

**CARBON TAX IMPLEMENTATION IN MALAYSIA: PUBLIC
ACCEPTANCE AND TRUST IN THE GOVERNMENT**

NORFAKHIRAH NAZIHAH BINTI MOHD HASNU

UNIVERSITI SAINS ISLAM MALAYSIA

**CARBON TAX IMPLEMENTATION IN MALAYSIA:
PUBLIC ACCEPTANCE AND TRUST IN THE GOVERNMENT**

Norfakhirah Nazihah binti Mohd Hasnu

Thesis submitted in partial fulfillment for the degree of
MASTER OF
ECONOMICS AND MUAMALAT ADMINISTRATION

UNIVERSITI SAINS ISLAM MALAYSIA

March 2023

AUTHOR DECLARATION

I hereby declare that the work in this thesis is my own except for quotations and summaries which have been duly acknowledged.

Date: 27th March 2023

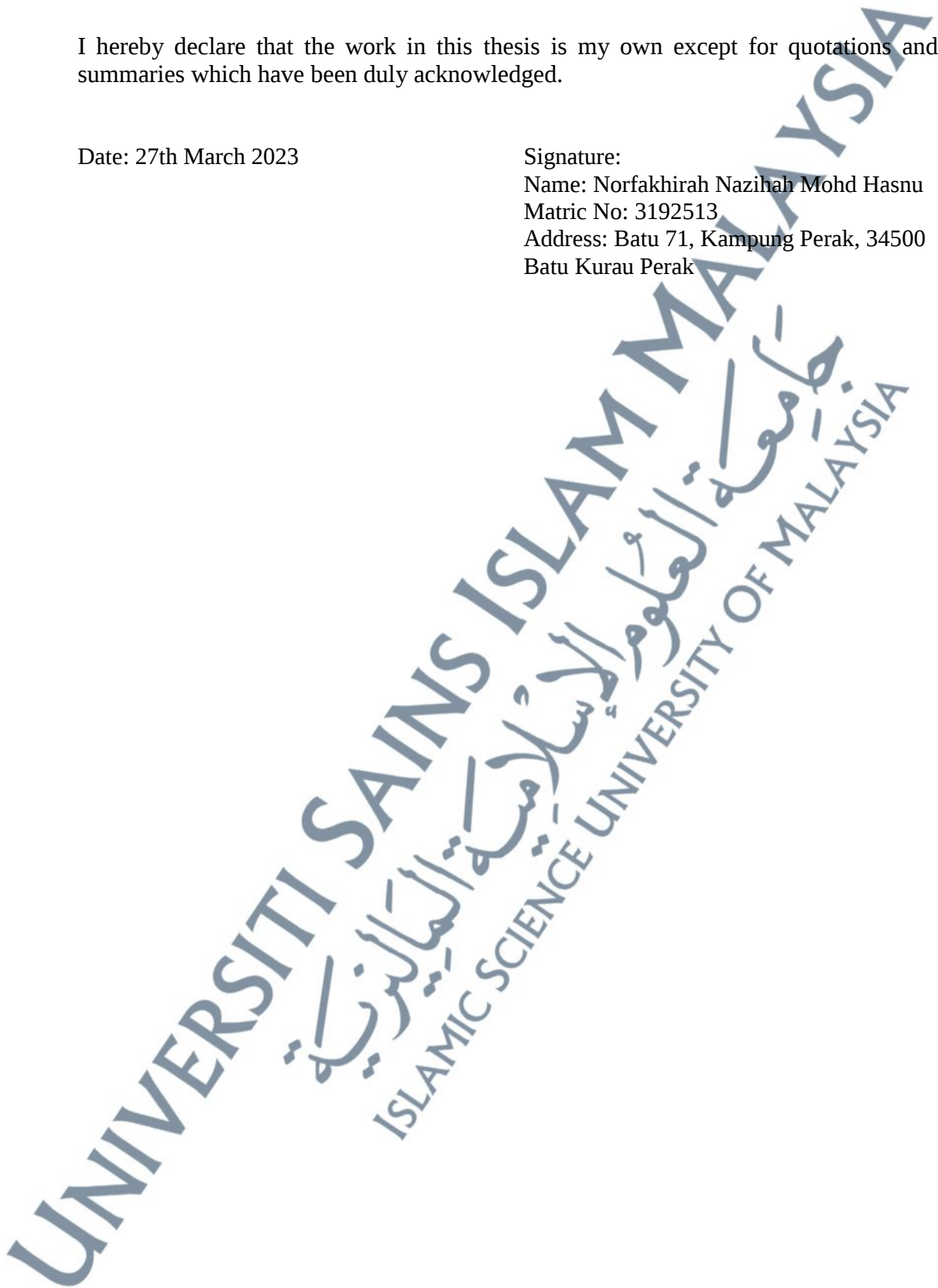
Signature:

