FACTORS AFFECTING HOUSEHOLD INVOLVEMENT IN RECYCLING ACTIVITIES

BY

ANGELIN THEIN LEE CHING
KANG YING FONG

A research project submitted in partial fulfillment of the requirement for the degree of

BACHELOR OF INTERNATIONAL BUSINESS (HONS)

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF ACCOUNTANCY AND MANAGEMENT

DEPARTMENT OF INTERNATIONAL BUSINESS

NOVEMBER 2018

DECLARATION

We hereby declare that:

(1) This undergraduate research project is the end result of our own work and that due acknowledgement has been given in the references to ALL sources of information be they printed, electronic, or personal.

(2) No portion of this research project has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.

(3) Equal contribution has been made by each group member in completing the research project.

(4) The word count of this research report is 12,229 words.

Name of Student:	Student ID:	Signature:
1. ANGELIN THEIN LEE CHING	15UKB06382	
2. KANG YING FONG	13UKB05173	

Date: 28th November 2018

ACKNOWLEDGEMENT

First of all, we would like to express our sincere appreciation towards our research project supervisor, Dr. Ooi Chee Keong. It is an honor to work under his supervision. He has offered valuable guidance and advice throughout the research period in order for us to improve our research. Likewise, we are grateful for the opinions and advices that were given from our second examiner, Dr. Komathi A/P Munusamy. Their support and guidance have allowed us to complete the research project within stipulated time.

Therefore, we would like to thank Universiti Tunku Abdul Rahman (UTAR) for giving us the opportunity to conduct this research project. We were able to conduct our study with the help of data and information obtained from UTAR‟s library database.

Thus, we are thankful for the respondents that were willing to spend time to complete our questionnaires. Without their patience and contribution, we would not have the opportunity to obtain the data needed to generate the result of this study.

Lastly, we would like to express our gratitude to our family and friends. They have given us unconditional support and encouragement that allow us to have the strength and courage to complete this research project.

DEDICATION

This research project is dedicated to our supervisor, Dr. Ooi Chee Keong who has provided insightful and valuable guidance, advice, feedback and encouragement to us throughout the research period of this study.

Besides, we would also like to dedicate this research to our family and friends that have given us enormous amount of support and encouragement.

Lastly, this research project is especially dedicated to our respondents that have lent a hand to us during data collection using the questionnaire. Their patience and contribution have allowed us obtains the data needed to generate the result of this study.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ABBREVIATIONS

3R	Reuse, Reduce and Recycle
SWCorp	Solid Waste Management and Public Cleansing Corporation
RB	Recycling Behavior
ATT	Attitude
SN	Social Norms
PBC	Perceived Behavioral Control
MN	Moral Norms
MSW	Municipal Solid Waste
TPB	Theory of Planned Behavior Model
TRA	Theory of Reasoned Action Model
MLR	Multiple Linear Regression
R^2	Coefficient of Determinations
β	Coefficient Beta
α	Alpha Value
UUM	University Utara Malaysia
OPAC	Universiti Tunku Abdul Rahman's Library Online Catalogue
UTAR	Universiti Tunku Abdul Rahman
SPSS	Statistical Packages for Social Science

PREFACE

The title of this research is a study on Factors Affecting Household Involvement in Recycling Activities. This required critical thinking, strong collaborations and build connection amongst the household in order to complete the work on schedule. Researchers aimed to study on the factors affecting household involvement in the recycling activities.

Behavior is a reaction of an individual or group to a movement, the surroundings, person, or inspiration. Hence, when recycling is available, human behavior will lead to higher consumption activities rather than the opposite. Therefore, in this study, Recycling behavior has been created beginning with rational choice theories such as Theory of planned behavior by Ajzen (1991).

This research, study on the significant relationship between the independent variables like attitudes, social norms, perceived behavior control and moral norm on recycling behavior towards household in Kuala Lumpur and Selangor.

ABSTRACT

Recycling is a process to transform the waste into new product which can reused them again especially for the raw materials. The purpose of this study is to examine the factors affecting household involvement in recycling activities in the location of Kuala Lumpur and Selangor. This study adopted the Theory of Planned Behavior Model (TPB) and Theory of Reasoned Action Model (TRA) to identify the relationship between the independent variables (attitudes, social norms, perceived behavioral control, moral norms) and dependent variable (recycling behavior) towards household involvement in recycling activities.

A total of 240 questionnaires have been distributed to the household who currently resident in Kuala Lumpur and Selangor. Besides, the SPSS version 21 was used to analyze the relationship between the independent variables and dependent variable. The findings of this research show that the relationship between perceived behavioral control and moral norms has a positive relationship towards household recycling behavior. In contrast, attitude and social norms has no relationship towards household recycling behavior

To conclude this study, the summary of descriptive analysis, discussion of the major findings and the theoretical and managerial implications of the research have been discussed. Lastly, limitation of the study and recommendations for future research are also discussed and highlighted to overcome the problem and potential improvement for the future study.

CHAPTER 1: RESEARCH OVERVIEW

1.0 Introduction

In this research, we would like to find out the relationship of independent variables and dependent variable at Kuala Lumpur and Selangor. The reason that we choose Kuala Lumpur and Selangor is because we can easy access in this area to explore the fact of this research. In this chapter, the research background will introduce and follow up by the problem statement of the study, research objective and research questions. Besides, this chapter also will point out the significance of the research, research layout and a conclusion.

1.1 Research Background

In general, recycling is referred to a concept of 3R, which are reduce, reuse and recycle. Recycling is defined as a process or method that used to transform the waste into new products which can reused them again especially for the raw materials such as plastic, aluminum, paper and so on (International Journal of Waste Resources, 2018). In recent year, the trend of discussing the issues of recycling have increase rapidly around the world and this made many people more concern in the issue of saving the environment by proposed different ideas or proposals to solve the problem.

Besides, as recycling activities are the responsibility for all level of the society around the world which including an individual, household, commercial, communities and even the government. However, in this research, our target is focusing on household

recycling behavior, which to understand and investigate the factors affecting household involved in the recycling activities. As Malaysia was a developing country, it has generated a lot of waste within the country especially for the household. According to the study of Moh and Abd Manaf (2013), they stated that the household are the major source of municipal solid waste (MSW) in Malaysia and it contain of 70 percent to 80 percent of waste was found in the open places such as roadside, river, lake and so on. All of the waste that generate by Malaysian are including the recyclable and non-recyclables waste.

1.2 Problem Statement

Nowadays, recycling has become a serious issue that has discussed by everyone in the world. The important of recycling behavior has changed our environment to ensure the environment had become more clean and save the marine lives away from the municipal solid waste (MSW) such as plastic. This is because many environmental issues that have been polluted by human and now have been save and even had provided the solutions to solve all these issues by the government, private or public institution in different countries around the world.

Furthermore, according to the statistic of World Bank stated that the global average of the waste generation for an individual was only 1.2kg, however Malaysian was throw the rubbish with 1.64kg every day and which was exceed the global average of waste generation (Khor, 2014 & Khoo, 2017). In addition, the major element of the trash on our landfills was food waste and followed by plastic, diapers and so on. Although some of the household area in Malaysia has enforced the waste separation law, but not every household areas are followed the law to separate and recycle their trash according to the recyclable and non-recyclable materials.

Besides, according to the Solid Waste Management and Public Cleansing Corporation (SWCorp Malaysia) of the deputy chief executive officer Dr Mohd Pauze Mohamad Taha stated in 'The Star Online' that although Malaysia government has launched a lot of recycling activity programme to the public, but the recycling rate of Malaysia in year 2016 was only 17.5 percent compared to other countries such as Austria with 63 percent of recycling rate and Germany with 62 percent ("Low awareness on recycling among Malaysians", 2017). This is because he stated that most of the citizen in Malaysia did not have a high level of awareness and knowledge in understanding the concept of reuse, reduce and recycle (3R) and this made them have the difficulty in implementing the recycling activities in their daily activities.

Furthermore, this research is to examine the factors affecting household involvement in recycling activities. Although there have many researches was completed by other researchers in the recycling behavior in different location, however, this research was focus on the household recycling behavior in Malaysia region and also can be a foundation for the future studies purpose in Malaysia.

1.3 Research Objectives

1.3.1 General Objective

The objective of this study is to investigate the factors affecting household involvement in the recycling activities.

1.3.2 Specific Objectives

1. To examine the relationship between attitudes and recycling behavior towards household involvement in recycling activities.
2. To examine the relationship between social norms and recycling behavior towards household involvement in recycling activities.
3. To examine the relationship between perceived behavioral control and recycling behavior and towards household involvement in recycling activities.
4. To examine the relationship between moral norms and recycling behavior towards household involvement in recycling activities.

1.4 Research Questions

1. What is the relationship between attitudes and recycling behavior towards household involvement in recycling activities?
2. What is the relationship between social norms and recycling behavior towards household involvement in recycling activities?
3. What is the relationship between perceived behavioral control and recycling behavior towards household involvement in recycling activities?
4. What is the relationship between moral norms and recycling behavior towards household involvement in recycling activities?

1.5 Hypotheses of the Research

Hypothesis 1:

There is a positive relationship between attitudes and recycling behavior towards household involvement in recycling activities.

Hypothesis 2:

There is a positive relationship between social norms and recycling behavior towards household involvement in recycling activities.

Hypothesis 3:

There is a positive relationship between perceived behavioral control and recycling behavior involvement in recycling activities.

Hypothesis 4:

There is a positive relationship between moral norms and recycling behavior towards household involvement in recycling activities.

1.6 Significance of the Research

The purpose of this research is to examine the factors affecting household involvement in the recycling activities. The objective is to find out the relationship between the 4 variables (attitudes, social norms, perceived behavioral control and moral norms) towards the dependent variable, which is recycling behavior. In this research, our target population was households because as mentioned above households are one of the major factors in generating the waste in Malaysia.

Through this research, we will able to discover the factors that may influence and affect to the household recycling behavior in Kuala Lumpur and Selangor. We also can determine the reason why the recycling rate in Malaysia is lower than other countries such Austria, Germany or even our neighboring countries such as Singapore ("Low awareness on recycling among Malaysians", 2017). Besides, by conducting this research, it can help the government in identifying and solving the environment problems and future improvement in social welfare. After running this research, we wish had a result of this research about the household tend to have positive recycling behavior in their daily activities.

Lastly, the main objective of this research is to investigate the factors that will bring the positive effect to the recycling behavior towards household involvement in recycling activities. In order for the household well recognized about the recycling and willingness to participate in recycling activities without being told, a few determinants have motivated and allowed to do so. It is utmost significant for this research to find out the causes behind all the determinations and the factors leading towards the household in their recycling behavior.

1.7 Chapter Layout

Chapter 1: Research Overview

This chapter will summarize the overview of this research. It was contained the part of background of the research, problem statements, research objectives, research questions, hypothesis of the research and significant of the research as well as the chapter layout and conclusion.

Chapter 2: Literature Review

In this chapter, it will provide a literature review that related to the purpose to examine of this study and will gather all the relevant information that gain from secondary data such as journal, data, articles, magazines and so on. Besides, the hypothesis will also be developed for each of the independent variables. In addition, a conceptual framework or theoretical model will be proposed in this research.

Chapter 3: Research Methodology

This chapter involved an overview of the research method that used to collect the data for this research. In this chapter, it included the parts of research design, data collection methods, sampling design, research instrument, construct measurement, data processing and data analysis.

Chapter 4: Data Analysis

This chapter will analyze the data based on the questionnaire collected from the respondent in the research. There will be analyzed the various data in different form such as descriptive data, scale of measurement and inferential data.

Chapter 5: Discussion, Conclusion and Implications

This is the last chapter of the research and will provide a summarized in the statistical analysis, discussion on the findings, and the implications of the study. Besides, this chapter also will provide the limitation while conducting this research and the recommendations for the future research.

1.8 Conclusion

This chapter is an overview of the research proposal which includes the background of the research and problem statement. It also identified the research objectives, research questions, hypotheses of this research and the significant of the research as well as the chapter layout of each chapter also had listed out. Besides, the next chapter will mention and discuss the literature review of independent variables and dependent variable from the previous of the relevant studies and researches.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

On this chapter 2 consist of literature review, which was from the secondary data that review and interpret according on others previous researcher. The article and journals sources came from published and unpublished. Besides that, it deliberates the relationships between independent and dependent variables. Develop of conceptual frameworks and hypotheses development to fix the relation between independent and dependent variable.

2.1 Literature Review

This research studied the relationship of factors (attitudes, social norms, perceived behavioral control and moral norms) and the Household behavior toward recycling in Kuala Lumpur and Selangor. To proceed explain on how these factors influence household behave in recycling activities, articles and journal are been review and interpret thoroughly.

2.1.1 Dependent Variable – Recycling Behavior

Recycling behavior has been created beginning with rational choice theories such as Theory of planned behavior by Ajzen (1991) and theory of reasoned action based on Fishbein (1979). Behavior is a reaction of an individual or group to a movement, the surroundings, person, or inspiration. According to Dr. Stanley, as "Human behaviors were known as one of the most important elements as it required higher level of understanding" (Stanley, 2012, p. 18). The studies have shown that when recycling is available, human behavior will lead to higher consumption activities rather than the opposite.

Robertson and Wallington (2009) have determined the extent of situational, demographic and psychological factors that impacted the level recycling and willingness in minimize waste. The researcher also believed that situational factors such as living arrangements, recycling bins and recycling of social normative awareness could lead massive changes on the population over recycling behavior. Demographic factors are measured by gender such as female is more willingness to reduce waste compared to educational level. Robertson and Wallington also mention that psychological factor that consists strategic ways of recycling schemes and promotion in nurturing waste management information.

A study conducted by Miafodzyeva & Brandt, 2013; Tang, Chen & Luo (2011); and Byrne & O'Regan (2014) that several recent studies on recycling behavior are only part of the original theory of planned behavior, general knowledge. With allowing him or her to use the information, understanding the environmental benefits of recycling helps to shape a person's intention. Those are important involve in attitude-behavior analysis due to their role.

