

# A Study of Generation Y Thai Consumers' Knowledge, Attitude and Behavior Related to Plastic Pollution

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**ABSTRACT:** The use of plastic, in many forms, is ubiquitous. Plastic is found in many of our day-to-day products and even though plastic has several useful applications, plastic waste has a detrimental impact on the environment and is life-threatening to humans, animals, and many marine species. The main aim of this exploratory study is to investigate the influence of internal (environmental knowledge and concern), and external factors (interpersonal influence and media) on Gen Y Thai consumers' environmental attitude and behavior relating to plastic pollution. Gen Y consumers are the focus of this study because they account for nearly a third of Thailand's population with high income and spending potential. A total of 550 questionnaires were distributed to Gen Y consumers in 7 areas in the Central Business District of Bangkok, of which 396 were considered valid and used for the analysis. Three hypotheses posited in the study were tested using Simple Regression analysis. The findings showed that both external factors (environmental knowledge and environmental concern) as well as internal factors (interpersonal influence and media) influenced environmental attitude. Environment attitude, in turn, was found to have a significant influence on behavior related to plastic pollution. The findings provide several useful suggestions for policymakers, marketers, and the general public toward inculcating better waste management practices in the Thai context.

**KEYWORDS:** Plastic pollution, Generation Y, Environmental Concern, Interpersonal Influence

## Introduction

Plastic waste, also called plastic pollution, consists of the remnants of plastic objects, such as, bottles, bags, caps, straws, microbeads, etc., that enter the earth's environment and create problems for wildlife, marine, as well as human populations (Moore 2020). Plastic pollution is ubiquitous in Asia, and as per a UNEP report in 2018, half the world's plastic is produced in Asia with approximately 40 percent consumed in the Asia Pacific region. Because plastic is a relatively inexpensive and durable material, over 300 million tons are produced annually for use in a variety of applications. Of this, at least 8 million tons end up in the ocean every year (IUCN 2021). It has been widely reported that marine species often mistake plastic waste for food, ingesting it, or are entangled by plastic debris causing suffocation and death. In fact, MacArthur (2016) claimed that the situation was so dire that there would be more plastic than fish in the ocean by 2050 unless governments and industry took steps to mitigate the problem.

### *Plastic waste in the Thai context*

As per a report published in 2015 by the McKinsey Centre for Business and Environment, Thailand is the 6<sup>th</sup> worst offender for dumping plastic into the sea. Leung (2018) reported that five Asian countries, China, Indonesia, Philippines, Thailand and Vietnam dump more plastic into the ocean than all other countries combined. The Department of Pollution Control reported that each year, Thailand generates almost 2 million tons of plastic waste, which are mostly single-use polyethylene bags, out of which just 25 percent are recycled (Bangkok Post 2020). Of this, approximately 20 percent is generated in Bangkok, Thailand's largest city with a population of approximately 15 million. With the situation becoming increasingly alarming, the Thai government in 2020, banned single-use plastic bags in department stores and retailers nationwide.

Disposal of plastic waste was already a major problem in the past, nevertheless, it has been compounded by the effects of the pandemic. Lockdowns and social distancing have created an increase in plastic waste as food is packaged for delivery in bags, containers, disposable forks, spoons, chopsticks, beverage cups and condiments, all of which make use of plastic. The global health crises has also increased the use of facemasks, gloves and hand sanitizer bottles, some of which have washed up on beaches, even on remote islands (Cottier 2021).

### ***Why study Generation Y?***

Generation Y is the group of people born between 1980 and 1994 and is also known as Millennials or Eco Boomers. They are the world's largest demographic group, made up of approximately 60 million individuals, with developing countries having a higher population of Gen Y than developed countries. Thai Gen Y consumers make up 32 percent of the population of 68 million people. Thus far, there have been studies relating to waste management, household waste separation, reducing plastic bags, etc. (Ittiravivongs 2012; Hohmann *et al.* 2016; Wichai-utcha and Chavalparit 2018; Vassanadumrongdee and Kittipongvises 2017) in the Thai context, however, no studies have focused specifically on Gen Y's knowledge, attitude and behavior related to plastic pollution. It is critical to examine this generation as it is estimated that by 2050, half of Thailand's working population will be Gen Y, which will also be Thailand's largest consumer group (Wangkiat 2016).

### **Literature Review**

The determinants of responsible environmental behavior often include factors considered to be internal to individuals (e.g., knowledge, values, personal norms, beliefs, attitudes) and external forces—contextual, structural or social factors. In the current study, environmental knowledge and concern are considered to be internal factors, and interpersonal influence and social media are external factors.

