THAI CONSUMERS' PERCEPTION AND BEHAVIOR TOWARD ENVIRONMENTALLY FRIENDLY FOOD AND BEVERAGE PACKAGING

BY

MISS THUNYAPORN SONGSERMSAWAD

AN INDEPENDENT STUDY SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE PROGRAM IN MARKETING (INTERNATIONAL PROGRAM)

FACULTY OF COMMERCE AND ACCOUNTANCY

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ENTITLED

THAI CONSUMERS' PERCEPTION AND BEHAVIOR TOWARD
ENVIRONMENTALLY FRIENDLY FOOD AND BEVERAGE PACKAGING

was approved as partial fulfillment of the requirements for
the degree of Master of Science Program in Marketing (International Program)

on 18 MAY 2020

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Member and Advisor

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Independent Study Title	THAI CONSUMERS' PERCEPTION AND BEHAVIOR TOWARD ENVIRONMENTALLY FRIENDLY FOOD AND BEVERAGE PACKAGING
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ABSTRACT

At present, many natural disasters and incidents occur from environmental destruction. Many countries are trying to raise consumer awareness about environmental conservation. Plastic pollution is still a major issue that contributes to the global warming situation. This research is a contemporary topic in applied marketing and the area of social issues. The purpose of the research is to determine the perception and attitudes of Thai consumers toward environmentally friendly packaging in the food and beverage industry. Furthermore, it will attempt to identify factors that act as triggers or barriers for consumers in their decision toward using or not using environmentally friendly food and beverage packaging.

This study focuses on a group of Thai consumers who are millennials and live in the Bangkok metropolitan area and purchase food and beverages on their own. The research used qualitative and quantitative analysis and involved both exploratory and descriptive research. The exploratory research included secondary data and in-depth interviews while the descriptive research was carried out using an online questionnaire.

The qualitative research explored customer insights to identify factors that act as triggers or barriers on consumer decision making toward using or not using environmentally friendly packaging of food and beverages. Additionally, the

questionnaire measured the current perceptions, attitudes, and behaviors of consumers toward environmentally friendly packaging. SPSS was used to analyze the data.

Results revealed that the most popular environmentally friendly packaging for on the go consumption are shopping bags, reusable cups or tumblers. Furthermore, an important factor that promotes the use of environmentally friendly packaging is whether or not it has ‘a long lifetime of use’. On the other hand, a barrier that affects the decision not to use them is ‘unreasonable price’. Moreover, data regarding social influences reveal that family members have a statistically significant influence on the individual’s decision toward using such packaging. As for the marketing mix, the factor that was most selected by the respondents and has the highest mean compared with others, is price discount. Furthermore, a point collection to redeem reusable packaging is a statistically significant factor that affects the decision to use environmentally friendly packaging. In terms of influencing factors, data results indicate that price discounts and point of collection for redeeming free reusable packaging play a role in affecting customers’ intention to use environmentally friendly food and beverage packaging. Apart from receiving a normal price discount, the marketing initiative should offer a special day for customers to receive extra price discounts, such as on the customer's birthday. Moreover, since customers are concerned with environmental issues, conducting a campaign for social and environmental causes would result in a good brand image for the company.

Keywords: Environmentally friendly packaging, Environmentally friendly food and beverage packaging, Thai millennials

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Miss Thunyaporn Songsermsawad

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CHAPTER 1
INTRODUCTION

1.1 Introduction

In the past ten years, plastic waste in Thailand has increased to around 12% of total solid waste or approximately 2 million metric tons per year. However, only 0.5 million metric tons are suitable for the recycling process (กรมควบคุมมลพิษ, 2019). The environmental concern is a big issue with global impacts in terms of climate change, and death of marine life, and of mammals because of plastic pollution. National Oceanic and Atmospheric Administration (NOAA) estimates that about 100,000 marine mammals are killed by plastic each year (NOAA, 2018). The research of the University of Exeter in 2019 concerning dolphins, whales, and seals in waters of the UK revealed that 100% of dead animals on the UK coast are caused by the ingestion of plastic. Furthermore, the death of animals is often a direct result of infectious disease from bacteria, viruses and contaminants found on plastic waste with a slightly higher number than those killed by injury or other reasons (Bodkin, 2019).

Due to these issues, more and more people in Thailand started to and were willing to change their plastic consumption behavior. Despite the availability of several studies on consumer behavior in developed countries in the western region, there are still few in developing countries. In regards to developed countries, Finland's Ministry of Environment, and the Finnish Commerce Federation signed an agreement to reduce the use of single and multiple-use plastic bags in Finnish supermarkets (Yle, 2018). Meanwhile, Thailand will ban three types of plastic, including oxo-degradable plastics, microbeads, and bottle cap seals by this year 2019. Moreover, four types of single-use plastic will be officially banned by 2022, including lightweight plastic bags (with thickness less than 36 microns), food containers made from Styrofoam, single-use plastic cups, and plastic straws (Praiwan & Apisniran, 2019). To conserve and sustainably use water resources, another solution is to use environmentally friendly packaging. However, there is only a small group of people in Thailand who behave as green consumers. The majority of Thai people still lack knowledge and awareness

toward environmentally friendly packaging (Srisakulpanich, 2018). Many single-use plastic consumptions are still found in everyday life or street food kiosks such as plastic utensils including cups, straws, lids, and cup holders made from several types of plastic. These products are used only one time and then thrown away. Once thrown away, the products are incorporated into a poor waste management system where the used plastic gets turned into solid waste and put into a landfill or dumped into the ocean where the material can take around 500 years to decompose (Leblanc, 2019). Therefore, this research is to investigate what factors act as triggers or barriers of consumer decision making toward the use or nonuse of environmentally friendly packaging. This research titled "Thai consumers' perception and behavior toward environmentally friendly food and beverage packaging" is a contemporary topic in applied marketing and the area of social issues.

1.2 Objectives

The following objectives will be addressed in this study.

Objective 1: To determine Thai consumers' perception and attitudes toward environmentally friendly packaging in the food and beverage industry.

a. To identify factors that act as triggers or barriers of consumer decision making toward the use or nonuse of environmentally friendly food and beverage packaging.

b. To identify how marketing mix (product, price, place, and promotion) influences the consumer decision toward use or nonuse of environmentally friendly packaging.

c. To identify how social factors influence the consumer's decision toward the use or nonuse of environmentally friendly packaging.

Objective 2: To determine Thai consumers' awareness of environmental issues in relation to environmentally friendly packaging in the food and beverage industry.

a. Knowledge of environmentally friendly packaging

b. Responsibility to the environment

Objective 3: To identify customer segments for users and nonusers of environmentally friendly food and beverage packaging.

a. To identify demographic profiles on the basis of these criteria: gender, age, education level, occupation, income, etc.

b. To identify geographic profiles using these criteria: residential areas.

c. To identify psychographic factors (personal interests, lifestyle activities, and health concerns)

1.3 Definitions

1. Environmentally friendly food and beverage packaging - Packaging that is often made from reusable or biodegradable packaging materials that are safe and sustainable for both individuals and the environment.

CHAPTER 2
REVIEW OF LITERATURE

2.1 Perception and behavior of consumer toward environmental issues

Nowadays, many Thai consumers are more concerned about the environment. Their properties and loss of life are caused by a variety of environmental issues (e.g., more frequent occurrence of natural disasters in different areas). Therefore, this concern has increased their environmental awareness significantly. However, research has shown that demographic and geographic segmentation is not enough to reveal a customer segment who have environmental concerns. It seems that the psychological variables influence the attitudes of consciousness and minimize behaviors that generate environmental impact (Dansirichaisawat & Suwunnamek, 2014). On the other hand, other research has shown that most consumers are willing to buy brands that advocate sustainability, yet there are a few consumers who are willing to pay for green products (White, Hardisty, & Habib, 2019). The previous research has shown that consumers who have an environmental concern will have significant intentions to purchase eco-friendly products (Yamaqupta, 2018). However, some factors influence their purchase intention, such as psychographic factors, environmental awareness, consumers' Perceived Consumer Effectiveness (PCE), environmental attitude, and promotional activity. Also, the activities promoting their green image are a major factor in motivating one's behavioral change to engage in environmental behavior (Sharma, Sonwalkar, & Kapse, 2013). This review shows that there is also a need for behavioral change among Thai people. Thus, it may be a personal responsibility in the form of actions taken by Thais in order to mitigate the waste problems in Thailand.

2.2 Environmentally friendly packaging trends in Thailand

Packaging seems to be a "salesman on the shelf" in order to communicate information regarding the brand and is an essential factor in the purchase decision process of the consumer at a point of sale (Silayoi & Speece, 2004). Sustainable

packaging means packaging that minimizes the environmental impact (BureauVeritas, 2010).

There are two functions of ecological packaging, including environmental protection and renewable resources with the concept of 4R1D which is Reduce, Reuse, Reclaim, Recycle, and Degradable (Zhanga & Zhaob, 2011). With social and political pressure on environmental concerns, many firms have taken an opportunity to strengthen their competitive advantage through their marketing strategy showing their stance for environmentally friendly products (Chen, 2010). Nevertheless, plastic waste in Thailand has increased to around 12% of total solid waste or around 2 million metric tons per year. Plastic waste dumped into the ocean causes the dissemination of microplastics that affect marine animals, and such contamination eventually returns to humans (Wongruang, 2018). The Thai government may take serious action to solve the environmental crisis derived from the waste management of plastic consumption. Its Plastic Roadmap is a policy that aims to eliminate some of the single-use plastic and to encourage packaging producers to take a further step in the industry (Praiwan & Apisniran, 2019). From this policy, many companies are involved in reducing single-use plastic. For example, Central Group, Thailand's leading retail business company, announced a commitment to become the first plastic bag-free operator (Appendix A). The Central Love the Earth campaign "Say No to Plastic Bags" began on 5 June 2019, which is also World Environment Day. This campaign aims to reduce around 150 million plastic bags (CentralGroup, 2019). In addition, there are several types of eco-friendly packaging innovation s for foods and beverages such as biodegradable material, bamboo fiber, and Poly Lactic Acid (PLA) that have been widely used in biocomposites with natural fibers as reinforcement (Fazita, et al., 2016). The use of environmentally friendly packaging is thus one of the solutions to eliminate plastic and chemical polymers.

