

ANALYSIS OF COMMUNITY BEHAVIOR AGAINST THE USE OF BIO-DEGRADABLE SHOPPING BAGS AS A SUBSTITUTE FOR SINGLE-USE PLASTIC BAGS**Mila Hariani & Yusuf Rahman Al Hakim****University of Mayjen Sungkono, Mojokerto, Indonesia**

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Abstract - The increase in world population is in line with the increase in waste. The problem of waste that disturbs the environment is the presence of waste that is difficult to recycle, such as plastic. The use of plastic bags is a contributor to quite a lot of waste in the world. Plastic bags can be decomposed by nature after more than 50 years. Meanwhile, burning plastic bags will cause air pollution that causes toxins. This makes some people reduce the use of plastic bags in daily activities such as shopping. However, some people think that plastic bags have many uses. The existence of regulations around the world regarding the prohibition of the use of plastic bags makes manufacturers create bio-degradable shopping bags. This study aims to determine changes in the behavior of people who use bio-degradable shopping bags as a substitute for plastic bags. Various factors that cause people's behavior to change are awareness of the environment, social pressures, and binding rules.

Keywords: community behavior, bio-degradable shopping bags, plastic bags, environmental conservation, shopping habits.

INTRODUCTION

The increase in the world's population has both positive and negative impacts. The positive impact of population growth is the creation of technology that makes it easier for the community. The negative impact of population growth is the increasing amount of waste. The existence of plastic waste is currently a major problem in the world. The amount of plastic production in the world continues to increase. In 2012, the amount of plastic production in the world reached 288 million metric tons per year (Jambeck et al., 2015). In 2015, this number increased to 6.3 billion metric tons per year. Only 9% of plastic waste will undergo the recycling process and the other 80% will accumulate and accumulate on land and oceans (Geyer et al., 2017).

Indonesia is one of the countries experiencing serious environmental problems, especially regarding waste. The total amount of waste in Indonesia in 2019 is estimated to reach 68 million tons and plastic waste has a proportion of 14 percent of the total waste generated. This is supported by research by Jambeck (2015) which states that Indonesia ranks 2nd as the largest plastic waste producer in the world after China. This problem is a serious concern because plastic waste has many negative impacts. According to Gogte (2009) plastic has positive and negative impacts, the positive impact is because plastic has advantages compared to other goods, such as stainless steel, stronger, lighter, flexible, easy to color and shape, not easily broken, as well as being an insulator, good heat and electricity. Meanwhile, the negative impacts that arise include plastic waste that cannot be broken down quickly, causing soil fertility to decrease, and plastic waste that is disposed of carelessly can contribute to the flow of water, causing flooding, and burning plastic waste will cause harmful substances to occur. human health (Ando et al., 2010; Issalillah et al., 2022). The problem of plastic waste which is increasing in number if not addressed will tend to cause environmental pollution so efforts are needed to reduce waste by recycling waste into a source of energy and goods that are more useful (Schwarz, 2019; Djaelani, 2021). Therefore, efforts are needed to reduce the amount of plastic waste, one of which is by bringing shopping bags.

The use of shopping bags is an environmentally friendly behavior that has been recommended by various parties or is often known as a form of pro-environmental behavior (Steg & Vlek, 2009). The purpose of recommending the use of shopping bags is to reduce the amount of plastic waste produced. A total of five shopping bags that are routinely used once a week can replace 520 plastic bags (Njeru, 2006). The results of other studies indicate that the behavior of using shopping bags and the factors that influence the use of shopping bags can encourage the use of shopping bags (Yeow et al., 2014; Lam & Chen, 2006). In addition, the use of shopping bags can influence other environmentally friendly behaviors such as increasing the purchase of environmentally friendly organic foods (Karmarkar & Bollinger, 2015).

In Indonesia, several shopping places have implemented payment rules for using plastic bags. Different sizes of plastic bags are priced at different prices. To avoid payment, some consumers choose to use used product packaging boxes as a means of carrying groceries (Khayru, 2021). People have different responses to the rules given by shopping places. People feel heavy with the nominal given. Some people change their behavior when shopping by bringing shopping bags that can be used repeatedly (Putra et al., 2022). For other customers, there are those who continue to use plastic bags or use used cardboard products. To avoid this, biodegradable bags were introduced. People's behavior when shopping has changed. Several factors influence changes in people's behavior. This study aims to analyze people's behavior to replace plastic bags by using environmentally friendly shopping bags.

RESEARCH METHODS

The research was conducted in the city of Surabaya. A community-based descriptive cross-sectional study design was used to assess the public's perception of single-use plastic shopping bags and the acceptance of an alternative management option which in this case is the use of bio-degradable shopping bags.