*Internal Factors:* Knowledge about environmental issues is considered a pre-condition to environmental behavior. Knowledge, in general, is inadequate, people need to know in clear terms about the kind and impacts of environmental threats. Therefore, the transmission of knowledge via educational programs has far-reaching, practical consequences. Mobley, Vagias and DeWard (2009), citing the role of education in the formulation of knowledge, attitude and behavior, argued that the level of education is correlated with both environmental knowledge as well as positive environmental attitude. Environmental concern has been defined as “the degree to which people are aware of problems relating to the environment and support efforts to solve them and/or indicate the willingness to contribute personally to their solutions” (Dunlap and Jones 2002, 485). A Glocalities survey conducted on 189,996 respondents between 2014-2019 revealed that citizens worldwide were increasingly concerned about the reckless exploitation and pollution of the planet (Glocalities 2019).

Based on the above, the following two hypotheses are posited:

H<sub>1.1</sub>: There is a significant influence of knowledge of plastic waste on attitude toward plastic pollution

H<sub>1.2</sub>: There is a significant influence of environmental concern on attitude toward plastic pollution

### ***External Factors:***

Previous research has shown a positive relationship between interpersonal influence and ecological behavior. Social learning theory purports that human thoughts, emotions and behavior are the result of both direct experience as well as indirect observation of other people's behavior (Bandura 1977). Sadachar et al. (2016) showed that interpersonal influence

was a significant indicator of green consumption among American youth. Nixon and Saphores (2009) confirmed that consumers who had received three recycling messages from family and friends, work/school were more likely to demonstrate such behavior and this method of information dissemination was the most effective medium to get people to start recycling. Social media's impact on attitude and purchasing behavior has been studied by several authors. Social media offers a more interactive buying experience and is seen as more useful and trustworthy by consumers. Li, Lee and Lien (2012) found that messages on social media increase consumers' willingness to buy, while interactions on social media directly influence purchasing decisions by increasing conformity with peers. Social conformity is stronger in collectivist societies, as Triandis, McCuskar and Hui (1990) reported that for collectivists, messages from certain in-groups such as the tribe, the work group, the family or the nation encourages conformity and is a significant motivation to purchase products/services, especially among young people.

Thus:

H<sub>2.1</sub>: There is a significant influence of interpersonal influence on attitude toward plastic pollution

H<sub>2.2</sub>: There is a significant influence of social media on attitude toward plastic pollution

### ***Attitude – Behavior linkage***

Environmental attitude has been considered a strong predictor of pro-environmental behavior. Previous research has evidenced that an individual's attitude toward environmental problems enables the willingness to engage in responsible environmental behavior and decrease irresponsible human practices toward nature (Kollmuss and Agyeman 2002). Nevertheless, researchers have also found gaps between the attitude-behavior relationship and have attempted to understand which factors directly impact pro-environmental behavior (Kollmuss and Agyeman 2002; Rodriguez-Barreiro et al. (2013).

Thus, the final hypothesis of the study is proposed:

H<sub>3</sub>: There is a significant influence of attitude on behavior related to plastic pollution

Based on the literature reviewed in previous sections, the study proposes a research framework as shown in Figure 1 below:

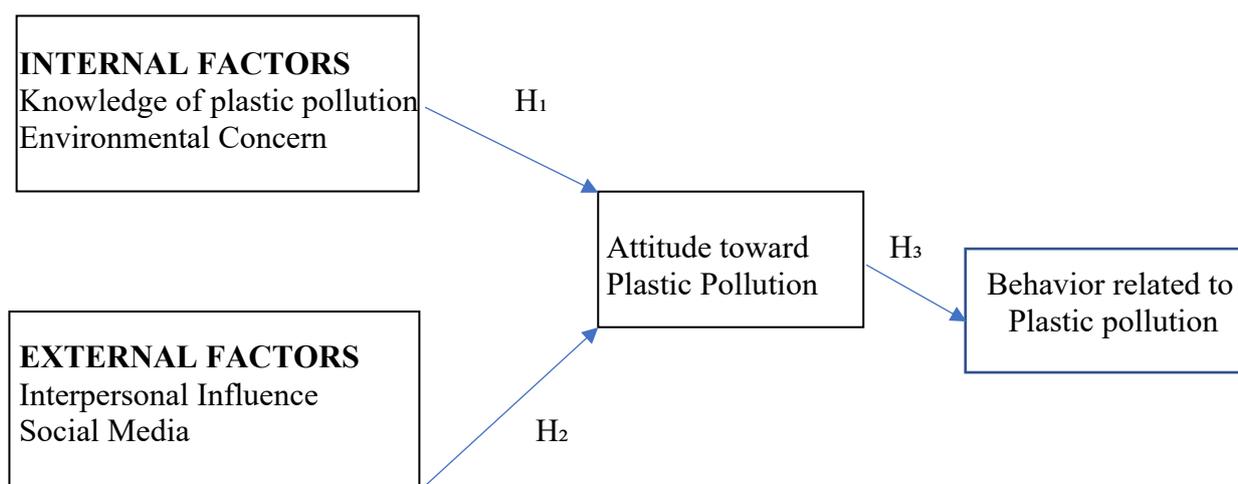


Figure 1. Research Framework

### **Research Methods**

The target population of this research is Thai consumers, both male and female, born between 1981–2000. A total of seven Central Business Districts in Bangkok was used for data