2.3 Green marketing strategy

By definition, a green marketing strategy includes marketing activities or services that have no environmental impact and are based on environmental benefits. It can be a product or service which is environmentally friendly in itself or produced in

an environmentally friendly way (Ottman, 2011). It also includes the management process responsible for identifying, anticipating, and satisfying the requirements of customers and society profitably and sustainably (Peattie & Charter, 2003). Recently, some customers have focused more on environmental concerns and are willing to pay more for environmentally friendly products, including renovation or innovation products that reduce environmental damage. Additionally, eco-friendly products have some attributes, such as product quality, convenience, availability, price, and performance equal to general products that attract the attention of the majority of consumers (Ginsberg & Bloom, 2004). Therefore, a marketer should emphasize not only the benefits to consumers but also the business sustainability of marketing activities by creating balance in the three following aspects: profit, social, and environmental responsibilities. This may lead to reaching the highest level of consumer satisfaction.

The green market has become one choice for entrepreneurs, which has widened business opportunities by taking into account the public benefits at the same time (Dansirichaisawat & Suwunnamek, 2014).

2.4 Segmentation of consumers toward environmentally friendly packaging

Consumers have different needs, interests, and demands. Thus, it is not easy to identify every level of their segmentation (Kotler & Keller, 2016). However, normally, segmentation starts from general data such as demographics, geographic, psychographics, behavioral, and benefits (Schlegelmilch, 2016). These influential factors affect environmental behavior. Nevertheless, the previous research has shown that there are certain numbers of consumers who are potentially receptive to a green appeal in the context leading to the green consumers' segment (Ginsberg & Bloom, 2004). Research in 2009 categorized green consumers by the criteria of sustainable attitudes and participation in sustainable involvement (Kreidler & Joseph-Mathews, 2009). Consumers were divided into four groups. The first one is a "True-Blue Green", those of which have robust environmental values and take steps to avoid products from companies that are not environmentally conscious. This group of consumers is willing to sacrifice everything in the way of sustainability. The second segment is a "Lean

Green" who is willing to participate in sustainability without costing them any extra money. The third group is a "Surface green" who understands the sustainability concept or green concept but is unwilling to participate in sustainable activities. The last group is a "Craven Green" who wants to be green and is attracted to the idea of being green but will not step outside their traditional comfort zone. Graphic representation of green market segments can be seen in Appendix B.

2.5 Summary

The literature review has shown that the consumer's perception and behavior toward environmental issues about environmental concerns will predict intention to purchase eco-friendly products. Moreover, in terms of the environmentally friendly packaging trend in Thailand, the Thai government is key in raising awareness about environmental issues. More importantly, the political policy and the environment roadmap show that more serious and immediate actions toward the environment are needed such as eliminating single-use plastic and encouraging the use of sustainable packaging. Environmentally friendly packaging should include the concept of 4R1D which is Reduce, Reuse, Reclaim, Recycle and Degradable. However, there is still a gap in our knowledge about this issue in Thailand. According to the secondary data, there are no research studies about the insights of Thai millennials who live in the Bangkok metropolitan area toward environmentally friendly packaging. Therefore, the purpose of this study is to address this gap as the research will show the factors influencing Thai consumers to use or not to use environmentally friendly packaging and the characteristics of consumers' segmentation that use environmentally friendly packaging for food and beverages.

CHAPTER 3
RESEARCH METHODOLOGY

This chapter describes the research methodology that the study employed to collect primary and secondary data. Firstly, exploratory research was conducted, which includes secondary data and in-depth interviews in order to investigate customers' insight. Secondly, descriptive research was carried out, which involved questionnaire design and data collection. Finally, data analysis was completed.

3.1 Exploratory Research

This research used exploratory research to investigate environmentally friendly packaging and the current situation in the industry. This method enabled the researcher to explore the perception and attitudes of Thai millennial consumers in the Bangkok Metropolitan area toward the use of environmentally friendly packaging when purchasing their own food and beverages. The information from secondary data and in-depth interviews was used to develop the questionnaire.

3.1.1 Secondary Data

Secondary data was collected through public sources, academic journals, textbooks, online articles and websites in order to understand the concept of environmentally friendly packaging and green marketing strategy. The data collected revealed that there is a broader perspective about the current situation in the industry, especially in the Thai society, concerning the government's policy and actions toward the issue of the environment, which is related to Objective 1, Objective 2, and Objective 3.

3.1.2 In-depth Interviews

The purpose of the in-depth interviews was used to gather insightful information from target consumers about triggers or barriers that affect decisions toward the use of environmentally friendly food and beverage packaging. Furthermore, it was a useful way of developing the questionnaire. Ten interviewees revealed their experiences, which was used to address Objective 1 and Objective 2**.**

3.2 Descriptive Research

Descriptive research was employed through the administration of an online survey via the SurveyMonkey system in order to obtain more insights from consumers. This questionnaire investigated the use and nonuse of environmentally friendly packaging as well as the current perception, attitudes, and behaviors of consumers toward environmentally friendly packaging. This questionnaire was pre-tested before the online data collection. The survey was distributed via social media. The data collection was used to achieve Objective 1, Objective 2, and Objective 3.

3.2.1 Independent variables of the research study

1. Consumers' demographics
2. Geographic
3. Psychographics
4. Factors that act as triggers or barriers for the consumer decision

4.1 Marketing mix (product, price, place, and promotion).

4.2 Social factors such as friends, family, celebrities, and environmental campaigns.

3.2.2 Dependent variables of the research study

1. The perception and attitudes toward environmentally friendly packaging
2. Awareness of environmental issues in relation to environmentally friendly packaging
3. Consumer's intentions to use environmentally friendly packaging

Details of the variables are shown in Figure 1.

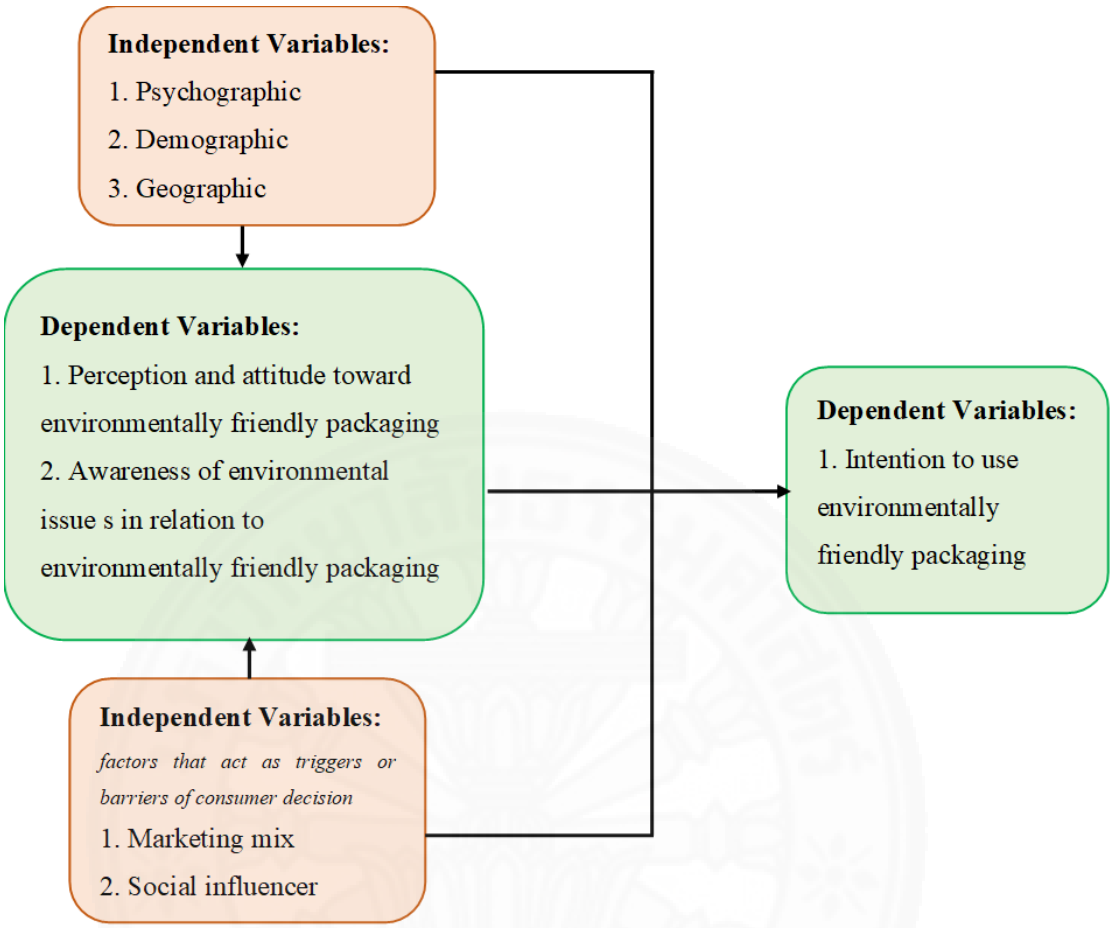

Figure 3.1 Diagram of dependent variables and independent variables

3.3 Sampling Procedure

The sampling process for both the qualitative and quantitative research was conducted by a non-probability convenience sampling method. The respondents were recruited using personal contacts and referral sampling. For the 10 participants of the in-depth interviews, a face-to-face method was carried out at coffee shops near BTS stations or conducted via telephone calls. Meanwhile, the questionnaire was administered to 200 participants by sharing the online survey on social media (such as Facebook and Line) and public pages (e.g. Greenery: Green Reviews).

3.3.1 In-depth interviews

The in-depth interviews were carried out face-to-face at cafés or coffee shops in Bangkok in central urban areas such as Siam, Sukhumvit, and Asok. For respondents who were unable to travel due to inconvenience, in-depth interviews were conducted via telephone calls. The sample questions for the in-depth interviews are exhibited in Appendix C.

3.3.2 Questionnaire

The qualified target respondents were those 1) born between the years 1980 – 1997, 2) who live in the Bangkok Metropolitan area, and 3) who buy food and beverages on their own. The online questionnaire was launched as a pretest to 10 respondents and was then distributed to 200 target respondents. The questionnaire was divided into four parts, the design of which is shown in Table 3.1. The full questionnaire is available in Appendix D.

