

**INVESTIGATION INTO PUBLIC ACCEPTANCE OF ENVIRONMENT
PROTECTION TAX LAWS IN MALAYSIA**

**By
LOO CHOO HONG**

**Thesis Submitted in Fulfilment of the Requirements
For the Degree of Doctor of Philosophy (Management)
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VERIFICATION PAGE

I certify that the Board of Examiner met on 04th July, 2013 to conduct the final examination of Loo Choo Hong on his thesis entitled “**Investigation into Public Acceptance of Environment Protection Tax Laws in Malaysia**” in accordance with the University requirements. The Board recommended that the candidate be awarded the degree of Doctor of Philosophy (Management). The members of the Board of Examiners are follows:

Dr. Mohd Saeed Bin Siddiq
Professor
Universiti Tun Abdul Razak
(Chairman)

Dr. Ravindran Ramasamy
Professor
Universiti Tun Abdul Razak
(Internal Examiner)

Dr. Jeyapalan Kasipillai
Professor
Monash University
(External Examiner)

This thesis was submitted to the Senate of Universiti Tun Abdul Razak and has been accepted as fulfillment of the requirements for the degree of Doctor of Philosophy (Management). The supervisor is:

Dr. Barjoyai Bardai
Professor
Universiti Tun Abdul Razak
(Supervisor)

.....
()
Dean
Graduate School of Business
Universiti Tun Abdul Razak

Date:

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**Investigation into Public Acceptance of Environment Protection Tax Laws in
Malaysia**

By

LOO CHOO HONG

ABSTRACT

This study looks at one of the many tools to promote environmental sustainability, namely environmental taxation. This research identifies the gaps between current Malaysian tax laws and practices in the countries reviewed, as well as the desires of Malaysian taxpayers which are not practiced in other countries. A mixed-method approach was used in this study. In the qualitative method focus groups and interviews involving 30 experts from various disciplines thoroughly explored what taxpayers want from environmental taxation laws. The quantitative approach entailed emailing a set of questionnaires to more than 700 respondents. The researcher developed and tested the environmental taxation acceptance model and its variables. In the model, the taxpayer engages in voluntary compliance, forced compliance or non-compliance with environmental tax laws. The findings show that education level, income source, domicile status and political affiliation do not determine whether one supports environmental tax issues; rather gender, age and race are significant determinants. Environmental taxation does play a role in encouraging good environmental behaviour; however, it only performing a supporting role in encouraging environmental preservation. Public education about good environmental behaviour, enforcement of environmental laws and supporting services should be practised along with environmental taxation laws. Behavioural factors, such as quality of life, self-actualisation and attitudes, and legal factors, such as immediate tax incentives, forced compliance and tax mitigation, are the underlying factors in the acceptance of environmental taxation by the Malaysian taxpayer. Attitudes were the least important independent variable while quality of life was the most important variable in the successful acceptance of environmental taxation. This study highlights the impeding factors in the theoretical framework that might change the outcome of acceptance of environmental taxation, including amount of the tax and the tax administration, current subsidy structure, culture, supporting infrastructure, public goods and governance issues.

The researcher introduced two theorems based on this research. **The Theory of Social Rental Cost** proposes a method of transferring the environmental costs to the taxpayer himself as expressed in the following equation:

$$R_T = R_A - R_C,$$

where R_T represents the rental of landfill charged to the taxpayer, R_C represents the rental earned by the government from current use and R_A represents the revenue received by the authorities from alternate use. **The Life of Pi Theorem** proposes that environmental taxation (or any other eco-friendly policy) will never restore nature to its original glory. From time to time, man will sin against nature by destroying it, but he could not complete the total destruction of nature. Environmental taxes are tools man uses to atone for his sins against nature.

Keywords: environmental policy, taxation policies, environmentalism, Malaysian government policies, philosophy

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List of Abbreviations

ASEAN	Association of Southeast Asian Nations
CC	Cubic centimetres
CDM	Clean Development Mechanism
CO ₂	Carbon dioxide
EU	European Union
EEV	Energy-efficient vehicles
FIABCHI	<i>Fédération Internationale des Administrateurs de Biens Conseils et Agents Immobiliers</i> (International Real Estate Federation)
GBI	Green Building Index
GHG	Greenhouse Gasses
GST	Goods and services tax
HKSAR	Hong Kong Special Administrative Region of the People's Republic of China
IRBM	Inland Revenue Board of Malaysia (main tax collection agency in Malaysia)
ITA	Investment tax allowance
LNG	Liquefied natural gas
LPG	Light petroleum gas
NGO	Non-governmental organisations
MIDA	Malaysian Investment Development Authority (Malaysian government's principal agency for the promotion of manufacturing and services sectors in the country)
OECD	Organisation for Economic Co-operation and Development
RFS	Renewable fuel standard
UK	United Kingdom
VAT	Value-added tax

Glossary

Bait-ul-mal	Financial institution responsible for the administration of taxes in Islamic states. Today, it administers the distribution of tithe revenue and other donations for the public good.
Case law	Principle or rule established in a previous legal case that is either binding on or persuasive for a court or other tribunal deciding subsequent cases with similar issues or facts
Capital allowance	Amount a Malaysian business may deduct from the overall corporate or income tax on its profits. These allowances are given for certain purchases or investments including those in plants and machinery, buildings and research and development facilities and equipment. Similar terminology is used in UK.
Clean Development Mechanism	Flexibility mechanism defined in the Kyoto Protocol that provides for emissions reduction projects
Common law	Law developed by the judiciary through decisions of the courts
Commonwealth	For the purposes of this research, Commonwealth generally refers to the British Commonwealth, an intergovernmental organisation of former members of the British Empire, Mozambique and Rwanda. In Chapter 4, 'Commonwealth' describes states in Australia and the United States.
Direct tax	Tax administered by the federal government and paid directly to the government by the persons on whom it is imposed
Elasticity	Measurement of how changing one economic variable affects another economic variable
Delphi method	Collaborative estimating or forecasting technique that combines independent analysis with the maximum use of feedback in order to build consensus among participants who interact anonymously. The topic discussed is circulated among the participants who comment on it and modify the opinion until a

	degree of mutual agreement is reached.
Double dividend hypothesis	Theory that increased environmental taxation on polluting activities will result in improvements to the environment. The improvements in economic efficiency from the use of environmental tax revenues will reduce other kinds of taxes such as income taxes that disturb labour supply and savings.
Emissions trading	Market-based approach used to control pollution by providing economic incentives for achieving reductions in the emissions of pollutants. A governmental body sets a limit on the amount of a pollutant that may be emitted and sell the limit to firms in the form of emissions permits which represent the right to emit or discharge a specific volume of the specified pollutant. Firms that need to increase their volume of emissions must buy permits from those who require fewer permits.
Environmental taxes	Taxes introduced to achieve a specific environmental objective or introduced initially for non-environmental reasons but have an impact on environmental objectives and may be reduced or otherwise modified for environmental reasons
Green building	Building designed to increase the efficiency of energy, water, and materials usage while reducing the impact on human health and the environment during the building's lifecycle.
Import duty	Tax chargeable on goods imported into Malaysia
Indirect tax	Taxes collected by an intermediary from the person who bears the ultimate economic burden of the taxes. The intermediary files a tax return and forwards the tax revenues to the government. In Malaysia, this tax is administered by the federal government.
Interest group	Voluntary association that seeks to publicly promote and create advantages for its cause
Local government tax	Taxes paid by the public to local authorities for services provided by authorities; typically assessments and land taxes
National Automobile	Policy introduced by the Malaysian government to promote a

Policy	competitive and viable automotive sector, in particular national car manufacturers
Non-tax revenue	Revenue generated by the government which is not sourced from taxes
Pigouvian tax	Tax levied on a market activity to correct any inequalities from any activity that generates negative externalities
Photovoltaic	method of generating electrical power by using semiconductors to convert the radiation of the sun into direct current electricity
Sales Tax	Single-stage Malaysian tax levied on certain imported and locally manufactured goods, either at the time of importation or at the time the goods are sold or otherwise disposed of by the manufacturer
Social accounting	Process of communicating the social and environmental effects of the economic actions of an economic entity to particular interest groups within society and to society at large
Stern Review on the Economics of Climate Change (The Stern Report)	Report commissioned by the British government and released in 2009 that discusses the effects of global warming on the world economy
	Measures that keep prices below market level for consumers or above market level for producers or that reduce costs for consumers and producers through direct or indirect support
Taxation	Financial charge or other levy imposed upon an individual or legal entity by a state or the functional equivalent of a state such that failure to pay is punishable by law
Tax compliance	Taxpayers' willingness to obey tax laws in order to maintain the economy equilibrium of a country
Tax incentives	Aspects of tax law designed to encourage a particular economic activity through taxation
Tax mitigation	Attempt by the taxpayer to make an actual expenditure which results in a tax advantage

CHAPTER 1 INTRODUCTION

Many countries have paid serious attention to environmental degradation since the 1980s. One issue relates to the thinning of the ozone layer. Problems concerning the environment such as global warming and the disappearance of many animal and plant species have been highlighted. Various measures and tools have been developed by governments and the public to elevate the issues relating to environmental degradation. Some measures are voluntary, such as the removal of shark fins from the dinner table, while others have been exercised using the power of the law such as tolls imposed when entering city limits. Taxation is a tool that governments use both to collect revenue and to prevent or encourage certain behaviour. As taxation is monetary in nature, it is a good way to encourage or discourage a country's citizenry to behave in a certain way as deemed appropriate by the government. Throughout the world, taxation is used as a means of encouraging good environmental practices and dissuading the citizens of a country from engaging in practices that could further damage the environment.

The Organisation for Economic Co-operation and Development (OECD) defined environmental taxes as *'any compulsory, unrequited payment to general government levied on tax-bases deemed to be of particular environmental relevance.'* (OECD, 2003)

1.1 Background

Taxation in Malaysia includes direct taxation, indirect taxation and local government taxes. The main laws governing taxation in Malaysia are the Income Tax Act 1967, Real Property Gains Tax 1976, Promotion of Investments Act 1986 and Stamp Duty Act 1949, along with various custom laws, some sections of local government laws and case law. In addition to these taxes, the government might receive some non-tax revenue, or revenue which is not generated by taxes. Examples include

foreign aid, tribute or indemnities paid by a party as a condition of peace after suffering military defeat (e.g., World War II reparations), loans from monetary funds and other governments and funds generated by government-linked enterprises (e.g., dividends from Tenaga Nasional Berhad), investments and sales of state assets.

Due to the colonisation of Malaya, Sabah and Sarawak by the British from the early 1800s to 1960s, Malaysian law, including tax law, is based on the British common law system. The Malaysian tax system, a subset of the Malaysian legal system, recognises cases from British dominions such as Australia, the former Crown Colony of Hong Kong and India. The Income Tax Act 1965 is based on British, Australian and Indian models. Since independence, case law from Commonwealth countries still has influenced lawmakers in Malaysia. However Malaysian laws are formed by Parliament and the decisions of local courts.

On the other hand, the UK has a comprehensive structure of environmental taxation law because of European Economic Community requirements. Malaysian taxation laws have adapted to the post-independence need to shift the economy from an agricultural to a manufacturing base. Various tax incentives such as reinvestment, accelerated capital, investment tax and pioneer status allowances concentrated on the manufacturing sector have been offered and granted to qualified companies.

Environmentalism emerged in Malaysia to a certain degree in the early 1970s and more so in the 1990s due to the social pressures to alleviate environmental degradation, especially the thinning of the ozone layer. Since laws acts as vehicles for governments to carry out policies, Laws, including taxation laws, were amended to suit new environmental policies.

1.2 Research Focus

Since the 1980s, countries around the world have considered various methods to tackle the issue of environmental degradation. Environmental taxation is one such tool. This study looks at taxation as a tool used by the Malaysian government to encourage good environmental behaviour among taxpayers.

1.2.1 Problem Statement

While other countries have taken the initiative in environmental preservation efforts, Malaysia has lagged behind. Taxation can be a crucial instrument used as a synergic effort to move in this direction. While other countries have initiated specific environmental taxes, the Malaysian government has confined its efforts to indirect incentives and deterrence created by tax features.

The question is whether the taxpayers in Malaysia are ready to make a quantum leap forward in environmental preservation by introducing a specific environmental taxation system. Is the country ready to learn from other developed countries in this respect?

The problem statement of this research is to determine whether international best practices in environmental taxation can be accepted as best practices in Malaysia and which practices are acceptable and feasible for the country.

1.2.2 Research Objectives

The specific research objectives are as follows:

1. To evaluate the level of acceptance of environmental law as a means of increasing the environmental commitment in Malaysia
2. To identify the best practices in environmental preservation initiatives that should be included in Malaysian tax laws

3. To analyse how various motivating, organisational and impeding factors influence Malaysian tax laws in order to create a scenario of environmental commitment by Malaysian taxpayers
4. To utilize the data to identify strategies using environmental laws to increase the level of environmental commitment in Malaysia

1.2.3 Research Questions

The basic questions of this research are:

1. Does the Malaysian taxpayer think that changes in Malaysian tax law will improve quality of life?
2. Are Malaysian taxpayers committed to implementing a full set of environmental tax laws?
3. Are the motives behind the current Malaysian environmental tax laws easily understood by the Malaysian public?
4. Does the Malaysian taxpayer appreciate the motives and intentions for implementing a full set of environmental tax laws?
5. Can Malaysians accept changes to bring tax laws related to the environment in line with international practices?
6. What are the gaps between the current tax laws related to environmental preservation initiatives in Malaysia and in selected Commonwealth countries or other non-Commonwealth countries?

7. What types of environmental taxes approach are preferred by the Malaysian taxpayer?
8. What types of environmental incentives are preferred by the Malaysian taxpayer?
9. What new tax instruments and incentives practiced in developed countries might be acceptable to the Malaysian taxpayer?

No country, including Malaysia, is exempt from the effects of global warming and environmental change. This research, therefore, is important because Malaysia must take action to reduce the effects of global warming and environmental degradation or face devastation. The Malaysian government must create policies (of which taxes are one tool the government can use) to encourage the public to protect the environment. It is the duty of citizens to comply with these policies. Humanity's survival on the planet requires everyone to take action now and practice sustainability.

1.3 Conceptual Framework

The environmental taxation acceptance model was developed after a review of academic and legal literature and was inspired mainly by the writings of Chen, Bao and Zhu (2006), Thalmann (2003) and Qian and Chan (2010) and by the theoretical framework of Graci (2008). These works are discussed in detail in Chapter 2.

1.3.1. Schematic Diagram of the Conceptual Framework

Figure 1-1 Schematic diagram of the conceptual framework

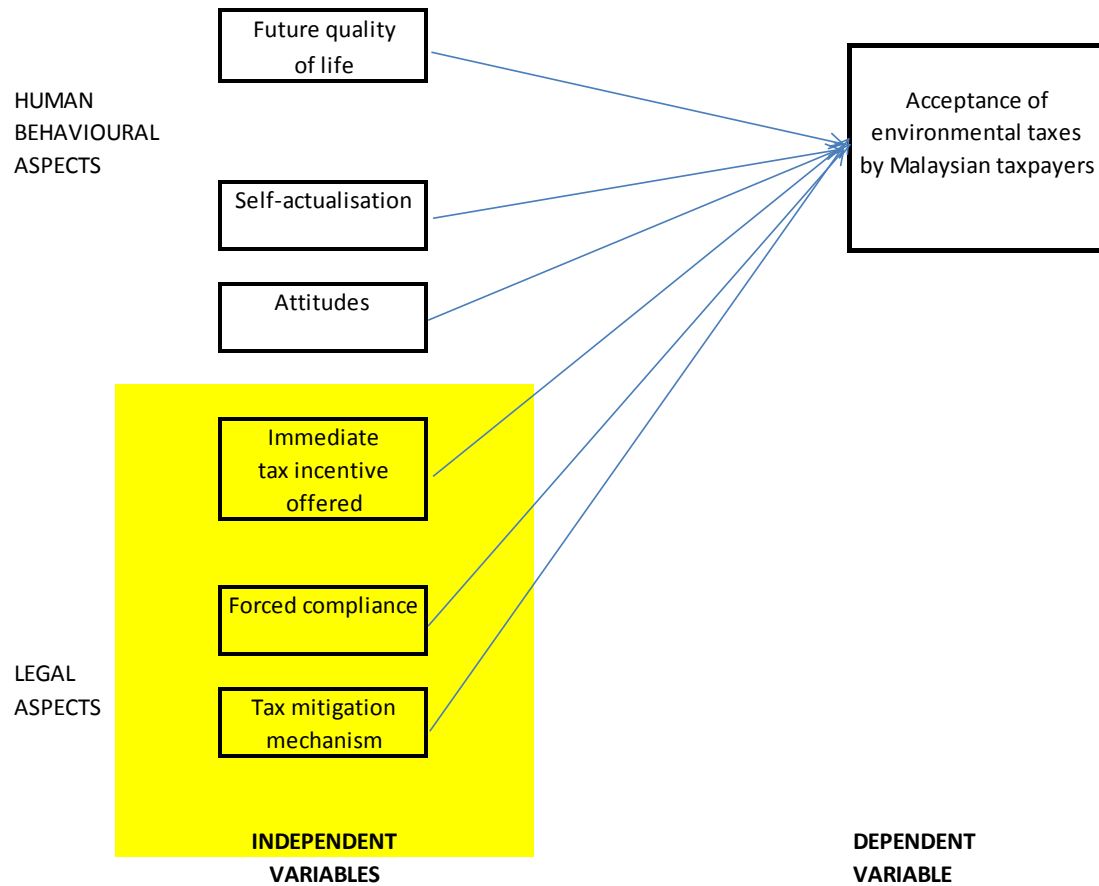


Figure 1.1 presents the variables identified in the environmental taxation model developed in this study. The following variables were proposed as the independent variables that could affect the dependent variable (i.e., the acceptance of environmental taxes by Malaysian taxpayers):

Behavioural Aspects.

Future quality of life. Qian and Chan (2010) argued that the desire for a better quality of life in the future will encourage environmental protection. Their study suggests that artificial incentives for environmental protection such as taxes are redundant. Vourc'h (2001), however, held the opposite opinion. He claimed that environmental taxes were needed to stimulate efforts to protect the environment.

Self-actualisation. Clement and Cheng (2011) concluded that protection of the environment would succeed if the public placed higher value on the environment than immediate economic gains. Chen, Bao and Zhu (2006) found that residents of the city of Hangzhou were committed to paying for green-space conservation in urban areas as they felt the need to safeguard the aesthetic and visual nature of Hangzhou. Unless the public is willing to place the environment above immediate monetary gains, then the introduction of any form of environmental taxes may not be successful.

Attitudes. Graci (2008) found that incompatible corporate cultures and the attitudes of employees were the most significant hindrances to environmental commitment amongst all facilities in the tourism accommodation industry in Sanya, China. Good attitudes towards the environment will ensure that there is support for any policies or attempts to protect the environment, including environmental taxes). This variable is related to 'forced compliance'. If a certain environmental policy is enforced, there might not be enough commitment from the public to the policy.

Tax mitigation. Gallo (2011) proposed implementing a punitive fuel surcharge policy to encourage motorists to use public transport or buy more fuel-efficient vehicles. This position implies that taxpayers might accept a certain new environmental tax in order to reduce the amount of taxes payable.

This variable might conflict with the variable of self-actualisation because the goodness in humanity prompts an automatic love for the environment. If the public is happy with current laws, there will be no need for amendments to current laws.

Tax mitigation seems to be a dominant trend in vehicle-related environmental taxes. There is a movement in Hong Kong Special Administrative Region of the People's Republic of China (HKSAR), Italy, Ireland, the United States (US) and even Malaysia to use tax mitigation to encourage motorists to exchange their older, environmentally unsafe vehicles for hybrids or to use public transport.

Legal Aspects.

Immediate tax incentives. Mewton and Cacho (2011) found that the Australian government would have to take the first step to encourage the use of green power. The public would begin to use green power only if the government introduced a carrot in the form of tax incentives, such as tax deductions for residential customers, exemption from the goods and services tax, the green power tax rebate and government purchases and reselling of electricity. This finding suggests that immediate tax incentives are needed to encourage environmental consciousness.

Is the public ready to accept the full set of environmental taxes or only the carrot, i.e., the immediate tax incentives? Is the public happy with the current set of taxes or are more carrots needed?

Forced compliance. Oliver et al. (2011) found that the willingness of households to pay a premium for green electricity was influenced by the level of consumers' comprehension of issues related to climate change. If the public does not understand the need to protect the environment, any attempts to introduce

environmental protection policies (including taxes) will fall flat. Any compliance to the laws is due to forced compliance. Fu (2010) stated that public involvement in green policy development is imperative. Any imposed policy is unacceptable.

1.4 Research Hypothesis

The following hypotheses were developed and explored in this study.

No.	Hypotheses
H1	The Malaysian taxpayers welcome the introduction of a full set of environmental taxes.
H1a	The Malaysian taxpayers are committed to having a full set of environmental taxes introduced.
H2	The Malaysian taxpayer foresees that environmental commitment will result in improved quality of life.
H3	The Malaysian taxpayer is happy with the current set of indirect environmental taxes.
H4	The Malaysian taxpayer understands the motives behind the possible introduction of environmental taxation laws.
H5	The Malaysian taxpayer can accept changes to environmental tax laws in line with international practices.

1.5 Justification of the Study

This study looks at one of the many tools to promote sustainability, namely environmental taxation. Malaysian citizens will profit from this study because the outcome is a comprehensive set of Malaysian environmental tax laws which encourage protection of the environment and are acceptable to the majority of the public.

This research reviews current Malaysian tax laws dealing with environmental issues and compares them to environmental–tax practices in selected Commonwealth and non-Commonwealth countries. This study identifies the gaps between current Malaysian tax laws and practices in the countries reviewed as well as the desires of Malaysian taxpayers which have not been addressed by the practices of other countries.

Earlier research thoroughly examined specific sections of environmental tax law. As tax laws are inter-related, there is a need to look at the laws as a set, rather than to examine sections separately. This research also the first work to looks at environmental taxes in Malaysia.

The aim of this research was to find out whether the Malaysian public thinks there is a need for:

1. Environmental tax laws which encourage the populace to protect the environment and to practice sustainability
2. Updated environmental tax laws that reflect the latest international developments especially in the Commonwealth, the United States and other United Nations members
3. Environmental taxation laws that discourage environmental degradation

The first part of this thesis attempts to identify the gaps between the current tax laws—specifically, the Income Tax Act 1965 and its amendments, custom acts and local governments’ ordinances—and the laws of selected Commonwealth countries and the United States. Next, this thesis presents a qualitative study. Experts from various fields in Malaysia were asked their opinions on the issues identified by the legal review. The experts were also given the opportunity to voice their desires concerning environmental taxation in Malaysia. The final part of this thesis describes a quantitative study in which the public voted on which laws they preferred. The public was presented with the desires of the experts and the various gaps identified between the tax laws of Malaysia and its selected Commonwealth and non-Commonwealth counterparts, and a poll conducted to see which laws were acceptable to the Malaysian taxpayer.

1.6 Methodology

A mixed-method approach was used as follows:

- In the qualitative approach, focus groups and interviews were conducted to explore what taxpayers and interest groups want from environmental taxation laws. The qualitative approach injected realism into the study by identifying the gaps in what selected Malaysian taxpayers really want to be addressed. However, since the qualitative approach required the researcher to interact and spend considerable time with the respondents, the number of participants in the study might be small, and the results might not be broad. Therefore, a more expansive mode of data collection was needed.
- A quantitative method was conducted next. Since the research dealt with the acceptance of environmental taxes by Malaysians, the samples used should be large. By using questionnaires, a bigger sample of respondents could be

obtained. Questionnaires were sent via snail mail, email, hand delivery and social media including Facebook and LinkedIn to ensure a large audience. Results from the questionnaires were analysed using statistical methods.

1.7 Significance of the Study

Since this research aims to update Malaysian tax laws with best practices from all over the world and the various desires of various Malaysian taxpayers, the outcomes could guide public policymakers in developing the most appropriate environmental tax laws for Malaysia.

In addition to this application, this study explored the social science of environmental taxation, and it is hoped that readers' understanding of how tax laws, especially environmental taxes, can improve quality of life will be increased. Taxation is normally thought of as the government taking away citizens' income through a compulsory payment that might not improve the quality of life. This researcher theorised that preventing a certain bad behaviour (i.e., taxing environmentally unfriendly efforts) results in the establishment of good behaviour (i.e., being more environmentally friendly).

The motives of the public policy implementer and implementee (the taxpayer) regarding environmental taxes are explored. Firstly, whether Malaysians' involvement in environmental initiatives is voluntary due to love of the environment or coerced by local and foreign pressures is explored. Do Malaysians become involved because the government forces them to do so or because exporters need to fulfil their legal obligations to have environmentally friendly products? The answer to this research

question is useful in understanding Malaysians' motivations for undertaking social responsibility. Are they external or impose? Or do Malaysians simply do not care?

Taxation is a common public policy tool. Behind every policy, however, lies the motive of the implementer, i.e., the government. Are the motives for current Malaysian tax laws easily understood by the public? Are these tax laws comprehensible, or are they forced upon the public? The results of this study should be applicable in other studies of Malaysian public policy.

Today, people commonly talk about implementing best practices in their work and their lives. Are the people of Malaysia able to accept changes to bring tax laws in line with international practices? Sometimes, best practices could bring hardship to Malaysians. More taxes could reduce after-tax income. Are Malaysians willing to sacrifice their income for the betterment of their lives? Again, the results of this study can be applied to any future public policy studies dealing with the application of best practices and the public's acceptance of these practices.

1.8 Summary

This research seeks to incorporate into Malaysian tax best practices from all over the world and the desires of various Malaysian taxpayers therefore, it guides policymakers in creating the most appropriate environmental tax laws for use in Malaysia. Additionally, this study explores the social aspects of taxation, of which environmental tax is a subset, and aims to increase understanding of how tax laws, specifically environmental taxes, can improve quality of life. The research objectives, questions and research hypotheses were developed based on the theoretical framework.

1.9 Organisation of the Thesis

This thesis is organised as follows:

Chapter 1: Introduction

The background, focus, problem statements and significance of the thesis are introduced.

Chapter 2: Literature Review

Earlier research on environmental taxation that influenced the development of this model is presented.

Chapter 3: Research Methodology

This chapter presents an overview of how this research was conducted. Details of the objectives, focus and questions, hypotheses, process and methodology are discussed. A detailed description of the qualitative and quantitative research methodology is given in Chapters 4, 5 and 6.

Chapter 4: Legal Review

This chapter reviews the tax laws of various Commonwealth and non-Commonwealth countries to identify the gaps in Malaysian tax laws, as suggested by the research questions.

Chapter 5: Qualitative Research

The qualitative research method was based on Guglyuvatty (2010). This chapter describes in detail the expert panel focus group and interview sessions. The researcher interviewed selected experts on matters pertaining to environmental taxation. The feedback from the experts was analysed using NViVo and used in the design of the nationwide questionnaire outlined in Chapter 5.

Chapter 5: Quantitative Study

This chapter reports on the quantitative research; a nationwide poll conducted using snail mail, email and social media to obtain feedback from the Malaysian populace about their acceptance of the various aspects of environmental taxation. The data collected was tabulated and analysed using SPSS.

Chapter 6: Conclusion

Based on the findings and analysis presented in Chapters 5 and 6, the researcher developed a set of Malaysian environmental tax initiatives which incorporate foreign best practices and the requirements of international treaties and take into account the needs and desires of the Malaysian public.

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CHAPTER 2: LITERATURE REVIEW

Various works dealing with Environmental tax locally and internationally are discussed in this chapter. Review of these works aided in the development of this model.

2.1 Main Theories

It is impossible to talk about environmental taxation without referring to the works of Pigou (1932), Coase (1960) and Brown and Frame (2005).

2.1.1 Pigouvian Tax

A Pigouvian tax is levied on a market activity to correct any inequalities from an activity that generates negative externalities. In the presence of negative externalities, the social cost of a market activity is not covered by the private revenue generated by the activity. In his 1932 classic *The Economics of Welfare*, Pigou wrote:

Let us suppose that we start from a condition of stability; that continually for a long time past savings at the rate of £2 million per day have been required for maintenance, and have in fact been forthcoming. Something occurs, as a result of which henceforward only £1 million will be forthcoming. It is obvious that the level of the lake must fall. But it will not continue to fall indefinitely. For, as a result of the decline in the inflow, the outflow also must diminish, since the progressive fall in the stock of capital involves at the same time a progressive fall in the daily wastage. Presently the outflow will so far decrease that the reduced inflow of £1 million a day suffices to replace it. The contraction in the capital stock thereupon comes to an end and a new equilibrium is

established.... If the failure to provide replacements is carried to the point that henceforward none whatever are forthcoming, the stock of capital must, of course, eventually disappear altogether. Items with a short remainder of life will become extinct first; then others and yet others. The out-flowing stream will diminish to a smaller and smaller trickle, until, with the demise of the longest-lived item, it and the lake from which it came alike go dry. In this event, however, humanity will take no interest, for the demise of the last capital item will certainly have been preceded by that of the 'last man'. (Pigou, 1932, p. 55)

Any negative externality which is left unattended will eventually destroy the whole economy or even society. A Pigouvian tax equal to the negative externality is thought to restore market efficiency.

In his classic work, Pigou cited an example when it is justifiable for authorities to place a tax on alcoholic products which introduce externalities into society. The tax could be used to remedy any social injustices, including building playgrounds, stemming from the sales of alcohol.

Pigou proposed using a tax to give justice to members of society hurt by the negative externality. Such a tax has become known as a Pigouvian tax.

The private net product of any unit of investment is unduly large relatively to the social net product in the businesses of producing and distributing alcoholic drinks. Consequently, in nearly all countries, special taxes are placed upon these businesses. Marshall was in favour of treating in the same way resources devoted to the erection of buildings in crowded areas. He suggested, to a witness before the Royal Commission

on Labour, ‘that every person putting up a house in a district that has got as closely populated as is good should be compelled to contribute towards providing free playgrounds’.

(Pigou, 1932, p. 143)

In the presence of positive externalities, i.e., public benefits from a market activity, the market tends to under-supply a product. Similar logic then suggests the creation of Pigouvian subsidies to increase market activity. Manufacturers of products that contribute to the degradation of the environment, therefore, must pay for these externalities imposed on society via a Pigouvian tax.

2.1.2 The Coase Theorem—Coase’s ‘The Problem of Social Costs’

In ‘The Problem of Social Costs’, Coase (1960) studied the actions of business firms which have harmful effects on others. He asked whether it was worthwhile to restrict the harmful firms’ methods of production to support more production by the harmed party at the expense of a reduced supply of the harmful product. In a world without transaction costs, firms could negotiate with one another to produce the most efficient distribution of resources. The transaction costs of negotiations between the firms would eat up any welfare-maximising reallocations. In such cases with potentially high transaction costs, the law could intervene to reduce those costs. This proposal later became the Coase Theorem.

In the case of the externalities due to environmental degradation, laws (in this case, environmental taxation) can be used to reduce the transaction costs for the firms that cause environmental degradation and harm to the public.

2.1.3 Social Accounting Theory

Social accounting, of which environmental taxation is a subset, is a new alternative to traditional accounting. Brown and Frame (2005) criticised the traditional cost-benefit analysis which is a mainstay in management accounting textbooks. Political judgments play a part in determining what and whose costs and benefits to count and quantify. Brown and Frame (2005) believed that, when viewed in a sustainability context, many benefits to others (e.g. future generations, non-Western nations, other species) and costs to organisations or society (e.g., health and safety, displacement of local communities) excluded when computing costs to vulnerable groups. In response to these weaknesses in traditional accounting, various tools and techniques have been developed to broaden the current approaches to accountancy. Cost-benefit analysis underplays the interests of different stakeholders on social issues (e.g., views on fair trade), but accountants have realised that it is a mistake for corporate decision makers to ignore the viewpoints of stakeholders (Livesey, 2001).

This thesis will look at various issues that warrant the introduction of environmental taxation and various models that promote environmental awareness and reveal the need for systematic implementation of the laws. Bellido-Arregui (2003) supported the use of taxes and tax subsidies to shift and reduce the social costs of pollution. Reidy and Diesendorf (2003) identify the various types of financial subsidies as:

- Direct subsidies and rebates
- Favourable tax treatment
- Provision of infrastructure and public agency services at below cost
- Provision of capital below market rates
- Failure of government-owned entities to achieve normal rates of return
- Trade policies, such as import and export tariffs and non-tariff barriers

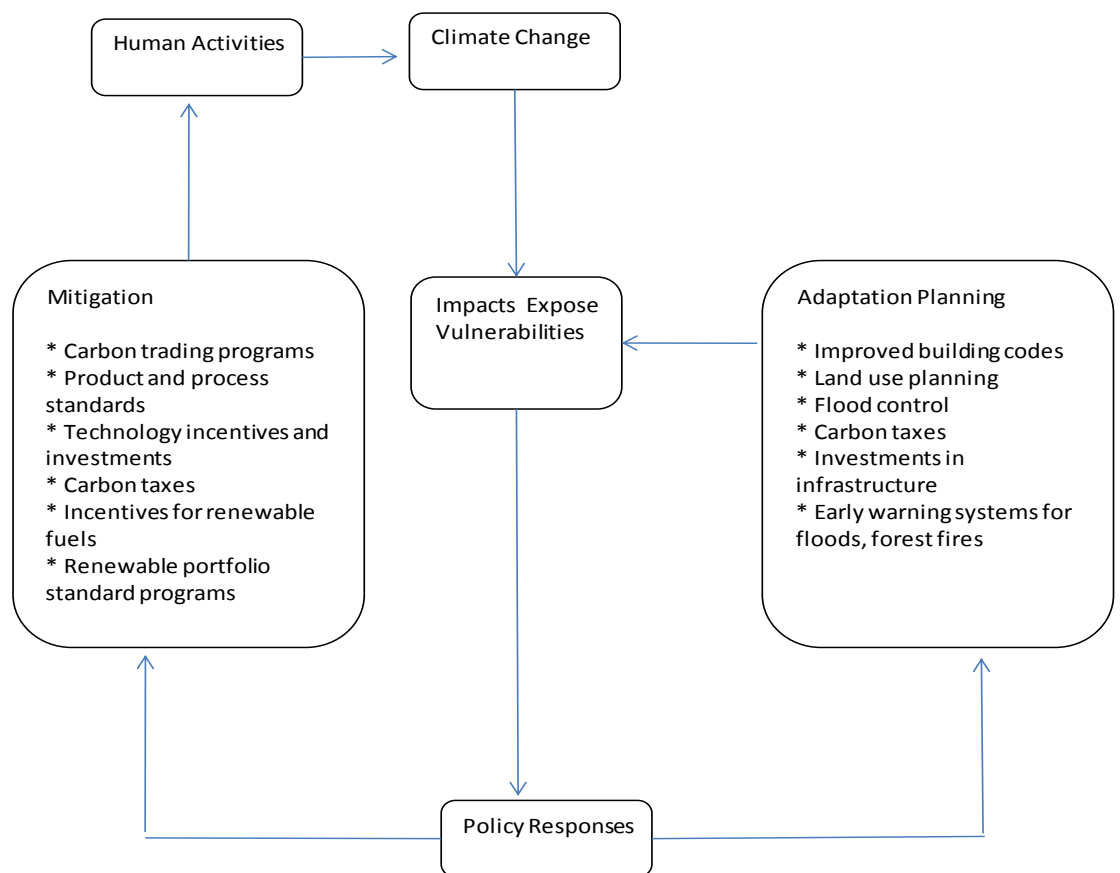
By imposing the costs associated with pollution on producers, tax incentives can induce producers to reduce emissions and develop and implement environmentally friendly technologies. However, tax designers must take into account the tax base and rate, relevant laws, regulatory authority and international competitiveness to design a successful environmental-tax system.

In research on the ad-hoc implementation of California's low carbon fuel standard (LCFS), Sperling and Yeh (2010) found that any energy policy forced upon businesses and individuals by the state will ultimately fail. A comprehensive policy for the carbon standard that encourages innovation and involves industry and consumers, however, could succeed. A top-down tax policy without consultation with the public would fail.

Labatt and White (2007) argued that carbon finance including carbon taxes is a mitigating policy that could reduce the impacts of climate change. The two writers pointed to the Climate Change Levy (a form of a carbon tax) in the UK which increased the cost of fuels in proportion to their GHG content. This policy creates an incentive for consumers and companies to reduce their energy consumption and to use less carbon-

intensive energy. The mitigation and adaptation measures in climate policies the writers are identified are summarised in Figure 2.1.

Figure 2-1 *Mitigation and adaptation measures in climate policies (Labatt & White, 2007, p. 16)*



A few studies investigated micro-level approaches that tackled localised pollution through the use of environmental taxation.

2.2 Environmental Taxation and Vehicle-related Issues

2.2.1 Vehicle Emissions Policies

Mazumder (2007) wrote three essays dealing with vehicle emissions policies. The first essay looked at the general equilibrium impacts of subsidies for ethanol and

ethanol-fuelled vehicles. Ethanol, which is an environmentally friendly type of fuel, was seen as a replacement for petroleum. Using data from the large ethanol-producing states in the United States, the researcher found that subsidies could be an effective motivation to switch from petroleum if the elasticities of substitution between premium petrol and its replacements were high enough. This study found that any encouragements for the Malaysian taxpayer to move from premium petrol to biofuel (or any other replacement) must be done carefully and can be implemented only if the elasticities of substitution between premium petrol and biofuels are high enough. In similar research, Hacatoglu (2008) argued that biofuels (referred to as bioenergy) could help meet the country's greenhouse gas emissions reduction targets by replacing fossil fuels. The life-cycle of the greenhouse gas emissions from bio-based heat, power and transportation fuels generally lower than those of their fossil fuel counterparts. This researched discovered that, compared to diesel and petrol, biofuels from made from straw, wood pallets and biodiesel contribute to lower greenhouse gas emissions. A similar study conducted by Lee Joon Hee (2007) in South Korea Found that CO₂ emissions into the air had a direct relationship with the general economy and an inverse relationship with fossil fuel taxes.

Mazumder's (2007) second study looked at the relationship between the price of petrol in India and the type of vehicles Indian motorists were buying. Petrol prices were not as important to vehicle sales as the income of the taxpayer (income elasticities for discrete vehicle choices were all positive and greater than unity). The higher the taxpayer's income, the more purchases made of every type of new vehicles. This study urges caution when dealing with any proposal to remove or reduce fuel subsidies to Malaysian taxpayers with large vehicles (i.e., sports utility vehicles).

Mazumder's (2007) final essay investigated whether subsidies to encourage car scrappage can be effective. As mentioned in Chapter 1, the Malaysian and the U.S. governments have implemented incentives to reduce the usage of old cars and to encourage replacing them with newer fuel-efficient cars. Mazumder's (2007) cautioned that a scrappage subsidy would be successful only if there an active resale market for old cars exists. The only other way to induce motorist to scrap their old vehicles is to close down the second-hand vehicle market. What the Malaysian authorities can learn from this work is that the authorities should not be overzealous about any plan to encourage the scrappage of vehicles. Those employed in the second-hand vehicle market could face a slump if the policy was implemented without proper consideration. Barbour (2004) found that motor vehicle wealth taxes had a statistically significant negative effect on the probability that a household would purchase a new vehicle. The tax had virtually no effect on households' decisions to stop using a vehicle due to age.

2.2.2 Carbon Tax on Vehicles

Wadud (2011) introduced the concept of introducing tradable emissions permits as a form of environmental tax to control vehicle emissions. These permits are an alternative to the traditional carbon tax. The advantages of this form of tax are that it provides

- A clearer and more visible incentive to consumers than a carbon tax
- An absolute cap on emissions, which carbon taxes may fail to provide due to the changing prices of crude oil
- A buffer between oil price and retail combined price of gasoline, helping to stabilize the gasoline market

Wadud (2011) found that tradable permits were also potentially more acceptable to the public than a carbon tax because the policy allowed consumers to influence the carbon cap. Neither Wadud nor other researchers have undertaken any study to assess the acceptability of the tradable permits on the public. This gap could be a future top for research.

Gallo (2011) studied a proposed Italian fuel surcharge policy aimed at reduce road-traffic greenhouse-gas emissions. The car ownership tax laws in Italy were unsuccessful at encouraging motorists to use public transport or buy more fuel-efficient vehicles. The car ownership law in Italy included

- An excise duty and value-added tax on fuels and lubricating oils
- Provincial car registration taxes
- Tax on third party insurance
- Ownership tax
- Value-added tax on car purchases, maintenance, tyres, highway tolls and parking

Gallo (2011) proposed that the calculation of fuel surcharges should take into account the consumption of gasoline and diesel by motorists in order to encourage motorists to shift to more fuel-efficient vehicles and help reduce greenhouse gas emissions.

2.2.3 Environmentally Friendly Vehicles

Caulfield et al. (2010) studied the motivations of individuals in the Irish Republic who were considering purchasing a new vehicle and how they might be persuaded to purchase an environmentally friendly vehicle. Respondents were asked which vehicle attributes they considered important. Vehicle registration tax and carbon

dioxide emissions were not considered important attributes by the survey respondents. However, fuel consumption was considered important and sixth of 12 attributes in the survey. The majority of respondents agreed that hybrid vehicles were better for the environment and cheaper to run than conventional vehicles but were more expensive than conventional vehicles. However, the respondents said they would purchase a hybrid vehicle in ten years if prices had dropped. The respondents voiced concerns about the scarcity of outlets selling biofuel. This fear prevents many motorists from switching from a conventional vehicle to one that runs on biofuel. In the 2011 budget, the Malaysian government granted hybrid vehicles full exemption from import and excise duties. Whether this move is successful, a similar study to that suggested by Caulfield et al. (2010) should be performed.

2.2.4 Environmental Taxation and Waste Issues

Much has been mentioned in the press about the implementation of a local government tax in Penang and Selangor to discourage the usage of plastic bags. Sugii (2008) looked at the connection between levies and the reduction in the usage of plastic bags in South Africa and the Republic of Ireland. Sugii (2008) concluded that an economic disincentive, or Pigouvian tax, is the most powerful and effective policy at reducing the environmental impact from the usage of plastic bags.

2.3 Environmental Policy

Using the Delphi method, Guglyuvatty (2010) designed a tool to determine whether emissions trading or cap would be a more appropriate measure to reduce GHG emissions in Australia. He organised a group of Australian environmental experts to verify, update and weigh the criteria essential for policy evaluation. The survey revealed that the top five criteria for policy evaluation are:

- Environmental effectiveness
- Transparency
- Minimizing rent-seeking
- Correcting price signal
- Flexibility

Weaver (2007) showed that environmental policies could be successfully only when the public is concerned about the environment. Positive environmental policy has a correlation to public opinion related to energy subsidies, funding for environmental projects and environmental governance.

In international, cross-border pollution, environmental degradation extends beyond the countries from which the pollution originates. Zhou (1999) introduced a political model which treated environmental problems resulting from trade as international public goods and analysed the optimal provision of public goods within the framework of game theory, which is the study of strategic decision making or of the mathematical models of conflict and cooperation between intelligent rational decision-makers. Zhou (1999) drew upon Coase's (1960) theory that, once property rights are established, the actions of companies which have harmful effects on others can be resolved through market transactions. Based on Coase's theory, Zhou (1999) argued that a global system of carbon credits, taxes or emissions trading was not feasible. Cross-boundary pollution problems caused by trade were seen an international public problem in the world economy. There was need to seek cooperative solutions among countries. Zhou (1999) assumed that, if the tropical forests in Brazil, Indonesia and Malaysia are important for the global environment, any deforestation in these areas would contribute greatly to climate change. There will be a consensus in the world

community an agreement reached to preserve these forests is an international public good. Under the concept of one-world, no 'free-rider' should be allowed; therefore, every country in the United Nations must contribute to preserve the rainforests.

Graci (2008) studied environmental commitment in the tourist accommodation industry in Sanya in the Hainan province of China and identified motivating, organisational and impeding factors in the tourist trade. Her study focused on four main research objectives:

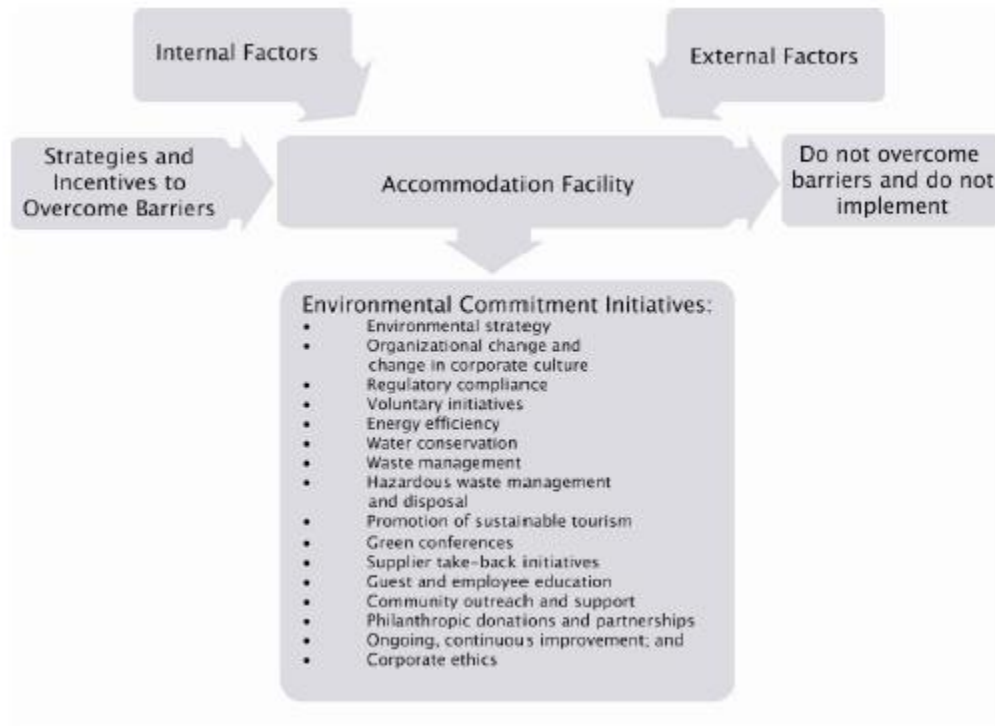
1. To review the business, tourism and environmental management literature to identify and consolidate the motivating, organizational and impeding factors that affect the level of environmental commitment in the tourist accommodation industry;
2. To conduct an inventory of the tourist accommodation industry in Sanya, China. The inventory is three-fold and consists of collecting data on the organizational factors, stakeholders and level of environmental commitment. The inventory will identify organizational factors such as ownership, age, size, management structure, clientele, salience and level of environmental commitment in the Sanya accommodation sector;
3. To analyse how various motivating, organizational and impeding factors influence environmental commitment in the tourist accommodation industry; and

4. To utilize the data to identify strategies to increase the level of environmental commitment in the tourist accommodation industry.
(Graci, 2008, p. 8)

Graci (2008) used a mixed method approach of exploratory, descriptive, action-oriented and prescriptive research methods. The exploratory form ‘explored the factors that influence the level of environmental commitment’ in the tourist accommodation industry (Graci, 2008, p. 8). The descriptive form ‘described the tourist accommodation industry in Sanya, China and the various factors that influence environmental commitment in the industry’ (Graci, 2008, p. 8). The research was ‘action-oriented, as it engaged stakeholders through site visits, stakeholder consultation sessions and workshops to discuss partnership development’ (Graci, 2008, p. 8). Prescriptive research explored the applications learned that ‘increase the level of environmental commitment in the tourist accommodation industry’ (Graci, 2008, p. 8). Graci (2008) combined ‘primary and secondary data and both qualitative and quantitative research techniques, such as a literature review, questionnaires, interviews, stakeholder consultation meetings and observation’ in the research (p. 8).

Graci’s (2008) conceptual framework is displayed in Figure 2.2.

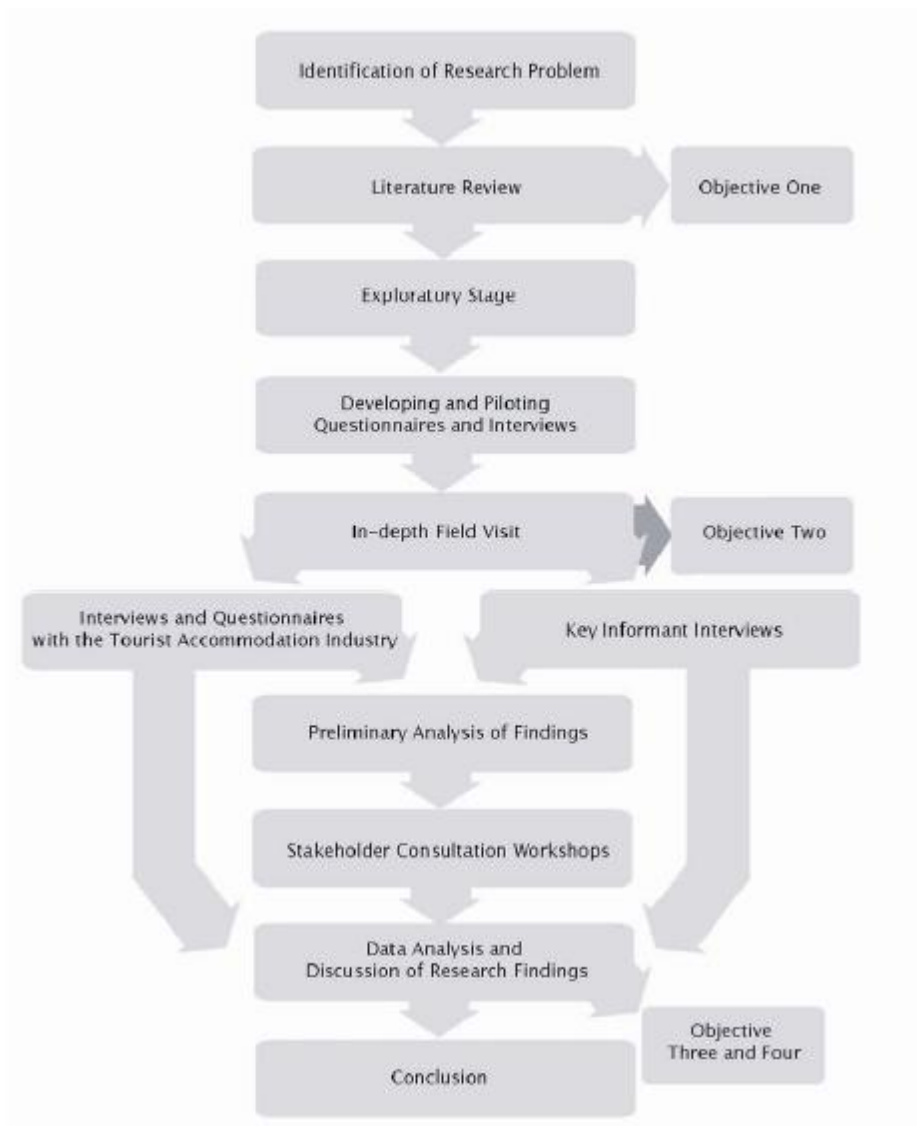
Figure 2-2 Graci (2008) 's framework (p. 46)



According to Graci (2008), internal and external motivating, impeding and organisational factors have varying levels of influence on the accommodation facility managers' decisions whether to implement environmental commitment initiatives. The motivational factors could result in an increase in the commitment level, while the impeding factors could hinder the implementation of such initiatives.

The logic underlying Graci's (2008) research process is presented in Figure 2.3.

Figure 2-3 Graci (2008) 's Research Process (p. 67)



Graci's (2008) third objective thesis is particularly relevant to this study. Graci (2008) aimed to determine how organisational factors influenced the level of environmental commitment in the Sanya accommodation industry. Using a stepwise multiple regression analysis, the relationships between the independent organisational variables and the dependent variable were examined to create a proxy for the level of environmental commitment in the accommodation facility. Graci (2008) found that organisational factors such as star rating and international clientele positively influence an organisation's level of environmental commitment.

With regards to the third objective, this plan yielded the following results: economic considerations, social responsibility and competitive advantage. The corporate decision makers and clientele motivated environmental commitment initiatives in Sanya. The most significant impeding factors were inadequate resources and an incompatible corporate culture and employees. In addition, economic considerations, ownership and management structure, the general manager and levels of environmental awareness, corruption and bureaucracy had great influence on the level of environmental commitment amongst all facilities in the tourism accommodation industry in Sanya, China.

Based on Graci's (2008) work, this researcher adapted the model's industry perspective to assess the Malaysian populace's commitment to environmental taxation initiatives.

2.4 Tax Policies

Vourc'h (2001) considered ways, including environmental taxation, to improve sustainability in Canada. In Canada resource-based sectors benefited from preferential tax treatment from the federal and provincial governments, which encouraged the

development of resource extraction activities that lowered prices. Tax incentives were especially important in non-renewable resource sectors, such as oil and gas, which face particularly low effective tax rates on marginal investment. For example, tax incentives to encourage investment in the forestry sector were lower than for non-renewable resource sectors, close to those granted to manufacturing when both large and small firms were considered. The fishing sector benefitted from the same tax treatment as non-renewable sectors. As in Malaysia, Canadian incentives for investment were provided through the corporate taxation system, the capital gains tax and royalties.

Exploration and other specific risks in the oil and gas industry could be deducted from taxable income. Flow-through share provisions provided a guarantee that the investor would profit from the deductibility of losses. The same scenario is seen in Malaysia. Vourc'h (2001) argued that a reform of environmental policies including taxation was needed in Canada. Malaysian tax law presents the same need for a review.

Vourc'h (2001) suggested that Canada adopt the following environmental policy reforms, including tax reforms:

1. Eliminate the preferential tax treatment of conventional resource sectors, such as oil and gas and minerals and metals, in order to meet Canada's commitment to the Kyoto Protocol
2. Impose economic pricing of water on the users of water rather letting the overall population of taxpayers shoulder the cost of water services
3. Consistently apply user charges of fisheries to allow for efficiency gains in the provision of services and to reduce the incentives for overfishing; auction or systematically charge transferable quotas on fishing as a basis for assessing taxes

4. Develop a mechanism for decision-making on the classification and evaluation of toxic substances
5. Introduce economic instruments to combat environmental degradation such as charges on toxic emissions, effluence or waste; water discharge permit trading; a tax on pesticides; and advance disposal fees for products containing toxic substances
6. In Ontario, Canada, set up a tradable scheme for nitrogen dioxide and sulphur dioxide emissions in the electricity sector that is consistent with the framework of the Canada-Wide Acid Rain Strategy and the Canada-US agreement on ground-level ozone
7. Implement an economic instrument with a large emissions base to reduce the overall costs of emissions abatement. While waiting for a cap-and-trade scheme covering fuel-based emissions to be introduced, a tax increase on fuel should be introduced to reduce emissions from the transport sector.

Metcalf (1999) studied the distributional impact of green tax reforms and consumption tax reforms using both annual income and lifetime income in the United States. He found that a modest tax reform in which environmental taxes equal 10 per cent of federal receipts has a negligible impact on the income distribution when the funds are rebated to taxpayers through reductions in the payroll tax and personal income tax. If this plan were adopted in Malaysia, it would make changes to environmental tax laws that would have a negligible impact on taxpayers if monthly contributions from payroll taxes were reduced and rebates and deductions from the personal income tax were increased.

Taxation is a public policy tool. Konisky (2006) investigated whether the authority to set environmental regulations and enforcement levels rested on the shoulders of the federal or state governments. Konisky examined how US state governments managed the relationship between economic development and environmental protection. The following hypotheses were proposed:

1. State government officials perceive that economic investment responds to the stringency (or lack thereof) of environmental regulation.
2. State environmental agencies, at times, modify their regulatory practices in response to concerns that state environmental regulation has an effect on private sector investment decisions.
3. State environmental regulatory effort will, over time, converge to the level of the state putting forth the least environmental regulatory effort.
4. State government officials are knowledgeable about the regulatory policies and practices of other states, particularly those states with which they compete for economic investment.
5. State environmental regulatory behaviour responds to the environmental regulatory behaviour of competitor states—that is, there is strategic interaction in state regulatory practices.
6. The pattern of strategic interaction in state environmental regulation will be one in which states respond to competitor states' regulatory behaviour only when this behaviour puts them at a disadvantage for attracting new and retaining economic investment.

7. States are more likely to respond to regulatory changes in competitor states, when their economies are smaller than these states, more dependent on pollution-intensive industries and contain more geographically mobile industries.

In Malaysia, taxation falls primarily under the jurisdiction of the federal government except for select taxes levied by the local and state governments. However laws concerning garbage disposal, the distribution of plastic bags, heritage protection and water laws are state matters in Malaysia and come within the purview of local government.

Konisky (2006) sought to address the first, second and third hypotheses by giving senior managers in state agencies questionnaires on the following matters:

1. The importance of environmental regulations in industry location decisions
2. How concerns about industry investment decisions influence state agency's regulatory practices
3. The degree of familiarity that state agencies have with other states' regulations and the relative importance of other states' environmental regulations to their own environmental protection efforts
4. The degree to which interstate economic competition drives decision-making

State-level enforcement data from the Environment Protection Agency's Integrated Database for Enforcement Analysis (IDEA) database were used to test the other hypotheses, using a series of strategic interaction models based on spatial econometric analysis. The estimated response functions of a state's environmental regulatory

behaviour were modelled as a function of competitor (defined, weighted and lagged in various ways) states' environmental regulatory behaviour.