Name: Norfakhirah Nazihah Mohd Hasnu

Matric No: 3192513

Address: Batu 71, Kampung Perak, 34500

Batu Kurau Perak



ACKNOWLEDGEMENTS

In the name of Allah, the Most Gracious and the Most Merciful.

Praise be to Allah, the Almighty, the greatest of all, upon Whom we ultimately depend for sustenance and direction. I thank Almighty Allah for giving me the opportunity, determination and strength to do my research. His continuous grace and mercy are with me throughout my life and ever more during the tenure of my research.

Special appreciation and sincere gratitude goes out to my supervisor, Associate Professor Dr Izlawanie Muhammad, for her continuous support throughout the three years it took me to complete this thesis. Her prompt inspiration and timely suggestions, all delivered in kindness, enthusiasm and dynamism have enabled me to complete my thesis.

I also convey my deep sense of gratitude to my co-supervisors, Dr Suhaila Abdul Hamid and Dr Mohd Adha Ibrahim, for their keen interest in helping me to successfully complete this thesis. Their timely advice, meticulous scrutiny, scholarly advice and scientific approach have all greatly aided me in completing this task. Without their guidance and persistent help, this thesis would not have come into fruition.

Next, my special thanks to my beloved parents, Mr. Mohd Hasnu Yeop and Mrs. Arbainah Abdul Hamid, for their encouragement and support and to my family members for their endless love, prayers and encouragement.

Last but not least, I would like to express my appreciation to Associate Professor Dr Khairil Faizal Bin Khairi, Dean of the Faculty of Economics and Muamalat USIM, and the staff of the Faculty Economics and Muamalat USIM. Finally, to those who had indirectly contributed to this proposal research, your kindness means a lot to me. May Allah bless and reward all of you.

Thank you.