Table 3.1

Questionnaire Design

Parts	**Questionnaire Response Types**
Screening Questions	Single-selected Choices
Perception and attitude toward environmental	Likert Scale
Factors that act as triggers or barriers of consumer decision toward use or nonuse of environmentally friendly food and beverage packaging.	Likert Scale
Marketing mix influencing decision process toward environmentally friendly packaging	Likert Scale
Demographic, geographic, personal lifestyle	Single-selected Choices and Multiple-selected choices

CHAPTER 4
RESULTS AND DISCUSSION

4.1 In-depth Interviews

There were 10 participants for the in-depth interviews (refer to table 4.1). As for their demographic data, four are males and six are females. Two males are aged 28 and 30 and are business owners who live in Bangkok, while the other two are aged 31 and 34 and are private company employees who live in Bangkok and Samutprakarn, respectively. Among the six females, two are aged 30 and are a part-time employee and a private company employee. Both of them live in Nonthaburi. The other two females are aged 32 and 36 and are both private company employees, and the last two are a female aged 29 who is a government employee and a female aged 38 who is a business owner. All of four females live in Bangkok.

Table 4.1

The Demographics of in-depth interview respondents

Respondents	Age	Gender	Occupation	Province
1	28	Male	Business owner	Bangkok
2	29	Female	Government officer	Nonthaburi
3	30	Female	Part-time employed	Nonthaburi
4	30	Female	Private company employed	Nonthaburi
5	30	Male	Business owner	Bangkok
6	31	Male	Private company employed	Samutprakarn
7	32	Female	Private company employed	Bangkok
8	34	Male	Private company employed	Bangkok
9	36	Female	Private company employed	Bangkok
10	38	Female	Business owner	Bangkok

The results of the respondents that normally use environmentally friendly packaging indicate that the common reason for their decision is their awareness of environmental concerns, as well as a self-realization regarding the use of plastic in their

daily life. “I feel bad whenever I see the news about the death of marine animals from plastic, I would like to reduce single-use plastic in my daily life so I always carry my tumbler to buy coffee every morning,” said one respondent.

There are interesting factors that are key triggers and barriers of consumer decision toward using or not using environmentally friendly packaging. These include their perception and their awareness of the single-use plastic problem, and its effects on the environment. Based on the interview data, some participants stated that they started to use environmentally friendly packaging when they were studying abroad and living in the dormitories that had ground rules about waste management. So, when they came back to Thailand and saw the news about how excess waste is destroying lives, they felt sad for those affected. Many countries have recently experienced natural disasters, and so the respondents wanted to start doing something themselves. They started from reducing the use of plastic bags when they go shopping at supermarkets, which became a habit, so then they started to carry reusable cups and straws more often. “I started from waste management. Then I found that there are lots of plastic bags when I go shopping so I wanted to reuse. So, I got a shopping bag and started using it until it became a habit. Then I bought a tumbler which I now use at work and cafés, and take lunchboxes to use for lunch. Apart from reducing waste, I also get discounts from cafés” said one respondent who used to study abroad in the US and uses environmentally friendly packaging in her daily life.

However, some respondents did mention about the inconvenience and the size of the packaging “I don’t carry anything, not even a backpack. I only carry my wallet and mobile phone with me but I try to reduce single use plastic by not using straws, and when I go shopping with my girlfriend, I use her shopping bag” said one respondent who gives priority to convenience.

All the respondents are aware of the environmental problems but some of them do not want to change their habits unless it impacts their lives directly, as presently they feel that they can still live normally and unaffected. However, the urgency to use environmentally friendly packaging was increased by their family, partner and friends. “I use a reusable cup because my sister bought it for me and encouraged me to be as green as possible” said one respondent who was influenced by her sister. “My girlfriend has a shopping bag, tumbler, and reusable straw so I use hers as well” said one

respondent who uses environmentally friendly packaging because his girlfriend uses them.

4.2 Descriptive Research

4.2.1 Demographics of all Respondents

A total of 271 questionnaires were completed, of which 212 respondents passed the screening process. The completion rate of the questionnaire was 78.00% with a typical time spent of seven minutes. The questionnaire data, from the 200 respondents who completed the demographic section, which included 146 females and 54 males, shows that there were more female respondents (73.00%) than male respondents (27.00%) and no other gender respondents (0.00%), as shown in Table 4.2. This research focuses on respondents from millennials, and they were categorized into age ranges for analysis, as shown in Table 4.3. Range 1, 23-28 years old are defined as 'Younger Millennials', range 2, 29-34 years old are classified as 'Middle Millennials' and range 3, 35-40 years old are deemed as 'Older Millennials'. Most of the respondents (47.00%) are in the Middle Millennials age range (47.00%).

Table 4.2

Gender of respondents

Gender	Count	Percent
Male	54	27.00%
Female	146	73.00%
Other	0	0.00%
Total	200	100.00%

Table 4.3

Age range of respondents

Age range	Count	Percentage
Younger Millennials (23-28 years old)	48	24.00%
Middle Millennials (29-34 years old)	94	47.00%
Older Millennials (35-40 years old)	58	29.00%
Total	200	100.00%

Regarding the marital status, 83.50% are single, 16.00% are married and 0.50% are divorced or separated. As for the education level, 1.00% completed their studies up until high school, 0.50% reached the diploma level, 42.00% have a bachelor's degree, 55.50% have a master's degree and 1.00% have a postgraduate degree or higher. Regarding personal income per month, 5.00% earn less than 20,000 THB/month, 20.50% earn 20,001 - 40,000 THB/month, 37.00% earn 40,001 - 60,000 THB/month, 18.50% earn 60,001 - 80,000 THB/month and 19.00% earn more than 80,000 THB/month. As for their occupation, 4.50% work as government officers, 67.50% are private company employees, 7.50% are state enterprise officers, 6.50% are business owners, 6% are freelancers, 1.50% are part-time employees, 1.50% are housewives, 3.50% are students and the remaining 1.50% have other occupations. Most of the respondents live in Bangkok (77.50%) while the others live elsewhere within the Metropolitan area (22.50%) (see Appendix E)

4.2.2 Environmentally Friendly Packaging Usage

Based on the results concerning environmentally friendly food and beverage packaging usage, the majority of the participants (80.50%) selected the top-two box (Agree and Strongly Agree) from the five-point rating scale when asked

whether they use environmentally friendly food and beverage packaging in their daily life in the past three months. These respondents are categorized as “Users”. As for the “Nonusers”, who select Not Sure and Strongly Disagree, they represent 19.50% of the group. Data results are portrayed in Table 4.4 (see Appendix E).

Table 4.4

The usage of environmentally friendly food and beverage packaging

	Count	**Percentage**
Users	161	80.50%
Nonusers	39	19.50%
Total	200	100.00%

Table 4.5 outlines the demographic of the two groups, which indicates that females constitute 71.43% of the Users and 79.49% of the Nonusers. When distinguished by age range, it can be seen that the Middle Millennials group make up 46.58% of the Users and 48.72% of the Nonusers, as shown in Table 4.6.

Table 4.5

Outline the demographic of gender between two groups

Gender	**Users**		**Nonusers**	
	Count	**Percentage**	**Count**	**Percentage**
Male	46	28.57%	8	20.51%
Female	115	71.43%	31	79.49%
Total	161	100.00%	39	100.00%

Table 4.6

Outline the demographic of age range between two groups

Age range	Users		Nonusers	
	Count	Percentage	Count	Percentage
Younger Millennials (23-28 years old)	41	25.47%	7	17.95%
Middle Millennials (29-34 years old)	75	46.58%	19	48.72%
Older Millennials (35-40 years old)	45	27.95%	13	33.33%
Total	161	100.00%	39	100.00%

Moreover, the one-way Analysis of Variance (ANOVA) was used to highlight any significant differences between the mean frequency usage scores of the three age range groups. When the groups were compared, ANOVA showed there to be no significant differences between the age range and frequency usage (F (2, 197) = 0.586, $p > .05$)

Regarding the frequency of usage of environmentally friendly food and beverage packaging separated by type of packaging, the majority of the environmentally friendly packaging that the respondents have used in the past three months are shopping bags (80.50%) and reusable cups or tumblers (60.00%). When comparing the Users and Nonusers, the most popular type of packaging used by both groups are shopping bags, with the percentage of respondents in both groups being 81.99% and 74.36%, respectively, as demonstrated in Table 4.7. Additionally, the Pearson's Chi-Squared Test show that the Chi-square statistic is at a significant level of .05 between two groups (see Appendix F).

Table 4.7

Outline the use of environmentally friendly packaging between Users, Nonusers and all respondents

	Users			Nonusers			All respondents		
	Count	**Percentage**	**Mean**	**Count**	**Percentage**	**Mean**	**Count**	**Percentage**	**Mean**
Often to all the time use reusable cup or tumbler	103	63.98%	3.4907	17	43.59%	3.2821	120	60.00%	3.4500
Often to all the time use reusable bottle	43	26.71%	2.5280	12	30.77%	2.6154	55	27.50%	2.5450
Often to all the time use reusable straw	42	26.09%	2.2733	4	10.26%	1.6667	46	23.00%	2.1550
Often to all the time use reusable food container	58	36.02%	2.7888	11	28.21%	2.6667	69	34.50%	2.7650
Often to all the time use reusable utensil	36	22.36%	2.3851	5	12.82%	2.0769	41	20.50%	2.3250
Often to all the time use shopping bag	132	81.99%	4.2484	29	74.36%	4.0000	161	80.50%	4.2000

4.2.3 Key Results of Respondents

The data results highlight the factors that trigger the use of environmentally friendly packaging related to Objective 1. Table 4.8 portrays the five-point rating scale top-two box (Agree and Strongly Agree) concerning key factors that impact the decision to use environmentally friendly packaging. The top two results that respondents selected are as follows, the first is ‘safe to use’ (99.5%, Mean = 4.73) and the second is ‘easy to wash’ (97.00%, Mean = 4.59), when comparing between the Users and Nonusers with the variable from Pearson Chi-Square Tests, the Chi-square statistic is significant at the .05 level (see Appendix G).

The key barriers that contribute to respondents deciding against the use of environmentally friendly packaging, as indicated in the five-point rating scale

top-two box (Agree and Strongly Agree), are ‘inconvenient to carry’ (82.00%, Mean = 4.18) followed by ‘heavy to carry’ (74.50%, Mean = 3.97) (see Appendix H).