Lee and Paik (2011) studies that as individual level element affect household recycling behavior related to variable such as attitudes, motivation, and distress regarding the environment and demographics. As finding explain that waste management attitudes, income and age affected recycling. Besides that, Individual motivations, attitudes and behaviors may also play an important role in successful recycling programs. According to Omran et al. (2009); Sphores et al. (2006) stated that relation of satisfaction with recycling services, convenience, and economic incentives can also influence individual behavior and attitudes toward recycling programs. As the element include public's motivation on their level of satisfaction into services.

Another study conducted by Thomas and Sharp (2013) stated that to understand on how the individual determinant may interact is that recycling behavior are more focused on the determinants of social psychological models and individual behavior. As identity, social influences and social and personal norms, perceived control and self-efficacy, attitudes, beliefs and values are part range of psychological factors the relationship to recycling behavior had been tested.

According to Malaysia researcher Latif et al. (2013) the intention to recycle is only a linked center for recycling behavior. Solid waste amount in Malaysia that continue rise with involved of urbanization and industrialization population increased causing huge damage and also human actions that irresponsible toward environmental condition. Latif et al also suggest that development and implementation of programs and public recycling policies are known as prosocial behavior.

2.1.2 Independent Variables – Attitudes

Attitudes is one of the factors that influence household behave in recycling activities in Malaysia. According to Pande & Soodan (2015) attitudes can be defined as an enduring group of emotional, cognitive, motivational and perceptual processes honor to some form of particular's world.

Attitudes are the key to enhancing recycling behavior. Hurst, Dittmar, Bond, & Kasser (2013) studies that the relationships between value and pro-environment behaviors and attitudes express that materialism associated with both pro-environment behaviors and attitudes are negatively. Materialists are big likely to capture in environment damaging behavior rather than less to believe changing behavior to protect the environment.

From the research studies in Malaysia, the research is shows that there is a supported relationship between attitudes and recycling behaviors in waste recycling sector of Malaysia (Jekria & Daud, 2016), The study finding pinpoint attitudes and social beliefs as factors influencing behavior in waste recycling with same behavior pattern can be determined. According to the theory of behavior, the perceived behavioral control consistently strong influence on behavioral intention and behavior. The importance of attitudes helps to boost the environmental concern to upgrade the recycling behavior within Malaysia waste recycling.

Besides that, the analysis in the research of Ahmad, Bazmi, Bhutto, Shahzadi, and Bukhari (2014) explain that more than half of population incentive to change and gain positively in modify the attitudes and adopts practices from developed country that the attitudes impacted towards recycling behavior.

Peoples' attitudes are main point subject to moral values and general norms of their society.

Miafodzyeva et al. (2013) pointed out with respect to household waste behavior with attitudes towards the recycling had strong determined recycling behavior among jarva householders. Besides, with attitudes of self-report a huge help to measure in the household waste behavior, as results that widespread barrier of recycling is lack of space and the others are participation in recycling was approval of legal norms.

2.1.3 Independent Variables – Social Norms

One of the factors affecting the influence household behave in recycling activities in Malaysia is social norms. Social norms define as perceived social pressure to conduct a behavior study by Fishbein & Ajzen (2010). Besides that, according to Vesely & Klöckner (2017) mentioned that global social norms of option of pro-environmental behavior to referee descriptive and subjective injunctive social norms. Abbott et al. (2013) shows that social norms have an impact on recycling behavior. They recommend taking measures to achieve social norms rather than implementing recycling levels for individuals. For example, by setting up a roadside collection plan, neighbors are more likely to see recycling, thereby promoting social norms for recycling. Recycling behavior also encouraged through social influence between friends, neighbors and family members.

According to Han et al. (2017) that social norms significantly promote household waste separation behavior by classifies into recyclables, hazardous waste, and kitchen waste, while others householder that inactivated by social norms still mixed all waste together. Waste separation attract desire to increase inner satisfaction such as minimize social pressure and gain good self-image. Also suggest that develop social capital along public awareness campaigns and citizen participation.

Nguyen et al. (2017) believe that depend on role subjective social norms in people recycling decision, hence the Vietnamese priority is family and social norms. Determined public campaigns such as social interaction, perspective leader and pleasant communicator pursues social pressure to archive recycling behavior. There is also positive relationship found between social norms and recycling behavior.

In addition, Jalil, Foo, Asis & Yunus (2016) indicate that social norms category as personal factors affecting recycling behavior among UUM student. As education lead powerful of socializes and Physical world enable to be more responsibilities toward the environment, thus involved of families and friends thinking that recycling is important value. This led positive relationships between social norms and recycling behavior.

On the other hand, the analysis in the research of Kirakozian (2015) describe that the identity social norms are social influence, it’s shown individual think their recyclers but reality that futile to face neighbor's behavior. Likewise, social influence towards neighbors negatively impact individual recycling behavior, social influence beliefs that harmonization is part of reduces

recycling behavior. Thus, it led negative relationships between social norms and recycling behavior.

2.1.4 Independent Variables – Perceived Behavioral Control

According to the Ajzen (1991) stated that perceived behavioral control was defined as the perceived ease and problem in performing the behavior and supposed to reflect for the previous experience as well as anticipated the limitations and problems. Perceived behavioral control also is mean as how an individual's perception of he or she performed in the certain behavior (Zhang, Huang, Yin & Gong, 2015).

A study that completed by Klöckner & Oppedal (2011), they indicated that the perceived behavioral control was limited but it has a significant influence on recycling behavior. This is because a past finding from a theoretical perspective was highlights that the perceived behavioral control is a variable that must be tie with the specificity of behavioral situation as a vital predictor.

Perceived behavior control can be assumed in influencing the behavior and intention and it is used to evaluate an individual's subjective assessment on whether he or she is able to perform well in the certain behavior and some actions may different from the original reactions (Poškus & Žukauskienė, 2017). In this research, they investigate each of the variables by comparing with different cluster (positive, extraverted and open, agreeable and closed as well as negative) to determine relationship towards recycling behavior. In the research, people with negative cluster have a highest association among other

cluster between their behavioral control and self-reported recycling behavior, but both variables in this cluster are consider as low among the other cluster. Hence, this may lead them need to increase their perceived control over recycling behavior to become more effectively.

Besides, in the research of Mahmud et al. (2010); Bortoleto et al. (2012); Zhang et al. (2015), they concluded that perceived behavioral control has direct impacts towards the recycling behavior. This is because based on the studies that completed by Mahmud et al. (2010); and Bortoleto et al. (2012), they mentioned that perceived behavioral control was the strongest and major predictor towards the recycling behavior. Thus, the perceived behavioral control has a positive and significant relationship towards the recycling behavior.

Lastly, perceived behavioral control is indicator use to test the perception of an individual of their ability to perform their behavior in the issues implying that how people behave rational and think carefully before they take actions (Ramayah, Lee & Lim, 2012). In this research, the researchers indicate that perceived behavioral control consists of two variables which are convenience of available recycling infrastructure and cost of recycling. Ramayah et al. (2012) found out that both variables have no direct relationship towards the recycling behavior although the cost of recycling shows an inverse relationship. Hence, it led a negative relationship between perceived behavioral control and recycling behavior.

2.1.5 Independent Variables – Moral Norms

Moral norms are also a factor that affecting the recycling behavior towards household involvement in recycling activities. According to the Tonglet et al. (2004) stated that moral norm is defined as the beliefs that relates to the moral values in the condition of right or wrong and performing in a specific behavior. Besides, according to the studies of Nielsen and McGregor (2013) mentioned that moral norms are internalize and they will affect a person's emotions, behaviors, thoughts, and independent of the originating context. Not only that, a survey done by Davies et al. (2002) show that the respondents perceive the moral norms has direct impact to recycle their household waste. Hence, all these past studies support that moral norm has a stronger impact on recycling behavior.

Moreover, in the studies of Ahmad et al. (2014), they indicate that the moral norms had a strongly influence towards an individual's behavior. This is due to the reason that the belief of an individual is establish based on how an individual perform in a specific behavior and it must include the recycling behavior as an important variable within the model. They also mentioned that the moral values are play an essential role in recognizing the activities which the moral dimension will affect to the community. In addition, there were few past studies also propose to include this variable should within the framework model (Corner & McMillab, 1999; Beck & Ajzen, 1991; Parker et al., 1992; Tonglet, 2000; Admad et al., 2014). Hence, this research concluded that moral norms has directly affect to recycling behavior.

Next, based on the study of Poškus (2015), the researchers are aimed to examine the different possible models which incorporated the moral norms into the Theory of Planned Behavior (TPB). In this research, they examine the

moral norms with several models in order to measure the predictive power between the moral norms and recycling behavior in TPB model. According to the Donald et al. (2014) stated that adding moral norms as a variable into the TPB model can help to enhance the model's predictive ability. Besides, some studies even recommend that moral norms can be successfully replaced the attitudes to the recycling behavior in the model of TPB (Chan & Bishop, 2013; Poškus, 2015). As a result, this study showed that moral norms were a strongest predictor in the model and has a positive relationship towards the recycling behavior.

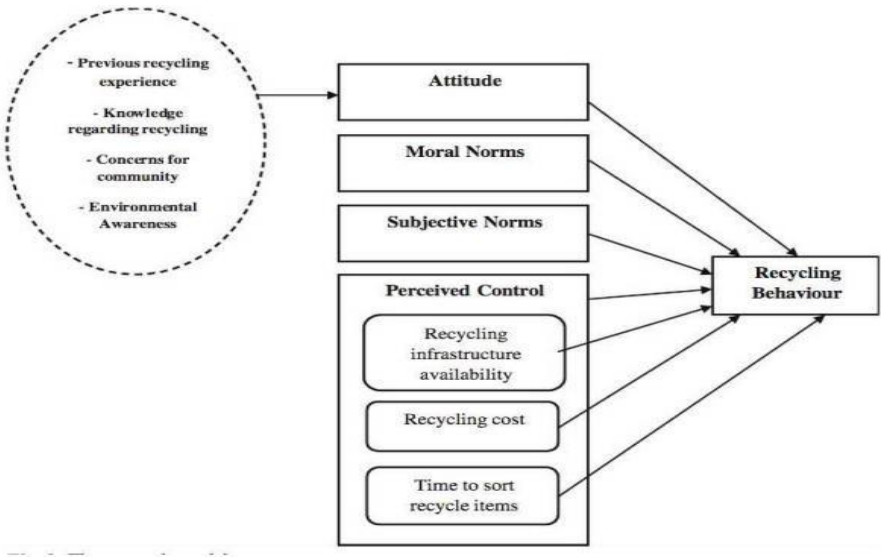
In addition, in the studies of Nguyen et al. (2017) concluded that moral norms have no significant relationship towards recycling behavior. This is because they found out that the Vietnamese people do not feel morally force to recycle their household's wastes because of the inconvenience and problem associated with the behavior. As result, this study showed that moral norms have no direct relationship towards the recycling behavior.

2.2 Proposed Theoretical Framework

Many researchers have suggested several factors that affect this recycling behavior. White, Smith, Terry, Greenslade, & McKimmie (2009) stated that recycling behavior proved injunctive norms for behavioral intention and behavior, it inspiring people obligation and morality to the environment.

Ahmad, et al. (2014) research on analyzed how attitude, moral norms, subjective norms and perceived control towards recycling behavior of student in COMSASTS institute of IT (CIIT) in Pakistan. Below are the Theoretical frameworks.

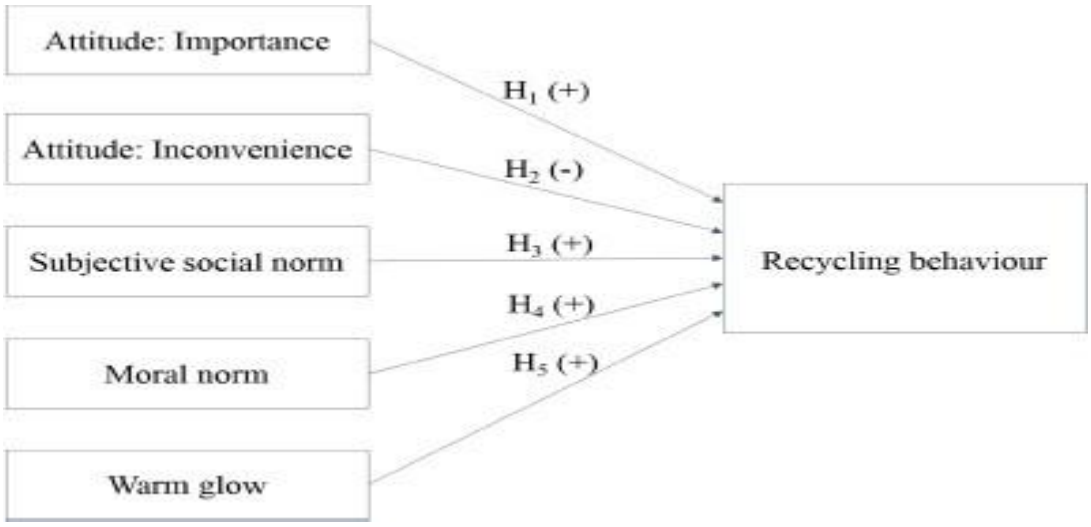
Figure 2.1 Theoretical Models (1)



Source: Adapted from Ahmad, et al. (2014).

Moreover, other researchers such as Nguyen, Nguyen, Lobo and Dao (2017) interpreted that how attitude: importance, attitude: inconvenience, subjective social norm, moral norm and warm glow towards recycling behavior. Below are the Theoretical frameworks.

