

CHAPTER 3

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3.0 RESEARCH METHODOLOGY

3.1 Introduction

Chapter 3 discusses the methodology of this thesis and provides an overview of the methods to evaluate this study. The development of a conceptual framework, as well as the independent and dependent variables is based on the supporting literature review in the previous chapter. The development of hypotheses, data collection method, questionnaire design, sampling design and data analysis is also presented.

3.2 Research Design

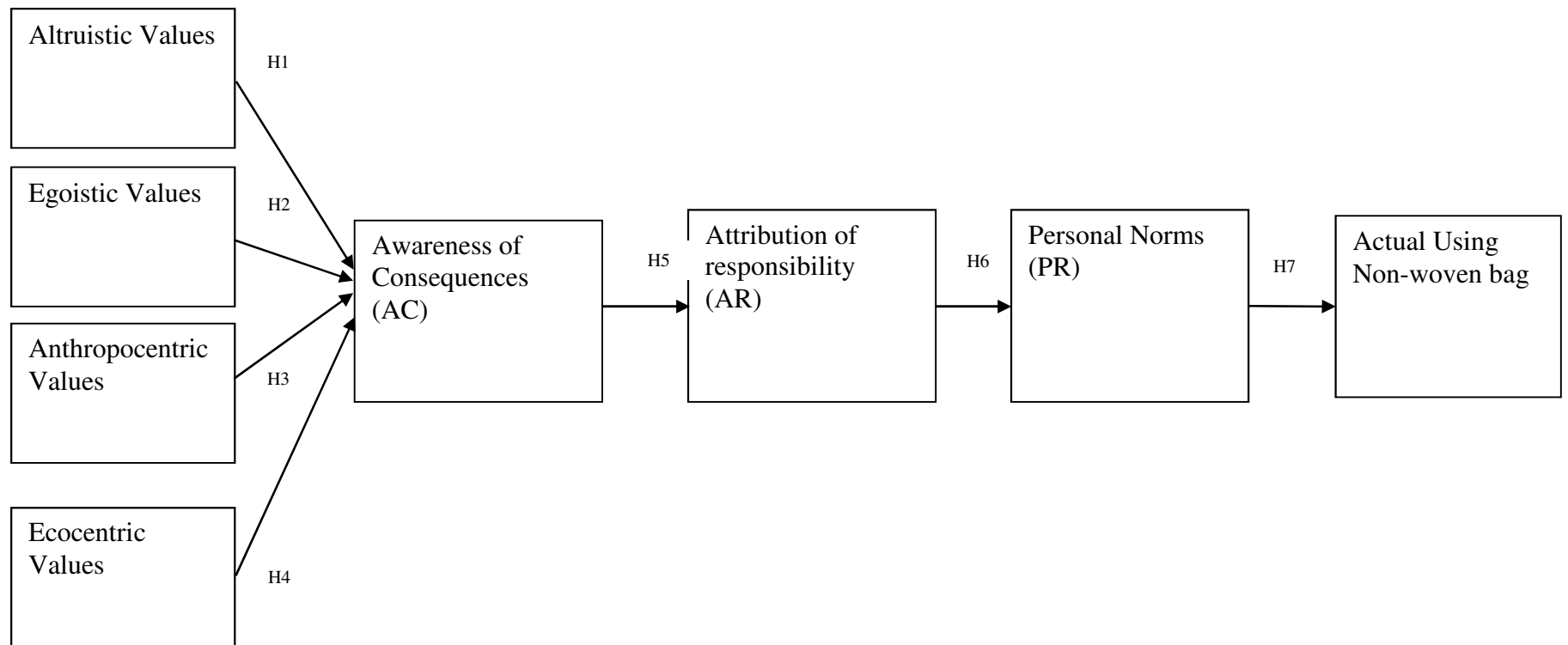
This is a descriptive research that has adopted the quantitative method. Data was collected through the use of physical and online questionnaires. Physical questionnaires were distributed at the University of Malaya, City Campus and work places, while the online questionnaire used the Monkey Survey and posted the link on Social Networks such as Facebook, MSN instant messenger and email. All the data were coded and underwent a screening process to ensure there were no missing data, extreme cases or outliers. In the event of missing data or outliers, the mean value replaced the outlier or the case was deleted. Statistical Package for the Social Sciences (SPSS V18) software was used to analyse the data, with the alpha level set at 0.05 the reliability analysis was carried out to check the internal consistency. The Cronbach's alpha coefficient

was set at 0.6. According to Nunnally (1967), in the research of social sciences and consumer behaviour, the Cronbach's alpha coefficient of a scale can be accepted at above 0.6. Factor analysis was also carried out in order to reduce unrelated data. Descriptive analysis, Pearson's correlation and multi regression were also conducted.