This study considers shoppers in a commercial area of the city for interviews. Therefore, all shoppers available at the time of data collection, aged over 18 years and willing to respond, were included in this study. The sample size for the selection of research participants is 100 people. The selection of the population for interviews was carried out using a combination of easy and systematic sampling techniques. A convenient sampling technique was used to ask which shoppers were available during data collection. The questionnaire contains questions related to the socio-economic background and demographics of the respondents, the knowledge, attitudes, and practices of the respondents towards plastic shopping bags, environmental problems with their waste, and their willingness to switch to other alternative bags.

RESULTS AND DISCUSSIONS

A total of 100 respondents participated in this study. The results of the socio-demographic characteristics of the study participants were that 51% were male, and 49% were female. Five percent of respondents have primary school education, followed by nine percent who have completed secondary school education. Twenty-three percent as undergraduates. There are 58% as high school graduates, and the rest are masters. Respondents 27% came from the age group of 26-30 years followed by 11% and 21% from the age less than 20 and 21 to 25 years. 39% of married participants followed by 61% of unmarried participants. Respondents' responses based on the questions asked can be explained as follows:

- a. Respondents questioned about It is more comfortable to use single-use plastic bags. Respondents responded with 32% agreement, 13% doubt, and 55% disagree.
- b. Respondents who answered about concern for environmental sustainability were responded to agree as many as 41% of respondents, who doubted 56%, and who did not agree as many as four people.
- c. Respondents responding about learning about bio-degradable shopping bags were approved by 58 people, 23% doubtful, and 19% disagree.
- d. Respondents responded about the intention to use bio-degradable shopping bags with questions 46% agree, 27% doubt, and 29% disagree.

There are four questions regarding the use of plastic bags and alternatives. The results of the table indicate that respondents have very big doubts about their contribution to environmental sustainability even though they dominantly choose not to agree to use single-use plastic bags. Respondents are also more likely to use bio-degradable shopping bags because most of them are aware of these alternative bags.

Plastic Bags

Plastic bags are one of the five most common types of waste found on beaches and rivers and cause damage to wildlife. According to Afroz (2017) plastic bags are the cause of the depletion of the ozone layer and can create greenhouse gases that can directly increase the temperature in the atmosphere.

Plastic is an object that contains several organic elements such as carbon (C), hydrogen (H), nitrogen (N), chlorine (Cl), and sulfur (S). Its properties are almost like wood, animal horns, and rosin. Plastic is a polymer that is shaped like a long chain which makes it difficult for plastic to be properly degraded by soil microorganisms. Each polymer chain is made up of carbon, hydrogen, oxygen and silicon. Plastic bags are usually made from by-products of the production of oil, gas, and coal which then form into ethylene compounds. The formed ethylene is then converted into a polymer called polyethylene or polythene which is then used as a raw material for the manufacture of goods including the manufacture of single-use plastic bags (Gogte, 2009).

Bio-Degradable Shopping Bags

With the development of science and technology, researchers and scientists continue to try to create new innovations to deal with waste problems in the world. Until finally, an alternative solution was found to replace the existence of single-use shopping bags. The innovation is in the form of biodegradable shopping bags, which are considered good for environmental sustainability. These biodegradable shopping bags are made from natural materials that can decompose in the environment in a short time. Natural polymers such as cellulose, starch, and fat are the raw materials for making this biodegradable plastic. In addition, Poly Lactic Acid is also the main ingredient in the manufacture of biodegradable plastics (Schwarz, 2019).

Single-use plastic bags require a minimum decomposition time of 50 years, while biodegradable shopping bags require faster time (Njeru, 2006). Biodegradable bags are bags made from renewable materials, so they are slightly more expensive. However, biodegradable bags have environmentally friendly properties (can be degraded by nature in a short time of about 3-6 months), besides that the carbon emissions produced are lower than conventional plastics (Ari & Yilmaz, 2016).

Biodegradable bags have the potential to be developed as a substitute for conventional plastic bags because they do not require direct processing technology.

Community Behavior

A person's behavior in acting is a direct influence of that person's intention to take action. The intention is influenced by three factors, namely attitude, subjective norm and perceived behavioral control. Attitude is an action that has a rationale which is the result of a personal evaluation of the surrounding conditions (Katz, 1960). In addition, attitudes are also based on a collection of conclusions that underlie salient beliefs related to attitudes and the evaluation of these beliefs by consumers. The value-expectancy model is designed to represent how people actually integrate a lot of information to arrive at an overall assessment (Bagozzi, 1981). Subjective Norms represent consumers' perceptions of what they think about what other people who are a reference or social conditions want. There are two sub-components that support SN, namely associative normative beliefs (thinking about what the reference thinks, whether he should follow the behavior or not and the motivation to follow or obey the person or group that is the reference).