Table 4.8

The factors that act as triggers or barriers to use or nonuse of environmentally friendly packaging

How much do you agree with these statements about the environmentally friendly packaging for food and beverage that you use? Environmentally friendly food and beverage packaging:			
	Count	**Percentage**	**Mean**
is made from environmentally friendly material.	152	76.00%	3.95
offers variety in design and is modern.	139	69.50%	3.91
is affordable.	175	87.50%	4.16
is light-weight.	179	89.50%	4.28
has a long lifetime of use.	185	92.50%	4.51
is easy to carry and store.	191	95.50%	4.55
is easy to wash.	194	97.00%	4.59
is safe to use.	199	99.50%	4.73
How much do you agree with these statements about the environmentally friendly packaging for food and beverage that you not to use? Environmentally friendly food and beverage packaging:			
	Count	**Percentage**	**Mean**
has an unreasonable price.	41	70.50%	3.91
is heavy to carry.	49	74.50%	3.97
is too big.	147	73.50%	3.95
is inconvenient to carry around.	164	82.00%	4.18
is hard to find.	104	52.00%	3.51
Inconvenient to Use	146	73.00%	3.94
Unsafe to Use	136	68.00%	3.84

Moreover, when comparing the key trigger and barrier scores for ‘decision to use’ among the age ranges, results indicate three significantly different factors that influence their decision. The first factor is whether the packaging is ‘made from environmentally friendly material’ (F (2, 197) = 4.306, $p < .05$). Follow-up tests

revealed that the mean score for Older Millennials ($M_{OlderMillennials}$ = 4.19) was significantly higher than the mean score for either Middle Millennials ($M_{MiddleMillennials}$ = 3.89) or Younger Millennials ($M_{YoungerMillennials}$ = 3.75). The second factor is whether the packaging has 'variety in design and is modern' (F (2, 197) = 7.110, p < .05). Follow-up tests revealed that the mean score for Middle Millennials ($M_{MiddleMillennials}$ = 4.07) was significantly higher than the mean score for either Older Millennials ($M_{OlderMillennials}$ = 3.60) or Younger Millennials ($M_{YoungerMillennials}$ = 3.94). The last factor is whether the packaging is 'inconvenient to carry around' (F (2, 197) = 4.913, p < .05). Follow-up tests revealed that the mean score for Younger Millennials ($M_{YoungerMillennials}$ = 4.37) was significantly higher than the mean score for either Middle Millennials ($M_{MiddleMillennials}$ = 4.29) or Older Millennials ($M_{OlderMillennials}$ = 3.82) see Appendix I.

4.2.4 Marketing Mix

That data results indicate the influence of the marketing mix, which is related to Objective 2. Respondents were asked on a five-point rating scale to indicate how much influence each factor in the marketing mix had on their use of environmentally friendly food and beverage packaging. Results from the top-two box (Influence and A Lot of Influence) show that respondents expressed that the highest influence is 'price discount' (82.50%, Mean = 3.98) (See Table 4.9). However, when comparing between the Users and Nonusers group with the marketing mix variables, the significant difference in Chi-square is the 'packaging redemption' that influences the use environmentally friendly packaging (see Appendix J).

Table 4.9

Outlines the marketing mix factors that influence the use environmentally friendly food and beverage packaging

Marketing factor	Count	Percentage	Mean
Price discount (e.g. discount for personal cup or reusable food container)	165	82.50%	3.9800
Double points for members who bring their own packaging	133	66.50%	3.6800
Exclusive checkout line for customers who bring their own reusable packaging	97	48.50%	3.4500
Collect points or stamps for redeeming free reusable packaging	121	60.50%	3.6300

4.2.5 Social Factors

Findings regarding social factors, based on the five-point rating scale top-two box (Influence and A Lot of Influence), show that family members have the highest influence (70.00%, Mean = 3.75), whereas favorite celebrities do not influence their decision as much (18.00%, Mean = 2.66) (See Table 4.10). When compared between the Users and Nonusers group with the variable, the significant difference in Chi-square is family influence in using environmentally friendly packaging (see Appendix K).

Table 4.10

Social factors that influence the use of environmentally friendly food and beverage packaging

Social influence factor	Count	Percentage	Mean
My family use	140	70.00%	3.7500
My friends and/or colleagues use	138	69.00%	3.7200
My favorite celebrities use	36	18.00%	2.6600
Companies that have internal cooperation to encourage employees to use	129	64.50%	3.6100
A social influencer who promotes campaigns through social media	63	31.50%	3.0450

4.2.6 Awareness of Environmental Issues

Based on the results regarding the factors that affect the decision to use environmentally friendly packaging, collected using the five-point rating scale top-two box (Agree and Strongly Agree), the highest percentage is the climate change and global warming issue (94.00%, Mean = 4.40) followed by the issue of plastic pollution in the ocean (93%, Mean = 4.42), as shown in Table 4.11. However, when compared between the two groups, Users and Nonusers, there is only one factor that has a Chi-

square significant difference, which is news about the death of animals from plastic, whereas for the other factors, there is no significant difference (see Appendix L).

Table 4.11

The awareness of environmental issues

	All respondents		
	Count	**Percentage**	**Mean**
News about the death of animals from plastic	184	92.00%	4.3750
Plastic pollution in the ocean	186	93.00%	4.4250
Climate change and Global warming	188	94.00%	4.4400
Waste management problem	181	90.50%	4.3200
Microplastic contamination in human	178	89.00%	4.3650

4.2.7 Responsibility to the Environment

According to the data results, most of the respondents are aware of the plastic waste that is produced in a day (92.50%, Mean = 4.45) but the behavior to separate waste (68.50%, Mean = 3.66) and to keep recycled packaging for the recycling process (58.50%, Mean = 3.53) have lower percentages when compared with other behaviors (Table 4.12). This result indicates that individuals in Thailand are aware of the issue but are not willing to become active in waste management.

Table 4.12

The responsibility to the environment

	All respondents		
	Count	**Percentage**	**Mean**
I want to reduce the waste I produce.	180	90.00%	4.0950
I feel bad for the death of animals from plastic waste.	178	89.00%	4.2000
I realize how much plastic waste I produce in a day.	185	92.50%	4.4500
I always separate types of waste when putting rubbish in the trash.	137	68.50%	3.6600
I always put aside recyclable packaging for the recycling process.	117	58.50%	3.5350

Regarding the respondents' perception toward the intention of using environmentally friendly food and beverage packaging, results show that only four respondents selected Agree and Strongly Agree from the five-point rating scale top-two box, which states that dealing with plastic pollution should be 'the responsibility of government, not individual' (2.00%, Mean = 1.40). This means that the remaining participants believe that it is the responsibility of individuals to take action regarding plastic pollution. As for the statement 'plastic pollution is not affecting my life or my family', five respondents selected Agree and Strongly Agree from the five-point rating scale top-two box (2.50%, Mean = 1.65), as shown in Table 4.13. Moreover, when compared between Users and Nonusers, results indicate a significant difference between the groups in the Pearson Chi-Squared (1, N = 200) = 11.958, $p = .001 < .05$ (see Appendix M).

Table 4.13

The perception toward the intention to use environmentally friendly food and beverage packaging

	All respondents		
	Count	**Percentage**	**Mean**
I do not want to change my usual habits by using environmentally friendly food and beverage packaging.	26	13.00%	2.2600
I do not think using environmentally friendly food and beverage packaging will solve environmental problems.	29	14.50%	2.1350
It is the job of the government to take action about plastic pollution, not individuals.	4	2.00%	1.4000
I do not think plastic pollution is affecting my life or my family.	5	2.50%	1.6500
I do not think I produce that much plastic waste in a day.	34	17.00%	2.3100

4.2.8 Knowledge of Environmentally Friendly Packaging

As for data results concerning the factors that affect the decision to use environmentally friendly packaging, based on the number of Agree and Strongly Agree on the five-point rating scale top-two box, the most influencing factor is whether the packaging is safe for the environment (99.50%, Mean = 4.67), followed by whether

the packaging is made from reusable materials (94.50%, Mean = 4.29), as portrayed in Table 4.14. However, when compared between the two groups, Users and Nonusers, results indicate there to be only one factor that is significantly different in the Chi-square statistics, which is whether the environmentally friendly food and beverage packaging is made from reusable materials with the Pearson Chi-Squared (1, N = 200) = 4.95, p = .025 < .05 (see Appendix N).

Table 4.14

The knowledge of environmentally friendly food and beverage packaging

	Users			**Nonusers**			**All respondents**		
	Count	**Percentage**	**Mean**	**Count**	**Percentage**	**Mean**	**Count**	**Percentage**	**Mean**
packaging that is made from reusable materials	155	96.27%	4.3230	34	87.18%	4.1794	189	94.50%	4.2950
produced with little to no environmental waste	148	91.93%	4.3727	36	92.31%	4.2307	184	92.00%	4.3450
	Users			**Nonusers**			**All respondents**		
	Count	**Percentage**	**Mean**	**Count**	**Percentage**	**Mean**	**Count**	**Percentage**	**Mean**
packaging that is made from biodegradable materials	151	93.79%	4.3043	37	94.87%	4.3846	188	94.00%	4.3200
safe for people	142	88.20%	4.4534	34	87.18%	4.4102	176	88.00%	4.4450
safe for the environment	160	99.38%	4.7143	39	100.00 %	4.4871	199	99.50%	4.6700
made from recycled material	116	72.05%	3.8758	26	66.67%	3.5897	142	71.00%	3.8200
packaging that is made from natural materials	142	88.20%	4.1988	35	89.74%	4.2564	177	88.50%	4.2100
packaging that is made from natural materials	142	88.20%	4.1988	35	89.74%	4.2564	177	88.50%	4.2100

4.2.9 User Segmentation Description

Among the Users, 161 respondents can be classified based on the psychographic factors regarding their personal interests and lifestyle activities, which were used in the Factor Analysis in order to group the respondents. As shown in Table

4.15, there are four groups of factors, which are Caring and Sharing, Straightforwardness, Entertainment and Socialization.

The Two-step Cluster and K-means Cluster Analysis were used with the four factors to classify respondents into customer segments. According to the findings, as shown in Table 4.16 and Table 4.17, 43 respondents were given the name 'Social Savvy' because they love social media and play as a team, 59 respondents were classified as 'Entertainer' because they are movie lovers, and lastly, 59 respondents were deemed as 'Serious Supporter' because they volunteer socially and are not interested in entertainment.

On the other hand, since there are only 39 respondents in the Nonuser group, segment classification was not carried out due to an insufficient number of participants.