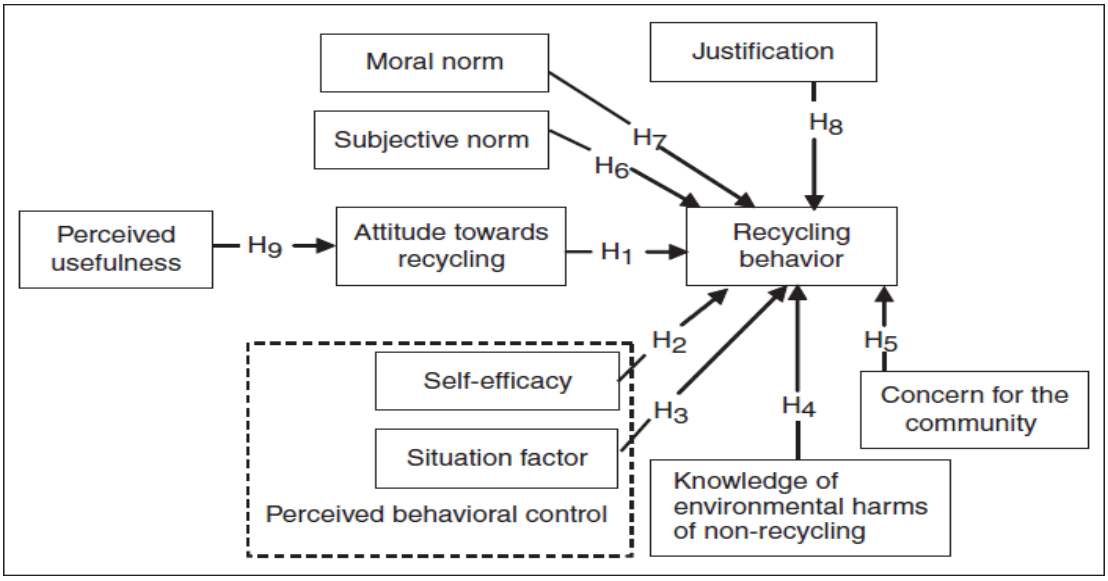
Figure 2.2 Theoretical Models (2)



Source: Adapted from Nyugen, et al. (2017).

Lastly, based on the study of Tang, Chen & Luo (2011), they examine relationship between several variables (Moral Norms, Subjective Norm, Justification, Attitude, Perceived Behavioral Control, Knowledge of environmental harms of non-recycling and Concern for the Community) towards the recycling behavior. Below was the theoretical framework that applied the researchers.

Figure 2.3 Theoretical Models (3)



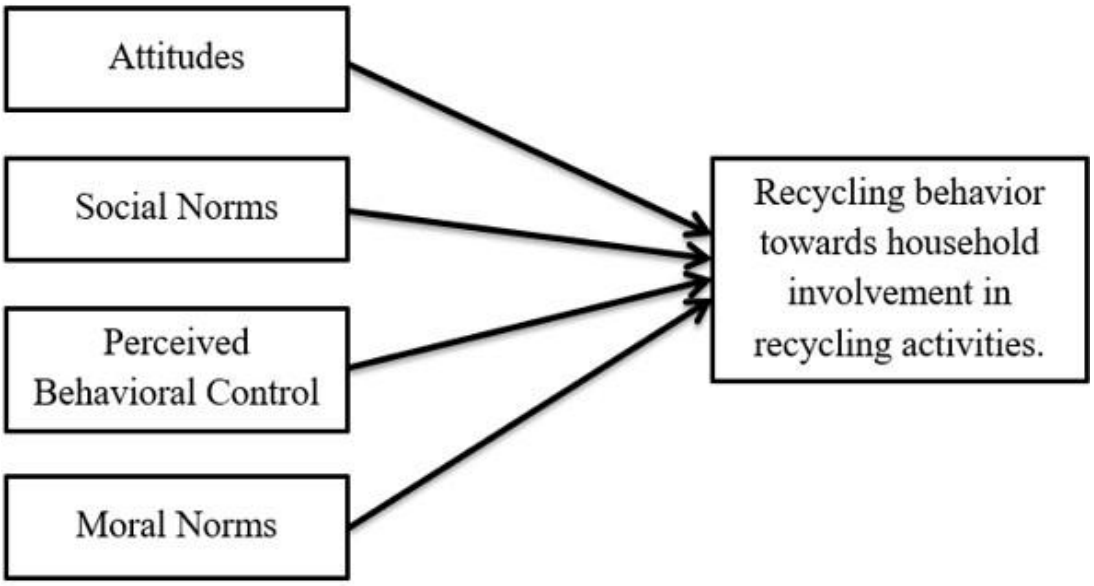
Source: Adapted from Tang, et al. (2011).

2.3 Conceptual Framework

These parts consist of conceptual framework research as shown below. The reason is that to be more understanding towards the research to be able to describe research objective and research question. There are four independent variables: attitudes, social norms, perceived behavioral control and moral norms. As dependent variable is the recycling behavior within household in Kuala Lumpur and Selangor.

The factors that we have chosen are due to strong attraction in finding out which of the factors are more effect on determination of recycling behavior. Likewise, reasonable strong theoretical foundation is there then the chances of been able to determine the outcomes are positive. The variables proven by the previous researcher that conducts mostly with empirical evidence and accurate knowledge. Hence, turn out through direction and supervisions support articles provided to us leading to outcome that aligning to our study. These factors are influential to recycle section in order to encourage household to participate in the recycling activities. This study attempts to grants an understanding on recycling behavior can be motivated by certain variables in recycling section that would create more people to have attitudes of recycling and to be more socialites with neighbor to do recycle in order to have clean environment.

Figure 2.4: Conceptual Framework



Source: Self-develop Framework

2.4 Hypothesis Development

There are four hypotheses develop variables in this study to be test the relationship between independent variables and dependent variable.

2.4.1 The relationship between attitude and recycling behavior towards household involvement in recycling activities.

H0: There is no direct relationship between attitude and recycling behavior towards household involvement in recycling activities.

H1: There is a positive relationship between attitudes and recycling behavior towards household involvement in recycling activities.

2.4.2 The relationship between social norms and recycling behavior towards household involvement in recycling activities.

H0: There is no significant relationship between social norms and recycling behavior towards household involvement in recycling activities.

H2: There is a positive relationship between social norms and recycling behavior towards household involvement in recycling activities.

2.4.3 The relationship between perceived behavioral control and recycling behavior towards household involvement in recycling activities.

H0: There is no significant relationship between perceived behavioral control and recycling behavior towards household involvement in recycling activities.

H3: There is a positive relationship between perceived behavioral control and recycling behavior towards household involvement in recycling activities.

2.4.4 The relationship between moral norms and recycling behavior towards household involvement in recycling activities.

H0: There is no significant relationship between moral norms and recycling behavior towards household involvement in recycling activities.

H4: There is a positive relationship between moral norms and recycling behavior towards household involvement in recycling activities.

2.5 Conclusion

Chapter 2 briefly explained about literature review of this research. This chapter had writes about the relationship between dependent variable (Recycling Behavior) and furthers that the four independent variables (Attitudes, Social norms, Perceived behavioral control and Moral norms). It also consists of definition for each factor and as other readers are able to be understood the information regards on this research project. As we also provide a review of theoretical models, conceptual framework and hypotheses development to lead the reader to know better on our research project.

CHAPTER 3: RESEARCH METHODOLOGY

3.0 Introduction

This chapter will examine research methodology through specific techniques which includes research design, sampling designs, methods of data collection and data analysis. It allows the reader to have critically evaluation and clearer understandings for the conducted research.

3.1 Research Design

Research design is known as useful approach for collecting and analyzing data for the variables as described in the study of research problems. The research design is a framework that also helps to solved pending research questions. According to Creswell (2015) this is two techniques which is qualitative research and quantitative research can be utilizing as one in situation which needed a mixed method or solely attempt on qualitative or quantitative research.

Besides that, Creswell (2015) also stated that quantitative research techniques make it easier to figure out and archive the goal by not included bias response, perception and experiences. This technique method is used to collect respondent's data by using the structure measurement able to convert to useful statistic. Based on the population's characteristic data which the quantitative research competent to develop hypothesis test. In this study had used the quantitative research techniques, researcher distributed

to interviewee through online questionnaires. Collection of the feedback data will be analyst and calculation were part of data collection especially the independent variables details.

3.1.1 Quantitative Research

The role of quantitative research design gathering the numerical data and also concentrated on statistical, numeric reasoning and mathematical. According to Babbie (2015) point out that data of quantitative research method are gathered through either online or offline questionnaire, survey and polls. Moreover, in this research technique is able to discover the thought and opinion in a deeper understanding into the problem. Also these researches able to obtain data form the recordings, discussion and notes.

3.1.2 Causal Research

Causal research acknowledges as the causal relationship variables stated by Neuman (2016). These determine causality for exploring the cause and effect relationship with the variables in statistical research or in a lab. This research is aim to investigate the factors affecting household involvement in recycling activities.

3.1.3 Deductive Approach

The deductive approach for building theory starts with a defined goal. Once the goals are determined, definitions and assumptions should be explained that whereby the researcher develop logical structure to reach the goal. Thus, according to Brown (2012) using "top-down" those are moving from the general to the specific. Furthermore, deductive approach creating an assumption depends on previous theories and set up a research strategy to trial the assumption or interprets the assumption directed form theory stated by Wilson (2010).

3.2 Data Collection Methods

In this research, data collection methods are part of collecting information from feedback on questionnaire sources to answers to the research problem. The researcher must ensure that during the collection have to be accurate data to be analysis. Hence, this method had two categories which are primary method and secondary method, however, in this study will be primary method.

3.2.1 Primary Data

Primary data are available to collect in many ways which is self-administered survey, field observation, experiments and interview according Marcano-belisario et al. (2015). The questionnaire with the total of 240 online surveys will give to randomly household of Kuala Lumpur and Selangor. With the respondent that are recycling because of behavior and active participating in recycling activities. This allowed the researcher to test effect of four independent variables (attitude, social norms, perceived behavioral control and moral norms) on dependent variables (recycling behavior). Convenience of primary data is that easier to implement, accuracy, quick and reliable.

3.3 Sampling Design

Sampling design is about the rule and procedures for certain element on population as sample. As large population is difficult for researcher to studied, thus need to divide in portion then easier to be studied is name a sample of the population. According to Alvi (2016) mentions that sample can be defined as the number of small group researchers select out from the population for investigation purposes.

3.3.1 Target Population

The target population is a group of people for which the researcher desires to explore and make inferences (Sekaran & Bougie, 2016, p.240). This research focus on a group of people that resident in Kuala Lumpur and Selangor involves of recycling activities in their own household area. By compile all detail of gender, age, race, marital status, occupation and level of education in Kuala Lumpur and Selangor. This able to decide whether different characteristics of household have shown participated in recycling activities.

3.3.2 Sampling Frame and Sampling Location

Sampling frame is defined as which a researcher wishes to analysis upon on certain population. For an instead, researchers hope to find out a name list of people occupy in city, household and so on. The sampling location of this research was conducted at Kuala Lumpur and Selangor. The reason in selecting Kuala Lumpur and Selangor as our sampling location was due to the high population in the area. Kuala Lumpur is the federal territory in Malaysia with 1.80millions of population and population of Selangor was 6.47millions of people (Selangor, n.d.). In the target sampling location was not only consists of local people, it also will involve other people who came from other state around Malaysia and currently reside in Kuala Lumpur and Selangor. Hence, the result of the survey questionnaires can be collected more reliable which involved the people came from other state around Malaysia.

3.3.3 Sampling Elements

For this research, the respondents who involve in the survey were the household, by knowing whether their active participating in the recycling with age range from 21 years old to 50 years old and above who currently reside in Kuala Lumpur and Selangor as well as the gender with both male and female and different race (Chinese, Malay, Indian or others). Besides, the respondents also will select by variety of occupation (students, employed, unemployed, and retired) and education level (high school or diploma, bachelor's degree, master's degree or doctorate). In this survey respondent also will determine based on their current marital status which included married, single or others.

3.3.4 Sampling Technique

There are two types of sampling techniques, namely probability sampling and non-probability sampling. In this research, we are using non-probability sampling techniques as the sample that we have chosen based on personal convenience and judgement. This sampling technique was widely used by most of the researchers due to it was very cost and time effective compared by using probability sampling technique.

In this research, convenience sampling was used in this research. Convenience sampling is one of the types of the non-probability sampling approach. It was defined as the researchers will collect the data from the member in the population who are convenience to provide their information (Sekaran & Bougie, 2016, p.252). This sampling technique brings some benefits to the

researchers such as save their time and cost during the data collection process. Due to the limitation of time and cost, this sampling method was very suitable applied in this research and it helped researchers to get the data in a quick, inexpensive and convenience ways. Hence, household in Kuala Lumpur and Selangor were invited to involve in this research because both were the city center which makes it easier approach and willing to gives fact information.

3.3.5 Sampling Size

According to Roscoe (1975) proposed that the rules of thumb for the determination of the sampling size between 30 to 500 are most suitable for most of the researchers. According to Siddiqui (2013) point out sample size is about nature of research and statistical techniques are a scope of the sample is determined. Yet the sample size measure by observation used on questionnaire. Moreover, Siddiqui (2013) also mention that with 200 interviewees able to get stable results by factor analysis. Hence, in this research, the sample size for pilot testing distributes is about 20 set of questionnaires, as for the 240 sets of questionnaires will be distribute through online for target people to accumulate the results.

3.4 Research Instrument

As for this research, the researcher had determined to practice questionnaire survey technique to be presented entire research. By exploit this, it leads to less cost on spending and it known as easier method cause consists of structured question for respondents to complete survey. This research the question design is based on literature review details and researcher take full alert to avoid any stereotype and discrimination information toward respondents.

3.4.1 Design of Questionnaire

The researchers discovered that the questionnaire design is bit challenging to be produces. To produces a good result will need to have high quality of questionnaire.

In this questionnaire, include of some parts such as the cover page, geographical segment, demographic segment and factors affect the households involved in recycling behavior. In geographical segment is screening question before proceeding to section A, whereby to be answer by respondent whose stayed in target area. Alongside the section A is demographic segment, this is for researchers known the respondent's characteristics. These parts consist of 6 questions which include of gender, age, race, level of education, occupation as well as marital status.

Last part is section B consist factors affect the households involved in recycling behavior. There is 5-point Likert scale on each question in this section which is 1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree and 5= Strongly Agree; besides that, 1= Very unwilling, 2= Unwilling, 3=Depend on situation, 4= Willing and 5= Very willing. This question is based on the relationship of dependent and independent variable. The dependent variable is recycling behavior whereas there are 4 independent variables which is attitude, social norms, moral norms and perceived behavioral control.

3.4.2 Pilot Test Study

The purpose of pilot test is to investigate the feasibility of research instrument by testing validity and reliability of the results as well as to ensure clarity of survey instruction and questions. Whereby the researcher will do alteration and amendment of the questionnaire based on the observation from the respondent's feedback in order to proceed on the actual survey.