collection as these areas housed many large local and multinational businesses in which many Gen Y consumers were employed. A self-administered questionnaire comprising four sections was used. All items were measured on a five-point Likert scale ranging from 1= strongly disagree to 5= strongly agree. The questionnaire also included general demographic questions such as gender, education and income. Data collection was conducted between October–December 2020.

## Findings

Table 1. Response Rate

Number of distributed questionnaires	Number of completed questionnaires received	Percentage of responses
550	396	72

As table 1 shows, a total of 550 questionnaires were distributed; of this number 154 were rejected because of non-response, bringing the total of usable questionnaires to 396 with a response rate of approximately 72%.

The demographic profile of the respondents is shown in Table 2, descriptive statistics in Table 3, and the hypotheses test results in Table 4 below.

Table 2. Demographic characteristics of sample

Classification	Variable	Percentage
Gender	Male	51.6
	Female	48.4
Earnings per month	Lower than 10,000 Baht	15.1
	10,000 – 20,000 Baht	29.2
	20,001 – 30,000 Baht	21.6
	30,001 – 40,000 Baht	15.3
	40,001 – 50,000 Baht	10.1
	More than 50,000 Baht	8.7
Highest level of education	High School or Below	5.1
	Diploma / Occupational Certificate	10.2
	Bachelor's Degree	51.4
	Master's Degree or Above	33.3

Table 3. Summary of Descriptive Statistics on Variables

No.	Variable Measured	Mean of Responses	Standard Deviation
1	Knowledge of plastic pollution	4.31	.567
2	Environmental Concern	3.78	.525
4	Interpersonal Influence	3.42	.486
5	Social Media	3.72	.531
6	Environmental Attitude	4.15	.536
7	Behavior related to plastic pollution	3.29	.502

Descriptive statistics were used to determine the mean responses for all the variables used in the study to analyze respondents' level of agreement or disagreement. The results show that Knowledge on plastic pollution obtained the highest mean (4.31) (Strongly Agree)

followed by Environmental Attitude (4.15) (Agree). The lowest mean score was Behavior related to Plastic Pollution (3.29) which fell in the Neutral level.

Table 4. Hypotheses test results

Hypothesized relationship	R	R <sup>2</sup>	F	Unstandardized Coefficients (B)	Standardized Coefficients (β)	t-value	Results
H <sub>1</sub> Internal Factors Attitude							
H <sub>a1.1</sub> Knowledge on plastic pollution, Attitude toward plastic pollution	.417	.172	81.626	.392	.415	9.035	Supported***
H <sub>a1.2</sub> Environmental Concern, Attitude toward plastic pollution	.201	.041	16.710	.206	.202	4.088	Supported***
H <sub>2</sub> External Factors, Attitude							
H <sub>a2.1</sub> Interpersonal Influence, Attitude toward plastic pollution	.175	.031	12.424	.193	.175	3.525	Supported***
H <sub>a2.2</sub> Social Media, Attitude toward plastic pollution	.407	.164	76.801	.409	.405	8.764	Supported***
H <sub>3</sub> Attitude toward plastic pollution and Behavior related to plastic pollution	.111	.013	5.004	.105	.112	2.237	Supported*

**Remarks:** Significant at \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

Internal factors which were hypothesized as H<sub>a1.1</sub>, and H<sub>a1.2</sub>, were tested by simple regression analysis. The findings showed the significant influences of knowledge of plastic pollution on attitude ( $\beta = .417$ ;  $p < .001$ ), environmental concern on attitude toward plastic pollution ( $\beta = .201$ ;  $p < .001$ ). Hence, the findings support H<sub>1.1</sub>, and H<sub>1.2</sub>. The hypothesized influence of external factors on attitude was also tested by simple regression analysis. The findings revealed the significant influences of interpersonal influence on attitude toward plastic pollution ( $\beta = .175$ ;  $p < .001$ ), and social media on attitude toward plastic pollution ( $\beta = .407$ ;  $p < .001$ ), providing support for H<sub>2.1</sub> and H<sub>2.2</sub>. Lastly, the significant influence of attitude toward plastic pollution on behavior related to plastic pollution was tested by simple regression analysis ( $\beta = .111$ ;  $p < .05$ ), providing support for H<sub>3</sub>.

