NORFATTERA IZZATY BINTI MAZRI BTM (INNOVATION TECHNOLOGY) 2016 UTeM

FACTORS INFLUENCING THE USE OF GREEN TECHNOLOGY IN MALACCA CITY STATE

NORFATTERA IZZATY BINTI MAZRI

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

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I hereby confirm that I have examined this project paper entitled:

Factors Influencing the Use of Green Technology in Malacca City State

By

NorFattera Izzaty Binti Mazri

I hereby acknowledge that this project has been accepted as part fulfillment for the Bachelor of Technology Management (Innovation Technology) with Honours

Signature : .....

Supervisor : PUAN MURZIDAH BINTI AHMAD MURAD

Date : ……...

Signature : ……...

Panel : CIK SITI NOR WARDATULAINA BINTI MOHD YUSOF

Date : ……...

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FACTORS INFLUENCING USE OF GREEN TECHNOLOGY IN MALACCA CITY STATE

NORFATTERA IZZATY BINTI MAZRI

Report submitted in fulfilment of the requirement for the degree of Bachelor of Technology Management (Hons) in Technology Innovation

Faculty of Technology Management and Technopreneurship
Universiti Teknikal Malaysia Melaka

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DECLARATION OF ORIGINAL WORK

I, NORFATTERA IZZATY BINTI MAZRI

"I hereby declare that the work of this exercise is mine except for the quotations and summaries that have been duly acknowledged."

Signature :

Name : NORFATTERA IZZATY BINTI MAZRI

Date : 15 June 2016

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DEDICATION

This Research Paper is lovingly dedicated
to my respective parents who have been my constant source of inspiration.
They have given me the drive and discipline to tackle any task with enthusiasm and determination.
Without their love and support this project would not have been made possible.

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ABSTRACT

Environmental problems such as pollution, climate change and scarce material resources are a currently global issue in this 21st century. Recognizing this, policies have been launched Green Technology under the Ministry of Energy, Green Technology and Water (KeTTHA) to strengthen the use of green technology in Malaysia. This research is undertaken in purpose to determine whether the application of green technology can have an impact on public acceptance in Malacca City State. In addition, this study aimed to identify factors influencing the use of green technology. The respondents were randomly selected from people who lived in Malacca based on the calculation of respondent's selection. Data were collected using structured questionnaire adopted from UTAUT Model and were analyzed using computerized statistical tools, known as SPSS. The data gathered were analyzed using descriptive analysis. Besides that, this research investigates the relationship between the performance expectancy, effort expectancy, and social influence, facilitating conditions and behavioral intention to use behavior. The end of the study, the users' intention to use green technology would incredibly improve productivity and quality use of green technology. The use of green technology is to allow this transformation and the key determinant of the success or failure of for development Malacca as Green City State.

Keywords: Unified Theory of Acceptance and Use of Technology (UTAUT), Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Behavioral intention Use Behavior

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ABSTRAK

Masalah alam sekitar seperti pencemaran, perubahan iklim dan sumber bahan yang terhad adalah isu kini global pada abad ke-21 ini. Menyedari hakikat ini, dasar telah dilancarkan teknologi hijau di bawah kementerian tenaga, teknologi hijau dan air (kettha) untuk mengukuhkan penggunaan teknologi hijau di malaysia. Kajian ini dijalankan dalam tujuan untuk menentukan sama ada penggunaan teknologi hijau boleh memberi kesan kepada penerimaan rakyat di melaka city negeri. Di samping itu, kajian ini bertujuan untuk mengenal pasti faktor-faktor yang mempengaruhi penggunaan teknologi hijau. Responden telah dipilih secara rawak daripada orang yang tinggal di melaka berdasarkan pengiraan pemilihan responden. Data dikumpulkan dengan menggunakan soal selidik berstruktur diambil daripada utaut model dan dianalisis dengan menggunakan alat statistik berkomputer yang dikenali sebagai SPSS. Data yang dikumpul dianalisis dengan menggunakan analisis deskriptif. Selain daripada itu, kajian ini mengkaji hubungan antara jangka prestasi, usaha jangka, dan pengaruh sosial, keadaan memudahkan dan niat tingkah laku untuk menggunakan tingkah laku. Akhir kajian ini, hasrat pengguna untuk menggunakan teknologi hijau sangat akan meningkatkan produktiviti dan kualiti penggunaan teknologi hijau di Melaka. Penggunaan teknologi hijau adalah untuk membolehkan transformasi ini dan penentu utama kejayaan atau kegagalan untuk pembangunan melaka sebagai bandar hijau negeri. Masalah alam sekitar seperti pencemaran, perubahan iklim dan sumber bahan yang terhad adalah isu kini global pada abad ke-21 ini. Menyedari hakikat ini, dasar telah dilancarkan teknologi hijau di bawah kementerian tenaga, teknologi hijau dan air (kettha) untuk mengukuhkan penggunaan teknologi hijau di malaysia. Kajian ini dijalankan dalam tujuan untuk menentukan sama ada penggunaan teknologi hijau boleh memberi kesan kepada penerimaan rakyat di melaka city negeri. Di samping itu, kajian ini bertujuan untuk mengenal pasti faktor-faktor yang mempengaruhi penggunaan teknologi hijau. Responden telah