Through graphical and statistical analysis, Konisky (2006) found that there is a modest pattern of convergence in state-level environmental regulatory effort is. Over time, state environmental regulatory effort blends into the level of the state putting forth the least effort. He determined that the strategic interaction in states' regulatory practices between the states is supportive of the strategic interaction hypothesis. This finding was robust across several definitions of economically competitive states and when using data on state enforcement of the federal pollution control programmes the Clean Air Act, the Clean Water Act and the Resource Conservation and Recovery Act. It was found that no US states responded to interstate economic competition by weakening their environmental regulatory practices. It could be productive to study the reactions of state and federal governments to one state introducing a given move to protect the environment. For example, was the nationwide ban on the issuance of plastic bags at selected outlets on weekends beginning 1 January 2011 a response to the bans introduced in Penang in 2009 and Selangor in 2010?

Sofocleous and Wise (2005) investigated whether management preferences for accounting, taxation and regulatory policies that affected the sustainability of the forest resources were associated with the size, sector and structure of firms in the forest industry in Cyprus. Since this study focused on environmental taxation, the taxation issues involved in this study are of interest. The two researchers wanted to learn whether managers of small forestry firms had different preferences for sustainable forestry practices than managers of large firms in Cyprus and whether the business

sector or the structure of a forestry firm in Cyprus were associated with different preferred sustainable forestry management practices.

The two researchers cited some literature concerning taxation policies and forest sustainability and noted that tax laws can act as a disincentive resulting in players exiting from the industry. According to Dumsday and Chisholm (1991), there was a link between the clearing of forests and certain tax deductions for farmers. Rezoning, environmental protection, tradable resource quotas, subsidies, bounties and special purpose grants are types of taxation tools that affect forest clearing by farmers.

Dumsday and Chisholm (1991) reviewed selected literature and conducted interviews with forestry firm managers, government legislators, accountants and forestry consultants in Cyprus. The interviews and questionnaires focused on taxation policies that could result in companies committing to the future viability of forests and their intra-generational survival and on regulation policies that could protect the sustainability of forests. It was discovered that managers of small firms suggested that, with little tax incentive, they might not want to engage in sustainable forestry management practices. If the government passed blanket tax policies affecting all firms in the forest industry regardless of size, implementation and possibly compliance problems would ensue. Managers of small firms preferred to be less regulated than their large counterparts and to be provided with appropriate government tax incentives for sustainable forestry management.

On the same issue of forest management, Leruth, Paris and Ruzicka (2000) noted that lowering the price of timber through a stumpage tax had a negative effect on forest conservation and encouraged wasteful forest management. A tax reduced the value of future harvests and the need to preserve immature stock for the future.

Environmental damage from logging activities was weakly related to the volume of timber extracted. Leruth, Paris and Ruzicka (2000) stated that tax-based approaches assume that forests are a gift of nature and that the cash flows generated by harvesting them represent pure profit. Viewing forests as a gift of nature encouraged managers to ignore the costs involved in ensuring their long-term productivity and invited inappropriate policy responses. Leruth, Paris and Ruzicka (2000) placed tropical logging in the categories of pollution and posited that it should be dealt with by a tax similar to emissions trading. The researchers argued that, as sulphur dioxide emissions from coal-powered power plants were dealt with by taxing the electricity produced, then a similar framework could be applied to taxes on logging damage.

Nyborg's (2010) research suggested that environmental taxation makes being not environmentally friendly costly and prompts individuals to adopt or maintain environmentally friendly moral values. The researcher cited Aronson et al.'s (2005) interpretation of cognitive dissonance theory: An individual who experiences a negative feeling or drive because his actions are at odds with his conscience will change behaviour. As an example, Nyborg (2010) claimed that a motorist who feels that a tax makes it costly to drive an electric car will rethink his moral values and find ways to avoid driving an electric car. However, it must be noted that Nyborg's research was limited to a small sample of goods. She did not test the impact of environmental taxes on large-scale public goods.

2.5 Payments for Environmental Services

Petheram and Campbell (2010) proposed, in addition to the traditional environmental tax, payments for environmental services (PES) as another form of payment for conservation of ecosystems. This method also serves as a means to improve

the livelihoods of people providing environmental services. The authors cited Wunder's (2007) definition of PES, which is characterised by: a voluntary transaction by the provider

- *a 'well-defined environmental service'*
- *has at least one environmental service buyer*
- *has at least one environmental service provider*
- *'conditionality'—where the environmental service buyer only pays if the provider consistently provides the defined environmental service over time*

(Wunder, S, (2007) The efficiency of payments for environmental services in tropical conservation. *Conserv. Biol.* 21, 48–58.)

Petheram and Campbell conducted research on PES in Vietnam's Cat Tien National Park. The public was encouraged to sponsor the inhabitants in Cat Tien to engage in activities that would not damage the forest. The study aimed to understand poor people's perspectives on PES. The researchers found that the sponsors of any PES programme must understand the dynamics of its contextual conditions and involve locals in the design of the PES programme.

2.6 Social Acceptance of Environmental Taxation

Chen, Bao and Zhu (2006) evaluated whether the residents of the city of Hangzhou in the People's Republic of China were committed to 'green-space conservation' in the urban areas. Hangzhou has famous heritage sites that dates to the Song Dynasty. Important historical sites include the West Lake (西湖), Confucius

Temple (孔廟) and Fenghuang Mosque (鳳凰清真寺), the oldest mosque in China. Chen, Bao and Zhu (2006) used the contingent-valuation method proposed by Mitchell and Carson (1989) in and created a hypothetical market scenario in a survey. The researchers presented participants with a hypothetical increase or decrease in the quantity or quality of environmental goods if the respondents were prepared to increase or decrease their contributions. The researchers concluded that Hangzhou residents' willingness to pay for urban green-space conservation was positively correlated with their perceptions of the benefits of having green spaces in the city. In Malaysia, the only similar form of tax in place is the Heritage Charge in Melaka, a 5 per cent tax imposed on hotel guests since 1 September 2011 to finance beautification programmes and to maintain cleanliness and conserve and promote the heritage sites.

Chen, Bao and Zhu (2006) found that those willing to pay higher taxes for green-space conservation are most likely have a higher income, own houses and are male. In Hangzhou, a cultural heritage site in China, most people surveyed viewed the conservation of urban green spaces as a highly important element of the city and were willing to pay additional taxes for conservation. Respondents' willingness to pay to protect the green spaces of Hangzhou stemmed from the desire to protect of the aesthetic nature of Hangzhou, to ensure the availability of recreational spaces, to attract birds and wildlife to the city, to increase property value, to ensure shade to reduce glare and noise, to view seasonal colour changes, to reduce air pollution and to control dust particles in the atmosphere. This study was important because it met a requirement for any study on environmental taxation: to address why taxpayers are willing to sacrifice their income to protect the environment and what motives environmental protection efforts.

Thalmann (2003) studied the acceptance of the proposed fossil energy taxation by the citizens of Switzerland. Thallman (2003) found that young Swiss citizens and the politically liberal accepted environmental taxation (or, in his terminology, green taxes) more so than other Swiss nationals. The liberal generally had a higher education, lived in cities, did not own a car and were of working age, i.e., younger than 60 years.

Thallman (2003) hypothesized that small green taxes were more effective than any broad form of environmental taxation. He expected an initiative to shift to solar power might be more acceptable than high and broad environmental taxation. He found that Swiss taxpayers were not decided on whether to prefer a small-based or a broad tax. He predicted that the Swiss would give greater support to a proposal that supported the fairest mode of redistribution of monies collected from environmental taxation. Thallman (2003), however, found that broad revenue recycling of tax monies did not make environmental taxation any more acceptable to the populace than redistribution to many different beneficiary groups in exchange for environmental efforts.

From these studies conducted in China and Switzerland, it is clear that the concept of environmental taxation is more acceptable to the highly educated and urban folk. However, the notion of a general, broad-based environmental tax might not be understandable or acceptable to the general populace. In the case of Hangzhou, a tax proposed specifically to protect green spaces was more acceptable than a general environmental tax. A tax system could be effective and acceptable if taxpayer clearly understand clearly the end product and results of the tax.

Fikret et al. (2011) explored urban Turkish households' willingness to pay for carbon emission reductions resulting from improvements in power production. The researchers observed that the young and educated were generally extremely willing to

support the project but were hindered by their belief that not all of their fellow Turks supported the initiative. They voiced concerns about the lack of credible government institutions to implement the project and believed that their contributions to the funds might be misappropriated. A lack of understanding about the motives of tax legislators has impeded a smooth implementation of green taxes in Turkey. As in this research in Malaysia, before any environmental taxes can be implemented properly, the government must enquire whether the taxpayers understand lawmakers' motives. In this research, certain survey questions addressed whether the Malaysian taxpayer understood the government's motives for environmental taxes.

The Green Building Index (GBI) incentive was introduced in the 2010 Malaysian budget. Chan (2008) studied the effectiveness of the HKSAR government's policy on green residential building development. He focused on the environmental awareness of building users and tried to identify the obstacles which hindered green building development. Building on his study on the HKSAR real estate industry, Chan (2008) juxtaposed cases from HKSAR and Singapore. Elements of this study might be useful in increasing understanding of Malaysian taxpayers' relation to the GBI and the IRBM's public rulings concerning green buildings (which were still pending at the time of writing).

Chan (2008) put forth the following hypotheses:

- The regulatory system for Hong Kong building development control was fragmented and hindered the development of green buildings.
- Users were not highly aware of what environmentally friendly buildings are.
- The HKSAR incentives policy for promotion of green buildings was not effective or efficient at the time of research.

Chan (2008) found that most Hong Kong residents had low awareness of environmental issues and inadequate knowledge of green features in residential buildings. For convenience and cost issues, residents were willing to improve the environmental quality of a building. The researcher found that both statutory and non-statutory controls in HKSAR were fragmented and outdated. At the time of the research, the building, planning and lands departments all had the authority to control the same of environmental aspects in a building, and some of their requirements were not consistent.

In contrast, Singapore adopted a holistic approach to promoting green buildings which included:

- The voluntary Greenmark system for recognition of green buildings
- Education and training for the public and practitioners
- Greenmark incentive scheme to reward makers of buildings with high green quality
- New statutory regulations

While Malaysia uses its domestic GBI as means of determining how green a building is, Greenmark is an internationally accepted rating tool. When deciding how to implement the provisions of the Finance Act 2010, Malaysia tax authorities should study how Singapore successfully implemented the Greenmark rating system. Thinking holistic should be the order of the day.

Au Yeung (2007) assessed the need for HKSAR to constantly review and revise its policies governing vehicle emissions. In such a small and densely populated city,

vehicular transport is damaging to the environment and produces harmful effects to health. Au Yeung's research objectives were to:

1. Identify the impact of pollutants produced by vehicles
2. Study the influencing factors on vehicle pollution
3. Investigate local transport and environmental policies and legislative controls for the reduction of environmental problems caused by vehicles
4. Recommend suitable measures to reduce environmental problems

The third objective is the most relevant to this discussion of environmental taxation. Au Yeung analysed the Air Pollution Control (Cap. 311), Waste Disposal (Cap. 354), Road Traffic (Cap. 354) and Noise Pollution Control Ordinances (Cap. 400), as well as subsidiary regulations.

In 1989, through the publication of the white paper 'Pollution in Hong Kong—A Time to Act', the Hong Kong SAR established policies to strategically control air pollution, including emissions from road transport. The government enacted the following policies to help control air pollution in HKSAR, the government introduced stringent diesel and vehicle emission standards, such as the Euro standard for new diesel vehicles, as early as 1994. Euro III standard requires emissions from vehicles to have 90 per cent less particulates and 40 per cent less nitrogen oxide than a pre-Euro standard vehicle manufactured before 1995. The government provided tax incentives to encourage the replacement of diesel-powered vehicles with cleaner alternatives when practicable. Starting in 2003, taxi owners received a cash incentive of HK\$40,000 to switch from diesel to light petroleum gas (LPG) vehicles. This resulted in making 99 per cent of taxis in the HKSAR supporters of LPG by 2005. In addition, the registration

tax was exempted for each diesel-powered light bus converted to a LPG vehicle. From 1 April 2007, the first registration tax for environmentally friendly private vehicles was reduced by 30 per cent to a maximum of HK\$50,000 per car. Owners of commercial goods vehicles, light buses and non-franchised buses received a one-time grant from local governments for the replacement of their vehicles. The measure also rewarded retrofitting in-use diesel vehicles with filter devices and catalytic converters, encouraged prompt, high-quality vehicle maintenance and increased enforcement against polluting vehicles.

Through tax incentives, fines, enforcement, subsidies and grants, the HKSAR government found successful ways to combat vehicle pollution. The Malaysian government should adopt similar policies that encourage vehicle owners to switch to LPG vehicles instead of using petrol- or diesel-powered vehicles. Although a major producer of LPG vehicles, Malaysia itself does not have many users of LPG vehicles. Tax instruments, such as subsidies, grants and road tax adjustments that could encourage the Malaysian public to switch from the traditional petrol- and diesel-powered vehicles to LPG vehicles are lacking. In addition, Au Yeung (2007) suggested adopting measures to encourage uptake of hybrid vehicles. For example, Malaysia's Finance Act 2009 and 2011 has given a 50 per cent reduction in custom duties to encourage the purchase of hybrid and electric vehicles.

Mewton and Cacho (2011) studied the demand characteristics of green power in Australia and policies which could increase its sales. Green power is electricity generated from renewable energy sources. However, the price of Green Power is higher than of ordinary electricity. The researchers determined that, if the Australian government purchased green power and sold it to the public, that measure was more

cost effective than giving tax incentives such as tax deductions for residential customers, exemption from the goods and services tax or even a Green Power tax rebate. A similar initiative called feed-in tariff was introduced in Malaysia in 2011. It is yet unknown whether this initiative will be successful at achieving its objective of supporting power generation from renewable sources.

2.7 Culture and the Environment

Khor (2012) studied the effect of culture on good environmental behaviour. She focused on how, in Singapore, the public is required to clean up areas after making prayer offerings. Large joss sticks more than 2 m in length and 75 mm in diameter should not be burnt within 30 metres of any buildings, and no more than six may be burnt at any one time. Any distracters will be punished. Khor (2012) founded that Singaporeans accepted such measures, especially when implemented through harsh and heavy-handed methods. The government should use education, determination and encouragement to withstand conflict with deeply rooted beliefs.

Getting the public to change customs and adopt more sustainable behaviours is difficult. Removing sharks fin soup from the table either through a ban or through punitive taxes did not stop the consumption of the delicacy. Shark fin soup holds significance in Chinese culture one of the Big Four, a set of dishes representing such Chinese values as prosperity and health which are served at traditional dinner banquets. To the Chinese, shark fin soup is an important delicacy that represents class, wealth and generosity (Shark Truth, 2012). As Khor (2012) observed, it took a great deal of education to wean the Chinese off the consumption of this delicacy.

One Asian cultural trait is *kiasuism*, described as an ‘obsessive concern with getting the most out of every transaction and a desire to get ahead of others’ (Kirby and

Ross (2007), p.108). *Kiasuism* can act as both a positive and a negative for society. *Kiasuism* is a form of competitiveness designed to achieve a desired end. If the use of this tactic becomes obsessive, a person could suffer from hyper competitiveness. Kirby and Ross (2007) found that *kiasuism* could hinder eliminating symbols of success such as shark fin soup. Similarly, O’Leary (2012) reported that sales of fur reached record highs in 2012 because of China’s appetite for luxury goods. Once taboo, fur is now considered chic and a symbol of wealth as *kiasuism* prevails.

Culture’s influence, however, is not all that bad. Culture might not just serve as a deterrent to good environmental behaviour but can catalyse good environmental behaviour. Subramuniaswami (2003) mentioned that one of the most central Hindu concepts is sacrifice and surrender through acts of worship, internal and external. Since the ability to give up something is noble, the guru stated that there is nobility and sacredness to protecting the environment. ‘To the Hindu the ground is sacred. The rivers are sacred. The sky is sacred. The sun is sacred. Man’s appetite for meat inflicts devastating harm on the Earth itself, stripping its precious forests to make way for pastures’ (Subramuniaswami (2003), p. 201). A *kiasu* person will purchase sharks’ fin as this delicacy is a means to showcasing wealth. Any measures to increase the price of delicacy, such as a tax, will surely backfire.

2.8 Motives behind the Introduction of Environmental Taxes

Fikret et al. (2011) found that the success of environmental taxes depends upon the public’s understanding of the motives of the legislators who introduce the law. Fu’s (2010) thesis on the acceptance of green building policies in HKSAR is in line with the work of Fikret et al. (2011). Fu (2010) found that a successful green building policy would require the public policy developers to have

- A clear mission and vision
- The engagement of the public in all stages of development
- The involvement of government officials, scholars, teachers, professionals, non-governmental organisations (NGO), parents, students and citizens in policy development
- Short- and long-term plans
- A good review system

Clement and Cheng (2011) studied the American public's value orientations, attitudes and preferences for the US national forests to obtain findings useful to the United States Department of Agriculture Forest Service (USFS) in the development of their forest plans. Clement and Cheng (2011) conducted a survey in Colorado and Wyoming that explored the following value definitions:

- *Aesthetic: Forests are valued because people enjoy the scenery, sights, sounds, smells, etc.*
- *Biodiversity: Forests are valued because they provide a variety of fish, wildlife, plant life, etc.*
- *Cultural: Forests are valued because they are a place for people to continue and pass down the wisdom and knowledge, traditions, and way of life of their ancestors.*
- *Economic: Forests are valued because they provide timber, fisheries, minerals, and/or tourism opportunities such as outfitting and guiding.*

- Future: *Forests are valued because they allow future generations to know and experience the forests as they are now.*
- Historic: *Forests are valued because they have places and things of natural and human history that matter to people and the nation.*
- Intrinsic: *Forests are valued in and of themselves, whether people are present or not.*
- Learning: *Forests are valued because people can learn about the environment through scientific observation or experimentation.*
- Life-sustaining: *Forests are valued because they help produce, preserve, clean and renew air, soil and water.*
- Recreation: *Forests are valued because they provide a place for outdoor recreation activities.*
- Spiritual: *Forests are valued because they are sacred, religiously or spiritually.*
- Subsistence: *Forests are valued because they provide necessary food and supplies.*
- Therapeutic: *Forests are valued because they make people feel better, physically and/or mentally.*

(Clement and Cheng (2011) 393-400)

There was a great deal of agreement among all the respondents from three forests in Colorado and Wyoming about which values have the most importance: aesthetics,

recreation, biodiversity and future. However, the respondents in the urban area of Wyoming placed greater importance on economic value than those in the more rural Wyoming forests. A weakness in the work of Clement and Cheng (2011) is that the respondents were predominantly male. The researchers questioned whether the value women placed on forests would be different than that placed by men. The researchers cited previous research by Tarrant, Cordell, and Green (2003) and by Vaske, Donnelly, Williams and Jonker (2001) that showed that women's value orientations generally are more bio centric. The female respondents wanted the government to allocate more money to protect the aesthetic, intrinsic and learning value of forests rather than to allow them to be economically exploited. Polk (2003) investigated whether women were potentially more accommodating than men to a sustainable transportation system in Sweden and found that women were more environmentally concerned and expressed more criticism of automobile ownership than men. From the work of Clement and Cheng (2011), it can be inferred that environmental tax policies can succeed only if the public values the environment more than immediate economic gains. The second lesson from this research is that a good balance among the sexes must be achieved in the make-up of participants.

Oliver et al. (2011) did some of the first research on the behaviour of South African consumers towards electricity generated from renewable energy sources (i.e., green electricity). Oliver et al. (2011) found that the willingness of households to pay a premium for green electricity is influenced by their level:

1. Belief that they are very well informed on issues concerning climate change
2. Belief that green electricity is as reliable as electricity produced by conventional means
3. Belief that human activities are major contributors to climate change
4. Concern for the future of the environment
5. Concern about climate change
6. Belief that the generation of electricity from coal contributes to climate change
7. Household income
8. Commitment to recycle what they can
9. Belief that they would still be willing to pay extra for green electricity on a voluntary basis even if everyone's ordinary electricity consumption contained a small percentage of green electricity
10. Belief that everyone should pay extra to contribute towards the generation of green electricity

2.9 Econometric Studies of Environmental Taxation

Researchers have presented various economical models to explain the phenomena of environmental taxation as a tool in combating environmental degradation. This study analyses the legal aspects and acceptance of environmental taxation rather than its economic aspects. However an understanding of the economic models is useful to identify the important variables to the study of the acceptance of environmental taxation.

The most common reason why environmental taxation is deemed as an appropriate tool in combating environmental degradation is the double dividend hypothesis which has been explored by various researchers. The double dividend hypothesis, as described by Fullerton and Metcalf (1997), posits that increased environmental taxation on polluting activities will result in the improvement in the environment. The improvement in economic efficiency from the use of environmental tax revenues will reduce other kinds of taxes such as income taxes that disturb labour supply and savings. Albrecht (2006), however, was not so optimistic about environmental taxation. Albrecht (2006) argued that the focus on the double dividend hypothesis has strongly limited study of the impact of environmental taxation. He argued that environmental taxation based on consumption ought to be differentiated according to the impact of products. Such an approach could be more effective and efficient.

Pearce et al. (1989) evaluated environmental taxation from the perspective of marginal costs. Luckin (1999) cited Pearce et al. (1989), who held that any product that produces pollution impacting a third party should have a price (P), which can be represented as

$$P=MC + MEC + MSC,$$

where P is price, MC is marginal cost, MEC is marginal external cost and MSC is marginal social costs. This equation indicates that, from an economic perspective, the real cost of products and services includes the actual cost of the product, the environmental cost to its users and the environmental cost to the public in general. Unlike in traditional cost accounting, cost is comprised of more than the product and the transfer cost but also the costs to the public. When considering the actual cost of

products, producers have ignored the costs to the public. For example, to the purchaser of a sport utility vehicle, the real cost includes the cost of the car, additional costs to the buyer such as petrol and the pollution that is produced. Due to the dominance of traditional accounting theory, users and producers typically ignore the cost of externalities in society. Luckin's (1999) theory justifies the implementation of public policies that take account of the cost of externalities. Such tools mentioned in this study include carbon taxes and tolls for vehicular traffic entering a city. Luckin (2009) believed that environmental taxes might be able to reduce the costs of regulation for the public sector because they reduce the need to monitor the abatement costs of the private sector. However, environmental taxation could legitimise the act of polluting for those who can afford to pay for it. Therefore, Luckin (1999) argues that such a tax must be implemented cautiously so that heavily taxed items do not become symbols of prestige. For example, the popularity of this delicacy has not waned even though authorities in Malaysia and many other countries have imposed punitive custom duties to curb its consumption.

Luckin (1999) warned that taxation might not be effective at encouraging a change in the public's behaviour towards the environment unless it is accompanied by a range of complementary measures that provide support and information to taxpayers. For the Malaysian public to become more eco-friendly, the Malaysian government should provide environmental protection education along with an appropriate environmental tax initiative such as charging customers 20 sen for plastic bags at the supermarket. Luckin (1999) believed that education remains important in changing the behaviour of the public towards environmentally unsafe products. However, Luckin (1999) is also of the opinion that decreasing fossil fuel consumption, CO₂ emissions

and secondary pollutants depends on the rate of carbon tax. On a positive note, Luckin indicated that studies on carbon taxes did not cause competitive losses for producers because revenue was channelled to compensate for labour costs.

The recycling of the carbon tax could offset impact and the extent of change in production cost. Jobs might not be terminated due to the loss of activity caused by environmental taxation. Tuladhar and Wilcoxon (1999) made a similar argument that taxing goods with externalities and channelling the revenue to reduce other taxes will improve public welfare. Recycling, for example, is more labour intensive than waste disposal.

Due to the political nature of subsidies in Malaysia, there are no published studies on the impact of the removal or reduction of fuel subsidies on the amount pollution emitted. If Luckin (1999) and Tuladar and Wilcoxon (1999) were right, monies saved from the termination of fuel subsidies could be directed to fund other users. A similar study on whether such recycling benefits the job market has yet to be undertaken in Malaysia.

Lu et al. (2010) performed a mathematical simulation to investigate whether a carbon tax could negatively impact the Chinese economy. The researchers found that the carbon tax is an effective policy tool because it can reduce carbon emissions with little negative impact on economic growth. A carbon tax of RMB300 per ton will decrease carbon emissions by 17.45 per cent and the gross domestic product by only 1.10 per cent.

Schob (2003) believed that environmental taxation should not be a permanent measure. Once the consumption of an environmentally unfriendly product falls, the

marginal environmental damage will decrease, and the Pigouvian tax (the environmental tax), too, should be reduced eventually.

2.10 Employment and Environmental Taxation

As found by Tuladar and Wilcoxon (1999), directing tax dollars from environmental taxes to the economy would benefit society at large. Forstater (2003) believes that taxation alone is not enough; public policy makers must create a comprehensive policy programme that includes a wide variety of policy instruments, from direct regulation to taxes, fees and subsidies, to transferable permits and quota licenses. Forstater (2003) considered taxation from the point of view of direct taxation. He did not examine the complete set of taxation which includes direct, indirect, company and enterprise taxes and incentives. An important lesson arising from this study is that evaluating acceptance of environmental taxation in Malaysia requires not looking at each kind of tax in isolation from another but at all forms of taxation as one set.

2.11 Emissions Trading

Emissions trading, or cap and trade, is an approach used to limit pollution by providing economic incentives for achieving reductions in the emissions of pollutants. Normally, emissions trading refers to the trading of greenhouse gas emission credits. Salnykov and Zelenyuk (2005) cited Pigou's (1948) seminal work which is the basis of the emissions trading concept. Pigou suggested that the cost of environmental pollution be transferred to the polluter by introducing taxation equal to the marginal external cost. In order for emission trading to work, pollution must be calculated in monetary terms. However, there is currently a need to simplify the administration of emission trading. Sachs (2008) is of the opinion that the existing tradable permit system requires

extensive monitoring and auditing, particularly to achieve equitable system of valuable permits in the face of the risk of favouritism and corruption.

Salnykov and Zelenyuk (2005) measured the internal valuation of environmental pollution by individual countries and these countries' efficiency at dealing with pollution. If countries cannot quantify the value of a clean environment, then emissions trading is meaningless. Salnykov and Zelenyuk's (2005) research highlighted questions pertaining to:

- The efficiency of individual countries and the internal valuation of environmental pollution by those countries
- The extent to which an individual country can reduce its undesirable outputs or increase beneficial outputs for the environment from its technological potential
- Shadow prices, which according to another study by Brown and Frame (2005) are estimated by reference to market prices; for example, by 'imputing the value workers place on occupational safety and health by looking at the wage premiums they demand for risky work' (p. 11) and assigning money values using contingent valuation methods such as 'asking survey respondents how much they would be prepared to pay for species preservation or to reduce their risk of mortality from a particular cause' (p. 11)
- The different estimates of efficiencies and shadow prices obtained using parametric and nonparametric approaches and the errors of the estimates

Salnykov and Zelenyuk (2005) pursued the objectives to

- Develop a theoretical model that can estimate the environmental efficiencies and shadow prices of pollutants in a country

- Create a computer programme in which estimates can be made
- Use those estimates to answer the research questions
- Make policy recommendations based on the results of the study
- Set the groundwork and propose directions for further studies in this field

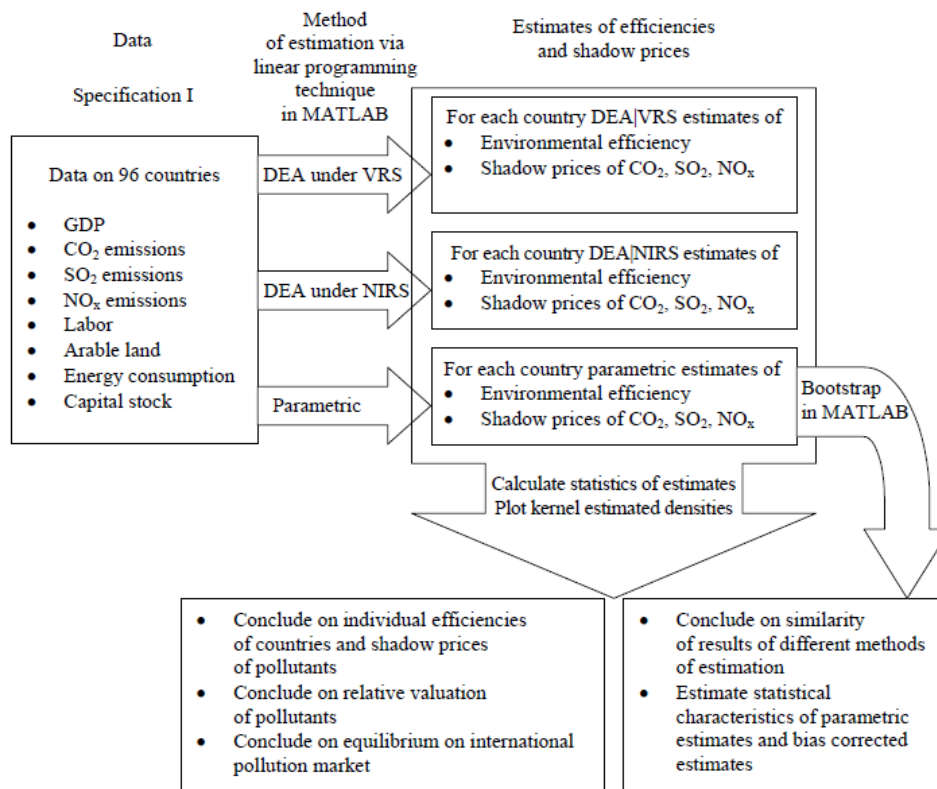
The inputs studied were labour, arable land, energy consumption and capital stock. The desirable output studied was economic output. The undesirable outputs were carbon, sulphur and nitrogen dioxide emissions. Salnykov and Zelenyuk (2005) issued predictions and findings for each of the outputs and inputs:

- The gross domestic product is a measure of the total output produced within the boundaries of the country and can be used as a reference value for the monetary rates of payments for environmental damage and for the prices of international environmental trade.
- Shadow prices need to be adjusted so that one dollar from every country is equal when gross domestic product is used to express as purchasing power parity. With this measure, researchers could determine which countries value environmental damage more as measured by the purchasing power of money.
- Carbon dioxide emissions, a main source of the climate change from fuel burning, are expected to have a low shadow price and little direct impact on humans.
- Sulphur dioxide emissions, which mostly come from fossil fuels, are expected to have a medium shadow price because they have a limited direct impact on humans through acidic precipitation.

- Nitrogen dioxide emissions are expected to have a high shadow price because they have a substantial direct impact on humans in the form of smog.
- Labour is a major input in production.
- Arable land is a production input because it is directly involved in agricultural production.
- Energy consumption was selected as a proxy for all raw materials used.
- Capital stock is a major production input.

Figure 2.4 presents Salnykov and Zelenyuk's (2005) methodology and analysis.

Figure 2-4 *Salnykov and Zelenyuk's (2005) model (p. 31)*



Salnykov and Zelenyuk (2005) drew the following conclusions. Countries both rich and poor can be fully technically efficient. Developing countries, such as the Ukraine and Russia which lie between rich and poor status, are mostly inefficient. As shadow prices are used as estimates for efficient environmental taxes, it was found that carbon dioxide is the least expensive pollutant, while nitrogen dioxide is the most expensive. Shadow prices can be used as proxy values in setting efficient environmental tax rates. To increase the social value placed of the environment, governments should raise the taxation rates on air pollutants. It can be concluded that when establishing an emission trading scheme, policy makers should price the outputs differently.

Next, the application of emissions trading of different types of outputs, as described by Salnykov and Zelenyuk (2005), warrants attention. Mariola (2009) studied the application of the concept of emissions trading to water pollution, with a focus on water quality trading. Companies that needed to discharge their waste into the water would buy nutrient credits from institutions representing users of water, such as farmers. Mariola (2009) used the inquiry method of correlation, causation and consequences to answer the following research questions:

- What is the role of ‘social embeddedness’ in explaining differential outcomes of water quality trading programmes nationwide?
- What are the major causal mechanisms by which social embeddedness operates to affect market outcomes in the water quality trading sector?
- What are the consequences for the environment and for the market itself of moving towards a more explicit market based approach to water quality trading? (Mariola, 2009, p12-13)

Mariolla (2009) cited Polanyi's 'double movement theory' as the basic theory of his research. Polanyi (2001) theorised that 'if this [production] process is to be organized through a self-regulating mechanism of barter and exchange, then man and nature must be brought into its orbit; they must be subject to supply and demand, that is, be dealt with as commodities' (p. 14).

A water quality trading scheme assumes that the idea that nature is a commodity that can be bought and sold can eventually prevent water pollution. To gain a holistic look of this research topic, Mariolla (2009) used the qualitative research. He wanted to allow his interviewees share their own experiences. However, it was a challenge to use these responses to uncover patterns and relationships, rather than merely isolated stories. To verify the information provided by the interviewees, the researcher used triangulation, or the utilization of multiple viewpoints to provide a more accurate or complete picture of a phenomenon. Triangulation most often refers to the use of multiple methods, typically a combination of quantitative and qualitative approaches.

An emissions trading programme must work with exact measurements. Exactly how pollutant credits may be packaged for exchange must be determined by the unit of trade, such as pounds per year of nitrogen or phosphorus. In order for the emissions trading scheme to be successful Mariolla cited the key variables that must be included for an emissions trading scheme to be successful, as proposed by Greenhalgh and Selman (2006):

1. Effective market design
2. Functionality of credits
3. Appropriate and accurate baselines

4. Clear assignment of liabilities in case of the failure of best management practices
5. Engagement with all groups of stakeholders
6. Appropriate administrative infrastructure
7. Rigorous and on-going monitoring

Mariolla (2007) compiled a list of all water quality trading programmes in the United States and then narrowed it down to programmes engaged in point source. The non-point source portion of their trading had to involve agricultural best management practices. Using the software NVivo, a database was constructed to track nodes, patterns, data categories and emergent themes from direct transcriptions of interviewees' responses. Mariolla (2007) (p.138-139) developed the independent variables of his study based on research done by Ragin (1987):

- Regulatory driver: Does a regulatory driver exist to drive demand for credits?
- Freedom of market action: Does the credit buyer have the legal right to enter into and exit from the trading programme at will?
- Cost efficiency: Mariolla (2007) calculated the cost efficiency of each programme by dividing the total programme expenditures to date by total nutrient credits generated to date and then dividing the quotient by the number of years in operation. He finally classified the programmes into a higher or lower category.

- Minimal government interference
- Minimization of uncertainty
- Social embeddedness

Mariolla (2007) defined a socially embedded programme as one in which the liaison between the programme administration and the farmers is directly involved in agricultural conservation. The programme must include pre-existing ties to the local farming community.

Mariolla (2007) concluded that the success of trading programmes depended upon farmers' participation and incorporating conservation in its design (which earlier literature had ignored). A successful water-quality trading programme might not be maximally efficient, offer low transaction costs or even result in a point source discharger meeting its regulated limit more cost-effectively than under a permit scheme. When trading not considered as a market-oriented activity but within the more holistic context of agricultural conservation and sustainability, then the programme will be regarded as successful.

Mariolla's (2007) study can be applied to a trading programme that Malaysia plans to introduce through the New Economic Model: the Green Palm Oil emissions trading scheme. Unless the Malaysian government legally compels palm oil producers to buy emission credits before they may emit effluents into the water, the proposed trading scheme will fail. Learning from Mariolla's (2007), the government must consult palm oil growers—big and small—in addition to effluent traders for this scheme to succeed.

Qian (2004) assessed the US emissions trading policy and acid rain programme (ARP) in the United States. His study had three objectives:

1. To summarize the rationales, merits, drawbacks and factors affecting the performance for each type of environmental policy instrument under a neo-classical economic framework
2. To analyse the impact of the ARP on sulphur dioxide distribution in the United States, assess its effectiveness and efficiency and identify related factors
3. To discuss the feasibility of implementing an emissions trading policy in other countries, especially those in earlier stage of economic development.

Qian (2004) looked at emission trading in China and used geographic analyses as a requirement for an environmental policy assessment, as prescribed by Nijkamp (1980). The criteria for assessing environmental policy were effectiveness and efficiency. The effectiveness of the ARP could be represented geographically in two ways: in the spatial-temporal change of sulphur dioxide and clusters of data from different states and different years based on the parameters of economic development and the pollution level. Compliance costs and flexibility were used to measure the efficiency of the ARP. Table 2.1 presents Qian's (2004) hypotheses.

Table 2-1. Wang Qian (2004) 's hypotheses (p. 46)

Testing Question	Testing Item	Testing Technique	Testing Hypothesis
Effectiveness	SO ₂ pollution level reduction	Change Detection for Cutting Rates	H ₀ Cutting Rate is the same before and after implementation of the ARP (*)
	Ratio of GSP to pollution level	K-mean Clustering for GSP and pollution level	Border exists before and after implementation of the ARP
Efficiency	PRB Coal Supply for Fuel-Switch	Service Area Mapping in Network Analysis	Service area increases greatly before and after implementation of the ARP
Existence of Hot Spots	Global Spatial Autocorrelation	Moran's I Index	H ₀ No global spatial autocorrelation exists (*)
	Local Spatial Autocorrelation	LISA	H ₀ No local hot spot exists (*)
Supplemental Relationships Tests	Relationship between Pollution Level and Emissions	Correlation Index	H ₀ No positive correlation exists (*)
	Relationship between Electricity Production and GSP	Correlation Index	H ₀ No positive correlation exists (*)

The data analysed by Qian (2004) included secondary data retrieved online from various US governmental departments. The sources of information are listed in Table 2.2.

Table 2-2. *Qian's (2004) Data Set (p. 49)*

Institute	Theme	Source	Spatial Attribute	Time Range	Description
US EPA	Pollution Monitoring Data	Air Quality System (AQS)	Point Data	1982 - 2002	SO ₂ density data from monitoring points
	Generation SO ₂ Emissions	C-MAP: Clean air mapping and analysis program	Point Data	1988 - 1999	SO ₂ emission volumes from all utility points
US Department of Energy (DoE)	Electricity Generation Capacity	EGRID program	Attribute	1995 - 1999	Detailed information for power plants
	Coal Price	Coal Data Publications	Attribute	2000	Classified data for coal price, location, and quality
ESRI	Railroad Network	US Data	Line	Unknown	Rail network on different levels
	State Boundary	US Data	Area	Unknown	State boundaries and names
US Statistics	Gross State Production (GSP)	Economic Data Publications	Attribute	1970 - 2002	In dollars
Resources for the Future (RFF)	Average Scrubber Compliance Cost	Report Paper (98-28-REV)	Attribute	1997	Summary of compliance costs in dollars
US Department of Transportation	Coal Freight	Freight Data Publications	Attribute	2000 & coarse historical data	In dollars

Qian (2004) determined that the ARP was effective since the reduction of pollution level under this programme was higher than before the programme was launched and the majority of states improved their development/pollution ratio. However, this programme was not deemed successful by the US Environmental Protecting Agency based on the reduction of sulphur dioxide emissions from energy plants. Qian (2004), however, judged that change detected in the sulphur dioxide pollution level showed that the ARP was effective because the reduction rate increased after the implementation of this programme.

Qian (2004) also discussed the emissions trading programme related to the ARP. He studied the emissions trading policy design features proposed by Cobloy (2000).

Table 2-3. Emissions Trading Policy Design Features as Suggested by Cobloy (2000) and Cited by Qian (2004, p. 97)

Features	Conflicts/Considerations
Nature of right to be traded	<ul style="list-style-type: none"> • Duration of right (perpetual or limited?) • Right to use, to consume, to waste • Forfeit due to non-use • Bankable for future use
Initial allocation of tradable right, to whom?	<ul style="list-style-type: none"> • How get tradable rights? • At what cost?
Initial allocation of right, how much?	<ul style="list-style-type: none"> • Historic use levels of degradation • Historic users want permits for full customary use
Trading mechanism	<ul style="list-style-type: none"> • Regulator control vs. 'free market' • Privacy of transfers vs. public info on trades/prices
Trading approval process *	<ul style="list-style-type: none"> • Transaction costs increase with more complex process • Process must account for externalities and public goods
Accounting/Monitoring	<ul style="list-style-type: none"> • Costs for verifying information • Costs of measurement devices • Reliance on voluntary reporting vs. official verification
Enforcement/Compliance Incentives [‡]	<ul style="list-style-type: none"> • Enforcement cost • Agency loyalties to resource users • Politically difficult to prevoke permits
Fees to cover administration cost [‡]	<ul style="list-style-type: none"> • Should resource users cover all costs? • Should tax payers bear some costs?
Linking use values to resource condition	<ul style="list-style-type: none"> • Users want certainty in use levels • Environmental advocates want use adjust to resource conditions
Limiting Entry	<ul style="list-style-type: none"> • New entrants want 'in' at zero cost
Equity constraints on transfers	<ul style="list-style-type: none"> • Constraints limits market gains • Communities linked to low-value users lobby for protection

When designing an emission trading system, Qian (2004) recommended that the authorities keep in mind the following:

- The selection of pollutants to be regulated should be based on their lasting time, dissemination abilities and importance to certain environmental problems.
- Pollutants can disseminate to relatively larger areas, leading to more homogeneous pollution patterns and making spatial permit trading safer.

- Pollutants being regulated ought to be the main products causing certain environmental problems.

To strengthen the premise of his research, Qian (2004) presented a case study of emissions trading in China as a comparison. Through the Environmental Protection Law in 1979, China introduced a mixed system combining the command-and-control system and an emission fee instrument. The command-and-control system imposed homogenous regulations on polluters' emissions based on the materials processing methods, toxicology requirements and abatement techniques. As China charged fees only on volumes that exceed the environmental standards, this measure proved to be ineffective at protecting the environment and instead encouraged polluters to emit more pollution. To remedy this problem, China's ninth Five-year Plan implemented an aggregate emission volume control and two environmental standards that will set annual caps and incorporate aggregate emission standards into traditional environmental standards. The Ninth Five-year Plan establishes emission volume caps and creates rules for all major pollutants and related monitoring and management systems.

The European Parliament adopted a directive in 2008 to include airlines in the European Emissions Trading Scheme since the growth of the aviation industry was expected to impact climate change. Annala (2010) used the dynamic simulation Energy–Environment–Economy Model to investigate the impact of the European Emissions Trading Scheme on air transport and found that air transport cap-and-trade policies had little on the European macro economy due to the varying price of carbon.

2.12 Best Practices in Environmental Tax Laws

An objective of this research is to address the need to investigate whether the Malaysian taxpayer can accept the best practices of environmental tax laws in other countries. Countries need to synchronise their environmental taxes and establish a coordinated approach to make a significant contribution to the fight against climate change. Malaysia, as a member of the world community, is not exempt from changing its laws. However, whether the taxpayer is ready to accept the best practices from other countries remains to be seen.

2.13 Studies of Sustainability in Malaysia

In addition to international journals pertaining to sustainability, relevant local journals were reviewed to gauge the breadth of the work performed by researchers in Malaysia. Lewis (2006) studied how Peninsular Malaysia addressed concerns over sustainability of forestry resources through the formulation, development, and implementation of the National Forestry Policy 1978 and the 1992 Revision of the National Forestry Policy.

Lewis (2006) wanted to address two research questions, firstly, what Peninsular Malaysia's forestry policies were and how they have evolved. The content and goals of forestry policies were examined in order to determine whether they address international calls for sustainable development. Next, Lewis identified the actors (e.g., federal and state governments, non-governmental organisations, local communities) who had roles in the development, formulation and implementation of forestry management and forestry policy, how these actors were in a position to shape Malaysian forestry policies and who exerted the most influence over policy matters.

Lewis (2006) drew upon the work of Bryant and Bailey (1997) who studied key themes of actors, scale, and power relations within political ecology studies. These themes, according to Bryant and Bailey (1997), highlighted the intricacies of the politicized environment in which human-environment relationships take place. Actors were identified in order to reveal their role in the intricacies of human-environment interactions. Lewis (2006) claimed that social interaction is often political. Actors might invoke a particular scale to serve their interests to the detriment of other actors and scales. Power was defined as ‘the ability of an actor, or group of actors, to control their own and others’ interactions with the environment within a political ecology’

Lewis (2006) performed a textual analysis on the 1978 National Forestry Policy and its 1992 Revision using the method prescribed by Barker and Galasinski (2001). Lewis paid specific attention to the:

1. Ideational function, i.e., the role of the speaker/writer in text production
2. Interpersonal function, i.e., the interaction between the speaker/writer and the audience
3. Textual function, i.e., the actual words of the text and how they come to form, or draw upon, discourses

Lewis (2006) studied the frequency, and the contexts of certain themes and topics that occur in the National Forestry Policy of 1978 and 1992. By paying attention to frequency of occurrence, Lewis (2006) assigned priority to themes present and evaluated how they might translate into broader themes within the two policies. Lewis (2006) continued by performing content analysis, which involves the development of a set of codes, or keywords and phrases. Some codes are created before reading the

policies, while others are added as themes emerge while reading the policies. Lewis' (2006) keywords and phrases for content analysis included biodiversity, community participation, conserve, conservation, biological conservation, education, genetic resources, Global warming, indigenous, international co-operation, natural resources research, sustainable, sustainability, sustainable development and training. While reading the text, Lewis (2006) highlighted each occurrence of the keywords and phrases, making note of the presence and/or absence of certain keywords or phrases.

Lewis (2006) next performed discourse analysis, examining the actors, power relations among them and the global development pressures and ecological concerns present in the formulation and revision of Peninsular Malaysia's forestry policies. Lewis (2006) expanded the keywords, for example, biodiversity to biological diversity, community to community participation, conservation to conserve and biological conservation and co-operation to international co-operation. Next Lewis (2006) used critical analysis, as prescribed by Phillips and Jørgenson (2002), to reveal the nature of change in discourses over time, in this case changes in the content and goals of the National Forestry Policy from 1978 to 1992. Using Fairclough's three-dimensional model for critical discourse analysis, the text, discursive practice, social practices and choice material were identified. Transcription was performed and followed by analysis of the wording, grammar and ethos of each forestry policy. The contextualization of the 1978 Policy during social practice analysis, which involved conceptually mapping the social matrix of the 1978 Policy, was the final step.

Lewis (2006) found evidence of marked shifts in forestry management practices between 1978 and 1992. By 1992, managers of forests were under pressure to make sure that their practices were sustainable and practical according to international practices,

rather than being good on paper as in the past. Lewis's (2006) suggests that any environmental taxation in Malaysia should reflect international practices and not only local needs.

2.14 Previous Research on the Acceptance of Environmental Taxation

The literature review yielded the following major observations.

- Environmental policies

Researchers looked at various environmental policies introduced by various governments and acceptance of those policies. It was noted that the highly educated and the younger generation were more willing to sacrifice their lifestyle and comply with any new environmental policy than the rest of the populace (Thalmann, 2003). However, Chen, Bao and Zhu (2006) and Clement and Cheng (2011) presented conflicting findings about the relation between gender and the acceptance of environmental policies. Women in the United States were more sensitive to the environment than men, but the opposite was observed in China.

- Social studies on environmental taxation including acceptance of the tax

The motives that encourage the public to accept or reject environmental taxation were explored in the literature. Attributes such as aesthetics, recreation, biodiversity and the future motivate the public to accept environmental protection policies (Clement and Cheng, 2011).

- Culture

Culture can hinder the success of environmental taxation. Khor (2012) suggested that education can slowly change environmentally destructively one to more positive actions. Laws and punishment might not work, but education will.

- Environmental taxation from the perspective of economics

The economic literature primarily presented mathematical simulations on the economic effect of changes to the rate (Lu et al., 2010) and the recycling of tax money to environmental protection (Tuladar & Wilcoxon, 1999; Lu et al., 2010). These researchers produced concept papers whose results had not been tested on the public.

- Contemporary issues related to environmental taxation such as employment and emission trading

Environmental taxation should not be studied in a vacuum. There is a need to analyse environmental taxation as a whole and its connection to other types of taxes such as fees, subsidies, transferable permits and quota licenses. Much literature addressed how to implement emissions trading whether dealing with gas emissions or even water use. (Wang Qian (2004) Again, almost all of the research was concept papers, and the results were not tested in the public.

- Best practices in environmental tax laws

There is a need for countries to synchronise their environmental taxation regimes and coordinated their efforts to make significant progress in the fight against climate change.

2.15 Research Gaps

Common research gaps were observed in the literature review. Many researchers suggested the need for future research to take a comprehensive view of environmental taxation rather than concentrating on selected parts. Researchers in the past either looked at selected types of respondents, parts of the law or environmental issues. Most took a microscopic view of the topic, rather than a bird's-eye view. Since tax laws are interconnected, however, an overall study of the connected laws and actors is needed. Chan (2008) credited holistic planning by Singaporean authorities as the main cause of success in the implementation of green building projects there. Chan (2008) hoped that his native HKSAR would more systematically implement green building projects. Sperling and Yeh (2010) suggested that a comprehensive carbon standard that encouraged innovation and involved the stakeholders, i.e. industry and consumers, could succeed. Any research on environmental policies should include all stakeholders; in Sperling and Yeh's (2010) work, the captains of industry. Vourc'h (2001) recommended reforming Canada's environmental policy structure. Nyborg's (2010) research was limited to a small sample of goods and did not address the impact of environmental taxes on large-scale public goods.

Some literature stressed on the importance of conducting preliminary studies before the implementation process. Zia Wadud (2011) stated that tradable permits were potentially more acceptable to the public than a carbon tax, but there have no studies on

how acceptable tradable permits are to the public. Caulfield et al. (2010) investigated how motorists might be persuaded to purchase an environmentally friendly vehicle. While the findings of this study have yet to be implemented as law, the Malaysian government fully exempted hybrid vehicles from import and excise duties in Budget 2011. The Malaysian government should conduct a study similar to that by Caulfield et al. (2010) in order to gauge the level of success of the hybrid initiative.

Studies on environmental taxation seem to focus on urban residents. Chen, Bao and Zhu (2006) studied the acceptance of environmental taxation in Hangzhou, a major city in China. Chan (2008) evaluated the effectiveness of the HKSAR government's policy on green residential building development compared to that of the city-state of Singapore. Clement and Cheng (2011), who conducted their research in Colorado and Wyoming, were the only researchers to look at both urban and rural residents.

The fields of legal and academic literature were quite independent from each other. Legal research concentrated on comparing or reporting on the laws practiced in selected countries (discussed in more detail in Chapter 4) while academic literature investigated in depth the real and what-if scenarios. Legal researchers such as Lewis (2006) narrated and summarised issues in Malaysian environmental policy. Economics researchers such as Lu et al. (2010) considered what-if scenarios and not how such scenarios could be implemented and whether they were legally sound or practical once implemented. Other economic scholars only analysed whether the taxes were acceptable (Wadud, 2011 but did not offer details about the implementation of their suggestions. Qian (2004) outlined the variables and actions to be taken in a good emissions trading scheme but did not address whether the US Congress or the American public would implement the suggestions.

Clearly, there is a need to connect the legal analysis of environmental taxation with its human aspects, i.e., the acceptance and implementation of the taxes. This research aims to merge three aspects of taxation. Firstly there must be laws that enact the public policy need (in this case, environmental taxation), secondly the laws must support public policy needs (i.e., the acceptance) and finally the concept introduced in any piece of research must be implementable. Sections of Malaysian tax law (in this case, environmental tax laws) need improving. The laws should be acceptable to the public to ensure that they can be implemented properly. How this research was carried out is outlined in Chapter 3.

2.15.1 Specific Research Gaps

The literature review identified the following research gaps.

- Need for a comprehensive study of environmental taxation

The literature tends to examine thoroughly individual issues within environmental taxation rather than the whole set of environmental taxation laws. This research addresses this need for a comprehensive study of environmental tax laws. Bellido-Arregui (2003) suggested that, to be effective, tax laws must be comprehensive. Tax designers must take into account the tax base and rate, relevant laws, regulatory authority and international competitiveness to design a good environmental tax system.

- Need to determine which forms of environmental taxation are acceptable to the Malaysian public

This study is important because the results could guide tax policy makers in forming laws that both encourage good environmental practices and are acceptable to the public, therefore catalysing good environmental behaviour.

Chen, Bao and Zhu (2006) went into the field in Hangzhou to investigate the acceptance of local government environmental taxation. Sperling and Yeh (2010) found that any energy policy that imposed by the state upon the public will fail ultimately. Petheram and Campbell (2010) recommended that all stakeholders whether rich or poor be included in the development of environmental policy.

No studies have sought to identify what environmental taxes that the public wants, except for selected local government taxes. This is the first comprehensive study of environmental tax policy in Malaysia. Instead of using a top-down approach in which tax policies are based on the objectives of the government, the bottom-up approach was adopted in this study. Inputs from the Malaysian public (comprised of experts in certain fields and the public at large) were taken into account when reviewing the current laws. Best practices from other countries were presented to the public, and their reactions recorded. The researchers used these sessions to identify desire that cannot be found in literature from both Malaysia and elsewhere. This study focused on the business taxpayer, the individual taxpayer and interest groups and their relation to on direct taxation, indirect taxation and local government tax laws.

2.16 Building the Issues in the Literature Review into Hypotheses

Webster (2010) reported that People's Republic of China plans to introduce a full-fledged environmental tax system by 2013. This researcher is curious whether the same is possible in Malaysia.

Hypothesis 1 (H1): *The Malaysian taxpayer welcomes the introduction of a full-fledged set of environmental taxes.*

Chen, Bao and Zhu (2006) outlined the positive aspects to the public of paying a tax to protect green spaces in Hangzhou. The protection of aesthetics of Hangzhou, the availability of recreation, the increases in property value, the availability of shade against glare and noise, the preservation of seasonal colour changes, the reduction of air pollution and the control of dust particles in the atmosphere were reasons why the public was willing to pay a tax. The Chinese's commitment to a full-fledged set of environmental tax laws raised the question of whether the Malaysian populace would have the same attitude. Fikret et al. (2011) found that the young and educated people in Turkey were generally highly willing to support the project but their attitudes were hampered by their belief that not all of their fellow Turks support this effort.

Hypothesis 1a (H1a): *The Malaysian taxpayer is committed to having a full environmental tax set introduced.*

Chen, Bao and Zhu (2006) were confident that paying a tax to protect the green spaces of Hangzhou would eventually benefit residents. Khor (2012) was not as optimistic and believed that culture might derail any efforts to environmental commitment. Chen, Bao and Zhu (2006) and Khor (2012) dealt with issues pertaining to Chinese culture, the former in China and the later in Malaysia. The researcher wonders whether the Malaysian taxpayer sees that the result of environmental commitment will be an improvement to the quality of life.

Hypothesis 2 (H2): The Malaysian taxpayer believes that environmental commitment will result in improved quality of life.

Although Malaysia has yet to enact a comprehensive set of environmental tax laws, bits and pieces of environmental tax laws exist in various forms, such as tax incentives and plastic bag fees. The researcher wonders whether the Malaysian taxpayer is happy with the current set of environmental taxes.

Hypothesis 3 (H3): The Malaysian taxpayer is happy with the current set of environmental taxes.

Coase's (1960) classic work suggested that restricting the methods of production for the harmful firm (in this case, pollution) would result in more production by the hurt party (the public) at the cost of a reduced supply of the harmful products. The law (in this case tax, laws) could intervene to reduce those costs. The researcher wondered whether the public would understand the need for having environmental tax laws to curb environmental degradation. Clement and Cheng (2011) cautioned that environmental tax policies can succeed only if the public places high value on the environment than immediate economic gains.

Hypothesis 4 (H4): The Malaysian taxpayers well understands the motives behind environmental taxation laws.

Caulfield et al. (2010), Webster (2010) and Mewton and Cacho (2011) discussed the development of environmental tax laws in the Ireland, China and Australia. Snape, John and De Souza (2006) described in detail British environmental tax laws. In an interconnected world, Malaysia, a signatory to the Langkawi Declaration on the Environment and the Kyoto Protocol, is not an exception to international changes in environmental tax laws. Neither are Malaysian companies that trade globally immune to the eco-friendly demands of their customers.

Hypothesis 5 (H5): Malaysian taxpayers are willing to accept changes in environmental tax laws according to international practices.

2.17 Summary

This section discussed articles published in academic journals that explored various social issues and economic models dealing with environmental taxation. Among the issues explored were:

- Environmental policies
- Social aspects of environmental taxation, including the acceptance of environmental taxation
- The economics of environmental taxation
- Contemporary issues involving environmental taxation such as employment and emission trading
- Best practices in environmental tax laws

Table 2.4 presents the 34 key pieces literature commonly cited throughout this research and the issues of concern that emerged from the literature review.

Table 2-4 *Thirty-four Key Pieces of Literature*

Researcher	Findings	Suggested Future Research
Bellido-Arregui (2003)	The use of tax and tax subsidies can shift and reduce the costs of pollution to society.	How can tax incentives be designed to encourage the reduction of emissions and the development of environmentally friendly technology?
Brown and Frame (2005)	The traditional accounting concept of cost-benefit analysis is not holistic. Social costs need to be recognised in cost calculations.	A new system of product costs can be developed to supplement the current traditional costing system.
Caulfield et al. (2010)	The Irish view hybrid vehicles as better for the environment and cheaper to run than conventional vehicles but more expensive than conventional vehicles. However, the respondents will purchase hybrid vehicle in ten years when prices have dropped.	Will a tax incentive entice motorists to switch from petrol to hybrid options?
Chen, Bao and Zhu (2006)	The reasons underlying respondents' willingness to pay to protect the green spaces of Hangzhou were: protection of the aesthetics of Hangzhou, the availability of recreation, the increases in property value, the availability of shade to protect against glare and noise, the preservation of seasonal colour changes, the reduction of air pollution and the control of dust particles in the atmosphere.	Is the public open to the concept paying a fee before entering a public space?
Clement and Chang (2010)	Environmental tax policies can succeed only if the public puts higher value on the environment than immediate economic gains.	Can the value of the environment be quantified for the public?
Coarse (1960)	Restricting the methods of production by a harmful firm would result in more production by the hurt party at the cost of a reduced supply of the harmful products. The transaction costs of negotiations between the firms would eat up any welfare-maximising reallocations. In such cases with potentially high transaction costs, the law could intervene to reduce costs.	Can the value of the environment be quantified for the public?
Fikret et al. (2011)	The young and the educated in Turkey were generally willing to support the project but this attitude was hindered their belief that not all of their fellow Turks support this effort.	What are the variables that could hinder the implementation of environmental policies?
Gallo (2011)	The calculation of fuel surcharges should take into account the consumption of gasoline and diesel consumption by the motorist.	How can tax incentives be designed to encourage the reduction of emissions and the development of environmentally friendly technology?
Graci (2008)	Organizational factors such as star ratings and international clientele positively influence the level of environmental commitment in an organization.	If Graci concentrated on issues pertaining to eco-tourism, could the issues on environmental commitment highlighted by her be extended to environmental taxation?

