

# Plastic Bag Diet: Economic or Environmental Motives?

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**Abstract—** The problem of plastic waste is, in fact, not only a problem of developing countries but also of countries big in the world. The phenomenon related to the export of used paper infiltrated by plastic waste by developed countries suggests that plastic waste has become a global issue, even though there are many rules related to the use of plastic waste. In Indonesia, the plastic diet program has been launched by the Government of Indonesia since 2015. This study aims to analyze consumer behavior in plastic bag diets. Besides, this study will further examine the public's awareness of the use of shopping bags that are strictly related to economic, environmental, or lifestyle motives. A sampling of respondents in the study based on non-probability sampling techniques, where sampling does not take into account the opportunity or likelihood of the sample unit selected or not. The non-probability method chosen was convenience sampling, which is sampling following the respondents' willingness to be interviewed with a questionnaire. This study is divided into several section question, namely: 1) Knowledge of the Indonesian Movement Plastic Bag Program; 2) Daily Needs Shopping Location Preference; 3) Attitudes towards Indonesian Movement Diet Plastic Bags Program, and 4) Motives/Basic attitudes towards the Indonesian Movement Plastic Bag Program. The average value for each section question is on average within the agreed range. In this study, it appears that the community has two motives that underlie the behavior of the use of plastic bags, namely economic and environmental purposes.

**Keywords:** *plastic bag diet, economic motives, environmental motives, plastic waste*

## I. INTRODUCTION

The Government of Indonesia had launched the plastic diet program since 2015 when the Indonesian Ministry of Forestry and Environment issued letter No. SE-071 / Men LHK-II / 2015 related to waste management measures and Form Letter of the Directorate General PSLB3 No. SE-06 / PSLB3-PS / 2015 dated 17 December 2015 anticipates the establishment of a paid plastic bag policy for modern retail businesses to governors, mayors, regents, and businesses. The program is considered effective in reducing the amount of plastic waste, especially shopping bags, plastic bags arising from buying and selling activities.

The problem of plastic waste is, in fact, not only a problem of developing countries but also of countries big in the world. The phenomenon related to the export of used paper infiltrated by plastic waste by developed countries suggests that plastic waste has become a global issue. A

study of the Synthetic Report initiated by the World Bank, together with several research institutions in Indonesia in 2018, said that no less than 150 million tons of plastic had polluted the world's oceans. East Asia is suspected as the region with the fastest growing waste production in the world. Research conducted by Geyer et al. [1] confirms the same thing. Out of a total of 192 countries reviewed, as many as five states in the East Asia Region are responsible for more than half the plastic waste in the ocean. Sadly, of the five countries, Indonesia ranks second after China. It is followed by Vietnam, the Philippines, and Thailand. Indonesia's total plastic waste that ends up in the sea is known to reach 187.2 million tons [2].

Bogor City is one of the cities that has a commitment to the "Bogor Without Plastic Bags" movement, where the Bogor City Government officially banned the supply of plastic bags in modern retail and shopping centers as of 1 December 2018. Consumers are forced to bring their shopping bags from home or buy reusable bags sold by these shopping places. The pros and cons of the policy occur at the beginning of its implementation. Consumers in Indonesia are still not fully environmentally conscious consumers, consumers still perceive that a ban on the provision of shopping bag facilities is an additional cost. On the other hand, the "Plastic Bag Diet" movement then emerged in the community as a form of support for environmentally friendly government policies. An infographic description of plastic waste in Indonesia from The World Economic Forum [3] can be seen in Fig. 1.

Wu & Chen [4] define green marketing as all activities designed by the company to meet human needs by reducing adverse impacts on the environment. Irandust & Bamdad [5] define green marketing as a marketing strategy that supports the environment by creating benefits to the environment, based on what consumers expect. Green purchasing is a purchasing decision based on environmental principles. Green purchasing is the practice of applying environmental criteria to the selection of products or services to be purchased [6].

This study aims to analyze consumer behavior in plastic bag diets. Besides, this study will further explain the public's awareness of the use of shopping bags that are strictly related to economic, environmental, or lifestyle motives.



Fig 1. Plastic waste infographics in numbers

II. MATERIALS AND METHODS

A sampling of respondents in the study based on non-probability sampling techniques, where sampling does not take into account the opportunity or likelihood of the sample unit selected or not [7]. The non-probability method chosen was convenience sampling, which is sampling following the respondents' willingness to be interviewed with a questionnaire.

The reason for using this sampling technique in convenience sampling is because respondents answered questionnaire questions via Google forms that are distributed through social media channels and media messengers, such as WhatsApp messenger.