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Kata kunci: Unified Teori Penerimaan dan Penggunaan Teknologi (UTAUT), Jangka Prestasi, Usaha Jangka, Pengaruh Sosial, Syarat Memudahkan, Niat Kelakuan, Penggunaan Kelakuan.

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TABLE OF CONTENT

CHAPTER	TITLE	PAGE
	DECLARATION	**ii**
	DEDICATION	**iii**
	ACKNOWLEDGMENT	**iv**
	ABSTRACT	**v**
	ABSTRAK	**vi**
	TABLE OF CONTENT	**vii**
	TABLE OF TABLES	**x**
	LIST OF FIGURES	**x**
	LIST OF ABBREVIATIONS	**xi**
CHAPTER 1	**INTRODUCTION**	**1**
	1.0 Introduction	1
	1.1 Background of the study	1
	1.1.1Green Technology Scenario in Malaysia	4
	1.2 Problem Statement	5
	1.3Research Questions	6
	1.4 Research Objectives	6
	1.5 Scope	8
	1.6 Limitation	8
	1.7 Key Assumptions of the Study	9
	1.8Importance / Significant of the study	10
	1.9Summary	10

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CHAPTER 2	**LITERATURE REVIEW**	**11**
	2.0 Introduction	11
	2.1 Definition Review Scope	11
	2.1.1 Defining Technology	12
	2.1.2 Defining Acceptance	12
	2.2 Green Technology	14
	2.2.1 Green Technology Opportunities	
	2.3 Background of UTAUT	16
	2.4Technology Acceptance using UTAUT	16
	Model	16
	2.4.1 Performance Expectancy	18
	2.4.2 Effort Expectancy	18
	2.4.3 Social Influence	20
	2.4.4 Facilitating Conditions	20
	2.5Behavioural Intention (BI) and User	22
	Behaviour	
	2.6 Theoretical Framework	
	2.7 Hypothesis	
	2.9 Summary	
CHAPTER 3	**RESEARCH METHODOLOGY**	**23**
	3.0 Introduction	23
	3.1 Research Design	23
	3.1.1 Descriptive Research Design	24
	3.2 Methodological Choices	25
	3.2.1 Quantitative Research Design	26
	3.3 Primary and Secondary Sources	27
	3.4 Location of Research	27
	3.5 Research Strategy	28
	3.4.1 Questionnaire Survey	28
	3.6 Sampling	29

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	3.7.1 Population	30
	3.7 Time Horizon	31
	3.7.1 Cross Sectional Studies	31
	3.8 Scientific Canons	32
	3.8.1 Validity	31
	3.8.2 Generalisability	33
	3.8.3 Reliability	34
	3.9 Scale of Measurement	34
	3.10 Analytical Tools	35
	3.10.1 Correlation	35
	3.10.2 Multiple Regressions	35
	3.10.3Statistic Associated With Multiple Regressions	36
	3.11 Summary	37
CHAPTER 4	**RESULT AND ANALYSIS**	**37**
	4.0 Introduction	39
	4.1 Description of Samples	
	4.2. Descriptive Frequency Analysis	40
	4.2.1 Respondent Demographic Profile	42
	4.2.2 Gender	42
	4.2.3 Age	42
	4.2.4 Educational Level	45
	4.2.5 Employment Status	47
	4.2.6 Resident Area	49
	4.2.7 Knowledge about Malacca Practice Green Technology	50
	4.2.8 Decision to Apply Green Technology	52
	4.2.9 The Application of Green Technology Used	53