Researcher	Findings	Research potential
Guglyuvatty (2010)	Any environmental policy evaluation tool must include environmental effectiveness, transparency, minimisation of rent-seeking, correct price signals and flexibility.	How does the lack of transparency hinder the acceptance of any environmental policy?
Hacatoglu (2008)	Substitution of biofuels for fossil fuels can help meet a country's greenhouse gas emission reduction targets.	Is substituting biofuels for fossil fuels a sustainable measure, or are any other forms of energy more sustainable?
Khor (2012)	Deeply rooted cultural traditions are hard to change. The government should use education, determination and encouragement to withstand conflict with deeply-rooted beliefs.	How effective is education at changing any deeply rooted cultural tradition?
Labatt and White (2007)	Carbon finance including carbon taxes is a mitigating policy to reduce the impacts of climate change. This policy creates an incentive for consumers and companies to reduce their energy consumption and to use less carbon-intensive energy	Like product costs, elements of carbon finance must be included to supplement the current traditional science of finance.
Mazumder (2007)	Subsidies can be an effective motivator for users to switch to ethanol from petroleum up to 64 percent of the welfare gains from the gasoline tax if the elasticities of substitution between premium petrol and their replacements are high enough.	Again, will a subsidy alone entice motorists to switch from petrol to ethanol?
McGrath (2006)	His report details the history of the environmental laws in Queensland.	Not applicable
Metcalf (1999)	In the United States, a modest tax reform in which environmental taxes equal to 10% of federal receipts is quite effective.	Is this measure acceptable to the public in the United States or anywhere else in the world?
Mewton and Cacho (2011)	If the Australian Government purchases green power and sells it to the public, that measure is more cost effective than giving tax incentives in the form of tax deductions to residential customers, exemptions from the goods and services tax or even a green power tax rebate.	Mewton and Cacho's (2011) suggestions were merely conceptual. A study on whether this proposal is acceptable to the Australian populace should be conducted.
Nyborg (2010)	Environmental taxation makes it very costly to be not environmentally friendly. The tax makes individuals more prone to adopt or maintain environmentally friendly moral values.	Are there any variables that would discourage a taxpayer from being eco-friendly?

Researcher	Findings	Research potential
Oliver et al. (2011)	The willingness of households to pay a premium for green electricity is influenced by their level of beliefs and concerns for the environment.	Are there any variables that would discourage a taxpayer from being eco-friendly?
Pigou (1932)	Market activities that generate negative externalities should be taxed to correct any resulting inequalities. In the presence of negative externalities, the social cost of a market activity is not included in the private cost of the activity.	A new system of product costs can be developed to supplement the current traditional accounting system.
Schofield (2009)	There is a need for countries to synchronise their environmental taxes. It is important for governments work closely with each other and establish a coordinated approach to make significant contributions to the fight against climate change.	The classic issue of tax mitigation comes to mind. Will tax mitigation derail any efforts by the government to encourage eco-friendliness?
Snape and De Souza (2006)	The authors chronicled the history of British environmental law from the 1980s to the 2000s.	Not applicable
Sperling and Yeh (2010)	Any energy policy forced upon the public by the state will fail ultimately.	Studies on energy policies must include all stakeholders.
Subramuniaswami (2003)	A core Hindu concept is that sacrifice and surrender through acts of worship, internal and external, are noble. Therefore, there is nobility and sacredness to protecting the environment.	Will the nobility of man prevail, or will negative elements of culture win the environmental debate?
Sugii (2008)	An economic disincentive, or a tax, is the most powerful and effective policy at reducing the environmental impact from the use of plastic bags.	Are there any variables that would discourage a taxpayer from being eco-friendly?
Thynell et al. (2010)	The imposition of a congestion tax succeeded in reducing traffic congestion in the city, increasing accessibility to the city and creating a better environment.	Are there any variables that would discourage a taxpayer from being eco-friendly?
Vourc'h (2001)	In Canada, tax incentives are particularly important in the non-renewable resource sectors, such as oil and gas, which face especially low effective tax rates on marginal investments.	Studies on energy policies must include all stakeholders.
Weaver (2007)	Positive environmental policy has a correlation with public opinion related to energy subsidies, funding for environmental projects and environmental governance.	Studies on energy policies must include all stakeholders.
Webster (2010)	He reported that People's Republic of China is planning to introduce a full environmental tax system by 2013.	Not applicable
Wadud (2011)	Tradable permits as a form of environmental tax to control vehicle emissions are an alternative to the traditional carbon tax.	How can tax policies be designed to encourage the reduction of emissions and the development of environmentally friendly technology?

CHAPTER 3: RESEARCH METHODOLOGY

In this chapter, the hypotheses, framework, methodology and models chosen for this research are presented.

3.1 Research Objectives and Questions

As mentioned earlier, the following research objectives addressed in this study are to:

1. Assess the overall acceptance of the public to the introduction of a full set of environmental taxes in Malaysia
2. Identify the forms of environmental taxes acceptable to the Malaysian taxpayer
3. Identify the forms of environmental tax incentives acceptable to the Malaysian taxpayer
4. Explore the possibility of introducing some substantial environmental tax practices applied in the other parts of the world to Malaysia

The research questions involved are:

1. Does the Malaysian taxpayer think that changes in Malaysian tax law will be able to improve the quality of life in Malaysia?
2. Are Malaysian taxpayers committed to implementing a full set of environmental tax laws?
3. Are the motives behind existing Malaysian environmental tax law easily understood by the Malaysian public?
4. Does the Malaysian taxpayer appreciate the motives and intentions for implementing a full set of environmental tax laws?

5. Can Malaysians accept changes to bring tax laws related to environment in line with international practices?
6. What are the gaps in the current Malaysian tax laws and the current tax laws in the selected Commonwealth and non-Commonwealth countries related to environmental preservation initiatives?
7. Which types of environmental taxes are preferred by the Malaysian taxpayer?
8. Which types of environmental incentives are preferred by the Malaysian taxpayer?
9. What new tax instruments and incentives practiced in developed countries might be acceptable to the Malaysian taxpayer?

3.2 Hypotheses

The hypotheses explored in this study are as follows:

No.	Hypotheses
H1	The Malaysian taxpayer welcomes the introduction of a full set of environmental taxes.
H1a	The Malaysian taxpayer is committed to having a full set of environmental taxes introduced.
H2	The Malaysian taxpayer believes that environmental commitment will result in an improved quality of life.
H3	The Malaysian taxpayer is happy with the current set of environmental taxes.
H4	The Malaysian taxpayer well understands well the motives behind

	environmental taxation laws.
H5	The Malaysian taxpayer can accept changes to bring environmental tax laws in line with international practices.

3.3 Conceptual Framework

The environmental taxation acceptance model proposed in this research is based on the works of Chen, Bao and Zhu (2006) and Thalmann (2003). Thalmann (2003) studied the acceptance of proposed fossil energy taxation by the citizens of Switzerland, and both sets of researchers questioned the level of education and the acceptance concerning a fee for green space protection and a fossil energy tax. Both research efforts suggest that understanding of the motives for any environmental protection measure is a key variable in its acceptance.

Since the human spirit is noble, individuals would want to protect the environment in order to maintain their quality of life. No human being would want their surroundings to be so bad that life is unbearable. Environmental taxation laws are tools used to encourage environmental protection; however, these tools are redundant as long as the human will desires a good environment in which to exist (Qian & Chan, 2010). With an appropriate education and mind-set change, environmental taxation laws simply become redundant and are no longer needed to encourage protecting the environment (Bignoux, 2006; O'Dwyer, 2003).

The fourth hypothesis proposes that the public understands the motives behind environmental taxation laws. Chen, Bao and Zhu (2006) and Thalmann (2003) both agree that education and understanding are key elements to the success of environmental taxation laws. Therefore, it is theorised that, if the public appreciates that

environmental taxation laws are for the good of human life (through the improvement of the quality of life), then the public will be more likely to voluntarily comply with the laws. Members of the Malaysian public who reluctantly comply with or defy these laws probably do not understand that these laws were enacted for their good. For example, many pay exorbitant prices for cigarettes and liquor because of laws to discourage the use of such unhealthy products.

3.3.1 Environmental Taxation Acceptance Model

'Death and taxes are inevitable' goes the familiar refrain. Taxpayers in Malaysia, whether individuals or businessmen, have to comply with tax laws, including environmental tax laws. The taxpayer reacts in three ways to environmental tax laws.

1. Voluntary compliance

As mentioned by Qian and Chan (2010), human goodness will result in voluntary compliance with the environmental tax laws because they encourage good behaviour.

2. Forced compliance

The second type of taxpayer complies with the laws because they are forced to. Nyborg's (2010) research suggested that an environmental tax makes it very costly to be not environmentally friendly. The tax makes individuals more prone to adopt or maintain environmentally friendly moral values. This type of taxpayer will comply with the environmental tax laws because they would be punished for not complying. Taxpayers also feel forced into complying with the law simply because they are ignorant of the reasons why the laws were introduced. Fikret et al. (2011) found that the success of environmental taxes

depends upon the public's understanding of the motives of the legislators who introduce the law.

3. Non-compliance

The final type of taxpayers is those who do not want to comply with the laws at all. They do not want to know why the laws are introduced and simply do not care about the issue of environmental protection.

In the model, interest groups are seen to influence the behaviour of both business and individual, or layman, taxpayers. Interest groups represent special forces in society such as a group of persons working on behalf of or strongly supporting a particular cause. The individuals involved in these groups might or might not be taxpayers themselves. These groups can influence the individual or businesses' desire to comply with or to resist environmental tax laws. Interests groups' influential role in the model is represented by dotted lines in Figure 3.1.

Figure 3-1 *Environmental Taxation Acceptance Model*

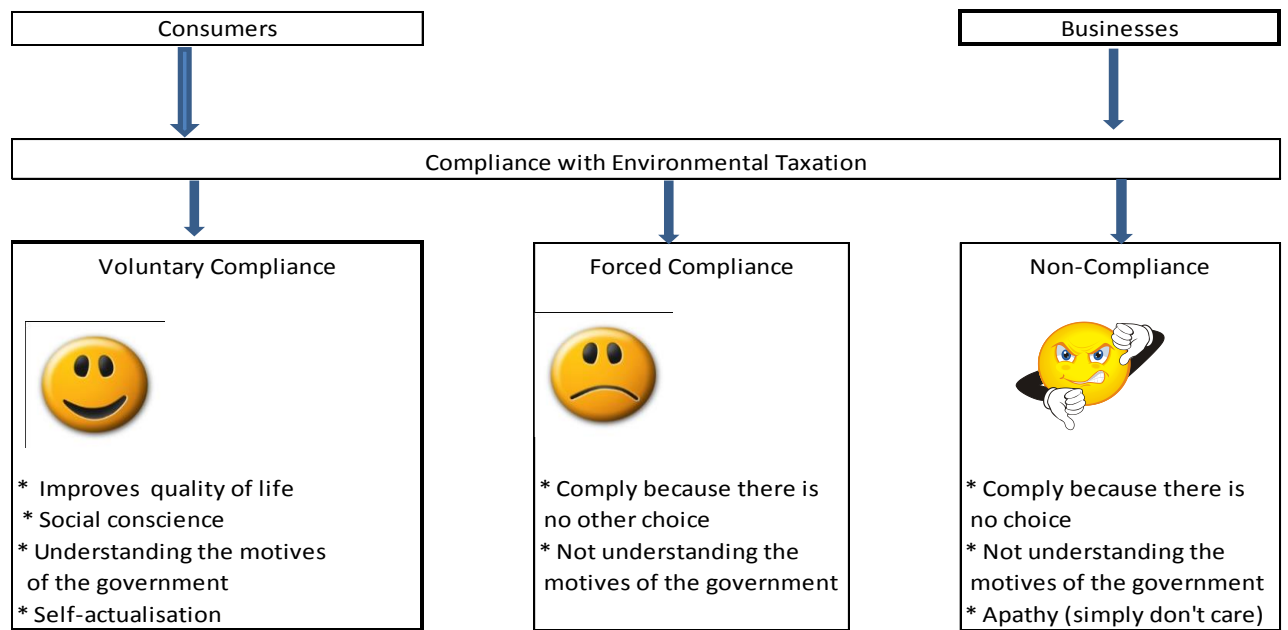


Figure 3-2 *Environmental Taxation Acceptance Model Variables*

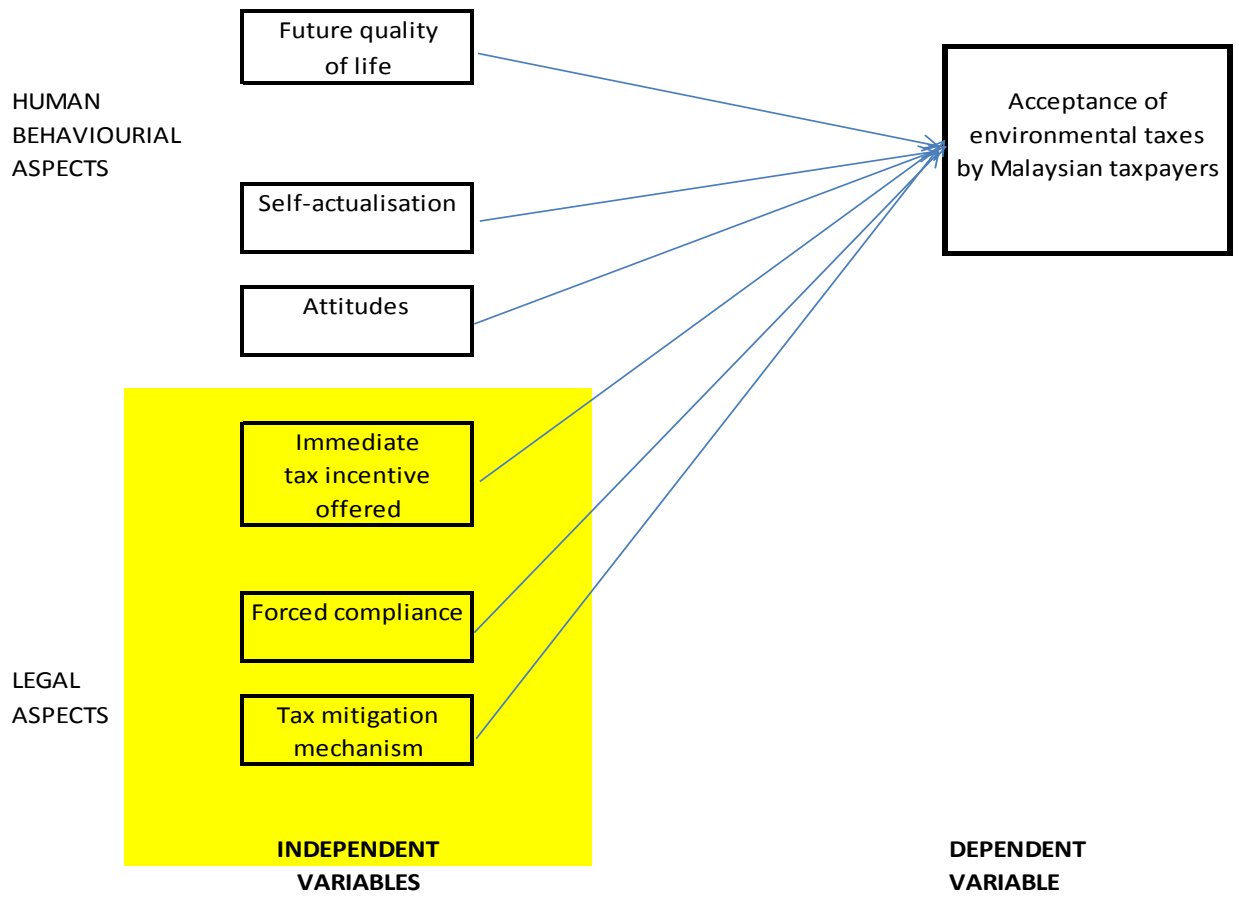


Figure 3.2 summarises the variables identified in the environmental taxation model that were researched. The following independent variables affect the dependent variable (i.e., the acceptance of environmental taxes by Malaysian taxpayers):

Behavioural aspects.

Future quality of life. Qian and Chan (2010) proposed that the love of having a better quality of life in the future will encourage environmental protection. Their study implies that artificial incentives for environmental protection such as taxes are redundant. Vourc'h, A. (2001) holds the opposite opinion and proposed that environmental taxes are needed to stimulate efforts to protect the environment. H2—the Malaysian taxpayer believes that environmental commitment results in an improved quality of life—tested this variable.

Self-actualisation. Clement and Cheng (2011) concluded that protection of the environment will succeed if the public values the environment more than immediate economic gains. Chen, Bao and Zhu (2006) found that residents of Hangzhou were committed to paying for green-space conservation in urban areas because they wanted to protect the aesthetics of Hangzhou. Unless the public is willing to assign higher priority to the environment than immediate monetary gains, then the introduction of any type of environmental taxes might not be successful. Again H2—the Malaysian taxpayer believes that environmental commitment results in an improved quality of life—tested this variable.

Attitudes. Graci (2008) found that an incompatible corporate culture and employee attitudes were the most significant hindrances to environmental commitment in the Chinese tourism accommodation industry. Good attitudes towards the

environment will ensure adequate support for any policies or attempts to protect the environment, including environmental taxes. This variable is connected to H2. Unless the public holds a positive attitude towards protection of the environment, any attempts to introduce environmental protection policies, including taxation will fail. In addition, this variable is related to forced compliance. If a certain environmental policy is forced upon the public, there might not be much support for the policy.

Tax mitigation. Gallo (2011) proposed that a punitive fuel surcharge policy will encourage motorists to use public transport or buy more fuel efficient vehicles. This theory implies that the taxpayer might accept a certain new environmental tax law simply out of the desire to save money. This variable might be in conflict with the self-actualisation variable because human goodness will result in an automatic love of the environment. This variable partly explains H3. If the public is happy with current laws, there will be no need for the public to ask for amendments. Tax mitigation has become fashionable for vehicle-related environmental taxation. There is a movement in HKSAR, Italy, Ireland and United States to use the threat of punitive tax mitigation to encourage motorists to replace their old, environmentally unsafe vehicles with hybrids or to use public transport. This variable is related to H5 because the research analysed whether international practices influence the acceptance of environmental tax laws in Malaysia.

Legal aspects.

Immediate tax incentives. Mewton and Cacho (2011) determined that the Australian government will have to take the first step to encourage the use of green power and offer the public a carrot through tax incentives or by buying green-powered

electricity and reselling it to the public. Thus, it can be concluded that any immediate tax incentive is needed to encourage the public to be environmentally conscious. This research proposes that authorities must dangle a carrot of tax incentives before the taxpayer can begin to accept environmental taxes. This variable is related to H1, H3 and H5. Tax incentives are part of environmental taxation. H1 states that the Malaysian taxpayer welcomes the introduction of a full set of environmental taxes. H3 states that the Malaysian taxpayer is happy with the current set of environmental taxes. H5 states that the Malaysian taxpayer can accept changes to bring environmental tax laws in line with international practices and this includes tax incentives.

Is the Malaysian public ready to accept the full set of environmental taxes or only the carrot, i.e., the immediate tax incentives? (H1) Is the public happy with the existing set of taxes, or are more carrots (i.e., tax incentives) needed? (H3). Throughout the literature review, countries such as the US, UK, HKSAR and China make it a common practice to dangle various tax incentives in front of the public (and simultaneously more taxes). Is the public ready for new practices from overseas or just incentives? (H5)

Forced compliance. H4 proposed that the Malaysian taxpayer well understands the motives behind environmental taxation laws. This hypothesis could imply mean that he is not coerced into accepting the laws because he understands why compliance is good for him. Oliver et al. (2011) found that the willingness of households to pay a premium for green electricity was influenced by their understanding of issues concerning climate change. If the public did not understand the need to protect the environment, any attempts to introduce any environmental protection policies (including environmental taxes) would fall flat. Any compliance to the laws stems from coercion.

Fu (2010) demonstrated that public involvement in green policy development is imperative. Any policy that is forced upon the populace is not acceptable.

3.4 Research Approach and Process

This section describes the methodological approach used in this study, including the phases of research, method and respondents. This research is exploratory, descriptive, action-oriented and prescriptive in nature. It is exploratory as it explores how foreign best practices, treaties and local needs influence environmental taxation laws in Malaysia. It is descriptive as it describes the development of environmental taxation laws in Malaysia and elsewhere and then the differences between the practices of these countries. It is action-oriented as it engages stakeholders through interviews, focus groups and surveys to obtain their feedback and input about current environmental law practices. It is prescriptive as it prescribes a set of recommended tax practices for the use of public policy decision makers.

3.4.1 Research Phases

The research was conducted in six phases.

Phase 1: Literature Review

In the first phase, the researcher looked in-depth at various studies dealing with environmental taxation and sustainability to learn how environmental taxation is practiced in various countries. Special attention was given to literature describing the process in the Commonwealth and the United States since Malaysian laws are based on the common law system. However, best practices from non-Commonwealth countries were also considered since good practices can be learned from them. The researcher looked at the literature highlighting problem and issues concerning the introduction of

laws. Literature about sustainability in general was also studied to gain a more rounded view of environmentalism. Literature includes academic journals, dissertations, government reports, textbooks and such media as the environmental films *An Inconvenient Truth*, *Who Killed the Electric Car* and the *11th Hour*.

Phase 2: Legal Review

This phase of the study entailed the review of Malaysian taxation laws, such as the Income Tax 1965, various customary laws and local laws, and compared them to the good practices and similar laws of other countries (with a special bias towards Commonwealth nations and the United States due to similarities with the common law system). Gaps between the current practices of environmental taxation in Malaysia and in Commonwealth were identified. The Commonwealth was used as a benchmark for Malaysia and many members of the Commonwealth, which share a history and practice common law. The legal review, presented in Chapter 4, sought to answer Research Question 6: *What are the gaps between the current tax laws in Malaysia and select Commonwealth and non-Commonwealth countries?*

Phase 3: Preliminary Stage

Based on the literature review and the review of the legal gaps between the various countries and Malaysia, a preliminary version of the model presented in this study was developed. The preliminary model is described in Conceptual Framework section and graphically illustrated in Figures 3.1 and 3.2.

Phase 4: Expert Panel Interviews/Focus Groups

The study moved into the exploratory and action-oriented research in which a sample of experts were interviewed to learn their opinion on the current environmental taxation system and to identify their view on what should be removed or added to current tax laws. Important variables were also identified, and the variables (i.e., the wish list) compared to the gaps identified during the literature review.

This phase of the study was inspired by the Guglyuvatty's (2010) work. As in Guglyuvatty's study, a Delphi study was conducted with a group of 30 experts from around Malaysia and elsewhere. Diversity was a key element in expert selection. The experts represented various disciplines relating to environmental taxation in Malaysia. To give the study a wider perspective, community leaders were also interviewed (this was not done in Guglyuvatty's study).

Experts and community leaders were considered qualified according to their knowledge, skill, experience, training and education; therefore, to select the experts for this research, the following decisive factors were considered:

- Knowledge of different environmental policies and the surrounding debates
- Experience and contribution within the field of environmentalism in Malaysia
- Knowledge of the local capabilities (for community leaders)

The experts represented the plantation industry, manufacturing, building industry, non-governmental organisations, tax/finance practitioners, the transportation sector, the public sector, journalists and international experts.

A set of open-ended questions gave respondents the opportunity to convey their views, thus facilitating an in-depth analysis of the criteria. The respondents were asked

to evaluate selected tax policies related to environmental protection and sourced from existing tax laws in Malaysia and other countries. The open-ended questions prompted participants to identify any issues not sufficiently addressed by existing environmental tax laws. The researcher drafted the minutes of the interview/focus group session within two days of the interviews. If requested, minutes of the sessions were sent to the experts. Details of the sessions are presented in Chapter 5.

Phase 5: Modified Model

Transcripts and minutes of the focus group discussions and interviews were analysed using NVivo. As in Mariola (2009), key points (or nodes, in NVivo terminology) were identified. Attention was directed to the key points introduced by the experts and included in the detailed questionnaires later distributed to the general public.

Focus group and interview transcripts are qualitative data, which requires the ability to question, translate, coordinate and determine the meaning of re-occurring issues and phenomena. Therefore, the qualitative data were analysed for the emergence of key themes using a coding method (Lewis (2006). Coding is the process by which categories of responses are established from open-ended questions. Responses from respondents are reduced and sorted into specific response categories by reading the interview and focus group transcripts and identifying common themes and repetitive words. The researcher then compared the themes that emerged from the coding with the original hypotheses, research focus and research question to see if they remained valid.

Phase 6: In-depth Questionnaires

A set of questionnaires which incorporated related research questions was developed and posted on KwikSurvey and Survey Monkey in English, Bahasa Malaysia and Mandarin. The questionnaires are presented in Appendix 3. Invitations were sent to potential respondents through email and social media such as Facebook. For respondents who were not computer savvy, the survey was sent by post or by hand. This measure, however, was not the norm because the researcher wanted to conduct the survey in a carbon-neutral manner. Question responses were given along a seven-item Likert Scale:

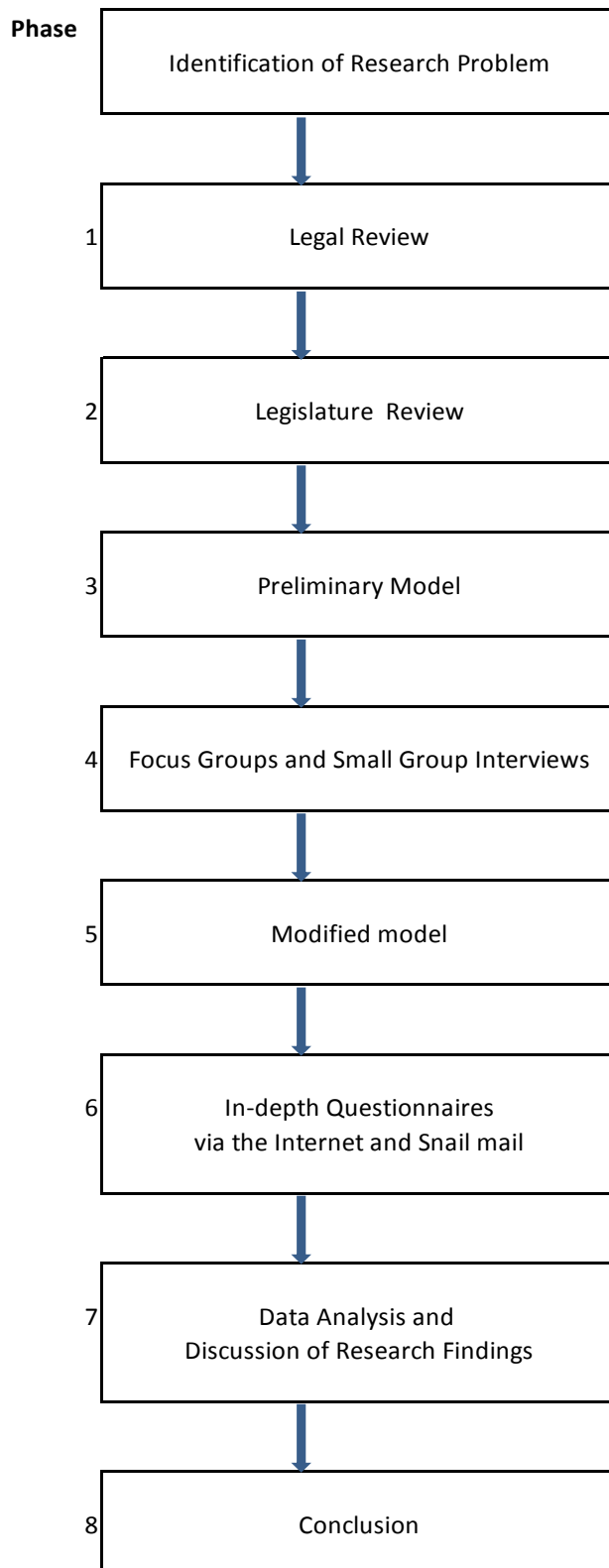
1. Strongly disagree
2. Disagree
3. Slightly disagree
4. No comment
5. Slightly agree
6. Agree
7. Strongly agree

Phase 7: Data Analysis and Discussion of Research Findings

The data collected from the survey were analysed using SPSS. Research findings are discussed in Chapter 6.

Phase 8: Conclusion

Figure 3-3 *Research Methodology*



3.4.2 Justification for the Mixed-method Approach

As shown in Figure 3.3, the research was conducted in eight phases. The mixed-method approach was employed to obtain a more comprehensive view of the topic. As described by Graci (2008), a mixed-method approach is a combination of qualitative and quantitative research methods, such as questionnaires, interviews, stakeholder consultation groups and casual observation. The mixed-method approach of this study was conducted as follows:

- The qualitative approach was employed in Phase 4 through the focus groups and interviews held to explore what the experts wanted from a Malaysian environmental tax law regime. Although the gaps between Malaysian and international environmental taxation laws were identified during the legal review in Phase 3, the experts provided information about gaps not addressed by the legal review. Most of the legal literatures came from foreign sources, but the experts provided a local perspective on the issues pertaining to environmental taxation in Malaysia. A broader expansive view of the issues than gained from the expert sessions, however, was needed, and here quantitative research serves a purpose.
- The quantitative approach was utilized in the in-depth questionnaires of stage 6. Since this study dealt with the acceptance of environmental taxes by Malaysians, the samples used should be large, and questionnaires can reach a bigger audience.

3.4.2 Respondent Selection

The participation of the following groups of respondents was crucial for the success of this research.

- Taxpayers

Taxpayers are members of the public directly affected by any changes in tax laws, including environmental tax laws. They include members of the business community and laymen—the proverbial man on the street.

- Interest groups

They are members of the public working on behalf of a particular cause to change or reinstate certain laws, including environmental laws.

The taxpayers who participated in the interview/focus group sessions and in-depth questionnaire consisted of both business owners and laymen.

3.4.3 Business Community

The business community consists of those who either are self-employed (e.g., a sole proprietor or a partner in partnership) or head companies. Environmental taxation laws affect how they do business. The respondents were taxpayers who filed B (individuals with businesses) or P (partnership) forms or were signatories of C (Companies) files. They were likely interested in legal issues such as dealing with losses, awarding incentives, imposing penalties and how environmental taxation fits into the whole equation. Issues pertaining to losses, green investment incentives and new taxes are relevant topics to them. For example, the Green Building Allowance which

was introduced in the year of assessment 2010 affects businesspeople in the building sector.

The business community is affected by indirect taxation in the form of custom and excise duties, sales and service taxes and the yet-to-be introduced goods and service tax. Any increase, decrease or exemption to these indirect taxes or any influence on them from green taxation or incentives will affect how many inputs businesses can buy or how much they can produce.

Local governments set land tax laws, such as assessments, quick rent, disposal rules and traffic zoning laws. One example of green taxation in Malaysia is the plastic bag tax in Penang and Selangor. Local government tax laws affect how businesses produce and deliver their goods and services in that area.

3.4.4 Selection of Business Community Respondents

The members of the business community that participated in this research belonged to the Federation of Malaysian Manufacturers (FMM), plantation industry, transport sector and the building and real estate sector *Fédération Internationale des Administrateurs de Biens Conseils et Agents Immobiliers* (International Real Estate Federation [FIABCHI]). Key members of these bodies were interviewed as experts, and using the directories produced by these bodies, members were invited via e-mail or by post to participate in the questionnaire.

3.4.5 Interest Group Respondents

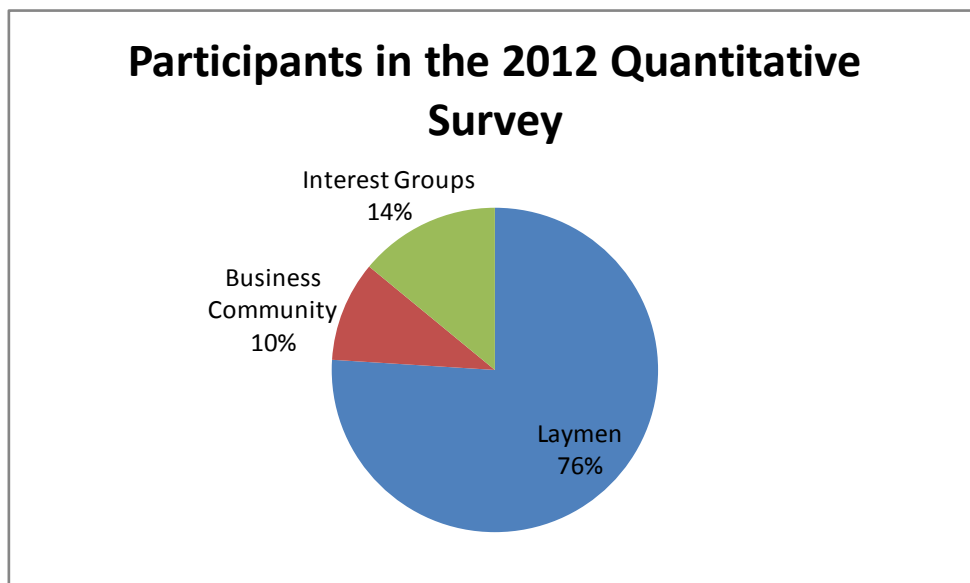
Interest groups including accounting and legal professional bodies, governmental think-tanks, environmental and social non-governmental organisations throughout Malaysia and political parties from the government and the opposition

participated in both the expert interview and focus group sessions and the poll. The key personnel from these groups' think-tanks shared their opinions on current and future issues pertaining to environmental taxation. The managers of environmental interest groups such as *Sahabat Alam Malaysia* (Friends of the Earth Malaysia) and the Consumer Association of Penang and Penang Institute were invited to participate in the questionnaire either by email or by post, and members of the Malaysian Institute of Accountants (MIA) through the group's official Facebook page and e-mail sourced from the organisation's directory.

3.4.6 Laymen Respondents

The laymen included members of the public who were not businesspeople: workers, retirees, housewives, full-time students, children and the unemployed. Members of this group were invited to participate in the poll via email, social media, post or by hand.

Figure 3-4 *Breakdown of Participants in the 2012 Quantitative Survey*



3.5 The Qualitative Study

Guglyuvatty (2010) interviewed experts for his study. In the same manner, 30 experts from various backgrounds were interviewed between 27 December 2011 and 12 April 2012 either individually or in focus groups. To achieve diversity, the selected experts came from different backgrounds, not necessarily the field of taxation, and did not have to be Malaysian citizens. They were required to have some experience with Malaysian taxes. The experts must have submitted Malaysian tax returns whether as residents or non-residents. They could also be representatives of other taxpayers such as a signatory to a company, trust or partnership, as well as being a taxpayer themselves.

3.5.1 Interviews

The researcher arranged for interviews with the experts face to face or by phone subject to their availability. If it was possible to gather a few experts together in a single session, then a focus group was held instead. Before starting the session, permission was requested to record the session or to write minutes of the session if the expert was not

comfortable with a taped session. Only four experts consented to recording the interview, while one expert did not allow note-taking during the interview. One required the researcher to provide the minutes of the interview.

Diversity characterised the experts. They were working as line managers up to the rank of chief executive officer. Council members of selected trade and professional bodies were interviewed so that the researcher could gauge the general feeling of the industry on certain environmental tax issues. The experts might not have expertise in tax law, but their work had to be involved in issues pertaining to environmental taxation and policies. The experts were from the fields of engineering, social work, public policy, science research, town planning, manufacturing and supply chain management and accounting.

Before the sessions, a set of interview guidelines (shown in Appendix 1) based on issues that emerged from the legal and literature review and on current tax and environmental issues was developed. To ensure that the questions were suited to the experts' industry, the contents of the questions were modified slightly during the interviews. A copy of the guidelines was emailed to the experts before the interview.

The interview/focus group sessions began with causal conversation that acted as an icebreaker and allowed the interviewer to find out more about the experts and their field or industry. The interviews and focus group sessions were also modified to ask additional questions pertaining to certain issues brought out by other experts and gauge the other experts' reaction to the issue. As mentioned, the interviewer either recorded or, if the expert forbade recording the session, took notes by hand. In addition to the experts' opinions, the interviewer noted the gestures of the experts during face-to-face sessions.

All interviews ended with a wish-list session in which the expert was free to air any comments or issues that he felt were important and had not been covered. This practice proved extremely useful because the experts suggested what they felt was missing from the literature review and ways to improve the study. A few experts even shared contacts and relevant reading material to aid future researchers. If needed, the experts were contacted later to seek clarification on issues raised during the sessions.

Table 3-1 *List of Participants in Interviews and Focus Group Sessions*

	Type of Organisation	Number of Experts	Occupation	Tax Residence	Citizenship
1	National newspaper	1	Section editor (housing and property)	Resident	Malaysian
2	Technology incubator	1	Chief executive officer	Resident	Malaysian
3	Oil palm industry	1	Science and environment researcher	Resident	Malaysian
4	US software giant	1	Senior technology advisor	Resident	Malaysian
5	State government think-tank	1	Researcher	Resident	Malaysian
6	Off-shore banking	1	Manager	Non Resident	Malaysian
7	Manufacturer	1	Director	Resident	Malaysian
8	Estate agent professional body	1	Secretary-general	Resident	Malaysian
9	State government department	1	Executive	Resident	Malaysian
10	Petroleum industry	1	Manager	Resident	Malaysian
11	ICT research house	1	Chief executive officer	Resident	Foreign
12	Nature non-governmental organisation	1	Head	Resident	Malaysian
13	UK-based accounting body	1	Manager	Resident	Malaysian
14	Legal professional body	1	Council member	Resident	Malaysian
15	Taxation professional body	1	Committee member	Resident	Malaysian
16	State government publication	1	Journalist	Resident	Malaysian
17	Public university	1	Professor of urban design and planning	Resident	Malaysian
18	Tax practice	1	Tax agent	Resident	Malaysian
19	Logistics	1	Director	Resident	Malaysian
20	UK-based accounting body	1	Division president	Resident	Malaysian
21	State government	1	Assistant to the chief minister	Resident	Malaysian
22	Manufacturing federation	1	President	Resident	Malaysian
23	Manufacturer	1	HR director	Resident	Malaysian
24	Federal government investment house	2	Managers	Resident	Malaysian
25	Green building professional body	2	Council members	Resident	Malaysian
26	Regulatory body for standards	2	Researchers	Resident	Malaysian
27	Recycling unit for a Christian charity	3	Managers and general manager	Resident	Malaysian
		32			

3.6 Quantitative Study

A broader survey with 48 questions was conducted between late May and July 2012. The 48 questions consisted of 45 seven-point Likert Scale items asking the

respondents how they felt about present and future developments on environmental taxation. The items used were as follows:

1. Strongly disagree
2. Disagree
3. Slightly disagree
4. No comment
5. Slightly agree
6. Agree
7. Strongly agree

Three questions required the respondents to vote on selected environmental taxes and incentives to assess their acceptance of those incentives.

The survey was divided in six distinct sections.

- Part One: Understanding and Acceptance of Current Environmental Tax Laws

This section asked respondents to evaluate statements relating to their perception of the current Malaysian environmental taxes and incentives.

- Part Two: Outcomes

This section asked respondents to evaluate statements relating to their perception of the outcome of having environmental taxes and incentives in Malaysia.

- Part Three: Taxpayer Comprehension

This section asked respondents to evaluate statements relating to their understanding of current Malaysian tax laws dealing with environmental issues.

- Part Four: Commitment and Comprehensive Laws

This section asked respondents to evaluate the effectiveness and comprehensiveness of current Malaysian tax laws dealing with the environment.

- **Part Five: Taxpayer Preference**

Respondents were asked to vote on the current environmental tax and incentives in Malaysia.

- **Part Six: Future Development**

This section asked respondents to rate their perception of future tax laws dealing with the environment in Malaysia. They were also asked to vote on which environmental tax initiatives from other countries they wished would be introduced in Malaysia.

To be carbon neutral, hardcopy surveys were avoided whenever possible and distributed only to respondents uncomfortable with online surveys such as the elderly and the disabled. Social media outlets, such as Facebook and LinkedIn, and online communication, such as email and instant messenger services, were used to promote the survey. A link was provided in social media communication leading to KwikSurvey or Survey Monkey. The survey was hosted initially on KwikSurvey (until it ceased business in June 2012) and later on Survey Monkey. The respondents were given the option to answer in English, Bahasa Malaysia or Chinese.

3.6.1 Administration of the Questionnaire

The researcher sent out 974 invitations via email, 25 LinkedIn messages, 353 via Facebook Messenger and 50 by hardcopy. The invitations were sent to 131 business owners, 5 accounting bodies, 102 state and federal government officials, 70 to environmental non-governmental organisations and the rest to individual taxpayers.

Of 572 questionnaires returned, 467 were complete and usable. The incomplete questionnaires (18 per cent of the total) were mostly from respondents who answered in Malay and Chinese. The length of the survey was the main reason why some of the surveys were incomplete. Most of the respondents stopped at the end of the first page of the survey, which had 7 of 47 questions. Cooper (2011) suggested that incomplete responses (especially from web surveys) should be removed because they distort the overall results. He also cautioned that long surveys have a tendency to put respondents off. Therefore, the incomplete surveys were excluded from the SPSS tabulations; adding 4 (no comment) as the answer to questions that respondents failed to answer would distort the overall results. It can be surmised respondents who are not proficient in English found it uncomfortable to answer a long translated survey.

Convenience sampling, despite its drawbacks, was used in this study. Castillo (2009) in her blog defended this form of sampling:

In all forms of research, it would be ideal to test the entire population, but in most cases, the population is just too large that it is impossible to include every individual. This is the reason why most researchers rely on sampling techniques like convenience sampling, the most common of all sampling techniques.

She added further that ‘this sampling technique is also useful in documenting that a particular quality of a substance or phenomenon occurs within a given sample. Such studies are also very useful for detecting relationships among different phenomena’ (Castillo, 2009) Convenient sampling suited this research because it deals with the opinions of Malaysian taxpayers, who numbered 1.65 million in a workforce of 12.8 million in 2011. As stated by Castillo (2009), it was impossible to include every

individual taxpayer in the survey. Indeed, as reported by the *Malaysian Insider* on 20 September 2011, Deputy Finance Minister Datuk Donald Lim Siang Chai stated that the government could not tax the whole workforce because technical issues make it hard to document wages earned by unskilled workers. Since the authorities themselves have difficulty determining the total population, it is natural to use convenience sampling. As pointed out by Castillo (2009) in her blog, this method keeps the researcher focused on the issues at hand (in this case, the opinions of various groups of taxpayers) rather than on the entire total population. In short, convenience sampling channels the researcher's attention towards detecting relationships among different phenomena; in this case, attention is directed towards the various types of taxpayers rather than statistical completeness. The study is focused on what the taxpayers want rather than issues concerning the methodology of pure statistics.

To ensure that the survey was available to as many Malaysian taxpayers as possible, social media was used. With permission from the following Facebook page owners, links to the survey were posted to the following pages.

a. Social groups

- Doctorate support groups
- St Xavier's Institution Alumni, Penang
- SXI Penang
- Malaysian Students' Post-graduate Association—Western Australia
- Post Grad Malaysia
- Citizen Journalist Malaysia
- I Love Pahang
- Saya Anak Melaka

- b. Business groups
 - North Malaysia Referral Business Groups
- c. Accounting professionals and students
 - Chartered Institute of Management Accountants
 - Malaysian Institute of Accountants
 - MIA Connect
 - WOU Accounting Graduates
- d. Local government Facebook pages

Penang

- George Town, Penang
- Penang Green Council
- We Support No Plastic Bags Days Every Mon.–Wed, in Penang!
- Penang Coastal Clean-up Program

Selangor

- We Support No Plastic Bag Day Every Saturday

3.7 Pilot Study

Since this study involved both qualitative and quantitative research, pilot studies from both schools of thought were conducted for the sake of completeness.

3.7.1 Initial Interviews and Focus Group Study

State government officials and staff from the Penang state government think-tank Social Economic Research Institute (today known as the Penang Institute) were interviewed between July and August 2010. The questions asked were

1. Currently the Penang government charges 20 sen for plastic bags at all hypermarkets and most shops. The monies collected in Penang will be donated to the state's poor. Do agree with the move? Why or why not?
2. Penang Chief Minister Mr Lim Guan Eng stated that Penang residents use too much water. In order to curb wastefulness, a water tariff will be imposed. Do you agree with the move? Why or why not?
3. In the United Kingdom, the local government charges tariffs based on the amount of garbage collected every month. Would you approve if the same were adopted by our local government? Why or why not?
4. In the United Kingdom, a rebate on garbage tariffs is given when residents sell recyclable rubbish to the government. Would you approve if the same were adopted by your local government? Why or why not?
5. In Australia, the government gives incentives to encourage motor oil and cooking oil recycling. Do you believe this would be sustainable in Malaysia?
6. In the United Kingdom, the government gives employers tax incentives to encourage employees to take public transport. Currently employee transport like Bus Kilang is tax deductible. Would you approve if this incentive were introduced in Malaysia?
7. In Hangzhou, residents agreed to pass a special fee to protect city parks. Would you approve if a special tree-growing fee were charged to encourage the growing of more trees in parks? Why or why not?
8. Currently retailers like Tesco UK (e.g., fair trade coffee and organic extra virgin olive oil), Starbucks (e.g., fair trade coffee) and Body Shop sell sustainable products. Would you buy sustainable Malaysian products such as green palm oil,

fair trade coffee and non-genetically modified organism (GMO) products? How would you want the government to help?

9. Currently the Malaysian government grants lower duties as an incentive to purchase hybrid cars. Is this policy successful? Would you buy these cars? Will you support incentives to shift from petrol to LPG-powered vehicles, as in Australia? Incentives for Proton, Perodua, Naza and Inokom to develop hybrid and electric vehicles?
10. The government gives pioneer status and investment tax allowances to companies that invest in biomass (such as from microorganisms, plants or animals). Do you agree with this move? Do you have plans to move to biofuels?
11. Overseas there is demand to innovate sustainable products (i.e., organic or products with recycled elements). Are you satisfied with the Malaysian government's efforts to encourage the domestic production of sustainable products? How can the government help in this effort?

Early drafts of the interview and focus group session guidelines were used in the pilot sessions and refined for the actual sessions conducted in 2012. The initial respondents were interviewed again in 2012. The results of both phases of interviews and focus groups are discussed in detail in Chapter 5.

3.7.2 Qualitative Pilot Studies

Two studies were attempted before the main study in May 2012. A short 10-question study was conducted in September 2010 to test whether a study was on the acceptance of environmental taxation was feasible. It would be pointless to invest in a full study if the subject were not understandable by the populace. The short study used descriptive statistics.

The second pilot study involved 20 alumni of SMK St Xavier's in Penang, included 45 questions and evaluated the reliability of the first questionnaire in early May 2012. This pilot study mirrored the actual study conducted a month later and served as a dry run of the actual survey questions. The main objective was to learn how to organise the logistics of the survey and from a statistical validity test. SMK St Xaviers' alumni were chosen because they represent a wide range of social leaders including professionals and members of the ruling elite. Input received from respondents via Facebook and email was critical in assessing how the study was conducted.

3.7.2.1 Initial 2010 quantitative study

In September 2010, students of Penang-based Wawasan Open University and INTI International College, Penang were invited to answer a 10-question survey hosted on Survey Monkey. The questions are asked and the responses were as follows:

1. As an introduction to the environmental taxation effort, 20 sen are charged for plastic bags at all hypermarkets and shops on Mondays, Tuesdays and Wednesdays in Penang and Saturday in Selangor. The monies collected in Penang will be donated to the state's poor. Do agree with the move?

Response: Yes, 90.30 per cent No, 9.70 per cent

2. Again as part of a sustainable development initiative, Penang Chief Minister stated that Penang citizens use too much water and, to curb this wastefulness, the water tariff will be increased. Do you agree with the move?

Response: Yes, 55.80 per cent No, 44.20 per cent

3. As an environmental tax, local governments in the United Kingdom charge tariffs based on the amount of garbage collected every month. Would you agree if the same were adopted by your local government?

Response: Yes, 50.60 per cent No, 49.40 per cent

4. As a sustainable development initiative, the United Kingdom gives a rebate on garbage tariffs when citizen sell recyclable rubbish to the government. Would you agree if the same were adopted by your local government?

Response: Yes, 90.90 per cent No, 9.10 per cent

5. As a sustainable development initiative, most countries including Singapore require citizens to divide their rubbish into paper, glass, plastic, metals and organic rubbish. Similar garbage bins are seen in certain places in the Klang Valley. Do you think this has been successful?

Response: Yes, 36.40 per cent No, 63.60 per cent

6. What kind of incentive do you think the government should give to encourage people to recycle their garbage?

Response: The respondents suggested, among other things, tax and cash rebates for recycling and more funding for education programmes.

7. In Australia, the government gives incentives to encourage motor oil and cooking oil recycling. Should this be introduced in Malaysia?

Response: Yes, 81.10 per cent No, 18.90 per cent

8. In the United Kingdom, the government gives employers tax incentives to encourage employees to take public transport. Currently employee transport like

Bus Kilang is tax deductible. Would you agree if this incentive were introduced in Malaysia?

Response: Yes 81.10 per cent No 18.90 per cent

9. In Hangzhou, citizens agreed to pass a special fee to protect city parks. Would you agree if a special fee were charged to encourage growing more trees in parks?

Response: Yes, 50.30 per cent No, 49.7 per cent

10. Currently retailers such Tesco UK (e.g., fair trade coffee and organic extra virgin olive oil), Starbucks (e.g., fair trade coffee) and Body Shop sell sustainable products. Would you buy sustainable Malaysian products, such as green palm oil products, fair trade coffee and non-genetically modified organism (GMO) products?

Response: Yes, 87.80 per cent No, 12.20 per cent

The responses to the initial study showed the willingness on the part of the public to participate in environmental tax surveys. The initial 10 question survey was expanded into a 48-question survey in 2012.

3.7.2.2 2012 Pilot study.

A more comprehensive set of questions was developed for the research proper. In early May 2012, 20 alumni of SMK St Xavier's in Penang participated in a pilot study to test the reliability of the 45-item questionnaire.

3.7.2.2.1 2012 Pilot study Validity and Verification

A reading of the Cronbach's alpha of 0.91 was noted. As found by many researchers, a Cronbach's alpha value of more than 0.70 indicates that the instrument has reliable internal consistency (Sekaran U, 2003; Page & Meyer, 2000). State, which was omitted in the 2012 pilot study, was included in the final study.

Table 3-2 *Reliability of the Pilot Study*

Cronbach's Alpha	Number of Items
.91	45

Factor analysis is a statistical method used to describe variability among observed, correlated variables, in particular a potentially lower number of unobserved variables called factors. The information gained about the interdependencies among observed variables can be used later to reduce the set of variables in a dataset. The data is grouped into the blocks that reflect the independent variables, here future quality of life, self-actualisation, attitudes, immediate tax incentives, forced compliance and tax mitigation, as along with the dependent variable of acceptance of environmental taxes by Malaysian taxpayers. Factor analysis is performed on the blocks.

In this study, the **first block** was Question 9: 'I am willing to support taxes that will stop bad environmental behaviour so that my quality of life will improve', which represents the dependent variable. The independent variables were represented, in the first block (future quality of life, by Question 8: 'My life will improve if the environment improves'.

The **second block**, self-actualisation, was represented by the questions:

- Q13 Green buildings improve my life.
- Q14 Clean solar energy is good for me.
- Q15 Sustainable energy through biomass is good for my life.
- Q19 I understand that, if I sacrifice a certain behaviour, I will benefit in the future.
I look forward to a more systematic and comprehensive set of environmental tax
- Q22 laws.
- Q28 A comprehensive set of environmental tax laws is good for me.

The **third block** consisted of the questions testing attitudes:

- Q24 I will take the LRT or public transport when petrol prices increase.
- Q25 I will not buy a conventional domestic car since there is a tax relief for hybrid cars.
I am willing to sacrifice my current lifestyle for a comprehensive set of environmental tax
- Q30 laws which are good for me.
- Q31 I am willing to purchase good with recycled items.
- Q32 I am willing to purchase food items wrapped in recycled paper.
- Q33 I think drinking reprocessed water like Singapore's NuWater is fine.
- Q34 I support motor oil and cooking oil recycling.
- Q36 I sorted my garbage for recycling.
- Q37 It is easy to find bins for recycling.
- Q38 I will stop practising any ritual in my culture that destroys the environment.
- Q39 I will not eat shark fin soup even if it is free.

The **fourth block** of questions concerned immediate tax incentives:

- Q5 Tax incentives that encourage producing energy using biomass are good.
- Q11 I will support environmental tax incentives as they will improve my life.

Q12 More people buying hybrids means less pollution, which is good for me.

The **fifth block** of questions represented forced compliance:

Q1 Charging some money for plastic bags at all hypermarkets and most shops is a good move.

Q7 I support high taxes on shark fins.

The **sixth block** of questions represented tax mitigation:

Incentives in the form lower duties for those who purchase hybrid cars below 2,200 cc are

Q2 good.

Q3 Encouraging people to produce solar power and selling back to the GRID is a good move.

Q4 Giving incentives to build green buildings is a good move.

At 95 per cent, all the variables—acceptability, self-actualisation, attitudes, forced compliance, tax mitigation and immediate tax incentives—are significant. The questionnaires were proven to be reliable and ready to be distributed to a larger set of respondents.

Table 3-3 *Factor Analysis for the 2012 Pilot Study*

Sig. (1-tailed)	Acceptable		0.00	0.00	0.00	0.00	0.00
	Self-actualisation	0.00		0.00	0.00	0.00	0.00
	Attitudes	0.00	0.00		0.00	0.00	0.00
	Forced compliance	0.00	0.00	0.00		0.00	0.00
	Tax mitigation	0.00	0.00	0.00	0.00		0.00
	Immediate tax incentives	0.00	0.00	0.00	0.00	0.00	

A survey with 48 questions was administered between late May and July 2012. Forty-five 7-item Likert scale questions asked respondents how they felt about present and future developments in environmental taxation. The details of this study are presented in Chapter 6.

3.8 Summary

This chapter outlines the hypotheses and conceptual framework of this study. Drawing from the work of Chen, Bao and Zhu (2006), Thalmann (2003), Qian and Chan (2010) and Graci's (2008) framework, the environmental taxation acceptance model was created. In addition, the research approach, process and phases; the make-up of the respondents; and details of the pilot studies were discussed in this chapter. The rationale for the mixed-method, qualitative and quantitative approach was explained; the method fulfilled the need for a detailed but broad research. Details and analysis of the qualitative and qualitative research are presented in chapters 5 and 6.

CHAPTER 4: LEGAL REVIEW

This chapter reviews tax law of various Commonwealth and non-Commonwealth countries to identify gaps in Malaysian laws, as called for by research question 6. This section addresses the first and fourth research objectives, to compare Malaysian tax laws against its Commonwealth peers to see whether the Malaysian tax code is in line with international environmental developments and to suggest any needed amendments. The gaps identified were used to guide the interview and focus group sessions with experts (discussed in Chapter 5) and were put to a vote by the general public (discussed in Chapter 6).

4.1 Historical Perspective

4.1.1 Malaysia

The main environmental law in Malaysia is the Environmental Quality Act 1974. Various regulations have supplemented the act, beginning with the Environmental Quality (Prescribed Premises) (Crude Palm-Oil) Regulations 1977 and Environmental Quality (Licensing) Regulations 1977. These regulations covered issues such as control of petrol and diesel properties; scheduled wastes; waste treatment and disposal facilities; dioxin and furan; control of emissions from motorcycles, petrol engines and diesel engines; halon and refrigerant management; prescribed premises; and sewage. Regulations concerning unleaded petrol were introduced 1980s in Malaysia in the late 1980s. The Environmental Quality (Control of Lead Concentration in Motor Gasoline) Regulations 1985 banned the import and production of petrol which contains lead or lead compounds in excess of 0.40 grams per litre.

In 1996, Malaysia hosted the Commonwealth Heads of Governmental Meeting. One of the major successes of the meeting was the Langkawi Declaration, the first from the British Commonwealth concerning the environment. The members to the declaration agreed to commit to

- Support the development of an international sustainable development funding mechanism
- Support the Intergovernmental Panel on Climate Change and recommend the Commonwealth's own report on climate change
- Promote energy efficiency
- Promote afforestation and sustainable forest management in developing countries and the conservation of virgin forest to protect biodiversity
- Restrict non-sustainable fisheries, including banning tangle nets and pelagic driftnet fishing, as part of a general trend amongst international organisations
- Prevent dumping of toxic or hazardous materials in the oceans or in developing countries
- Promote public awareness of environmental risks and issues

In 2009 Malaysia introduced a comprehensive environmental policy called the National Green Technology Policy. The New Economic Model, issued in 2010 envisions Malaysia as a leader in green technology by commercialising its biodiversity into high-value products and services and reducing its greenhouse emissions to 40 per cent of

2005 levels by 2020, as stipulated by the 15th Conference of the Parties (COP 15) at the United Nations Framework Convention on Climate Change in Copenhagen in 2009.