Among resident of Kuala Lumpur and Selangor in Malaysia, the researcher randomly selected of 20 respondents to complete the questionnaire for pilot test purposed for about one week of duration. According to the Pallant (2015) stated that Cronbach's Alpha reliability test value above 0.8 are preferable while above 0.7 are acceptable. For the actual survey will be officially takes place about 3 to 4 weeks duration. The pilot test result is as below:

Table 3.1: Cronbach's Alpha Reliability Test

Variables	Cronbach's Alpha	Number of constructs
Attitudes (ATT)	0.8076231	5
Social norms (SN)	0.8216853	5
Perceived behavioral Control (PBC)	0.7165006	5
Moral norms (MN)	0.8817675	5
Recycling Behavior (RB)	0.9270635	5

Source: Developed for the research

3.5 Construct Measurement

3.5.1 Origin of Construct

In this research, the source origin of the questionnaire was adapted from past studies and it will be shown in Appendix B.

3.5.2 Scale of Measurement

In this research, the demographic questions in Section A were using the nominal and ordinal scale, whereas the questions in Section B was applied the interval scale.

3.5.2.1 Nominal Scale

Nominal scale is allowed the researchers to allocate the value of the object to identify the certain groups or categories (Sekaran & Bougie, 2016, p.212). In this research, nominal scale was used to compute the respondent's demographic question such as race, gender, age, education level, occupation and marital status.

3.5.2.2 Ordinal Scale

Ordinal scale is to clarify the data by ranking order (Sekaran & Bougie, 2016, p.213). The demographic questions such as age range of the respondents are measured in ordinal scale in this study.

3.5.2.3 Interval Scale

In this measurement such as 5-point Likert scale was used in this research in order to measure the opinion of the respondents on the dependent variable (recycling behavior) and four independent variables (attitudes, social norms, moral norms and perceived behavioral control). The 5-point Likert scale was used to measure the agreement and disagreement of the respondents. For instance, 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly Disagree.

3.6 Data Processing

3.6.1 Questionnaires Checking

During the process of data collection, we have checking all the surveys collected to ensure the survey were fully completing by the respondents. Any incomplete survey questionnaires collected or received after the deadline will remove from the succeeding process. A total 240 sets of survey questionnaires were collected, and 14 sets of survey questionnaires are not able to use for data analysis.

3.6.2 Data Editing

Data editing is to point out and correcting the inconsistent, illogical and illegal data to ensure that the data were consistency and accuracy in the research (Sekaran & Bougie, 2016, p.279). In this research, no any data was adjusted since there was no any invalid data among all the questionnaires collected.

3.6.3 Data Coding

After editing and modifying the data collected, the next step is data coding, it is the process that required researchers to develop coding for the numbers and questions, so the researchers can enter the data more easily when processing the analysis (Sekaran & Bougie, 2016, p.280). Below is the table for summarize coding for Section A and Section B in the questionnaires.

Table 3.2: Coding of questions in Section A

No.	Question	Coding
1.	Gender	1 = 'Male' 2 = 'Female'
2.	Age	1 = '30 and below' 2 = '31 – 40' 3 = '41 – 50' 4 = '51 and above'
3.	Race	1 = 'Malay' 2 = 'Chinese' 3 = 'Indian' 4 = 'Other'
4.	Level of Education	1 = 'High School/ Diploma' 2 = 'Bachelor's Degree' 3 = 'Master's Degree' 4 = 'Doctorate'

5.	Occupation	1 = 'Student' 2 = 'Employed' 3 = 'Unemployed' 4 = 'Retired' 5 = 'Other'
6.	Marital Status	1 = 'Single' 2 = 'Married' 3 = 'Other'

Source: Develop for the research

Table 3.3: Coding of questions in Section B

Variables	5-point Likert Scale
RB = 'Recycling Behavior' ATT = 'Attitude' MN = 'Moral Norms' PBC = 'Perceived Behavioral Control'	1 = 'Strongly Disagree' 2 = 'Disagree' 3 = 'Neutral' 4 = 'Agree' 5 = 'Strongly Disagree'
SN = 'Social Norms'	1 = 'Very Unwilling' 2 = 'Unwilling' 3 = 'Neutral' 4 = 'Willing' 5 = 'Very Unwilling'

Source: Develop for the research

3.6.4 Data Transcribing

This process is to enter all the data and transform into the database for data analysis by using Statistical Package for Social Science (SPSS) Version 21.0.

3.7 Data Analysis

3.7.1 Descriptive Analysis

Descriptive analysis is one of a type of statistic that used to conclude and summarize the data that collected from survey in Google form. In this research, descriptive analysis will used to analyze the nominal and ordinal data that regrading to the demographic question in Section A and all the summary of the data will be presented in table and pie chart. Moreover, descriptive analysis was involved the measurement of central tendency (mean, median and mode), measurement of variation (standard deviation) in the Section B.

3.7.2 Scale Measurement

3.7.2.1 Reliability Test

The reliability test is an indicator to measure the internal consistency of each questions designed in which the items can be test independently in order to combine all the same meaning to each of the items.

In this research, Cronbach's Alpha Coefficient was used to measure the internal consistency reliability of both dependent and independent variables. The results of this instrument were based on the rules of thumb which stated by the Sekaran & Bougie (2010).

Table 3.4: Rules of Thumb – Cronbach Alpha Coefficient Size

Coefficient Range	Strength of Association
< 0.6	Poor
0.6 to < 0.7	Moderate
0.7 to < 0.8	Good
0.8 to < 0.9	Very Good
> = 0.9	Excellent

Source: Sekaran & Bougie (2010).

3.7.3 Inferential Analyses

In this study, the Pearson's Correlation Coefficient Analysis and Multiple Linear Regression Analysis were adopted to analyze the data of the variables and explain the relationship between each other.

3.7.3.1 Pearson's Correlation Coefficient Analysis

Pearson's correlation coefficient analysis is used to examine the trend and strength of association between two variables. The correlation coefficient was range from -1 to 1, which 1 indicates a perfect positive association or correlation; while -1 indicate as a perfect negative association or correlation between the variables. A result of zero means there is no association or correlation between the variables.

According to the Mukaka (2012), the correlation between 0 to 0.3 (0 to -0.3) indicate as insignificant correlation; the value ranges between 0.30 to 0.50 (–0.30 to –0.50) indicates a low positive (negative) correlation; value size between 0.50 to 0.70 (–0.50 to –0.70) is moderate positive (negative) correlation; the value ranges between 0.70 to 0.90 (–0.70 to –0.90) reflect high positive (negative) correlation and value ranges between 0.90 to 1.00 (–0.90 to –1.00) represent very high positive (negative) correlation.

Table 3.5: Rules of Thumb – Pearson's Correlation Coefficient

Size of Correlation	Interpretation
.90 to 1.00 (–.90 to –1.00)	Very high positive (negative) correlation
.70 to .90 (–.70 to –.90)	High positive (negative) correlation
.50 to .70 (–.50 to –.70)	Moderate positive (negative) correlation
.30 to .50 (–.30 to –.50)	Low positive (negative) correlation
.00 to .30 (.00 to –.30)	Insignificant correlation

Source: Mukaka (2012)

3.7.3.2 Multiple Linear Regression Analysis

Multiple linear regression (MLR) analysis is one of the most common forms of linear regression analysis for most of the researchers and MLR is used to measure the all different regression analyses. In this research, MLR is used to measure the relationship between dependent variable (recycling behavior) and independent variables (attitudes, social norms, moral norms, and perceived behavioral control). Besides, 95% confidence interval is used to examine the level of significant in this research. The regression equation for this research is shown as below:

$$\mathbf{RB = \alpha + \beta 1ATT + \beta 2SN + \beta 3PBC + \beta 4MN}$$

Where, α = Regression Constant

β = Beta Coefficient

ATT = Attitude

SN = Social Norms

PBC = Perceived Behavioral Control

MN = Moral Norms

3.8 Conclusion

This chapter was discussed the research design, data collection method, sampling design, research instrument, pilot test study, scale measurement, data processing method and statistical analysis techniques to be applied in this research such as descriptive analysis and inferential analysis (Pearson's Correlation and Multiple Linear Regression Analysis). In next chapter will interpret and discuss the detail of the results of data analysis based on the techniques that mentioned in this chapter.

CHAPTER 4: DATA ANALYSIS

4.0 Introduction

Chapter 4 discussed the results analysis that related to the research hypotheses and questions. The data analysis was measure based on the descriptive statistic method which including demographic questions and measurement of central tendency scale measurement as well as the inferential analysis.

4.1 Descriptive Analysis

4.1.1 Respondent's Demographic Profile

In this research, survey questionnaires have been distributed to 240 respondents. However, 14 survey questionnaires are not eligible to be used for the analysis after checking the data. Hence, a total of 226 sets of survey questionnaires are being utilized to construct the data analyses.

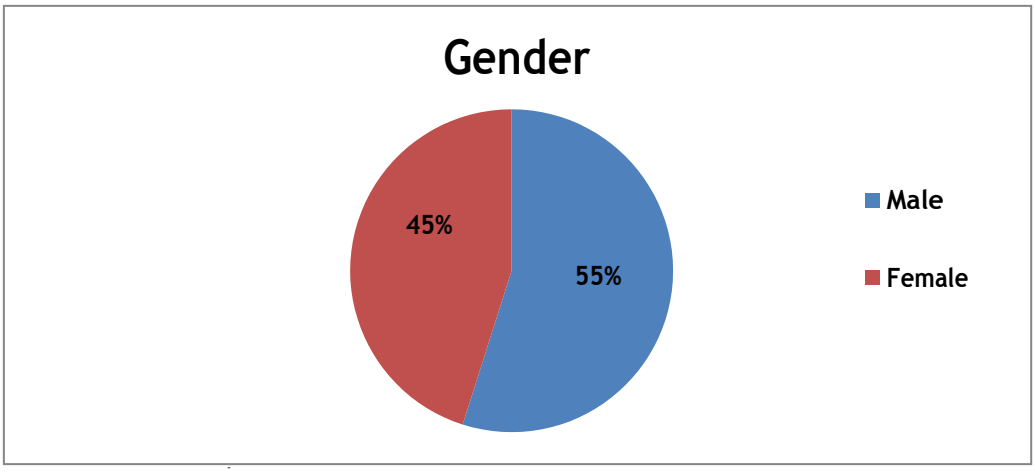
4.1.1.1 Gender

Table 4.1 Gender

	Frequency	Percentage (%)	Cumulative Percentage
Male	124	54.9	54.9
Female	102	45.1	100
Total	226	100	

Source: Develop for the Research

Figure 4.1: Gender



Source: Develop for the Research

Table 4.1 and Figure 4.1 show the frequency and percentage of gender for 226 respondents. Based on the Table 4.1 and Figure 4.1 stated that there are 124 (55%) male respondents participate in this survey while there are 102 female respondents participate in the survey which accounted to 45% out of the total respondents. Based on the results, it shown a balancing respond rate between the two genders where male only exceed female respondents for only with 5%.

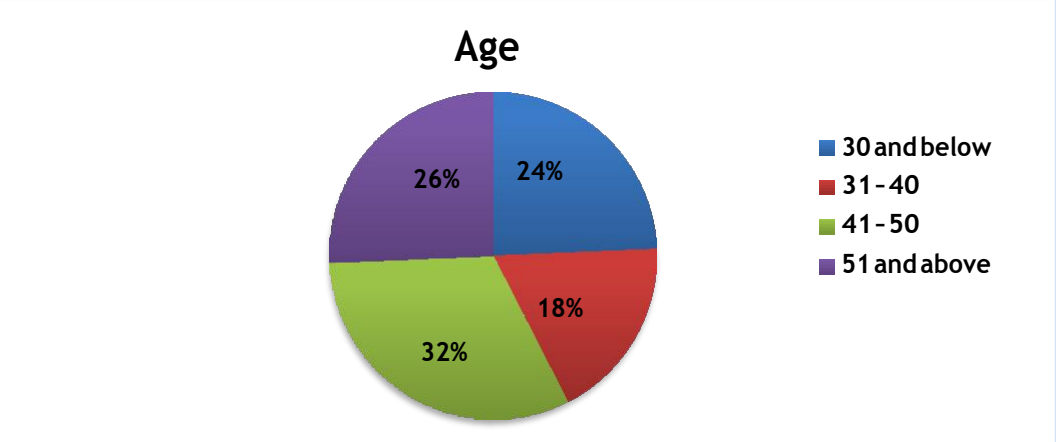
4.1.1.2 Age

Table 4.2: Age

	Frequency	Percentage (%)	Cumulative Percentage
30 and below	55	24.34	24.34
31 – 40	41	18.14	42.48
41 – 50	72	31.86	74.34
51 and above	58	25.66	100
Total	226	100	

Source: Develop for the Research

Figure 4.2: Age



Source: Develop for the Research

Table 4.2 and Figure 4.2 illustrate the percentage and frequency of the different age group for the respondents that involved in the survey questionnaires. According to the Figure 4.2 and Table 4.2, majority of the respondents are aged between 41 to 50 years old with 32%, which are 72 respondents. Then, the second largest portion of total respondents is 50 years old and above, which accounted to 26%. Next, only 55 (24%) respondents at

the age group of 30 years old and below, followed by 18% (41) of respondents are between the age group of 31 until 40 years old.