## Discussion and Conclusion

The findings demonstrate that the respondents had adequate knowledge of the negative impacts of plastic pollution; in fact, the knowledge variable obtained the highest score (mean=4.11) in the current study. Seventy six percent of the respondents strongly agreed with the statement “Plastic waste has a negative impact on the environment” (mean=4.15). Respondents also demonstrated strong agreement with the statement “I am concerned about the impact of plastic waste on Thailand’s environment” (mean=4.08). There was a significant influence of both knowledge and concern for the environment with attitude toward plastic pollution. This showed that respondents were not just knowledgeable, they also wanted stronger measures from the government to mitigate the problems related to plastic waste as is evidenced by their support for the statements “I think Thailand needs stronger legislation to prevent the disposal of plastic in rivers and the sea” (mean=4.21), “I am glad that the Thai government banned plastic bags in department and convenience stores” (mean=4.12). In regard to external factors, the findings showed that the majority of respondents obtained their information on plastic pollution from the internet (68 percent). Information obtained from television and radio ranked much lower at 31, and 26 percent, respectively. Interpersonal influence on attitude has a strong relationship with behavior in

many Asian countries. In fact, in an earlier study by Arttachariya (2012), interpersonal influence was the strongest predictor of graduate students' green purchasing behavior. Lee (2009) also found that peer influence was the top predictor in her study of adolescents' green purchasing behavior in Hong Kong. Although the findings showed the significant influence between respondents' attitude and behavior regarding plastic pollution, descriptive statistics showed gaps in their willingness to take personal action to mitigate the problem. For instance, the statements: "I separate household waste before putting it in the bin (mean=2.31) and "I buy products packaged in materials that can be recycled (mean=2.44) fell in the neutral level of agreement. Recent reports have emerged about the increasing amount of discarded face masks which have leaked into the sea and affected aquatic animals. A total of 68 percent of the respondents showed strong agreement (mean=4.22) with the statement: "I throw away my used face marks along with other household waste in the garbage bin". The UNEP study conducted in 2020 in Indonesia, Philippines, Malaysia, Vietnam and Thailand, showed that although 91 percent of respondents were "extremely concerned" about plastic waste, more than half surveyed continued to use non-recyclable containers which was attributed to both cultural norms as well as the belief that recycled food packaging was unsafe for consumption.

The study's findings hold important implications. Knowledge regarding various types of plastics and their potential for recycling need to be taught to Thai students at a young age. Early teaching of the 3 R's (reduce, reuse, recycle) is critical, since the findings show that even though the respondents possessed adequate knowledge of plastic pollution and its consequences, their implementation behavior was limited. Research has shown that Thai Gen Y consumers use the internet for 8-10 hours a day, like to stay connected and post/share information on Facebook, Instagram and Lifelogs (Kittikrairat and Ogawa 2016). Online awareness of the negative effects of plastic pollution can be conveyed using celebrity reference groups such as actors, musicians and other popular personalities. McCarty and Shrum (1994) proposed that people place a stronger weight on interpersonal influence when they live in a collectivist rather than an individualist society. Hofstede (2001) classified Thailand as a collectivist society. This makes Thai consumers have a greater propensity to follow social norms and share values that could make for a safer and cleaner environment. Policymakers and the government can ameliorate the problems related to plastic waste by increasing financing to waste management projects, improving infrastructure like the number of bins on roads and more collection points, and encouraging proper separation of household waste and recycling. The recent Federation of Thai Industry's proposal to provide red bags to every household to enable the separation of plastic and other non bio-degradable items that pose a threat to the environment, is a step in the right direction. Given the collectivist nature of Thai people and their concern for Thailand's environment, cause-related PR campaigns with emotional slogans such as "Save our Motherland – say no to plastic" and "Make our Beloved Country a better place by being part of the say no to plastic waste" could also serve as a catalyst for behavioral change in better waste management practices.

### **Limitations and Future Studies**

This exploratory study is only focused on Generation Y consumers. Convenience sampling was used to select respondents from the Central Business District in Bangkok only, hence the sample might not represent Thailand's Generation Y as a whole. Further studies should cover other cities in Thailand. In addition, online surveys may be an economic and safe alternative for researchers to reach customers in other geographic areas of Thailand. There are many other internal and external variables which have not been included in this study. These can be further examined for their influence on behavior related to plastic pollution. A qualitative research method is also suggested to gain in-depth information about Thai Gen Y consumers' and a deeper understanding of their reasoning and motivations. Finally, researchers may

conduct cross country studies in the Asean region so as to heighten awareness of other systems, cultures, and patterns of behavior related to plastic pollution.

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