ABSTRAK

Pelepasan asap karbon dioksida di atmosfera merupakan suatu kebimbangan yang amat besar di peringkat global. Sebilangan besar negara maju di Eropah (contoh: Finland, Poland, Norway, Sweden, Denmark) telah melaksanakan cukai karbon beberapa dekad yang lalu. Sementara itu, dalam kalangan negara membangun, hanya beberapa negara (contoh: Chile, Mexico, Ukraine, Argentina) telah melaksanakan cukai karbon sejak beberapa tahun yang lepas. Pengalaman dari negara-negara tersebut telah membuktikan bahawa cukai karbon adalah salah satu cara terbaik untuk mengurangkan pelepasan karbon dioksida dan meningkatkan pertumbuhan ekonomi. Di Malaysia, pelaksanaan cukai karbon disenaraikan sebagai salah satu sasaran untuk menjamin pertumbuhan kelestarian lingkungan yang lebih baik di masa depan seperti yang dinyatakan dalam Unit Perancangan Ekonomi 2019 sebagai strategi untuk Rancangan Malaysia ke-12 (RMK-12). Bagi memastikan pelaksanaan cukai karbon berjaya, sokongan daripada orang awam terhadap cukai karbon sangat penting untuk mengelakkan tentangan masyarakat terhadap pelaksanaannya. Walaubagaimanapun, kepercayaan kepada kerajaan merupakan masalah utama yang dihadapi oleh kebanyakan negara membangun. Di samping itu, kajian mengenai penerimaan masyarakat terhadap cukai karbon dalam kalangan negara membangun adalah terhad. Malaysia telah mengalami peningkatan isu tidak kepercayaan kepada kerajaan akibat perubahan kerajaan pada awal tahun 2018. Ini telah memberi pengaruh negatif kepada kerajaan Malaysia semakin tinggi, apabila masyarakat mula hilang kepercayaan terhadap kerajaan berbanding organisasi lain. Hal ini telah menimbulkan kebimbangan mengenai sokongan masyarakat terhadap cadangan pelaksanaan cukai karbon. Justeru, kajian ini berhasrat untuk menjalankan kajian mengenai pra-pelaksanaan cukai karbon menggunakan teori kepercayaan dengan mengkaji bagaimana kepercayaan kepada kerajaan mempengaruhi penerimaan masyarakat terhadap pelaksanaan cukai karbon di Malaysia. Pembolehubah yang diuji dalam kajian ini ialah kepercayaan politik, integriti kerajaan, kecekapan kerajaan, dan akauntabiliti kerajaan. Kajian ini menggunakan metodologi penyelidikan kuantitatif untuk mencapai objektif kajian dengan mengedarkan borang soal selidik atas talian kepada warganegara Malaysia, dan 566 responden telah melengkapkan soal selidik tersebut. Data kajian ini dianalisis dengan menggunakan Pakej Statistik untuk Sains Sosial (SPSS). Hasil kajian menunjukkan bahawa, kecekapan dan akauntabiliti kerajaan adalah faktor yang mempengaruhi penerimaan orang ramai terhadap pelaksanaan cukai karbon. Faktor-faktor yang lain (kepercayaan politik dan integriti kerajaan) tidak mempengaruhi penerimaan orang awam terhadap cukai karbon. Oleh itu, hasil kajian ini akan menyumbang kepada literatur kepercayaan kepada kerajaan dan cukai karbon serta meningkatkan pengetahuan pembuat dasar dalam melaksanakan dasar cukai karbon di Malaysia. Kajian mengenai penerimaan orang awam terhadap cukai karbon akan membantu kerajaan mengambil langkah awal bagi mengelakkan tentangan daripada orang awam terhadap cukai karbon.

Kata kunci: *cukai karbon, kepercayaan, kerajaan, integriti dan penerimaan masyarakat*

ABSTRACT

Carbon emissions in the atmosphere have become a major global concern. Many developed countries in Europe (examples: Finland, Poland, Norway, Sweden, Denmark) have adopted the carbon tax policy for decades. Meanwhile, among developing countries, only several countries (example: Chile, Mexico, Ukraine, Argentina) have adopted the carbon tax policy for years. Experiences from developed and developing countries proved that carbon tax is one of the best ways to reduce carbon dioxide (CO₂) emissions and improve economic growth. In Malaysia, the implementation of a carbon tax has been identified as a target for future environmental sustainability development as part of the strategic development of the 12th Malaysia Plan (12MP), as indicated in the Economic Planning Unit 2019. To successfully implement a carbon tax, having public support for the carbon tax is crucial to avoid public resistance to its implementation. However, trust in the government is a major problem faced by many developing countries. In addition, limited studies on public acceptance of carbon tax had been conducted in the context of developing countries. Malaysia has experienced an increase in trust issues as a result of the government change in early 2018. This has had a negative influence on the Malaysian government, with the public losing trust in the government in comparison to other organisations. These have prompted concerns about public support for the proposed carbon tax. Thus, this study intends to conduct a study on the pre-implementation of carbon tax using the trust theory by examining how trust in the government influences public acceptance of the carbon tax implementation in Malaysia. The variables tested in the study are political trust, government's integrity, government's competence, and government's accountability. This study adopts the quantitative research methodology to achieve the research objectives by distributing an online questionnaire to Malaysian citizens, and 566 respondents completed the survey. The data of the study was analyzed using the Statistical Package for Social Science (SPSS). The result of the study indicated that the government's competence and accountability are the factors that influence public acceptance of the carbon tax. The other factors (political trust and government's integrity) have no significant influence on the public acceptance of carbon tax. This study contribute to the extension of literature on trust towards the government and carbon tax as well as enhance the knowledge of policymakers in implementing the carbon tax policy in Malaysia. Examining the public acceptance on carbon tax will help the government to take earlier precaution to avoid public opposition against carbon tax.