Perceptual behavioral control can be determined from two sub-components, namely: control beliefs – perceptions of barriers or resources that influence behavior, and perceived strengths – the importance of these barriers or resources (Hawley et al., 2008). In addition, behavior is also influenced by environmental factors. Factors that affect the environment can come from two sources. The first source comes from the individual and the second is a factor that arises from outside the individual. These individual factors include knowledge, attitudes, skills, motivation, locus of control, and so on that exist within a person. Meanwhile, factors that exist outside the individual include economic conditions, environment, culture, and so on that can have a major influence on the individual's life (Kollmuss & Agyeman, 2002).

People's habits in using the type of bag in shopping activities greatly affect the public's perspective. The habit of people using this type of shopping bag can arise because of a sense of comfort and a sense of liking for these types of plastic bags. The easier and more practical a product is to use, it will become a habit for individuals to use the product. As a result, not a few people have difficulty changing habits and switching to other products.

Community Behavior, Bio-Degradable Shopping Bags, Plastic Bags

Indonesian people's awareness is still quite low in reducing the use of single-use plastic bags. There must be a two-way interaction from companies and consumers to reduce the use of plastic bags such as promotions, advertisements, information from offline and online media so that people are aware of the dangers of plastic bag waste.

Some people think that the use of plastic bags is more practical. In addition, plastic bags can be reused for other needs (Rokka & Uusitalo, 2008). Plastic bags are considered to have strong resistance so that they can be used for a longer time (Jayaraman et al., 2011). Changes in community behavior based on awareness of environmental conditions (Ando et al., 2010). Some people know that plastic bags are not easy to decompose. The reason for this concern comes from the increasingly polluted earth by human hands. This awareness movement dates back to the 19th century when there was an industrial revolution that polluted the air in Europe and the United States. Research conducted by Kamaruddin and Yusuf (2015) and Rokka and Uusitalo (2008) states that information about environmental damage caused by plastic bags changes people's views to use other alternative shopping bags.

People's behavior to replace plastic bags with bio-degradable shopping bags is the result of social pressure. The social community that exists in society will influence a person to change his attitude. Shackleford (2006) states that human nature has evolved to make humans sensitive to social pressures, so they can adapt to the values, attitudes or behavior of others. These properties can be used to increase individual participation in recycling.

People's behavior can also change due to the rules that apply (Khayru et al., 2021). Some countries have set regulations to not be allowed to use plastic bags. For Indonesia, it is stated in the Circular Letter of the Directorate General of Waste, Waste, and Hazardous and Toxic Materials of the Ministry of Environment and Forestry Number: SE06/PSLB3-PS/2015 concerning Anticipatory Steps for the Implementation of Paid Plastic Bags Policy in Modern Retail Businesses. In Indonesia, the payment rules for plastic bags have succeeded in changing people's behavior to use recycled shopping bags. For business players, so that customers continue to shop, bio-degradable shopping bags are made to complete the middle ground.

The level of use of biodegradable plastics can continue to be increased, this can be done by conducting socialization efforts related to biodegradable bags. Efforts to change a person's behavior can be through repeated socialization (Djaelani, 2022). If socialization is carried out frequently, it can affect the knowledge and experience of the community. Increasing one's knowledge and experience will have the potential to increase a sense of awareness in humans. Environmentally friendly behavior is a tangible form of environmental knowledge (Handayani et al., 2021). Increasing knowledge and awareness about the environment can change individual attitudes towards the environment itself, and ultimately affect the practice of irresponsible activities to nature (Kollmuss & Agyeman, 2002). Based on their assumptions, when a person has a deeper understanding of the consequences of behavior to the environment, then they will pay more attention to the environment. Mckenzie-Mohr and Smit (1999) define that intervention will change human behavior and increase awareness to change actions rather than just convincing them to do something. Meanwhile, according to Ajzen and Fischbein (1975), if someone thinks that someone else is doing something important, then that person will quickly follow the same action.

CONCLUSIONS

The results of the table indicate that respondents have very big doubts about their contribution to environmental sustainability even though they dominantly choose not to agree to use single-use plastic bags. Respondents are also more likely to use bio-degradable shopping bags because most of them are aware of these alternative bags. The results showed that people's behavior to use bio-degradable shopping bags was still quite low compared to the use of plastic bags. People decide to use plastic bags because they feel that they are stronger and have various functions compared to bio-degradable shopping bags. The lack of information about plastic waste makes people's behavior not understand the dangers of plastic.

Reducing the use of plastic waste needs support from various parties. The use of bio-degradable shopping bags is a good middle ground to meet the needs of producers and consumers. bio-degradable shopping bags that can be decomposed in less than ten years can be an alternative to satisfy consumer desires for the use of plastic bags.

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