3.3 Research Framework

This study aims to test the applicability of the Value-Belief-Norm (VBN) Theory in understanding consumer behaviour in using non-woven bags. As per the literature review in the previous chapter, this research framework will adopt the theoretical framework of the VBN theory, which has been widely used to test consumer behaviour in respect of green products. Four constructs can influence the consumers' use of green products (non-woven bags): consumer values (altruistic values, egoistic values, anthropocentric values and ecocentric values), consumer awareness of consequences (AC), attitude of responsibility (AR) and personal norms (PR). The dependent variable is the actual usage of non-woven bags, while the independent variable is consumer values (altruistic values, egoistic values, anthropocentric values and ecocentric values). The mediating variables are consumer awareness of consequences (AC), attitude of responsibility (AR) and personal norm (PR). The research framework and hypotheses are shown below in Figure 3.1.

Figure 3.1: Research Framework of the Study



3.4 Development of Hypotheses

The development of the hypotheses is based on the literature review in the previous chapter.

3.4.1 Consumer Values

In the study of Schwartz 1977, individual altruistic values should increase when the individual is made aware of the suffering of others and feels obligated to reduce this suffering. However, generalization posits that individuals have other more important values and the level of altruistic value of other relevant values may be different across individuals (Stern, 1999). Therefore, Stern expanded Schwartz's model, not limiting it to altruistic values, but explored other values, such as egoistic values, anthropocentric values, and ecocentric values which can influence consumers to adopt green products (Stern 1999; Stern 2000; de Groot and Steg, 2008; Hansla et al., 2008; Jansson 2010; Ibtissem, 2010). Therefore, the first four hypotheses are as below:

H1: Altruistic value is positively related to awareness of the consequences.

H2: Egoistic value is positively related to awareness of the consequences.

H3: Anthropocentric value is positively related to awareness of the consequences.

H4: Ecocentric value is positively related to awareness of the consequences.

3.4.2 Awareness of the Consequences

Awareness of the Consequences (AC) is one of the major influences that underlie pro-environmental attitudes and behaviour. In the pro-environmental context, it emphasises threats towards non-human species and the biosphere (Stern et al., 1993; Stern and Dietz, 1994). Therefore, individuals who have high levels of awareness of the consequences will most likely behave pro-environmentally. Therefore, the fifth hypothesis is as below:

H5: Awareness of the consequences is positively related to the attribution of responsibility.

3.4.3 Attribution of Responsibility

Attribution of responsibility (AR) is a factor in which the individual feels the unpleasant consequences to others or believes that environmental conditions could threaten things the individual values and the belief or denegation that one's own actions have contributed to or could alleviate those consequences (Stern et al., 1999). This variable emphasises belief in the responsibility for causing or the ability to alleviate threats to any object or value (Stern et al., 1999). Therefore, individuals who are knowledgeable concerning environmental issues and have pro-environmental values, have a feeling of personal responsibility towards pro-environmental behaviour. Therefore, the sixth hypothesis is as below:

H6: Attribution of responsibility is positively related to the personal norms

3.4.4 Personal Norms

The personal norms are based on the flow from accepting the important individual's values, and beliefs that can create possible dangers or threats and restore the value, therefore, personal norms are the action or willingness to act pro-environmentally to reduce the environment problems (Stern, 2000).

H7: Personal norm is positively related to the consumers' actual use of non-woven bags.

3.5 Questionnaire Development

This is a quantitative approach that tests and analyses all the hypotheses developed in the earlier section using SPSS software. The questionnaire consists of four pages and includes a total of 55 statements and questions. It is divided into two parts; the first part includes the independent, dependent and mediating variables.