This study involved 130 respondents, both male and female that collected in November 2019. According to Siagian [8], the minimum requirements for normally distributed statistical data samples are 30 samples, so that 100 samples have met the minimum standards and to get an overview of the actual conditions in the field and to avoid bias results.

The questionnaire in this study can be seen on the s.id/dietplastik link. This questionnaire is divided into several sections of questions, namely:

1. Description of Respondents
2. Knowledge of the Indonesian Movement Plastic Bag Program
3. Daily Needs Shopping Location Preference
4. Attitudes towards Indonesian Movement Diet Plastic Bags Program
5. Motives/Basic attitudes towards the Indonesian Movement Plastic Bag Program

III. RESULTS AND DISCUSSION

The number of women who became respondents from 130 respondents was 68%, and 32% for men as shown in Fig. 2, this is because women more often shop at shopping places (supermarkets, mini markets, markets, etc.) for daily family needs.

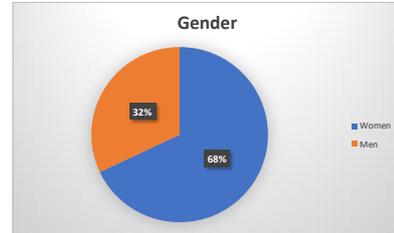


Fig. 2. Description of Respondents - Gender

The age range in this study is less than 25 years, 25-35 years, and above 35 years. The age of the most respondents in this study is 25-35 years, which is equal to 52%, as shown in Fig. 3.

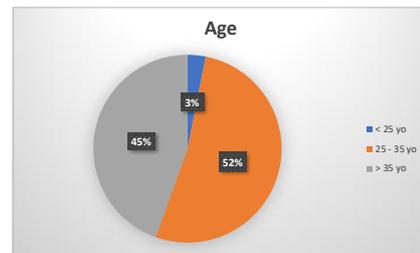


Fig. 3. Description of Respondents - Age

The latest education in this study was divided into three, namely elementary/junior high/senior high school, S1 (bachelor), and S2/S3 (postgraduate). The latest education, which is the most respondents, was the S1 (Bachelor), which is equal to 55%, as shown in Fig. 4.

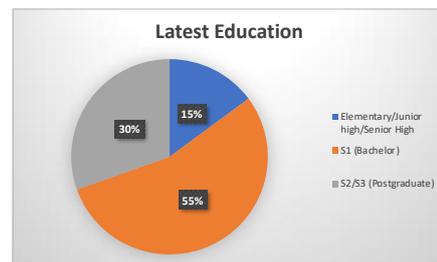


Fig. 4. Description of Respondents - Latest Education

The occupation of the respondents in this study were Housewives (23%), Civil Servants (13%), Students / Students (7%), Lecturers (12%), Private (30%), Entrepreneurs (3%), and others (12%), as shown in Fig. 5.

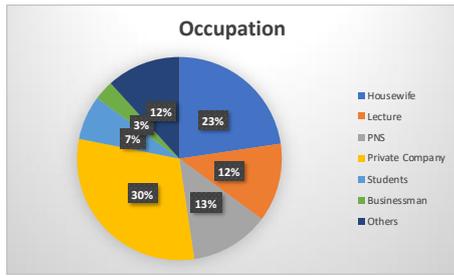


Fig. 5. Description of Respondents - Occupation

Table 1 illustrates the average value of all respondents for all attributes of the questions that describe 1) Knowledge of the Indonesian Movement Plastic Bag Program, 2) Daily Needs Shopping Location Preference, 3) Attitudes towards Indonesian Movement Program Diet Program Plastic Bags and 4) Motives/Basic attitudes towards the Indonesian Movement Program Plastic Bag Program.

Attributes about knowledge of the Indonesian Movement Plastic Bag Program are described in attributes number 1 and 2. From each attribute, the average value from all respondents are 4,62 for attribute number 1, and 4,25. That show Indonesian customer have good knowledge about program on reducing plastic bag diet and also the goal of that program.

Attributes about daily needs shopping location preference are described in attributes number 3 and 4. From each attribute show that Indonesian customer prefer shopping at traditional market than minimarket/supermarket (3,17). The customer preferences is not based the free plastic bag that provide at the traditional market.

Attributes about Attitudes towards Indonesian Movement Diet Plastic Bags Program are described in attributes number 5 to 10. From the data show the customer in Indonesia have a good awareness about plastic bag diet program. They bring their own shopping bag as the support of the plastic reduction movement wherever they shop. That attitude is followed by their family.