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	4.3 Result of Measurement	55
	4.3.1 Test Validity	55
	4.3.2 Validity Test for 100 respondents	56
	4.3.3 Reliability Test	60
	4.4 Descriptive Statistic for Each Variable	62
	4.5 Pearson Correlation Coefficient	63
	4.6 Inferential Analysis	65
	4.6.1Simple Regression Analysis	65
	4.6.2 Multiple Regression Analysis	74
	4.7 Summary	79
CHAPTER 5	**CONCLUSION AND**	**80**
	RECOMMENDATION	80
	5.0 Introduction	80
	5.1 Discussion	80
	5.1.1 Research Objective 1 and	83
	Conclusions	85
	5.1.2 Research Objective 2 and	85
	Conclusions	85
	5.1.3 Research Objective 3 and	88
	Conclusions	86
	5.1.3.1 Multiple Regression Analysis	87
	5.1.3.2 Hypothesis Testing	
	5.2 Recommendations for Future Research	
	5.3 Limitation	
	5.4 Conclusion	
REFERENCES		**90**
APPENDICES		**106**

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LIST OF TABLE

TABLE	TITLE	PAGE
Table 3.2	Gantt Chart	30
Table 3.3	Pearson Correlation Coefficient Range	33
Table 4.1	Pearson Correlation Coefficient Range	38
Table 4.2	Statistics of Respondent's Profile	40
Table 4.3	Respondent's Age	40
Table 4.4	Respondent's Educational Level	41
Table 4.5	Respondent's Employment	42
Table 4.6	Status Resident Area's Respondent	46
Table 4.7	Respondent Knowledge about Malacca Practices Green Technology	46
Table 4.8	Decision to Apply Green Technology	47
Table 4.9	Respondent Use of Green Technology	48
Table 4.10	The result of correlation analysis for all variables	52
Table 4.11	Cronbach's Alpha Coefficient range and its strength of association	55
Table 4.12	Reliability Statistics	56
Table 4.13	Mean for Factors of Independent Variable	57
Table 4.14	Mean for Users' Intention to Use of Green Technology	57
Table 4.15	Rules of Thumb about Correlation Coefficient	58
Table 4.16	Pearson correlations	59
Table 4.17	Simple Regression Result for Hypothesis 1	60
Table 4.18	Simple Regression Result for Hypothesis 2	62
Table 4.18	Simple Regression Result for Hypothesis 3	64
Table 4.19	Simple Regression Result for Hypothesis 4	66
Table 4.21	Model Summary of Multiple Regressions	67
Table 4.22	ANOVA	67

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Table 4.23	Table Coefficient of Determination	68
Table 5.1	Descriptive Statistic Summary for Independent Variables	74

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LIST OF FIGURE

FIGURE	TITLE	PAGE
Figure 2.1	Theoretical Framework UTAUT Model	18
Figure 4.1	Respondent Gender	20
Figure 4.2	Respondent Age	40
Figure 4.3	Educational Level Respondent	42
Figure 4.4	Employment Status Respondent	44
Figure 4.6	Respondent Knowledge about Malacca Practices Green Technology	45
Figure 4.7	Respondent Decisions to Apply Green Technology	47
Figure 4.8	Respondent Application of Green Technology Used	49

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LIST OF APPENDICE

APPENDICE	TITLE	PAGE
Appendix 1	Gantt chart 1	87
Appendix 2	Questionnaire	89
Appendix 3	Population in Malacca	97

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CHAPTER 1

INTRODUCTION

1.0 Introduction

This first chapter is about the introduction of the study. The introduction is important in order to determine the success of the research using iron triangle which is related with Topic, Research Questions and Research Objectives. There are common types of introduction for research that must include background of the study, problem statement, research question, research objective, scope, limitation and key assumption of the project.