In this part, Likert Scales ranging from 1 (strongly disagree) to 7 (strongly agree) are used by the respondents to answer each item and variable. The respondents are able to indicate their level of agreement or disagreement based on the above Likert-type scale. The odd number rating scale is adopted as it allows the respondent to 'sit on the fence' by selecting a neutral statement. It is considered

less threatening to the respondent to select ‘neither’, rather than to admit that they do not know or are not aware of the statements.

The second part focuses on the demographic information of the respondents, which includes information, such as age, gender, marital status, ethnicity, educational background, personal income, occupation, family members staying with the respondent, frequency of grocery shopping, as well as preferred grocery shop.

The respondents are required to answer a specific question at the beginning of the questionnaire to measure whether the consumers have been using non-woven bag(s). If the respondents have not used non-woven bags before, he/she does not need to answer the questions that follow and the case will not be analysed.

All the items asked in the questionnaire were adopted from past studies and are as outlined below:

Table 3.1 Questionnaire Items Summary

Part 1: Section A: Actual Usage non-woven bag				
Code	Statement	Related Hypothesis	Scale Used	Adopted from
Section A: Actual Usage non-woven bag				
SU1	I always bring non-woven bag(s) while shopping.			
SU2	Normally, I leave non-woven bag(s) in my car.			
SU3	I prefer to carry least items with me while shopping.			

SU4	I rather pay a few cents for plastic bag(s) instead of bringing non-woven bag(s).		Likert-type 7 point scale	Ibtissem, 2010
SU5	I re-use my non-woven bag (s) a few times.			
SU6	Usually I bring sufficient non-woven bag(s) during shopping.			
SU7	I use non-woven bag(s) more than plastic bag(s).			
Code	Statement	Related Hypothesis	Scale Used	Adopted from
Section B: Altruistic value				
AAC1	I will work for the welfare of others.	H1	Likert-type 7 point scale	Ibtissem, 2010
AAC2	I provide equal opportunities for all.			
AAC3	I respect the earth.			
AAC4	I respect other species.			
AAC5	I prevent pollution to conserve natural resources.			
AAC6	I prefer a world of peace without war.			
Code	Statement	Related Hypothesis	Scale Used	Adopted from
Section C: Egoistic value				
EAC1	I have the right to lead people.	H2	Likert-type 7 point scale	Ibtissem, 2010
EAC2	I have the right to control the others.			
EAC3	I have possession of good materials/products for living.			
EAC 4	I can influence others.			
Code	Statement	Related Hypothesis	Scale Used	Adopted from
Section D: Anthropocentric value				
PAC1	My most concern about the deforestation is the shortage of lumber.	H3	Likert-type 7 point scale	Ibtissem, 2010
PAC2	It bothers me that humans are running out of oil supply in future.			
PAC3	One of the best things about recycling is save money.			
PAC4	The most important reason of conservation is human survival.			
PAC5	We need to preserve resources to ensure a better standard of living in future.			
Code	Statement	Related Hypothesis	Scale Used	Adopted from
Section E: Ecocentric value				
CAC1	Sometimes it makes me sad to see forest cleared for commercial.	H4	Likert-type 7 point scale	Ibtissem, 2010
CAC2	I prefer wildlife reserve to zoos.			
CAC3	It makes me sad to see natural environment destroyed.			
CAC4	Spending time in nature is a great stress reducer for me.			
CAC5	Sometimes, I see animals are equal to human.			
CAC6	Humans are part of the ecosystem.			

Code	Statement	Related Hypothesis	Scale Used	Adopted from
Section F: Awareness of Consequences				
AC1	Plastics pollution will be a problem for other species.	H5	Likert-type 7 point scale	Ibtissem, 2010
AC2	Using non-woven bag(s) can reduce pollution.			
AC3	Environment quality will improve if we use less plastic bags.			
AC4	Plastic bags pollution will be a serious problem for the country.			
AC5	Using non-woven bag(s) is an advantage for the country.			
AC6	Using non-woven bag(s) is a benefit to me and my family			
AC7	Using plastic bag(s) can associate people personality.			
Code	Statement	Related Hypothesis	Scale Used	Adopted from
Section G: Attribution of Responsibilities				
AR1	I am responsible for the plastics pollution.	H6	Likert-type 7 point scale	Ibtissem, 2010
AR2	I feel responsible for the earth resources.			
AR3	I feel responsible for global plastics pollution.			
AR4	My contribution to the pollution issue is negligible.			
AR5	Individual is unable to reduce plastics pollution problem.			
Code	Statement	Related Hypothesis	Scale Used	Adopted from
Section H: Personal Norm				
PR1	I feel personally obliged to reduce plastic bag(s) pollution.	H7	Likert-type 7 point scale	Ibtissem, 2010
PR2	I feel morally obliged to reduce plastic bags pollution regardless of what other do.			
PR3	People like me should do everything they can to reduce plastic bag(s) usage.			
PR4	I feel guilty when I use plastic bag(s).			
PR5	I would be a better person if I use non-woven bag(s).			

