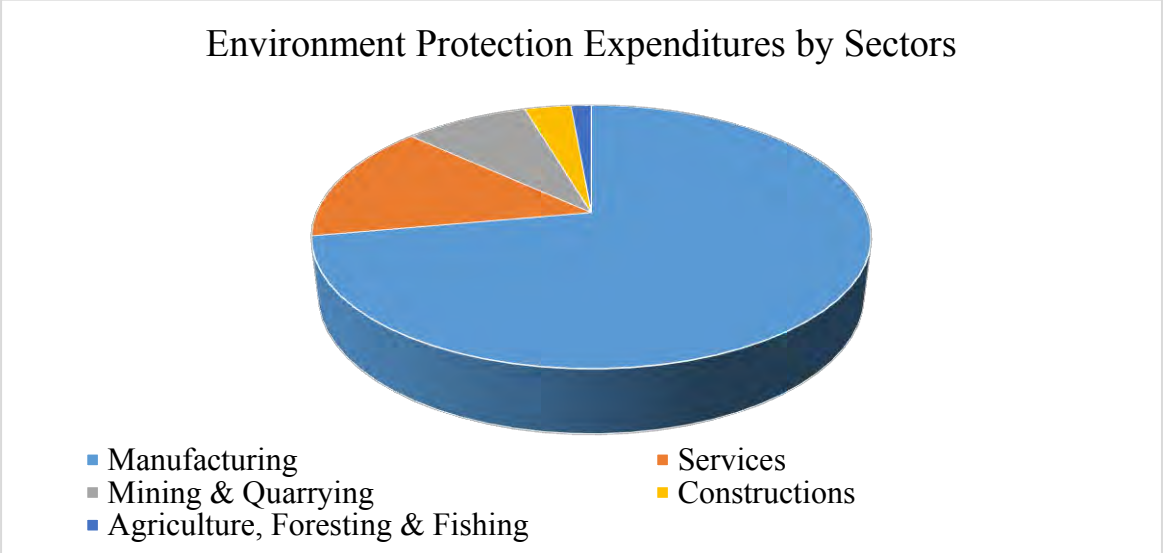

Figure 1.3: Environment Protection Expenditure by Sectors

Government policy plays a crucial role in the growth and broad-scale implementation on renewable green technology and also its research and development (McLauchlan & Mehrubeoglu, 2010). Thus, numerous governments have altered policies to nurture new development of renewable energy and growth of industries. On 4th April 2009, Ministry of Energy, Green Technology and Water (KeTTHA) was

established after reshuffle of Cabinet and reorganizing of the ministry which conducted by Malaysia's Prime Minister, Dato' Sri Mohd. Najib bin Tun Abdul Razak with the responsible to scheme, map out policies and programs of green technology.

In 24th July 2009, Prime Minister of Malaysia, Dato' Sri Mohd. Najib bin Tun Abdul Razak launched the National Green Technology Policy (Ministry of Energy, 2016) which concentrate on the four pillars namely Environment, Energy, Social and Economic (Malaysia External Trade Development Corporation, 2016). Prime Minister of Malaysia said that green technology is a blue ocean strategy that gives extensive chances for business and government to innovate and develop new sections of competitiveness (Melaka Green Technology Corporation, 2016).

According to KeTTHA (2016), green technology defined as the growth and implementation of goods, systems and devices that applied to preserve natural resources and environment, which diminishes and decreases negative impact from human activities. One of the objectives for the National Green Technology Policy is to increase the education and awareness of public towards Green Technology and motivate wide-ranging usage by the public. The success of the Development of Green Technology will be effected by two major elements which are efficiency of promotion and public awareness that enables the alteration of mind-set of the public toward green technology.

For achieving the mission of Melaka state to become Green Technology City State by year 2020 (Asia Development Bank, 2014), Melaka Green Technology Corporation (GTC) is introduced as an agency to lead the growth of green technology at Melaka state with the purpose of executing policy and green technology policies (Melaka Green Technology Corporation, 2016). It cooperates with Economic Planning Unit Negeri Melaka (EPU) towards designing, executing and monitoring execution of activities programs and projects of green Malacca based on seven major green sectors which are Energy, Environment, Management Water, Town Green, Transportation, Urban Design and Waste Reduction. Many of the projects had been implemented by GTC such as Electric Bus, Low Carbon City Framework (LCCF), and Melaka World Solar Valley.

1.2 Problem of Statement

Current estimation of population on earth amount to 7.5 billion as of May 2017 growing at a rate of around 1.11% in year 2017 which decreased from 1.13% in year 2016 (Worldometers, Current World Population, 2017). This shows that in 21st century, the population of the world will continue to grow yet at a slower rate compared to recent years.

The increase of human population on Earth will exponentially increase human's demand on natural resources (Patterson, 2016). As a result-, this phenomenon causes degradation of environment by increasing human activities as to fulfil the needs and wants of human. Human activities such as illegal deforestation, burning fossil fuel and using chemical fertilizers which bring a lot of negative impacts toward Earth and causing serious pollution to the environment.

Recently, Malaysia produced over 23,000 tonnes of waste per day and it is expected that it will increase to 30,000 tonnes by year 2020. It is as a result of less than 5% of the waste is being recycled and the population and development in Malaysia is increasing (Jones, 2016). Malaysian has generated around 30,000 metric tonnes of rubbish per day and plastic holds around 13% out of the solid waste stream which amount to 4000 tonnes of plastics waste is being generated in Malaysia (DMS, 2017). Based on the latest estimates, current population of Malaysia is 31,119,896 and rank at 44th in the list of world population with a growth rate of 1.34% and forecast will increase to 32,374,474 in year 2020 (Worldometers, 2017).

Thus, solid waste production can pose significant negative influence towards environment's quality with an increasingly present rate which without valid disposal methods and supervision (Haron, Paim, & Yahaya, 2005). These wastes involve of garbage from household, commercial refuse, waste of hospital, bulky and rubbish yard, cleaning of street, dead animals, abandoned vehicles and residues of hygiene (Mbu, 2015). Decomposing of landfill waste bring negative impact to the ecosystem due to number of pollutants being produced in the process such as methane, air toxics and carbon dioxide. Methane is more than 25 times of potential greenhouse gas compared to carbon dioxide that caused to global warming (Jones, 2016). Therefore,

this is important that how the efforts from citizens and government to solve this problem before this circumstance getting worst that will reduce harm from human actions towards earth.

Humans are responsible to have grave concern on the environment issues to minimize the degradation of environment. Thus, sustainable developments are important to conserve the natural resources for future generation (UNESCO, 2002). Government is the key role (Chen & Chai, 2010) to advocate green awareness among human by green policies and initiatives such as programs and activities that are related to motif of green. Government of Malaysia has established institutional and legal framework to encourage healthy environment and sustainable development (Malaysian Investment Development Authority, 2016).

YAB Datuk Seri Ir. Hj. Idris bin Hj. Haron, Chief Minister of Melaka introduced a green actions framework which is Green City Action Plan for Melaka state with the mission of Melaka state to become Green Technology City State by year 2020 (Asia Development Bank, 2014). In this Green City Action Plan, many green initiatives are introduced and achieved award-winning work in pursue of green. Thus, this research trying to identify the level of public awareness on the green initiatives by government is significant to identify in term of measurements.

1.3 Research Questions

This research attempt to answer the following research questions in the research:

a. What are the level of public awareness on green city and social influences in Melaka state?
b. What are the differences of public awareness based on demographic factors?
c. What is the relationship between social influences and public awareness?
d. What is the main factor that contributes to public awareness?