4.1.2 United Kingdom

British green issues go as far back as the 1950s with the introduction of the Clean Air Acts (1956 & 1968). In the 1970s, these issues began to emerge in the political field with the 1972 Limits to Growth Report and the Stockholm Conference. Up to 80 per cent of UK legislation on environmental issues comes from the European Union. The EU is a leading advocate in environmental legislation and regulation, which constitutes one of the most important and far-reaching areas of EU legislation.

Snape and De Souza (2006) chronicled the history of the British environmental law, which has been based on British legislation and EU directives. In response to the 1989 Commission vs. Denmark case, the European Packaging and Packaging Waste Directive harmonised national rules on waste management in the EU member states. In 1990, European Community law on waste management was adopted, and in response, the UK formulated various environmental laws, including the Landfill Tax and Special Waste Regulations. The UK Landfill Tax took a form similar to a value-added tax (VAT) of £7 per tonne of general waste. In 1999 the European Climate Change Programme implemented measures contained in the Kyoto Protocol to tackle climate change. These measures, implemented from 2000 to 2003 included:

- A climate change levy passed into law in the Finance Act 2000
- Introduction of tradable green certificates
- Integration of environmental policies (as stated in the Kyoto Protocol) in the EU
- Drawing 22 per cent electricity from renewable resources by 2010

- Treasury paper proposing climate change levy and
- The Waste and Emissions Trading Act 2003

British environmental policy, especially the tax law, covered local issues such as landfills, traffic congestion and employment taxation to national and international issues such as the climate change levy.

Commissioned by the British Government, economist Nicolas Stern (2009) released *The Stern Review on the Economics of Climate Change*, a report on the effect of global warming on the world economy. This report has acted as a major influence on British environmental policy ever since.

4.1.3 Australia

The Australian environmental movement started in the 19th century with bushwalking clubs whose members were interested in protecting the natural rural landscape. In the next century, environmentalism became concerned with preserving the wild from destruction by economic endeavours such as logging, mining, farming and housing. Environmentalists campaigned for the creation of national parks to protect the wilderness.

In the 1960s and 1970s, biodynamic and organic farming gained important among activists as a reaction to the widespread use of artificial chemicals in agriculture. Responding to environmental destruction along the Franklin River in Tasmania, activists formed the Greens, the first green political party in Australia, which adopted the mission statement ‘Peace and Non-violence, Grassroots Democracy, Social and Economic Justice, Ecological Sustainability’ (The Greens Official Webpage <http://greens.org.au/about>, Accessed 7 September 2013.)

Before the 1980s, Australian environmentalism dealt only with local environmental issues. Since then activists have addressed international issues such as global warming and ozone depletion, as well as local issues. McGrath (2006) described in detail the history of the environmental laws in Queensland, Australia. The Australian legal system recognises international law, Commonwealth law (those enacted and administered by the federal government), state law and common law. Article 38 of the *Australian Statute of the International Court of Justice* recognises customs, or the general practice of nations which may be legally binding and treaties and conventions which are formal agreements between nations and the Commonwealth of Australia. The case *USA of America v Canada (1941) 9 Annual Digest and Reports of Public International Law Cases 315* imposed liability on countries that pollute across the border. In 1992, Australia signed the Convention on Biological Diversity, an internationally legally binding treaty drafted in Rio de Janeiro in June 1992. Other treaties signed and ratified by Australia include the Convention on the International Trade in Endangered Species 1973, International Convention for the Regulation of Whaling 1946 and United Nations Framework Convention on Climate Change 1992.

Commonwealth law includes the Environment Protection and Biodiversity Conservation Act 1999 (Cth). The federal government known as the Commonwealth exercises control on customs and export controls on trade in endangered species, fisheries, ozone and greenhouse issues, aboriginal issues, heritage issues, energy efficiency and biodiversity issues. These same issues are also covered by state and local laws. State laws also concern land, mining and on- and offshore petroleum exploration. Common law and those set by court decisions treat issues concerning private and public nuisances, Riparian user rights, negligence and native law. Riparian users' rights are a

system from British common law for allocating water among those who possess land around the source. Native laws protect the interests and rights of indigenous Australians.

Based on these readings, British environmental policy, especially tax law appears more comprehensive and structured than Malaysian environmental policy, likely due to the strong influence of comprehensive European environmental directives. EU membership requires that Britain or any other member state respond quickly to changes to any directives. As in Britain, environmental policy in Australia has a long history in dealing with local and international issues since the 19th century. Malaysian environmental policy, including tax laws, is not as comprehensive or systematic as the set of laws adopted in Australia and the UK.

4.1.4 The People's Republic of China and the Hong Kong Special Administration Region of China (HKSAR)

In a short period beginning in 1996, the People's Republic of China and Hong Kong have created a set of comprehensive environmental laws including environmental tax laws on par with their developed counterparts such as the European Union. Webster (2010) reported that People's Republic of China was planning to introduce a full-fledged environmental tax system by 2013 to revise tax laws in place since 1996. China current environmental tax policy began in 1996 with the Polluter Pay policy focused on point-source and concentration control. A nationwide plan aimed to exercise control over the gross emissions of 12 primary pollutants such as smoke dust, sulphur dioxide, carbon monoxide, cadmium, lead and solid wastes. Measures were taken to promote the treatment of environmental pollution in key catchments and regions, to control the total amount of pollutant discharge and to implement pollutant fees and energy policies aimed at replacing coal with gas and electricity (Wang, 2010). Wang

(2006–2007), though, cautions that the implementation of environmental laws in China is lax because inadequate legal research has produced unrealistic laws, local governments prefer economic benefit over environmental protection, and public participation in the development of such laws has been low. In addition, a legislative void exists between administrative departments and the National People's Congress Standing Committee and court system.

To promote industrial upgrading and energy conservation, China imposed an export tax on energy and resource-intensive products in 2006 and 2007. This strategy was aimed at discouraging the production of exports that waste scarce energy and resources. A 5 per cent export tax was imposed on oil, coal and coke; 0 per cent on non-ferrous metals, some minerals and 27 other iron and steel products; and 15 per cent on copper, nickel, aluminium and other metallurgical products.

To encourage the purchase of energy-efficient cars, the vehicle excise tax was increased over time. In 1994, the tax rates were:

- 3 per cent for cars with 1.0 litre or smaller engines
- 5 per cent for cars with 1.0 and 4 litre engines
- 8 per cent for cars with more than 4 litre engines

In 1996, the Chinese government broadened the tax rate from the 1996 range of 3–8 per cent to 3–20 per cent and increased the number of categories of engine size from 3 to 6.

In 2006, the vehicle tax policy was as follows:

- Rates on engines between 1.0 and 1.5 litres were decreased to 3 per cent.
- Owners of vehicles with engines between 2 and 4 litres were required to pay a consumption tax of 9 to 15 per cent.

- Owners of vehicles with engines of more than 4 litres were required to pay a consumption tax of 20 per cent.

In 2008, the rate for vehicles with

- Engines of less than 1.0 litre was decreased to 1 per cent,
- Engines of 3 to 4 litres was increased to 25 per cent,
- Engines of more than 4 litres was the highest, at 40 per cent.

In 2009, China launched the ‘Golden Sun’ programme to boost the solar sector. To encourage the use of solar power, a subsidy of 50 per cent to 70 per cent for the costs of production of solar power with a capacity of 500 MW or more was given. This tax incentive was offered from 2009 to 2011.

In 2003, China reduced the value-added tax on wind power equipment from the normal rate of 17 per cent to 8.5 per cent. The duty rate for domestic investment in wind power was reduced to 6 per cent from the normal rate of 23 per cent. Equipment imported for renewable energy technologies in joint ventures was exempted from duties. Some local governments provided even more favourable policies.

HKSAR implemented a similar polluter pay policy to tackle environmental pollution and to raise public awareness of environmental protection. In 1999 the HKSAR government introduced a concessionary duty on ultra-low sulphur diesel, a one-off grant to subsidise the replacement of diesel vehicles with LPG vehicles and a reduction in the first registration tax on environmentally friendly vehicles. The incentives resulted in the reduction of vehicle pollution from respiratory suspended particulates by 15 per cent and nitrogen oxides by 24 per cent from 2007 levels.

In 2008, the HKSAR government implemented a tax incentive for capital expenditures for environmental protection plant and machinery. Capital allowances as much 100 per cent of the qualifying costs were deductible from annual profits. Interest expenditure incurred to adopt more 'green' equipment was deductible (Chan, 2009).

In 2001 the HKSAR Building Department introduced incentives to encourage the green features in building development, including wider common corridors and lift lobbies, balconies, communal podium gardens and sunshades (Fu 2010). Malaysia included similar green building incentives in Budget 2010.

In 2013 HKSAR planned to offer HK\$10 billion (US\$1.3 billion) in subsidies to replace old diesel vehicles and limit their life-span with the aim to battle smog, a major problem in the region. HKSAR planned to set a service limit for new diesel commercial vehicles at 15 years and to implement legislation requiring ships berthing at Hong Kong ports to switch to low-sulphur diesel (Khan & Yun, 2013).

4.1.5 Indonesia

Jakarta imposed a progressive tax on vehicle ownership beginning 3 January 2011 in a bid to resolve the city's severe traffic problems. Vehicle owners were taxed 1.5 per cent of the value of their first vehicle, 1.75 per cent of the second, 2.5 per cent of the third and 4 per cent of the fourth and above. This tax was intended to encourage residents to use public transport.

4.1.6 Sweden and the United Kingdom

In 2007, Stockholm introduced a congestion tax on registered vehicles driving in and out of the city centre zone on weekdays between 6:30 and 18:29. This followed a pilot test, the Stockholm Trial between January and August 2006. The congestion tax succeeded in reducing traffic congestion in the city, increasing accessibility and creating

a better environment. The Stockholm Trial recorded reduced emissions of both carbon dioxide and particles. The funds collected from the congestion tax in Stockholm will be used to finance a new 20 km by-pass road to improve the short-term efficiency of the city's traffic system (Thynell et al. 2010).

Similar to the Swedish initiative, London's traffic management body, Transport for London, introduced a £5 daily charge (called a congestion charge) for vehicles entering central London. The congestion charge contributed 9 per cent of the body's earnings in 2004–2005. Transport for London invests the revenue in improvements to the bus system (Labatt & White, 2007).

4.1.7 Republic of Ireland

The republic of Ireland introduced a new vehicle registration tax (VRT) and annual road tax system on 1 July 2008 to encourage purchases of vehicles with lower carbon dioxide emissions. The old VRT system was based on engine size, but the new VRT assessment on the amount of carbon dioxide emissions. This change marked a complete paradigm shift in the assessment of road taxes, calculating them according to emissions tax rather than engine size, as practiced in Malaysia and many other countries (Caulfield et al., 2010).

4.1.8 International Community

In January 2011, The International Federation of Accountants (IFAC) released an exposure draft of the International Standard on Assurance Engagement (ISAE) 3410: Assurance Engagements on Greenhouse Gas Statements. This document was the first produced by the accounting community concerning the procedures of auditing carbon taxes and carbon trading schemes. The IFAC and the International Auditing and Assurance Standards Board (IAASB) finalized the standard for adoption by its

members, including Malaysia in March 2012. ISAE 3410 became effective for assurance reports covering periods ending on or after September 30, 2013.

4.2 Current Malaysian Environmental Tax Law and Commentary

To understand the existing environmental taxation laws in Malaysia, the researcher reviewed all the Finance Acts and bills from 2001 to 2013 as well as various newspaper articles. Below are the various sectors that need to be addressed.

4.2.1 The Energy Sector

Incentives to promote use of renewable energy, especially biomass, by the private sector were first attempted in 8th Malaysia Plan/Five Fuel Policy which covered 2001 to 2005.

The incentives in Budget 2004 were:

- Pioneer status

An exemption of 70 per cent (100 per cent for value-added products and promoted areas) of increased statutory income for five years was granted to any manufacturing company which reinvests in machinery utilising oil palm biomass.

- Investment Tax Allowance (ITA)

Tax exemptions of up to 70 per cent of statutory income for each year of assessment computed at 60 per cent of additional qualifying capital expenditures incurred within five years were granted for any manufacturing company which reinvests in machinery utilising oil palm biomass.

For energy-related measures, companies could also qualify for higher exemptions or allowances if their activities took place in promoted areas. The Four Fuel Diversification policy initially focused on oil, gas, coal and hydro but in the eighth plan was expanded to include renewable energy in the renamed Five Fuel Strategy.

From 2003 to 2006, the first phase I of the Biogen Project—the Grid-Connected Power Generation and Co-Generation (Biogen) Project—aimed to reduce the growth rate of greenhouse gas emissions from fossil fuel by promoting biomass-based power generation and combined heat-and-power generation system using waste from palm oil mills. The second phase of the Biogen Project was implemented between 2007 and 2009.

Snape and De Souza's (2006) reported that the UK government undertook various measures to encourage the usage of biofuel. In 2003, the price of biofuels was set 20 p lower than the price of low sulphur fuel. As a non-taxation method, the Malaysian government issued the Biofuels Directive which promotes the replacing diesel and petrol with biofuels for transport purposes.

The government concentrated on the promotion of the supply side of biomass through tax incentives but has not figured out how to promote the use of biomass from the demand side, except for power generation through the two Biogen projects. In Australia, a tax incentive is given to vehicle owners who use biomass and liquefied natural gas (LNG) or LPG vehicles (Freebairn, 2009).

Since Malaysia is a major producer of palm oil, biomass fuels, LNG and LPG, incentives to encourage the production of biomass and LNG/LPG vehicles and machines should be adopted. The List of Promoted Activities and Products for Reinvestments under the Promotion of Investment Act 1986 published by Malaysian Investment Development Authority (MIDA) (as of 2 March 2012) included the utilisation of oil palm biomass to produce value-added products as a promoted activity.

The tax incentives for energy conservation (as of 5 November 2012) granted by the Malaysian government go to companies that provide energy conservation services or

conserve energy for their own consumption. To receive these tax incentives, companies must apply to MIDA before 31 December 2015. Companies that provide energy conservation services are entitled to apply for

- (a) Pioneer Status with income tax exemption of 100 per cent of the statutory income for 10 years. Unabsorbed capital allowances and accumulated losses incurred during the pioneer period can be carried forward and deducted from the post pioneer income of the company; or
- (b) ITA of 100 per cent on qualifying capital expenditures incurred within five years. The allowance can be offset against 100 per cent of the statutory income for each year of assessment. Any unutilised allowances can be carried forward until fully utilised.

Businesses must implement their projects within one year from the date of approval.

Companies which undertake energy conservation for their own consumption are eligible for an ITA of 100 per cent on qualifying capital expenditures incurred within five years. The allowance can be offset against 100 per cent of the statutory income for each year of assessment. Any unutilised allowances can be carried forward until fully utilised.

Malaysian companies generate energy using biomass, hydropower (not exceeding 10 MW) and solar power that is renewable and environmentally friendly may apply for the following incentives:

- (i) Pioneer Status with income tax exemption of 100 per cent of statutory income for 10 years. Unabsorbed capital allowances and accumulated losses incurred during the pioneer period can be carried forward and deducted from the post pioneer income of the company; or

- (ii) ITA of 100 per cent on qualifying capital expenditures incurred within five years. This allowance can be offset against 100 per cent of the statutory income for each year of assessment. Any unutilised allowances can be carried forward until fully utilised.

Companies that generate energy from renewable resources for their own consumption are eligible for an ITA of 100 per cent on qualifying capital expenditures incurred within five years. This allowance can be offset against 100 per cent of the statutory income for each year of assessment. Any unutilised allowances can be carried forward until fully utilised.

4.2.2 Green Buildings

The 2005–2010 Malaysia Building Integrated Photovoltaic Technology Application (MBIPV) project was intended to promote increased use of photovoltaic (PV) technology to capture solar energy and generate electricity for buildings. The project was expected to increase Malaysia's installed BIPV capacity by about 330 per cent (2 MWp) by 2010 and to lower the technology unit cost by approximately 20 per cent.

Under Budget 2010, owners of buildings awarded a GBI certificate were eligible for a tax exemption equal to 100 per cent of the capital expenditures incurred to obtain GBI certification. The exemption was allowed to set-off against 100 per cent of the statutory income for each year of assessment. The incentive was applicable only to new buildings and upgraded existing buildings and only for a building's first GBI certificate.

In addition, buyers of buildings with GBI certification from real property developers were eligible for stamp duty exemption on instruments of the transfer of ownership. The amount of stamp duty exemption is the additional cost incurred to

obtain the GBI certificate. The incentive is given only once to the first owner of the building.

Similar exemptions have been implemented in HKSAR. Malaysia is a pioneer in offering tax incentives for green buildings and is the only country in The Association of Southeast Asian Nations (ASEAN) to do so.

4.2.3 Transportation Sector

The Mini Budget 2009 introduced an incentive to encourage the purchase of domestic cars. A RM\$5,000 discount was given for those who traded in vehicles 10 years or older. The same measure was implemented in the United States in 2009, giving vouchers of up to US\$4,500 (RM\$13,500).

In Budget 2009, franchise holders were given 100 per cent import duty and 50 per cent excise duty exemptions on new completely Built Unit (CBU) hybrid cars. In Budget 2011, the government fully exempted hybrid and electric cars and motorcycles from import and excise duties. As of 24 October 2012, the Malaysian government had no plan to give cash rebates as an incentive to buy energy-efficient vehicles (EEV) similar to those in the United States or European countries in addition to the duty exemptions (Rahim, 2012).

The scrappage discount in the United States and Malaysia was intended to boost sales of the lagging motor industry, not to remove old, environmentally unsafe vehicles from the roads. The duty exemption for imported hybrid cars is a first step towards encouraging Malaysians to purchase hybrid vehicles. However, the government should also encourage Malaysia vehicle manufacturers to produce hybrid or electric vehicles through tax incentives such pioneer status and investment tax allowances.

4.2.4 Public Transport

Governments around the world give various incentives to promote the use of public transport. In Australia, to encourage businesses to invest in public transport, accelerated depreciation is given to taxpayers for the purchase of transport equipment. In Malaysia, instead of such tax incentives, the government has invested in government-linked transport companies such as RapidPenang, RapidKuching, RapidKuantan and RapidKL.

In Budget 2009, the Malaysian government provided a soft loan facility of RM\$3 billion through the Public Transportation Fund, to finance the acquisition of buses and rail companies. To encourage private transport providers to modernise their fleet, the government should consider granting reinvestment allowances for providers so that they could purchase newer and more fuel-efficient fleets.

4.2.5 Plastic Bags and Bottles

The prohibition on the issuance of plastic bags began at the state government level in Penang in 2009 and Selangor in 2010. In Penang retailers are not allowed to provide plastic bags to customers on Mondays, then slowly up to Thursday. By 2011, the Penang state government banned the issuance of plastic bag by all retailers. Customers who want plastic bags are charged 20 sen per bag, with the collections donated to the poor in Penang. In Selangor plastic bags are not provided on Saturdays. In 2011, the federal government officially discouraged the issuance of plastic bags nationwide on Saturdays.

Similar measures to limit the use of plastic bags can be seen in China where plastic bags have been banned since January 2008. Restricting the use of plastic bags through taxation or other methods is not new. The Republic of Ireland imposed a tax on

plastic grocery bags in 2002. San Francisco was the first US city to ban conventional plastic bags, followed by the city of Los Angeles in 2010. In January 2013, the state of Massachusetts banned the sales of water in plastic bottles. First-time offenders will be given a warning, while second-time offenders will be fined US\$25 and then US\$50 for subsequent violations (Agence France-Presse, 2013).

The plastic bag taxation in Penang is similar in concept to that of bait-ul-mal, unique in Malaysia in that the monies collected are redistributed to the poor.

4.2.6 Landfill Levies

Snape and De Souza (2006) reported that a landfill tax similar to the value-added tax (£7 per tonne of general waste) was implemented in the UK in 1996. In 2001, an aggregates levy of £1.60 per tonne of garbage was charged on landfill use. Similar forms of landfill levies are also practiced in Australia.

Malaysia has no similar form of taxation. Garbage disposal falls under the jurisdiction of local government, and garbage disposal activities are financed through local government taxes. Malaysia introduced an integrated solid waste management system under the National Strategic Plan in 2005 and Solid Waste and Public Cleansing Management Act in 2007, but neither law made mention of landfill taxation.

4.2.7 Waste Recycling

To promote waste recycling by industry, Malaysia introduced various incentives, such as pioneer status and investment tax, accelerated capital and reinvestment allowances. Accelerated depreciation for selected capital works and accelerated deductions for environmental expenditure are the two major incentives for the Australian taxpayer.

Under the Promotion of Investment Act 1986, Malaysian companies performing waste recycling activities of high value-added using high technology are granted:

- (i) Income tax exemption on 70 per cent of statutory income for five years; or
- (ii) Investment Tax Allowance of 60 per cent of capital expenditures incurred within a 5 years to be set off against 70 per cent of the statutory income in the assessment year. Any unutilised allowance can be carried forward until it is fully utilised.
- (iii) Activities located in the promoted areas are eligible for income tax exemption or ITA in accordance with the law for that specific promoted area.

Companies involved in recycling ordinary household waste are not given any similar incentives. The List of Promoted Activities and Products for Selected Industries Which are Eligible for Consideration of Pioneer Status and Investment Tax Allowance under the Promotion of Investment Act 1986 (as of 2 March 2012) includes the utilisation of oil palm biomass to produce value-added products, the generation of renewable energy and the conservation of energy.

Companies that undertake waste recycling activities can enjoy accelerated capital allowances on capital expenditures incurred for the purchase of waste recycling machinery to be utilised within three years under the Income Tax (Accelerated Capital Allowances) (Recycling of Waste) Rules 2000.

Exemptions from import duties and sales tax are granted for the import of machinery for 'waste recycling activities not produced in Malaysia' (The List of Promoted Activities and Products for Selected Industries Which are Eligible for Consideration of Pioneer Status and Investment Tax Allowance under the Promotion of

Investment Act 1986 (as of 2 March 2012). The purchase of machinery for waste recycling produced in Malaysia is exempted from sales tax.

In the UK, the government concentrated on household recycling, unlike Malaysia which emphasised industry. The UK Climate Change Bill enabled local authorities to pay rebates to householders for good performance in recycling and waste minimisation. It also allowed an authority, if it so chooses, to collect incentive-based payments from householders for waste collection. Authorities could also pay rebates and collect any payments through the Council Tax system, if they so wished (Snape and De Souza, 2006).

Dresner and Ekinsb (2010) reported that local authorities in the United Kingdom have various methods of charging for the disposal of waste.

1. Bag or tag/sticker schemes

The waste collector only picks up waste that has been placed in specially identified bags or containers. The public may purchase either special bags or tags/stickers from the local authority which must be fixed to the standard bags or containers used.

2. Volume-based schemes

Property owners will choose a waste container of a size, and an annual charge is based on container volume.

3. Frequency-based schemes:

Property owners will chose the frequency of their collection and pay accordingly.

4. Weight-based schemes:

Property owners will pay for the rate based on the amount of garbage they discard. Garbage collection vehicles are fitted with devices that automatically record the weight of the waste collected. Each bin is fitted with an electronic identification transponder.

Malaysia has done well to start encouraging its citizens to recycle. Recycling at the household level, however, is organised through associations and not at government level. For example, Rukun Tetangga organises a monthly recycling collection day. A more comprehensive recycling policy which includes households is needed. Like the recycling rewards system, measures such as the compulsory separation of garbage should be introduced.

4.2.8 Water and Sewage Disposal

Indah Water Konsortium Sdn Bhd is a government-owned national sewerage company entrusted with developing and maintaining a modern and efficient sewerage system throughout Malaysia, except in Kelantan, Sabah, Sarawak and the Majlis Perbandaran Johor Bahru. Various tariffs for sewage are charged to domestic, commercial, industrial and governmental users. Similar sewer management systems exist in countries such as the United Kingdom, United States and Australia.

4.2.9 Storage, Treatment and Disposal of Toxic and Hazardous Wastes

The Malaysian government is offering tax incentives to companies to encourage the construction of proper facilities to store, treat and dispose of toxic and hazardous wastes. Companies directly involved in these activities in an integrated manner can apply for:

- (i) Pioneer status, with an income tax exemption of 70 per cent of the statutory income for five years. Unabsorbed capital allowances and accumulated losses incurred during the pioneer period can be carried forward and deducted from the post-pioneer income of the company; or
- (ii) ITA of 60 per cent on qualifying capital expenditures incurred within five years. The allowance can be offset against 70 per cent of the statutory income in each year of assessment. Any unutilised allowances can be carried forward until fully utilised.

4.2.10 Used Oil Recycling

In Australia the government introduced a fund to encourage companies become involved in used oil recycling (Freebairn, 2009). No such effort exists widely in Malaysia. Used oil recycling, especially of motor and cooking oil, could be a profitable industry for Malaysians. For example, in a corporate social responsibility statement, McDonalds states that it sells its used cooking oil to soap manufacturers.

4.2.11 Deposit-refund System

In a deposit-refund system, consumers receive a payment when they return an item to a collection centre. In the United States, California, Connecticut, Delaware, Hawaii, Iowa, Massachusetts, Michigan, New York, Oregon and Vermont have enacted deposit-refund systems for drink containers (Field & Field, 2009). Malaysia practised this measure until the 1980s; beverages are now shipped in aluminium containers. Trading of cooking gas in canisters is the only remnant of the deposit-refund system.

Creative use has been made of the deposit-refund system in Europe. Germany subjects buyer of lubricating oil to a tax which will be refunded when the buyer returns used oil. In Sweden and Norway, buyers of new cars pay a deposit, and when the car is

scrapped, the owner can send the car to an authorised junk dealer to claim the deposit (Field & Field, 2009).

4.2.12 Employment Taxation

In Malaysia, provision for employee transportation is a deductible expense under section 33 of the Income Tax Act 1967. In Australia, employee transport claims are considered a deductible business expenses if the employee uses public transport (McGrath, 2006). In the UK, to encourage use of public transport, a nine-year-old deduction for car parking facilities provided for employees was ended in 1997 (Snape & De Souza, 2006)

4.2.13 Certified Emissions Reduction Units

Malaysia granted a tax exemption to income from the sales of certified emission reduction units for the year of assessment from 2008 to 2012. This scheme has been withdrawn beginning 2013. The Malaysian government has no plans to offer certified emission reduction units with green palm oil. According to Part 1 of the New Economic Model for Malaysia report, however, such an initiative could work if a more comprehensive and binding global carbon trading and emissions regulation were set up.

4.2.14 Forestry and Land Management Incentives

The Australian government granted tax incentives for land care, accelerated depreciation for reforestation equipment and tax subsidies for farmers to divide their land between agriculture and reforestation (McGrath, 2006).

Malaysia has similar tax incentives for forestry management. Companies in Malaysia that undertake forest plantation projects can apply for the following incentives under the Promotion of Investments Acts 1986:

- (a) Pioneer status with income tax exemption of 100 per cent of statutory income for 10 years. Unabsorbed capital allowances and accumulated losses incurred during the pioneer period can be carried forward and deducted from the post-pioneer income of the company; or
- (b) ITA of 100 per cent on qualifying capital expenditures incurred within five years. The allowance can be offset against 100 per cent of the statutory income for each year of assessment. Any unutilised allowances can be carried forward until fully utilised.

Companies that undertake forest plantation projects can also apply for the following incentives under Section 127 of Income Tax Act 1967:

- (a) Tax deductions equivalent to the amount invested in related company; and
- (b) For an approved forest plantation Project:
 - (i) Tax exemption of 100 per cent on statutory income for 10 years starting from the first year the company enjoys statutory income
 - (ii) Bringing forward losses incurred before and during the exemption period after the exemption period of 10 years

4.2.15 Environmental Protection Equipment

Malaysian companies that use environmental protection equipment may receive an initial allowance of 40 per cent and an annual allowance of 20 per cent on qualifying capital expenditures. Companies that incur capital expenditures for conserving their own energy for consumption can write-off their expenditures within two years instead of three years.

4.2.16 Other Measures

Australian tax law imposes environmental protection taxes such as the aircraft noise and ozone protection levies. Chen, Bao and Zhu (2006) reported that in China, the local government in Hangzhou introduced a tax to protect the beauty of city parks. A survey of the public in Hangzhou found that it was willing to pay the tax to protect the city's heritage.

Malaysia has concentrated on Islamic banking with the hopes of establishing itself as an international hub for Islamic banking. Under the New Economic Model, the government plans to introduce green banking, in which financial institutions channel funds to environmental or other ethical projects. This form of banking products exists in the United Kingdom and France; take, for example, *Crédit Agricole* formed through the merger of local French banks dedicated to providing financing to farmers. In Malaysia, *AgroBank* (formerly *Bank Pertanian Malaysia Berhad*) has similar objectives as *Crédit Agricole* but does not offer similar schemes to customers.

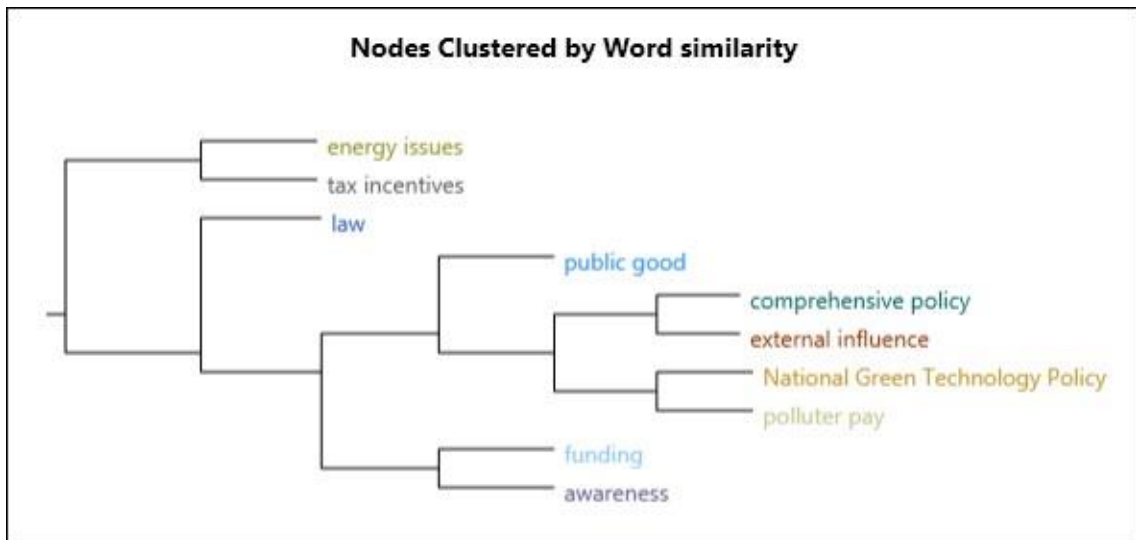
4.3 Answering the Research Questions

Earlier, the research question 'What are the gaps between current tax laws in Malaysia and select Commonwealth and non-Commonwealth countries?' was posed. To help answer this research question, NVivo software was to extract and organise the main themes of the legal review, represented by nodes. Next, the gaps were identified. While this usage of NVivo was simple, merely for organisation, the software was later put to more sophisticated usage in linking key issues among various interviews and focus groups.

Figure 4-1 *Using NVivo to Organise the Legal Review*

All Nodes						
Name	In Folder	Created On	Created By	Modified On	Modified By	
awareness	Nodes	03/12/2012 13:26	CH	03/12/2012 13:43	CH	
comprehensive policy	Nodes	03/12/2012 13:26	CH	03/12/2012 13:27	CH	
energy issues	Nodes	03/12/2012 13:25	CH	03/12/2012 13:35	CH	
external influence	Nodes	03/12/2012 13:33	CH	03/12/2012 13:33	CH	
funding	Nodes	03/12/2012 13:25	CH	03/12/2012 13:25	CH	
law	Nodes	03/12/2012 13:23	CH	03/12/2012 13:36	CH	
National Green Technology Policy	Nodes	03/12/2012 13:26	CH	03/12/2012 13:26	CH	
polluter pay	Nodes	03/12/2012 13:33	CH	03/12/2012 13:33	CH	
public good	Nodes	03/12/2012 13:31	CH	03/12/2012 13:31	CH	
tax incentives	Nodes	03/12/2012 13:35	CH	03/12/2012 13:35	CH	

Figure 4-2 *Nodes Clustered by Word Similarity in the Legal Review*



The nodes were then clustered by word similarity as shown in Figure 4.2. This chart identifies the connections between critical nodes in the text. (A more expansive analysis was performed for the interview and focus group sessions and is discussed in Chapter 5.)

Many of the issues pertaining to energy are closely tied to tax incentives. Many countries use tax incentives to encourage the usage of cleaner energy. Comprehensive sets of environmental tax laws are encouraged.

The gaps identified from this legal review include:

- In the United Kingdom, the local government charges tariffs based on the amount of garbage collected every month, which is different than the lump sum payment made to the local government under assessments. The a-la-carte charge for garbage collection has resulted in the reduction of garbage being disposed into the landfills. Is it time to look at how assessments are collected in Malaysia?
- Local British governments give a rebate on garbage tariffs when citizens sell recyclable rubbish to the government. This is not practised in Malaysia, nor is there any accounting of what happens to collected. A system of separating useful and useless garbage could reduce waste at landfills and achieve a higher level of recycling. Again, this measure could be explored in Malaysia.
- The Australian government gives incentives to encourage motor oil and cooking oil recycling, a concept that has not been explored in Malaysia. The Malaysian government is more interested in the handling of waste from the palm oil sector, not from the households. This issue can be explored further.

- The Malaysian government focuses on giving loans or capital to get entrepreneurs involved in public transportation. In the United Kingdom, the government gives employers tax incentives to encourage employees to take public transport. Malaysian tax law does not consider promoting public transport from the point of view of the user.
- In Hangzhou, citizens approved a special fee to protect city parks. In Malaysia public goods are sourced from taxation. Private funding could be used by the government to provide more public goods.
- The Malaysian government gives incentives in the form of lower duties for those who purchase hybrid cars. However, the government could go further and, like Australia, encourage motorists to use LPG-powered vehicles. As an LPG producing nation, Malaysia could save money on oil imports and reduce greenhouse gas emissions from vehicles by using LPG instead of petrol.
- China and HKSAR are moving to a more systematic and connected system of environmental taxation based on the ‘polluter pay’ model unlike the British or Australian model. The British, Australian and Malaysian systems are piecemeal, calling for Parliament to enact new tax laws when the need arises.

4.4 Implications of the Legal Review for Malaysia

International developments in environmental taxation may be classified as having originated from an evolutionary or revolutionary process. Under the evolutionary process, countries’ environmental taxation systems took years to develop. For example, the environmental legal system in the United Kingdom started locally in the 1950s. By the 1970s, elements of European law were introduced into British laws

through membership in the larger European Economic Community. Up to 80 per cent of UK legislation on environmental issues came from the EU. In Australia, environmental legislature was first seen in Queensland in the 1940s and the slowly implemented nationwide. Under the long evolutionary process, there can be instances of incomplete or even contradictory laws.

Countries such as the PRC and the special administrative region of Hong Kong took a different approach. Accused of being a major polluter, the PRC decided to embark on fast-track implementation of environmental laws. Since 1996, the People's Republic of China and Hong Kong have crafted a set of comprehensive environmental laws, including tax laws, on par with those of their developed counterparts such as the EU. According to Webster (2010), the People's Republic of China planned to introduce a full-fledged environmental tax system by 2013. The 2008 Summer Olympics in Beijing gave PRC the extra push to become eco-friendly. Beijing has invested 120 billion RMB to improve the environment since 1998.

Malaysian environmental tax laws have undergone an evolutionary process. The Environmental Quality Act 1974 dealt more with the administration of environmental issues rather than issues of finance. Only in the 1980s did environmental laws in Malaysia address issues of finance. Regulations concerning unleaded petrol were introduced in the late 1980s, and with them arose the issue of fuel subsidies. Major changes to environmental laws (including tax laws) came in 1996 Malaysia signed the Langkawi Declaration, the first declaration from the British Commonwealth concerning the environment. The Kyoto Protocol was another key turning point, adding more eco-friendly elements were added to Malaysian tax laws. The New Economic Model released in 2010 envisions Malaysia becoming a leader in green technology by

commercialising its biodiversity into high-value products and services and cutting greenhouse emissions to 40 per cent of 2005 levels by 2020.

Comparing Malaysia to the United Kingdom and Australia reveals that the country has made numerous environmental laws (including tax laws) within 40 years; however, the development of environmental tax laws in Malaysia has been slow compared to countries such as the PRC. Since Malaysia has signed the Kyoto Protocol, the country cannot take laws evolve slowly but need to be adapted quickly to match changes in other Kyoto Protocol countries, not only in Commonwealth countries. Countries such as the PRC that are committed to the development of more comprehensive and systematic environmental tax laws place Malaysia under pressure to follow suit.

The next issue worthy of concern is enforcement. Countries such as the United Kingdom and EU members strictly enforce environmental law, including tax laws. The PRC suffers from problems in law enforcement. Wang (2006–2007) found that, although Chinese environmental laws were comprehensive, enforcement was lax. Malaysia must ensure that introducing a systematic, comprehensive set of environmental tax laws is accompanied by strong enforcement.

4.5 Summary

Environmental degradation has become a serious problem globally, and countries have come up with various measures to tackle environmental degradation, including environmental taxes. Developed countries such as the United Kingdom, Australia and European Union members were among the first to introduce laws to address environmental degradation, starting with Australia in the 1940s and the United

Kingdom in the 1950s. Malaysia began to craft laws governing the environment in the 1970s.

However, with the worsening global environmental situation in the 1990s, countries including Malaysia began to make tougher environmental laws, including taxation. However, environmental laws in the United Kingdom, Australia, United States and even Malaysia occurred on a piecemeal basis. Changes to the laws were made to address such issues as landfill waste, traffic and ozone thinning when needed.

China and the HKSAR, however, took a different approach to dealing with environmental degradation, starting the introduction of polluter pay policy in 1996 (Zhang, 2010; Fu, 2010). This law marked the first time that China considered environmental tax policies as a group of inter-related laws. In Malaysia, the piecemeal approach has dominated the development of environmental protection policies. As described earlier, various pieces of legislation (including environmental tax laws) have been introduced since 1976 to address the issue of the day. The piecemeal introduction of laws allows the public to manipulate the situation. For example, the 2009 Mini Budget's subsidies for trading in old cars become an incentive to buy more cars and then replace them with new cars.

If China could take the bold step of introducing a comprehensive set of environmental laws in 1996, the same can be done internationally, including in Malaysia. However, any comprehensive tax laws must be acceptable and feasible to the public to reduce instances of mitigation and non-compliance. Whether the comprehensive set of environmental laws, such as introduced in China, is acceptable to the Malaysian public not is unknown, because no study has addressed the issue.

The literature reviewed in the section above is descriptive in nature, reporting various actions taken by countries in the field of environmental tax law to address environmental degradation. However none of the literature has described the acceptability of such laws to the public. The weakness of legal literature is that it presents only the bare facts to the reader, in this case current practices in a certain country or the legal history of that country (Snape & De Souza, 2006; McGrath, 2006). The human (i.e., social acceptance) and economic aspects of laws (i.e., economic what-if models) are not explored in legal literature. Chapter 5 explores those issues.

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CHAPTER 5: QUALITATIVE RESEARCH

As outlined in Chapter 3, the first phase of fieldwork was the expert panel interview and focus group sessions. This process was undertaken to help the researcher gather different viewpoints of experts from various disciplines on matters pertaining to environmental taxation. The researcher asked the experts whether the issues that arose during the legal and literature review were relevant to the Malaysian scenario. The researcher used the sessions with the experts to identify any unaddressed issues during the legal and literature review. The sessions also provided a chance for the researcher to compare the different opinions of the various experts.

5.1 Methodology

Guglyuvatty's (2010) work inspired this part of the study. The researcher interviewed 30 experts from various backgrounds between 27 December 2011 and 12 April 2012 either individually or in groups. To reflect diversity, the researcher had chosen experts from different backgrounds, not necessarily the field of tax, and some of whom were not Malaysian citizens. The experts must have experience submitting their Malaysian tax returns whether as Malaysian tax residents or as non-residents. As well as being taxpayers themselves, they could be representatives of other taxpayers such as a signatory to a company, trust or partnership.

5.1.1 Interviews

The researcher arranged face-to-face interviews with the experts or phone interviews, subject to their availability. If it was possible to gather a few experts together in a single session, then the researcher conducted a focus group instead

Diversity characterised the sample of experts. They were working as line managers and as high in the ranks as chief executive officer. The researcher interviewed the council members of selected trade and professional bodies in order to gauge the general feeling of industry on certain environmental tax issues. The experts might or might not be experts in tax law but their work must have involved issues pertaining to environmental taxation and policies. The experts came from the fields of engineering, social work, public policy, science research, town planning, manufacturing and supply chain management and accounting.

Before the sessions, a set of interview guidelines (shown in Appendix 1) based on issues that emerged from the legal and literature review and on current tax and environmental issues was developed.

The interview/focus group sessions began with causal conversation that acted as an icebreaker and allowed the interviewer to find out more about the experts and their field or industry.

All interviews ended with a wish-list session in which the expert was free to air any comments or issues that he felt were important and had not been covered. If needed, the experts were contacted later to seek clarification on issues raised during the sessions.

5.1.2 The Experts

Tables 5.1 and 5.2 present details about the experts who participated in the interview or focus group sessions.

Table 5-1 *Experts Interviewed*

	Type of Organisation	Position	Tax Form Filed	Tax Residency	Citizenship
1	National newspaper	Section editor (housing and property)	B	Resident	Malaysian
2	Technology incubator	Chief executive officer	BE, C	Resident	Malaysian
3	Oil palm industry	Science and environment researcher	B	Resident	Malaysian
4	US software giant	Senior technology advisor	BE	Resident	Malaysian
5	State government think-tank	Researcher	BE	Resident	Malaysian
6	Off-shore banking	Manager	NR	Non-resident	Malaysian
7	Manufacturer	Director	BE	Resident	Malaysian
8	Estate agent professional body	Secretary-general	B	Resident	Malaysian
9	State government department	Executive	BE	Resident	Malaysian
10	Petroleum industry	Manager	BE	Resident	Malaysian
11	ICT research house	Chief executive officer	BE, C	Resident	Foreign
12	Nature non-governmental organisation	Head	BE, T	Resident	Malaysian
13	UK-based accounting body	Manager	BE	Resident	Malaysian
14	Legal professional body	Council member	B, P	Resident	Malaysian
15	Taxation professional body	Committee member	B, C, P, T	Resident	Malaysian
16	State government publication	Journalist	BE	Resident	Malaysian
17	Public university	Professor of urban design and planning	BE	Resident	Malaysian
18	Tax practice	Tax agent	B, C, P, T	Resident	Malaysian
19	Logistics	Director	B, C	Resident	Malaysian
20	UK-based accounting body	Division president	B	Resident	Malaysian
21	State government	Assistant to the chief minister	BE	Resident	Malaysian
22	Manufacturing federation	President	B, C	Resident	Malaysian
23	Manufacturer	HR director	B, C	Resident	Malaysian

Table 0.2 *Focus Group Session Experts*

	Type of organisation	Number of experts	Personnel in the focus group	Tax file filing by the expert	Tax Residency	Citizenship
1	Federal government investment house	2	Managers	BE	Resident	Malaysian
2	Green building professional body	2	Council members	BE, C	Resident	Malaysian
3	Regulatory body for standards	2	Researchers	BE	Resident	Malaysian
4	Recycling unit for a Christian charity	3	Managers and General Manager	BE, C	Resident	Malaysian

The researcher contacted the following types of organisations and individuals to participate in the above sessions but could not secure their participation as they declined or had conflicting work and travel schedules.

- On-line alternative news organisation
- Energy regulatory body
- Research house on water pollution




























- State executive council member
- Electronics recycling company

5.1.3 Software Analysis

The researcher used QSR NVivo9 software to summarise and connect the major themes brought up by the experts in the interview and focus group sessions. The transcripts and minutes of each interview and focus groups session were loaded individually into a project group in the program. The software created a tree diagram so that the researcher could keep track of the connections between the ideas. The software tracked key phrases and quotations from the experts which aided in the researcher in later synthesising the various ideas, as done by Mariola (2009). Although the software is capable of providing statistical analysis in addition the qualitative analysis, statistical analysis was not performed in this phase of the research because a sample of 30 experts is not large or significant enough to represent the ideas of the Malaysian taxpayer population as a whole. Statistical analysis could be performed only in Phase 6 (see Chapter 6) in which many questionnaires were sent to various taxpayers for their comment. Any feedback from the analysis of the qualitative data from the interview and focus sessions was compared to the environmental taxation acceptance model proposed in Chapter 3 to see whether the model needed any modification or not.

The expert interview and focus group interview transcripts and minutes were loaded as sources into NVivo as shown in Figure 5.1.

Figure 5-1 Sources (NVivo)

	acca
	bar council
	berita
	cima
	citm
	eden focus
	fiabchi
	fmm
	gbi
	intel
	khazanah focus
	konsortium
	microsoft
	mns
	mpoc
	msw
	mutimedia
	penang state
	selangor times
	seri
	shell
	siltera
	sirim focus
	tax agent
	tourism selangor
	uob mumbai
	usm building




























QSR NVivo9 uses nodes to represent a certain idea in the project. The researcher started with an initial 15 nodes, which represented the questions in the interview guidelines as mentioned earlier. The numbers beside the node represent questions 1 to 15. The initial nodes are illustrated in Figure 5.2.

Figure 5-2 *Initial Nodes in NViVo*

1		Plastic bags
2		Water tariff
3		Ala carte garbage tariff
4		Assessment rebate
5		Garbage separation
6		Motor and Cooking Oil recycling
7		Transport tax
8		Tree growing
9		Sustainable products
10		Alternative energy vehicles
11		Green bank
12		Green building
13		Clean energy
14		Post Consumer
15		Innovations

The researcher opened each source file, went through the transcripts, highlighted the key points and created a node for each new theme uncovered. The researcher discovered the following new themes and marked them as nodes.

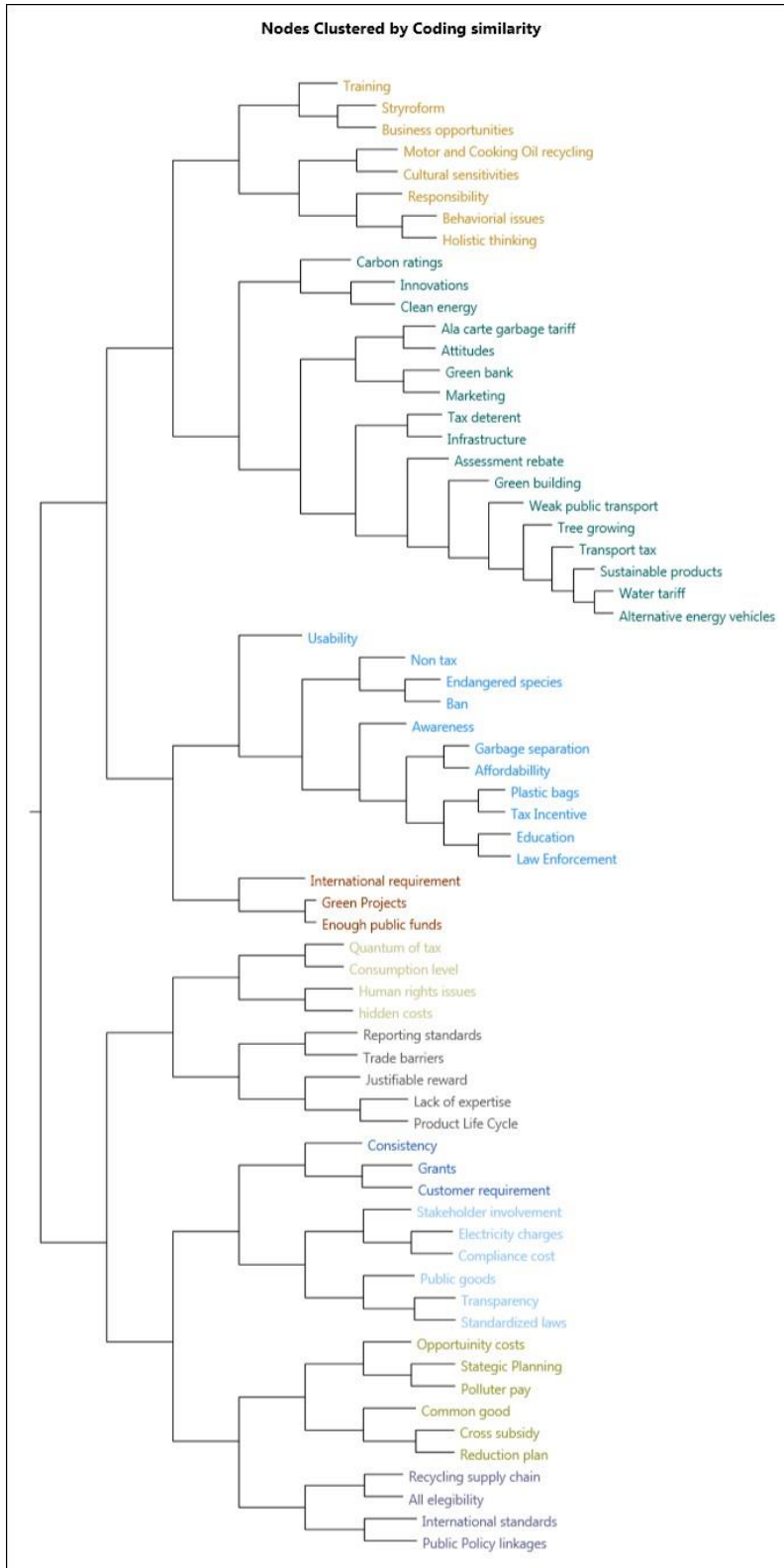
Figure 5-3 *Additional Nodes in NVivo*

	All eligibility
	Attitudes
	Awareness
	Ban
	Behaviorial issues
	Business opportunities
	Carbon ratings
	Common good
	Compliance cost
	Consistency
	Consumption level
	Cross subsidy
	Cultural sensitivities
	Customer requirement
	Education
	Electricity charges
	Endangered species
	Enough public funds
	Grants
	Green projects
	hidden costs
	Holistic thinking
	Human rights issues
	Infrastructure
	International requirements
	International standards
	Justifiable reward
	Lack of expertise
	Law enforcement
	Marketing
	Non-tax
	Opportunity costs
	Polluter pay
	Product life cycle
	Public goods
	Public policy linkages
	Amount of tax
	Recycling supply chain
	Reduction plan
	Reporting standards
	Responsibility
	Stakeholder involvement
	Standardized laws
	Stategic planning
	Tax deterrent
	Tax incentives
	Trade barriers
	Training
	Transparency
	Usability
	Weak public transport

The researcher read the transcripts again and matched the key issues discussed by each expert with the relevant node.

The researcher then ran the cluster analysis to enable visualising the connections between the various issues (in NVivo nodes) discussed by the experts. The software generated a tree map called 'Nodes Clustered by Coding Similarity' shown in Figure 5.4.

Figure 5-4 Tree Map: Nodes Clustered by Coding Similarity



The tree map in Figure 5-4 presents out a flowchart of the various ideas presented by the experts. The researcher then matched the ideas with the research questions mentioned in Chapter 1.

5.2 Findings

Using the responses from the experts, the researcher tried to answer the research questions posed in Chapter 1. NVivo was used to organise the experts' responses from the interview and focus group sessions.

5.2.1 Implications from the Tree Map

The tree map opened up a few points of discussion.

The main logic behind Coase's (1960) theory might not work in Malaysia.

Many methods of environmental taxation were suggested by the experts. The green portion of the chart was full of various tax solutions, but none, like a carbon tax on industry, clearly topped the agenda. A carbon tax in the form of carbon ratings seems to be most important. Although not specifically pointed out by the experts, it seems that taxation on industry seems to be of the upmost importance. If the experts could point their finger at who is to blame for polluting the environment, it is the industrialist. Issues pertaining to the individual man on the street ranked low at the bottom of the chart. Although it is true that issues such as transportation, water and garbage were issues need to be addressed, the brunt of the problems was presumed to be industry.

Since industrialists were identified as the villains by the experts, the question is whether the industrialist should be punished with carbon taxes. Strangely enough, tax incentives (including cross-subsidies and grants) were suggested as rewards for the industrialists. More strangely, polluter pay policy appeared in a lower branch than

innovations. These rankings imply that the experts do not in favour strict punishment of polluters but are more concerned about the carrots given to industrialists from polluting the environment.

Would an environmental tax regime as proposed by Coase (1960) work in Malaysia? It seems it might not. Polluter pay, which is the main component of Coase's (1960) ranks very low in the chart. In no session was there discussion about how much a polluter should pay in any of the sessions, only the notion that a polluter must pay.

The whole environmental discussion creates new business opportunities.

It can be concluded that the discussion of environmental is driven more by the prospect of generating new innovation and business opportunities rather than the purpose of punishing environmental polluters. Green banking, green products, science innovation, clean energy and sustainably products were on branches that run throughout the chart. The environmental discussion is more centred on using tax monies to incubate new, more eco-friendly products and services than on using to taxation to fine and punish.

International standards are compiled with voluntarily when the customer demands it.

International standards ranked on a very low branch in the chart. It seems that most experts will make sure that their businesses comply with international environmental standards if their customers demand it. For example, in the green building discussion, developers design green buildings as their clients require it. The GBI acts more as a catalyst to get more developers to jump onto the green building bandwagon.

It might be suggested that Malaysians are reactive, not pro-active, when dealing with environmental issues. If there were no customer demand or the government had not introduced the GBI, then perhaps no-one would have bothered to build a green building.

Only businesspeople should be responsible, not the public as a whole.

The experts felt that businesspeople should be held accountable for environmental degradation. The man on the street must not be compelled by any form of environmental taxation. Any such environmental taxation should be minimal.

Public goods are the responsibility of the government.

Although Chen, Bao and Zhu (2006) suggested the implementation of tree growing fees in parks in Hangzhou, this practice was not welcomed by the experts. To them, the provision of public goods is within the responsibility of authorities. There should not be any additional monetary requirements of the people.

It is more acceptable to the public to lump the taxes together rather than be itemised.

The Malaysian populace seems unhappy with the potential for special environmental taxes. A-la-carte garbage tariffs and tree growing taxes are part of the local government assessments. It does not seem to be acceptable to the public to itemise and charge separately for local government services. Indeed, many experts rejected the notion of imposing a tree growing tax on park visitors. They were surprised to learn that a special tree growing fee is charged to developers in Penang.

5.2.2 Answering the Research Questions

Research question 1: Does the Malaysian taxpayer think that changes in the Malaysian tax law will be able to improve the quality of life in Malaysia?

In the interview sessions, most experts agreed that taxation is a good instrument to encourage good environmental behaviour. The experts' opinions were in line with Coase (1960). In the case of the externalities due to environmental degradation, laws (in this case, environmental taxation) can be used to reduce the transaction costs between the firms that cause environmental degradation and the deprivation endured by the public.

However, the experts differ on the strength of taxation as means of encouraging good environmental behaviour. For example, the experts were asked about the effect of the 20 sen tax on plastics bags on environmental commitment. They commented:

Yes, I agree completely..... Charging small fees is just a means to achieve this. [It] acts as a deterrent, rather than profit.

This is one of the ways to create awareness that has significant effects.

First there was resistance, [and] then there was acceptance. The tax created a behavioural change. The Penang government was bold. [At the] pain level, money causes behavioural changes.

However, the mere fact of having environmental taxation laws does not ensure environmental commitment. Environmental taxation will force the taxpayer to forgo an activity or product which is environmentally unsafe, which creates an opportunity cost for the taxpayer. The experts suggested that there be measures to address such an opportunity cost. The experts agreed that taxation on expenses for employees' use of

private, rather than public, transport would fail if there were no solution to address the opportunity cost of using private transport. They expressed the following thoughts:

Public transport is terrible. People will take a car. Public transport is for people who don't have a car. Implementation and proof are needed.

First place improve public transport. In Seattle the university introduced an unlimited travel pass [for] anywhere in the county. The result is the reduction in private parking. When there is good public transport, values will evolve. People will not want to use cars.

Rapid (Penang) does not ply the industrial areas.... Workers have to walk to work; this makes the capacity low. The completeness is not there. The transportation system is poor.

I could not imagine how an employee working in Bayan Lepas FTZ could go to their factory by taking public bus. Although Penang CAT government is having this free bus plying FTZ & Prai, not all factory areas are covered and not all areas in Penang. For example, those staying in Air Itam working in FTZ may have issues.

The experts had the same thoughts on having to deal with plastic bags.

[An] effective move; this reduces the usage. However there must be an alternative; people must be provided with the alternative of recycling bags and containers.

With the implementation of an environmental tax, the taxpayer sacrifices convenience as an opportunity cost. The authorities must address this opportunity cost before implementing any new forms of environmental taxation. A proper, interconnected and reliable public transport system must exist alongside a transportation tax before the public will adopt a more environmentally beneficial lifestyle (e.g., using public transport.) Therefore, it is suggested that the government initiate efforts to encourage people to be eco-friendly. The government has to make the first move.

Research question 2: Is the Malaysian taxpayer committed to having a full set of environmental tax laws implemented?