3.6 Pilot Test

The main objective of a pilot test is to preview how long it takes to complete the questionnaire and the level of difficulty in answering the questions. Therefore, a pilot test or pre-test of the structured questionnaire was conducted before distributing the questionnaires to the public. A total of 30 respondents

participated in the pilot test and the questionnaire was assessed in terms of ease of understanding, logical consistency, the sequence of items, contextual relevance to enable the questionnaire to be further refined. The average time taken by respondents to complete the questionnaires was 15 min. The respondents were satisfied with the sequence of the items and understood the questionnaire. The Cronbach's alpha for all constructs was above 0.6, which reflects internal consistency of the scale.

3.7 Sampling Design

In this study, the methods of sampling included convenience and snowball sampling. Both methods are classified as non-probability sampling methods. All respondents were required to spend around 10-15 minutes to complete the questionnaire on a voluntary basis. The use of this method was employed as it is relatively low cost, convenient and provides a high response rate.

The unit of analysis in this study is the individual who uses non-woven bags while shopping; the target respondent age should be above 15. The target sample size is 400, which, assuming 75% usable data, will yield about 300 respondents. Although Malaysia is a multiracial country, no quota for ethnic group was set due to the limited time frame and resources available for this study.

3.8 Data Collection Procedure

This study used the survey method and distributed the questionnaires to the public. Respondents could be either Malaysian or foreign as long as he/she lives in Malaysia and uses non-woven bags.

A total of 100 physical questionnaires were distributed to family members, friends, colleagues, customers and course mates. Respondents were allowed to take them home and submit them within the time frame. In addition, some of the surveys were done online. The Monkey Survey website (www.monkeysurvey.com) was used to create the questionnaire and circulate the link via email, instant messenger, and social networks such as Facebook.

The duration for the data collection was about two weeks. A total of 338 useable questionnaires were collected and were used for further analysis. There were 288 usable surveys collected from online facilitation and 50 usable surveys from physical questionnaires.

3.9 Data Analysis Technique

The collected data were manually screened to determine the incomplete responses and those respondents who do not use non-woven bags. This screening process was to ensure there were no missing data. All completed questionnaires were coded using a numerical value for data entry. SPSS

software was used to analyse the data gathered. From the processed output, the possible reasons for a particular relationship between altruistic values, egoistic values, anthropocentric values, ecocentric values, and awareness of consequences (AC), attribution of responsibility (AR), personal norms (PR) and consumers using non-woven bags can be determined. The analysis includes testing for normality, descriptive analysis, validity and reliability. A short summary of the analysis is listed below in Table 3.2.

Table 3.2: Type of analysis

Type of Analysis	Methodology	Objective of Analysis
Descriptive Analysis	Frequencies, mean, standard deviation	To analyse and understand the respondent's demographic profile
Normality Test	Histogram chart, boxplot, Kurtosis, Skewness analysis	To ensure the data are normally distributed
Reliability Test	Cronbach's alpha	To measure the consistency of the items
Validity Test	Factor analysis	To ensure the variables are in the manageable level prior to multiple regression analysis
Correlation	Pearson's correlation	To analyse the strength and direction of the relationship between two continuous variables
Multiple regression analysis	Standard multiple regression	To explore the relationship between the dependent and independent variables

3.10 Summary

This chapter explained the research framework and method used to evaluate the data. This chapter also revealed the questionnaires development, sampling design, and data collection procedure as well as the techniques used for analysis. All data will be used in the analysis in the next chapter.