Keywords: *carbon tax, trust, government, integrity and public acceptance*

الملخص

انبعاثات ثاني أكسيد الكربون في ماليزيا في مستوى خطير. اعتمدت العديد من البلدان المتقدمة في أوروبا (أمثلة: فنلندا ، بولندا ، النرويج ، السويد ، الدنمارك) سياسة ضريبة الكربون لعقود. وفي الوقت نفسه ، من بين البلدان النامية ، هناك العديد من البلدان فقط (على سبيل المثال: تشيلي والمكسيك وأوكرانيا والأرجنتين) التي اعتمدت سياسة ضريبة الكربون لسنوات. أثبتت التجارب من البلدان المتقدمة والنامية أن ضريبة الكربون هي أفضل الطرق لتقليل انبعاثات ثاني أكسيد الكربون وتحسين النمو الاقتصادي. في ماليزيا ، تم إدراج تطبيق ضريبة الكربون كهدف لتطوير الاستدامة البيئية المستقبلية كما هو مذكور في وحدة التخطيط الاقتصادي 2019 للتطوير الاستراتيجي لخطة ماليزيا الاثني عشر (MP12). وبعد الحصول على دعم عام لضريبة الكربون أمراً بالغ الأهمية لتجنب مقاومة الجمهور لتطبيقها. مع ذلك ، فإن الثقة في الحكومة هي مشكلة رئيسية تواجهها معظم البلدان النامية. بالإضافة إلى ذلك ، فإن الدراسات حول القبول العام لضرائب الكربون بين البلدان النامية محدودة النطاق. شهدت ماليزيا زيادة في مسألة الثقة في الحكومة بسبب تغيير الحكومة في أوائل عام 2018. وكان لهذا تأثير سلبي على الحكومة الماليزية ، عندما بدأ المجتمع يفقد الثقة في الحكومة مقارنة بالمنظمات الأخرى. وقد أثار هذا مخاوف بشأن الدعم العام للتنفيذ المقترح لضريبة الكربون. وبالتالي ، تهدف هذه الدراسة إلى إجراء دراسة حول التطبيق المسبق لضريبة الكربون باستخدام نظرية الثقة من خلال دراسة كيفية تأثير الثقة في الحكومة على القبول العام لتطبيق ضريبة الكربون في ماليزيا. كانت المتغيرات التي تم اختبارها في هذه الدراسة هي الثقة السياسية ، ونزاهة الحكومة ، وكفاءة الحكومة ، ومساءلة الحكومة. يتبنى منهج هذه الدراسة المنهج الكمي لتحقيق أهداف البحث من خلال توزيع الاستبانة على المواطنين الماليزيين، 566 مستجيبين أكملوا المسح. تم تحليل بيانات الدراسة باستخدام الحزمة الإحصائية للعلوم الاجتماعية (SPSS). تشير النتائج الأولية إلى أن الثقة السياسية هي أقوى عامل يؤثر على القبول العام لتطبيق ضريبة الكربون. ستساهم هذه الدراسة في توسيع نطاق الدراسات المتعلقة بالثقة إلى الحكومة والدراسات المتعلقة بالكربون ومن ثم تعزيز المعرفة لصانعي السياسات في تطبيق سياسة ضريبة الكربون في ماليزيا. إن دراسة القبول العام لضريبة الكربون سيساعد الحكومة على اتخاذ احتياطات مبكرة لتجنب معارضة الجمهور لضريبة الكربون.