Table 4.15

Psychographic component from Factor Analysis Rotated Component Matrix

	Component			
	Factor 1	**Factor 2**	**Factor 3**	**Factor 4**
I like art such as painting and/or drawing.	0.795			
I like to participate in volunteer activities.	0.671			
I like to see exhibitions (e.g. art, photo, antiques, etc.).	0.651			
I like reading books, articles, etc.		0.750		
I like to play individual sports (e.g. running, swimming, yoga, etc.).		0.730		
I always pay attention to political news.		0.589		-0.448
I like to watch movies			0.815	
I like to watch television			-0.403	
I like to use social media.				0.661
I like to play team sports (e.g. football, basketball, volleyball, etc.).				-0.600
I like shopping.			0.485	0.522

Table 4.16

Segments from Cluster Analysis's Final Cluster Centers

Factor	Cluster		
	Segment 1	**Segment 2**	**Segment 3**
Caring empathy	-1.15103	.19965	.63924
Straightforward	-.50719	.04514	.32451
Entertain	-.16486	.62340	-.50324
Social support	.52939	-.78703	.40120

Table 4.17

Clusters Analysis's Number of Cases in Each Cluster

Cluster	**Social savvy**	43.000
	Entertainer	59.000
	Serious supporter	59.000
Valid		161.000
Missing		0.000

The results of the demographic findings of each segment (gender, personal monthly income, education level, occupation, and area of residence) were analyzed using the Pearson's Chi-Squared Test (see Appendix O), which show that gender and occupation are statistically significant. Additionally, data shows that more than 20 percent of the cells in this subtable have expected cell counts of less than 5, therefore, Chi-square results may be invalid. The demographic data was crossed examined with each segment, the results are as follows (see Appendix P):

Social Savvy individuals are made up of mostly females (88.37%) with an age range between 29-34 years old. The majority are private company employees; however, this group has the highest proportion of students when compared

with other groups. Most have a master's degree and a personal income per month of 40,001 – 60,000 THB. Moreover, while most of them live in Bangkok, this group has the highest proportion of individuals living in Samutprakarn, when compared with other groups.

Entertainer individuals are mostly single and 23-28 years old. This group has the highest proportion of males (47.46%) when compared with other classifications. This group consists of mostly private company employees but have a large proportion of State enterprise officers and business owners. Most of them have a master's degree and a personal income per month of approximately 60,001 THB or more. The majority lives in Bangkok.

Serious Supporter individuals are made up of mostly single female aged around 35-40 years old holding a bachelor's degree who work as a private company employee with a personal income per month of around 20,000 – 40,000 THB. The majority live in Bangkok, but this group has the higher proportion of those living in Nonthaburi, when compared with other groups.

The intention to use environmentally friendly packaging is not significantly different among the three segments ($F(2,158) = 0.182$, $p > .05$), according to the Analysis of Variance (ANOVA). (see Appendix Q).

4.3 Relationship between Variables

4.3.1 Factors that act as triggers or barriers of consumer decision

The researcher explored the relationship between factors that act as a trigger or barrier, marketing mix and social influencer (independent variables) and the intention to use environmentally friendly packaging (dependent variable) in separate regression analyses. The results, as shown in Appendix R, indicate that whether environmentally friendly packaging has 'a long lifetime of use' is statistically significant with $p < .05$, while the barrier that affects the decision not to use is 'unreasonable price', which is statistically significant with $p < .05$ as well.

The results of the Regression Analysis of marketing mix 'Collect points or stamps for redeeming free reusable packaging' and social influence 'Family who use environmentally friendly packaging', which are independent variables, and

intention to use environmentally friendly packaging, which is the dependent variable, reveal that both are statistically significant with $p < .05$ (see Appendix S and Appendix T). However, the Regression Analysis results indicate that the perception ‘I want to reduce the waste I produce’ and awareness of ‘Plastic pollution in the ocean’ are statistically significant with $p < .05$, which strongly impact the intention to use environmentally friendly packaging, as shown in Appendix U.

CHAPTER 5
CONCLUSIONS AND RECOMMENDATIONS

5.1 Users of Environmentally Friendly Food and Beverage Packaging

From the results of the data analysis, the researcher found that the respondents who always use environmentally friendly food and beverage packaging were not using every type of packaging in their daily life. The environmentally friendly packaging that are most popular for Users are a shopping bag and reusable cup or tumbler. The results are similar for Nonusers as well.

Regarding the Objective 1 of this research, which is aimed at identifying factors that act as triggers or barriers toward consumer decision to use environmentally friendly food and beverage packaging, data shows that the factor that triggers and affect consumers' decision to use environmentally friendly packaging depend on the lifetime use of packaging products that relates to being reusable. Furthermore, the barrier that contributes against the decision to use environmentally friendly packaging is an unreasonable price. Moreover, data regarding social influences reveal that family members have a statistically significant influence on the individual's decision. As for the marketing mix, the factor that was mostly selected by the respondent and has the highest mean, compared with others, is a price discount. Furthermore, a collection point to redeem reusable packaging is a statistically significant factor that affects the decision to use environmentally friendly packaging.

In terms of the awareness of environmental issues in relation to environmentally friendly food and beverage packaging, results show that the respondents are aware of the issues of climate change causing global warming and plastic pollution in the ocean. Data reveals that plastic pollution in the ocean statistically significantly affects the intention to use environmentally friendly food and beverage packaging as well as realizing how much plastic waste is produced and the desire to reduce the waste they produce each day.

Regarding the overall result of the psychographic factor analysis and customer segmentation, the researcher classified respondents who always use

environmentally friendly food and beverage packaging Users into three segments, which are Social savvy, Entertainer and Serious supporter. However, for Nonusers, the number of respondents is insufficient to do a cluster analysis.

5.2 Recommendations

According to data results, the main barrier that affects the consumers' decision not to use environmentally food and beverage packaging is the inconvenience of carrying the packaging around. Therefore, it is recommended that a solution be found to solve this barrier, which must be explained to consumers, for example, foldable packaging that can reduce in size. It would also be beneficial to make the packaging attractive with a nice design and high functionality, such as making it hangable so that customers can hang it with their bag.

In terms of influencing factors, data results indicate that price discount and point of collection for redeeming free reusable packaging plays a role in affecting customers' intention to use environmentally friendly food and beverage packaging. Apart from receiving a normal price discount, the marketing initiative should offer a special day for customers to receive extra price discounts, such as, on the customer's birthday or special events. Moreover, since customers are concerned with environmental issues, conducting a campaign for social and environmental causes would result in a good brand image for the company. Moreover, for the recommended target consumers, the Social Savvy segment has a high level of intention to use with most of them being female with middle to high income who has a lifestyle of using social media and caring about the environment.

5.3 Limitations of the Research

During the study, the researcher found three specific limitations. The first was the limitation to get a sufficient sample size. The second was the time limitation regarding the development of the questionnaire and its launch on online platforms. The last limitation was the sampling method used for the distribution of the questionnaire. Since the questionnaire was distributed using convenience sampling through social media and among the researcher's connections, via Line and Facebook, the participants

may have come from similar backgrounds. Additionally, since the respondents are mostly female, this means that the male sample size is quite small and may impact the accuracy of the results. Also, since a non-probability sampling method was used, the results should not be generalized to the whole Thai millennials population who live in Bangkok and the Metropolitan area.

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APPENDICES

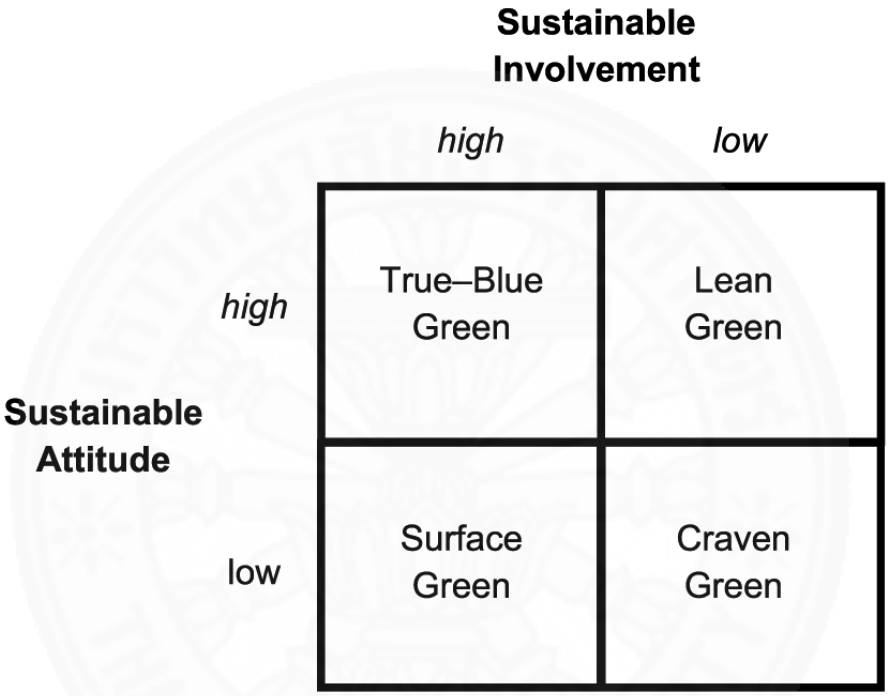
APPENDIX A

CENTRAL "SAY NO PLASTIC BAG" CAMPAIGN

(CentralGroup, 2019).

APPENDIX B

GRAPHIC REPRESENTATION OF PROPOSED GREEN MARKET SEGMENTS



APPENDIX C

SAMPLE QUESTIONS OF IN-DEPTH INTERVIEW

1. Are you aware of environmental concerns?
2. Have you ever read any news or articles about plastic waste problems?
3. How do you feel when you hear news about environmental issues?
4. Does that impact your life?
5. If yes, in which situation does it impact you the most?
6. If no, why not? Please explain your opinion.
7. Do you use any environmentally friendly packaging for food and beverages?
8. Which packaging do you use?
9. Why are you not using another environmentally friendly packaging?
10. How often do you carry these products with you?
11. How long have you used these products?
12. When was the first time you used it? How did you start?
13. How do you feel when you use this packaging?
14. In your opinion, do you think that using or not using environmentally friendly packaging has an impact on anything?
15. Why do you think other people are not using environmentally friendly packaging yet?
16. What do you think would influence these people to use environmentally friendly packaging?
17. Do you think any actions or regulations from the government and private sectors would have an impact on people using environmentally friendly packaging?

APPENDIX D

QUESTIONNAIRE

Screening question

1. Where do you currently live?
    - Bangkok and Metropolitans area
    - Other
2. Were you born between the years 1980 – 1997?
    - Yes
    - No
3. Do you purchase food and beverage on your own?
    - Yes
    - No

The first questions are about your general use of environmentally friendly products and packaging.

4. How much do you agree with the following statement?

   (1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree)

	1	2	3	4	5
I am a person who has used reusable products in my daily life in the past 3 months.					

5. How often have you used the following types of food and beverage packaging for "on the go" consumption in the past 3 months?