A majority of experts agreed that a full set of interconnected laws must be in place before any success can be seen. One expert believed that tackling individual environmental problems without considering the big picture will not work. This opinion was in accord with Forstater (2003)'s view that concentrating solely on the issues of taxation is not enough. The related issues must be considered at the same time. The expert from the legal profession has this to say:

Solve the human issue. Look at the larger picture. Think aggregate. Just by switching off power to reduce carbon emissions, you may get a reactive response. Why are you so stingy? This will make people think.

Waste management is not thought holistically.

Exceptions to the rule should never be allowed when implementing any form of environmental taxation. Exceptions allow the taxpayer can mitigate the situation to his benefit. One expert was sceptical about the plastic bag tax in Selangor as the tax was

imposed only on certain days. Another expert pointed out that the tax is also implemented on different days in different states.

People still use plastic bags. Do it as a whole. Do it whole week.

The payment of 20 sen is justifiable, but a coordinated approach between the states should be done. Those who are caught unawares with money for the bags end up consuming the bags rather than bringing their own.

Another expert questioned why the tax incentive for hybrid cars was restricted to cars below 1,500 cc. If a measure is for the good of all, then it should have no restrictions.

Hybrid cars are very expensive. LPG cars that are environmentally sound cut down the costs of petrol consumption. Incentives should cover all levels, now limited to below 1,500 cc. The government should target all levels so long it saves the environment.

Research question 3: Are the motives for the current Malaysian environmental tax laws easily understood by the Malaysian public?

The experts questioned the motives of the government when dealing with environmental issues including the use of environmental taxation. The lack of connectivity and holistic thinking by the authorities was evident. On whether incentives could be used to encourage motor oil recycling, one expert said:

We already recycle black oil [or 'motor oil', literally translated from Mandarin 黑油]. Regulation must be there. Only the containment laws are there, and there is no follow up after that. There are no proper

collection centres, and the [Department of Environment] DOE is the only one allowed to recycle.

Another expert highlighted the contradiction between encouraging the purchase of hybrid cars using a tax exemption along with the policy of subsidising petrol.

Hybrid cars may not work with cheap petrol.

The experts questioned the effectiveness of the tax exemption for hybrid cars as a means to encourage the purchase of alternative energy vehicles compared to the National Automobile Policy which supports the production of all forms of locally made vehicles.

Malaysia wants to protect the local car industry. Not enough effort to encourage the hybrid car. Important to grow alternative transport like using hydrogen.

Employee tax incentives may not be effective as the car prices are cheap via easy payment and highly subsidised petrol.

Hybrid and LPG cars cannot work due to the national car policy. How to be sustainable? Transportation is 40 per cent of the carbon agenda. It is toothless. Vested interests!

The National Automobile Policy proposes five objectives to drive the Malaysian automotive industry

- To promote a competitive and viable automotive sector, in particular domestic car manufacturers

- To become a regional hub for manufacturing, assembly and distribution for automotive vehicles
- To enhance value-added and domestic capabilities in the automotive sector
- To promote export-oriented Malaysian manufacturers and components and parts vendors
- To promote competitive and broad-based Bumiputera participation in vehicle manufacturing, distribution and importation and in components and parts manufacturing

Other experts insisted that, before any form of environmental taxation could work, the government must ensure that all related services and regulations are in place.

On whether the tax incentive for hybrid and electric cars would work, one expert said:

The adoption of the hybrid car may not be successful. Lower prices are just a small consideration. Lack of infrastructure like power dockers for charging electric cars must be considered, like Hong Kong was slow. Docking bays come out every 2 km.

The hybrid initiative may not be successful. The take-up is very low. Issues concerning spare parts and supporting repairers are more important than merely the price of the car.

The rigidness of banking regulations was cited by one expert as a deterrent for industry to reinvest in clear production methods. Even though plant costs are considered qualifying expenditures for capital and reinvestment allowances, the difficulty of

securing financing made it a deterrent for industry to move into cleaner forms of production. The expert from the oil palm industry had this to say:

Some banks do not consider the plant as collateral.

Many experts blamed the lack of certification standards and badly crafted regulations for a lack of enthusiasm among industry and consumers to go green.

Premium prices for environmental ethical goods? There should proper monitoring like the 'V' (vegetarian) in the UK and the Green/Red [labelling] in India. A comprehensive mechanism is required.

It is quite easy to get points [to become a green building and receive the tax benefit but just doing one option for example reduces temperature. All stops at certification; no need for follow up.

Standards to define what is 'green', 'fair trade', 'non-genetically modified organisms (GMO)' must be there together with enforcement.

Carbon is very technical for the Inland Revenue Board Malaysia (IRBM). ... There is currently no data. How is the calculation done? There is no proper framework when IRB certifies carbon rating The IRBM has no way to certify the qualifying cost. In the car industry, they know how much the carbon element is. In the building industry we don't know the breakdown for the various inputs.

Research question 4: Does the Malaysian taxpayer appreciate the motives for and intent behind implementing a full set of environmental tax laws?

Although the experts believed that a full set of interconnected laws must be in place before any success from tax laws could be seen, the contradictory sets of existing environmental laws, including tax laws, prevented the experts from clearly understanding the motives for and intent behind implementing a full set of environmental tax laws. One expert made this remark concerning current policies:

Public transport in the UK, Hong Kong [is] successful as it is efficient. The hypocrisy of Malaysian politicians [in dealing with] public transport versus the automobile industry [is glaring]. The two things are positively linked.

Issues of transparency might hinder any plans to introduce a comprehensive set of environmental taxation laws. Unless authorities come out with good, transparent accounting system for the monies collected or disbursed in any environmental tax scheme, the experts seem to be sceptical about the taxes' chance for success.

Yes, I don't mind paying small fees for 'park entrance fees', but how could we ensure the fees so collected will all go to planting more trees and not into someone's pocket for them to buy condos and Mercedes?

Lobbied projects succeed in getting feed-in-tariff. The Penang state encourages solar panel projects, but many who applied were rejected.

There is a lot of investment in preparing for the fit-in-tariff.

One expert pointed to the complexity of tax laws as a deterrent to any attempts to innovate in industry.

Palm oil is the most highly taxed commodity with corporate tax, CESS fund (Tax on Crude Palm Oil), cooking oil subsidy and a state tax in Sabah.

Research Question 5: Can Malaysians accept changes to bring tax laws in line with international practices?

The experts had a mixed set of opinions on this issue. Experts who had a business relationship with customers from overseas and those who were educated overseas welcomed any move to align Malaysian tax laws with international changes. Most experts who supported such moves were either trading with American companies or had been educated there.

On issues pertaining to carbon tax and reporting, one expert stated that

Using the Enterprise Resource Planning (ERP), the ERP can optimise efficiency including the carbon footprint. New Microsoft Dynamics tries to help companies comply with the Kyoto Protocol. There should an initiative for companies to start carbon reporting. Again the ERP can help.

Even though systems in the market can capture data for carbon reporting, current laws in Malaysia do not require companies to record and report their carbon emissions. Another expert stressed the need to adopt carbon standards like those implemented in Europe.

Methane capture is made compulsory as it will reduce the carbon footprint by 30 per cent. However, there should be standards like the EU standard for biofuels (Renewable Fuel Standard) RFS2 (quality subsidy

by the EU) There should be a clean development mechanism (CDM).

The measurement is not there.

It is not environmental taxation that forces a company to be environmentally friendly but due to the insistence of customers (normally foreign entities), a company complies with good environmental practices. The experts from such businesses favoured any move to align environmental laws (including tax laws) with their foreign counterpart.

Multinational renters are prepared to pay a premium on renting green buildings, and they insist of renting a green building.

Green Rated Factory is driven by international needs. This was requested by Federation of Malaysian Manufacturers (FMM) to Green Building Index Sdn Bhd.

[Green building is] done in the new Kulim building. It is a corporate direction for new buildings to be green.

In contrast, the experts who worked in industries not affected by customer demands to be eco-friendly were not interested in adopting environmental best practices in their companies.

One expert mentioned the difficulty of asking manufacturers to track and control their carbon footprint in line with the US Clean Energy and Security Act of 2009, an energy bill in the United States that would have established a variant of an emissions trading plan similar to the one in Europe.

*Legal issues— it is not up to Malaysia. This is an international scenario.
Malaysia is a small country.*

Research Question 6: What are the gaps between current tax laws in Malaysia and select Commonwealth and non-Commonwealth countries?

This question was thoroughly explored in the legal review. Only one group of experts saw a need for manufacturers to align their processes with the tax requirements of their US customers who chose to comply with the Clean Energy and Security Act of 2009.

Research Question 7: Which types of environmental taxes are preferred by the Malaysian taxpayer?

The experts were satisfied by the current types of environmental taxes in Malaysia, including both indirect and local government taxes. One expert suggested that elements of carbon taxes be incorporate into the existing real property gains taxes.

There should be a green tax on developers. Housing is sweeping away the forest. Developmentalists [industrialists] are jealous of trees. Chopping [down] trees should result in a carbon tax. People should protect the environment to stop [for example] flash floods.

Research Question 8: Which types of environmental incentives are preferred by the Malaysian taxpayer?

Most experts did not express desire for new environmental taxes but did have many ideas for new forms of environmental tax incentives in Malaysia. In addition to

the existing tax environmental incentives embedded in pioneer status, ITA and reinvestment allowances, the experts suggested that the government award grants to encourage research and development in the field of environment.

Grants are more successful compared to mere incentives. The government should give grants on specific areas like the part grants in information technology (IT). Unlike IT, green technology needs a large manufacturing base.

Another expert suggested the grants to cover marketing research on eco-friendly products.

With new things, there is an element of cost. The government can help in two ways, i.e. subsidy/incentives and to help in promotions. The government will help in promotions and support the [eco-friendly] products so that they can be marketable. This is to push ahead with the objectives.

However, there is a need for the authorities to apply clear and stringent rules on grant applications.

There is a Green Financing Fund, and the managers of this fund are looking for people to participate. However, one must be careful to note not all projects are green projects. The manager must only finance projects that are really green.

Again the issue of corporate governance appears as cautioned by Sachs (2008). Not all projects are truly eco-friendly, and the rules on what is considered green are not clear and transparent.

Others experts suggested non-monetary aid in the form of technical assistance to various research houses.

If palm oil mill effluent (POME) is made compulsory, assistance should be given by the government, not incentives.

Research question 9: What new tax instruments and incentives practiced in developed countries might be acceptable to the Malaysian taxpayer?

The experts who participated in the interviews and focus group sessions could not suggest any new tax instruments and incentives practiced in developed countries that might be acceptable to the Malaysian taxpayer. However, the expert from the regulatory body for standards suggested that Malaysian manufacturers should prepare their systems to record data in anticipation of proposals to introduce carbon trading laws like those in Australia. The accounting of carbon credits could be made compulsory in the near future.

5.2.3 Answering the Research Hypotheses

H1 proposes that the Malaysian taxpayer welcomes the introduction of a full set of environmental taxes. H1a posits that Malaysian taxpayers are committed to having a full environmental tax set introduced. Based on the discussions of research question 1 and 2, the answer to H1 and H1a is yes on the condition authorities address the opportunity costs incurred when the taxpayer forgoes products and services.

H2 proposes that Malaysian taxpayers believe that the result of environmental commitment is improved quality of life. Most experts agree on this point. They associate health and environmental issues.

The younger generation have better awareness of the benefits of green products. The benefits hit the person emotionally.

What is green is good for the long term. What is not green we pay for it tomorrow. I want to be healthy. I want to live to 100.

The opinions of the experts are similar to those of Brown and Frame (2005).

H3 proposes that Malaysian taxpayers are happy with the current set of environmental taxes. H4 holds Malaysian taxpayers well understand well the motives behind environmental taxation laws. The feedback of the experts, though, indicated that they are not happy with the current set of laws, which are seen as incomplete, not comprehensive and open to abuse. Experts were unsure on the motives of the authorities. The section on research question 4 highlighted that a full set of interconnected laws must be in place before tax laws can achieve any success. Contradictory environmental policies and laws including tax laws have prevented experts from clearly understanding the motives for and intent behind implementing a full set of environmental tax law. A few experts saw the existence of public transport initiatives and the National Automotive Policy as contradictory and questioned the motive of the government. Which does it see as more important: more public transport or more domestic-made cars?

Transparency problems could hinder any plans to introduce a comprehensive set of environmental taxation laws. Unless authorities create a good accounting system for the monies collected or disbursed in any environmental tax scheme, the experts seem sceptical about the system's chance of success. The complexity of current tax laws was seen as a deterrent to any attempts to innovate manufacturing practices.

The final hypothesis, H5, proposes that the Malaysian taxpayers are able to accept changes to environmental tax laws according to international practices. The discussion about research question 9, however, shows that Malaysians are extremely slow to accept any changes intended to bring tax laws in line with international practice unless pressured by their direct customers. The initiative to encourage Malaysian manufacturers to track their carbon usage in line with the American Clean Energy and Security Act of 2009 was spearheaded by a government agency, not by manufacturers themselves.

5.3 Other Considerations and Discussion

The experts highlighted the following issues as important to the acceptance of environmental taxation as a means of encouraging environmental commitment and of best environmental taxation practices by the Malaysian populace.

5.3.1 Amount of the Tax and the Administrative Procedures Involved

The experts agreed that the amount of the environmental tax or incentive could encourage or even impede the environmental commitment of the Malaysian populace. The experts suggested that the environmental taxation must be large enough to create an inconvenience for the taxpayer on a regular basis to encourage him to change his behaviour. This opinion was in line with Luckin (1999)'s econometrics model.

The experts expressed these thoughts on the plastic bag tax.

A minimal charge is able to deter people from using plastic (bags).

One expert believed that, if the original product (in this case, water) were sold cheaply to the taxpayer, the taxpayer would consider any price changes to be considered negligible and thus would be insensitive to the changes made. The concept of price elasticity comes to mind. The researcher from a state think-tank has this to say:

Any taxes or contribution of funds on water bills may not be effective as the cost to the user is very little. The tax will be effective only if it significantly affects the expenditures of any household. The similar contribution to the Energy Fund for electricity users might be more effective as in most households, the size of electricity expenditure is more significant than water.

The expert's opinion was similar to that of Vourc'h (2001), who suggested that the water authorities charge the economic price of water, rather than burdening the overall population of taxpayers with the cost.

Conversely if the incentive is too small or too difficult to quantify, any attempts to encourage the good environmental behaviour through environmental taxation will be futile. The following comments from experts gave a lukewarm response to the GBI incentive introduced in Budget 2012 due to the amount of the incentive.

The GBI tax incentives are actually small. Financially insignificant! It is the GBI that gives the marketing push not the tax incentive. Singapore gives cash incentives to developers and consultants. In a typical building, the tax incentive part is less than 10 per cent of building cost. It is the marketing (initiative) that gives the premium price a driving force.

Refurbishment is a small cost. The green content is very small. Only Tier 1 developers are interested, for example SP Setia, Jelutong and UOA. The tier 3 (rated developers have) not jumped into the green building but they are enquiring. Green building is market driven not tax driven.

To add salt to injury, the experts stated that the lack of direction on implementing the GBI incentive discourages developers from starting a green building project.

How is the calculation done? There is no proper framework [as] when Inland Revenue Board Malaysia (IRBM) certifies carbon rating [for the green building].

At the time of writing, the Inland Revenue Board had not issued any public rulings pertaining to the administration of the GBI incentive.

The following expert was sceptical that any tax moratorium to encourage the production of biofuel would work because the steps to qualify a project were too strict.

I am fine with the production of biofuel. To help, the Reinvestment Allowance (RA) could be used [to encourage reinvestment in eco-friendly technologies], but the method of assessment [which was suggested by] Public Ruling 2/2008 is too rigid. A lot of people stopped applying the RA as the current rules are too rigid. Nobody dares to apply for the RA.

5.3.2 Current Subsidy Structure

In the discussion around research question 1, it was noted that environmental taxation is a good means of encouraging a change in public behaviour, shifting from a non-sustainable to a sustainable way of life. However, past attempts by the government to intervene in prices might negate any effect of environmental taxation in the future.

In 2009, the Penang Water Supply Corporation Sdn Bhd (PBAPP) planned to impose a Water Conservation Surcharge for usage of more than 230 litres per month after the body was advised by the United Nations that water usage by Penang residents were excessive. Taking effect 1 November 2010, the water conservation surcharge has been imposed for usage above 35,000 litres per month, still far below the target of 50 to

100 litres per capita per day suggested by the United Nations. As of 30 June 2013, Penang's domestic water consumption was 302 litres per capita per day. PBAPP planned to raise the water conservation surcharge from 24 sen to 48 sen per 1,000 litres of water consumed by households starting 1 September 2013 (McIntyre, 2013).

The experts were sceptical that any attempts to increase the price of water, which is a very cheap commodity, would work at all.

[Water sold in] Penang is the cheapest in the federation—with only 20 per cent from local sources. Cross-subsidies of water is OK. Water is too cheap. No need to match dollar to dollar of cost. Currently Penang uses Grade B pipes which need constant fixing. Money should go to maintenance and upgrading not subsidies.

Should [be] the next step to charge. Water is undervalued. The price in the whole country is very low, and people take it for granted.

The same concept might not work with placing a carbon tax to discourage the usage of fossil fuels. Indeed, some politicians proposed reducing car duties so that more Malaysian could afford to buy more cars (*The Malaysian Insider*, 11 September 2012).

Fuel subsidies are difficult to remove as the move is political. Carbon tax is not enforceable.

Any attempts to decrease fuel subsidies either to reduce the usage of fossil fuel or even to save the government money will be met with resistance. The experts believe such a measure would cause inflation.

Increase in price of gas and gasoline, the costs of supplies increase; the cost of logistics increase' food costs increase. Barley water used to be 80 sen; now it is RMI.20. It is even higher in Kuala Lumpur.

The experts commented that the concept of cross-subsidies between the price that domestic users and industrial users pay has distorted the actual cost of services to the user. Only with the careful elimination of the cross-subsidy mechanism can authorities successfully introduce environmental taxation policies. Two experts commented on the cost of the assessment bill and water subsidies.

Can [the] Penang Town Council (MPPP) afford to reduce the assessment? Industrial garbage is not collected by the council. [We must] think of the total financial [equation when dealing with garbage]. The cost to industry is high. Industry is subsidizing the household.

[Consumers must understand] that there is a cost [to everything we use]. We are not really paying for the cost of water. Tariffs should be discouraging. ... Water bill is small. There must be a study into the tariff scheme—I can't picture the cost.

5.3.3 Cultural Attitudes and Sensitivities

Any attempts to encourage good environmental behaviour through environmental taxation might not work unless the public policy makers examine the cultural attitudes and sensitivities of the populace.

Recycled items [might be religiously and culturally sensitive to some people]. Make sure the items conform to religious and cultural norms.

This is the lifestyle [of Muslims]. Muslims cannot live without water for shower and prayers. Our usage of water might be higher than non-Muslim's usage of water. We cannot reduce our water usage.

The researcher asked the experts their opinion on the marketing of products containing post-consumer recycled material. Some experts were hesitant to purchase these products, perceiving them as unclean. These experts were also reluctant to purchase food and clothing products wrapped or contained such item.

People don't mind if it is cheaper. No pantang [taboo], but it must be clean. It is up to the manufacture to have the post recycled, not [be] force[d to].

Post-consumer recycled waste [products can be found] currently only at Starbucks. I am fine with recycling so [long as] the reprocessed waste is not used to wrap edible content.

I may not buy clothes with post-consumer waste.

There was a misunderstanding about what oil recycling is. Some experts did not know that oil can be recycled into fuel and thought that only cooking oil was reused.

I don't think this [cooking oil recycling] is sustainable in Malaysia. Recently there was an outcry of people taking collected cooking oil, and instead of recycle them into other uses, they repackaged them and sold [them] as fresh cooking oil! [Recycled cooking oil] is bad for health!

In China, people recycle cooking oil as cooking oil, as fresh oil is too expensive.

One expert was more positive on this issue. He stated that his purchasing decisions are based on the quality of the product, not what the product is made from.

I agree to buy (products with post-recycled waste). Make sure the quality is the same with fresh products. If some people in Vietnam could drink coffee with fox stool, then why not?

Experts agreed that a ban would be more effective than tariffs to prevent the usage of items from endangered species. The attempt to increase the price of shark fin through an import duty first imposed in the early 2000s seems futile in the eyes of the experts. One expert theorised that the import duty has raised the ego level (or swagger value) of owning the now–forbidden shark fins. In addition, any ban must be followed with proper enforcement, as explained by Wang (2006–2007).

As suggested by Khor (2012), the experts also believe that an environmentally unfriendly culture cannot be changed in a single generation. It is through education that the young are taught to slowly leave behind these practices. One expert suggested that culture can be changed. For example, 150 years ago, white wedding dresses were culturally unacceptable in China and considered appropriate for a funeral.

5.3.4 Recycling Supply Chain Issues

The discussion on research question 3 stressed that any attempts to discourage any behaviour through environmental taxation will succeed only if the supporting infrastructure and rules to address the opportunity cost (as suggested by Brown and Frame, 2005) to the taxpayer are in place. For example, a transport tax requires a proper

system of transport. Promotion of electric cars must be matched with efforts to install many charging points.

In this context, the government must seriously look at the connectivity of the recycling supply chain and the waste disposal system. One expert highlighted the slow pace of the tabling of the Solid Waste Management and Public Cleansing Act 2011 and the implementation of the measure which mandates the separation of garbage by the public. Another expert pointed out that the Solid Waste Management Act and Solid Waste Management Corporation Act 2007 have made waste disposal a federal issue and left local authorities with very little on the very local issue of waste management.

For example, one expert who works in the recycling industry shared that glass is not recycled because there are no glass manufacturers in the vicinity to buy glass. Sending glass from one state to another is not cost effective, and therefore, glass ends up thrown in the landfill. This cycle defeats the purpose of separating glass from normal garbage as required by the Solid Waste Management and Public Cleansing Act 2011. Figure 5.5 shows a notice at a recycling centre showing items which the centre cannot accept for recycling.

Figure 5-5 Notice Board Showing Unrecyclable Items



Notes. Taken at Buddhist Tzu Chi Merit Society, Pulau Pinang, Malaysia on 12 August 2013

5.3.4 Public Goods

The experts seemed divided about the concept of public goods and the usage of environmental taxation to finance the production of such items. The researcher posed the question of imposing park entrance fees to finance the maintenance of the parks. A tree growing fee is charged to visitors to parks in Hangzhou (Chen, Bao and Zhu, 2006). A few experts mentioned that a nominal fee was charged at selected Selangor parks. To the experts who lived in the United States, paying an entrance fee before entering a national park was a norm, gladly paid by visitors for a good cause.

Many experts felt that public goods should not be subjected to environmental taxation. Public goods are for the good of everyone, and there should not any discussion

about financing. Taxes are intended wholly to address any inequalities in the economic system; as one expert put it: *‘Taxes work because some people make the fool of others’*. However, many of the experts did not know that a tree growing tax was already in place, requiring developer of housing projects to pay a one-time landscape requirement fee before starting. Additionally, Melaka charges a heritage fee to hotel guests to finance beautification programmes in the state.

The experts believed that environmental taxation in the form of tree growing fees punished the good behaviour of loving nature. They felt that any attempt to encourage tree growing should be implemented as a corporate social responsibility (CSR) project by industry, which would be rewarded with tax incentives. If there were a need to impose a tax to financing an environmental project for the good of the public, it has to be implemented covertly, like the landscape requirement” (in Penang and the heritage tax in Melaka. The expert who is from the legal sector had this to say:

This is a bad idea. It is the low-income public that go to parks. Public spaces are for everyone. Instead, encourage private initiatives to grow trees.

The expert who is a professor had this to say:

I am personally against this idea. A park makes us closer to nature. Payment is not fair. Sources of funds to grow more trees should come from those who destroy the environment, not from those who appreciate nature.

5.4 Realigning the Environmental Taxation Acceptance Model

Chapter 3 introduced the environmental taxation acceptance model based on the writings of Chen, Bao and Zhu (2006), Thalmann (2003) and Qian and Chan (2010) and

the framework of Graci (2008). After the expert panel interview sessions were conducted, the researcher felt that the proposed model still stands true.

Taxpayers in Malaysia (whether laymen or businessman) have to comply with tax laws of the country (including environmental tax laws). The taxpayer complies with or resists environmental tax laws in three ways.

1. Voluntary compliance

As explained by Qian and Chan (2010), natural human goodness in man will result in voluntary compliance with environmental tax laws because they encourage good behaviour. H2, which proposes that the Malaysian taxpayer foresees that environmental commitment will result in an improved quality of life, was proven to hold true. Most experts were in agreement because they connected health and environmental issues.

The benefits hit the person emotionally.

What is green is good for the long term. What is not green, we pay for it tomorrow. I want to be healthy. I want to live to 100.

2. Forced compliance

The second type of taxpayer will comply with the laws because they are forced to. As described earlier, taxpayers followed GBI requirements as their clients demanded. As pointed out by some experts, shoppers paid the tax for plastic bags when caught unawares by the law.

3. Non-compliance

The final type of taxpayers does not want to comply with the laws. They do not want to understand why the laws are in place and simply do not care about environmental protection. As one expert mentioned, some people are willing to pay for plastic bags and ultimately litter. The 20 sen charge does seem to work at these taxpayers.

Interest Groups, particularly environmentalists, charities, professional bodies and trade associations, had extremely high participation in this phase of the research.

The researcher feels that, at this point, impeding factors need to be added to the environmental taxation acceptance model variables to complete the picture. The independent and dependent variables proposed in Chapter 3 remain unchanged. However, the following issues will also be considered.

- Amount of the tax and the administrative procedures involved

The amount of the environmental tax or incentive could encourage or even impede environmental commitment of the Malaysian populace. The environmental tax must be large enough to inconvenience the taxpayer on a regular basis in order to encourage behavioural changes, while the incentive must be large enough to offset any compliance cost to the taxpayer. The cases reported concerning the GBI are proof of this relationship.

- Current subsidy structure

The government acknowledges that a strong subsidy mentality exists in Malaysia and plans to weed out this behaviour through the National Transformation Programme. As explained in connection with the issues of water

and fuel subsidies, any environmental tax on subsidized goods and services might not work. The delay in implementing the conservation surcharge (as originally suggested in 2009 and not as implemented in 2010) proves that subsidies make implement taxes difficult. One expert who approved of the water surcharge wondered whether the authorities would consider the plight of the poor affected by it. This expert supported the surcharge only half-heartedly.

- Cultural attitudes and sensitivities

Any attempts to encourage good environmental behaviour through environmental taxation might not work unless public policy makers study the cultural attitudes and sensitivities of the populace. Taxes might not work if directed at what is considered culturally inappropriate. For example, the experts perceived food items packaged using recycled material as dirty. One expert suggested that the authorities should be sensitive to the imposition of water surcharge fee because the Muslim populace uses more water than the rest of the populace.

- Supporting infrastructure

Support for physical infrastructure, supply chains and laws must accompany any new environmental taxation. Opportunity costs must be addressed, such as the cost to the commuter for usage of public transport if a tax on private transport like in the United Kingdom is introduced. Good public transport is crucial to the success of this tax. The Solid Waste Management and Public Cleansing Act 2011 and any accompanying tax laws will not work if the supply chain that supports the recycling initiative is lacking. Separating glass from other forms of garbage is a waste of time if there are no facilities to recycle glass and the glass still ends up in a landfill.

- Public goods

The experts seem to suggest that public goods should be provided by the government, and any attempts to impose a tax (including environmental taxation) to finance public goods are unacceptable. Products and services for the common good such as parks and street lighting should be free. This belief opens discussion about who is responsible for the upkeep of such goods—the authorities or the consumer.

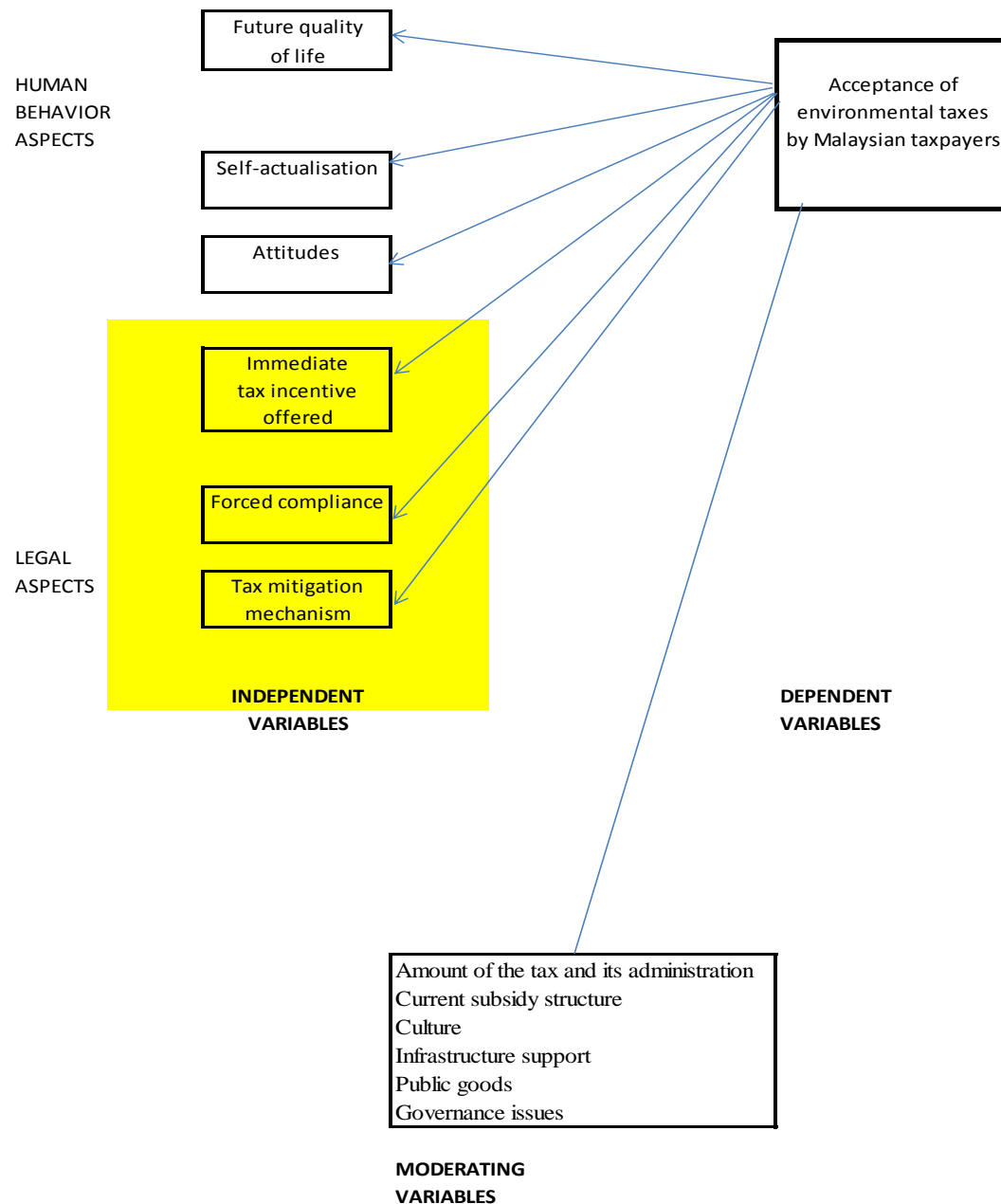
- Governance issues

The experts stated that accountability must be present when implementing any environmental taxation initiatives, echoing the views of Sachs (2008). Many experts questioned what the criteria were for successful applications for the feed-in-tariff scheme. (The regulatory body declined to participate in this research.) A few experts wanted to know how the monies collected from the

plastic bag tax were distributed to the poor in the *Rakan Kemiskinan* (Partners of the Poor) scheme. The experts' thoughts were in line with the work of Fikret et al. (2011), who observed that the young and the educated in Turkey were generally extremely willing to support environmental initiatives but were concerned by the lack of credible government institutions to implement such projects. Corporate governance seems to be a universal issue.

At this juncture, the researcher would like to present the revised environmental taxation acceptance model variables as shown in Figure 5.6.

Figure 5-6 *Environmental Taxation Acceptance Model Variables after the Interview and Focus Group Sessions*



In-depth questionnaires distributed via the Internet and snail mail were involved in the next research phase and are discussed in Chapter 6. The qualitative research detailed in this chapter enabled the researcher to probe the opinions of experts on certain

present or future environmental tax laws. It also allowed the researcher to investigate the desires of the experts. However, 30 experts do not represent the wishes of the Malaysian populace. A more expansive survey is needed.

5.5 Conclusions from the Interviews and Focus Groups Sessions

The following conclusion arose from the interview/focus group sessions.

The mere fact of having environmental taxation laws does not actually ensure environmental commitment. Environmental taxation can force the taxpayer to forgo an activity or product which is environmentally unsafe, which creates an opportunity cost for the taxpayer that allows policymakers to change behaviour. The taxpayer must sacrifice some money to comply with the law.

However, there must be measures to address the opportunity cost to the taxpayer. If authorities do not provide appropriate procedures and infrastructure to support the tax, taxpayers will comply only for its own sake. They will not understand the motive of the government. *All the talk of being green is just hot air* if there is no follow up, said one expert. Taxpayer will be extremely sceptical and think that the tax is just way for the government to increase its revenue. The plastic bag fee initiatives in Penang and the Kuala Lumpur yielded different results. In Penang, the authorities followed up with an education campaign. One expert stated that, in Kuala Lumpur, consumers can simply shop on weekdays to avoid the plastic bag fee. The authorities of both states wanted the public to reduce the use of plastic bags. The message of one state was effective. The other was not.

A full set of interconnected laws must be in place before any tax laws can be implemented successfully. Contradictory existing environmental laws, including tax laws, have prevented experts from understanding the motives and intent of a full set of

environmental tax law, as theorised by Chan (2008). On one hand, the government is encouraging the saving of petrol through the tax incentive to purchase hybrids, but on the other hand, the price of petrol is low enough that it is cost effective to maintain a sports utility vehicle in Malaysia. To further complicate the situation, the government supports domestic vehicle production but has neglected the development of public transport nationwide. Mass rapid projects are all centred in the Klang Valley. An attempt to introduce mass rapid transport outside the Klang Valley—a monorail project in Penang—was cancelled in 2008.

Customer demand is the best driver pushing producers to be environmentally friendly. Tax plays a secondary role. Manufacturers are reluctant to change their methods of production unless forced either through a foreign tax or ban. Experts who have business relationship with overseas and those educated overseas welcomed any moves to align Malaysian tax laws with international changes. The insistence of customers (normally foreign entities) ensures that the provider will comply with their needs. The experts from foreign enterprises favour any move to align environmental laws (including tax laws) with those of their foreign counterpart.

Any environmental tax must be substantial enough to regularly inconvenience to encourage behavioural changes by the taxpayer. The tax should not be administered only certain days of the month but every day. This opinion accorded with Luckin (1999)'s econometrics model discussed earlier. The 20 sen fee on plastic bags is seen as nominal. Charging this nominal fee on weekends in Kuala Lumpur hardly inconveniences the shopper, who could shop on weekdays to avoid the fee.

Environmental taxation is good means of encouraging a change in public behaviour from a non-sustainable to a sustainable way of life. However, previous

attempts by the government to intervene in prices might negate the effect of environmental taxation in the future. For example, the subsidy scenario in Malaysia makes it difficult for the government to impose any tax on fuel. Political parties have even proposed reducing taxes on automobiles along with issuing a fuel subsidy.

Attempts to encourage good environmental behaviour through taxation might not work unless public policy makers study the cultural attitude and sensitivities of the populace. For instance, the tax or even a ban on sharks fin soup will not work if the public is not re-educated to reject the cultural significance of consuming the delicacy. It takes re-education to change people's attitudes towards commodity. A tax can reduce consumption, but it will still occur on special occasions. This same logic operates in taxes on alcohol and cigarettes. People still drink and smoke even though the two commodities are more expensive in Malaysia than in other ASEAN countries. Re-education takes time.

It was discussed whether public goods should be subjected to environmental taxation such as a tree growing fee. **Public goods are for the good of everyone, and financing them through a tax should not be considered.** Using a tax to increase the supply of eco-friendly services such as parks cannot be done directly because the public thinks that providing public goods is the responsibility of the government. The public pays income and local taxes and thinks it should not be burdened with more taxes.

The subsidy regime on basic essentials might work against any attempts to impose environmental taxation. Fuel, water and electricity are subsidised in Malaysia, and any attempts to introduce a carbon tax like in Australia and United Kingdom would be unacceptable. It would entail a complete removal of the subsidy, re-pegging the commodity to market value and imposing a tax on the adjusted price.

5.6 Implications from the Interviews and Focus Groups Sessions

As mentioned, the following were implied from what the experts said.

The main logic behind Coase's (1960) theory might not work in Malaysia.

Industrialists must acknowledge their role in damaging the environment. However asking the industrialist to pay for the damage through environmental taxation and carbon taxation is not a popular move. The big-stick approach is not acceptable; the carrot approach (i.e., using tax incentives) might work better.

The environmental discussion creates new business opportunities.

The idea of environmental taxation is more due to the potential generation of new innovation and business opportunities rather than the purpose of punishing environmental polluters (i.e., polluter pay). The whole environmental discourse is more centred on using tax monies to innovate new, eco-friendly products and services than on using to taxation to fine and punish.

International standards are compiled with voluntarily when the customer demands it.

Malaysians appear to be more reactive than pro-active when dealing with environmental issues. Without customer demand or the GBI incentive, no-one might be bothered to build a green building.

Only businesspeople should be responsible, not the public as a whole.

The contribution of the man on the street to saving the environment should be voluntary. Punishment for eco-unfriendly behaviour by the man on the street should be

minimal. Tree growing fees and water tariffs that will impact the common citizen are not popular.

Providing public goods is the responsibility of the government.

The provision of public goods falls within the responsibilities of authorities. The people should not be required to make any additional contribution.

It is more acceptable to the public to lump taxes together rather than itemise them

Malaysians do not like proposals for special environmental taxes. Attempts to introduce a-la-carte garbage tariffs and tree growing taxes should be implemented as part of the local government assessments. It does not seem to be acceptable for local government services to be itemised and charged separately.

The government should lead the way.

It is the responsibility of the government to provide infrastructure so that the public can be environmentally friendly. As custodian of public funds with the mandate to provide public goods and services, the government should lead the way in providing public goods and services such as better public transportation and green spaces. Environmental interest groups and the public will help the government.

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CHAPTER 6: QUANTITATIVE RESEARCH

As outlined in Chapter 3, the research next moved from qualitative to quantitative. Since the qualitative research sample of 30 experts could not represent the entire Malaysian populace, a more expansive survey was needed. In a questionnaire, Malaysian taxpayers were asked to state their opinions on selected issues pertaining to environmental taxation. The questionnaire was designed to address the issues raised during the legal and literature review and in the inputs of the experts.

6.1 The Questionnaire

A 48-question survey was administered between late May and July 2012. It had 45 seven-item Likert scale questions asking the respondents how they felt about present and future developments on environmental taxation. The scale used was as follows:

1. Strongly disagree
2. Disagree
3. Slightly disagree
4. No comment
5. Slightly agree
6. Agree
7. Strongly agree

Three questions requested that respondents choose the environmental tax and tax incentives they prefer.

The survey had six distinct sections.

- Part One: Understanding and Acceptance of Current Environmental Tax Laws

This section asked respondents to evaluate statements related to their perception of the current environmental taxes and incentives in Malaysia.

- Part Two: Outcomes

This section asked respondents to evaluate statements relating to their perception of the outcomes of environmental taxes and incentives in Malaysia.

- Part Three: Taxpayer Comprehension

This section asked respondents to evaluate statements relating to their understanding of current Malaysian tax laws dealing with environmental issues.

- Part Four: Commitment and Comprehensive Laws

This section asked respondents to evaluate the effectiveness and comprehensiveness of current tax laws dealing with the environment in Malaysia.

- Part Five: Taxpayer Preferences

The respondent was asked to select which current environmental taxes and incentives in Malaysia that they prefer.

- Part Six: Future Development

This section asked respondents to rate their perception of future tax laws dealing with the environment in Malaysia. They were also asked to select

which environmental tax initiatives from other countries they wished could be introduced in Malaysia.

6.2 Respondents

Of the 572 respondents who answered the questionnaire, 467 successfully completed it. The respondents represented all the states of Malaysia, but the most came from the more industrialised states. Penang, Selangor and the Federal Territory, which have the most taxpayers and tax collections in Malaysia, accounted for 72.60 per cent of respondents. University graduates made up the majority, of 80.90 per cent, of respondents. Those that completed the survey were 59.90 per cent ethnic Chinese and 21.20 per cent. Women returned 54.0 per cent of the completed responses.

The survey attracted Malaysians living abroad and in the country and the expatriate community in Malaysia, including the Malaysia My Second Home residents. Of the respondents, 90.80 per cent were Malaysia tax residents. Of the completed responses, 3.90 per cent came from the expatriate community, and 95.50 per cent from Malaysian citizens. Those ages 36 to 45 were the largest group of respondents (31.50 per cent), and those 26 to 35 second at 30 per cent. Those in these age ranges are in the workforce and paying taxes.

Table 6-1 *Number of Respondents by State*

	Frequency	Per cent
Selangor	79	16.90
Pulau Pinang	220	47.10
Melaka	5	1.10
Sabah	5	1.10
Sarawak	15	3.20
Wilayah Persekutuan	40	8.60
Other States	5	1.10
Did not wish to state	5	1.10
Perak	27	5.80
Pahang	6	1.30
Johor	15	3.20
Kedah	12	2.60
Kelantan	12	2.60
Terengganu	4	0.90
Negeri Sembilan	8	1.70
Perlis	9	1.90
Total	467	100.00

Table 6-2 *Respondents by Race*

	Frequency	Per cent
Malay	99	21.20
Chinese	279	59.70
Indian	53	11.30
Other Bumiputras	12	2.60
Non-Malaysian	10	2.10
Other	13	2.80
Did not wish to state	1	0.20
Total	467	100.00

Table 6-3 *Respondents by Gender*

	Frequency	Per cent
Male	207	44.30
Female	252	54.00
Did not wish to state	8	1.70
Total	467	100.00

Table 6-4 *Respondents by Tax Residence*

	Frequency	Per cent
Malaysian resident taxpayer	424	90.80
Non-resident taxpayer	34	7.30
Did not wish to state	9	1.90
Total	467	100.00

Table 6-5 *Respondents by Nationality*

	Frequency	Per cent
Malaysian	446	95.50
Non-Malaysian	18	3.90
Did not wish to state	3	0.60
Total	467	100.00

Table 6-6 Respondents by Age

	Frequency	Per cent
Below 25	41	8.80
26–35	140	30.00
36–45	147	31.50
46–55	92	19.70
56–65	34	7.30
65 or older	11	2.40
Did not wish to state	2	0.40
Total	467	100.00

6.3 Results

6.3.1 Descriptive Statistics

As mentioned, 45 of the 48 survey questions required respondents to rate how much they agreed or disagreed on a certain issue pertaining to environmental taxes and environmental issues in general. The average of the responses to the 45 questions were rounded up from 2 decimal places (as provided by SPSS) to whole number to ease classification into the categories of agree, neutral and disagree.

Encouragingly, the respondents agreed to almost all of the questions, with the exception of three questions to which they disagreed and 5 questions on which they were neutral. They were willing to support taxes (mean= 5.78) and tax incentives (mean = 5.70) as means to stop bad environmental behaviour and improve their quality of life.

The respondents were of the opinion that the current infrastructure provided by the government is not adequate for the public to be environmentally friendly. The respondents believed that public transport in Malaysia was lacking (*'The public transport system in my area is adequate'*) and the amount of public recycling bins made them hard to find (*'It is easy to find bins for recycling'*). These opinions accorded with

the complaints expressed by the experts in the interviews and focus group sessions. Like the experts, the survey respondents saw the current tax laws as adequate to address the issues of environmental degradation (*'The current tax laws are adequate to address environmental issues'*).

The respondents were neutral when asked on their opinions of specific environmental practices overseas. The respondents were not sure whether the local authorities should adopt the practice of a-la-carte billing of garbage collection as practiced in the United Kingdom (*'I feel the local authorities should charge garbage collection based on weight as practiced overseas'*). They were unsure whether oil recycling as practiced in Australia (*'I support motor oil and cooking oil recycling'*) and water reprocessing as practiced in Singapore (*'I think drinking reprocessed water like in Singapore's NuWater is fine for me'*) would be good for them.

Although the respondents strongly agreed that their lives would improve if the environment improved (mean = 6.20) and were committed to implementing a systematic and comprehensive set of environmental tax laws in Malaysia (mean= 5.65), the public showed a weak level of agreement on specific measures to encourage environmentally friendly behaviour through taxation or behaviour change. Respondents were not so ready to sacrifice their current lifestyle or even to change their daily routine to support a comprehensive set of environmental tax laws (mean = 5.06) (*'I will take the LRT or any form of public transport when the petrol price increases'*. mean = 4.64; *'Fines should be charged on people who do not sort and separate their garbage'*. mean = 4.67; *'I will not buy a conventional local car since there is tax relief for the hybrid car'*. mean = 4.71; *'I am willing to purchase food items wrapped in recycled paper.'* mean = 5.43)

Green measures that would require the public to forgo cultural beliefs were met with a lukewarm response (*'I will stop practising any rituals in my culture that destroy the environment'.* mean = 5.38; *'I will not eat sharks fin soup even if it is free'.* mean = 5.05). Purchasing goods with recycled content was viewed as noble (mean = 5.69), but the use of recycled material as food packaging was not well supported (mean = 5.43). The experts gave the same responses; some considered packaging food in recycled paper as dirty. The respondents supported taxation on sharks fin soup (mean= 5.84) but gave lukewarm support to restraining oneself from consuming the delicacy (*'I will not eat sharks fin soup even if it is free'.* mean = 5.05). Culture is an important variable to consider when dealing environmental protection policies, including tax policies, as suggested by Khor (2012).

The respondents gave more support to tax incentives than taxation as a means of encouraging good environmental behaviour (mean = 5.70). The respondents agreed (means 5.50 and above) with all the questions that dealt with incentives. The respondents supported incentives for the public to sell power to the main power grid (*'Encouraging people to produce solar power and selling back to the grid is a good move.'* mean = 5.62), giving tax holidays to green developers (*'I understand why only the green developers must be given tax breaks'* mean = 5.67; *'Giving incentives to build Green Buildings is a good move'.* mean = 6.11), lowering taxes on hybrid and electrical vehicles (*'More people buying hybrids means less pollution and is good for me.'* mean = 5.68; *'Incentives in the form of lower duties for those who purchase hybrid cars below 2,200 cc is a good thing'.* mean = 5.88), tax incentives for recycling (*'The government should give tax incentives to people involved in recycling'* mean= 6.04) and tax

incentives to encourage the production of renewable energy (*Tax incentives to encourage producing energy using biomass is a good thing* ' mean = 5.89).

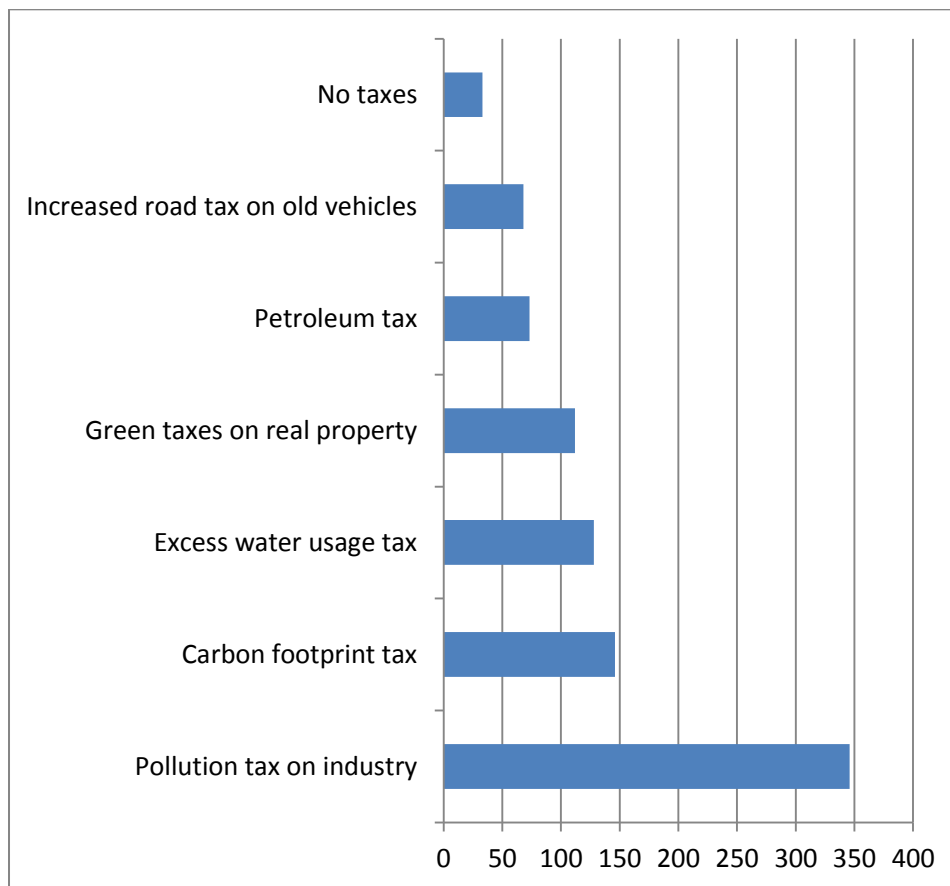
Table 6-7 Survey Means

Disagree (2)	
The public transport system in my area is adequate.	2.48
Slightly Disagree (3)	
It is easy to find bins for recycling	3.03
The current tax laws are adequate to address environmental issues.	3.33
Neutral (4)	
I am open to a higher road tax to encourage the use of public transport.	3.61
I feel that local authorities should charge garbage collection based on weight as practiced overseas.	4.37
I support motor oil and cooking oil recycling.	4.41
I think drinking reprocessed water like Singapore's NuWater is fine for me.	4.41
I understand how buildings are certified as green.	4.45
Slightly Agree (5)	
I will take the LRT or any form of public transport when the petrol price increases.	4.64
Fines should be charged to people who do not sort and separate their garbage.	4.67
The current tax laws on the environment are contradictory.	4.68
I will not buy a conventional local car since there is tax relief for hybrid cars.	4.71
A comprehensive set of environmental tax laws means more income for the government.	4.77
Every property developer must pay a tax to the government to build parks.	5.02
I will not eat shark fin soup even if it is free.	5.05
I am willing to sacrifice my current lifestyle for a comprehensive set of environmental tax laws which are good for me.	5.06
I sorted my garbage for recycling	5.19
Charging some money for plastic bags at all hypermarkets and most shops is a good move.	5.34
I will stop practising any rituals in my culture that destroy the environment.	5.38
I am willing to purchase food items wrapped in recycled paper.	5.43
I am open to carbon taxes as it will save the environment.	5.48
A comprehensive set of environmental tax laws is good for me.	5.50

Agree (6)	
I understand why we should have a comprehensive set of environmental tax laws.	5.50
I am open to accepting new environmental tax laws that are in line with international practices .	5.55
Encouraging people to produce solar power and selling back to the GRID is a good move.	5.62
I understand why it is fair to pay for plastic bags.	5.63
I am committed about having a systematic and comprehensive set of environmental tax laws in Malaysia.	5.65
I understand why only the green developers must be given tax breaks.	5.67
I am willing to support charging of money on plastics bags as in the long run the environment will be made better.	5.67
More people buying hybrids means less pollution and it is good for me.	5.68
I am willing to purchase good with recycled items.	5.69
I will support environmental tax incentives as it will improve my life.	5.70
Sustainable energy through biomass is good for my life.	5.75
I am willing to support taxes that will stop bad environmental behaviour so that my quality of life will improves.	5.78
I understand why we must pay extra if we use too much water.	5.79
I look forward to a more systematic and comprehensive set of environmental tax laws .	5.82
I support high taxes on shark fins.	5.84
Incentives in the form lower duties for those who purchase hybrid cars below 2,200 cc is a good thing.	5.88
Tax incentives to encourage producing energy using biomass is a good thing.	5.89
Green buildings improve my life.	5.99
I understand if I sacrifice a certain behaviour I will benefit in the future.	6.00
Clean solar energy is good for me.	6.01
The government should give tax incentives to people involved in recycling.	6.04
Giving incentives to build Green Buildings is a good move.	6.12
My life will improve if the environment improves.	6.28

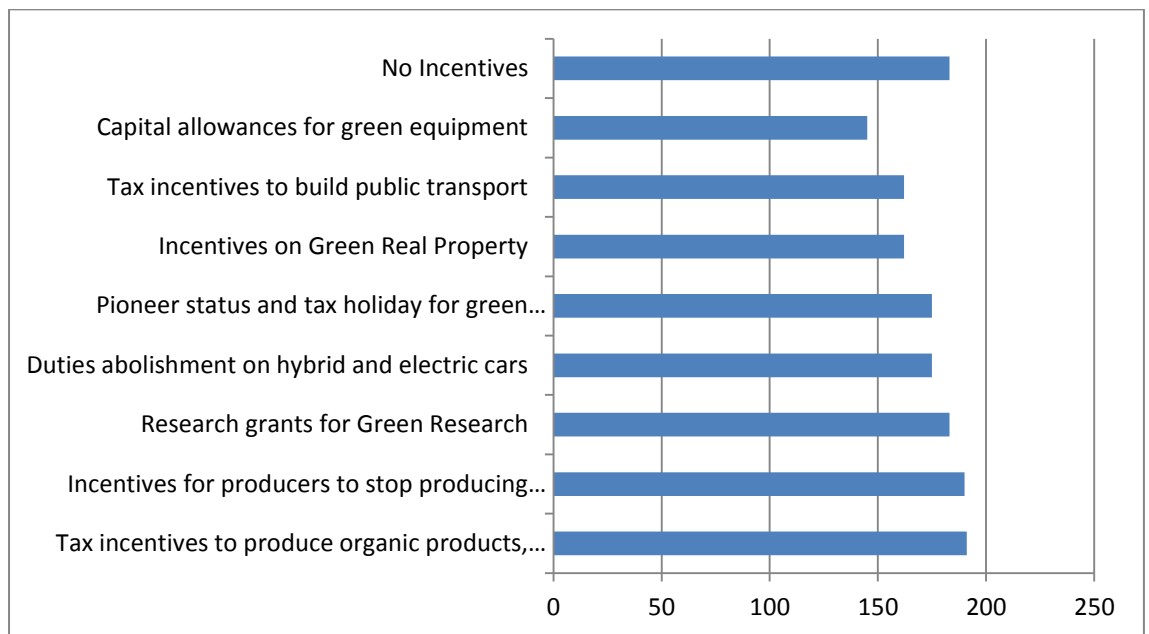
Research Question 7 enquired which types of environmental taxes the Malaysian taxpayer preferred. The respondents were asked to indicate their preferences among the types of environmental taxes introduced by the government or suggested by members of parliament to encourage good environmental behaviour. The respondents preferred taxes which were aimed at industry and not at individuals. The pollution tax and the carbon footprint tax lies on industry. Taxes that would impact common citizens, such as a tax on petrol (e.g., pricing of RON 95 at market prices and RON 92 at subsidised prices) and road taxes on old vehicles, were the least popular.

Figure 6-1 Preferred Environmental Taxes



Research question 8 enquired which types of environmental incentives the Malaysian taxpayer preferred. The respondents were asked to indicate which they preferred among the types of environmental incentives introduced by the government or suggested by lawmakers. Generally the respondents were supportive of all forms of tax incentives listed. They were most supportive of incentives to produce organic, sustainable and free trade products and to eliminate the use of plastic and Styrofoam boxes. However, there were also quite a large portion of respondents who felt that the tax incentives on environmental matters were enough and there was no need for more incentives.

Figure 6-2 Preferred Environmental Incentives

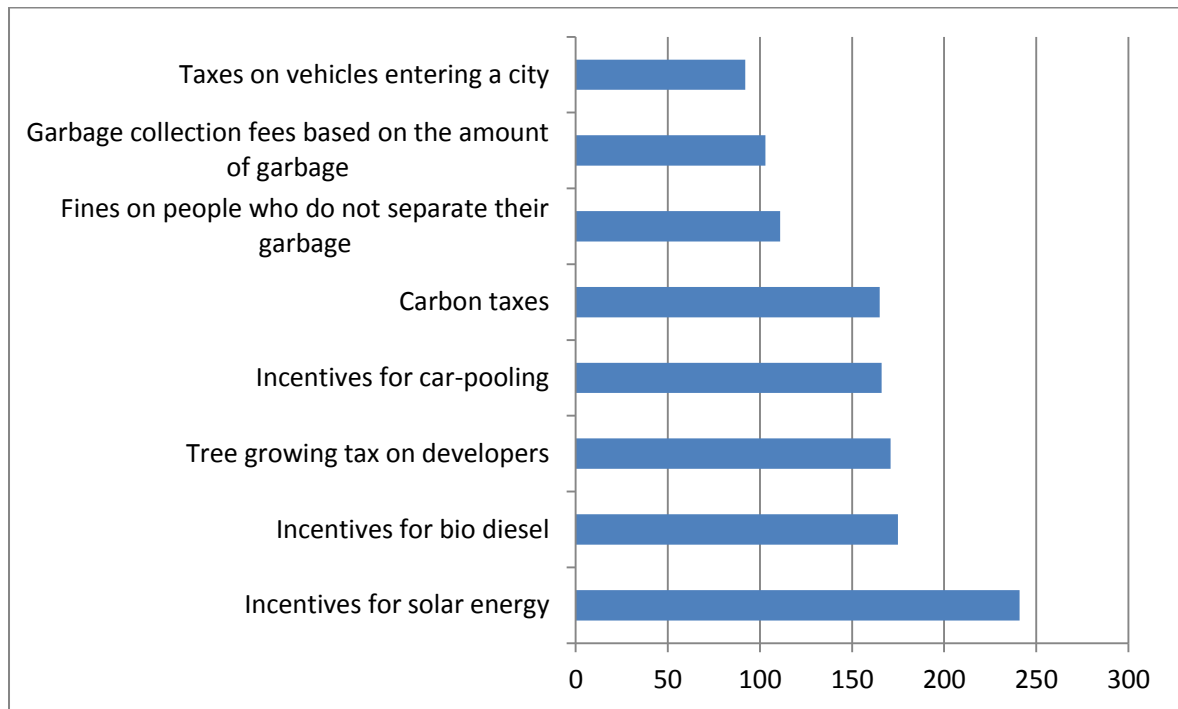


Research question 9 enquired whether new tax instruments and incentives practiced in developed countries might be acceptable to the Malaysian taxpayer. In Question 48, the respondents were asked to vote on environmental taxes and incentives that were practiced in the developed countries but yet to be introduced in Malaysia. The respondents preferred tax incentives over taxes as means of encouraging good environmental behaviour.