الكلمات المفتاحية: ضريبة الكربون ، الثقة ، الحكومة ، النزاهة ، القبول العام

TABLE OF CONTENTS

CONTENTS	PAGE
AUTHOR DECLARATION	ii
ACKNOWLEDGEMENTS	iii
ABSTRAK	iv
ABSTRACT	v
AL-MULAKHKHAS	vi
TABLE OF CONTENTS	vii
LIST OF TABLES	x
LIST OF FIGURES	xiii
LIST OF APPENDICES	xiv
LIST OF UNITS OF MEASUREMENTS	xv
LIST OF ABBREVIATIONS	xvi
 CHAPTER 1: INTRODUCTION	 1
1.1 Introduction	1
1.2 Research Background	1
1.3 Problem Statement	8
1.4 Research Questions	12
1.5 Research Objectives	12
1.6 Significance of the Study	13
1.6.1 Carbon Tax Literature	13
1.6.2 Government	13
1.7 Scope of the Study	14
1.8 Research Method	14
1.9 Operational Definitions	14
1.10 Organization of the Study	15
1.11 Conclusion	16
 CHAPTER 2: LITERATURE REVIEW	 17
2.1 Introduction	17
2.2 Carbon Tax	17
2.2.1 Carbon Tax in Developing Countries	20
2.2.2 Carbon Tax in Malaysia	24
2.2.3 Advantages of Carbon Tax	28
2.3 Public Acceptance	31
2.4 Trust in the Government	35
2.5 Trust Theory	39
2.6 Dimensions of Trust that Influence Acceptance	44
2.6.1 Political Trust	44
2.6.2 Integrity	46
2.6.3 Competence	47
2.6.4 Accountability	48
2.7 Conceptual Framework and Hypothesis Development	50
2.8 Conclusion	51

CHAPTER 3: RESEARCH METHODOLOGY	53
3.1 Introduction	53
3.2 Research Design	53
3.3 Research Approach	56
3.4 Population and Sampling	59
3.4.1 Sampling Design	59
3.4.1.1 Target Population	60
3.4.1.2 Sampling Frame and Sampling Population	60
3.4.1.3 Sampling Elements	61
3.4.1.4 Sampling Technique	61
3.4.1.5 Determination of Sample Size	63
3.5 Data Collection Method	64
3.5.1 Questionnaire Design	65
3.5.2 Questionnaire Design Procedure	65
3.6 Data Analysis Method	75
3.6.1 Pre-test Analysis for Survey	76
3.6.1.1 Missing Data	76
3.6.1.2 Normality Test	76
3.6.1.3 Non-response Bias	77
3.6.1.4 Response Rate	78
3.6.1.5 Common Method Bias	79
3.6.2 Demographic Analysis	79
3.6.3 Descriptive Analysis	80
3.6.4 Validity Analysis	81
3.6.5 Reliability Analysis	82
3.6.6 Multiple Regression Analysis	82
3.7 Pilot Study	85
3.7.1 Validity	86
3.7.1.1 Content Validity	87
3.7.1.2 Construct Validity	87
3.7.2 Reliability	88
3.8 Conclusion	89
CHAPTER 4: ANALYSIS AND RESULT	91
4.1 Introduction	91
4.2 Missing Data	91
4.3 Normality Test	91
4.4 Non-response Bias	92
4.5 Response Rate	93
4.6 Common Method Bias	94
4.7 Demographic Background	96
4.7.1 Age	96
4.7.2 Education Level	97
4.7.3 Employment Status	98
4.7.4 Monthly Gross Income	99
4.7.5 Gender	101
4.7.6 Race	102
4.7.7 Location	103
4.8 Descriptive Statistics	104

