










## Consumer Behavior Towards Environmental Policy for Paid Plastic Shopping Bags in Traditional Markets of Padang City

Henny Yulius<sup>1,2</sup>, Indang Dewata<sup>1</sup>, Heldi<sup>1</sup>, Nurhasan Syah<sup>1</sup>, Aprizon Putra<sup>2</sup>, Mira Hasti Hasmira<sup>1\*</sup>, Aldri Frinaldi<sup>1</sup>

<sup>1</sup>Universitas Negeri Padang, Padang 25131, Indonesia

<sup>2</sup>National Research and Innovation Agency (BRIN), Jakarta 10340, Indonesia

Corresponding Author Email: [mirahasti@fis.unp.ac.id](mailto:mirahasti@fis.unp.ac.id)

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<https://doi.org/10.18280/ije.070117>

### ABSTRACT

**Received:** 6 October 2023

**Revised:** 24 January 2024

**Accepted:** 13 February 2024

**Available online:** 31 March 2024

#### Keywords:

*consumer behavior, shopping bags, environmental approach, Theory of Planned Behavior (TPB), eco-friendly behaviour*

This research aims to analyze the characteristics of consumer behavior regarding the use of shopping bags and the factors that influence it based on an environmental approach. The method in this research is based on ten (10) factors from the Theory of Planned Behavior (TPB) model to understand the behavior of carrying shopping bags instead of using plastic bags based on ten (10) variables namely; 1) Attitude (AT); 2) Subjective Norms (SN); 3) Perceived Behavioral Control (PBC); 4) Environmental Concern (EC); 5) Personal Norms (PN); 6) Response Efficacy (RE); 7) Self-efficacy (SE); 8) Behavioral Intention (BI); 9) Anti-Plastic Bag Behavior (APB); and 10) Behavioral Willingness (BW). The results show a significant relationship between trustworthy AT, SN, PBC, EC, PN, and SE. This is evident from the significance value (sig) which is less than 0.05, indicating a fairly high level of confidence. Overall, the results of the research provide a better understanding of the factors that influence consumer decisions in carrying shopping bags, especially among BI consumers. The implications of these findings can be used as a basis for developing more effective strategies for promoting more eco-friendly and sustainable behavior in the future.

## 1. INTRODUCTION

The use of plastic bags continues to increase from year to year, causing a significant increase in the amount of plastic waste. In Indonesia, plastic waste is in second place with 5.4 million tons each year or 14% of total waste production [1-3]. Plastic shopping bags have become an important topic of discussion in the world of waste management in Indonesia because they are cheap, easy to find, and easy to use, so they have become an inseparable part of human life. Almost all foods, goods, and their packaging use plastics and plastic bags [4, 5].

Plastic shopping bags, which shoppers often use to carry home their purchases, are a common type of shopping bag in many countries, where stores often provide them for shoppers' convenience. Even though they provide practical benefits for consumers, the existence of plastic shopping bags also hurts the environment. Made from non-renewable resources such as petroleum, plastic bags take hundreds of years to decompose, and usually contain additives that can pollute soil and water. Therefore, in the last ten years, many countries in the world, including Africa, Australia, Europe, North America, and Asia, have changed their policies regarding plastic bags by prohibiting their free sale or distribution [6]. Further research from [7] explains that to control the excessive use of plastic bags and reduce littering, the Indonesian Government implemented a paid plastic shopping bag system policy. This

policy was launched by the Indonesian Ministry of Environment and Forestry, the National Consumer Protection Agency, the Indonesian Consumer Foundation, and the Indonesian Retail Entrepreneurs Association starting February 21, 2016, which coincides with National Waste Awareness Day simultaneously in 22 cities in Indonesia, including Jakarta, Bandung, Balikpapan, Makassar, and Surabaya. This policy takes the form of limiting the use of plastic shopping bags, where retail entrepreneurs no longer provide free plastic shopping bags to consumers. If consumers still need them, consumers are required to buy plastic shopping bags at retail outlets.

In the last few decades, public concern for the environment has continued to increase and has become a problem of global significance. These concerns have led to major changes in consumer attitudes and behavior towards sustainability. Explanations from [8-13] indicate that sustainability varies but mostly revolves around the idea of preserving the environment for future generations. In this case, sustainable consumption refers to purchasing, using, and disposing of products in a way that reduces environmental damage.

Consumer behavior, which combines psychology, sociology, and social and economic anthropology, plays a key role in the purchasing decision-making process, both individually and in groups. Research conducted by Asmuni et al. [14] in Malaysia highlighted the level of consumer participation in the government program "No Plastic Bag Day"

and tested its effectiveness using Descriptive Statistics and Pearson's chi-square test. The research results showed that 52.3% of respondents stated that the program was successful in encouraging consumers to avoid using plastic bags. Similar research has also been carried out in various places, including in Taiwan, with a focus on predicting consumer behavior regarding the use of plastic shopping bags in hypermarkets and other stores.