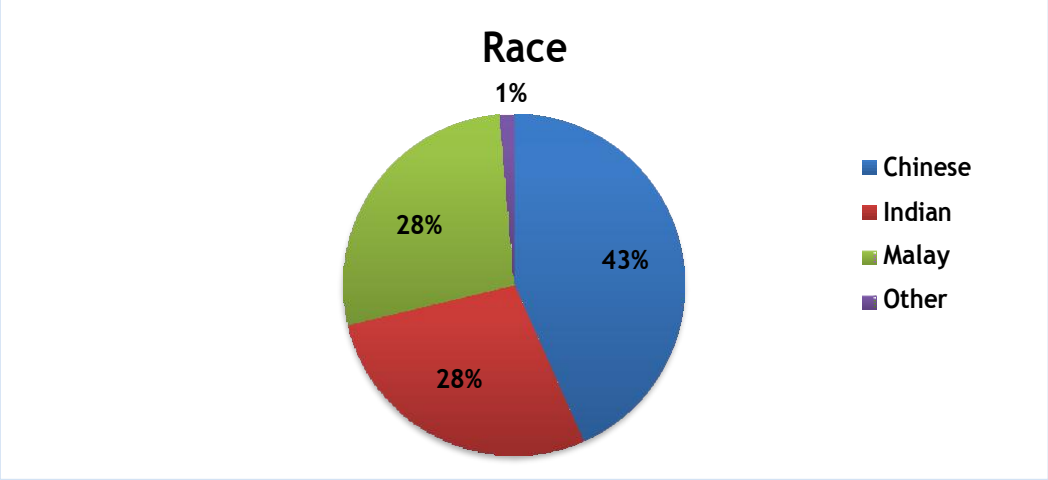
4.1.1.3 Race

Table 4.3: Race

	Frequency	Percentage (%)	Cumulative Percentage
Chinese	98	43.36	43.36
Indian	63	27.88	71.24
Malay	62	27.43	98.67
Others	3	1.33	100
Total	226	100	

Source: Develop for the Research

Figure 4.3: Race



Source: Develop for the Research

Table 4.3 and Figure 4.3 indicate the frequency and percentage of different race that participate in the survey collection period. In Table 4.3 and Figure 4.3, majority respondents are Chinese with 98 respondents of the total respondents which accounted as 43%. Next, the second largest portion of the total respondents is Malay and Indian with (28%) of respondents. Lastly, there are only 3 respondents are from other's race such as Portuguese which accounted as 1% out of the total respondents.

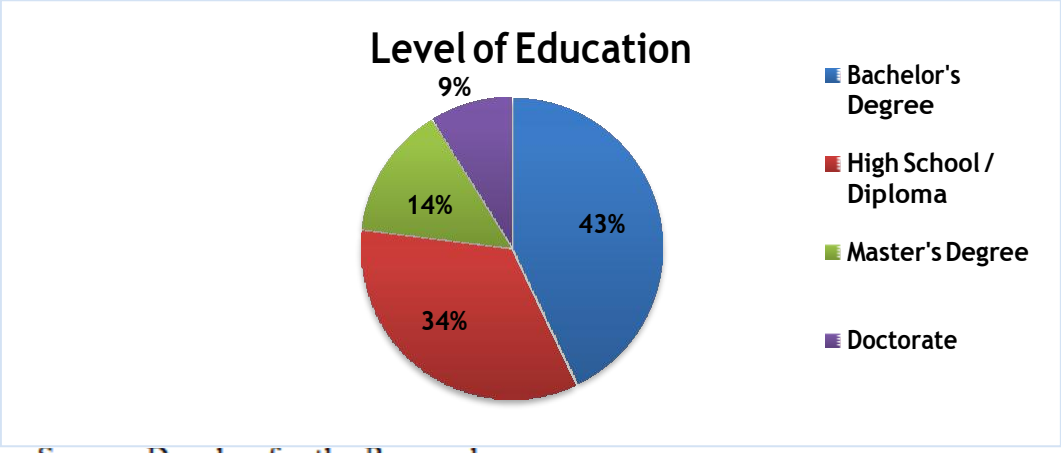
4.1.1.4 Level of Education

Table 4.4: Level of Education

	Frequency	Percentage (%)	Cumulative Percentage
Bachelor's Degree	97	42.92	42.92
High School/Diploma	77	34.07	76.99
Master's Degree	32	14.16	91.15
Doctorate	20	8.85	100
Total	226	100	

Source: Develop for the Research

Figure 4.4: Level of Education



Source: Develop for the Research

Table 4.4 and Figure 4.4 represent the education level of the respondents participate in this questionnaire. As seen from the Table 4.4 and Figure 4.4, there are 97 (43%) of respondents having the bachelor's degree on the education level, followed by high school or diploma certificate with 77 (34%) respondents. Then, there are 32 respondents owned master's degree qualification which accounted as 14% of the total respondents. Lastly, respondents with doctorate education level made the least portion of total respondents, which are 20 (9%) respondents.

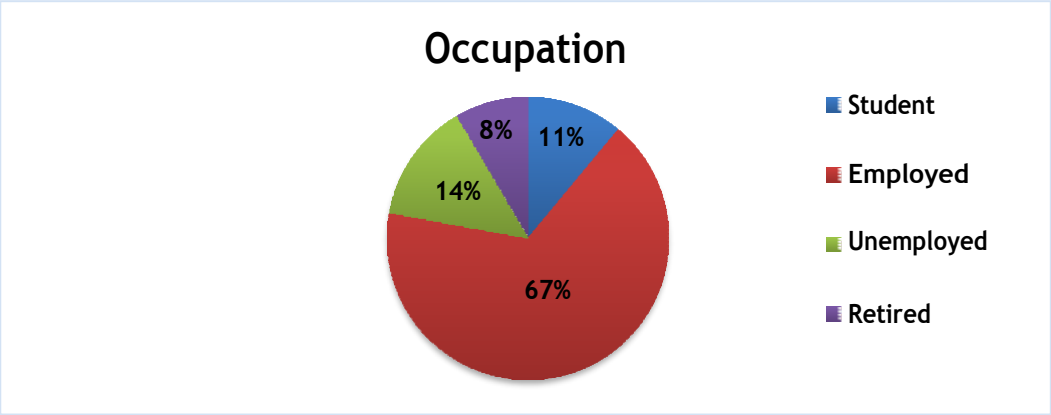
4.1.1.5 Occupation

Table 4.5: Occupation

	Frequency	Percentage (%)	Cumulative Percentage
Student	25	11.06	11.06
Employed	151	66.81	77.88
Unemployed	31	13.72	91.59
Retired	19	8.41	100
Total	226	100	

Source: Develop for the Research

Figure 4.5: Occupation



Source: Develop for the Research

Table 4.5 and Figure 4.5 explain the frequency and percentage occupation for the respondents responded in this questionnaire. In Table 4.5 and Figure 4.5, there are 151 respondents who are employed have participate in this survey questionnaire, accounted to 67%. Next, there are 31 (14%) respondents who are unemployed, followed by 25 (11%) students responded in this survey questionnaire. Lastly, the respondents who have been retired made up a smallest portion of the total respondents, which contribute only for 19 (8%) respondents.

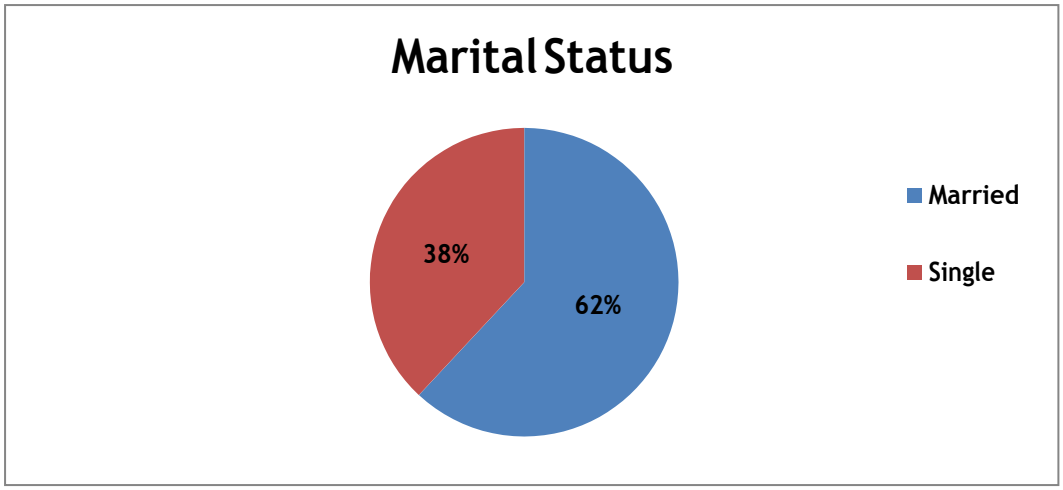
4.1.1.6 Marital Status

Table 4.6: Marital Status

	Frequency	Percentage (%)	Cumulative Percentage
Married	140	62	62
Single	86	38	100
Total	226	100	

Source: Develop for the Research

Figure 4.6: Marital Status



Source: Develop for the Research

Table 4.6 and Figure 4.6 represent the marital status of the respondents who have responded in this questionnaire. Based on the Table 4.6 and Figure 4.6, most of the respondents are married, which was accounted as 140 (62%) respondents. While the remaining 86 respondents are single, contribute to only 38% of the total respondents participate in this questionnaire.

4.1.2 Central Tendencies Measurement of Constructs

Table 4.7: Central Tendencies

N=226	Mean	Median	Std.Deviation	Variance	Range
ATT	3.5602	4.0000	0.98937	0.979	4.00
SN	3.9513	4.0000	0.79416	0.631	3.60
PBC	3.9540	4.0000	0.66614	0.444	2.80
MN	3.9920	4.2000	0.72696	0.528	4.00
RB	3.8876	4.2000	0.855890	0.738	4.00

Source: Develop for the Research

ATT = Attitudes

SN = Social Norms

PBC = Perceived Behavioral Controls

MN = Moral Norms

RB = Recycling Behavior

Table 4.7 demonstrates the descriptive statistics regarding household's recycling behavior, attitudes, social norms, moral norms and perceived behavioral control. Among the independent variables results shown that the highest mean are moral norms which is 3.9920. Along with perceived behavioral control and social norms which are 3.9540 and 3.9513. Followed by the lowest mean is Attitudes which is 3.5602. On the others hand, the recycling behavior has the mean of 3.8876. This table results shows that the respondent most agreed that the moral norms has the deep impact on household's recycling behavior, whilst attitudes has less impact on household's recycling behavior.

4.2 Scale Measurement

Scales of measurement or known as level of measurement is used on categorize or quantify variables. With the guidance of four scale measurement used in statistical analysis which is ordinal, nominal, interval and ratio scales.

4.2.1 Internal Reliability Analysis

In this part, the reliability tests shown that the Cronbach's Alpha identify that the total Internal Reliability of 25 projects (5 variables x 5 questions). Most of the researchers had approached this Cronbach's Alpha reliability to investigate the variables.

Table 4.8 Summary of Reliability Analysis

	Variables	Numbers of item	Cronbach's Alpha	Strength
i.	Attitudes (ATT)	5	.806	Good
ii.	Social Norms (SN)	5	.845	Very Good
iii.	Perceived Behavioral Controls (PBC)	5	.623	Moderate
iv.	Moral Norms (MN)	5	.785	Very Good
v.	Recycling Behavior (RB)	5	.885	Very Good

Source: Develop for the Research

Based on the table shown above, 5 variables reliability had been shown by using the reliability test with strength of the alpha level.

According to Bougie & Sekaran (2010) the rule of thumb of the Cronbach Alpha Coefficient Size had mentioned in chapter 3 as references. The value of Cronbach's Alpha of Attitudes is 0.806, social norms are 0.845, moral norms are 0.785, perceived behavioral controls are 0.623 and recycling behavior 0.885. Therefore, the strength of perceived behavioral controls is only moderate, follow by attitudes are good for strength compare to the social norms, moral norms and recycling behavior are belong to very good. The alpha value for all variables in this research is over 0.6. As comparison that the Cronbach's alpha coefficient of recycling behavior are 0.885 which are higher than 0.7, thus is an acceptable value with 5 items applied to defined it.

4.3 Inferential Analysis

According to Christensen et al. (2011) this inferential analysis statistical technique is to determine whether the hypothesis is accepted or rejected.

4.3.1 Pearson's Correlation Coefficient Analysis

Table 4.9: Pearson's Correlation Coefficient

		ATT	SN	PBC	MN	RB
Attitude (ATT)	Pearson Correlation	1	-0.003	.360**	0.118	.198**
	Sig. (2-tailed)		0.962	0.000	0.077	0.003
	N	226	226	226	226	226
Social Norms (SN)	Pearson Correlation	-0.003	1	.224**	.449**	.255**
	Sig. (2-tailed)	0.962		0.001	0.000	0.000
	N	226	226	226	226	226
Perceived Behavioral Control (PBC)	Pearson Correlation	.360**	.224**	1	.561**	.550**
	Sig. (2-tailed)	0.000	0.001		0.000	0.000
	N	226	226	226	226	226
Moral Norms (MN)	Pearson Correlation	0.118	.449**	.561**	1	.581**
	Sig. (2-tailed)	0.077	0.000	0.000		0.000
	N	226	226	226	226	226
Recycling Behavior (RB)	Pearson Correlation	.198**	.255**	.55099	.581**	1
	Sig. (2-tailed)	0.003	0.000	0.000	0.000	
	N	226	226	226	226	226

** Correlation is significant at the 0.01 level (2-tailed).
Source: Develop for Research

The Table 4.9 shows the result of Pearson Correlation Coefficient between independent variables: Attitudes (ATT), Social Norms (SN), Moral Norms(MN), perceived behavioral control (PBC) and dependent variables: Recycling Behavior (RB) towards household involvement in recycling activities. The Pearson Correlation results of the survey range from 0.198 to 0.581.

According to Table 4.10 below is a Rules of Thumb of Pearson's Correlation Coefficient.

Table 4.10: Rules of Thumb – Pearson's Correlation Coefficient

Size of Correlation	Interpretation
.90 to 1.00 (–.90 to –1.00)	Very high positive (negative) correlation
.70 to .90 (–.70 to –.90)	High positive (negative) correlation
.50 to .70 (–.50 to –.70)	Moderate positive (negative) correlation
.30 to .50 (–.30 to –.50)	Low positive (negative) correlation
.00 to .30 (.00 to –.30)	Insignificant correlation

Source: Malawi Med J (2012).

Based on the table 4.9 above, the p-value of attitudes is 0.003 which explain that attitude have significant relationship with recycling behavior towards household involvement in recycling activities. On the other hand, as coefficient correlation result show a value of 0.198, which show that attitudes has insignificant correlation towards recycling behavior towards household in involvement in recycling activities.