Attributes about Motives/Basic attitudes towards the Indonesian Movement Plastic Bag Program are described in attributes in number 11 and 12. From each attribute show that the Indonesian customer considering economic reason than the lifestyle. Recap of the data for all attribute shows at Table 1.

Table 1. Average Value for All Attributes

No	Attributes	Questions	Value
1	Attributes about knowledge	I am aware of a government program on reducing plastic waste (Indonesia Diet Plastic Bag Movement)	4,62
2		I know that prohibiting the use of plastic bags in minimarket/supermarket effectively reduces plastic waste	4,25
3	Attributes about daily needs shopping	I Prefer shopping for daily necessities at the traditional store than at	3,17

	location preference	minimarket/supermarket	
4		I prefer shopping at traditional store because there are still free plastic bag available for shopping	2,32
5	Attributes about Attitudes	I Support the plastic reduction movement by always carrying my shopping bag wherever I shop	4,43
6		I often buy new shopping bags because I forgot to bring my own shopping bags	2,90
7		I bring my own bag when shopping at places that still provide plastic	3,43
8		In my oppinion, the price of shopping bags sold at the minimarket/supermarket is currently expensive	3,31
9		My family also has a habit carrying shopping bags	3,35
10		I feel bothered by the existence of plastic diet program in a shopping center	2,04
11	Attributes about Motives	I Choose to bring my own shopping bag for economic reason	3,33
12		I bought my own shopping bag because of lifestyle	3,28

Note : The range is out of 5, 1 is strong disagree – 5 is strongly agree.

The average value for attribute 1 (knowledge of the Indonesian movement plastic bag diet program) is the highest number compare to attribute 2 (daily needs shopping location preference), attributes 3 (attitudes towards Indonesian movement plastic bag diet program) and attributes 4 (motive towards Indonesian plastic bag diet program). An info graphic of the average value for all attributes shows in Fig. 6.

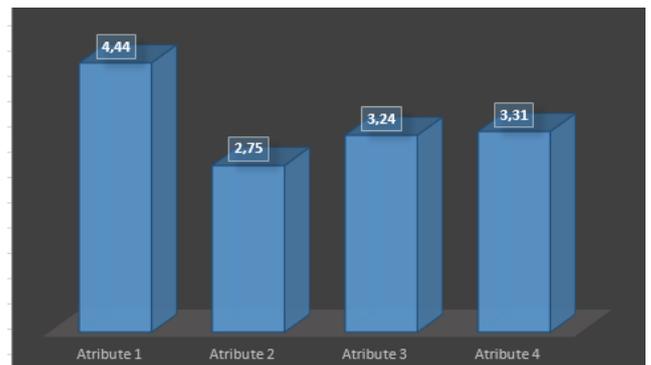


Fig. 6. Average value for all attributes

Table 2 presents from all attributes; the average values are shown based on the latest education: 1) elementary/junior high/senior high school, 2) S1 (bachelor), and S2/S3 (Postgraduate).

Based on education background, the average value for attributes 1 is the highest position compare to other attribute (4.51). Otherwise the lowest is attributes 3 (2,94) compare to others attributes. The average value for attribute 1 for the SD-SMU respondents is the highest

number (4,84), but for the average value for attribute 3, it shows the lowest (2,73). That patterns also show at the customer with higher educational background (undergraduate and postgraduate). It inform that the Indonesian customer for all educational background have the same behaviour. They have a good knowledge about the pastic bag diet, but to bring the knowledge into action still need supports.

Table 2. Average Values – Latest Education

Attribute	Education			Average
	SD to SMU	Under graduate	Post graduate	
1	4,84	4,41	4,30	4,51
2	3,37	3,29	3,30	3,32
3	2,73	3,07	3,00	2,94
4	3,13	3,30	3,40	3,28

The postgraduate respondent have the highest score for attributes 4, related to motive towards Indonesian plastic bag diet program. For the SD-SMU respondent the economic motive is higher than lifestyle motive, otherwise for the undergraduate and postgraduate responden the lifestyle motive the lifestyle motive as the highest score.