The respondents overwhelmingly supported incentives for renewable energy such solar power and bio diesel. As mentioned in the literature review, these forms of incentives have been implemented in Australia. Malaysia recently began to encourage the production of solar power through the feed-in-tariff. Respondents supported that initiative with a mean of 5.62.

Again, the respondents did not favour of any taxes that impacted the common citizen. Fines and garbage collection fees (as practiced in certain boroughs in the United Kingdom) and taxes on vehicles entering a city (as practiced in Singapore) were the least popular options.

Figure 6-3 Preferred Future Environmental Taxes and Incentives



6.3.2 Model Analysis

In Chapter 3, the environmental taxation acceptance model was introduced, and the following variables identified as components of the model. Six independent variables—future quality of life, self-actualisation, attitudes, immediate tax incentives, forced compliance and tax mitigation—are paired to the dependent variable of acceptability of environmental taxes to Malaysian taxpayers. Using a simple regression analysis, the researcher test which independent variables are significant and would affect any attempts to make environmental taxes acceptable to the Malaysian taxpayer.

Relevant questions in the questionnaire are identified and matched to each independent variable in a block. The blocks are paired to the dependent variables and then tested using the regression analysis. The same blocks used in the pilot study (as identified in 3.7.2.2) were used in this study.

6.4 The Findings: The Overall Model

The researcher has decided to determine which independent variable would be the most dominant from the overall model. The researcher grouped into the blocks (as identified in section 3.7.2.2) the means for each question. The mean scores for each blocks was calculated, as shown in Table 6.8.

Table 6-8 Independent Variable Means

Questions	Level of Agreement
It is easy to find bins for recycling	3.03
I support motor oil and cooking oil recycling.	4.41
I think drinking reprocessed water like Singapore's NuWater is fine for me.	4.41
I will take the LRT or any form of public transport when the petrol price increases.	4.64
I will not buy a conventional local car since there is tax relief for hybrid cars.	4.71
I will not eat shark fins even if they are free.	5.05
I am willing to sacrifice my current lifestyle for a comprehensive set of environmental tax laws which are good for me.	5.06
I sorted my garbage for recycling	5.19
I will stop practising any rituals in my culture that destroy the environment.	5.38
I am willing to purchase food items wrapped in recycled paper.	5.43
I am willing to purchase good with recycled items.	5.69
Attitudes (Mean)	4.82
Charging some money for plastic bags at all hypermarkets and most shops is a good move.	5.34
I support high taxes on shark fins.	5.84
Forced Compliance (Mean)	5.59
My life will improve if the environment improves.	6.28
Future Quality of Life (Mean)	6.28
More people buying hybrids means less pollution and is good for me.	5.68
I will support environmental tax incentives as they will improve my life.	5.70
Tax incentives to encourage producing energy using biomass is a good thing.	5.89
Immediate Tax Incentives (Mean)	5.76
A comprehensive set of environmental tax laws means more income for the government.	4.77
Sustainable energy through biomass is good for my life.	5.75
I look forward to a more systematic and comprehensive set of environmental tax laws.	5.82
Green buildings improve my life.	5.99
I understand that, if I sacrifice a certain behaviour, I will benefit in the future.	6.00
Clean solar energy is good for me.	6.01
Self-actualisation (Mean)	5.72
Encouraging people to produce solar power and selling it back to the grid is a good move.	5.62
Incentives in the form of lower duties for those who purchase hybrid cars below 2,200 cc are good.	5.88
Giving incentives to construct green buildings is a good move.	6.12
Tax Mitigation (Mean)	5.87

The researcher noted that the respondents agreed (mean = 6) that forced compliance (mean = 5.59), future quality of life (mean = 6.28), immediate tax incentives (mean = 5.76), self-actualisation (mean = 5.72) and tax mitigation (mean = 5.87) are the independent variables that contribute to the acceptance of environmental tax laws in Malaysia. Attitudes were the least important independent variable because

respondents slightly agreed with the importance of this variable, giving it a low mean of score of 4.82. Future quality of life is the most important variable to the acceptance of environmental taxation in Malaysia, carrying the highest mean of 6.28.

At 95 per cent confidence, the F test for each blocks of independent variables (future quality of life = 128.86, self-actualisation = 35.64, attitudes = 16.50, immediate tax incentives = 20.05, forced compliance = 18.32m and tax mitigation = 16.49; larger than > 1.97) shows that the environmental taxation acceptance model is statistically significant as shown in Table 6.9. Models 1 to 6 had *p-values* below 0.05. Significance is a statistical term that tells whether a relationship exists or not. It is clear here that the variables of future quality of life, self-actualisation, attitudes, immediate tax incentives, forced compliance and tax mitigation all have relationships with environmental tax acceptance.

Table 6-9 Significance Reading for the Various Independent Variables of the Environmental Taxation Acceptance Model

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	180.79	1	180.79	128.86	0.00
	Residual	652.37	465	1.40		
	Total	833.16	466			
2	Regression	293.40	7	41.91	35.64	0.00
	Residual	539.76	459	1.18		
	Total	833.16	466			
3	Regression	332.16	18	18.45	16.50	0.00
	Residual	500.99	448	1.12		
	Total	833.16	466			
4	Regression	405.10	21	19.29	20.05	0.00
	Residual	428.06	445	0.96		
	Total	833.16	466			
5	Regression	406.19	23	17.66	18.32	0.00
	Residual	426.97	443	0.96		
	Total	833.16	466			
6	Regression	411.16	26	15.81	16.49	0.00
	Residual	422.00	440	0.96		
	Total	833.16	466			

The R^2 readings displayed in Table 6.10 show that the legal aspects of the model (immediate tax incentives = 0.49, forced compliance = 0.49 and tax mitigation' = 0.49) played a greater role in explaining the model than the human behavioural aspects, which have a larger R^2 reading. This does not mean that future quality of life, self-actualisation and attitudes were not important in the model because they all have small R^2 values. Colton and Bower (2002) held that, even if the R^2 value is small, one or more of the regression coefficient p -values can be statistically significant. Such a relationship between predictors and the response might be highly important, even though it might not explain a large amount of variation in the response.

The hand of the law, acting through taxation, has more power to make people accept environmental tax laws than relying on human goodness. The public is compelled to comply with the environmental tax laws. The law then becomes a catalyst in making a person adopt more environmentally friendly behaviour.

Table 6-10 *R² Reading for the Various Independent Variables of the Environmental Taxation Acceptance Model*

Model		R	R2	Adjusted R2	Std. Error of the Estimate
1	Future quality of life	0.47	0.22	0.22	1.18
2	Self-actualisation	0.59	0.35	0.34	1.08
3	Attitudes	0.63	0.40	0.38	1.06
4	Immediate tax incentives	0.70	0.49	0.46	0.98
5	Forced compliance	0.70	0.49	0.46	0.98
6	Tax mitigation	0.70	0.49	0.46	0.98

6.4.1 Findings: Attributes of the Independent Variables

The most significant attributes of each independent variable are examined next

Table 6-11 Significance Readings for Attributes of the Independent Variables of the Environmental Taxation Acceptance Model

Significant		
Model		t Sig.
1 Future quality of life	(Constant) My life will improve if the environment improves.	5.37 0.00 11.35 0.00
2 Self-actualisation	Clean solar energy is good for me. I understand that, if I sacrifice a certain behaviour, I will benefit in the future. A comprehensive set of environmental tax laws is good for me.	1.76 0.08 3.40 0.00 6.34 0.00
3 Attitudes	I will take the LRT or any form of public transport when the petrol price increases. I am willing to sacrifice my current lifestyle for a comprehensive set of environmental tax laws which are good for me.	1.88 0.06 4.61 0.00
4 Immediate tax incentives	I will support environmental tax incentives as they will improve my life.	8.60 0.00
5 Forced compliance		
6 Tax mitigation	Giving incentives to construct green buildings is a good move.	(1.88) 0.06

a. Dependent Variable: I am willing to support taxes that will stop bad environmental behaviour so that my quality of life will improve.

Not Significant		
Model		t Sig.
2 Self-actualisation	Green buildings improve my life. Sustainable energy through biomass is good for my life. I look forward to a more systematic and comprehensive set of environmental tax laws.	0.12 0.91 (0.47) 0.64 0.20 0.84
3 Attitudes	I will not buy a conventional local car since there is tax relief for the hybrid car. I am willing to purchase good with recycled items. I am willing to purchase food items wrapped in recycled paper. I think drinking reprocessed water like Singapore's NuWater is fine for me. I support motor oil and cooking oil recycling. I sorted my garbage for recycling I will stop practising any rituals in my culture that destroy the environment. It is easy to find bins for recycling I will not eat shark fin even if it is free.	(0.80) 0.43 (1.02) 0.31 (0.07) 0.94 (0.31) 0.76 0.43 0.67 (0.63) 0.53 (0.54) 0.59 1.65 0.10 0.48 0.63
4 Immediate tax incentives	Tax incentives to encourage producing energy using biomass are a good thing. More people buying hybrids means less pollution and is good for me.	(0.94) 0.35 0.05 0.96
5 Forced compliance	Charging some money for plastic bags at all hypermarkets and most shops is a good move. I support high taxes on shark fins.	(1.03) 0.30 0.37 0.71
6 Tax mitigation	Incentives in the form of lower duties for those who purchase hybrid cars below 2,200 cc is a good thing. Encouraging people to produce solar power and selling it back to the grid is a good move.	(0.79) 0.43 0.89 0.38

In statistics, regression analysis is a statistical process for estimating the relationships among variables. It includes many techniques for modelling and analysing several variables when the focus is on the relationship between a dependent variable and one or more independent variables. In this project, the researcher is interested only to determining whether the independent and dependent variables have a relationship. The researcher is not interested in creating a regression model or any predicting models because social research is fluid and making predictions using an equation is not realistic.

Quality of life. Improvement in the present quality of life will impact future quality of one's life (sig. = 0.00). The implication here is that the quality of life today will have an impact on life tomorrow.

Self-actualisation. The understanding of the need for sacrificing of one's behaviour (sig. = 0.00) and the knowledge that comprehensive environmental tax laws are good for a person's wellbeing (sig = 0.00) are significant attributes in self-actualisation (Subramuniaswami (2003). As part of achieving some level of self-actualisation, voluntarily restraining oneself from environmentally destructive behaviour and knowing that monies sacrificed towards the environment are noble attributes. This implies that a noble person cares for the environment.

Attitudes. Surprisingly, although the respondents said that they were willing to sacrifice their current lifestyle for a comprehensive set of environmental tax laws which are good for them (sig = 0.00), many respondents were not committed to practice specific actions to protect the environment. Such practices included stopping buying a conventional domestic car' (sig. = 0.43), 'purchasing goods with recycled items' (sig = 0.31), buying food items wrapped in recycled paper (sig = 0.94), drinking reprocessed water (sig = 0.76), supporting oil recycling (sig = 0.67), sorting garbage for recycling

(sig = 0.53), stopping practising any rituals that destroy the environment (sig = 0.59) and stopping eating sharks' fin (sig = 0.63).

The walk must follow the talk. The public knows that it needs to make sacrifices (including paying taxes) for the environment but is not willing to commit to practices that will save the environment. Sadly, the Malaysian taxpayer is not 100 per cent committed to protecting the environment. It can safely be concluded that Malaysian taxpayers need to change their attitudes towards the environment and that Malaysians have yet to reach the level of self-actualisation.

Immediate tax incentives. Environmental tax incentives eventually improve one's life (sig. = 0.00). It does not matter what kinds of incentives are given by the government as long as there are incentives (biomass tax incentives, sig. = 0.35; hybrid tax incentives, sig. =0.96). This finding clearly implies that immediate tax incentives are a highly important factor in the success of environmental taxation at encouraging good environmental behaviour.

Forced compliance. Environment tax laws will work if forced upon the public. The statistics showed that the public will comply with the laws of which compliance is demanded. The public do not see significant enough value in of paying for plastic bags (sig. =0.30) and forgoing sharks' fin (sig=0.71) to make them accept the merits of being environmentally friendly. As mentioned earlier by the experts, environmental tax laws must first create inconveniences for the public. The public slowly gets used to such inconveniences of having no plastic bags or shark fin soup and slowly weans itself off the habit. Again, as mentioned earlier, it is implied that Malaysians have yet to reach the level of 'self-actualisation'.

Tax mitigation. Tax authorities must be careful so that tax mitigation could derail their good intentions of environmental taxation. The taxpayer does not care that buying a tax-exempted hybrid is good personally (sig=0.43) or that solar power is good for the environment (sig=0.38). Individuals typically plan their taxes in order to pay less tax. It does not matter whether a tax incentive is good for the individual or not so as long the tax bill is lower.

6.4.2 Cross-tabulation Analysis

Cross-tabulation analysis was performed on the data. The Pearson Chi-square test was used to determine the significance of the relationship between the categorical variables: gender, age, nationality, tax residence, marital status, education, employment, race and state.

Issues that significantly affect the opinions of different categorical variables were identified. Section 6.6 shows how a comparison of means was used to identify the root causes of the issues that cause disagreement among the various categorical variables.

6.4.2.1 Gender

At a 95 per cent confidence level, there is no significant difference between the opinions of the sexes except for nine questions. Except for tax mitigation and attitudes, men and women perceive most of the independent variables in the environmental taxation acceptance model as means to encourage environmental tax acceptance.

Men and women disagreed on issues pertaining to vehicle ownership, including whether the tax incentive for hybrid cars (sig. = 0.04) introduced in Budget 2011 is a good measure and whether it will prompt car buyers to stop purchasing conventional vehicles (sig = 0.04).

Men and women disagreed on how tax mitigation can be used to promote good environmental behaviour. Men and women did not agree on whether environmental tax laws are designed to promote good behaviours (sig. = 0.04) or to generate more revenue for the government (sig. = 0.00). They disagreed on whether the current tax laws adequately address environmental issues (sig. = 0.00).

Attitudes differ among men and women on whether non-taxation measures would help elevate environment degradation, whether to voluntarily give up any cultural rituals (sig. = 0.01) and whether to support oil recycling (sig = 0.04).

Table 6-12 *Cross-tabulation—Gender*

Question	Asymp. Sig. (2-sided)	Model Independent Variable
Incentives in the form of lower duties for those who purchase hybrid cars below 2,200 cc are good. * Gender	0.04	Tax Mitigation
I understand why only green developers must be given tax breaks. * Gender	0.04	N/A
The current tax laws are adequate to address environmental issues. * Gender	0.00	
I will not buy a conventional domestic car since there is tax relief for hybrid cars. * Gender	0.04	N/A
A comprehensive set of environmental tax laws is good for me. * Gender	0.04	N/A
A comprehensive set of environmental tax laws means more revenue for the government. * Gender	0.00	N/A
I support motor oil and cooking oil recycling. * Gender	0.04	Attitudes
It is easy to find bins for recycling * Gender	0.00	Attitudes
I will stop practising any rituals in my culture that destroy the environment. * Gender	0.01	Attitudes

6.4.2.2 Age

Respondents of various ages disagreed on seven questions: whether the current tax laws adequately addressed environmental issues (sig. = 0.05), whether the hybrid car incentive (sig. = 0.10) was effective, whether to impose taxes on developers to build green areas as practiced in Penang (sig. = 0.03), whether to stop cultural rituals that destroy the environment (sig. = 0.00) and whether the carbon tax (sig. = 0.052) was

effective. These findings imply that age generally does not affect one’s acceptance of environmental taxation; however, certain issues pertaining to the needs of an age group (such as parks for the elderly) do matter.

Except on tax mitigation and attitudes, respondents of various ages approved of most of the independent variables in the environmental taxation acceptance model as means to encourage environmental tax acceptance. Older taxpayers might not support tax mitigation for purchasing hybrid vehicles in which they are uninterested. Less environmentally friendly practices or attitudes to which the older generation are accustomed are difficult to discard.

Table 6-13 *Cross-tabulation—Age*

Question	Asymp. Sig. (2-sided)	Model Independent Variable
Incentives in the form of lower duties for those who purchase hybrid cars below 2,200 cc are a good thing. * Age	0.10	Tax mitigation
Every property developer must pay a tax to the government to build parks. * Age	0.03	N/A
The current tax laws are adequate to address environmental issues. * Age	0.05	N/A
I am willing to sacrifice my current lifestyle for a comprehensive set of environmental tax laws which are good for me. * Age	0.00	Attitudes
It is easy to find bins for recycling * Age	0.04	Attitudes
I will stop practising any rituals in my culture that destroy the environment. * Age	0.00	Attitudes
I am open to carbon taxes as they will save the environment. * Age	0.05	N/A

6.4.2.3 Nationality

Both Malaysians and non-Malaysians responded to the survey, which was placed on the Internet and publicised through Facebook and LinkedIn. There was not much difference in the responses from Malaysians and other nationalities to most questions concerning environmental taxation and the environment, except for eight issues. Malaysians and those from other countries disagreed on issues pertaining to transportation, namely using tax incentives to produce biofuels (sig. = 0.03), the

adequacy of local transportation (sig. = 0.00) and the effectiveness of tax incentives for purchasing hybrids (sig. = 0.01). The group also disagreed on whether taxation on sharks' fin would curb consumption (sig. = 0.04) of the delicacy.

Except for immediate tax incentives, attitudes and forced compliance, Malaysians and non-Malaysians approved of most of the independent variables in the environmental taxation acceptance model as means to encourage environmental tax acceptance.

Table 6-14 *Cross-tabulation—Nationality*

Question	Asymp. Sig. (2-sided)	Model Independent Variable
Tax incentives to encourage producing energy using biomass are good. * Nationality	0.03	Immediate tax incentives
I support high taxes on shark fins. * Nationality	0.04	Attitudes
More people buying hybrids means less pollution and is good for me. * Nationality	0.01	Forced compliance
The current tax laws are adequate to address environmental issues. * Nationality	0.06	N/A
The public transport system in my area is adequate. * Nationality	0.00	N/A
I understand how buildings are certified as green. * Nationality	0.03	N/A
I am open to accepting new environmental tax laws that are in line with international practices. * Nationality	0.00	N/A
Fined should be charged to people who do not sort and separate their garbage. * Nationality	0.02	N/A

6.4.2.4 Tax Residency

Malaysian resident taxpayers and non-resident taxpayers disagreed on only five issues, as shown in Table 6.15. Perhaps because of the cultural differences, their attitudes toward using taxes as a means to promote good environmental behaviour differ.

Table 6-15 *Cross-tabulation—Tax Residency*

Question	Asymp. Sig. (2-sided)	Model Independent Variable
Charging some money for plastic bags at all hypermarkets and most shops is a good move. * Tax residency	0.04	N/A
I understand why only green developers must be given tax breaks. * Tax residency	0.02	N/A
The current tax laws are adequate to address environmental issues. * Tax residency	0.03	N/A
The public transport system in my area is adequate. * Tax residency	0.01	N/A
I support motor oil and cooking oil recycling. * Tax residency	0.00	Attitudes

6.4.2.5 Marital Status

Except for tax mitigation, self-actualisation and attitudes, the married, single and divorced respondents agreed with most of the independent variables in the environmental taxation acceptance model. Married, single and divorced people disagreed on 11 questions ranging from the forms of environmental tax incentives such as hybrid car incentives (sig. = 0.02) to green building incentives (sig. = 0.03). They disagreed on whether fines should be imposed on people who do not separate their garbage (sig. = 0.04) and the effectiveness of carbon taxes (sig. = 0.00). The comparison of means among groups subsection 6.6 will show discuss the issues married and single people disagree.

Table 6-16 *Cross-tabulation—Marital Status*

Row: Question	Asymp. Sig. (2-sided)	Model Independent Variable
Incentives in the form of lower duties for those who purchase hybrid cars below 2,200 cc are good. * Marital status	0.02	Tax mitigation
Every property developer must pay a tax to the government to build parks. * Marital status	0.01	N/A
I support high taxes on shark fins. * Marital status	0.05	N/A
I am willing to support taxes that will stop bad environmental behaviour so that my quality of life will improve. * Marital status	0.03	N/A
Green buildings improve my life. * Marital status	0.03	Self-actualisation
I understand why only green developers must be given tax breaks. * Marital status	0.01	N/A
I look forward to a more systematic and comprehensive set of environmental tax laws. * Marital status	0.04	Self-actualisation
I am willing to sacrifice my current lifestyle for a comprehensive set of environmental tax laws which are good for me. * Marital status	0.01	Attitudes
I will stop practising any rituals in my culture that destroy the environment. * Marital status	0.00	Attitudes
I am open to carbon taxes as they will save the environment. * Marital status	0.00	N/A
Fines should be charged to people who do not sort and separate their garbage. * Marital status	0.04	N/A

6.4.2.6 Education

The opinions of respondents from various education backgrounds were significantly different. The groups with different educational levels disagreed on 19 of 45 questions and had different perceptions of the current environmental taxes and incentives and their outcomes in Malaysia.

Except for self-actualisation and attitudes, respondents from different educational backgrounds agreed with most of the independent variables in the environmental taxation acceptance model. The higher the educational level, the more attitudes towards life differ and the more strongly the need for a more fulfilling lifestyle is felt.

These results imply that the level of education does affect the taxpayer's comprehension of current tax laws dealing with environmental issues and perception of the effectiveness and comprehensiveness of current tax laws dealing with the environment in Malaysia. The significant findings are summarised in Table 6.17.

Table 6-17 Cross-tabulation—Education

Question	Asymp. Sig. (2-sided)	Model Independent Variable
Encouraging people to produce solar power and sell it back to the grid is a good move. * Education	0.03	N/A
I support high taxes on shark fins. * Education	0.00	N/A
My life will improve if the environment improves. * Education	0.01	N/A
I am willing to support taxes that will stop bad environmental behaviour so that my quality of life will improve. * Education	0.04	N/A
I am willing to support charging money on plastics bags as in the long run, the environment will be made better. * Education	0.00	N/A
More people buying hybrids means less pollution and is good for me. * Education	0.01	Immediate tax incentives
I understand why it is fair to pay for plastic bags. * Education	0.03	N/A
I understand why we must pay extra if we use too much water. * Education	0.02	N/A
I understand why only green developers must be given tax breaks. * Education	0.00	N/A
I look forward to a more systematic and comprehensive set of environmental tax laws. * Education	0.00	Self-actualisation
The public transport system in my area is adequate. * Education	0.00	N/A
I understand why we should have a comprehensive set of environmental tax laws. * Education	0.00	N/A
I am willing to sacrifice my current lifestyle for a comprehensive set of environmental tax laws which are good for me. * Education	0.00	Attitudes
I am willing to purchase good with recycled items. * Education	0.00	Attitudes
It is easy to find bins for recycling. * Education	0.00	Attitudes
I am open to accepting new environmental tax laws that are in line with international practices. * Education	0.02	N/A
I am open to carbon taxes as they will save the environment. * Education	0.01	N/A
I am open to higher road tax to encourage the use of public transport. * Education	0.02	N/A
I feel the local authorities should charge garbage collection based on weight as practiced overseas. * Education	0.01	N/A

6.4.2.7 Employment

The respondents' occupation barely affected their acceptance of environmental tax laws and understanding of environmental issues. There was significant difference in two of the 45 questions asked. This implies that vocation does not affect acceptance of environmental tax laws and understanding of environmental issues.

Table 6-18 *Cross-tabulation—Employment*

Question	Asymp. Sig. (2-sided)	Model Independent Variable
The current tax laws are adequate to address environmental issues . *	0.00	Attitudes
Employment		
I support motor oil and cooking oil recycling. * Employment	0.00	N/A

6.4.2.8 Race

The respondents of different races disagreed on 11 questions, including on issues pertaining the usage of recycled paper (sig. = 0.02), reprocessed water (sig. = 0.01) and shark fin tax (sig. = 0.00). The respondents also disagreed on how tax incentives should be awarded (to biomass projects) (sig. = 0.01) and the use of hybrids (sig. = 0.00). At this point, it is suspected that cultural issues affect the decisions made by taxpayers from different ethnic groups. All ethnic groups have different cultural practices, some of which might be environmentally friendly, while others are not. Except for forced compliance and attitudes, respondents from different races approved of most of the independent variables in the environmental taxation acceptance model.

A comparison of means test will be performed on the Malay, Chinese and Indian respondents to determine how their opinions differ.

Table 6-19 *Cross-tabulation—Race*

Question	Asymp. Sig. (2-sided)	Model Independent Variable
Tax incentives to encourage producing energy using biomass are good. * Race	0.01	Forced compliance
I am willing to support charging money on plastics bags as in the long run, the environment will be made better. * Race	0.03	Forced compliance
More people buying hybrids means less pollution and is good for me. * Race	0.00	N/A
The current tax laws are adequate to address environmental issues. * Race	0.00	N/A
The public transport system in my area is adequate. * Race	0.05	N/A
I understand why we should have a comprehensive set of environmental tax laws. * Race	0.04	N/A
I am willing to purchase food items wrapped in recycled paper. * Race	0.02	Attitudes
I think drinking reprocessed water like Singapore's NuWater is fine for me. * Race	0.01	Attitudes
The government should give tax incentives to people involved in recycling. * Race	0.02	N/A
I will not eat shark fins even if they are free. * Race	0.00	Attitudes
I am open to carbon taxes as they will save the environment. * Race	0.01	N/A

6.4.2.9 State

Overall, the respondents from different states did not differ much in opinion on issues pertaining to environmental taxation. They disagreed on issues pertaining to transportation: whether local transportation is adequate (sig. = 0.00) and whether to stop buying conventional cars since there is a tax incentive for hybrids (sig. = 0.00). Except for immediate tax incentives and attitudes, respondents from different states agreed with most of the independent variables in the environmental taxation acceptance model. These results imply that Malaysians, wherever they live, do not disagree on why they need to be eco-friendly.

Table 6-20 *Cross-tabulation— State*

Question	Asymp. Sig. (2-sided)	Model Independent Variable
Tax incentives to encourage producing energy using biomass are good. * State	0.03	Immediate tax incentives
I am willing to support taxes that will stop bad environmental behaviour so that my quality of life will improve. * State	0.03	N/A
I will not buy a conventional local car since there is tax relief for the hybrid car. * State	0.00	Attitudes
The public transport system in my area is adequate. * State	0.00	N/A
I am willing to purchase goods with recycled items. * State	0.10	Attitudes
I am willing to purchase food items wrapped in recycled paper. * State	0.06	Attitudes

6.5 Findings: Answering the Research Questions Using Regression Analysis

As mentioned, the researcher was interested only in determining whether the independent and dependent variables have relationships, not in defining a regression model or prediction models. The researcher examined the relationship between various variables embedded in the questionnaire. The questions in the questionnaire contain the following variables and issues, which were investigated below.

Q01 Plastic bags fee

Q02 Hybrid cars incentive

Q03 Sell solar power

Q04 GBI incentive

Q05 Biomass incentive

Q06 Park tax

Q07 Shark fins tax

Q08 Believe that life will improve if the environment is improved

Q09 Taxes to stop bad environmental behaviour support

- Q10 Plastic bags fee support
- Q11 Environmental tax incentives support
- Q12 Hybrids incentive support
- Q13 Green buildings support
- Q14 Solar energy support
- Q15 Biomass support
- Q16 Understanding that it is fair to pay for plastic bags
- Q17 Understanding that is fair pay extra to use excess water
- Q18 Understanding what green tax breaks are
- Q19 Understanding the need for sacrificial behaviour
- Q20 Adequacy of tax laws
- Q21 Contradictory tax laws
- Q22 Anticipation of comprehensive tax laws
- Q23 Commitment to comprehensive tax laws
- Q24 Take public transport
- Q25 Stop buying conventional cars
- Q26 Adequate public transport
- Q27 Understanding of comprehensive laws
- Q28 See comprehensive laws as good
- Q29 Comprehensive laws mean income for the government.
- Q30 Willing to sacrifice current lifestyle
- Q31 Willing to purchase good with recycled items
- Q32 Willing to purchase food wrapped in recycled paper
- Q33 Willing to drink reprocessed water

- Q34 Support oil recycling
- Q35 Support tax incentives for recycling
- Q36 Sort garbage for recycling
- Q37 Find recycling bins
- Q38 Stop practising rituals
- Q39 Boycott shark fins
- Q40 Green building certification understanding
- Q43 Accept international practices
- Q44 Accept carbon taxes
- Q45 Accept higher road taxes
- Q46 Accept garbage collection based on weight
- Q47 Accept fines for not sorting garbage

This researcher hypothesised that taxes (in this case, environmental taxes) act as a catalyst for improving the quality of life in Malaysia. To determine whether existing Malaysian tax laws supported improved quality of life in Malaysia, a correlation analysis was performed between questions 1–7 and question 8. The independent variables were the environmental taxes and incentives enforced in Malaysia:

- Q01 Plastic bags fee
- Q02 Hybrid cars incentive
- Q03 Sell solar power
- Q04 GBI incentive
- Q05 Biomass incentive

Q06 Park tax

Q07 Shark fins tax

The dependent variable was from question 8 ‘*My life will improve if the environment is improved*’.’ Table 6.19 displays the results of the test.

Table 6-21 *Correlation Analysis on Current Taxes and Incentives Highlighting Issues Statistically Significant for Improving the Environment*

	R	R2	Adjusted R2		
Model summary	0.33	0.11	0.10		
	Sum of Squares	Df	Mean Square	F	Sig.
Regression	51.59	7.00	7.37	8.16	0.00
Residual	414.66	459.00	0.90		
Total	466.25	466.00			
	Sig.				
(Constant)	0.00				
Encouraging people to produce solar power and selling it back to the grid is a good move.	0.01				
Giving incentives to build green buildings is a good move.	0.00				
I support high taxes on shark fins.	0.05				

At 95 per cent confidence, the F test ($8.16 > 1.97$) shows that the model is significant. However, not all of the variables from questions 1 to 7 are significant as measured by the adjusted R^2 ($R^2 = 0.10$). Only sell solar power (sig. = 0.05), green buildings incentive (sig. = 0.00) and shark fins tax (sig. = 0.05) are existing taxes and incentives that significantly improve the environment and thus quality of life. Variables, however, are not rejected solely because their adjusted R^2 is low. Colton and Bower (2002) posited that, even if the R^2 value is small, one or more of the regression coefficient p -values can be statistically significant. Such a relationship between predictors and the response could be highly important, although it does not explain a large amount of variation in the response.

Research question 1 asked whether changes in the Malaysian tax law will improve quality of life. A correlation analysis was performed between questions 9–15 and question 8 to attempt to answer research question 1 and prove H2.

Research question 1: *Does the Malaysian taxpayer think that changes in the Malaysian tax law will improve the quality of life in Malaysia?*

And

H2: *The Malaysian taxpayer foresees that environmental commitment will result in an improved quality of life.*

The independent variables were the taxes and incentives the taxpayer could support that would improve the quality of life in Malaysia.

Q09 Support for taxes to stop bad environmental behaviour

- Q10 Support for plastic bags fee
- Q11 Support for environmental tax incentives
- Q12 Support for hybrids incentive
- Q13 Support for green buildings
- Q14 Support for solar energy
- Q15 Support for biomass

The dependent variable was from question 8, *'My life will improve if the environment is improved.'*

Table 6-22 Correlation Analysis for Research Question 1 and H2

	R	R2	Adjusted R2		
Model summary	0.29	0.28	0.85		
	Sum of Squares	Df	Mean Square	F	Sig.
Regression	135.69	7.00	19.38	26.92	0.00
Residual	330.57	459.00	0.72		
Total	466.25	466.00			
	Sig.				
(Constant)	0.00				
I am willing to support taxes that will stop bad environmental behaviour so that my quality of life will improve.	0.00				
I will support environmental tax incentives as they will improve my life.	0.04				
Green buildings improve my life.	0.00				
Clean solar energy is good for me.	0.04				

Note. The table shows issues in Malaysian tax law that significantly improve quality of life.

At 95 per cent confidence, the F test ($26.92 > 1.97$) showed that the model and H2 are significant. The Malaysian taxpayer foresees that environmental commitment will improve quality of life. The variables from questions 9–15 are more significant than the first model (see Figure 6.22) as measured by the adjusted R^2 ($R^2 = 0.28$). Support of taxes that will stop bad environmental behaviour (sig. = 0.04), of the development of green buildings (sig. = 0.00) and of the production of clean solar energy (sig. = 0.04) significantly improve quality of life. Punishing bad behaviour through taxation and the commitment to green buildings and solar energy were also effective at increasing quality of life.

The respondents did not feel that buying hybrids, paying for plastic bags or generating energy through biomass and the accompanying fiscal initiatives could improve quality of life. Linking this result to H3, we can conclude that the Malaysian taxpayer is happy with selected of the current set of environmental taxes.

Research question 2 asked whether the Malaysian taxpayer is committed to having a full set of environmental tax laws implemented. To answer this research question, a correlation analysis was performed on questions 24 and 30–40 against question 23. This test was related to H1. The independent variables were actions the taxpayer could take to show commitment to different parts of environmental tax laws:

- Q24 Take public transport
- Q25 Stop buying conventional cars
- Q30 Willing to sacrifice current lifestyle
- Q31 Willing to purchase good with recycled items
- Q32 Willing to purchase food wrapped in recycled paper
- Q33 Willing to drink reprocessed water
- Q34 Support oil recycling
- Q35 Support tax incentives for recycling
- Q36 Sort garbage for recycling
- Q37 Find recycling bins
- Q38 Stop practising cultural rituals

Q39 Boycott shark fins

Q40 Understanding of green building certification

The dependent variable in Q23 is commitment to comprehensive laws commitment.

Table 6-23 Correlation Analysis for Research Question 2

	R	R2	Adjusted R2		
Model summary	0.36	0.13	0.10		
	Sum of Squares	Df	Mean Square	F	Sig.
Regression	59.70	13.00	4.59	5.12	0.00
Residual	406.56	453.00	0.90		
Total	466.25	466.00			
	Sig.				
(Constant)	0.00				
The government should give tax incentives to people involved in recycling.	0.05				

Note. These issues are significant to the Malaysian taxpayer’s commitment to the implementation of a full set of environmental tax laws.

At 95 per cent confidence, the F test ($5.12 > 1.97$) shows that the model is significant. However, the adjusted R^2 value for this model is quite low at only 0.10. Sadly, taxpayers are not extremely committed to changing their lifestyle once a full set of environmental tax laws is in place (H1). The respondents are only supportive of general changes to their life such as willing to sacrifice current lifestyle (sig. = 0.01) and stop practising cultural rituals (sig. = 0.00) and not of specific sacrifices such as take public transport (sig. = 0.35), willing to purchase good with recycled items (sig. = 0.40), ‘willing to purchase food wrapped in recycled paper (sig. = 0.29), willing to drink

reprocessed water (sig. = 0.16) and boycott shark' fins (sig. = 0.91). Walking the talk seems to be quite difficult for the public.

However, the respondents were agreeable to a lifestyle change if the government gave tax incentives. The respondents would stop buying conventional cars (sig. = 0.01) when incentives on hybrids were given. It can be concluded that tax incentives are more effective than environmental taxes at catalysing changes to a more environmentally friendly lifestyle.

Research question 3 asked whether the motives of the current Malaysian tax law were easily understood by the public. To answer this, questions 16–19 were paired against question 23 and tested in a regression analysis. This test was closely related to H4.

The independent variables in questions 16–18 are the level of comprehension of why current environmental taxes and incentives are in place. Question 19 concerns the level of comprehension of why one must sacrifice current environmentally unfriendly behaviour in order to save the environment.

Q16 Understand that it is fair to pay for plastic bags

Q17 Understand that is fair pay extra to use too much water.

Q18 Understand what green tax breaks are

Q19 Understand need for behaviour sacrifice

The dependent variable in question 23 is commitment to comprehensive laws.

Table 6-24 Correlation Analysis for Research Question 3

	R	R ²	Adjusted R ²		
Model summary	0.36	0.13	0.12		
	Sum of Squares	Df	Mean Square	F	Sig.
Regression	62.69	4.00	15.67	16.77	0.00
Residual	431.72	462.00	0.93		
Total	494.41	466.00			
	Sig.				
(Constant)	0.00				
I understand why it is fair to pay for plastic bags.	0.01				
I understand why we must pay extra if we use too much water.	0.03				
I understand why only green developers must be given tax breaks.	0.03				
I understand that, if I sacrifice a certain behaviour, I will benefit in the future.	0.01				

Notes. This test assessed whether the motives for the current Malaysian tax laws were easily understood by the Malaysian public.

At 95 per cent confidence, the F test ($16.77 > 1.97$) showed that the model is significant with a low adjusted R^2 at 0.12. Despite a R^2 value, one or more of the regression coefficient p -values can be statistically significant. Such a relationship between predictors and the response can be extremely important, even though it might not explain a large amount of variation in the response (Colton & Bower, 2002). The respondents understand that it is fair to pay for plastic bags (sig=0.01), that is fair pay extra to use too much water' (sig. = 0.03), what green tax breaks are (sig. = 0.03) and that some sacrifices are needed for environmental taxation to succeed (sig. = 0.01). This test proves H4, that the public understands the motives behind environmental taxation laws.

The researcher also considered the perception that taxation is motivated by governments' desire for revenue. Therefore, questions 16–19 were paired against question 29 and tested in a regression analysis.

The independent variables in questions 16–18 are the level of comprehension of the motives for the existing environmental tax and incentive laws. The independent variable of question 19 is the level of comprehension of why one must sacrifice current environmentally unfriendly behaviour to save the environment.

Q16 Understand that it is fair to pay for plastic bags

Q17 Understand that is fair pay extra to use too much water

Q18 Understand what green tax breaks are

Q19 Understand need for behaviour sacrifice

The dependent variable in question 29 is whether 'comprehensive laws mean income for the government.

Table 6-25 *Regression Analysis for the Income motive of Taxation*

R	R2	Adjusted R2	Std. Error of the Estimate		
0.04	0.00	(0.01)	1.41		
	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.77	3.00	0.59	0.30	0.83
Residual	920.17	463.00	1.99		
Total	921.94	466.00			

Notes. The model has been proven to be invalid.

The test resulted in a negative adjusted R^2 and an F statistic of 0.30. This model is not valid.

Research questions 4 and H1a asked whether Malaysian taxpayers appreciated the motives behind and intent for implementing a full set of environmental tax laws. The researcher placed a current tax (Q10), support for plastic bags fee support, as an independent variable against the dependent variable in question 27, understanding of comprehensive laws understanding, to investigate their relationship.

Table 6-26 *Correlation Analysis for Research Question 4 and H1a (Understand the Need for a Comprehensive Set of Environmental Tax Laws)*

	R	R ²	Adjusted R ²		
Model summary	0.23	0.05	0.05		
	Sum of Squares	Df	Mean Square	F	Sig.
Regression	31.43	1.00	31.43	25.67	0.00
Residual	569.32	465.00	1.22		
Total	600.75	466.00			
	Sig.				
(Constant)	0.00				
I am willing to support charging oney on plastics bags as in the long run, the environment will be made better.	0.00				

At 95 per cent confidence, the F test ($25.67 > 1.97$) showed that the model was significant with a low adjusted R^2 of 0.05. The respondents who supported taxes on plastics bags would ultimately support the need for a comprehensive set of environmental tax laws (sig. = 0.00)

The Malaysians who supported the need for a comprehensive set of environmental tax laws supported the need for a comprehensive set of environmental tax incentives. The independent variable in question 12, support hybrids incentives, was paired with the independent variable from question 11, support for environmental tax incentives. At 95 per cent confidence, the F test ($66.68 > 1.97$) shows that the model is significant with a low adjusted R^2 at 0.12.

Table 6-27 *Correlation Analysis for Research Question 4 and H1a (Understand the Need for a Comprehensive Set of Environmental Incentive Laws)*

	R	R2	Adjusted R2		
Model summary	0.35	0.13	0.12		
	Sum of Squares	Df	Mean Square	F	Sig.
Regression	96.72	1.00	96.72	66.68	0.00
Residual	674.51	465.00	1.45		
Total	771.22	466.00			
	Sig.				
(Constant)	0.00				
More people buying hybrids means less pollution and is good for me.	0.00				

Research Question 5 inquired whether Malaysians will accept changes to bring tax laws in line with international practices. H5 is related to this research question. The independent variables are environmental taxes in other countries not introduced to Malaysia:

- Q44 Accept carbon taxes
- Q45 Accept higher road tax
- Q46 Accept garbage collection based on weight
- Q47 Accept fines on not sorting garbage

The dependent variable in question 43 is accepting international practices.

Table 6-28 *Correlation Analysis for Research Question 5: Significant Issues Determining Malaysians' Willingness to Accept Changes to Bring Tax Laws in Line with International Practices*

	R	R ²	Adjusted R ²		
Model summary	0.61	0.37	0.37		
	Sum of Squares	Df	Mean Square	F	Sig.
Regression	219.76	4.00	54.94	68.29	0.00
Residual	371.70	462.00	0.81		
Total	591.47	466.00			
	Sig.				
(Constant)	0.00				
I am open to carbon taxes as they will save the environment.	0.00				
Fines should be charged to people who do not sort and separate their garbage.	0.00				

At 95 per cent confidence, the F test ($68.29 > 1.97$) shows that the model is significant with an adjusted R^2 level of 0.37. The respondents can accept carbon taxes (sig. = 0.00), garbage collection based on weight (sig. = 0.06) and fines on not sorting garbage (sig. = 0.00), practices from the United Kingdom and Australia, but not higher road taxes (sig. = 0.48) as practiced in Italy and the United Kingdom. It can be concluded that the public is willing to accept most forms of taxation practiced internationally with the exception of those dealing with road tax (H5). Any attempt by authorities to limit the usage of private vehicles is unacceptable to the Malaysian public.

6.6 Comparison of Means between Groups

The previous cross-tabulation tests assessed whether groups differed in opinion. The researcher ran the 'compare means' function in SPSS and recorded the observations

from the system. The researcher zoomed in to see on what issues the groups actually disagreed. The respondents were grouped by:

- Gender
- Age
- Education level
- Sources of income
- Marital status
- Political affiliations
- Race

Comparisons between different nationalities and tax residence were made because the number of non-Malaysians and non-Malaysian tax residents among the respondents was insufficient for any meaningful comparison. The groups were monitored using Levene's test for equality of variances, yielding a 95 per cent significance level. Levene's test uses the null hypothesis to see if the variances of the groups are the same. A reading below 0.05 indicated significant differences in opinion between the two groups being tested. A reading above 0.05 indicated agreement on the question being asked.

6.6.1 Gender

The respondents were comprised of 207 males and 252 females. Levene's test showed no significant differences in the opinions of the male and female respondents, except in the issues reported in Table 6.29 (sig. < 0.05).

Table 6-29 Questions that Showed Significant Differences of Opinion between the Genders.

	F	Sig.	Gender	N	Mean	Std. Deviation	Std. Error Mean
Incentives in the form of lower duties for those who purchase hybrid cars below 2,200 cc are good.	4.90	0.03	Male	207	6.05	1.15	0.08
			Female	252	5.74	1.34	0.08
I support high taxes on shark fins.	23.24	0.00	Male	207	5.59	1.80	0.12
			Female	252	6.02	1.39	0.09
I am willing to support charging money on plastics bags as in the long run, the environment will be made better.	4.69	0.03	Male	207	5.55	1.65	0.11
			Female	252	5.77	1.52	0.10
I understand why it is fair to pay for plastic bags.	5.40	0.02	Male	207	5.55	1.65	0.11
			Female	252	5.77	1.52	0.10
I understand that, if I sacrifice a certain behaviour, I will benefit in the future.	4.00	0.05	Male	207	5.55	1.65	0.11
			Female	252	5.77	1.52	0.10
I understand why we should have a comprehensive set of environmental tax laws.	5.06	0.03	Male	207	5.55	1.65	0.11
			Female	252	5.77	1.52	0.10
A comprehensive set of environmental tax laws means more income for the government.	10.32	0.00	Male	207	4.60	1.57	0.11
			Female	252	4.90	1.26	0.08
I support motor oil and cooking oil recycling.	4.43	0.04	Male	207	4.54	2.00	0.14
			Female	252	4.33	1.81	0.11
I sorted my garbage for recycling	4.87	0.03	Male	207	4.91	1.65	0.11
			Female	252	5.40	1.44	0.09
It is easy to find bins for recycling	5.03	0.03	Male	207	3.02	1.76	0.12
			Female	252	2.97	1.60	0.10
I am open to higher road taxes to encourage the use of public transport.	10.23	0.00	Male	207	3.55	2.03	0.14
			Female	252	3.67	1.80	0.11

Women were more united than men in their support for taxes on sharks fins (SD = 1.39) and on plastic bags (SD = 1.52). More women expressed understanding of why sacrificing a certain behaviour today (whether influenced by taxation or not) will benefit the environment in the long run (SD = 1.52) and understanding of why a comprehensive set of environmental tax laws is needed (SD = 1.52). Men were more divided on whether to support or be neutral (mean = 4.54, SD = 2.00) issues dealing with motor oil and cooking oil recycling; women (mean = 4.33, SD = 1.81) generally had no opinion on that matter. Men (mean = 6.05 SD = 1.15) were more united than women (mean = 5.74, SD = 1.34) in supporting incentives for hybrid cars as compared to the women.

The results from the Levene's test indicate women tend to show more unanimity in support for a certain tax (e.g., sharks' fin) but be neutral on issues such as oil recycling. Men were divided in their opinion but generally more opinionated than women, who remained neutral on some issues.

6.6.2 Age

There are six different categorical variables under the attribute age so the Levene's test for equality of variances, which addresses only two categorical variables, is not an appropriate measure. A more simplified analysis performed by calculating the mean was used instead. In the cross-tabulation analysis, the respondents of different ages disagreed on seven questions. The mean score of the questions from the respondents of various ages were calculated.

Table 6-30 Mean Scores by Age Groups

Age	Incentives in the form of lower duties for those who purchase hybrid cars below 2,200 cc is good. * Age	Every property developer must pay a tax to the government to build parks. * Age	The current tax laws are adequate to address environmental issues. * Age	I am willing to sacrifice my current lifestyle for a comprehensive set of environmental tax laws which are good for me. * Age	It is easy to find bins for recycling. * Age	I will stop practising any rituals in my culture that destroy the environment. * Age	I am open to carbon taxes as they will save the environment. * Age
Younger than 26	6	5	4	5	3	5	5
26–35	6	5	4	5	3	5	5
36–45	6	5	3	5	3	5	5
46–55	6	5	3	5	3	6	6
56–65	6	5	3	5	3	5	6
65 or older	5	7	4	5	4	5	6

The elderly older than 65 (mean = 5) were less likely than younger respondents (mean = 6) to support incentives for hybrids cars. The elderly were highly supportive (mean =7) of fees on developers to finance parks. Those in the prime of their careers (36–55 years old) and the recently retired (56–65 years old) believe that the current tax laws were inadequate to address environmental issues. Respondents of other age groups were neutral on these two issues.

This result implies that respondents of all ages were willing to stop practicing any cultural rituals that destroy the environments but those between ages 46 and 55 are the most supportive of this move. Overall, respondents of all ages were supportive of carbon tax.

6.6.3 Education Level

More university graduates (378 respondents) participated in this survey than non-graduates (89 respondents). In the cross-tabulation analysis, significant differences in opinion between respondents from various education backgrounds were noted in 18 questions. The significant differences emerged in the degree of agreement and disagreement, not in the direction of agreement or disagreement. There was no question whether the different groups agreed or disagreed on a given question. There were only groups of respondents who were neutral to certain questions, e.g., the ease of finding recycled bins, openness to higher road tax and acceptance of garbage collection charged by weight.

Table 6-31 Mean Scores by Education Level

	Encouraging people to produce solar power and sell it back to the grid is a good move. * Education	I support high taxes on shark fins. * Education	My life will improve if the environment is improved. * Education	I am willing to support taxes that will stop bad environmental behaviour so that my quality of life will improve. * Education	I am willing to support charging of money on plastics bags as in the long run the environment will be made better. * Education	More people buying hybrids means less pollution and is good for me. * Education	I understand why it is fair to pay for plastic bags. * Education	I understand why we must pay extra if we use too much water. * Education	I understand why only green developers must be given tax breaks. * Education
Secondary school	5	7	6	6	6	6	6	6	6
Certificate or diploma	5	6	6	6	6	6	5	6	6
Bachelor's degree	6	6	6	6	6	6	6	6	5
Master's degree	6	6	6	6	6	6	6	6	6
Doctoral degree	6	6	6	6	6	6	6	6	6
Professional qualification	6	6	6	6	6	6	6	6	6

	I look forward to a more systematic and comprehensive set of environmental tax laws. * Education	The public transport system in my area is adequate. * Education	I understand why we should have a comprehensive set of environmental tax laws. * Education	I am willing to purchase good with recycled items. * Education	It is easy to find bins for recycling. * Education	I am open to accepting new environmental tax laws that are in line with international practices. * Education	I am open to carbon taxes as they will save the environment. * Education	I am open to higher road taxes to encourage the use of public transport. * Education	I feel that local authorities should charge garbage collection based on weight as practiced overseas. * Education
Secondary school	6	3	5	6	4	5	6	4	4
Certificate or diploma	6	2	5	5	3	5	5	3	4
Bachelor's degree	6	3	5	6	3	5	5	3	4
Master's degree	6	2	6	6	3	6	6	4	5
Doctoral degree	6	3	6	6	3	6	6	4	5
Professional qualification	6	3	6	6	4	6	6	4	4

A second test was performed to see whether there are differences of opinion between graduates and non-graduates. The data was regrouped, and the results observed. There were no significant difference in opinion between graduates and non-graduates, except on four questions on which respondents were asked to rate their agreement. The implication from the Levene's test is that education level generally does not determine whether one supports environmental tax issues.

Table 6-32 Questions that Showed Significant Differences of Opinion by Education

Level

Independent Samples Test						
	Levene's Test for Equality of Variances		N	Mean	Std. Deviation	Std. Error Mean
	F	Sig.				
Charging some money for plastic bags at all hypermarkets and most shops is a good move.	7.06	0.01	89	5.13	2.10	0.22
			378	5.39	1.79	0.09
I will take the LRT or any form of public transport when the petrol price increases.	10.41	0.00	89	4.94	1.38	0.15
			378	4.56	1.78	0.09
A comprehensive set of environmental tax laws means more income for the government.	5.07	0.03	89	4.94	1.38	0.15
			378	4.56	1.78	0.09
It is easy to find bins for recycling.	8.85	0.00	89	3.21	1.84	0.20
			378	2.98	1.64	0.08

6.6.4 Sources of income

More salaried workers (423) than those with business income (44) answered the survey. The prevalence of salaried workers does not mean that the majority of respondents were not in touch with issues concerning business people. The respondents who answered as taxpayers with business income were sole proprietors or business

partners. The survey was sent to members of the Federation of Malaysian Manufacturers and the accounting bodies and addressed to members of their management. As a company is a corporate person and the management are merely employees of the organisation, the respondents classified themselves as taxpayers with no business income (BE). Although the respondents may declare their taxes as a taxpayer with no business income, it cannot be said that they are ignorant of business tax regulations as some file company tax returns on behalf of the companies for which they work.

Table 6-33 Questions that Showed Significant Differences of Opinion by Income Source

Independent Samples Test						
	Levene's Test for Equality of Variances		Income Source	Mean	Std. Deviation	Std. Error Mean
	F	Sig.				
Charging some money for plastic bags at all hypermarkets and most shops is a good move.	4.25	0.04	Business source	5.11	2.16	0.33
			Non-business source	5.36	1.82	0.09
I understand why it is fair to pay for plastic bags.	14.49	-	Business source	5.16	2.02	0.30
			Non-business source	5.68	1.38	0.07
I understand why only green developers must be given tax breaks.	5.51	0.02	Business source	5.55	1.58	0.24
			Non-business source	5.68	1.14	0.06
The public transport system in my area is adequate.	3.95	0.05	Business source	2.09	1.54	0.23
			Non-business source	2.52	1.74	0.08
A comprehensive set of environmental tax laws means more income for the government.	8.37	0.00	Business source	4.66	1.79	0.27
			Non-business source	4.78	1.36	0.07
I am willing to purchase good with recycled items.	7.10	0.01	Business source	5.50	1.36	0.20
			Non-business source	5.71	0.99	0.05

Except for six questions, there was generally no significant disagreement among the taxpayers with a business source of income and those without a business source. Respondents with a business source were more divided in supporting plastic bag fees (SD = business 2.16, non-business = 1.82) at hypermarkets, the fairness of charging for plastic bags (SD = business 2.02, non-business = 1.38) and whether green incentives should be given to developers (SD = business 1.58, non-business = 1.13).

The Levene's test implied that any change in the tax regime would directly affect business owners, i.e. sole proprietors and business partners. They want to be supportive of the environment but they do not want to compromise their profitability. The salary man is indirectly affected by the changes to the tax regime, including environmental taxation. In its current form, environmental taxation does not affect personal income tax. Perhaps the results would be different if environmental taxation directly affected personal income tax.

6.6.5 Marital Status

Compared to other groups, marital status significantly affected respondents' opinions on the acceptance of environmental taxation. Unmarried (170) and married (275) respondents differed on 11 of the 45 questions asked.

The results of the Levene's test were quite surprising. Unmarried respondents were more supportive of environmental issues, including taxation, and of questions pertaining specific environmental issues such as plastic bag fees and taxes on shark fins. Married respondents expressed more support on general questions, such as environmental taxation's capacity to improve quality of life and the need for comprehensive environmental taxation. These results are ironic because most married people have children, who will inherit the world, but married respondents seemed less

supportive of specific initiatives to improve the environment than unmarried respondents who have no vested interest in the future state of the world.

Table 6-34 Questions that Showed Significant Differences of Opinion by Marital Status

Independent Samples Test							
	Levene's Test for Equality of Variances		Marital Status	N	Mean	Std. Deviation	Std. Error Mean
	F	Sig.					
Charging some money for plastic bags at all hypermarkets and most shops is a good move.	10.36	0.00	Single or never been married	170	5.64	1.67	0.13
			Married	275	5.20	1.91	0.12
Every property developer must pay a tax to the government to build parks.	9.38	0.00	Single or never been married	170	4.96	1.70	0.13
			Married	275	5.07	2.00	0.12
I am willing to support charging for plastics bags as in the long run, the environment will be made better.	18.92	0.00	Single or never been married	170	5.98	1.31	0.10
			Married	275	5.50	1.68	0.10
I understand why it is fair to pay for plastic bags.	7.90	0.01	Single or never been married	170	5.81	1.28	0.10
			Married	275	5.51	1.53	0.09
I understand why only green developers must be given tax breaks.	12.06	0.00	Single or never been married	170	5.45	1.26	0.10
			Married	275	5.80	1.10	0.07
I am committed to having a systematic and comprehensive set of environmental tax laws in Malaysia.	4.54	0.03	Single or never been married	170	5.61	1.10	0.08
			Married	275	5.69	0.98	0.06
I am willing to purchase food items wrapped in recycled paper.	6.26	0.01	Single or never been married	170	5.65	1.34	0.10
			Married	275	5.28	1.58	0.10
I support motor oil and cooking oil recycling.	3.91	0.05	Single or never been married	170	4.70	1.79	0.14
			Married	275	4.23	1.94	0.12
I am open to higher road taxes to encourage the use of public transport.	6.36	0.01	Single or never been married	170	3.62	1.79	0.14
			Married	275	3.63	1.98	0.12
I feel that local authorities should charge garbage collection based on weight as practiced overseas.	5.19	0.02	Single or never been married	170	4.55	1.63	0.12
			Married	275	4.31	1.84	0.11
Fines should be charged to people who do not sort and separate their garbage.	6.63	0.01	Single or never been married	170	4.80	1.59	0.12
			Married	275	4.63	1.73	0.10

6.7.6 Domicile Status

In the cross-tabulation analysis, respondents from different states exhibited significant difference in the degree, but not direction, of agreement and disagreement on six questions.

Table 6-35 Mean Scores of Respondents by Malaysian State

State	Tax incentives to encourage producing energy using biomass are a good thing. * State	I am willing to support taxes that will stop bad environmental behaviour so that my quality of life will improve. * State	I will not buy a conventional domestic car since there is tax relief for the hybrid car. * State	The public transport system in my area is adequate. * State	I am willing to purchase good with recycled items. * State	I am willing to purchase food items wrapped in recycled paper. * State
Selangor	6	6	5	2	6	6
Perak	5	6	5	2	6	5
Pahang	6	4	4	2	7	5
Johor	7	6	5	2	6	5
Kedah	6	6	5	3	6	5
Kelantan	5	7	4	2	6	5
Terengganu	7	6	6	2	7	7
Negeri Sembilan	6	7	5	3	6	5
Perlis	5	5	4	2	5	5
Pulau Pinang	6	6	5	3	6	5
Melaka	7	6	4	3	5	6
Sabah	6	6	4	2	6	6
Sarawak	6	6	5	2	5	6
Wilayah Persekutuan	6	6	4	3	6	5

Respondents from all states complained that public transport in their state was not adequate. Those from states with a more advanced means of transportation (i.e., light rail, monorail) such as Selangor and Wilayah Persekutuan were equally critical of their local transport as those from other states.