4.8.1	Political Trust	104
4.8.2	Government's Integrity	105
4.8.3	Government's Competence	106
4.8.4	Government's Accountability	107
4.8.5	Public Acceptance of Carbon Tax	108
4.9	Validity Analysis	108
4.9.1	Political Trust	109
4.9.2	Government's Integrity	109
4.9.3	Government's Competence	110
4.9.4	Government's Accountability	111
4.9.5	Public Acceptance of Carbon Tax	112
4.10	Reliability Analysis	113
4.11	Multiple Regression Analysis	115
4.11.1	Preliminary Analysis on Multiple Regression Analysis	115
4.11.2	Standard Multiple Regression Analysis	117
4.12	Conclusion	120
CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS		122
5.1	Introduction	122
5.2	Discussion of the Findings	122
5.2.1	Public Perception on Political Trust and Acceptance of the Carbon Tax	128
5.2.2	Public Perception on Government's Integrity and Acceptance of Carbon Tax	129
5.2.3	Public Perception on Government's Competence and Acceptance of Carbon Tax	130
5.2.4	Public Perception on Government's Accountability and Acceptance of Carbon Tax	131
5.3	Contribution of the Study	132
5.3.1	Contribution to Carbon Tax Literature	132
5.3.2	Contribution to the Government	133
5.4	Limitations of the Study	133
5.5	Recommendations of the Study	134
5.6	Conclusion	134
REFERENCE		138
APPENDICES		153

LIST OF TABLES

Tables	Page
Table 2.1: The Implementation of Carbon Tax at the National and Sub-national Levels	19
Table 2.2: Carbon Tax Collection in Developing Countries from Year 2016-2020	23
Table 2.3: Prior Research on Carbon Tax in Malaysia	24
Table 2.4: Percentage of Public Trust by Profession Types	39
Table 3.1: Areas and States Involved	62
Table 3.2: Table for Determining Sample Size from a Given Population	63
Table 3.3: Summary of the Listed Questions in the Questionnaire	69
Table 3.4: Operational Definitions for the Independent and Dependent Variable	70
Table 3.5: List of Reviewers	72
Table 3.6: Demographic Information	79
Table 3.7: The Range of Values for Cronbach's Alpha	82
Table 3.8: Results of Validity Analysis in Pilot Study	88
Table 3.9: Cronbach's Alpha Values for the Independent and Dependent Variables	88
Table 4.1: t-Test Results for Early and Late Responses	93
Table 4.2: Internet Survey Response Rate	94
Table 4.3: Total Variance Explained	95
Table 4.4: Frequency, Percentage, Valid percentage, Cumulative Percentage of Respondents' Age	96
Table 4.5: Frequency, Percentage, Valid Percentage, Cumulative Percentage of Respondents' Education Level	98
Table 4.6: Frequency, Percentage, Valid Percentage, Cumulative Percentage of Respondents' Employment Status	99
Table 4.7: Frequency, Percentage, Valid Percentage, Cumulative Percentage of Respondents' Monthly Gross Income	100