1.1 Background of the Study

Green technology has been introduced in the country, but for it is still not enough awareness encouraging of. Construction Industry Development Board Malaysia (CIDB) has Technical Committee set up in 1999 to focus the development

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and construction of environment-friendly. At the time of at CIDB has also introduced the Construction Industry Master Plan Malaysian (CIMP) for the period 2006 to 2015, as early exposure on all parties to be prepared to synergize green technology in their business. However, constraints still exist, especially the knowledge on green technology (CIDB News, 2011).

Green technology concept is introduced because the term "green" is one of the most sensational topics on this century, particularly in the context of development, technology and innovation. Green technology refers to the development and application of product, equipment and systems for protecting the environment and nature as well as to reduce the negative impacts caused by human themselves (Ministry of Energy, Green Technology and Water, 2011). Green technology is the right approach in dealing environmental issues and economic growth. It is also in line the main agenda governments around the world at the time now that give priority to environmental issues, particularly the phenomenon of climate change. Consequently, world population should be responsible for jointly play a role in making the world a safer and more pleasant place to live.

More than two thirds of Malaysians live in towns and cities. This places major cities at the heart of the many environmental challenges facing us today, such as polluted air and water, and climate change. Malacca is the third smallest state, after Perlis and Penang. Meanwhile, it is bordered by the sea west, known as the Straits of Malacca. For years now, Malacca has worked intensively to meet environmental challenges, focusing on innovative and sustainable solutions. A green city is the precondition for a high quality of life. Malacca has an ambition to be green technology growth hubs in the country, regional and international levels by 2020 as stated through the mission of *Perbadanan Teknologi Hijau Melaka*. Malaysia Green Technology Program is a new idea developed by the Malacca State Government. The main mission and vision for this program is to transform it into a state of Malacca state themed green city. In other words, the Malacca State

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Government is trying to transform the city into a "green city" by using Biodiesel Program, The Smoke-Free Malacca, River Rehabilitation Project, Electric Bus Program and Ma Green Seal Program.

According to Abdul Hadi et al. (2010) , the city became the focus of almost 60 per cents of world population and this figure is expected to rise to one billion in the next fifty years. The focus of the city's population to put pressure on the environment and this is reflected in the event of problems such as urban warming, pollution, congestion and loss of biodiversity resulting from changes in land use and the like. As indicated by Long Term goals of 12th Malaysia Plan and beyond it articulates to widespread use of green technology to reduce overall resource consumption while maintaining economic growth. Secondly, to apply the application of green technology in Malaysia‟s culture. Third, Malaysia will become a major producer of green technology in the global market. Then, 12th Malaysia Plan is to build the international cooperation among local universities and research institutions by way of green technology industry. However, short term of Malaysia Plan is to create greater public awareness through programs of support and commitment to the adoption of green technology.

1.1.1 Green Technology Scenario in Malaysia

The government's determination of green technology in living systems has been emphasized by announcing provisions. Additional Green Technology Financial Scheme (GTFS) RM 2 billion, bringing the total RM 3.5 billion as incentives for the production and the use of green technology -based products (GTFS, 2012). According to the Green City Initiative Low Carbon Putrajaya (2012), in 2007 government office sector is a sector that contributing to the high carbon emissions totaling 180 ktCO2eq followed by sector passenger transport by

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161 ktCO2eq and the solid waste sector, a total of 148 ktCO2eq . However , in 2025 it is expected that commercial sector will be a key contributor of carbon emissions by 1435 ktCO2eq an increase of 95.4 per cent over the year 2007 followed by passenger transport sector to increase 87.7 per cent to 1314 ktCO2eq . Based on that number, initiatives for reduce carbon emission levels into the air should be practiced to ensure the well-being environment and people's lives in the future.