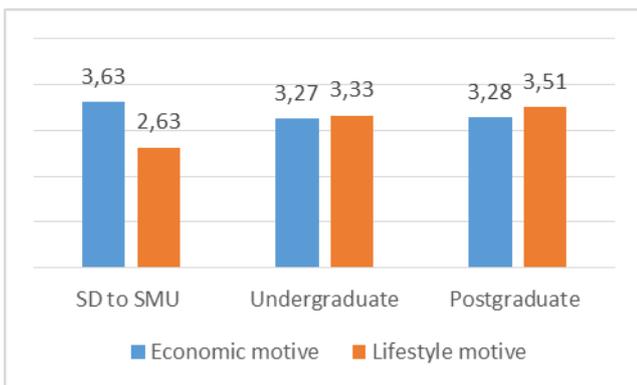


Fig. 7. Economic and Lifestyle motive based on educational background

Table 3 presents from all attributes; the average values are shown based on occupation (housewife, lecture, PNS, private company, students, businessman, others). From all respondents are shown the attributes 1 as the highest and the attribute 2 as the lowest. The housewife respondent have the highest value for the attribute 1 (4,69), attribute 2 (2,91) and the attribute 3 (3,36). It show the house wife have the big opportunities to support the plastic bag diet.

Table 3. Average Value - Occupation

	House wife	Lecturer	Civil servant	Private company	Student	Entrepreneur	Others
1	4,69	4,50	4,12	4,38	4,34	4,00	4,54
2	2,91	2,63	2,79	2,66	2,45	2,63	2,79
3	3,36	3,16	3,32	3,25	3,11	3,04	3,16
4	3,21	3,25	3,13	3,30	3,45	3,38	3,67

Fig. 8 inform that economic motive dominant to affect the customer behavior related to plastic bag diet program. It indicate the customer in Indonesia still sensitive to price related to shopping bag. The innovation of green product should continuously improved to lower price because people still pay more attention to prices than green claims.

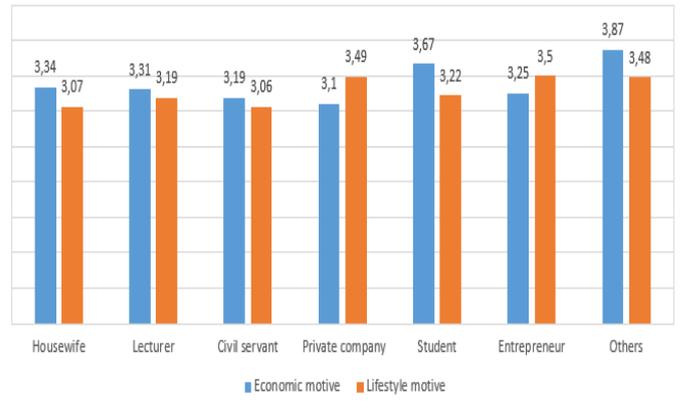


Fig. 8. Economic and Lifestyle motive based on occupation

Based on all point of view in this research shows the Attribute 1 as the highest values. It is shown that respondents agree and know enough about the plastic bag diet program. All respondents aware the government program on reducing plastic waste and prohibiting the use of plastic bag. It will support people care about environmentally friendly product [5]. The knowledge of the program is not always followed by action to support the program. It happened to respondents with educational background SD-SMU.

Economic motive still a big reason for Indonesian customer. They choose to bring their own shopping bag for to avoid buy the the shopping bag. The higher educational background (undergraduate and postgraduate respondents) support the plastic bag diet and have a good behaviour related to environmental lifestyle. They believe that the cost they paid is cheaper than the benefit of the product for a better environment in the future. The government should involve all the element society to take part in plastic bag diet program.

#### IV. CONCLUSION

This study is divided into several section question, namely: 1) Knowledge of the Indonesian Movement Plastic Bag Program; 2) Daily Needs Shopping Location Preference; 3) Attitudes towards Indonesian Movement Diet Plastic Bags Program, and 4) Motives/Basic attitudes towards the Indonesian Movement Plastic Bag Program.

The average value for “Knowledge of the Indonesian Movement Plastic Bag Program” is 4,43. It is shown that the respondents agree and know enough about the Indonesian Movement Plastic Bag Program.

The average value for “Daily needs shopping location preference” is 2.75. It is shown that the respondents quite agree about the preference of shopping location because of the availability of shopping bags.

The average value for “Attitudes towards Indonesian Movement Diet Plastic Bags Program” is 3,24. It is shown that respondents are quite agreeing to the movement diet plastic bags program.

The average value for “Motives/Basic attitudes towards the Indonesian Movement Plastic Bag Program” is 3,30. For economic motive, the average value is 3,33, and for lifestyle, motive is 3,33. It is shown that respondents quite agree for both motives (economic and lifestyle) towards the Indonesian Movement Plastic Bag Program. In this study, it appears that the community has two reasons that underlie the behavior of the use of plastic bags, namely economic and environmental purposes.

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