Table 4.8: Frequency, Percentage, Valid Percentage, Cumulative Percentage of Respondents' Gender	101
Table 4.9: Frequency, Percentage, Valid Percentage, Cumulative Percentage of Respondents' Race	102
Table 4.10: Frequency, Percentage, Valid Percentage, Cumulative Percentage of Respondents' Location	103
Table 4.11: Descriptive Analysis for Political Trust	105
Table 4.12: Descriptive Analysis for Government's Integrity	106
Table 4.13: Descriptive Analysis for Government's Competence	106
Table 4.14: Descriptive Analysis for Government's Accountability	107
Table 4.15: Descriptive Analysis for Public Acceptance of the Carbon Tax	108
Table 4.16: KMO and Bartlett's Test of Sphericity for Political Trust	109
Table 4.17: Factor Loadings for Political Trust	109
Table 4.18: KMO and Bartlett's Test of Sphericity for Government's Integrity	110
Table 4.19: Factor Loadings for Government's Integrity	110
Table 4.20: KMO and Bartlett's Test of Sphericity for Government's Competence	111
Table 4.21: Factor Loadings for Government's Competence	111
Table 4.22: KMO and Bartlett's Test of Sphericity for Government's Accountability	111
Table 4.23: Factor Loadings for Government's Accountability	112
Table 4.24: KMO and Bartlett's Test of Sphericity for Public Acceptance of the Carbon Tax	112
Table 4.25: Factor Loadings for Public Acceptance of the Carbon Tax	112
Table 4.26: Summary of the Reliability Analysis for the Independent and Dependent Variables	113
Table 4.27: Tolerance and Variance-Inflation Factor (VIF) Values	117
Table 4.28: Model Summary of Variables	118
Table 4.29: ANOVA Analysis Result	118

Table 4.30: Multiple Regression Analysis Results	119
Table 4.31: Summary of Results on Hypotheses Testing	120
Table 5.1: Demographic Profile of Respondents	123
Table 5.2: Summary Results of Validity and Reliability Analysis	125
Table 5.3: Summary of the Research Findings	127



LIST OF FIGURES

Figures	Page
Figure 1.1: Major sources of GHG Emissions in Malaysia 2016	3
Figure 1.2: Major Sources of Carbon Dioxide Emissions in Malaysia 2016	4
Figure 2.1: Feasibility as a Function of Effectiveness, Cost-Efficiency, and Acceptability	33
Figure 2.2: Trust on Organizational Bodies in Malaysia in the Year 2020	38
Figure 2.3: Typology of Trust in the Government	40
Figure 2.4: Conceptual Framework	43
Figure 2.5: Conceptual Framework	50
Figure 3.1: Summary of Research Process	55
Figure 3.2: Steps in Questionnaire Design Procedure	65
Figure 3.3: Types of Devices Used to Access the Internet	74
Figure 3.4: Statistics of Communication Application Users	74
Figure 3.5: Statistics of Social Media Application Users	75
Figure 3.6: Summary of Data Analysis Method	85
Figure 3.7: Flowchart of the Research Methodology	89
Figure 4.1: Normal Plot of Regression of Standardised Residual	92
Figure 4.2: Respondents' Age	97
Figure 4.3: Respondents' Education Level	98
Figure 4.4: Respondents' Employment Status	99
Figure 4.5: Respondents' Monthly Gross Income	100
Figure 4.6: Respondents' Gender	101
Figure 4.7: Respondents' Race	102
Figure 4.8: Respondents' Location	104
Figure 4.9: Scatterplot of the Relationship between the Independent Variables and Dependent Variable	116

LIST OF APPENDICES

Appendices	Page
Appendix 1: Reviewer Forms	153
Appendix 2: Questionnaire	155

UNIVERSITI SAINS ISLAM MALAYSIA
جامعة العلوم الإسلامية
ISLAMIC SCIENCE UNIVERSITY OF MALAYSIA

LIST OF UNITS OF MEASUREMENTS

Celsius

°C

Gigagram

Gg

Tonnes of carbon dioxide per equivalent

tCO₂e

UNIVERSITI SAINS ISLAM MALAYSIA
جامعة العلوم الإسلامية
ISLAMIC SCIENCE UNIVERSITY OF MALAYSIA

LIST OF ABBREVIATIONS

CH ₄	methane
CO ₂	carbon dioxide
COVID-19	coronavirus disease 2019
EFA	exploratory factor analysis
GE	general election
GHG	greenhouses gas
GST	goods and services tax
IEA	International Energy Agency
MCO	movement control order
MESTECC	Ministry of Energy, Science, Technology, Environment and Climate Change
n.a	not available
N ₂ O	nitrous oxide
OECD	Organisation for Economic Co-operation and Development
TV	television