In Malaysia, the National Green Technology Policy launched in 2009, a new ministry namely the Ministry of Energy, Green Technology and Water (KeTTHA) was established to manage the affairs energy, green technology and water. Then, Malaysian Green Technology Corporation established as a driver and implementer of KeTTHA driving efforts to develop and promote green technology in Malaysia. In addition, the government promote green technology with providing tax breaks pioneer, excise duties, recognition and special promotions to on the green technology sector key role players (GTFS, 2012).

Thus, education is seen as the best way to shape a generation that has the knowledge and awareness of the environment (Jamilah, 2011). Through education, information can be delivered. Current issues concerning the environment, a study is conducted and the latest technology that is available to assist environmental management. The goal of environmental education is to form a community that is more sensitive to environmental issues and acquire the knowledge, skills, values and commitment to work and act individually or collectively towards solving environmental issues as together (Zairin, 2013). According to Ahmadi (2011), environmental education is also the basis for creating a society with environmental awareness, thereby creating a society that is more ethical.

Green technology is believed to be overcome environmental degradation and natural resources. Yet, it can improve the health and human life as well as preserve ecosystems and reduce the cost burden to the government in its efforts to

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mitigate the effects of development and serve as an alternative in order to improve the country's economy without compromising the environmental issues.

1.2 Problem Statement

In this 21st century, all human life revolves around the technology and profitability without realising the importance of social aspects to be considered. Social refers to macroeconomic factors in the context of marketing where the other factors are demography or background, economic, environment and politic (Altman, 2009). Green technology is no longer new in Malaysia however the level of awareness and knowledge of Malaysians on the importance of green technologies in present and future still at low levels (Mudzalifah, 2014).

Currently, Green Technology has been a highlight on various environmental issues which are compromising the issue of energy crisis, a lack of resources and all kind of issues that happen around us. The environment or environmental factors mean surrounding the physical human life (Jamilah et al. ,2011). In spite of this, the number of human will be increasing every year, whereas the natural resources that can be exploited are decreasing day by day. This all contributes to an environment that is not very occupied to live in. Environmental issues is a social problem that has overwhelmed community which starts with the problem of pollution the environment , global climate change and the lack of natural resources that threaten the life of the world individual , community and other living organisms (Bruni et al., 2012) .

Population growth, technological developments, changes in society and culture has encouraged the use of natural resources while conservation the environment is not running (Kassim, Mokhtar & Jill 2004). According to Jill (2010), each component of the environment is also threatened by destruction

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natural resources due to rapid development to meet the high demand. Growth economic, industrial and population growth rapidly in developing countries such as Malaysia that demand for energy can renewed increases in view fossil fuel consumption has been reduced by global (Kamaruddin et al. , 2011) .

The researcher wants to study and identify variable that measure perform of people activities towards the use of green technology in Malacca City. Besides that, the researcher wants to examine factors that influence towards the users‟ intention of using green technology. This research is important because the green technology is a key determinant of the success or failure of for development Malacca as Green City State. Consequently, the researcher would resemble the technology acceptance model using UTAUT for people activities to use and optimize the use of green technology in Malacca City.

In the application of green technology, the biggest benefit is in terms of improving the quality of life by guaranteeing the quality of the environment more sustainable. When we use green technologies, negative effects on the environment is minimal (KeTTHA 1, 2011). Thus, all publics in Malacca need to pay attention on this global problem. Awareness and concern for the environment is the sole responsibility of each individual. Acceptance is developed in the hope to improve the well-being while preserving the environment for sustainable development.

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1.3 Research Questions

The focus of this research is to investigate the factors affecting the public acceptance to application of green technology. In the context of this aim, three research questions were formulated:

RQ1: What are the factors that influence on users‟ intention to use green technology?

RQ2: What are the relationships of the factors that influence on users‟ intention to use green technology?

RQ3: What is the most dominant factor that has big influence on users‟ intention to use green technology?

1.4 Research Objectives

The aim of this study is to explore the factors influence the public acceptance to application of green technology based on the opportunities and drawbacks of green technology offered specifically into public. In order to achieve the above aim, the researcher found the objectives as shown:

RO1: To examine the factors that influence on users‟ intention to use green technology.

RO2: To determine the relationships of the factors that influence on users‟ intention to use green technology.

RO3: To investigate the most dominant factor that has big influence on users‟ intention to use green technology.

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