(1 = Never 2 = Rarely 3 = Sometimes 4 = Often 5 = All the time)

	1	2	3	4	5
Reusable or biodegradable cup (e.g. reusable tumbler, bamboo cup, silicone folding cup, etc.)					
Reusable or biodegradable bottle (e.g. reusable plastic bottle, bamboo bottle, silicone folding bottle, etc.)					
Reusable straw					
Reusable food container					
Reusable utensils					
Shopping bag					
Other (Please specify_____)					

Now I would like your personal opinion about environmentally friendly packaging for food and beverage.

6. How much do you agree with these statements about the environmentally friendly packaging for food and beverage that you use?
   (1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree)

Environmentally friendly food and beverage packaging:	1	2	3	4	5
is made from environmentally friendly material.					
offers variety in design and is modern.					
is affordable.					
is light-weight.					
has a long lifetime of use.					
is easy to carry and store.					
is easy to wash.					
is safe to use.					

7. How much do you agree with these statements about the environmentally friendly packaging for food and beverage that you use?
   (1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree)

Environmentally friendly food and beverage packaging:	1	2	3	4	5
has an unreasonable price.					
is heavy to carry.					
is too big.					
is inconvenient to carry around.					
is hard to find.					

8. How much do you agree with the following statements?
   (1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree)

	1	2	3	4	5
I do not want to change my usual habits to use environmentally friendly food and beverage packaging.					
I do not think using environmentally friendly food and beverage packaging will solve environmental problems.					
It is the job of the government to take action about plastic pollution, not individuals.					
I do not think plastic pollution is affecting my life or my family.					
I do not think I produce that much plastic waste in a day.					

Now I would like you to think about things that might influence your use of environmentally friendly food and beverage packaging.

9. How much influence do the following items have on your decision to use environmentally friendly food and beverage packaging? (1 = no influence and 5 = a lot of influence)

	1	2	3	4	5
Price discount (e.g. discount for personal cup or reusable food container)					
Double points for members who bring their own packaging (e.g. 7Eleven, Tops Supermarket)					
Exclusive checkout line for customers who bring their own reusable packaging					
Collecting points or stamps for redeeming free reusable packaging					

10. Different people in our lives can influence whether or not we use environmentally friendly food and beverage packaging. How much do you agree that the following groups affect your decision to use environmentally friendly packaging? (1 = No influence and 5 = A lot of influence)

	1	2	3	4	5
My family who uses the packaging.					
My friends and/or colleagues who the packaging.					
My favorite celebrities who use the packaging.					
Companies which have internal cooperation to encourage the employees to use the packaging					
A social influencer who promotes a campaign through social media to encourage people to reduce single-use plastic or promote to use environmentally friendly packaging. (e.g. Thailand green award presented by Cherry Khemupsorn and OneMan and The Sea by Tono Pakin)					

11. How much do you agree that the following factors affected your decision to use environmentally friendly food and beverage packaging?
(1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree)

	1	2	3	4	5
News about the death of animals from plastic					
Plastic pollution in the ocean					

	1	2	3	4	5
Climate change and Global warming					
Waste management problem					
Microplastic contaminate to human					

12. How much do you agree with the following statements?

(1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree)

	1	2	3	4	5
I want to reduce the waste I produce.					
I feel bad for the death of animals from plastic waste.					
I realize how much plastic waste I produce in a day.					
I always separate types of waste before putting rubbish in the trash.					
I always keep recyclable packaging for the recycling process.					

Now I would like your opinion about the definition of environmentally friendly food and beverage packaging.

13. How much do you agree with the following statements?

(1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree)

Environmentally friendly food and beverage packaging is	1	2	3	4	5
A packaging that is made from reusable materials.					
Produced with little to no environmental waste.					
Packaging that is made from biodegradable materials.					
Safe for people.					
Safe for the environment.					
Made from recycled material.					
Made from natural materials.					

Now I would like to ask about your personal lifestyle

14. How much do you agree with the following statements?

(1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree)

	1	2	3	4	5
I like to watch movies					
I like to watch television					
I like reading books, articles, etc.					
I like shopping.					
I like to play sport as a team (e.g. football, basketball, volleyball, etc.).					
I like to play sport alone (e.g. running, swimming, yoga, etc.).					

	1	2	3	4	5
I like to participate in volunteer activities.					
I like to use social media.					
I like art such as painting and/or drawing.					
I like to see an exhibition (e.g. art, photo, antiques, etc.).					
I always pay attention to politics news.					

15. How much do you agree that the following statements represent you?

    (1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree)

	1	2	3	4	5
I read the nutrition table on the packaging.					
I calculate calories before I eat.					
I think the best thing is to have a healthy life.					
I am concerned about plastic contamination in food and beverages.					
I do not eat junk food.					

Demographic questions

16. How old are you?

    Please specify _____

17. Gender

    ☐ Male

    ☐ Female

    ☐ Other

18. Marital status

    ☐ Single

    ☐ Married

    ☐ Widowed

    ☐ Divorced

    ☐ Other

19. Education Level

    ☐ Lower than high school
    ☐ High school
    ☐ Diploma
    ☐ Bachelor's Degree

☐ Master's Degree
☐ Postgraduate and higher

20. Occupation
☐ Government officer
☐ Private company employed
☐ Business owner
☐ Part-time employed
☐ Freelance
☐ Others

21. Monthly personal income level
☐ Less than 20,000 THB
☐ 20,000 – 40,000 THB
☐ 40,001 – 60,000 THB
☐ 60,001 – 80,000 THB
☐ More than 80,000 THB

22. Where do you live
☐ Bangkok
☐ Pathum Thani
☐ Samut Prakan
☐ Nonthaburi
☐ Samut Sakhon
☐ Nakhon Pathom
☐ Samut Songkhram
☐ Other provinces

APPENDIX E

DEMOGRAPHICS OF THE RESPONDENTS

	Users		Nonusers		All respondents	
Gender	**Count**	**Percentage**	**Count**	**Percentage**	**Count**	**Percentage**
Male	46	28.57%	8	20.51%	54	27.00%
Female	115	71.43%	31	79.49%	146	73.00%
Total	161	100.00%	39	100.00%	200	100.00%
	Users		**Nonusers**		**All respondents**	
Age range	**Count**	**Percentage**	**Percentage**		**Count**	**Percentage**
23-28	41	25.47%	7	17.95%	48	24.00%
29-34	75	46.58%	19	48.72%	94	47.00%
35-40	45	27.95%	13	33.33%	58	29.00%
Total	161	100.00%	39	100.00%	200	100.00%
	Users		**Nonusers**		**All respondents**	
Marital status	**Count**	**Percentage**	**Count**	**Percentage**	**Count**	**Percentage**
Single	139	86.34%	28	71.79%	167	83.50%
Married	22	13.66%	10	25.64%	32	16.00%
Divorced or separated	0	0.00%	1	2.56%	1	0.50%
Total	161	100.00%	39	100.00%	200	100.00%
	Users		**Nonusers**		**All respondents**	
Education Level	**Count**	**Percentage**	**Count**	**Percentage**	**Count**	**Percentage**
High school	0	0.00%	2	5.13%	2	1.00%
Diploma	1	0.62%	0	0.00%	1	0.50%
Bachelor's Degree	65	40.37%	19	48.72%	84	42.00%
Master's Degree	93	57.76%	18	46.15%	111	55.50%
Postgraduate and higher	2	1.24%	0	0.00%	2	1.00%
Total	161	100.00%	39	100.00%	200	100.00%
	Users		**Nonusers**		**All respondents**	
Occupation	**Count**	**Percentage**	**Count**	**Percentage**	**Count**	**Percentage**
Government officers	6	3.73%	3	7.69%	9	4.50%
Private company employed	105	65.22%	30	76.92%	135	67.50%
State enterprise officers	15	9.32%	0	0.00%	15	7.50%
Part-time employed	3	1.86%	0	0.00%	3	1.50%
Freelancer	12	7.45%	0	0.00%	12	6.00%
Business owner	10	6.21%	3	7.69%	13	6.50%
Housewife	2	1.24%	1	2.56%	3	1.50%
Student	6	3.73%	1	2.56%	7	3.50%
Other	2	1.24%	1	2.56%	3	1.50%
Total	161	100.00%	39	100.00%	200	100.00%
	Users		**Nonusers**		**All respondents**	
Personal income (monthly)	**Count**	**Percentage**	**Count**	**Percentage**	**Count**	**Percentage**
Less than 20,000 THB	7	4.35%	3	7.69%	10	5.00%
20,000 – 40,000 THB	35	21.74%	6	15.38%	41	20.50%
40,001 – 60,000 THB	60	37.27%	14	35.90%	74	37.00%
60,001 – 80,000 THB	35	21.74%	2	5.13%	37	18.50%
More than 80,000 THB	24	14.91%	14	35.90%	38	19.00%
Total	161	100.00%	39	100.00%	200	100.00%
	Users		**Nonusers**		**All respondents**	
Residential province	**Count**	**Percentage**	**Count**	**Percentage**	**Count**	**Percentage**
Bangkok	123	76.4%	32	82.1%	155	77.50%
Nonthaburi	24	14.9%	6	15.4%	30	15.00%
Samutprakan	8	5.0%	0	0.0%	8	4.00%
Pathum Thani	3	1.9%	1	2.6%	4	2.00%
Nakhonpathom	3	1.9%	0	0.0%	3	1.50%
Total	161	100.00%	39	100.00%	200	100.00%

APPENDIX F

A PEARSON CHI-SQUARE TEST OF THE USE OF ENVIRONMENTALLY FRIENDLY FOOD AND BEVERAGE PACKAGING

A Pearson Chi-Square Tests

Often to all the time use reusable cup or tumbler	Chi-square	5.436
	df	1
	Sig.	.020*
Often to all the time use reusable bottle	Chi-square	.260
	df	1
	Sig.	.610
Often to all the time use reusable straw	Chi-square	4.443
	df	1
	Sig.	.035*
Often to all the time use reusable food container	Chi-square	.850
	df	1
	Sig.	.357
Often to all the time use reusable utensil	Chi-square	1.753
	df	1
	Sig.	.185
Often to all the time use shopping bag	Chi-square	1.164
	df	1
	Sig.	.281

APPENDIX G

A PEARSON CHI-SQUARE TEST OF THE FACTOR THAT AFFECT TO THE USE OF PACKAGING

A Pearson Chi-Square Tests

is made from environmentally friendly material.	Chi-square	2.314
	df	1
	Sig.	.128
offers variety in design and is modern.	Chi-square	.183
	df	1
	Sig.	.668
is affordable.	Chi-square	1.024
	df	1
	Sig.	.312[a]
is light-weight.	Chi-square	.278
	df	1
	Sig.	.598[a]
has a long lifetime of use.	Chi-square	.531
	df	1
	Sig.	.466[a]
is easy to carry and store.	Chi-square	.044
	df	1
	Sig.	.833[a]
is easy to wash.	Chi-square	.754
	df	1
	Sig.	.385[a]
is safe to use.	Chi-square	4.149
	df	1
	Sig.	.042[a,*,c]
has an unreasonable price.	Chi-square	1.871
	df	1
	Sig.	.171
is heavy to carry.	Chi-square	.001
	df	1
	Sig.	.982
is too big.	Chi-square	.018
	df	1
	Sig.	.892
is inconvenient to carry around.	Chi-square	.207
	df	1
	Sig.	.649
is hard to find.	Chi-square	.378
	df	1
	Sig.	.539
is inconvenient to use	Chi-square	.378
	df	1
	Sig.	.539
is unsafe to use	Chi-square	2.991
	df	1
	Sig.	.084

Results are based on nonempty rows and columns in each innermost subtable.
a. More than 20% of cells in this subtable have expected cell counts less than 5. Chi-square results may be invalid.
c. The minimum expected cell count in this subtable is less than one. Chi-square results may be invalid.