In terms of regulations, according to research by the study [15], Padang Mayor Regulation No. 36/2018 concerning "controlling the use of plastic shopping bags" mandates that every business actor, including shopping centers, modern shops, and traditional markets, is required to manage the use of plastic shopping bags by established provisions. In Chapter IV Article 8 concerning 1) Every business actor is obliged to manage the use of plastic shopping bags; and 2) Business actors as intended in paragraph (1) consist of business actors and/or activities in shopping centers, modern shops, and traditional markets.

Research on consumer behavior in plastic shopping bags towards government policies needs to be carried out so that the government's plan can work well. This is an interesting topic because the problem of using plastic bags cannot be separated from several influencing factors, not to mention the policies of each local government. Therefore, this research was conducted to be able to contribute to the government to see the public's response and consumer behavior towards the policies set by the government on plastic shopping bags so that the government can determine ministerial regulations and implement appropriate policies on the plastic bag system.

This research aims to analyze the characteristics of consumer behavior regarding the use of shopping bags and the factors that influence it based on an environmental approach. Research on consumer behavior in plastic shopping bags towards government policies needs to be carried out so that the government's plan can work well. This is an interesting topic because the problem of using plastic bags cannot be separated from several influencing factors, not to mention the policies of each local government in environmental management. Therefore this research was conducted to be able to contribute to the government to see the public's response and consumer behavior towards the policies set by the government on plastic shopping bags so that the government can determine regulations and implement appropriate policies on the plastic bag system.

## 2. METHODS

The behavior of carrying shopping bags compared to using plastic bags should be studied in two (2) different approaches, namely 1) General behavioral perspective; and 2) Ethical perspective. Therefore, the data collection was collected through consumer opinions based on nine (9) factors from the Theory of Planned Behavior (TPB) model to understand the behavior of carrying shopping bags instead of using plastic bags [16, 17]. TPB extensively explores consumer behavior, helping in a deep understanding of their preferences and decisions.

TPB has been formed to have three (3), namely 1) socio-psychological; 2) behavior-specific factors, which are attitude, and subjective norms; and 3) perceived behavioral control to predict the intention and intention to become the actual behavior [18]. This model was applied to investigate the

behavior of reducing the use of plastic bags in supermarkets in Japan [19]. The conceptual model is built based on ten (10) variables, namely; 1) Attitude (AT); 2) Subjective Norm (SN); 3) Perceived Behavioral Control (PBC); 4) Environmental Concern (EC); 5) Personal Norm (PN); 6) Response Efficacy (RE); 7) Self-efficacy (SE); 8) Behavioral Intention (BI); 9) Anti Plastik Bag Behaviour (APB); and 10) Behavioral Willingness (BW) [20].

The closeness between variables in this model can be explained by looking at how these variables are interconnected and influence each other. For example, attitudes can influence behavioral intentions, which in turn can influence actual behavior. Self-efficacy and perceived behavioral control can also play an important role in linking intentions to actual behavior. Subjective standards and descriptive standards can moderate the relationship between attitudes and intentions or between intentions and behavior [21]. All of these variables work together to form a conceptual model that can help understand and predict individual behavior regarding plastic bag use. Of the ten (10) variables mentioned, it seems that they are related to behavioral studies related to the use of plastic bags. The explanation in providing a general view of the possibilities of quantification and approaches that might be used in this research is:

- Attitude (AT): a) Quantification: Likert scale to measure positive or negative attitudes towards the use of plastic bags; and b) Approach: An attitude examination approach that involves asking questions regarding individual beliefs and values regarding plastic bags.
- Subjective Norm (SN): a) Quantification: Likert scale to measure the extent to which individuals feel social pressure to use or not use plastic bags; and b) Approach: Examining individual perceptions of social norms that influence behavior regarding plastic bags.
- Perceived Behavioral Control (PBC): a) Quantification: Measures the extent to which individuals perceive others in their environment using or not using plastic bags; and b) Approach: Assess the influence of descriptive norms on individual decisions.
- Environmental Concern (EC): a) Quantification: Likert scale to measure the extent to which individuals feel they have control over behavior regarding plastic bags; and b) Approach: Assess the extent to which individuals believe they can change or control their behavior regarding plastic bags.
- Personal Norm (PN): a) Quantification: Assessing individual intentions to use or not use plastic bags through related questions; and b) Approach: Examining the extent to which individuals are willing to take desired actions regarding plastic bags.
- Response Efficacy (RE): a) Quantification: Measures an individual's level of willingness to actively engage in plastic bag-related behavior; b) Approach: Assess individuals' motivation and desire to change their behavior regarding plastic bags.
- Self-efficacy (SE): a) Quantification: Measuring concrete individual behavior regarding the use of plastic bags; and b) Approach: Involves questions related to individual concrete actions towards the use of plastic bags.
- Behavioral Intention (BI): a) Quantification: Measuring concrete individual behavior regarding the use of plastic bags; and b) Approach: Involves questions related to individual concrete actions towards the use of plastic bags.