6.7.7 Political Affiliation

The states of the Federation of Malaysia were controlled by two distinct political groups after the 12th Malaysian General Elections. Penang, Selangor, Kelantan and Kedah were controlled by the Pakatan Rakyat, and the other states by the Barisan Nasional. After the 12th Malaysian General Elections, states under the control of the Pakatan Rakyat introduced fees and local taxes to encourage good environmental behaviour. The initiatives introduced in Penang and Selangor included a fee charged for plastic bags at a hypermarket and supermarket, park levies on new development and a proposed local surcharge for water. While it is not true to say that Barisan Nasional-controlled states do not have any environmental taxation, they have undertaken fewer local environmental initiatives, including taxation, than Pakatan-controlled states. Environmental taxes and incentives introduced by the federal government such as the GBI and hybrid car incentives affect all the states in Malaysia.

The respondents were divided into two groups based on their domicile. Those living in Penang, Selangor, Kelantan and Kedah were noted as living under the government of the Pakatan Rakyat, and the rest of the respondents under the Barisan Nasional. It must be noted that there is no connection between the personal political affiliations of the respondents and where they reside. Of the respondents, 134 came from Barisan Nasional states and 323 from Pakatan Rakyat states.

Using the Levene's test, only six of the questions showed a significance level below 0.05.

Table 6-36 *Questions that Showed Significant Differences of Opinion between Respondents Living in Barisan Nasional and Pakatan Rakyat States*

Independent Samples Test						
	Levene's Test for Equality of		Political Affiliation	Mean	Std. Deviation	Std. Error Mean
	F	Sig.				
I support high taxes on shark fins.	11.20	0.00	Barisan Nasional state	6.04	1.31	0.11
			Pakatan Rakyat state	5.78	1.69	0.09
I understand why only green developers must be given tax breaks.	9.22	0.00	Barisan Nasional state	5.83	1.01	0.09
			Pakatan Rakyat state	5.58	1.24	0.07
I am committed to implementing a systematic and comprehensive set of	5.51	0.02	Barisan Nasional state	5.56	1.15	0.10
			Pakatan Rakyat state	5.70	0.97	0.05
The public transport system in my area is adequate.	4.23	0.04	Barisan Nasional state	2.31	1.70	0.15
			Pakatan Rakyat state	2.55	1.74	0.10
A comprehensive set of environmental tax laws is good for me.	5.67	0.02	Barisan Nasional state	5.38	1.23	0.11
			Pakatan Rakyat state	5.55	1.05	0.06
I am willing to purchase food items wrapped in recycled paper.	12.27	0.00	Barisan Nasional state	5.29	1.77	0.15
			Pakatan Rakyat state	5.47	1.38	0.08

Reassuringly, based on Levene's test, acceptance of environmental taxation did not depend on the state where the respondents lived and its political affiliation. There were no differences in opinion on tax-specific questions such as 'Charging some money for plastic bags at all hypermarkets and most shops is a good move' or 'Incentives in the form of lower duties for those who purchase hybrid cars below 2,200 cc is a good thing' whether the respondent lived in a Barisan Nasional- or Pakatan Rakyat-controlled state. The former is a Pakatan Rakyat initiative, while the latter is a Barisan Nasional initiative. Regional political affiliations did not respondents' acceptance of environmental tax laws.

The respondents differed on issues such the acceptance of taxes on sharks fin and of recycled food wrappers. However, these questions have no connection to any initiatives introduced by either Barisan Nasional or Pakatan Rakyat.

6.7.8 Race

Using the Levene's test, the three largest racial groups of respondents—Malay, Chinese and Indian— were compared. Other ethnic groups were not compared because their numbers were insignificant. There were 99 Malay, 279 Chinese and 53 Indian respondents.

The Malays and Chinese differed in their responses to five questions. Malays were more likely than the Chinese to support environmental taxation as a means to improve quality of life, based on the higher mean of 6.10 and a smaller standard deviation of 1.02 (Chinese mean = 5.61 SD, = 1.46). The Malays were more supportive of environmental tax incentives (Malay mean = 5.97, SD = 1.06; Chinese mean = 5.60, SD = 1.37).

It can be concluded that culture played a role in this difference (Khor, 2012). The Malays are more supportive of taxes on shark fins, with a mean of 6.28 compared to the Chinese mean of 5.73, and firmer in this stance, with a standard deviation of 1.36 compared to the Chinese standard deviation of 1.61. This difference could arise because shark fin soup is considered an important delicacy, representing class, wealth and generosity and is a fixture at traditional Chinese dinner banquets (Shark Truth, 2012).

Halal principles of Islam affect how the Malays perceive drinking reprocessed water. In the interviews and focus group sessions, the Malay experts expressed their reluctance to use reprocessed water because it might contain excrement, which is one form of *najis* (things regarded as ritually unclean). Al-Nawawi in his book *Minhadj* stated that *najis* includes wine, other spirituous drinks, dogs, pigs, dead animals that were not ritually slaughtered, blood, excrement and the milk of animals whose meat

Muslims may not eat. Any contact with *najis* things put a Muslim in a state of ritual impurity (*najasad*). The Malay respondents were more quick to object to drinking reprocessed water (mean =3.63), while the Chinese were more supportive of it (mean = 4.64).

Table 6-37 *Questions that Showed Significant Differences of Opinion between Malay and Chinese Respondents*

Independent Samples Test						
	Levene's Test for Equality of Variances		Race	Mean	Std. Deviation	Std. Error Mean
	F	Sig.				
Every property developer must pay a tax to the government to build parks.	4.95	0.03	Malay	5.04	2.08	0.21
			Chinese	5.08	1.81	0.11
I support high taxes on shark fins.	6.25	0.01	Malay	6.28	1.36	0.14
			Chinese	5.73	1.61	0.10
I am willing to support taxes that will stop bad environmental behaviour so that my	12.76	0.00	Malay	6.09	1.02	0.10
			Chinese	5.61	1.46	0.09
I will support environmental tax incentives as it will improve my life.	10.32	0.00	Malay	5.97	1.06	0.11
			Chinese	5.60	1.37	0.08
I think drinking reprocessed water in Singapore's NuWater is fine for me.	4.60	0.03	Malay	3.63	1.79	0.18
			Chinese	4.64	1.55	0.09

The Chinese respondents differed from the Indian respondents on 12 questions. The Indians were generally more supportive of using taxation and incentives to protect the environment than the Chinese. The Indians gave greater supportive to environmental taxes (Chinese mean = 5.61, Indian mean = 6.06), incentives to buy hybrids (Chinese mean = 5.62, Indian mean = 6.02), promotion of biomass incentives (Chinese mean = 5.67, Indian mean = 6.11) and green building incentives (Chinese mean = 5.58, Indian mean = 5.96). The Indians were more likely than the Chinese take public transport if the petrol subsidies were reduced (Chinese mean = 4.60, Indian mean = 5.04). Indians

(mean = 4.96) were less supportive of using recycled paper to wrap their food than the Chinese (mean = 5.43).

Again, culture and religion play a part in this difference. The Indians in Malaysia are predominantly Hindus. Dharma, or natural law, is an important concept in Indian philosophy and makes behaviours that maintain the natural order and protect nature a key element of Hinduism. Indian and Chinese eating customs also differ, which could explain why Indians were not as receptive to using recycled paper food wrappers.

Table 6-38 *Questions that Showed Significant Differences of Opinion between Chinese and Indian Respondents*

Independent Samples Test							
	Levene's Test for Equality of Variances		Race	N	Mean	Std. Deviation	Std. Error Mean
	F	Sig.					
Every property developer must pay a tax to the government to build parks.	6.38	0.01	Chinese	279	5.08	1.81	0.11
			Indian	53	4.60	2.13	0.29
I am willing to support taxes that will stop bad environmental behaviour so that my quality of life will improve.	7.34	0.01	Chinese	279	5.61	1.46	0.09
			Indian	53	6.06	1.10	0.15
I am willing to support charging for plastics bags as in the long run, the environment will be made better.	3.23	0.07	Chinese	279	5.68	1.52	0.09
			Indian	53	5.66	1.87	0.26
More people buying hybrids means less pollution and is good for me.	5.39	0.02	Chinese	279	5.62	1.20	0.07
			Indian	53	6.02	1.03	0.14
Sustainable energy through biomass is good for my life.	5.36	0.02	Chinese	279	5.67	0.99	0.06
			Indian	53	6.11	0.85	0.12
I understand why only green developers must be given tax breaks.	6.74	0.01	Chinese	279	5.58	1.25	0.07
			Indian	53	5.96	0.90	0.12
I am committed to implementing a systematic and comprehensive set of environmental tax laws in Malaysia	11.85	0.00	Chinese	279	5.55	1.05	0.06
			Indian	53	6.02	0.84	0.12
I will take the LRT or any form of public transport when the petrol price increases.	3.13	0.08	Chinese	279	4.60	1.75	0.10
			Indian	53	5.04	1.54	0.21
I will not buy a conventional local car since there is tax relief for the hybrid car.	3.16	0.08	Chinese	279	4.69	1.58	0.09
			Indian	53	5.38	1.38	0.19
The public transport system in my area is adequate.	7.23	0.01	Chinese	279	2.30	1.65	0.10
			Indian	53	2.94	2.02	0.28
I am willing to purchase food items wrapped in recycled paper.	18.14	0.00	Chinese	279	5.43	1.38	0.08
			Indian	53	4.96	1.95	0.27
The government should give tax incentives to people involved in recycling.	4.51	0.03	Chinese	279	6.00	0.89	0.05
			Indian	53	6.04	0.78	0.11

The Malays and Indian respondents differed on only six questions. The Indians (mean = 6.11) were more supportive of bio-mass initiatives than the Malays (mean = 5.77). Indians were also more supportive of having a comprehensive set of

environmental tax laws (Malay mean = 5.78, Indian mean = 6.02). Both groups supported taxation on shark fins.

Table 6-39 *Questions that Showed Significant Differences of Opinion between Malay and Indian Respondents*

Independent Samples Test							
	Levene's Test for Equality of Variances		Race	N	Mean	Std. Deviation	Std. Error Mean
	F	Sig.					
Sustainable energy through biomass is good for my life.	4.74	0.03	Malay	99	5.77	1.14	0.11
			Indian	53	6.11	0.85	0.12
I am committed to implementing a systematic and comprehensive	4.26	0.04	Malay	99	5.78	1.00	0.10
			Indian	53	6.02	0.84	0.12
I am willing to purchase food items wrapped in recycled	11.59	0.00	Malay	99	5.63	1.45	0.15
			Indian	53	4.96	1.95	0.27
The government should give tax incentives to people involved in recycling.	6.11	0.02	Malay	99	6.11	0.90	0.09
			Indian	53	6.04	0.78	0.11
I will stop practising any rituals in my culture that destroy the environment.	4.47	0.04	Malay	99	5.55	1.21	0.12
			Indian	53	5.28	1.46	0.20
I will not eat shark fins even if they are free.	4.17	0.04	Malay	99	5.67	1.57	0.16
			Indian	53	5.32	1.84	0.25

6.8 Summary

6.8.1 Regression Analysis

The law, in the form of taxation, is more effective than human goodness at influencing people to accept environmental tax laws. As environmental tax laws compel people to comply, the law catalyses moves toward more environmentally friendly behaviour. The results of the regression analysis matched with the corresponding hypothesis are summarised in Table 6.40.

Table 6-40 Hypothesis Summary

No.	Hypotheses	Work Performed	Results	Conclusion
H1	The Malaysian taxpayer welcomes the introduction of a full set of environmental taxes.	Correlation analysis on questions 24 and 30–40 against question 23	At 95 per cent confidence, the F test ($5.12 > 1.97$) shows that the model is significant. The adjusted R^2 level is quite low at 0.10.	The respondents are partially supportive of general changes to their life. They give half-hearted support to the full set of environmental taxes. They are supportive of environmental tax incentives.
H1a	The Malaysian taxpayer is committed to having a full set of environmental taxes introduced.	Correlation analysis: Paired a current tax (question 10: Plastic bags fee support) as an independent variable against the dependent variable (question 27: comprehensive laws understanding) to investigate their relationship	At 95 per cent confidence, the F test ($25.67 > 1.97$) showed that the model was significant with a low adjusted R^2 of 0.05.	The respondents are half-heartedly committed to the full set of environmental taxes.
H2	The Malaysian taxpayer foresees that the result of environmental commitment is an improved quality of life.	Correlation analysis between questions 9–15 and question 8	At 95 per cent confidence, the F test ($26.92 > 1.97$) showed that the model is significant with an adjusted R^2 of 0.28.	Punishing bad behaviour through taxation and tax incentives will encourage environmental commitment that will ultimately result in the improvement in one's quality of life.
H3	The Malaysian taxpayer is happy with the current set of environmental taxes.	Not applicable	Performed through quantitative analysis	Based on the qualitative analysis, the respondents are happy with selected parts of the current set of environmental taxes, not the whole set of the taxes.
H4	The Malaysian taxpayer understands the motives behind environmental taxation laws.	Correlation analysis between questions 16–18 and question 19	At 95 per cent confidence, the F test ($16.77 > 1.97$) showed that the model is significant with a low adjusted R^2 of 0.12.	The public understands the motives behind environmental taxation laws.
H5	The Malaysian taxpayer is able to accept changes to bring environmental tax laws in line with international practices.	Correlation analysis between questions 44–47 and question 43	At 95 per cent confidence, the F test ($68.29 > 1.97$) shows that the model is significant with an adjusted R^2 of 0.37.	The public can accept most forms of taxation practiced internationally with the exception of those dealing with road tax. Any attempt by authorities to limit the usage of private vehicles is unacceptable to the Malaysian public.

6.8.2 Attributes of the Independent Variables

Quality of life. Improvements to one's quality of life extend into the future. Future quality of life is the most important variable to the successful acceptance of environmental taxation in Malaysia.

Self-actualisation. The understanding of the need for sacrificial behaviour and the knowledge that comprehensive environmental tax laws are good for personal wellbeing are significant elements of self-actualisation. Self-actualisation can be demonstrated by voluntarily restraining oneself from environmentally destructive behaviour and acknowledging sacrificing monies for the environment as noble.

Attitudes. Unfortunately, the Malaysian taxpayer is not 100 per cent committed to protecting the environment. The public know that its needs to sacrifice (including paying taxes) for the environment but is not willing to commit to practices that will save the environment. Attitudes were the least important independent variable since the respondents slightly agreed with its importance. This variable was the only one about which respondents from different genders, ages, education levels, residence, marital status, races and domicile disagreed. Each group had different attitudes towards environmental taxation as a means of promoting good environmental behaviours.

Immediate tax incentives. To the Malaysian public, it does not matter what kinds of incentives are introduced by the government so long as there are incentives. Immediate tax incentives are a highly important factor in the success of environmental taxation at encouraging good environmental behaviour.

Forced compliance. Environment tax laws will work if forced upon the public. The public will comply with the laws when so demanded. Environmental tax laws first

create inconveniences for the public, and as the public slowly gets used to the inconveniences, it is weaned off the destructive habit.

Tax mitigation. Tax authorities must be careful so that tax mitigation does not derail their good intentions in implementing environmental taxation. One who wants to pay less tax does not care about the merits of an environmental tax incentive. It does not matter whether the tax incentive is good for him so as long as taxes are lowered.

6.8.3 Research Questions

Environmental taxes act as a catalyst improving the quality of life in Malaysia. Below are the findings to the research questions.

Research question 1. Changes in Malaysian tax law significantly improve the quality of life. Punishing bad behaviour through taxation and committing to green buildings and solar energy are tax initiatives that result in long-term improvement to the quality of life.

Research question 2. Taxpayers are not highly committed to changing their lifestyles once a full set of environmental tax laws comes into effect. The respondents are only supportive of general changes to their lives and not specific sacrifices in their daily lives. Encouraging green behaviour in the Malaysian public using tax will be a challenge. However, the respondents are agreeable to the implementation of tax incentives, which are more effective than taxes at encouraging an environmentally lifestyle.

Research question 3. The motives for the current Malaysian environmental tax law are easily understood by the Malaysian public.

Research question 4. The Malaysian taxpayer appreciates the motives and intent of implementing a full set of environmental tax laws.

Research Question 5. Malaysians are willing to accept changes to bring most tax laws in line with international practices, except those dealing with private vehicles.

6.8.4 Cross-tabulation Analysis

The cross-tabulation analysis showed that marital status, education and race have significant influences on opinions about environmental taxation. Gender, age, nationality, tax residency and vocation do not significantly affect acceptance of environmental tax laws. Overall, the R^2 values were small but the results significant. This observation should not be alarming, according to Colton and Bower (2002):

The R^2 statistic can be small, yet one or more of the regression coefficient p-values can be statistically significant. Such a relationship between predictors and the response may be very important, even though it may not explain a large amount of variation in the response. (p. 5)

Environmental taxation plays a supporting role in encouraging environmental behaviour. As stated by the experts, public education about good environmental behaviour, enforcement of environmental laws and supporting services should be delivered alongside the environmental taxation laws in order to initiate behavioural change, in this case, the adoption of a more environmentally friendly lifestyle.

6.8.5 Comparison of Means between Groups

Comparison of means between groups (through Levene's test) yielded the following conclusions. Educational level, income source, domicile status and political affiliation do not determine support for environmental tax issues. Gender, age and race do determine support or rejection of environmental taxation.

Gender. Women tend to show unity in supporting a certain tax (e.g., a tax on shark fins) but can be neutral on issues such as oil recycling. Men were divided in their opinions but more opinionated than the women, who remained neutral on certain issues.

Age. The age of a person influence support for various forms of environmental taxes and incentives. The elderly support the development of leisure facilities (e.g., parks). The middle-aged are more supportive of carbon taxes than the young, perhaps because the middle-aged were more exposed to issues relating to carbon taxes.

Race. Culture influenced how one supports environmental taxation. The public finds it difficult to wean itself off any environmentally detrimental practices required by culture or religion. For example, compared to the Chinese, Malays were generally more likely to support environmental taxation as means to improve quality of life, and the Indians were generally more supportive of using taxation and tax incentives to protect the environment.

The next chapter reviews the findings of this entire research effort.

CHAPTER 7: CONCLUSION

This chapter summarises and discusses the major findings and knowledge gained in this research.

7.1 Discussion of Major Findings

Both the qualitative and quantitative findings of this study are reviewed holistically.

7.1.1 Acceptance of Environmental Taxation among Various Sectors of Malaysian Society

The effect of environmental taxation on each category of Malaysian taxpayers is discussed here. In general, the public accepts any efforts to save the environment, including taxation. Acceptance becomes another matter based on whether the tax succeeded in producing the desired results. The public prefers to receive tax incentives than to fork out monies to pay taxes. It is another question whether the public understands why they are paying a certain tax or are merely complying with it.

Educational level, source of income, domicile status and political affiliation do not determine whether one supports environmental tax issues. Gender, age and race do determine whether one supports or rejects environmental taxation.

Environmental taxation plays a supporting role in encouraging environmental behaviour. More effective at changing behaviour are public education about good environmental behaviour, enforcement of the environmental laws and supporting services alongside by side with environmental taxation laws.

Gender. Malaysian men and women expressed similar acceptance of environmental taxation on most issues. The public is generally accepting of anything

that will improve their lives as a whole. Women tend to show unity in supporting a certain tax (like that on shark fins) but can be neutral on issues such as oil recycling. Men were more divided and held stronger opinions. Except for tax mitigation and attitudes men and women saw most of the independent variables in the environmental taxation acceptance model as means to encourage acceptance of environmental taxes.

Malaysian men and women disagreed on issues pertaining to vehicle ownership, specifically whether a tax incentive on hybrid cars introduced in Budget 2011 is a good measure and whether tax incentives for hybrid vehicles will make car owners stop buying conventional vehicles. Men were more supportive of incentives for car ownership than women and more united in support for tax incentives for hybrids. These results are in line with a 2003 Swedish study by Polk, who found that women were more environmentally concerned and expressed more criticism of automobile ownership than men.

As a group, women who had an opinion (not those who were neutral) were more united in their stand on environmental taxation. Women were more willing to give up any cultural rituals or behaviour that destroy the environment, as exemplified by their support for taxes on sharks' fin and plastic bag fees. More women expressed understanding of the need to end certain behaviours.

Age. As with gender, people of all ages approve of environmental taxation; however, age affects which forms of environmental tax and incentives a person supports. Respondents of various ages approved of most of the independent variables in the environmental taxation acceptance model, except for tax mitigation and attitudes.

The needs and wants of a particular group determine the amount of support for environmental taxation. The elderly (age 65 and older) are less likely than younger

respondents to support any incentives for hybrids cars but are highly supportive of any ideas to make developers help finance building parks and other leisure facilities, which they use frequently. The elderly often have difficulty driving or drive less, and any initiative to encourage them to drive a certain vehicle, such as hybrids, would not be effective. The older generation finds it hard to discard less environmentally friendly practices or attitudes to which they are accustomed.

Those in the prime of their careers (36–55 years old) and the recently retired (56–65 years old) see existing tax laws as inadequate to address environmental issues. The middle-aged are more supportive of carbon taxes than the young. Younger respondents often had difficulty expressing an opinion about the current state of tax laws because they might not have been less exposed to the intricacies of the laws such as carbon taxation than those who have more work experience.

Nationality. Malaysians did not exhibit much difference from people in other countries in their opinions on most questions concerning environmental taxation. Except for immediate tax incentives, attitudes and forced compliance, Malaysians and non-Malaysians agree that most of the independent variables in the environmental taxation acceptance model act as means to encourage environmental tax acceptance. However, it cannot be concluded whether Malaysians' views are in line with international opinions because Malaysians accounted for 95.50 per cent of respondents.

Malaysians disagreed with their foreign counterparts on issues pertaining to transportation. They differed in their views concerning using tax incentives to encourage the production of biofuels, the adequacy of local transportation and the effectiveness of giving tax incentives to purchase hybrids. Malaysians seem to have a poor opinion the state of the local transportation industry throughout the country. Any

attempt to change the public's daily routine from using private vehicles to public transportation would not work because local transport is not adequate. The experts have stated that the lack of connectivity among several public transport systems in the Klang Valley have rendered it a nuisance to forgo private transportation. The experts believed that the complete lack of facilities for biofuel-powered vehicles would make any incentives encouraging this form of transport a failure.

Marital status. Married, unmarried and divorced respondents approved of most of the independent variables in the environmental taxation acceptance model, except for tax mitigation, self-actualisation and attitudes. The respondents' marital status and their opinions had a clear relationship. Unmarried people were more supportive than their married counterparts of environmental issues, including taxation, and of questions pertaining to specific environmental issues such as charging for plastic bags and taxes on shark' fins. Married respondents gave higher support to general questions such as the effectiveness of environmental taxation at improving quality of life and the need for a comprehensive set of environmental taxes. This difference is ironic as most married people have children, who will inherit the world, but seems to be less supportive of specific initiatives to improve the environment than unmarried people who have no vested interest in the future state of the world.

Employment. The type of employment did not affect respondents' acceptance of environmental tax laws and understanding of environmental issues. There was generally no significant disagreement between taxpayers with a business source and those without a business source. Respondents with a business source were more divided in whether to support paying for plastic bags and whether to give green building incentives to developers. A change in the tax regime affects the businesses owned by

direct business owners such as sole proprietors and business partners. They want to be supportive of the environment but do not want the profitability of their businesses to be affected. The effect on the salary man from changes to the tax regime through environmental taxes is indirect. The questionnaire dealt with issues pertaining to corporate taxation and indirect taxation, not personal income taxes. The results might be different if environmental taxation directly affected personal income tax.

Race. Culture determines how one supports environmental taxation. The public finds it difficult to wean themselves off any environmentally detrimental practices required by culture or religion. Except for forced compliance and attitudes, respondents from different races approved of most of the independent variables in the environmental taxation acceptance model.

Different ethnic groups have different cultural practices, some more environmentally friendly than others. Malays are generally more likely than the Chinese to support both environmental taxation and incentives as a means to improve quality of life. The Malays also expressed more support for taxes on shark fins than the Chinese, for whom shark fin soup is a significant cultural symbol of prosperity, health, class, wealth and generosity (Shark Truth, 2012). The cultural trait of *kiasuism* (Kirby & Ross, 2007) makes it even more difficult to remove sharks' fin soup from the table. The need to prove one's success to others in the community (through the consumption of sharks' fin soup) makes consumption of that delicacy a hard habit to break.

Similarly, the Islamic principles affect how the Malays think about drinking reprocessed water. In the interview and focus group sessions, the Malay experts expressed reluctance to use reprocessed water as it might contain excrement, which is

one form of *najis* (things regarded as ritually unclean). The Malay respondents objected to the drinking of reprocessed water, while the Chinese were more supportive of it.

The Indians were generally more supportive than the Chinese of using taxes and incentives to protect the environment. The Indians also gave more support to incentives for buying hybrids and the promotion of biofuel through incentives. The Indians were more likely than the Chinese take public transport if the petrol subsidies.

Again, culture and religion play a part in these differences. The Indians in Malaysia are predominantly Hindu and follow religious and philosophical concepts that encourage maintenance of the natural order and the protection of nature. Indians' eating habits also differ from those of the Chinese. Indians were not as receptive to recycled paper food wrappers.

Domicile status and political affiliations. Respondents from different states expressed no significantly differences opinions on issues pertaining to environmental taxation. The significant differences emerged in the degree, not the direction, of agreement and disagreement between various groups. People from all states complained that public transport in their area was inadequate. People from states such as Selangor and Wilayah Persekutuan with more advanced transportation systems (e.g., light rail, monorail) were equally critical of their local transport.

Again, it was observed that the acceptance of environmental taxation does not depend upon where respondents live and regional political affiliations. Whether respondents lived in a Barisan Nasional- or Pakatan Rakyat-controlled state, there were no differences in opinion on tax-specific questions such as 'Charging some money for plastic bags at all supermarkets and most shops is a good move' (a Pakatan Rakyat

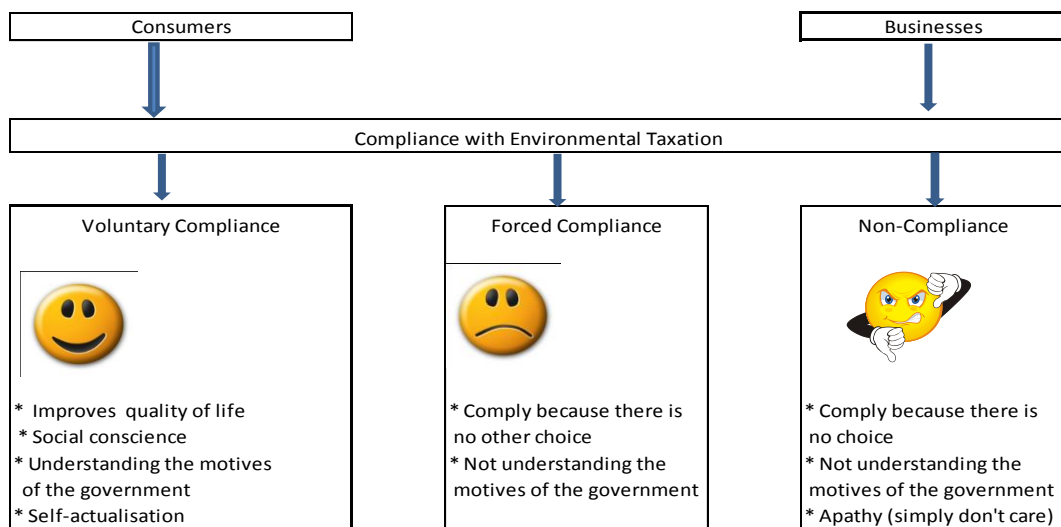
initiative) or ‘Incentives in the form of lower duties for those who purchase hybrid cars below 2,200 cc are good’ (a Barisan Nasional initiative).

7.1.2 The Final Environmental Taxation Acceptance Model

In Chapter 3, the environmental taxation acceptance model was introduced with a set of independent variables. The findings of the qualitative (interviews and focus group sessions) and quantitative studies (the initial study and the 2012 questionnaire) were summarised and used to support the model.

Figure 7.1. presents the final version of the environmental taxation acceptance model.

Figure 7-1 *Final Environmental Taxation Acceptance Model*



Taxpayers in Malaysia (whether laymen or businesspeople) have to comply with tax laws of the country, including environmental tax laws. There are two ways in which the taxpayer complies with environmental tax laws.

1. Voluntary compliance

As stated by Qian and Chan (2010), human goodness in man will prompt voluntary compliance with environmental tax laws because they encourage good behaviour. This research has shown that Malaysian respondents supported the entire concept of environmental taxation because it is for the good of all. Absolutely no Malaysian respondent or expert objected to such a set of taxes. Only one respondent from Singapore and another from Australia disagreed that environmental taxation is useful for alleviating environmental problems in Malaysia. The public might hold different opinions on the specific taxes and incentives suggested by the authorities.

2. Forced compliance

The second type of taxpayer complies with laws under the threat of force, cost or other punishment. Nyborg's (2010) research suggested that environmental taxes make it very costly to be not environmentally friendly, and in response, individuals tend to adopt or retain environment friendly moral values.

Another reason why taxpayers feel they forced into complying with the law is simply because they are ignorant of the reasons for the laws. Fikret et al. (2011) found that the success of environmental taxes depends upon the public understanding of the motives of the legislators who introduced the law.

In this research, the experts stated that forced compliance is useful at changing the behaviour of the ignorant taxpayer. Citing the plastic bag

initiative in Penang, a few experts said that shoppers are forced to bring their own shopping bags because they wanted to avoid paying the 20 sen fee. The shoppers complained heavily at the start of the ban but slowly became used to not asking for plastic bags when they shop. Khor (2012) made the same observation.

Certain taxpayers do not want to comply with the laws at all. They do not want to know why the laws are introduced and simply could care less about the issue of environmental protection.

In this model, interest groups influence the behaviour of taxpayers (layman and businesses). Interest groups represent special focuses in society and work on behalf of or strongly support a particular cause. Individuals involved in these groups might or might be taxpayers. These groups may influence laymen or businesses to resist or want to comply with environmental tax laws. These groups hold an influential role in the model.

However, public policy makers must note that environmental taxation plays only a supporting tool in encouraging the public to become more environmentally friendly. Public education about good environmental behaviour, enforcement of environmental laws and supporting services are necessary to catalyse a change of behaviour to a more environmentally friendly lifestyle.

7.1.3 Environmental Taxation Acceptance Model Variables

Initially, the independent variables of quality of life, self-actualisation, attitudes, immediate tax incentives, forced compliance and tax mitigation were proposed.

Quality of life. Taxation is monetary payments made by the public to the government to fund public goods and services. Sacrifice must be made by the taxpayer in return for the reward of public goods. Therefore, for environmental taxation to succeed, taxpayers must commit to sacrifice any environmentally unfriendly aspect of their lifestyle.

The idea that the public will be rewarded with a better environment and an improved quality of life when it willingly sacrifices money through environmental taxation must be emphasized. This variable is crucial to any public policy developer. For any form of environmental taxation (or even environmental tax incentives) to work, the public must be made aware of the reward, i.e. improvements to quality of life. The survey questions that assessed whether taxpayers were agreeable to selected taxes were met with between 'neutral' and 'slightly agreeable' answers, while questions about tax incentives received higher support from the public. For example, respondents 'slightly agreed' to a local tax to build parks, as practiced in Penang and Selangor but were neutral towards the suggestion that garbage be collected based on weight as in the United Kingdom.

As emphasized by the experts, some level of transparency is needed regarding the outcome of the tax for which the public has sacrificed. For success, the accounting of tax collection must be made visible to the public. A few experts objected to park entrance fees charged by local governments. To the experts, parks are public goods and should be provided and maintained by the government from existing taxes. If the government wants to charge more for parks, then the public must be made aware of what more they get for paying this tax. The government should help the public see the benefit to the quality of life when garbage is collected based on weight. If the public

cannot understand how less garbage in the landfills could affect their lives, then the whole idea of pay-as-you-throw will not work.

It was noticed that the public have a higher level of acceptance for environmental tax incentives than environmental taxes. The respondents were agreeable to all of the questions pertaining to tax incentives. Tax incentives do not require the public to sacrifice directly for any environmental project, although in the larger picture, the public has already paid for the incentives through their taxes.

Based on the correlation test evaluating whether current tax laws act as a catalyst to improve the quality of life in Malaysia, it was noted that the respondents do not feel that the acts of or incentives for buying hybrids, paying for plastic bags and promoting biofuels-powered energy improve quality of life of a person. It takes a lot more than a few initiatives here and there to have a significant impact on the environment, thus improving the quality of life as a whole. The respondents agreed (mean = 6) that the country needs a more comprehensive set of environmental tax laws. However, what the specific tax laws should be are debated. Some experts stated that the current tax initiatives do not tackle the root causes of environmental problem but distract from the problem. One Singapore professor gave the following feedback:

Hybrid cards do NOT solve congestion problems in cities. And if the electricity to charge the batteries comes from dirty coal plants, what have you done?

Self-actualisation. Abraham Maslow (1943) defined self-actualisation as the desire for self-fulfilment, namely the tendency for the individual to become actualized in what he is potentially. A person who has achieved self-actualisation, according to Maslow (1943), has fulfilled all personal needs and wants. In this context, the

understanding that sacrificing of one's behaviour and that a comprehensive set of environmental tax laws is good for personal wellbeing are significant signs of self-actualisation. The regression analysis showed that the taxpayer's ability to sacrifice behaviour, wants and needs for a larger purpose, such as protection of the environment, was significant for the acceptance of environmental taxation. A person who has achieved self-actualisation is ready to discard any behaviour, even those required by culture or society for the better good (in this case, the environment). One respondent made the following statement in an email to the researcher:

My personal belief is environmental issues starts from personal hygiene, respect for each other and caring for society.

Attitudes. A positive attitude towards the environment is significant for acceptance and success of environmental tax laws by the public. While no humans in their right mind would wish for the total destruction of the environment, apathy hinders good environmental practices.

Whether the Malaysian populace has positive attitudes towards the environment and is willing to change the popular lifestyle to protect it is another question. The survey yielded the surprising result that, although the respondents say they are willing to sacrifice their current lifestyle for a comprehensive set of environmental tax laws which are good for them (sig=0.00), they are not committed to practicing specific actions to protect the environment, such as stopping buying conventional domestic cars (sig.=0.43), purchasing goods with recycled items (sig=0.31) and food items wrapped in recycled paper (sig=0.94), drinking reprocessed water (sig=0.76), supporting oil recycling (sig=0.67), sorting garbage for recycling (sig=0.53), ceasing to practise any cultural rituals that destroy the environment (sig=0.59) and refraining from eating

sharks' fin (sig=0.63). None of these actions had a positive beta coefficient. Strangely, the married respondents seemed less inclined than the unmarried respondents to adopt a more eco-friendly lifestyle. Apathy frustrates desires to live a positive lifestyle. The married respondents seem never to have thought that their children will suffer for their practices.

Research question 2, which asked whether the Malaysian taxpayer is committed to implementing a full set of environmental tax laws, was answered with a resounding 'no'. The respondents only supported general statements, such as willing to sacrifice current lifestyle and stop practising rituals but not specific sacrifices such as take public transport and willing to purchase good with recycled items, purchase food wrapped in recycled paper, drink reprocessed water and boycott shark' fins. At present, the public is not willing to sacrifice it daily routine and cultural norms to protect the environment. Unless the public is committed to changing lifestyles, environmental tax laws will become a useless tool. In short, the public wants a comprehensive set of laws but what the laws should be and the public's commitment to the objectives of the laws are other questions.

In the absence of a positive attitude towards the environment, environmental taxation works as a means to punish the public and force it to forgo practices which are bad for the environment. The fee for plastic bags becomes a nuisance to the shopper, who eventually brings his own shopping bag. The tax is the equivalent of caning to taxpayers so they will be kind to the environment. Similarly, some people do not eat shark fins, not from concern for sharks becoming extinct, but because the tax makes shark fins unaffordable. Environmental taxation acts like a caning to enforce a positive attitude towards the environment.

One respondent wrote to the researcher that

The education to build the right mind-set on environmental issues is of paramount needs. Thus, before we could able to help our country, we practice on our own.

Simply changing the tax laws to encourage positive environmental practices among the populace would not work if the seed of awareness and love of the environment was not planted in the young. Most of the experts agreed that using education to create awareness among the young is a necessary starting point. Environmental taxation is a good a way to reinforce good environmental practices, but sowing awareness among the young is more important.

Immediate tax incentives. The survey has shown that immediate tax incentives are significant in the acceptance of the tax. O'Donoghue and Rabin (2001) explained that humans all have problems with self-control and want immediate gratification, rather than waiting a long time for good to occur. The public is not willing to accept a tax regime that brings good only in the future. For the public to accept environmental taxation, it is imperative that there be incentives that can be enjoyed immediately by the public. O'Donoghue and Rabin's (2001) theory would explain why the respondents 'slightly agree' to buying a hybrid car and enjoying the tax incentive but do not support a road tax (the respondents were 'neutral') that would take vehicles off the road and improve the environment in the long term. A few experts stated that the tax incentive to encourage purchases of hybrid will create more environmental degradation as more vehicles are on the roads, which would become more congested. However, because of the human nature to want immediate gratification, tax laws that have the element of 'immediate gratification' must be in place first.

Forced compliance. In a study on forced compliance, Festinger and Carlsmith (1959) concluded that, if individuals perform an action that goes against what they personally believe, doing so typically change what they believe. Forced through environmental taxation laws to perform actions to protect the environment, the public will comply with environment tax laws, become accustomed to them and slowly switch from environmentally unfriendly to environmentally friendly behaviour.

For example, while the public does understand that indiscriminately using plastic bags is detrimental, the plastic bag fee had to be forced upon them. The public eventually reduced the usage of the bags as the fee was a nuisance, and, in the long run, will habitually use fewer plastic bags. Although eating sharks' fin is a Chinese custom, the tax makes the delicacy unaffordable for most people, and in the long run, the public will become used to forgoing the delicacy as a result of the tax. When answering research question 4, the researcher paired support for taxes on plastics bags with the need for a comprehensive set of environmental tax laws using regression analysis and found that the model was significant. The forced nuisance of having to pay for plastic bags has resulted in the public not wanting to ask for plastic bags. The public, which was initially uninterested in environmental issues, began to take an interest in ways to improve the environment and to support environmental tax laws.

Tax mitigation. Again, although tax mitigation is a significant variable in ensuring the public's acceptance of environmental tax laws, the merits of any given law are not significant to the person who wants to reduce tax liability. These taxpayers do not care that buying a tax-exempted hybrid is good for them (sig=0.432) or solar power incentives are good (sig=0.375). They aim to pay as little in taxes as possible. Whether the tax incentive is good for such taxpayers does not matter as long as they pay less tax.

Impeding factors. It was noted that the amount of tax and the administrative procedures involved, current subsidy structure, cultural attitudes and sensitivities, supporting infrastructure, concept of Public goods and governance issues affect the acceptance of environmental taxation by the Malaysian public.

- Amount of the tax and the administrative procedures involved

The amount of the environmental tax or incentive could encourage or even impede the environmental commitment of the Malaysian populace. The environmental tax must be large enough to create a regular inconvenience for the taxpayer and encourage changed behaviour, while the incentive must be large enough to offset any compliance costs to the taxpayer. The case described by the experts involving the GBI is proof to this statement.

- Current subsidy structure

The government acknowledges a strong subsidy mentality exists in Malaysia and plans to eliminate behaviour through the National Transformation Programme. As shown in the cases of the water and fuel subsidy, environmental taxation on subsidised goods and services might not work. The delay of the implementation of Conservation Surcharge suggested in 2009 stands as evidence that the involvement of a subsidy makes the tax difficult to implement. One expert who partly agreed with the implementation of the water surcharge wondered whether the authorities would consider the plight of the poor affected.

- Cultural attitudes and sensitivities

The cross-tabulation analysis demonstrated that culture affected the level of acceptance of environmental taxation. As a whole, Malaysians were quite supportive of environmental taxation as a tool of improving the environment and their quality of life. However, the cultural sensitivities of ethnic group could influence how strongly an individual supported certain environmental taxation policies.

For example, the Malays were more supportive of taxes on shark fin than the Chinese, for whom the cultural symbolism of eating shark fin soup can override the logic of supporting any means to save an endangered species. The same factors influence the consumption of fur. Although fur is considered taboo on most runways across the world, the swagger value of fur has resulted in China leading the world in purchases of fur products (O'Leary, 2012). Cultural acceptance can encourage apathy towards protection of the environment and, in this case, override the power of environmental taxation as a means to encourage good environmental behaviour.

Halal principles affect Malays' thoughts about drinking reprocessed water. Although the Singapore Public Utilities Board has determined that reprocessed water in Singapore is cleaner than most other sources of water, the ethnic Malay experts expressed discomfort at using reprocessed water. Although reprocessed water provided for 30 per cent the water needs of Singapore in 2010, these experts were reluctant to use it because they feared it might contain excrement, which is considered ritually unclean). In the questionnaire, the

acceptance level of reprocessed water was lower among the Malays than to the Chinese.

A lesson learned here is that the design of any environmental taxation must include a thorough study of the cultural needs and sensitivities of the populace before implementing the laws.

- Supporting infrastructure

A number of experts demonstrated reluctance to support increasing road taxes, reducing petrol subsidies or supporting the purchase of electric vehicles because they felt that the current transportation system was not adequate to support the needs of the public. One expert from the Klang Valley pointed to the lack of connectivity among transport systems. Experts from elsewhere, too, were unhappy with the coverage of their local public transport. Another expert said that he would not support the introduction of electric vehicles (which were given a tax exemption in 2012) as the government has not even started providing charging stations for the vehicles as done in HKSAR.

The respondents unanimously said they were dissatisfied by the state of public transport in their area. Even the respondents from the Klang Valley, which has the nation's most comprehensive transportation system, were not happy with their service. Respondents were neutral on using a road tax hike to discourage usage of private vehicles.

The supply chain for recycling is incomplete. Respondents did not think that recycling bins are easy to find, an opinion common throughout Malaysia. Even respondents from states such as Selangor, Wilayah Persekutuan and

Penang which have many private, charitable recycling initiatives complained about the lack of recycling bins. Experts from the recycling industry mentioned that not all items are easily recyclable. Recycled glass manufacturers are located mostly in Selangor and Johor; therefore, it is difficult for recyclers in the north to transport glass to the manufacturers, so the glass collected is discarded in landfills.

Environmental taxation serves as a tool to discourage bad environmental behaviour. However, when the public is asked to stop practicing a certain behaviour, a positive alternative must be available. If we ask the public to stop using private transport, the alternative of a well-connected public transportation system is needed instead.

Some experts expressed reservations about the feed-in-tariff initiative. The public must apply to become vendors to supply electricity to the energy company, Tenaga Nasional Berhad, and not every applicant will be successful. Currently there is no way for a house owner to divert the electricity generated by his own solar panels to his own use. This lack defeats the whole purpose of encouraging private persons to produce clean energy for personal use. Currently, the production of clean energy is encouraged only by profit, not the desire to help the environment.

The current environmental tax laws tackle small parts of the environmental issue instead of a set of connected issues. The respondents were committed to implementing a more comprehensive set of environmental tax laws. To tackle the issue of transport, incentives are given to buy hybrid and

electric cars, but little has been done to address the issue of transportation nationwide. There have been no attempts to start any mass rapid transit services outside the Klang Valley. Tenaga Nasional Berhad has used the feed-in-tariff initiative to find new sources of energy, not to enable homeowners to generate their own electricity. In addition, there is no standardized way for town councils to deal with recyclables. The Town Council have bins for residents to throw away paper, plastic and glass, but there is no facility in the North to recycle glass. It would be good if tax monies were directed to support all these efforts.

- Concept of public goods

The experts seemed to suggest that public goods should be provided by the government and that any attempts to impose a tax (including environmental taxes) to provide a specific public good is not welcome. Common good such as parks and street lighting should be free. This opinion opens up discussion of who is responsible for the upkeep of such goods—the authorities or the consumer. The survey respondents slightly agreed that developers should pay a tax to create green spaces. This responds reflects the reality that the government is in charge of providing public goods such as parks. Developers pay the government as a service provider to construct public green spaces.

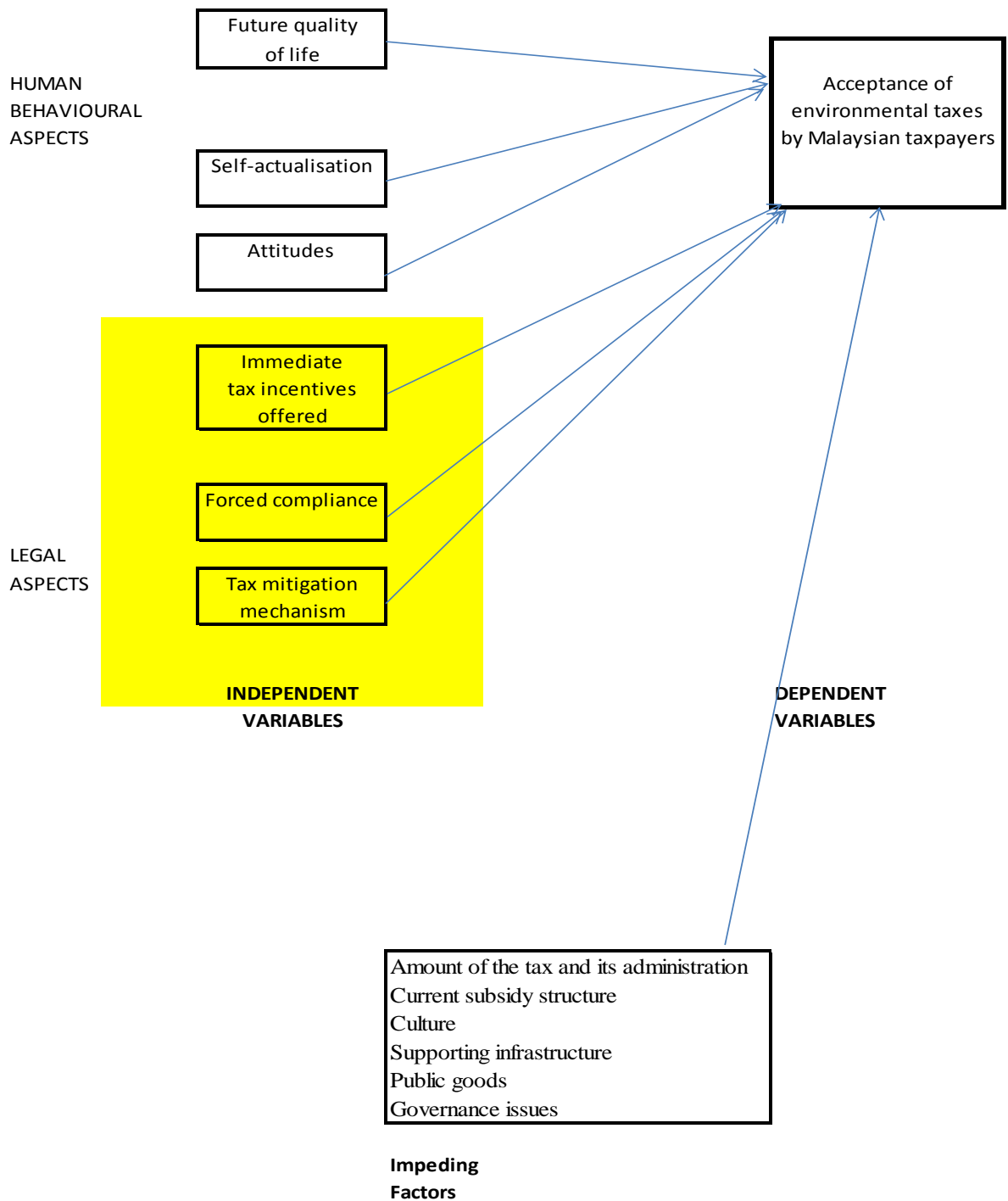
- Governance issues

The experts stated that accountability is necessary when implementing any environmental taxation initiatives. Many experts queried what the criteria were for successful applicants in the feed-in-tariff scheme. (The regulatory body declined to participate in this research.) A few experts also wanted to know how

the money collected from the plastic bag tax was distributed to the poor in the *Rakan Kemiskinan* ('Friends of the Poor') poverty eradication scheme.

The variables in the environmental taxation acceptance model are finally presented in Figure 7.2.

Figure 7-2 *Environmental Taxation Acceptance Model Variables*



7.2 The Theory of Social Rental Costs

At this juncture, the researcher would like to propose the Theory of Social Rental Cost based on the results of the study. Coase (1960) suggested the government intervene through a law that can reduce the transaction costs from harmful methods of production by industry. The law is the tool we call taxation.

The researcher aims to propose a method of transferring the environmental costs to taxpayer themselves. Leruth, Paris and Ruzicka (2000) stated that, under existing accounting rules, gifts of nature (i.e., the environment) are considered products with zero costs. This is a major flaw in the theoretical framework of accounting. This research presented the government's motive for plastic bag fees to reduce the amount of garbage in landfills. In this scenario, the voluntarily compliant taxpayers are happy to bring their own shopping bags and, as a result, do not need to pay for plastic bags. Forced compliant taxpayers grumble about being forced to pay for bags and reluctantly pay for the plastic bag at first but slowly remember to bring bags and do not pay for plastic bags in the future. The fee has made these taxpayers gradually change their behaviour. Non-compliant taxpayers pay for bags and never bring shopping bags or change to make their behaviour more eco-friendly.

Some experts argued that the fee charged for plastic bags is quite affordable, so it does not deter shoppers from using plastic bags. In this scenario, the forced compliant taxpayer might sometimes purchase a plastic bag or two, and the non-compliant taxpayer will always buy plastic bags. What happens, though, if the taxpayer is charged the true cost of plastic bags?

Landfills are parcels of land on which the government permits garbage to be dumped. The opportunity cost of the landfill is the usage of that parcel for farming or

development. By designating landfills a public good, the government loses revenue from rental of the land. To be fair, the land costs to the government and landfill opportunity cost should be charged to the taxpayer as rent. The researcher, therefore, proposes the following equation:

$$R_T = R_A - R_C,$$

where R_T represents the landfill rent charged to the taxpayer, R_C the rent earned by the government from current use, and R_A the revenue received by the authorities for alternate use.

To illustrate this proposed equation, consider a hypothetical example involving the Jelutong Landfill, the main garbage dump on Penang Island near prime real estate such as the Light on the west coast of the island. In private hands, the Jelutong Landfill would be prime real estate, but under municipal ownership, this parcel is used as a public good to contain the garbage of the people of Georgetown.

Assume that the landfill can be turned into a mega-mall as large as Pavilion in Kuala Lumpur, that the occupancy of the mega-mall is as high as that of the Pavilion and that the mega-mall is owned by the municipality. In the quarter ending 31 March 2012, Pavilion earned rentals worth RM70,510,000 (Pavilion Real Estate Investment Trust – Financial Report for the Quarter Ended 31 March 2012, Unaudited). Assume that, in the same quarter, the rentals earned from the mega mall are equal the Pavilion's. The R_A , government revenue from alternate use, then is RM70,510,000.

In one week, 200 trucks carry garbage into the landfill and are charged RM200 per trip. One truck services 200 households. There are 13 weeks in the quarter. Therefore, the municipal earns

$$\begin{aligned} \text{Quarterly Revenue from garbage collection (RM)} &= 13 \times 200 \times 200 \\ &= 520,000 \end{aligned}$$

In this case R_C , the rental earned by the government from current use, is RM520,000.

The loss of revenue to the municipality if the landfill was used as a landfill is

$$\begin{aligned} \text{Loss of income (RM)} &= 70,510,000 - 520,000 \\ &= 69,990,000 \end{aligned}$$

The loss should be charged to the taxpayers; therefore R_T , the rental charged to the taxpayer, is RM69,990,000.

For the sake of fairness, the customers of the landfill, which are the households, should compensate the municipality for the opportunity costs of not using the landfill as a mall. Every household should pay an additional assessment per quarter of:

$$\begin{aligned} \text{Trucks in service} &= 200 \\ \text{Number of households served per truck} &= 200 \\ \text{Number of households} &= 200 \times 200 \\ &= 40,000 \\ \text{Additional assesment per household (RM)} &= \frac{69,990,000}{40,000} \\ &= 1,750 \end{aligned}$$

Assume that every household discards 20 plastic bags per week. The opportunity cost of plastic bags would be

$$\begin{aligned} \text{Loss of income (RM)} &= 70,508,250 \\ \text{Number of households} &= 40,000 \\ \text{Number of plastic bags per households per week} &= 20 \\ \text{Weeks in the quarter} &= 13 \\ \text{Number of bags per quarter} &= 40,000 \times 20 \times 13 \\ &= 10,400,000 \\ \text{Opportunity cost of plastic bags (RM)} &= \frac{69,990,000}{10,400,000} \\ &= 6.73 \end{aligned}$$

Therefore, to be effective in the face of real economic forces, the municipality should charge RM6.73 for each plastic bag, instead of 20 sen.

This is not to suggest that the real costs of the environmental opportunity costs should be charged directly to the taxpayer (as evidenced in the research, the environmental taxes are merely a tool to get people to become eco-friendly), but the authorities must inform the public of how much they lose from the opportunity costs of more productive activities in the community, rather than spending on tackling environmental issues. The facts and figures can be used to re-educate and make more eco-friendly the forced compliant taxpayer. Authorities could charge the full opportunity cost to non-compliant taxpayers after they have proven themselves to be defiant of the laws.

7.3 Life of Pi Theorem

The researcher would like to propose the *Life of Pi* Theorem, which inspired by lines in Yann Martell's novel *The Life of Pi*, the writings of Pigou (1932) and of Brown and Frame (2005) and the findings that supported the environmental taxation acceptance model discussed earlier.

Martell's book presents two different stories the protagonist Pi tells a group of Japanese investigators about the sinking of a ship that killed his whole family. One account was a tall tale, and the other was the real event. To Pi, there was no happy ending in either version of the story. His family still perishes in the end. The only thing Pi could do is atone.

'In both stories the ship sinks, my entire family dies, and I suffer'.'

'Yes, that's true'.' (Martel, 2002, p. 312)

Similarly, environmental taxation (or any other eco-friendly policy) will never restore nature to its original glory. Qian and Chan (2010) proposed that, if humanity is noble, they will want to protect the environment as they want to maintain their quality

of life. Humans will never want their surroundings to be unliveable. To the researcher, however, humans are extremely weak. Sometimes, they will sin against nature and destroy it. Environmental taxation (and other eco-friendly policies and acts) are how humanity atones for their sins against nature. The concept of atonement is described the Old Testament book of Leviticus 5:18: 'And the priest shall make atonement for him on account of his ignorance'. 'Atonement' is a translation from the Hebrew word for 'covering' sins or 'forgiving' sins.

Environmental taxation will prevent humans from further destroying nature but will not return to her original glory. Subramuniaswami (2003) stated that 'man's appetite for meat inflicts devastating harm on the Earth itself, stripping its precious forests to make way for pastures' (p. 201). Human desires always put humanity at odds with nature. As mentioned, environmental taxation is not a panacea for environmental degradation, but merely a tool to encourage humans to be more respectful of the environment. The tax here works a means to atone for the sin of destroying the environment.

Pigou's 1932 classic *The Economics of Welfare* suggests correct inequalities levying charges on a market activity that generates negative externalities. In the presence of negative externalities, the social cost of a market activity is not covered by the private cost of the activity. Today, such measures are called Pigouvian tax. Pigou (1932) worked from the economic perspective that assumes that humanity is rational. In reality, humans are not rational but influenced by their culture, religion and surroundings. Pigouvian environmental taxes are levied on taxpayers to correct the destruction caused by their activities that generate negative externalities for the environment.

Pigou cites the example of a justifiable tax on alcoholic products which introduce externalities into society. The tax can be used to remedy any social injustices (e.g., building free playgrounds) stemming from the sales of alcohol. From a philosophical view, the free playground is atonement for the injustices created by alcohol. People whose lives were damaged by alcohol will never be restored to the original state; however, the playgrounds are a symbol of atonement from users and producers of alcohol.

Similarly, a Pigouvian tax will never remedy any destruction to nature but is a means for the taxpayer to atone for the negative externalities inflicted on nature. One expert suggested using real property gains taxes to preventing further environmental destruction due to property development. Any property development will certainly affect nature; the only question is by how much. This tax would remind the developer to be mindful to the environment.

Environmental taxation is a subset of a new form of accounting called social accounting. It was mentioned earlier that Brown and Frame (2005) criticised the traditional concept of cost-benefit analysis which is a mainstay in management accounting textbooks. Political judgments are part of the choices of what and whose costs and benefits are counted and quantified. Brown and Frame (2005) believed that when viewed in a sustainability context, many costs that involve benefits to others (e.g., future generations, non-western nations, other species) are ignored, and costs across organisations or societies (e.g. health and safety, displacement of local communities) are excluded when computing costs to vulnerable groups. In response to these weaknesses in traditional accounting, various tools and techniques have been developed to broaden the current approaches to accountancy. Cost-benefit analysis underplays the interests of

different stakeholders on social issues (e.g., views on fair trade). From a philosophical view, the inclusion of social costs in traditional cost-benefit analysis creates an avenue for industrialists to atone for their myopic view that ignores social costs.

7.4 Implications

This study can help legislators, the most important stakeholder of this study, to create environmental tax laws acceptable to the Malaysian populace.