APPENDIX H

USE OF ENVIRONMENTALLY FRIENDLY FOOD AND BEVERAGE PACKAGING

How much do you agree with these statements about the environmentally friendly packaging for food and beverage that you use?
Environmentally friendly food and beverage packaging:

	Users			Nonusers			All respondents		
	Count	Percentage	Mean	Count	Percentage	Mean	Count	Percentage	Mean
is made from environmentally friendly material.	126	78.3%	3.98	26	66.7%	3.82	152	76.0%	3.95
offers variety in design and is modern.	113	70.2%	3.91	26	66.7%	3.87	139	69.5%	3.91
is affordable.	139	86.3%	4.19	36	92.3%	4.05	175	87.5%	4.16
is light-weight.	145	90.1%	4.29	34	87.2%	4.26	179	89.5%	4.28
has a long lifetime of use.	150	93.2%	4.53	35	89.7%	4.38	185	92.5%	4.51
is easy to carry and store.	154	95.7%	4.56	37	94.9%	4.51	191	95.5%	4.55
is easy to wash.	157	97.5%	4.58	37	94.9%	4.64	194	97.0%	4.59
is safe to use.	161	100.0%	4.76	38	97.4%	4.62	199	99.5%	4.73

How much do you agree with these statements about the environmentally friendly packaging for food and beverage that you do not use?
Environmentally friendly food and beverage packaging:

	Users			Nonusers			All respondents		
	Count	Percentage	Mean	Count	Percentage	Mean	Count	Percentage	Mean
has an unreasonable price.	117	72.7%	3.95	24	61.5%	3.72	141	70.5%	3.91
is heavy to carry.	120	74.5%	3.97	29	74.4%	3.95	149	74.5%	3.97
is too big.	118	73.3%	3.93	29	74.4%	4.05	147	73.5%	3.95
is inconvenient to carry around.	133	82.6%	4.18	31	79.5%	4.18	164	82.0%	4.18
is hard to find.	82	50.9%	3.48	22	56.4%	3.62	104	52.0%	3.51
is inconvenient to use	116	72.0%	3.91	30	76.9%	4.08	146	73.0%	3.94
is unsafe to use	114	70.8%	3.89	22	56.4%	3.62	136	68.0%	3.84

APPENDIX I

ANOVAS OF THE TRIGGERS AND BARRIERS FOR DECISION TO USE OF RESPONDENT GROUPED BY AGE RANGE

Environmentally friendly food and beverage packaging						
		Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
is made from environmentally friendly material.	Between Groups (Combined)	5.545	2	2.773	4.306	0.015
	Within Groups	126.85	197	0.644		
	Total	132.395	199			
offers variety in design and is modern.	Between Groups (Combined)	8.024	2	4.012	7.11	0.001
	Within Groups	111.171	197	0.564		
	Total	119.195	199			
is inconvenient to carry around.	Between Groups (Combined)	10.335	2	5.167	4.913	0.008
	Within Groups	207.185	197	1.052		
	Total	217.52	199			

APPENDIX J

THE INTENTION TO USE INFLUENCED BY MARKETING MIX AND A PEARSON CHI-SQUARE TEST

	Users			Nonusers			All respondents		
	Count	Percentage	Mean	Count	Percentage	Mean	Count	Percentage	Mean
Price discount (e.g. discount for personal cup or reusable food container)	136	84.47%	4.0186	29	74.36%	3.8205	165	82.50%	3.9800
Double points for members who bring their own packaging	110	68.32%	3.7267	23	58.97%	3.5128	133	66.50%	3.6800
Exclusive checkout line for customers who bring their own reusable packaging	79	49.07%	3.4658	18	46.15%	3.3590	97	48.50%	3.4500
Collect points or stamps for redeeming free reusable packaging	108	67.08%	3.7143	13	33.33%	3.2821	121	60.50%	3.6300

A Pearson Chi-Square Tests

Price discount (e.g. discount for personal cup or reusable food container)	Chi-square	2.224
	df	1
	Sig.	.136
Double points for members who bring their own packaging	Chi-square	1.232
	df	1
	Sig.	.267
Exclusive checkout line for a customer who brings their own reusable packaging	Chi-square	.107
	df	1
	Sig.	.744
Collect points or stamps for redeeming free reusable packaging	Chi-square	14.962
	df	1
	Sig.	.000*

APPENDIX K

THE INTENTION TO USE INFLUENCED BY SOCIAL FACTORS AND A PEARSON CHI-SQUARE TEST

	Users			Nonusers			All respondents		
	Count	Percentage	Mean	Count	Percentage	Mean	Count	Percentage	Mean
My family use	120	74.53%	3.8323	20	51.28%	3.4103	140	70.00%	3.7500
My friends and/or colleagues use	115	71.43%	3.7578	23	58.97%	3.5641	138	69.00%	3.7200
My favorite celebrities use	27	16.77%	2.6708	9	23.08%	2.6154	36	18.00%	2.6600
Companies which have internal cooperation to encourage the employees to use	107	66.46%	3.6211	22	56.41%	3.5641	129	64.50%	3.6100
A social influencer who promotes the campaign through social media	51	31.68%	3.0621	12	30.77%	2.9744	63	31.50%	3.0450

A Pearson Chi-Square Tests

My family use	Chi-square	8.083
	df	1
	Sig.	.004*
My friends and/or colleagues use	Chi-square	2.277
	df	1
	Sig.	.131
My favorite celebrities use	Chi-square	.846
	df	1
	Sig.	.358
Companies which have internal cooperation to encourage the employees to use	Chi-square	1.385
	df	1
	Sig.	.239
A social influencer who promotes the campaign through social media	Chi-square	.012
	df	1
	Sig.	.913

APPENDIX L

DATA OF THE AWAENESS OF ENVIRONMENTAL ISSUES AND A PEARSON CHI-SQUARE TEST

	Users			Nonusers			All respondents		
	Count	**Percentage**	**Mean**	**Count**	**Percentage**	**Mean**	**Count**	**Percentage**	**Mean**
News about the death of animals from plastic	150	93.17%	4.4099	34	87.18%	4.2308	184	92.00%	4.3750
Plastic pollution in the ocean	152	94.41%	4.4720	34	87.18%	4.2308	186	93.00%	4.4250
Climate change and Global warming	152	94.41%	4.4907	36	92.31%	4.2308	188	94.00%	4.4400
Waste management problem	145	90.06%	4.3478	36	92.31%	4.2051	181	90.50%	4.3200
Microplastic contaminate to human	145	90.06%	4.4037	33	84.62%	4.2051	178	89.00%	4.3650

A Pearson Chi-Square Tests

News about the death of animals from plastic	Chi-square	1.530
	df	1
	Sig.	.216a
Plastic pollution in the ocean	Chi-square	2.521
	df	1
	Sig.	.112a
Climate change and Global warming	Chi-square	.246
	df	1
	Sig.	.620a
Waste management problem	Chi-square	.184
	df	1
	Sig.	.668a
Microplastic contaminate to human	Chi-square	.951
	df	1
	Sig.	.329a

APPENDIX M

DATA OF PERCEPTION TOWARD INTENTION TO USE ENVIRONMENTALLY FRIENDLY PACKAGING AND A PEARSON CHI-SQUARE TEST

	Count	Percentage	Mean	Count	Percentage	Mean	Count	Percentage	Mean
I do not want to change my usual habits to use environmentally friendly food and beverage packaging.	18	11.18%	2.1801	8	20.51%	2.5897	26	13.00%	2.26
I do not think using environmentally friendly food and beverage packaging will solve environmental problems.	19	11.80%	2.0435	10	25.64%	2.5128	29	14.50%	2.135
It is the job of the government to take action about plastic pollution, not individuals.	1	0.62%	1.3416	3	7.69%	1.641	4	2.00%	1.4
I do not think plastic pollution is affecting my life or my family.	1	0.62%	1.5342	4	10.26%	2.1282	5	2.50%	1.65
I do not think I produce that much plastic waste in a day.	25	15.53%	2.2547	9	23.08%	2.5385	34	17.00%	2.31

A Pearson Chi-Square Tests

I do not want to change my usual habits to use environmentally friendly food and beverage packaging.	Chi-square	2.418
	df	1
	Sig.	0.12
I do not think using environmentally friendly food and beverage packaging will solve environmental problems.	Chi-square	4.85
	df	1
	Sig.	.028*
It is the job of the government to take action about plastic pollution, not individuals.	Chi-square	8.009
	df	1
	Sig.	.005*,b,c
I do not think plastic pollution is affecting my life or my family.	Chi-square	11.958
	df	1
	Sig.	.001*,b,c
I do not think I produce that much plastic waste in a day.	Chi-square	1.268
	df	1
	Sig.	0.26

APPENDIX N

A PEARSON CHI-SQUARE TEST OF KNOWLEDGE OF ENVIRONMENTALLY FRIENDLY PACKAGING

A Pearson Chi-Square Tests

Packaging that is made from reusable materials.	Chi-square	4.995
	df	1
	Sig.	.025*,b
Produced with little to no environmental waste	Chi-square	.006
	df	1
	Sig.	.937b
Packaging that is made from biodegradable materials.	Chi-square	.065
	df	1
	Sig.	.798b
is safe for people.	Chi-square	.031
	df	1
	Sig.	.860b
is safe for the environment.	Chi-square	.243
	df	1
	Sig.	.622b,c
is made from recycled material.	Chi-square	.442
	df	1
	Sig.	.506
is made from natural materials.	Chi-square	.074
	df	1
	Sig.	.786b