Moreover, the table shown p-value of social norms is 0.000 which prove that social norms have significant relationship with recycling behavior towards household involvement in recycling activities. Thus, as for the coefficient correlation result reveal that the value is 0.255 which mean social norms is insignificant correlation towards recycling behavior towards household involvement in recycling activities.

According to the table above, the perceived behavioral control obtains p-value of 0.000, it explained that perceived behavioral control has significant relationship with recycling behavior towards household involvement in recycling activities. Hence, the coefficient correlation result is 0.550 for perceived behavioral control which is moderate positive correlations on recycling behavior towards household involvement in recycling activities.

The Table 4.9 above show p-value of moral norms is 0.000, it illustrates that moral norms have significant relationship with recycling behavior towards household involvement in recycling activities. Besides that, the moral norms are moderate positive correlation towards recycling behavior towards household involvement in recycling activities due to coefficient correlation result is 0.581.

Therefore, for all the independent variables have strong influence on recycling behavior towards household involvement in recycling activities.

4.3.2 Multiple Linear Regression Analysis

Table 4.11: Model Summary

Model	R	R-Square	Adjusted R-Square	Std. Error of the Estimate
1	.642[a]	.412	.402	.66427

Source: Develop for the Research

a. Dependent Variable: RB

b. Predictors: (Constant), ATT, SN, PBC, MN

Above shows the model summary of the value of R square ($□^2$) for the regression model is 0.412 which mean 41.2% of variation in dependent variable (Recycling Behavior) is described by the four independent variables as whole in this model. Follow by the rules of thumb, the $□^2$ value of 0.412 point out this model is moderately well in predicting the results of dependent variable with four independent variables.

Table 4.12 ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	68.468	4	17.117	38.792	.000[b]
Residual	97.517	221	.441		
Total	165.985	225			

Source: Develop for the Research

a. Dependent Variable: RB

b. Predictors: (Constant), ATT, SN, PBC, MN

Above show ANOVA table indicates that the F value is 38.792 and the significance level is 0.000 which is smaller than 0.05 (< 0.05). Therefore, there is statistically significant difference between the recycling behavior and four independent variables [Attitudes (ATT), Social Norms (SN), Perceived Behavior Control (PBC) and Moral Norms (MN)]. These mean that the independent variables well described the variation in recycling behavior.

F-test involved a group of four independent variables are merged significant towards dependent variable (recycling behavior). As higher values of F-test are higher chances to fits of different linear models. Thus, this model has a high fitting degree and accumulated that this model is meaningful. Regression model is better in response variable forecasted compare for average of the response.

Table 4.13 Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std.Error	Beta		
(Constant)	.273	.331		.826	.410
ATT	.034	.048	.039	.700	.485
SN	.006	.063	.006	.099	.921
PBC	.400	.086	.310	4.652	.000
MN	.473	.081	.400	5.874	.000

Source: Develop for the Research

Based on the table 4.13, is a measurement of coefficient beta values that measuring each variable towards the recycling behavior. The stronger influence of factor towards recycling behavior is depending on the highest beta value applied. Thus, Moral norms is the highest beta value found in the table which is 0.400 and most important factor that influence recycling behavior towards household involvement in recycling activities. Likewise, when moral norms increase by 1 unit, the recycling behavior will correspond with increase of 0.400 units. On the others hand, the social norms held lowest beta value of 0.006 which is less slightly important factor that influence recycling behavior towards household involvement in recycling activities.

Therefore, this model multiple regression equation is created as figure below:

RB = 0.273 + 0.034 ATT + 0.006 SN + 0.400 PBC + 0.473 MN

Where, RB = Recycling Behavior
ATT = Attitude
SN = Social Norms
PBC = Perceived Behavioral Control
MN = Moral Norms

4.3.3 Test of Significant

Hypothesis I

H1: There is a positive relationship between attitudes and recycling behavior towards household involvement in recycling activities.

According on the multiple regression coefficient analysis tables, the significant value of attitudes is 0.485, which is higher than the significant level of 0.05 (p-value > 0.05). Hence, alternative hypothesis is rejected. As conclusion, attitudes have no significant relationship recycling behavior towards household involvement in recycling activities.

Hypothesis II

H2: There is a positive relationship between social norms and recycling behavior towards household involvement in recycling activities.

According on the multiple regression coefficient analysis tables, the significant value of social norms is 0.921, which is higher than the significant level of 0.05 (p-value > 0.05). Hence, alternative hypothesis is rejected. As conclusion, social norms have no significant relationship recycling behavior towards household involvement in recycling activities.

Hypothesis III

H3: There is a positive relationship between perceived behavioral control and recycling behavior towards household involvement in recycling activities.

According on the multiple regression coefficient analysis tables, the significant value of perceived behavioral control is 0.000, which is lower than the significant level of 0.05 (p-value < 0.05). Hence, alternative hypothesis is accepted. As conclusion, the perceived behavioral control has significant relationship recycling behavior towards household involvement in recycling activities.

Hypothesis IV

H4: There is a positive relationship between moral norms and recycling behavior towards household involvement in recycling activities.

According on the multiple regression coefficient analysis tables, the significant value of moral norms is 0.000, which is lower than the significant level of 0.05 (p-value < 0.05). Hence, alternative hypothesis is accepted. As conclusion, the moral norm has significant relationship recycling behavior towards household involvement in recycling activities.

Table 4.14 Summary of Hypothesis Testing

Hypothesis	Relationship	P-value	Result
H1	ATT > RB	.485	Not Supported (p > 0.05)
H2	SN > RB	.921	Not Supported (p > 0.05)
H3	MN > RB	.000	Supported (p < 0.05)
H4	PBC > RB	.000	Supported (p < 0.05)

Source: Develop for the Research

4.4 Conclusion

These chapters conclude of the demographic profile of the target respondents and the central tendencies and variability measurement of all five constructs using descriptive analysis. Beside that the reliability test had used for Cronbach's alpha and for inferential analysis, Pearson's Correlation Coefficient analysis together with Multiple Linear Regression analysis used to find out the relationship and structural model between dependent variable and independent variables. The following chapter will be conclusions of this study and with implication and limitation follow by the recommendation.

CHAPTER 5: DICUSSION, CONSLUSION AND IMPLICATION

5.0 Introduction

Chapter 5 summarizes the whole research by including the summary of statistical analyses and the discussion on major findings. Besides, the implications of study also to be discuss in the chapter, where including the theoretical and managerial implications. Furthermore, limitations of the research and recommendations for future research also will point out in the chapter.

5.1 Summary of Statistical Analysis

5.1.1 Descriptive Analysis

The results show the demographic profile of 226 respondents in this research. 55% of respondents are male whereas the 45% are female respondents. Next, more than half of the respondents are Generation X which are aged 41 to 50 years old (32%) and baby boomer with the aged of 50 years old and above (26%). Majority of the respondents are Chinese (43%), followed by Malay (28%) and Indian (28%). Moreover, 43% of respondents have bachelor's degree certification; while 34% of respondents are high school or diploma degree holders; followed by 14% respondents are master's degree holders and lastly 9% of respondents are doctorate degree holders. Besides, 67% of the

respondents are employed workers; followed 14% of unemployed respondents; 11% of them are students and 8% of respondents are retiree. In this research, most of the respondents are married with 62%, while the remaining 38% of respondents are single.

5.1.2 Scale Measurement (Reliability Analysis)

Each variable in internal consistency reliability is being tested using Cronbach's Alpha, hence it shows the measurement instruments consider reliable that the alpha value for all variables in this research is over 0.6. Moreover, the data show that value of Cronbach's Alpha of Attitudes is 0.806, social norms are 0.845, moral norms are 0.785, perceived behavioral controls are 0.623 and recycling behavior 0.885. The Cronbach's Alpha coefficient of recycling behavior are 0.885 which are higher than 0.7, thus is an acceptable value.

5.1.3 Inferential Analyses

Table 5.1: Summary of Inferential Analyses Results

Hypothesis	Pearson Correlation	Multiple Linear Regression		Result
		Beta	P-value	
H1: Attitudes (ATT)	0.198**	0.034	0.485	Rejected
H2: Social Norms (SN)	0.255**	0.006	0.921	Rejected
H3: Perceived Behavioral Control (PBC)	0.550**	0.400	0.000	Accepted
H4: Moral Norms (MN)	0.581**	0.473	0.000	Accepted

Source: Develop for the Research

5.1.3.1 Pearson's Correlation Coefficient Analysis

Based on Table 5.2, the result of Pearson Correlation Coefficient collected from the SPSS system. The correlation between recycling behavior and attitudes is 0.198, a social norm is 0.255, perceived behavior control is 0.550 and a moral norm is 0.581.

Hence two of the independent variables have positive significant and another two independent variables have insignificant correlation relationship with dependent variable. That is, an attitude is 0.198 and social norm is 0.255 have insignificant influence; perceived behavioral control is 0.550 and a moral

norm is 0.581 have moderate positive influence toward recycling behavior towards household involvement in recycling activities.

5.1.3.2 Multiple Linear Regression Analysis

Based on the R square for regression of recycling behavior is 0.412, which illustrate that 41.2% of the variation in recycling behavior can be explained by the four independent variables. Thus, the F value of 38.792 is significant of the significant level of 0.05 ($p = 0.000 < 0.05$), therefore the regression model is considered as moderately and fit well in predicting recycling behavior.

Moreover, the result explained that moral norms have strongest influence towards recycling behavior on household involvement in recycling activities, followed by perceived behavioral control. On the other hand, is that attitude and social norms has least impact. Hence, all independent variables have positive coefficient beta values (β) which conclude that all the independent variables have positive influences on the recycling behavior. Additionally, two independent variables ($p < 0.05$) have significant positive relationships with recycling behavior at 0.000 significant levels apart from the other two independent variables which is attitude ($p = 0.485 > 0.05$) and social norms ($p = 0.921 > 0.05$). Thus, H1 and H2 are rejected whereas H3, H4 are accepted in this study.

5.2 Discussion of Major Findings

The purpose of this research is that studying the relationship between attitudes, social norms, perceived behavior control and moral norm on recycling behavior towards household involvement in recycling activities.

5.2.1 Attitudes

H1: The relationship between attitude and recycling behavior towards household involvement in recycling activities.

This research turns out that attitude is not statistically significant on recycling behavior towards household involvement in recycling activities. These are opposite with finding of Jekria & Daud (2016). Jekria & Daud (2016) stated that attitudes could influence behaviors patterns towards waste recycling which include social belief in order to boost the level of concerns in recycling behaviors. As for this also show opposite with journal Ahmad, et al. (2014) mentioned that participation of incentive in attitudes that helps to change and adopts external practices that could carry out recycling behaviors. Moreover, there is lack of study support the insignificant relationship between attitudes and recycling behavior. Such as Miafodzyeya et al. (2013) highlights that determination shown by the household towards recycling behavior within neighborhood should be respected as it includes wider social participations. Likewise, the attitudes is initiatives to change and adaptability of recycling behaviors plays an important role in building group of people to reached

maximum concerns towards waste recycling as agreed by Ahmad, et al. (2014).

5.2.2 Social Norms

H2: The relationship between social norms and recycling behavior towards household involvement in recycling activities.

In this study, the social norms are not statistically significant on recycling behavior towards household involvement in recycling activities. According to Kirakozian (2015) showed the similar result that social norms is insignificant influence especially in recycling behaviors which could involve family members, friends and even neighborhood. Social influence is an important role in creating relationships with recycling behaviors through educations as described by Kirakozian (2015). In contrast of finding in Jalil, Foo, Asis & Yunus (2016) stated that social norms affecting recycling. Still, most of the findings show positive relation between the variables. Especially according to Nguyen et al. (2017) referring social norms as commonly as it carries interactions internally and externally which helps to create relationship and awareness in recycling behaviors. As well as that bonding of social norms in attitudes could contribute widely as it helps to connect people with environmental recycling as well as helps to promote recycling behaviors by having more waste activity such as awareness campaign as according to Han et al. (2017).

5.2.3 Perceived Behavioral Control (PBC)

H3: The relationship between perceived behavioral control and recycling behavior towards household involvement in recycling activities.

In this study, the perceived behavioral control is satisfactory significant on recycling behavior towards household involvement in recycling activities. Based on the previous study of Mahmud et al. (2010); Bortoleto et al. (2012); Zhang et al. (2015), they concluded that perceived behavioral control has direct impacts towards the recycling behavior. This is because based on the studies that completed by Mahmud et al. (2010); and Bortoleto et al. (2012), they mentioned that perceived behavioral control was the strongest and major predictor towards the recycling behavior. Furthermore, Klöckner & Oppedal (2011), they concluded that although perceived behavioral control has a limited influence on recycling behavior but it still significant towards recycling behavior.

5.2.4 Moral Norms

H4: The relationship between moral norm and recycling behavior towards household involvement in recycling activities.

In this research, the results found out that moral norms is satisfactory significant on the recycling behavior towards household involvement in

recycling activities. Refer to the previous researcher stated that respondents perceive the moral norms has direct impact to recycle their household waste (Davies et al, 2002). Besides, another researcher Ahmad et al. (2014), they indicate that the moral norms had a strongly impact towards an individual's behavior. This is because the belief of an individual is established based on how an individual perform in a specific behavior and it must involve the recycling behavior as an important variable within the model. They also mentioned that the moral values are play an essential role in recognizing the activities which the moral dimension will influence to the community. Furthermore, Donald et al. (2014) stated that adding moral norms as a variable into the TPB model also can help to enhance the model's predictive ability. Lastly, Chan & Bishop (2013) and Poškus (2015) conclude that some studies even recommend that moral norms can be successfully replaced the attitudes to the recycling behavior in the model of TPB.

5.3 Implications of the Study

5.3.1 Managerial Implications

The main purposed of this research is to investigate which are the factors affecting household involvement in recycling activities. These research study aim to contribute more detailed information for department of environment in Malaysia to increase awareness advantage in order to save the world environment becomes cleaner for household. There is environmental issue occur because of irresponsible household polluted the environment without even noticed. Well this research study able to increase the existence of recycle (3R), waste separation and motivate the household for recycling activities

purposed. Based on the result of this research, moral norms and perceived behavior control able to impact the recycling behavior towards household involvement in recycling activities. On the other hand, the attitudes and social norms are indicating no significant relationship with recycling behavior.