7.4.1 Implications for Society

When implementing a new environmental tax laws, legislators must be sensitive not only to the legal factors but, most importantly, to the human behavioural aspects of the laws. Legislators need to emphasize that environmental tax laws (or any other environmental policy) are positive in nature, i.e., in the end, they help the public achieve a better quality of life. The public will ask how they benefit from abiding by environmental tax laws. Sacrifice by the public will result in a better quality of life in the future. The plastic bag fee initiative in Penang almost failed at the start because the government did not emphasize the Cleaner Greener Penang outcome. This case implies that laws can force to comply blindly, but understanding the human emotions involved in a certain law makes people internalise good **behaviour**. Environmental tax laws forces taxpayers to be environmentally friendly, but stressing the positive aspects of the law will result adoption of the desired behaviour.

Legislators must also deal with attitudes and culture of the public. A thorough study into the attitudes and culture of the populace must be conducted. Although people know that sharks are becoming extinct and furring is cruel, they still purchase these items due to cultural reverence and their swagger value. An outright ban or a hefty tax will send the sellers of those products into the black market. Legislators, therefore, must

try to educate the populace to stop purchasing those products while at the same time banning or taxing them. For examples, celebrities including Jackie Chan were featured in the When the Buying Stops the Killing Stops campaign in an attempt to re-educate the public to feel that it is not cool to use products made from the killing of endangered animals and plants (JC News 2003). This case implies that laws introduced without a thorough understanding of the attitudes and culture in place might backfire. Environmental laws have roots in Western countries such as the United Kingdom and United States, but transplanting these laws without a good understanding of local customs can be disastrous.

Legislators must also understand that some people will exploit any tax reductions or incentive in order to pay less tax, not to be eco-friendly. Regarding tax administration, legislators must make sure that benefits of any environmental tax incentives outweigh the costs for the taxpayer. How would someone qualify for an incentive? Rules on how to administer a new tax incentive must be revealed to the public along with the incentive itself. The experts felt that this knowledge was lacking in the GBI initiative. Complying with environmental tax laws is itself an opportunity cost to the taxpayer (the things he cannot do). This implies that the taxpayer also seeks justifiable compensation for the opportunity cost of foregoing an eco-unfriendly behaviour.

Legislators must remember tax laws are merely tools for the government to encourage or discourage certain behaviour. Tax laws are not a miracle cures. Without accompanying products and services in place, the laws will be worth only the paper on which they are printed. The tax incentive of carbon trading was unsuccessful because the government issued rules on how to capture the revenue side of carbon trading but

neglected the cost side of the instrument. Similarly, telling the public to reduce private transportation will be futile if the public feels that public transport is unreliable.

7.4.2 Implications for Academia

For academia, this study, through the *Life of Pi* Theorem, reveals the human side of the Coase theorem, which is concerned with the overall social cost of externalities caused by certain members of society. The subsequent compensation that the state forces the harmful members of society to pay to compensate others for the externalities assumes the rationality of humanity. The *Life of Pi* Theorem complements this theory by addressing the influences of philosophy and theology. If earlier it was culture and religion that hindered members of society from doing the right thing with the environment (e.g., in the shark fins debate), the *Life of Pi* Theorem uses culture and religion to remedy the irrecoverable loss society bear as a whole when human activities exploit nature.

The Theory of Social Rental Cost highlights the cost of the exploitation of nature in real dollar terms. For academia, the theory is a simple method to calculate social costs. The Theory of Social Rental Costs furthers the study of accounting addresses the weaknesses in traditional management accounting pointed out by Brown and Frame (2005). Simple costing methods, bill back (from financial accounting) and opportunity costs (from economics) are combined to create a simple method for authorities to calculate the price of the damage of the environment to the laymen. The researcher suggested that the calculations performed by the theory should be used to educate the public about the cost of environmental damage. The calculations can also be used to bill charges to defiant and recalcitrant members of the community who persistently participate in activities that destroy the environment.

7.5 Recommendations

Recommendations are made firstly based on the environmental taxation acceptance model and then the desires of the research participants. Some recommendations arise from consideration of independent and moderating variables.

- **Quality of life**

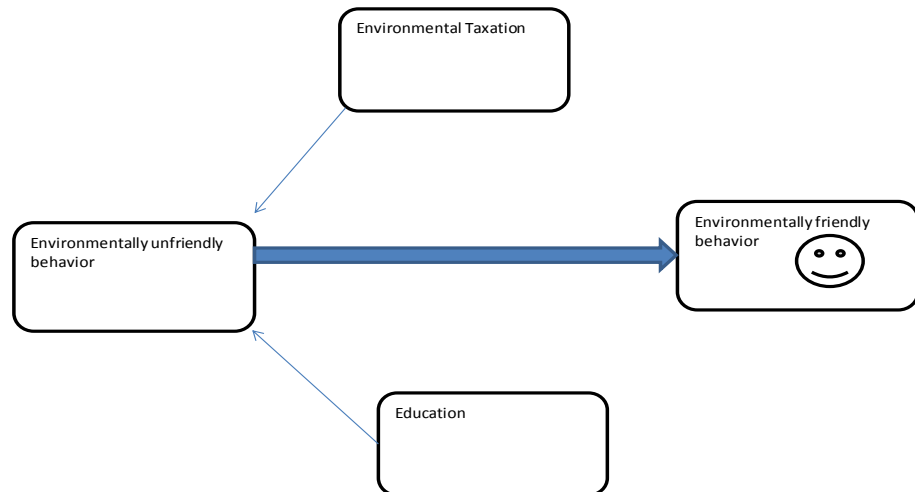
The public sacrifices taxes for the general welfare and the reward of an improved quality of life. The public's commitment to sacrifice environmentally unfriendly behaviours is a prerequisite for the success of environmental taxation. The reward of a better environment and improved quality of life for the willing sacrifice of environmental taxation must be emphasized. If the authorities merely ask the public for money without clearly explaining the motives for the tax, then the tax will not work, and the public will simply be forced to comply. In this form of forced compliance, the public accepted the plastic bag fee only after authorities adopted the 'Cleaner Greener Penang' motto and the public could see that the fee reduced usage of plastic bags and consequently rubbish in the landfill. Therefore, the researcher recommends that the authorities highlight the benefits of new environmental taxes to the public before implementing the tax. Some public relations work will yield dividends.

- **Attitudes**

One expert stated that re-education can change culture and attitudes. For example, white wedding dresses are commonplace in China today, but 200 years ago, white was a suitable colour for funerals, red for wedding dresses. Authorities must use taxation as a means to educate the public about an environmentally friendly lifestyle. As mentioned, authorities should emphasize

how the public can benefit from this lifestyle change. The steps to change public attitudes are shown in Figure 7.3.

Figure 7-3 *Steps to Becoming Eco-friendly*



Simply changing the tax laws to encourage positive environmental practices among the populace would not work if the seed of awareness and love of the environment were not planted in young. Most experts agreed that using education to create awareness in the young is a good first step. **Environmental taxation is a good way to reinforce good** environmental practices, but the most important task is to plant the seed of loving the environment in the young. Education is one area the authorities should explore seriously.

- **Immediate Tax Incentives**

Immediate tax incentives for the public are significant to the acceptance of an environmental tax. Since all humans have self-control problems and want immediate gratification, the public is not willing to accept any tax regime that requires them to wait a long time for rewards (O'Donoghue & Rabin, 2000). For example, businesses participate in the feed-in-tariff project not to be eco-friendly but to earn extra cash. The Federation of Malaysian Manufacturers introduced the feed-in-tariff to allow members to money by producing solar energy. Since human nature is such that people want freebees, it is recommended the tax authorities dangle an immediate carrot to encourage the public to participate in any eco-friendly project. Improving the environment would be the long-term reward.

- **Forced Compliance**

Forcing the public, through environmental taxes, to perform actions that protect the environment causes people to gradually adopt environmentally friendly behaviour. The cases of the plastic bag fee in Penang and the shark fins tax demonstrate this process. Authorities must acknowledge that taxation is a good means to change behaviour but must be exercised with caution. The swagger' value of some items and customs could hinder the objectives of authorities.

- **Tax mitigation**

The researcher must caution that a tax or incentive will not work on certain taxpayers who only desire to only pay less tax. Again, although tax mitigation is a significant variable in ensuring the public's acceptance of environmental tax

laws, the merits of any given law itself will not be significant to the person seeking a lower tax liability. A tax incentive is good only as it allows for paying less tax. Again, when using taxation to encourage eco-friendliness, authorities must consider tax mitigation as one element that could thwart good intentions.

- **Amount of tax and the administrative procedures involved**

The amount of the environmental tax or incentive could encourage or impede the environmental commitment of the Malaysian populace. An environmental tax must be large enough to regularly inconvenience taxpayer in order to induce a behavioural change. An incentive must be large enough to offset any compliance cost to the taxpayer. The cases of the GBI and the plastic bag fee prove this claim. Some shoppers simply pay the fee which a cost less than the inconvenience. In addition, the government must formulate rules on how to qualify a taxpayer for the tax incentives. The Public Ruling on Green Buildings has not been released to the public even though the incentive was introduced in 2011.

- **Supporting infrastructure**

Environmental taxation is not a fix-it-all solution for environmental problems. The authorities must understand that taxes play a supporting tool in encouraging the adoption of more eco-friendly behaviour. Supporting infrastructure and services must be introduced along with the tax. The current transportation system must be improved before road taxes are increased, petrol subsidies reduced or the purchase of electric vehicles supported. The public must be given an alternative in return for their sacrifice of a certain environmentally unfriendly behaviour. A tax or incentive will temporarily encourage foregoing

environmentally unfriendly practices, but the public could soon return to the older way of life.

- **Governance Issues**

Governance has become synonymous with public policy. There must be accountability when implementing any environmental taxation initiative. **The government must be transparent about how incentives are awarded and taxes allocated for the good of the public.** Many experts did not know what the criteria were for the successful in the feed-in-tariff scheme or how the plastic bag tax was went to the poor under the Rakan Kemiskinan poverty eradication scheme. London, on the other hand, was very transparent about how monies collected from a congestion tax were channelled towards the building of better public transport in the city.

The following recommendations arose from the research itself.

- **Explore Green Technologies**

Research is the best way to improve knowledge; therefore, the government has given considerable attention to research in the Economic Transformation Plan. Incentives for green research are a proactive measure to tackle environmental problems.

- **Promotion of Investments Act**

The List of Promoted Activities & Products for Selected Industries Which Are Eligible for Consideration of Pioneer Status and Investment Tax Allowance under the Promotion of Investment Act 1986 should include household waste recycling. The utilisation of oil palm biomass to produce value-added products,

the generation of renewable energy and energy conservation are considered promoted activities.

The government as a whole should:

- Understand that tax incentives are more acceptable than taxes per se. The Malaysian public prefers the soft approach of a carrot rather than punishment.
- Be transparent when implementing any tax or incentive policies

Any initiative introduced by the government will fail if the public is sceptical of the outcome. The experts' comments about the feed-in-tariff project have shown that good intentions on the part of the government can be misunderstood if the public does not understand the criteria which are used to select participants. The respondents questioned how tax money would be distributed from the collection of plastic bags fees and park building charges.

- Create supporting facilities before implementing any environmental policy (including tax policies)

The government must address the opportunity cost of introducing any pro-environmental measure. Encouraging public transport by subsidising transport operators will not work if there is no attempt to ensure convenience for commuters using public transport. As many experts complained, the lack of connectivity of public transportation in Klang Valley is inconvenient. The mere act of spending public funds (in these case loans to transport companies) is rendered pointless. The Malaysian government has focused on piece meal solutions using taxation to tackle portions of larger problems. For example, what is the point of asking the public to buy electric vehicles through a tax incentive when there are no charging facilities?

What is the point of asking the public to separate their garbage when there are no facilities to recycle certain forms of garbage? Any incentives should support the whole supply chain from recycling up to the reprocessing of recycled materials.

Taxation might help the government achieve a certain objective—in this case, to change the public's environmentally unfriendly practices—but is not a panacea. Taxation, as stressed by Labbatt and White (2007), is merely a mitigation policy. Adequate administrative and structural support should be in place before implementing any tax policy.

- Check for any contradictory policies that will jeopardize the implementation of a pro-environmental policy (including environmental taxation)

If government policies are contradictory, then the public will be confused about the government's real motives for introducing certain policies of the day. As pointed out by the experts, the National Automotive Policy contradicts the eco-friendly measures in Budget 2011. The government wants to increase by at least 40 per cent the utilisation rate of public transport but at the same time encourages more domestic production of cars. Again, the question arises: What is more important to the government—the domestic car industry or public transportation?

- Perform a cost-benefits analysis on the receiver before implementing any new tax incentive

One of the building-industry experts' criticisms of the GBI was that the cost of getting a building certified as green was higher than that of the tax benefit. The only reason developers are getting buildings certified is pressure from customers.

- Use tax as a means of controlling waste

The government has placed much emphasis on the use of tax incentives to encourage the purchase or adoption of eco-friendly technology, such as hybrid cars and green buildings. One expert stated that the discussion needs to move from the demand to the supply side. There should be initiatives (using tax or not) to reduce consumption of unnecessary products which are harmful to the environment. As mentioned in the legal review, countries including the United Kingdom charge residents by the amount of rubbish. This scheme creates pressure for companies to create products that are easily recyclable or have minimal amounts of packaging. The Malaysian government should look closely at using incentives to help producers reduce waste. Any reduction in household waste would result in cost savings (e.g., landfill costs) for the local government.

State governments should ensure uniformity in environmental laws throughout the nation. It is pointless that each state have conflicting environmental laws. For example, there is no uniformity in how plastic bag fee is collected throughout the Federation. Some states charge the fee every day of the week while some states implement once or twice a week. Good environmental policies benefit all, whichever political party one supports.

The industrialist should

- Use tax incentives to make their methods of production more eco-friendly

Malaysia is the first ASEAN nation to offer green building incentives for developers. Developers should use the opportunity to design buildings that satisfy not only the authorities but more importantly, their customers who require 'greener' buildings

- Develop green technologies and products even independently of government support

The qualitative study found that companies go green not because of the tax incentives but because of customer demand for greener and more sustainable products. Good industrialists should take care of the needs of the customer first and not wait for the government to intervene. Unfortunately, only companies that export to the United States were interested in complying with the American Clean Energy and Security Act of 2009. Companies should be pro-active and not wait for the government to enforce laws and taxes. At the end of the day, the customer is king.

The ordinary citizen should view positively environmental taxation (and incentives). Any sacrifice on their part to the environment will be returned to them in the form of a better quality of life. Any attempt to destroy the environment will result in their harm.

7.5 Contributions

The researcher has introduced two new theorems which aim to add to the body of knowledge about environmental taxation. Ever since the problems of corporate governance came to light in the Enron and WorldCom fiascos, corporate governance and ethics have become important issues in the study of accountancy. Professional ethics courses have become compulsory for accounting students. In particular, environmental accounting has become a key topic in the study of accounting. This study adds on to the body of knowledge of social accounting, including environmental accounting.

The Theory of Social Rental

This theory uses simple financial calculations to illustrate to the taxpayer the cost to the local community stemming from environmentally destructive activities. The theory is an extension of Coase's (1960) theory, expressed in monetary form. This method enables the laymen to understand the cost of actions in monetary terms. Coase (1960) approached this problem using economic theory quite difficult for the general public to understand.

The Life of Pi Theorem

This theorem connects theological and philosophical theory, in particular the concept of atonement, to the work of Pigou (1932) and Brown and Frame (2005). Pigou viewed taxes from an economic point of view as a way to correct social injustices (in this research, an environmental tax corrects injustices to the environment). *The Life of Pi Theorem* considers Pigou's proposal from a theological and philosophical point of view. Tax then is as a form of atonement for injustices against the environment. Brown and Frame (2005) suggested that social costs (including environmental costs) be included in any cost-benefit analysis. This research suggests that the identification of social costs should be a reminder to accountants to atone for any destruction to society, including environment damage.

7.6 Implications for Future Research

This study focused on environmental taxation as a means of encouraging good environmental behaviour. However, the experts and the results of the quantitative research emphasised that education, awareness and supporting services must go hand in hand with environmental taxation. The following issues could be researched in the future.

- **Education and Awareness**

Does education actually work at making behaviour more environmentally friendly? Khor (2012) seemed to think so. She believed that the government should use education, determination and encouragement to prevail in conflicts with deeply rooted beliefs.

- **Supporting services**

This study has shown that merely throwing money at incentives to create environmentally friendly products and services will not work if the government does not attempt to create supporting goods and services. Issues such a lack of facilities to recycle glass and charging points for electrical cars have been identified by this study. The researcher feels that authorities should conduct studies to determine what supporting goods and services are needed to accompany each form of environmental tax that is introduced.

- **Rechanneling of funds due to environmental taxation**

Tuladhar and Wilcoxon (1999) suggested that taxing goods with externalities and channelling the tax revenue to reduce other taxes will improve public welfare. For example, a landfill tax might encourage people to recycle more. This result was reported by Labbat and White (2007) when Transport for London reinvested collections from the Congestion Charge on vehicles entering central London) to improve the bus system. A study has yet to be undertaken in Malaysia to determine whether recycling benefits the local job market. Studies

should address the opportunities and threats when certain environmental taxes are introduced in the country.

- **Direct green taxation**

The bulk of this research centres primarily on direct and local government taxation. It would be quite interesting to know how green elements can be included in direct taxation and whether direct taxation is possible.

7.7 Limitations of the Study

As in any research, this work presents potential risks, weaknesses and shortcomings. The researcher anticipated the following weaknesses and shortcomings.

- Respondents might not have a basic understanding of taxation.

There might be a risk that respondents in the focus groups, interviews and questionnaires do not have the basic knowledge of taxation necessary to fully participate in the study. As the tax laws are written in technical Bahasa Malaysia or English, the layman might not understand some of the issues addressed in the survey. The businessman might not understand some of the tax issues asked as it is common practice for tax agents to deal with tax issues on the behalf of businesses.

- Respondents might not be honest about or inject bias into their answers.

Since some parts of the study involve public officials and politicians, it is anticipated that the respondents could respond cautiously as directed by their party and official directives. They might not give candid answers. Respondents from interest group might focus on their organisation's agenda and be overtly critical of policies from their rival groups.

7.8 Summary

The outcome of the specific research objectives are as follows:

- 1. To evaluate the level of acceptance of environmental law as a means of increasing the environmental commitment in Malaysia**

Malaysians are in favour of environmental laws especially environmental tax incentives as a means of increasing the environment commitment in Malaysia.

- 2. To identify the best practices in environmental preservation initiatives that should be included in Malaysian tax laws**

Malaysian businessmen are still not ready to accept the best practices in environmental preservation unless their customers insists on them.

- 3. To analyse how various motivating, organisational and impeding factors influence Malaysian tax laws in order to create a scenario of environmental commitment by Malaysian taxpayers**

The various motivating, organisational and impeding factors influence had been discussed in detail in section 7.1.3.

- 4. To utilize the data to identify strategies using environmental laws to increase the level of environmental commitment in Malaysia**

Section 7.5 described in detail strategies using environmental laws to increase the level of environmental commitment in Malaysia

As evidenced from the qualitative and quantitative analysis and the literature and legal review, human behavioural (quality of life, self-actualisation, attitudes) and legal factors (immediate tax incentives, forced compliance, tax mitigation) are the underlying factors of the acceptance of environmental taxation by the Malaysian taxpayer. This study attempts to identify the impeding factors in the theoretical framework that might change the outcome of acceptance of environmental taxation. These factors include amount of tax and its administration, current subsidy structure, culture, supporting infrastructure, public goods and governance issues.

The survival of humankind depends on its relationship with the environment. Environmental taxation is a merely a supporting tool that encourages humans to be more environmentally friendly. Ensuring a better quality of life in the future requires every taxpayer to sacrifice any aspect of personal behaviour that is not eco-friendly. Environmental taxes give a push, but the ordinary citizen needs to take action to ensure the survival of future generations.

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APPENDICES

Appendix 1: Guidelines during Focus groups and interview sessions

- Currently the Penang government charges 20 sen for plastic bags at all hypermarkets and shops on Mondays to Wednesdays and the same on Saturdays in Selangor. The monies collected in Penang will be donated to the state's poor. In China like both states the same action holds. Do you agree with the move? Why?
- The Penang Chief Minister mentions that Penang citizen use too much water and to curb this wastefulness water tariff will be increased. Do you agree with the move? Why?
- In the United Kingdom, the local government charges tariffs based on the amount of garbage collected every month. Do you agree if the same if adopted by your local government? Why?
- In the United Kingdom a rebate on garbage tariffs are done when citizen 'sell' recyclable rubbish to the government. Do you agree if the same if adopted by your local government? Why?
- Most countries including Singapore required their citizen to divide their rubbish into paper, glass, plastic, metals and organic rubbish. Similar style garbage bins are seen in certain places in the Klang Valley. Do you think this is successful? Why?
- In Australia, the government gives incentives to encourage motor oil and cooking oil recycling. Is this sustainable in Malaysia?
- In the United Kingdom, the government gives employers tax incentives to encourage employees to take public transport? Currently employee transport such as 'Bus Kilang' is tax allowable. Do you agree if this incentive is introduced in Malaysia?
- In Hangzhou, citizens agree to pass a special fee to protect the parks in the city. Do you agree if a special tree growing fee is charged to encourage the growing of more trees in parks? Why?

- Currently retailers like Tesco UK (example Fair Trade Coffee and Organic Extra Virgin Olive Oil), Starbucks (example Fair Trade Coffee) and Body Shop sell products that are sustainable. Would you buy Malaysian products which are sustainable e.g. for instance Green Palm Oil Products, Fair Trade Coffee or non-genetically modified organism (GMO) products? How would you want the government to help?
- Current the Malaysian and the US governments give incentives to change cars. Does this help in saving the environment? Why?
- Currently the Malaysian government gives incentives in lower duties for those who purchase hybrid cars. Is this successful? Will you buy those cars? Will you support incentives for vehicles to move from petrol to LPG like in Australia? What about incentives to Proton, Perodua, Naza and Inokom to develop hybrid and electric vehicles?
- Currently the government is giving incentives to developers to build Green Buildings? Are looking to turn your home green by supporting initiatives such as using solar energy? What kind of support are you looking from the government for you to renovate your home to become green buildings?
- Universiti Sains Malaysia has banned the use of Styrofoam food boxes ('coffin boxes'). Do you support a tax something like the tax on plastic bags is introduced to discourage the use of those boxes? Do you support government incentives to help producers make disposable paper containers?
- In the United States there is a demand for packaging to include a percentage post-consumer recycled waste? Will you buy products with such content?
- 'When the buying stops, the killing stops' says Jackie Chan. Do you consume items from endangered species such as sharks and tigers? Do you agree higher tariffs should be placed on items such as sharks fins to reduce the killing of these animals?
- Green banking which is a system of banking whereby money to fund environmental or ethical projects is currently becoming very fashionable in the

United Kingdom and France (for example Crédit Agricole). Would you like to see the same kind of incentives given to the Islamic Banks extended to the bankers to encourage the set-up of Green banking in Malaysia?

- The government gives pioneer status and investment tax allowances to companies to invest in biomass. Do you agree with this move? Do you have plans to move to bio fuels?
- Overseas there is demand from producers to come up with sustainable products i.e. organic or products with recycled elements. Are you satisfied with government's efforts to encourage the production of sustainable products in Malaysia? How can the government help?
- In the United States there is a demand for packaging to include a percentage post-consumer waste? Is this acceptable in Malaysia? What government support is needed here?
- The National Green Technology Policy promises to bring Malaysia into the era of green technology through green technology usage and research. What is the support is feel the government should give to help your company support green technology?

The additional question presented to the experts in the palm oil and manufacturing industries was

- How can the newly introduced policy on Feed-In-Tariff help those in your industry? And what more can the government do?

Appendix 2: Initial quantitative study

1.

1. As an introduction to the Environmental taxation effort, Currently the Penang government charges 20 sen for plastic bags at all hypermarkets and shops on Mondays to Wednesdays and the same on Saturdays in Selangor. The monies collected in Penang will be donated to the state's poor. Do agree with the move?

Yes

No

2. Again as a sustainable development initiative, The Penang Chief Minister mentions that Penang citizen use too much water and to curb this wastefulness water tariff will be increased. Do you agree with the move?

Yes

No

3. As a form of Environmental tax, in the United Kingdom, the local government charges tariffs based on the amount of garbage collected every month. Do you agree if the same is adopted by your local government?

Yes

No

4. As a sustainable development initiatives, In the United Kingdom a rebate on garbage tariffs are done when citizen "sell" recyclable rubbish to the government. Do you agree if the same is adopted by your local government?

Yes

No

5. As a sustainable development initiative, most countries including Singapore required their citizen to divide their rubbish into paper, glass, plastic, metals and organic rubbish. Similar style garbage bins are seen in certain places in the Klang Valley. Do you think this has been successful?

Yes

No

2.

6. What kind of incentive would you think the government should give to encourage people to recycle their garbage?

7. In Australia, the government gives incentives to encourage motor oil and cooking oil recycling. Should this be introduced in Malaysia?

- Yes
 No

8. In the United Kingdom, the government gives employers tax incentives to encourage employees to take public transport? Currently employee transport such as “Bus Kilang” is tax allowable. Do you agree if this incentive is introduced in Malaysia?

- Yes
 No

9. In Hangzhou, citizens agree to pass a special fee to protect the parks in the city. Do you agree if a special tree growing fee is charged to encourage the growing of more trees in parks?

- Yes
 No

10. Currently retailers like Tesco UK (example Fair Trade Coffee and Organic Extra Virgin Olive Oil), Starbucks (example Fair Trade Coffee) and Body Shop sell products that are sustainable. Would you buy Malaysian products which are sustainable e.g. for instance Green Palm Oil Products, Fair Trade Coffee or non-genetically modified organism (GMO) products?

- Yes
 No

Appendix 3: Final quantitative study Questionnaire (English, Bahasa Malaysia and Chinese editions)

The Acceptance of Best Practices in the Malaysian Environmental Tax Laws

Instructions:

The following statements are about your thoughts of the need for Malaysia to have environmental tax laws. The laws are created to encourage the populace to protect the environment and practice sustainability principle.

Please indicate the degree to which you agree or disagree with each of the statement presented below on the most appropriate option on a 7-point scale, ranging from 1 (Strongly Disagree) to 7 (Strongly Agree).

Please be assured that your responses remain confidential.

Part One: Understanding and Acceptance of Current Environmental Tax Laws

The following statements relate to your perception towards the **current environmental taxes and incentives in place in the country today**. Please indicate the degree to which you agree or disagree with each of the following statements:

	Statement	Strongly Disagree	Disagree	Slightly Disagree	No comment	Slightly Agree	Agree	Strongly Agree
1	Charging some money for plastic bags at all hypermarkets and most shops is a good move.	1	2	3	4	5	6	7
2	Incentives in the form lower duties for those who purchase hybrid cars below 2,200 cc is a good thing.	1	2	3	4	5	6	7
3	Encouraging people to produce solar power and selling back to the GRID is a good move.	1	2	3	4	5	6	7
4	Giving incentives to build Green Buildings is a good move.	1	2	3	4	5	6	7
5	Tax incentives to encourage producing	1	2	3	4	5	6	7

	energy using biomass is a good thing.							
6	Every property developer must pay a tax to the government to build parks.	1	2	3	4	5	6	7
7	I support high taxes on sharks' fins.	1	2	3	4	5	6	7

Part Two: Outcome

The following statements relate to your perception towards the **outcome of having environmental tax and incentives in Malaysia**. Please indicate the degree to which you agree or disagree with each of the following statements:

	Statement	Strongly Disagree	Disagree	Slightly Disagree	No comment	Slightly Agree	Agree	Strongly Agree
8	My life will improve if the environment improves.	1	2	3	4	5	6	7
9	I am willing to support taxes that will stop bad environmental behaviour so that my quality of life will improve.	1	2	3	4	5	6	7
10	I am willing to support charging of money on plastics bags as in the long run the environment will be made better.	1	2	3	4	5	6	7
11	I will support environmental tax incentives as it will improve my life.	1	2	3	4	5	6	7
12	More people buying hybrids means less pollution and it is good for me.	1	2	3	4	5	6	7

13	Green buildings ¹ improve my life.	1	2	3	4	5	6	7
14	Clean solar energy is good for me.	1	2	3	4	5	6	7
15	Sustainable energy through biomass is good for my life.	1	2	3	4	5	6	7

Part Three: Taxpayer Comprehension

The following statements relate to your perception towards the **taxpayer comprehension** towards current tax laws dealing with environmental issues. Please indicate the degree to which you agree or disagree with each of the following statements:

	Statement	Strongly Disagree	Disagree	Slightly Disagree	No comment	Slightly Agree	Agree	Strongly Agree
16	I understand why it is fair to pay for plastic bags.	1	2	3	4	5	6	7
17	I understand why we must pay extra if we use too much water.	1	2	3	4	5	6	7
18	I understand why only the green developers must be given tax breaks.	1	2	3	4	5	6	7
19	I understand if I sacrifice a certain behaviour I will benefit in the future.	1	2	3	4	5	6	7

Part Four: Commitment and Comprehensive Laws

¹Green building is a building practice to improve resource utilization efficiency (energy, water, and materials), at the same time reduce the impact of buildings on human health and the environment, in terms of placement, design, construction, operation, maintenance and removal of the entire building life cycle.

The following statements relate to your perception towards the effectiveness and comprehensiveness of current tax laws dealing with the environment in Malaysia. Please indicate the degree to which you agree or disagree with each of the following statements:

	Statement	Strongly Disagree	Disagree	Slightly Disagree	No comment	Slightly Agree	Agree	Strongly Agree
20	The current tax laws are adequate to address environmental issues.	1	2	3	4	5	6	7
21	The current tax laws on the environment are contradictory.	1	2	3	4	5	6	7
22	I look forward to a more systematic and comprehensive set of environmental tax laws.							
23	I am committed about having a systematic and comprehensive set of environmental tax laws in Malaysia.							
24	I will take the LRT when the petrol price increases.	1	2	3	4	5	6	7
25	I will not buy a conventional local car since there is a tax relief for the hybrid car.	1	2	3	4	5	6	7
26	The public transport system in my area is adequate.	1	2	3	4	5	6	7
27	I understand why we should have a comprehensive set of environmental tax laws.	1	2	3	4	5	6	7
28	A comprehensive set of environmental tax	1	2	3	4	5	6	7

	laws is good for me.							
29	A comprehensive set of environmental tax laws means more income for the government.	1	2	3	4	5	6	7
30	I am willing to sacrifice my current lifestyle for a comprehensive set of environmental tax laws which is good for me.	1	2	3	4	5	6	7
31	I am willing to purchase good with recycled items.	1	2	3	4	5	6	7
32	I am willing to purchase food items wrapped in recycled paper.	1	2	3	4	5	6	7
33	I think drinking reprocessed water like in Singapore's NuWater is fine for me.	1	2	3	4	5	6	7
34	I support motor oil and cooking oil recycling.	1	2	3	4	5	6	7
35	The government should give tax incentives to people involved in recycling.	1	2	3	4	5	6	7
36	I sorted my garbage for recycling	1	2	3	4	5	6	7
37	It is easy to find bins for recycling	1	2	3	4	5	6	7
38	I will stop practising any rituals in my culture that destroys the environment.	1	2	3	4	5	6	7
39	I will not eat sharks' fin even if it is free.	1	2	3	4	5	6	7
40	I understand how buildings are certified as green.							

Part Five: Taxpayer Preference

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From the following taxes indicate the types of new taxes that you prefer to encourage good environmental behaviour.

Green Taxes on Real Property		Increased Road Tax on Old Vehicles	
Petroleum Tax		Pollution tax on industry	
Carbon Footprint Tax		Other Taxes (please specify)	
Excess Water Usage Tax		No Taxes	

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From the following taxes indicate the types of new incentives that you prefer which will encourage good environmental behaviour.

Incentives on Green Real Property		Tax incentives to build public transport	
Duties abolishment on hybrid and electric cars		Pioneer status and tax holiday for green industries	
Tax incentives to produce organic products, sustainable and free trade products.		Incentives for producers to stop producing plastic and Styrofoam boxes.	
Research grants for Green Research		Other Incentives (please specify)	
Capital allowances for green equipment		No Incentives	

Part Six: Future Development

The following statements relate to your perception towards future tax laws dealing with the environment in Malaysia. Please indicate the degree to which you agree or disagree with each of the following statements:

	Statement	Strongly Disagree	Disagree	Slightly Disagree	No comment	Slightly Agree	Agree	Strongly Agree
43	I am open to accepting new environmental tax laws that are in line with international practices.	1	2	3	4	5	6	7
44	I am open to carbon taxes as it will save the environment.	1	2	3	4	5	6	7
45	I am open to higher road tax to encourage the use of public transport.	1	2	3	4	5	6	7
46	I feel the local authorities should charge garbage collection based on weight as practiced overseas.							
47	Fine should be charged on people who do not sort and separate their garbage.							

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The following taxes and incentives are practiced in the developed countries. Indicate the types of new taxes and incentives that you feel could be introduced here.

Carbon taxes		Incentives on bio diesel	
Taxes on vehicles entering a city		Fine on people who do not separate their garbage.	
Incentives on car-pooling		Garbage collection fees are based on amount of garbage.	
Incentives on solar energy		Tree growing tax on developers.	

Part Seven: Profile

- Gender
() Male

- Female
2. What is your age group?
- Below 25
- 26 – 35
- 36 – 45
- 46 – 55
- 56 – 65
- 65 or Above
3. Nationality
- Malaysian
- Non-Malaysian (please state your nationality):_____
4. Tax Residence
- Malaysian resident taxpayer
- Non resident taxpayer
5. Which kinds of tax returns do you file (you can choose more than one)?
- Employment (BE)
- Business (B)
- Companies ©
- Partnership (P)
- Estate Trust (TP)
- Trust Fund(T)
- No returns
6. Marital Status
- Single or Never Been Married
- Married
- Separated
- Divorced
- Widowed
- Others (please specify):_____
7. Which one of the following best describes your highest level of education?
- Primary School or Below
- Secondary School
- Certificate or Diploma
- Bachelor's Degree
- Master's Degree
- Doctoral Degree
- Professional Qualifications
- Others (please specify):_____

8. Which one of the following best describes your employment?
- Employed
 - Self-employed
 - Homemaker
 - Student
 - Retired
 - Unemployed
 - Other (please specify): _____

9. Race
- Malay
 - Chinese
 - Indian
 - Other Bumiputras
 - Non-Malaysians
 - Others

10. State
- Selangor
 - Perak
 - Pahang
 - Johor
 - Kedah
 - Kelantan
 - Terengganu
 - Negeri Sembilan
 - Perlis
 - Pulau Pinang
 - Melaka
 - Sabah
 - Sarawak
 - Wilayah Persekutuan
 - Other States

Participation in this survey is anonymous. However, if you would like us to contact you in the future or to receive the results of this survey, please leave you contact details below.

Name (optional): _____

Contact email (optional) : _____

Telephone number (optional) : _____

THANK YOU VERY MUCH FOR YOUR TIME AND PARTICIPATION!

Penerimaan Kaedah Terbaik Pencukaian Alam Sekitar di Malaysia

Arahan:

Kenyataan berikut adalah untuk mendapatkan pandangan anda terhadap keperluan Malaysia untuk mengwujudkan undang-undang cukai alam sekitar. Undang-undang yang diwujudkan untuk menggalakkan penduduk untuk melindungi dan mengekalkan alam sekitar dalam keadaan yang baik. Sila nyatakan pada pilihan yang paling sesuai pada skala 7-mata, di antara 1 (Sangat Tidak Bersetuju) hingga 7 (Sangat Setuju).

Kami akan memastikan bahawa jawapan anda tetap sulit.

Bahagian Satu: Pemahaman dan Penerimaan Rakyat Jelata Mengenai Undang-Undang Cukai Alam Sekitar

Kenyataan berikut berkaitan dengan persepsi anda terhadap **cukai dan insentif cukai alam sekitar semasa di negara ini**. Sila nyatakan sama ada anda bersetuju atau tidak bersetuju dengan setiap kenyataan di bawah:

	Kenyataan	Sangat Tidak Bersetuju	Tidak setuju	Sedikit Tidak Setuju	Tidak ada pandangan	Sedikit Setuju	Setuju	Sangat Setuju
1	Caj yang kecil untuk beg plastik di semua pasar raya besar dan kedai-kedai merupakan satu langkah yang baik.	1	2	3	4	5	6	7
2	Cukai yang lebih rendah untuk menggalakkan rakyat membeli kereta hibrid di bawah 2200 cc adalah satu perkara yang baik.	1	2	3	4	5	6	7
3	Menggalakkan orang ramai untuk menghasilkan tenaga solar dan menjual tenaga tadi merupakan suatu langkah yang baik.	1	2	3	4	5	6	7
4	Memberi insentif untuk membina Bangunan Hijau adalah satu langkah yang baik.	1	2	3	4	5	6	7
5	Insentif cukai untuk menggalakkan pengeluaran tenaga melalui biomass adalah sesuatu yang baik.	1	2	3	4	5	6	7
6	Cukai ke atas pemaju untuk mendirikan taman adalah satu langkah yang baik.	1	2	3	4	5	6	7
7	Saya menyokong cukai yang tinggi pada sirip ikan yu.	1	2	3	4	5	6	7

Bahagian Dua: Hasil Akhir

Kenyataan berikut adalah berkaitan dengan persepsi terhadap **hasil akhir pengenalan cukai dan insentif alam sekitar di Malaysia**. Sila nyatakan sama ada anda bersetuju atau tidak bersetuju dengan setiap kenyataan di bawah:

	Kenyataan	Sangat Tidak Bersetuju	Tidak setuju	Sedikit Tidak Setuju	Tidak ada pandangan	Sedikit Setuju	Setuju	Sangat Setuju
8	Hidup saya akan bertambah baik jika alam sekitar bertambah baik.	1	2	3	4	5	6	7
9	Saya bersedia untuk menyokong cukai yang akan	1	2	3	4	5	6	7

	menghentikan kelakuan buruk terhadap alam sekitar agar kualiti hidup saya bertambah baik.							
10	Saya bersedia untuk menyokong caj pada beg plastik kerana dalam jangka panjang ini menguntungkan alam sekitar.	1	2	3	4	5	6	7
11	Saya akan menyokong insentif cukai alam sekitar kerana ia akan memperbaiki kehidupan saya.	1	2	3	4	5	6	7
12	Lebih ramai orang membeli kereta hibrid bermakna kurang pencemaran dan ini baik untuk saya.	1	2	3	4	5	6	7
13	Bangunan hijau boleh memperbaiki kehidupan saya.	1	2	3	4	5	6	7
14	Tenaga solar adalah bersih dan baik untuk saya.	1	2	3	4	5	6	7
15	Tenaga bersih daripada sisa buangan bio adalah baik untuk kehidupan saya.	1	2	3	4	5	6	7

Bahagian Tiga: Kefahaman Pembayar cukai

Kenyataan berikut berkaitan dengan persepsi terhadap **kefahaman pembayar cukai terhadap** isu-isu alam sekitar dalam undang-undang cukai. Sila nyatakan sama ada anda bersetuju atau tidak bersetuju dengan setiap kenyataan di bawah:

	Kenyataan	Sangat Tidak Bersetuju	Tidak setuju	Sedikit Tidak Setuju	Tidak ada pandangan	Sedikit Setuju	Setuju	Sangat Setuju
16	Saya faham mengapa kita perlu membayar bila menggunakan beg plastik.	1	2	3	4	5	6	7
17	Saya faham mengapa kita perlu membayar harga yang lebih tinggi jika kita menggunakan terlalu banyak air.	1	2	3	4	5	6	7
18	Saya faham mengapa hanya pemaju bangunan hijau diberikan pengecualian cukai.	1	2	3	4	5	6	7
19	Saya faham jika saya meninggalkan tingkah laku yang tidak baik nescaya saya akan mendapat manfaat pada masa akan datang.	1	2	3	4	5	6	7

Bahagian Empat: Komitmen Serta Undang-Undang Yang Komprehensif

Kenyataan berikut berkaitan dengan persepsi anda kepada keberkesanan undang-undang cukai alam sekitaryang komprehensifdi Malaysia.Sila nyatakan sama ada anda bersetuju atau tidak bersetuju dengan setiap kenyataan di bawah:

	Kenyataan	Sangat Tidak Bersetuju	Tidak setuju	Sedikit Tidak Setuju	Tidak ada pandangan	Sedikit Setuju	Setuju	Sangat Setuju
20	Undang-undang cukai semasa adalah mencukupi untuk menangani isu alam sekitar.	1	2	3	4	5	6	7
21	Undang-undang cukai semasa ke atas alam sekitar adalah bercanggahan dengan satu sama lain.	1	2	3	4	5	6	7
22	Saya berharap kerajaan akan mengeluarkan satu setundang-undang cukai alam sekitar yang lebih sistematik dan menyeluruh.							
23	Saya komited dengan pengenalan undang-undang cukai alam sekitar di Malaysia yang sistematik dan menyeluruh							
24	Saya akan menggunakan LRT apabila harga petrol meningkat.	1	2	3	4	5	6	7
25	Saya tidak akan membeli kereta tempatan biasa kerana kini terdapat pelepasan cukai untuk kereta hibrid.	1	2	3	4	5	6	7
26	Sistem pengangkutan awam di kawasan saya adalah memadai.	1	2	3	4	5	6	7
27	Saya faham mengapa kita perlu ada satu set undang-undang cukai alam sekitaryang komprehensif.	1	2	3	4	5	6	7
28	Satu set undang-undang cukai alam sekitar yang komprehensifbaik untuk saya.	1	2	3	4	5	6	7
29	Satu set undang-undang cukai alam sekitar yang komprehensif bererti pendapatan yang lebih untuk kerajaan.	1	2	3	4	5	6	7
30	Saya sanggup	1	2	3	4	5	6	7

	mengubah gaya hidup semasa saya untuk mematuhi undang-undang cukai alam sekitar yang komprehensif kerana ia baik untuk saya.							
31	Saya bersedia untuk membeli barangan dengan unsur-unsur kitar semula.	1	2	3	4	5	6	7
32	Saya bersedia untuk membeli barangan makanan yang dibungkus dalam kertas kitar semula.	1	2	3	4	5	6	7
33	Saya bersedia meminum air minuman yang telah diproses semula seperti di NuWater Singapura kerana ia baik untuk saya.	1	2	3	4	5	6	7
34	Saya menyokong langkah mengkitar semula minyak motor dan minyak masak.	1	2	3	4	5	6	7
35	Kerajaan perlu memberikan insentif cukai kepada semua yang terlibat dalam aktiviti kitar semula.	1	2	3	4	5	6	7
36	Saya mengasingkan sampah saya untuk tujuan kitar semula	1	2	3	4	5	6	7
37	Saya mudah untuk mencari tong sampah khas untuk kitar semula	1	2	3	4	5	6	7
38	Saya akan berhenti mengamalkan apa-apa amalan budaya yang akan memusnahkan alam sekitar.	1	2	3	4	5	6	7
39	Saya tidak akan makan sirip ikan yu walaupun diberikan secara percuma.	1	2	3	4	5	6	7
40	Saya faham bagaimana suatu bangunan disahkan sebagai bangunan hijau.							

Bahagian Lima: Keutamaan Pembayar cukai

41

Daripada senarai cukai di bawah nyatakan jenis cukai yang baru yang anda lebih suka yang dapat menggalakkan cara hidup yang memelihara alam sekitar.

Cukai hijau pada Harta Tanah		Menaikkan Cukai Jalan Terhadap Kenderaan Lama	
Cukai petroleum		Cukai pencemaran ke atas industri	

Cukai karbon		Cukai lain (sila nyatakan)	
Cukai Penggunaan Air Berlebihan		Tiada cukai	

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Daripada senarai cukai di bawah nyatakan jenis insentif yang baru yang anda lebih suka yang dapat menggalakkan cara hidup yang memelihara alam sekitar.

Insentif pada Harta Tanah Hijau		Insentif cukai untuk membangunkan pengangkutan awam	
Pemansuhan cukai terhadap kereta hibrid dan elektrik		Taraf perintis dan pengecualian cukai terhadap industri hijau	
Insentif cukai untuk menghasilkan produk organik, mampan dan produk perdagangan bebas.		Insentif bagi pengeluar untuk menghentikan pengeluaran kotak plastik dan styrofoam.	
Geran penyelidikan Penyelidikan Hijau		Insentif lain (sila nyatakan)	
Elaun modal untuk peralatan hijau		Tiada Insentif	

Bahagian Enam: Hala Tuju Masa Hadapan

Kenyataan berikut berkaitan dengan persepsi anda terhadap undang-undang cukai alam sekitar pada masa hadapan di Malaysia. Sila nyatakan sama ada anda bersetuju atau tidak bersetuju dengan setiap kenyataan di bawah:

	Kenyataan	Sangat Tidak Bersetuju	Tidak setuju	Sedikit Tidak Setuju	Tidak ada pandangan	Sedikit Setuju	Setuju	Sangat Setuju
43	Saya terbuka untuk menerima undang-undang cukai baru persekitaran selaras dengan amalan antarabangsa.	1	2	3	4	5	6	7
44	Saya terbuka kepada cukai karbon kerana ia akan menyelamatkan alam sekitar.	1	2	3	4	5	6	7
45	Saya terbuka kepada cukai jalan yang lebih tinggi untuk menggalakkan penggunaan pengangkutan awam.	1	2	3	4	5	6	7
46	Saya rasa pihak berkuasa tempatan perlu mengenakan cukai taksiran berdasarkan	1	2	3	4	5	6	7

	berat pungutan sampah seperti yang diamalkan di luar negeri.							
47	Denda hendaklah dikenakan ke atas mereka yang tidak mengasingkan sampah-sarap mereka.	1	2	3	4	5	6	7

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Cukai dan insentif berikut diamalkan di negara-negara maju. Tandakan jenis cukai dan insentif baru yang anda rasa boleh diperkenalkan di sini.

Karbon cukai		Insentif pada bio diesel	
Cukai ke atas kenderaan yang memasuki pusat bandar		Denda ke atas mereka yang tidak mengasingkan sampah-sarap mereka.	
Insentif pada kepada mereka yang berkongsi kereta.		Cukai taksiran berdasarkan jumlah sampah yang dipungut.	
Insentif pada tenaga solar		Cukai Tanaman Pokok ke atas pemaju.	

Bahagian Tujuh: Profil

1. Jantina
 - Lelaki
 - Perempuan
2. Umur
 - Kurang daripada 25
 - 26 - 35
 - 36 - 45
 - 46 - 55
 - 56 - 65
 - 65 ke atas
3. Kewarganegaraan
 - Malaysia
 - Bukan Warganegara (sila nyatakan kewarganegaraan anda): _____
4. Pemastautin cukai
 - Pemastautin cukai Malaysia
 - Bukan pemastautin cukai Malaysia
5. Borang Nyata Cukai Pendapatan yang anda kembalikan (anda boleh tanda lebih daripada satu)
 - Pekerjaan (BE)
 - Perniagaan (B)
 - Syarikat (C)
 - Perkongsian (P)
 - Harta Pusaka (TP)
 - Tabung Amanah (T)
 - Tidak mengembalikan sebarang borang nyata cukai pendapatan
6. Status Perkahwinan
 - Bujang atau Tidak Pernah Berkahwin
 - Berkahwin

- Berpisah
- Bercerai
- Janda
- Lain-lain (sila nyatakan): _____

7. Tahap pendidikan tertinggi anda.
- Sekolah Rendah atau ke bawah
 - Sekolah Menengah
 - Sijil atau Diploma
 - Ijazah Sarjana Muda
 - Ijazah Sarjana
 - Ijazah Kedoktoran
 - Kelayakan Profesional
 - Lain-lain (sila nyatakan): _____

8. Pekerjaan anda.
- Makan gaji
 - Tuan sendiri
 - Suri Rumah
 - Pelajar
 - Bersara
 - Menganggur
 - Lain-lain (sila nyatakan): _____

9. Bangsa
- Melayu
 - Cina
 - India
 - Bumiputra Lain
 - Bukan Rakyat Malaysia
 - Lain-lain

10.

10. Negeri
- Selangor
 - Perak
 - Pahang
 - Johor
 - Kedah
 - Kelantan
 - Terengganu
 - Negeri Sembilan
 - Perlis
 - Pulau Pinang
 - Melaka
 - Sabah
 - Sarawak
 - Wilayah Persekutuan
 - Negeri-negeri Lain

Penyertaan dalam soal selidik ini adalah rahsia. Walau bagaimanapun, jika anda ingin kami hubungi anda pada masa akan datang atau menerima keputusan soal selidik ini, sila tinggalkan butiran anda di bawah.

Nama (tidak wajib): _____

E-mel (tidak wajib): _____

Nombor telefon (tidak wajib): _____

TERIMA KASIH KERANA MELUANGKAN MASA ANDA UNTUK MENYERTAI SOAL SELIDIK INI!

马来西亚环境收税法律实践调查

说明：

下面的陈述是您对于马来西亚环境收税法律的看法。这个环境收税法律是鼓励民众保护环境。请在下方的陈述里表明您同意或不同意。从1（强烈反对）到7（强烈同意）。

请您放心，您的意见将会受保密。

第一部分：您对于目前环境收税法律的理解

下面的陈述是您对于目前发生在国内的环境收税法律的看法。请注明您同意或不同意：

	陈述	强烈反对	不同意	稍微不同意	没有意见	稍微同意	同意	强烈同意
1	塑料袋的收费，是一个很好的举措。	1	2	3	4	5	6	7
2	混合动力 (hybrid)汽车（低于 2200 毫升）享有较低的汽车税，是一个很好的举措。	1	2	3	4	5	6	7
3	鼓励生产太阳能及卖回予电力公司，是一个很好的举措。	1	2	3	4	5	6	7
4	政府奖励绿色建筑 (green buildings)，是一个很好的举措。	1	2	3	4	5	6	7
5	较低的生物质能(废料)，是一件好事。	1	2	3	4	5	6	7
6	每一个房地产开发商必须缴纳个税予政府建立公园。	1	2	3	4	5	6	7
7	我支持对鱼翅的高收税。	1	2	3	4	5	6	7

第二部分：环境收税法律的成果

下面的陈述是您对于马来西亚环境收税法律成果的看法。请注明您同意或不同意：

	陈述	强烈反对	不同意	稍微不同意	没有意见	稍微同意	同意	强烈同意
8	如果环境有所改善,我的生活也将会改善。	1	2	3	4	5	6	7
9	如果可以禁止对于破坏环境的恶劣行为,我愿意支持收税使我的生活质量提高。	1	2	3	4	5	6	7
10	如果可以改善环境,我愿意支持塑料袋的收费。	1	2	3	4	5	6	7
11	我支持环保的税收优惠政策,因为它可以改善我的生活。	1	2	3	4	5	6	7
12	越来越多的人购买混合动力 (hybrid)汽车以减少空气污染,这是很好的举措。	1	2	3	4	5	6	7
13	绿色建筑 (green building) 可以改善我的生活。	1	2	3	4	5	6	7
14	清洁的太阳能,对我有益。	1	2	3	4	5	6	7
15	来自废料的可持续能源 (sustainable energy from biomass), 是很好的举措。	1	2	3	4	5	6	7

第三部分：纳税人的理解

下面的陈述是您身为纳税人的立场对于目前收税法律和环境问题的看法。请注明您同意或不同意：

	陈述	强烈反对	不同意	稍微不同意	没有意见	稍微同意	同意	强烈同意
16	我明白为什么我要缴纳塑胶袋费。	1	2	3	4	5	6	7
17	我明白为什么我必须缴纳额外费用，如果我使用太多的水。	1	2	3	4	5	6	7
18	我明白为什么绿色建筑商享受税收优惠。	1	2	3	4	5	6	7
19	我明白，如果我牺牲不良于环境的行为，我的将来生活可以改善。	1	2	3	4	5	6	7

第四部分：承诺和广泛的环境税法

下面的陈述是您对于现今马来西亚收税法律效用和广泛法律的看法。请注明您同意或不同意：

	陈述	强烈反对	不同意	稍微不同意	没有意见	稍微同意	同意	强烈同意
20	现在的环境税法可以解决环境问题。	1	2	3	4	5	6	7
21	现在的环境税法对环境很矛盾。	1	2	3	4	5	6	7
22	我期待着具有系统和广泛的环境税法律。	1	2	3	4	5	6	7
23	我承诺具有系统和广泛的环境税法律。	1	2	3	4	5	6	7
24	如果汽油价格上升，我会使用轻轨列车系统（LRT）。	1	2	3	4	5	6	7
25	我不会购买本地汽车，因为这有损对于免混合动力汽车(hybrid)的税收优惠。	1	2	3	4	5	6	7
26	我区有足够的公共交通系统。	1	2	3	4	5	6	7
27	我明白为什么我们必须有广泛的环境税法律。	1	2	3	4	5	6	7
28	我认为广泛的环境税法律是为了我好	1	2	3	4	5	6	7
29	我认为广泛的环境税法律能够增加政府的收入。	1	2	3	4	5	6	7
30	我愿意牺牲我现在的的生活方式是为了响应广泛的环境税法律。	1	2	3	4	5	6	7
31	我愿意购买及回收再使用产品(Recycled products)。	1	2	3	4	5	6	7
32	我愿意购买用再生纸(Recycled paper)包裹的食物。	1	2	3	4	5	6	7
33	我愿意喝如新加坡的NuWater再处理过的水。	1	2	3	4	5	6	7
34	我支持再生机油(Recycled motor oil)和再生食用油(Recycled cooking oil)。	1	2	3	4	5	6	7
35	我认为政府应该提供优惠给予哪些负责回收及环保任务的团体。	1	2	3	4	5	6	7
36	我会分类我的垃圾。	1	2	3	4	5	6	7
37	我认为很容易找到回收箱。	1	2	3	4	5	6	7
38	我会停止实行有破坏于环境的不良风俗习惯和仪式。	1	2	3	4	5	6	7
39	我不会吃鱼翅，即使它是免费的。	1	2	3	4	5	6	7
40	我了解绿色建筑的批准。							

第五部分：纳税人的偏爱

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请在下面的陈述里选择您所希望推行的开征新税（new taxes）以鼓励环保的行为：

地产环保税		增加旧车的路税	
石油税		工业环境污染税	
碳足迹税		其他税（请注明）	
多余的水税		无税	

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请在下面的陈述里选择您所希望推行的税收优惠新政策（new incentives）以鼓励环保的行为：

绿色建筑商的减税优惠		建立公共交通的减税优惠	
混合动力汽车 (hybrid) 和电动 (electric car) 汽车的零收税		绿色产业的先驱地位和零收税	
环保产品的减税优惠		鼓励停止生产塑料和泡沫塑料盒的减税优惠	
绿色环境研究的赠款		其他优惠（请注明）	
环保设备的资本津贴 (capital allowance)		没有优惠	

第六部分：未来发展

下面的陈述是您对于未来马来西亚收税法律发展的看法。请注明您同意或不同意：

	陈述	强烈反对	不同意	稍微不同意	没有意见	稍微同意	同意	强烈同意
43	我愿意接受新的环境税因为它符合国际标准。	1	2	3	4	5	6	7
44	我愿意接受碳税 (carbon tax)，因为它会保护环境。	1	2	3	4	5	6	7
45	我接受提高道路税，是因为鼓励市民使用公共交通工具。	1	2	3	4	5	6	7
46	我认为地方政府应依据垃圾重量来征收税务类似外国所实行的。							
47	我认为谁不分类他们的垃圾应该被罚款。							

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请在下面的陈述里选择您对于发达国家实行税收优惠新政策的看法。

碳税 (carbon footprint tax)		生物质能 (biomass) 的优惠	
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进城市的车辆税		不分类垃圾的罚款。	
共用汽车的优惠		依据垃圾重量来征收的收费。	
太阳能的优惠		向房屋发展商征收的树生长税。	

第七部分：个人资料

1. 性别
 - 男
 - 女

2. 年龄
 - 25 以下
 - 26 - 35
 - 36 - 45
 - 46 - 55
 - 56 - 65
 - 65 以上

3. 国籍
 - 马来西亚人
 - 非马来西亚人（请注明您的国籍）：_____

4. 税务居民
 - 马来西亚居民纳税人
 - 非马来西亚居民纳税人

5. 报税文件（您可以选择不止一个）
 - 就业（BE）
 - 商业（B）
 - 公司©
 - 伙伴关系（P）
 - 房地产信托基金（TP）
 - 信托基金（T）
 - 没有报税

6. 婚姻状况
 - 单身
 - 已婚
 - 分隔
 - 离婚
 - 丧偶
 - 其他（请注明）：_____

7. 最高教育水平
 - 小学
 - 中学
 - 证书或文凭
 - 大学学历
 - 硕士学位
 - 博士学位

- 专业资格
- 其他（请注明）：_____

8. 职业
- 雇员的工资
 - 自雇
 - 主妇
 - 学生
 - 退休
 - 失业
 - 其他（请注明）：_____

9. 种族
- 马来人
 - 华人
 - 印度人
 - 其他土著
 - 非马来西亚人
 - 其他

10. 行政区划雪兰莪州
- 霹靂州
 - 彭亨州
 - 柔佛州
 - 吉打州
 - 吉兰丹州
 - 登嘉楼州
 - 森美兰州
 - 玻璃市州
 - 檳城州
 - 马六甲州
 - 沙巴州
 - 砂拉越州
 - 联邦直辖区
 - 其他行政区划

这项调查是匿名的。但是您希望这次调查的结果，请留下您的联系详情。

姓名可选)：_____

联系电子邮件(可选)：_____

电话号码(可选)：_____

非常感谢您的时间和参与！