APPENDIX O

A PEARSON CHI-SQUARE TEST OF DEMOGRAPHICS OF USERS' CLUSTERS

A Pearson Chi-Square Tests

Age Range	Chi-square	2.511
	df	4
	Sig.	.643
Gender	Chi-square	17.596
	df	2
	Sig.	.000*
Marital Status	Chi-square	2.002
	df	2
	Sig.	.367b
Education	Chi-square	10.623
	df	6
	Sig.	.101b,c
Occupation	Chi-square	47.282
	df	16
	Sig.	.000*,b,c
Personal income (monthly)	Chi-square	14.786
	df	8
	Sig.	.063b
Residential province	Chi-square	7.094
	df	8
	Sig.	.526b,c

APPENDIX P

DATA OF CLUSTERS' DEMOGRAPHICS

Gender	Social savvy		Entertainer		Serious supporter	
	Count	Percentage	Count	Percentage	Count	Percentage
Male	5	11.63%	28	47.46%	13	22.03%
Female	38	88.37%	31	52.54%	46	77.97%
Age Range	**Social savvy**		**Entertainer**		**Serious supporter**	
	Count	**Percentage**	**Count**	**Percentage**	**Count**	**Percentage**
Age 23-28	10	23.26%	15	25.42%	16	27.12%
Age 29-34	22	51.16%	30	50.85%	23	38.98%
Age 35-40	11	25.58%	14	23.73%	20	33.90%
Marital Status	**Social savvy**		**Entertainer**		**Serious supporter**	
	Count	**Percentage**	**Count**	**Percentage**	**Count**	**Percentage**
Single	38	88.37%	48	81.36%	53	89.83%
Married	5	11.63%	11	18.64%	6	10.17%
Education	**Social savvy**		**Entertainer**		**Serious supporter**	
	Count	**Percentage**	**Count**	**Percentage**	**Count**	**Percentage**
Diploma	1	2.33%	0	0.00%	0	0.00%
Bachelor's Degree	17	39.53%	17	28.81%	31	52.54%
Master's Degree	24	55.81%	41	69.49%	28	47.46%
Postgraduate and higher	1	2.33%	1	1.69%	0	0.00%
Occupation	**Social savvy**		**Entertainer**		**Serious supporter**	
	Count	**Percentage**	**Count**	**Percentage**	**Count**	**Percentage**
Government officer	4	9.30%	2	3.39%	0	0.00%
Private company employed	29	67.44%	32	54.24%	44	74.58%
State enterprise officer	2	4.65%	12	20.34%	1	1.69%
Part-time employed	0	0.00%	0	0.00%	3	5.08%
Freelance	4	9.30%	3	5.08%	5	8.47%
Business owner	0	0.00%	8	13.56%	2	3.39%
Housewife	0	0.00%	2	3.39%	0	0.00%
Student	4	9.30%	0	0.00%	2	3.39%
Other (please specify)	0	0.00%	0	0.00%	2	3.39%
Personal income (monthly)	**Social savvy**		**Entertainer**		**Serious supporter**	
	Count	**Percentage**	**Count**	**Percentage**	**Count**	**Percentage**
Less than 20,000 THB/month	2	4.65%	0	0.00%	5	8.47%
20,000 – 40,000 THB/month	10	23.26%	10	16.95%	15	25.42%
40,001 – 60,000 THB/month	22	51.16%	21	35.59%	17	28.81%
60,001 – 80,000 THB/month	4	9.30%	17	28.81%	14	23.73%
More than 80,000 THB/month	5	11.63%	11	18.64%	8	13.56%
Residential province	**Social savvy**		**Entertainer**		**Serious supporter**	
	Count	**Percentage**	**Count**	**Percentage**	**Count**	**Percentage**
Bangkok	29	67.44%	49	83.05%	45	76.27%
Nonthaburi	8	18.60%	6	10.17%	10	16.95%
Samut Prakan	4	9.30%	3	5.08%	1	1.69%
Pathum Thani	1	2.33%	1	1.69%	1	1.69%
Nakhon Pathom	1	2.33%	0	0.00%	2	3.39%

APPENDIX Q

ANOVAS OF USAGE INTENTION OF SEGMENTATIONS

I am a person who has used reusable products in my daily life in the past 3 months.					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups (Combined)	.031	2	.016	.182	.833
Within Groups	13.571	158	.086		
Total	13.602	160			

Mean comparison

Cluster Number of Case	**Mean**	**Count**	**Std. Deviation**
Social savvy	4.1163	43	.32435
Entertainer	4.0847	59	.28089
Serious Supporter	4.0847	59	.28089
Total	4.0932	161	.29157

APPENDIX R

REGRESSION ANALYSIS OF FACTORS THAT AFFECTED INTENTION TO USE

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.183[a]	.034	.029	.69862

a. Predictors: (Constant), Packaging has a long lifetime of use.

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	3.362	1	3.362	6.888	.009[b]
Residual	96.638	198	.488		
Total	100.000	199			

a. Dependent Variable: I am a person who has used reusable products in my daily life in the past 3 months.
b. Predictors: (Constant), Packaging has a long lifetime of use

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	2.919	.339		8.609	.000	2.251	3.588
Packaging has a long lifetime of use	.195	.074	.183	2.625	.009	.049	.342

a. Dependent Variable: I am a person who has used reusable products in my daily life in the past 3 months.

Excluded Variables[a]

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
					Tolerance
is made from environmentally friendly material.	.117[b]	1.685	.094	.119	.999
offers variety in design and is modern.	.085[b]	1.182	.239	.084	.951
is affordable.	.093[b]	1.308	.192	.093	.969
is light weight.	.042[b]	.570	.570	.041	.896
is easy to carry and store.	.004[b]	.052	.958	.004	.778
is easy to wash.	-.077[b]	-.990	.323	-.070	.803
is safe to use.	.110[b]	1.550	.123	.110	.959

a. Dependent Variable: I am a person who has used reusable products in my daily life in the past 3 months.
b. Predictors in the Model: (Constant), Packaging has a long lifetime of use

APPENDIX S

REGRESSION ANALYSIS OF MARKETING MIX THAT AFFECTED INTENTION TO USE

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.157[a]	.025	.020	.70180

a. Predictors: (Constant), Collect points or stamps for redeeming free reusable packaging

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2.480	1	2.480	5.036	.026[b]
Residual	97.520	198	.493		
Total	100.000	199			

a. Dependent Variable: I am a person who has used reusable products in my daily life in the past 3 months.
b. Predictors: (Constant), Collect points or stamps for redeeming free reusable packaging

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	3.331	.215		15.509	.000	2.907	3.755
Collect points or stamps for redeeming free reusable packaging	.129	.058	.157	2.244	.026	.016	.243

a. Dependent Variable: I am a person who has used reusable products in my daily life in the past 3 months.

Excluded Variables[a]

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
					Tolerance
Price discount	-.007[b]	-.080	.937	-.006	.703
Double points for members who bring their own packaging	-.039[b]	-.397	.692	-.028	.510
Exclusive checkout line for a customer who brings their own reusable packaging	.077[b]	1.047	.296	.074	.917

a. Dependent Variable: I am a person who has used reusable products in my daily life in the past 3 months.
b. Predictors in the Model: (Constant), Collect points or stamps for redeeming free reusable packaging

APPENDIX T

REGRESSION ANALYSIS OF SOCIAL FACTOR THAT AFFECTED INTENTION TO USE

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.210[a]	.044	.039	.69484

a. Predictors: (Constant), My family who uses environmentally friendly food and beverage packaging.

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	4.404	1	4.404	9.121	.003[b]
Residual	95.596	198	.483		
Total	100.000	199			

a. Dependent Variable: I am a person who has used reusable products in my daily life in the past 3 months.

b. Predictors: (Constant), My family who uses environmentally friendly food and beverage packaging.

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	3.165	.216		14.654	.000	2.739	3.591
My family who uses environmentally friendly food and beverage packaging.	.169	.056	.210	3.020	.003	.059	.280

a. Dependent Variable: I am a person who has used reusable products in my daily life in the past 3 months.

Excluded Variables[a]

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
					Tolerance
My friends and/or colleagues who use environmentally friendly food and beverage packaging.	-.010b	-.128	.898	-.009	.815
My favorite celebrities who use environmentally friendly food and beverage packaging.	-.003b	-.041	.968	-.003	.944
Companies which have internal cooperation to encourage the employees to use packaging.	.058b	.817	.415	.058	.950
A social influencer who promotes a campaign through social media to encourage people to reduce single-use plastic	.081b	1.165	.245	.083	.999

APPENDIX U

REGRESSION ANALYSIS OF PERCEPTION THAT AFFECTED INTENTION TO USE

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.255[a]	.065	.060	.68721

a. Predictors: (Constant), I want to reduce the waste I produced.

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	6.493	1	6.493	13.748	.000[b]
Residual	93.507	198	.472		
Total	100.000	199			

a. Dependent Variable: I am a person who has used reusable products in my daily life in the past 3 months.
b. Predictors: (Constant), I want to reduce the waste I produced.

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	2.580	.332		7.761	.000	1.925	3.236
I want to reduce the waste I produce.	.298	.080	.255	3.708	.000	.139	.456

a. Dependent Variable: I am a person who has used reusable products in my daily life in the past 3 months.

Excluded Variables[a]

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
					Tolerance
I feel bad for the death of animals from plastic waste.	.113b	1.334	.184	.095	.654
I realize how much plastic waste I produce in a day.	.084b	1.084	.280	.077	.793
I always separate types of waste before putting rubbish in the trash.	.026b	.367	.714	.026	.933
I always keep recyclable packaging for the recycling process.	-.023b	-.333	.740	-.024	.990

a. Dependent Variable: I am a person who has used reusable products in my daily life in the past 3 months.
b. Predictors in the Model: (Constant), I want to reduce the waste I produce.

BIOGRAPHY

Name	Miss Thunyaporn Songsermsawad
Date of Birth	December 20, 1988
Educational Attainment	2011: Bachelor of Science Packaging Technology, Kasetsart University
Work Position	2018: Artwork Production Specialist Unilever Thai Services Limited
Work Experiences	2014: Inter-Market Supply Import NPD Executive Nestle (Thai) Ltd. 2011: Packaging technologist Mondelēz International