5.3.1.1 Attitudes

Attitudes is known as enduring group of emotional, motivational, cognitive and perceptual processes honor to some form of particular's world. According to Ahmad, et al. (2014) mentioned that the attitudes which could be transformed over time on how individual approach with certain behavior is insisted by how it's perceived things, this create personal attitudes. On this research stated that attitude is contrast with the findings of the research because it is no significant relationship with recycling behavior towards household involvement in recycling activities. Therefore, meaning that an attitude is not a main factor on recycling behavior. At this present time, attitudes towards environment have long gone because society are busy with full time work, have no time to do recycling and also the family attitude never bothered to do recycle activities. This is where a company or government can planned to organize recycle campaign once a month to motivate society/employees attitude to do recycle whom do not have time to do recycle at home.

5.3.1.2 Social Norms

These results show that Social norm is no significant relationship with recycling behavior towards household involvement in recycling activities. Therefore, meaning that a social norm is not a main factor on recycling behavior. Abbott et al. (2013) mentioned that social norms implementing recycling levels for individuals and also influence between friends, neighbors and family members. The similar research finding of social norms no significant relationship with recycling behavior is by Kirakozian (2015) mention that social influence towards neighbors negatively impact individual recycling behavior and beliefs that harmonization is part of reduces recycling behavior. Therefore, nowadays family, friend, colleague, neighbors, government, community and even environmental organization had become social pressure to household which discourage them in implementing recycle and unwilling to listen to their advice. In order to minimize the social pressure of household is that create event for 'running for recycle' that with small fun such as the trade recycle item for handmade prize from the recycle itself.

5.3.1.3 Perceived Behavioral Control (PBC)

The result show that perceived behavioral control has significant relationship on recycling behavior towards household involvement in recycling activities. According to Mahmud et al. (2010); and Bortoleto et al. (2012), they mentioned that perceived behavioral control was the major predictor towards the recycling behavior. Therefore, in order to enhance the knowledge and participation of the community in recycling activities, household recycling campaigns should organize and implement by the government, school or

residents. Besides, the government also should formulate and implement the relevant policies or laws and regulations in the community. These activities can help the community to enhance their awareness in the waste separation as well as their interested in the practical action. The government also can develop an incentive system to encourage the household in recycling their waste to increase the household recycling rate in Malaysia. For example, the government can implement the 'Recycle Rewards Activities' to the community, where the community can recycle their waste by earning the points to redeem the certain products that offer by government such as electronic devices, recyclable products and so on. Hence, it can help to protect the environment out from the pollution and global warming.

5.3.1.4 Moral Norms

Moral norms are also one of the important factors that can affect the recycling behavior towards household involvement in recycling activities. Moral norms are the key factor to affect household recycling behavior. A study completed by Nielsen and McGregor (2013) mentioned that moral norms are internalize and they will affect a person's emotions, behaviors, thoughts, and independent of the originating context. Besides, some studies even recommend that moral norms can be successfully replaced the attitudes to the recycling behavior in the model of Theory of Planned Behavior (TPB) (Chan & Bishop, 2013; Poškus, 2015). Therefore, in order to influence the moral values of the community, the support from family, friends and neighbors are essential. This is because whenever the action that taken by their closest person can be an example for them to learn and imitate those action. In addition, moral norms have become a very important element to support the Theory of Planned Behavior (TPB) model by replacing the attitude in the model. In order to

ensure the moral norms can be able to replace attitude, the future researchers can conduct and explore more evidence to support with this relationship.

5.4 Limitations of the Study

In this section, limitation is the weakness that the researchers are unable to control the condition during the progress of conducting the research.

5.4.1 Unequal Sample Group and Sample Size

Unequal sample group are also considered as one of the limitation in this research. This is because most of the respondents in this study are aged between 41-50 years old. This may reduce the accuracy of the research and the results may be significantly impact by this group of respondents. Besides, in this research, a total 240 respondents were selected; however, only 226 respondents are eligible to participate and conduct in this survey questionnaire. This may lead inaccurate of this study due to a small amount of sample size unable to generate a best result for the research.

5.4.2 Time Constraints

Besides, this research is conducted in a limited time frame as the time frame of the process of data collected was for this research was only takes 3 to 4 weeks. So, this issue may reduce the accuracy and also the sample size of this research that received from the respondents who participate in this process.

5.4.3 Restriction of Few Geographical Location in Malaysia

In this research, only two geographical locations in Malaysia were selected by the researchers, which involve Kuala Lumpur and Selangor. So, this will become inaccurate in this research due to the coverage number of the geographical location in Malaysia is limited.

5.4.4 Language Barriers

Language barriers also serve as a limitation in this research. As this survey questionnaire is full written in English but not every respondent in Kuala Lumpur and Selangor are proficiency in English language. Thus, they may not be able to participate and conduct in this survey questionnaire. So, it may lead to reduce the accuracy of the research during the process of collecting the data.

5.5 Recommendations for Future Research

Is about researcher assesses in studies, in term of the project experience and overcome the limitations for enhance the next researcher on this future investigation.

5.5.1 Adding More Independent Variables

The purposed is to increase the predictive power of this model, aside from this research independent variables and the researchers suggest for future researches; could add others independent variables; for example, the Collective mean (Iyer & Kashyap, 2007) is as group are motivated achieve a common goal; warm glow (Abbott, 2013) is a motivation of selfless on contribution of public interest. By adding it will help to improve the predictive power of this model can be more accurate and significantly predicts of the outcome on recycling behavior. For the future researches will be able to investigate on relevant variables and the influence on recycling behavior towards household involvement in recycling activities in more accurate data and positive manner.

5.5.2 Increase Sample Size

To get reliability results and specific data from the next research studies, Perri & Corvello (2015) stated that suitable and accurate sample size is between 100 to 500 respondents, whereby the researcher suggest that increase the number of participation from 240 sets to at least 500 sets to gain from the target respondent and also eligible data to be used for the research. For future researches is that by getting more target respondent will gain more accurate and reliable data analysis for positives significant from the large sample size results.

5.5.3 Adding More Geographical Location

As mentioned above, this research was only targeting on two places such as in Kuala Lumpur and Selangor which create inaccurate analysis. Thus, for future researcher is that by adding more location into their research could be better in term of more details and precise analysis. Besides that, by conducting several others location could be much more respond with getting more depth information from the target respondents.

5.6 Conclusion

In conclusion, this research has achieved from investigating the factors affecting household involvement in recycling activities. In this study, the independent variables (attitude, social norms, perceived behavioral control and moral norms) are tested and examine on the dependent variable, where is recycling behavior. As a result, perceived behavioral control and moral norms have a significant relationship towards household recycling behavior. In contrast, attitude and social norms have no relationship towards recycling behavior. Apart from that, the implication of the study, limitations and recommendations of this research also provided in this chapter for the future researchers have a better understanding in the "Factors Affecting Household Involvement in Recycling Activities".

REFERENCE

Abbott, A., Nandeibam, S., & O'Shea, L., (2013), "Recycling: Social norms and warm-glow revisited", *Ecological Economics, 90*: 10-18.

Ahmad, M. S., Bazmi, A. A., Bhutto, A. W., Shahzadi, K., & Bukhari, N. (2014). Students' Responses to Improve Environmental Sustainability Through Recycling: Quantitatively Improving Qualitative Model. *Applied Research in Quality of Life*. *11(1)*, 253-270.

Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes, 50(2)*, 179-211.

Alvi, M.H. (2016). A Manual for Selecting Sampling Techniques in Research. *University of Karachi, Iqra University*. 53p.

Babbie, E. R. (2015). The Practice of Social Research (14th ed.). Nelson Education.

Brown, J. (2012). The current status of STEM education research. *Journal of STEM Education: Innovations and Research, 13(5)*, 7-11.

Byrne, S., & O'Regan, B. (2014). Attitudes and actions toward recycling behaviors in the Limerick, Ireland region. *Resource, Conservation and Recycling, 87*, 89–96.

Christensen, L. B., Johnson, R. B. & Turner, L. A. (2011). Research Methods, Design, and Analysis (11th ed.). Bonston, MA: Allyn & Bacon.

Creswell, J. W. (2015). A Concise Introduction to Mixed Methods Research. Thousand Oaks, CA: SAGE.

Davies, J., Roxall, G. R., & Pallister, J. (2002). Beyond the Intention – Behaviour Mythology: An Integrated Model of Recycling. *Marketing Theory, 2(1),* 29-113.

Fishbein, M. (1979). A Theory of Reasoned Action: Some applications and implications. *Neb. Symp. Motivation, 27*, 65–116.

Fishbein, M., & Ajzen, I. (2010). Predicting and Changing Behavior: The Reasoned Action Approach. New York, NY: Psychology Press.

Han, H., Zhang, Z., Xia, S., & Li, H. (2017). The carrot or the stick: individual adaption against varying institutional arrangements. *Journal of Environmental Planning and Management, 61(4),* 568-596.

Hurst, M., Dittmar, H., Bond, R., & Kasser, T. (2013). The relationship between materialistic values and environmental attitudes and behaviors: A meta-analysis. *Journal of Environmental Psychology, 36*, 257–269.

Jalil, E. E. A., Foo, Y. J., Asis, Z. A., & Yunus, N. A. (2016). Recycling Behaviour among Malaysian Tertiary Students. *Journal of Technology and Operations Management, 11(2),* 69-81.

Jekria, N., & Daud, S. (2016). Environmental Concern and Recycling Behaviour. *Procedia Economics and Finance, 35*, 667–673.

Khoo, N. (2017). Malaysian Companies Generated Less Waste in 2017 than in 2007! But There's A Dark Side to It. Retrieved October 15, 2018, from https://cilisos.my/heres-why-our-sampah-is-increasing-even-though-companies-are-producing-less-waste/

Khor, S. (2014, November 17). Why Is It Necessary To Implement A Compulsory Waste Separation System for Malaysians? Retrieved October 15, 2018, from https://says.com/my/news/why-is-it-necessary-to-implement-a-compulsory-waste-separation-system-for-malaysians

Kirakozian, A. (2015), The Determinants of Household Recycling: Social Influence, Public Policies and Environmental Preferences, *Applied Economics, 48 (16),* 1481-1503.

Klöckner, C. A., & Oppedal, I. O. (2011). General vs. domain specific recycling behavior – Applying a multilevel comprehensive action determination model to recycling in Norwegian student homes. *Resources, Conservation and Recycling, 55(4),* 463-471.

Latif, S. A., Bidin, Y. H., & Awang, Z. (2013). Towards the Realization of Green Cities: The Moderating Role of the Residents' Education Level. *Procedia-Social and Behavioral Sciences, 85*, 646-652.

Lee, S., & Paik, H.S. (2011). Korean Household Waste Management and Recycling Behaviour. *Building and Environment, 46(5),* 1159-1166.

Low Awareness on Recycling Among Malaysians – Nation. (2017, August). Retrieved October 18, 2018, from https://www.thestar.com.my/news/nation/2017/08/20/low-awareness-on-recycling-among-malaysians/

Mahmud, S., & Osman, K. (2010). The determinants of recycling intention behavior among the Malaysian school students: an application of theory of planned behaviour. *Procedia – Social and Behavioral Sciences*, 9, 119-124.

Marcano-Belisario, J. S., Huckvale, K., Saje, A., Porcnik, A., Morrison, C. P., & Car, J. (2015). Comparison of self-administered survey questionnaire responses collected using mobile apps versus other methods. Cochrane Database of Systematic Reviews. Retrieved September 20, 2018, from https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.MR000042.pub2/full

Miafodzyeva, S., & Brandt, N. (2013). Recycling behavior among householders: Synthesizing determinants via a meta-analysis. *Waste and Biomass Valorization, 4(2),* 221–235.

Miafodzyeva, S., Brandt, N., Andersson, M., (2013). Recycling behaviour of householders living in multicultural urban area: a case study of Jarva, Stockholm, Sweden. *Waste Management and Research 31(5),* 447–457.

Moh, Y. C., & Abd Manaf, L. (2013). Overview of household solid waste recycling policy status and challenges in Malaysia. *Resources, Conservation and Recycling, 82,* 50-61.

Mukaka, M. (2012). A Guide to Appropriate Use of Correlation Coefficient in Medical Research. Retrieved September 29, 2018, from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3576830/

Nguyen, T.N.; Nguyen, H.V.; Lobo, A. & Dao, T.S. (2017). Encouraging Vietnamese Household Recycling Behaviour: Insights and Implications. *Sustainability, 9,* 179.

Omran, A., Mahmoond, A., Abdul Aziz, H., & Robinson, G. M. (2009). Investing Households Attitude Toward Recycling of Solid Waste in Malaysia: A Case Study. *International Journal of Environmental Research, 3(2),* 275-288.

Pallant, J. (2015). *SPSS survival manual: A step by step guide to data analysis using SPSS (5th ed.)*. Maidenhead: Open University Press.

Pande, A. C., & Soodan, V. (2015). Role of consumer attitudes, beliefs and subjective norms as predictors of purchase behaviour: a study on personal care purchases. *The Business & Management Review, 5(4),* 284-291.

Poškus, M. S. (2015). Predicting Recycling Behavior by Including Moral Norms into the Theory of Planned Behavior. *Psychology. 52(52),* 22-32.

Poškus, M. S., & Žukauskienė, R. (2017). Predicting adolescents' recycling behavior among different big five personality types. *Journal of Environmental Psychology, 54,* 57-64.

Ramayah, T., Lee, J. W. C., & Lim, S. (2012). Sustaining the environment through recycling: An empirical study. *Journal of Environmental Management, 102*, 141-147.

Robertson, S. & Wallington, H. (2009). Recycling and waste minimisation behaviours of the transient student population in Oxford: results of an on-line survey. *Local Environment, 14(4),* 285-296.

Saphores, J. M., Nixon H, Ogunseitan O.A., Shapiro, A. A. (2006). Household Willingness to Recycle Electronic Waste: An Application to California. *Environment and Behavior, 38(2),* 183–208.

Sekaran, U., & Bougie, R. (2016). Research methods for business: A skill building approach (6th ed.). New York: John Wiley & Sons.

Selangor. (n.d.). Retrieved October 20, 2018, from https://www.dosm.gov.my/v1/index.php?r=column/cone&menu_id=eGUyTm9RcEVZSllmYW45dmpnZHh4dz09

Siddiqui, K. (2013). Heuristics for Sample Size Determination in Multivariate Statistical Techniques. *World Applied Sciences Journal, 27(2),* 285-287.

Stanley, B. (2012). Want Not, Waste Lots. Waste Age, 43(8), 18.

Tang, Z., Chen, X., & Luo, J. (2011). Determining Socio-Psychological Drivers for Rural Household Recycling Behavior in Developing Countries: A Case Study from Wugan, Hunan, China. *Environment and Behavior*. *43(6)*, 848-877.

Thomas C, Sharp V. (2013). Understanding the normalisations of recycling behavior and its implications for other pro-environmental behaviours. A review of social norms and recycling. *Resources Conservation and Recycling, 79,* 11-20.

Vesely, S., Klöckner, C. (2017). Global Social Norms and Environmental Behavior. *Environment and Behavior, 50(3),* 247-272.

White, K. M., Smith, J. R., Terry, D. J., Greenslade, J. H., & McKimmie, B. M. (2009). Social Influence in the Theory of Planned Behaviour: The Role of Descriptive, Injunctive, and In-Group Norms. *British Journal of Social Psychology, 48(1),* 135–158.

Wilson, J. (2010). Essentials of Business Research: A Guide to Doing Your Research Project (2nd ed.). SAGE Publications.

Zhang, D., Huang, G., Yin, X., & Gong, Q. (2015). Residents' Waste Separation Behaviors at the Source: Using SEM with the Theory of Planned Behavior in Guangzhou, China. *Environmental Research and Public Health, 12,* 9475-9491.

Appendix A: Survey Questionnaire

UNIVERSITI TUNKU ABDUL RAHMAN
FACULTY OF ACCOUNTANCY AND MANAGEMENT
ACADEMIC YEAR 2018 MAY 2018 TRIMESTER
BECHOLAR OF INTERNATIONAL BUSINESS (HONS)

Dear respondents,

We are final year students pursuing a Bachelor of International Business (HONS) from Faculty of Accountancy and Management (FAM) at Universiti Tunku Abdul Rahman (UTAR), Sungai Long Campus.

As part of our Final Year Project for UKMZ 3016, we are conducting a survey to examine the "Factors Affecting Household Involvement in Recycling Activities". Household recycling is referred to variable such as attitudes, motivation, and distress regarding the environment and demographics.

This questionnaire would take approximately TEN (10) minutes to complete. All questions obtained will be analyzed and to be concluded in a report. Under the Personal Data Protection Act (PDPA) 2010, all data and identity of respondent will be kept strictly PRIVATE and CONFIDENTIAL. All the data collected in this research would be used for learning purpose only. We appreciate your effort and time taken to contribute to this work and thank you for your time and participation.

Student's Details:

Name	Student ID No.
Angelin Thein Lee Ching	1506382
Kang Ying Fong	1305173

Screening Question

1. Are you currently reside in Kuala Lumpur or Selangor?

   □ Yes

   □ No (You might not our target respondents and thanks for your valuable time.)

Section A

In this section, we are interested in your background in brief. Please provide the following information.

Please tick (√) ONE answer that comes closest to your opinion for all the statement below.

1. Gender:

   □ Male

   □ Female

2. Age (years old)

   □ 30 and Below

   □ 31-40

   □ 41-50

   □ 51 and Above

3. Race

   □ Malay

   □ Chinese

   □ Indian

   □ Others:……

4. Level of Education:

□ High School / Diploma

□ Bachelor's Degree

□ Master's Degree

□ Doctorate

□ Others:……

5. Occupation

□ Student

□ Employed

□ Unemployed

□ Retired

□ Others:……

6. Marital status

□ Single

□ Married

□ Others:……

Section B

This section is seeking your opinion regarding the factors affecting household involvement in recycling activities. Please indicate your agreement or disagreement with the following statement with 5 Likert scale which consists of '5-Strongly Agree, 4-Agree, 3-Neutral, 2-Disagree, and 1-Strongly Disagree'.

Please select ONE answer that comes closest to your opinion for all the statement below.

Dependent Variables

Recycling Behavior

No.	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	Doing all that is needed to recycle at home is something I have been doing for a long time.	1	2	3	4	5
2.	Doing all that is needed to recycle at home is something I do without thinking.	1	2	3	4	5
3.	It makes me feel weird if I do not do all that is needed to recycle at home.	1	2	3	4	5
4.	I frequently do all that is needed to recycle at home.	1	2	3	4	5
5.	Doing all that is needed to	1	2	3	4	5

	recycle at home is something I do automatically.					

Independent Variable

Attitudes

No.	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I work full time and I do not have the time to recycle.	1	2	3	4	5
2.	My parents never bothered to recycle so why should I bother starting now.	1	2	3	4	5
3.	Recycling is for people who have a lot of time to spare.	1	2	3	4	5
4.	I would pay more for products whose packaging does less damage to the environment.	1	2	3	4	5
5.	Having a tidy house is very important to me. I always intent to recycle my household waste, but it cause a mess so I usually throw everything	1	2	3	4	5

	into the bin.					

Social norms

No.	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	If your family encourages you in implementing recycle, are you willing to listen to their advice?	1	2	3	4	5
2.	If your friend or colleague encourages you in implementing recycle, are you willing to listen to their advice?	1	2	3	4	5
3.	If your neighbors encourage you in implementing recycle, are you willing to listen to their advice?	1	2	3	4	5
4.	If your government and community encourage you in implementing recycle, are you willing to listen to their advice?	1	2	3	4	5
5.	If your environmental organization encourages you in implementing recycle, are you willing to listen to their advice?	1	2	3	4	5

Perceived behavioral Control (PCB)

No.	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	Whether household separate waste is dependent on them.	1	2	3	4	5
2.	I separate waste regardless of whether there are community incentives.	1	2	3	4	5
3.	Waste separation is a very easy thing for me.	1	2	3	4	5
4.	I believe that my recycling activities will help improve environmental quality.	1	2	3	4	5
5.	Household recycling is an easy task for me.	1	2	3	4	5

Moral norms

No.	Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I feel I should not waste anything if it could be used again.	1	2	3	4	5
2.	It would be wrong of me not to recycle my household waste.	1	2	3	4	5
3.	I would feel guilty if I did not recycle my household waste.	1	2	3	4	5
4.	Not recycling goes against my principles.	1	2	3	4	5
5.	Everybody should share the responsibility to recycle household waste.	1	2	3	4	5

THANK YOU

Appendix B: Source of Questionnaire

Variable	Description	Reference
Attitudes	1. I work full time and I do not have the time to recycle. 2. My parents never bothered to recycle so why should I bother starting now. 3. Recycling is for people who have a lot of time to spare. 4. I would pay more for products whose packaging does less damage to the environment 5. Having a tidy house is very important to me. I always intent to recycle my household waste, but it cause a mess so I usually throw everything into the bin	Byrne & O'Regan. (2014).
Social norms	1. If your family encourage you in implementing recycle, are you willing to listen to their advice? 2. If your friend or colleague encourage you in implementing recycle, are you willing to listen to their advice? 3. If your neighbors encourage you in implementing recycle, are you willing to listen to their advice? 4. If your government and community encourage you in implementing recycle, are you willing to listen to their advice?	Xu et al. (2017)

	5. If your environmental organization encourage you in implementing recycle, are you willing to listen to their advice?	
Recycling Behavior	1. Doing all that is needed to recycle at home is something I have been doing for a long time. 2. Doing all that is needed to recycle at home is something I do without thinking. 3. It makes me feel weird if I do not do all that is needed to recycle at home. 4. I frequently do all that is needed to recycle at home. 5. Doing all that is needed to recycle at home is something I do automatically.	Tam, Le, Wang, & Illankoon, (2018).
Perceived Behavioral Control (PBC)	1. Whether household separate waste is dependent on them. 2. I separate waste regardless of whether there are community incentives. 3. Waste separation is a very easy thing for me.	Zhang, D., Huang, G., Yin, X., & Gong, Q. (2015).
	4. I believe that my recycling activities will help improve environmental quality. 5. Household recycling is an easy task for me.	Ramayah, T., Lee, J. W. C., & Lim, S. (2012).
Moral Norms	1. I feel I should not waste anything if it could be used again. 2. It would be wrong of me not to recycle my household waste. 3. I would feel guilty if I did not recycle my household waste. 4. Not recycling goes against my	Tang, Z., Chen, X., & Luo, J. (2011).

	principles. 5. Everybody should share the responsibility to recycle household waste.	

Appendix C: SPSS Output of Data Analysis

Respondent's Demographic Profile

Statistics

Statistics							
		Gender	Age	Race	Level of Education	Occupation	Marital Status
N	Valid	226	226	226	226	226	226
	Missing	0	0	0	0	0	0
Mean		1.45	2.59	1.87	1.98	2.19	1.38
Median		1.00	3.00	2.00	2.00	2.00	1.00
Mode		1	3	1	2	2	1

Frequency Table

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	124	54.9	54.9	54.9
	Female	102	45.1	45.1	100.0
	Total	200	100.0	100.0	

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	30 and Below	55	24.3	24.3	24.3
	30-40	41	18.1	18.1	42.5
	41-50	72	31.9	31.9	74.3
	51 and Above	58	25.7	25.7	74.3
	Total	226	100.0	100.0	

Race					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Chinese	98	43.4	43.4	43.4
	Malay	63	27.9	27.9	71.2
	Indian	62	27.4	27.4	98.7
	Others	3	1.3	1.3	100.0
	Total	226	100.0	100.0	

Level of Education					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High School/ Diploma	77	34.1	34.1	34.1
	Bachelor's Degree	97	42.9	42.9	77.0
	Master's Degree	32	14.2	14.2	91.2
	Doctorate	20	8.8	8.8	100
	Total	226	100.0	100.0	

Occupation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Student	25	11.1	11.1	11.1
	Employed	151	66.8	66.8	77.9
	Unemployed	31	13.7	13.7	91.6
	Retired	19	8.4	8.4	100.0
	Total	226	100.0	100.0	

Marital Status					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Married	140	61.9	61.9	61.9
	Single	86	38.1	38.1	100.0
	Total	226	100.0	100.0	

Reliability Test

Scale: Attitude

Case Processing Summary			
		N	%
Cases	Valid	226	100.0
	Excluded[a]	0	.0
	Total	226	100.0
a. Listwise deletion based on all variables in the procedure.			

Reliability Statistics	
Cronbach's Alpha	N of Items
.885	5

Scale: Social Norms

Case Processing Summary			
		N	%
Cases	Valid	226	100.0
	Excluded[a]	0	.0
	Total	226	100.0
a. Listwise deletion based on all variables in the procedure.			

Reliability Statistics	
Cronbach's Alpha	N of Items
.806	5

Scale: Perceived Behavioral Control

Case Processing Summary			
		N	%
Cases	Valid	226	100.0
	Excluded[a]	0	.0
	Total	226	100.0
a. Listwise deletion based on all variables in the procedure.			

Reliability Statistics	
Cronbach's Alpha	N of Items
.845	5

Scale: Moral Norms

Case Processing Summary			
		N	%
Cases	Valid	226	100.0
	Excluded[a]	0	.0
	Total	226	100.0
a. Listwise deletion based on all variables in the procedure.			

Reliability Statistics	
Cronbach's Alpha	N of Items
.623	5

Scale: Recycling Behavior

Case Processing Summary			
		N	%
Cases	Valid	226	100.0
	Excluded[a]	0	.0
	Total	226	100.0
a. Listwise deletion based on all variables in the procedure.			

Reliability Statistics	
Cronbach's Alpha	N of Items
.785	5

Pearson's Correlation Coefficient Analysis

Correlation						
		ATT	SN	PBC	MN	RB
Attitude (ATT)	Pearson Correlation	1	-0.003	.360**	0.118	.198**
	Sig. (2-tailed)		0.962	0.000	0.077	0.003
	N	226	226	226	226	226
Social Norms (SN)	Pearson Correlation	-0.003	1	.224**	.449**	.255**
	Sig. (2-tailed)	0.962		0.001	0.000	0.000
	N	226	226	226	226	226
Perceived Behavioral Control (PBC)	Pearson Correlation	.360**	.224**	1	.561**	.550**
	Sig. (2-tailed)	0.000	0.001		0.000	0.000
	N	226	226	226	226	226
Moral Norms (MN)	Pearson Correlation	0.118	.449**	.561**	1	.581**
	Sig. (2-tailed)	0.077	0.000	0.000		0.000
	N	226	226	226	226	226
Recycling Behavior (RB)	Pearson Correlation	.198**	.255**	.55099	.581**	1
	Sig. (2-tailed)	0.003	0.000	0.000	0.000	
	N	226	226	226	226	226

** Correlation is significant at the 0.01 level (2-tailed).

Multiple Linear Regression Analysis

Variables Entered/Removed[a]			
Model	Variables Entered	Variables Removed	Method
1	ATT, MN, PBC, MN, RB[b]	.	Enter
a. Dependent Variable: RB			
b. All requested variables entered.			

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.642[a]	.412	.402	.66427
a. Predictors: (Constant), ATT, MN, PBC, MN.				

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	68.468	4	17.117	38.792	.000[b]
	Residual	97.517	221	.441		
	Total	165.985	225			
a. Dependent Variable: RB						
b. Predictors: (Constant), ATT, MN, PBC, MN.						

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficient	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.273	.331		.826	.410
	ATT	.034	.048	.039	.700	.485
	SN	.006	.063	.006	.099	.921
	PBC	.400	.068	.310	4.625	.000
	MN	.473	.081	.400	5.874	.000
a. Dependent Variable: RB						

Central Tendencies Measurement of Constructs

Descriptive Analysis					
N=226	Mean	Median	Std. Deviations	Variance	Range
ATT	3.5602	4.0000	0.98937	0.979	4.00
SN	3.9513	4.0000	0.79416	0.631	3.60
PBC	3.9540	4.0000	0.66614	0.444	2.80
MN	3.9920	4.0000	0.72696	0.528	4.00
RB	3.8876	4.0000	0.855890	0.738	4.00