- Anti Plastik Bag Behaviour (APB): a) Quantification: Assessing the extent to which individuals feel able to change their behavior regarding plastic bags; and b) Approach: Involves questions related to the individual's belief in their ability to adopt the desired behavior.
- Behavioral Willingness (BW): a) Quantification: Assessing the extent to which responses to behavioral changes regarding plastic bags are considered possible or easy to do; and b) Approach: Examining individual perceptions of response affordances and possible barriers.

The approach used may include questionnaire surveys, interviews, or other data collection methods appropriate to the research objectives and characteristics of the population sample. The number of samples to be tested is in Yamane's formula, so the total sample is 122 respondents. Where questionnaires were distributed to consumers/buyers who shop with an age range of 18 years to 40 years. The Yamane formula is a method used to determine samples in survey research. This method was developed by Yulius et al. [22]. Following are the specific steps for calculating samples with the Yamane formula:

- Determine the Population Size (N): N is the total number of elements or units in the population that will be used as research objects.
- Determine the Error Rate (e): The error rate (e) is the acceptable level of uncertainty in the research results. Usually, the value of e is predetermined, for example, 5%.
- Calculate n value.

– Use Yamane's formula:  $n = N / (1 + N(e^2))$   
 where, N is the required sample size; N is the total number of elements in the population; and e is the desired error rate.

1. Calculate the Required Value of n: Calculate the required n value based on the results of the third step. The results must be rounded to the nearest whole number because the sample must be an integer.
2. Take Sample: Select a random sample from the population according to the calculated sample size. Calculation Example: For example, if the total number of elements in the population (N) is 1000 and the allowable error rate (e) is 5%, then the calculation of sample size (n) is as follows:

$$N = \frac{1000}{1 + (1000 \times (0.05)^2)}$$

Then it will get the n value and can select a sample from the population based on the calculated sample size. It is important to note that Yamane's formula provides an estimate of the required sample size, and the actual sample size may vary depending on the nature of the population and the objectives of the research.

Data pre-processing methods are used to clean, organize, and prepare data before it is involved in analysis or modeling. This process involves several steps, including the identification and removal of dirty data or outliers. Some data preprocessing methods used to remove dirty data involve 1) Identification and Handling of Missing Values; 2) Outliers Detection and Handling; 3) Normalization and Standardization; 4) Categorical Variable Encoding; 5) Duplicate Data Cleaning; 6) Filtering and Selection Features; 7) Variable Transformation; 8) Sample Selection; and 9) Data Visualization. This helps in the identification of data that may need to be deleted or changed. Each dataset has unique

characteristics, and the most appropriate preprocessing method may vary depending on the type of data and the desired analysis or modeling goals. It is important to note that this process can vary depending on the research methods used, the research objectives, and the theories on which the conceptual model is based.

### 3. RESULTS

The traditional market is the third largest market in Padang City, West Sumatra Province with a land area of 10,464 m<sup>2</sup> and a building area of 3.448 m<sup>2</sup> [22]. The traditional market has an average number of traders and visitors of 1.840 people every day with an average volume of waste generation of 0.398 l/m<sup>2</sup>/h or 0.696 l/p/h [23]. The research was conducted at the traditional market of Lubuk Buaya in Padang City. Questionnaires were distributed to consumers/buyers who shop with an age range of 18 years to 40 years. The number of samples to be tested is in Yamane's formula, so the total sample is 122 respondents.

Most of the respondents, namely 91 people (75%) agreed that there was a government policy related to reducing the use of plastic bags and even prohibiting their use. This is because, with this policy, the use of plastic bags can be reduced and even stopped. However, 17% and 8% respectively said they disagreed and disagreed with the policy. Rahmadiawan et al. [24-26] add the emergence of this opinion is because according to them the implementation of this policy will face many obstacles, and plastic bags given by traders have become a habit.

Related to public knowledge about Padang Mayor Regulation No. 36/2018, most of the respondents knew about this regulation. 44% have heard/seen news coverage in the mass media, 14% of respondents know clearly through government/mass media outreach, and 42% of respondents are not aware of these regulations due to limited information. As many as 80% of respondents said they agreed, starting with socialization in the community and implementing it slowly, 17% of respondents still disagreed and 3% of respondents said they did not agree if it was implemented in traditional markets because according to them it would face many challenges, obstacles and would take a long time to implement, when its implementation will also burden the community.

In general, regulations controlling the use of plastic shopping bags usually impact consumers in several ways, such as: 1) Reducing plastic use: The main aim of this kind of regulation is to reduce the use of plastic bags, which can have a positive impact on the environment and reduce plastic waste; 2) Changes in consumer habits: Consumers may need to adapt to alternative uses such as cloth shopping bags or other materials that can be used repeatedly [27]; 3) Environmental awareness: This kind of regulation can increase environmental awareness among consumers and encourage sustainable practices [28]; and 4) Fines or sanctions: Consumers who violate regulations may be subject to certain fines or sanctions. Therefore, consumers need to understand and comply with the applicable provisions. Based on Table 1 shows that overall Descriptive Norms (AT) variable has the largest average compared to other variables with the AT-2 indicator having the highest average value of 4.1311 which means that consumers agree that I think using plastic shopping bags can damage/pollute the environment. The following is the result of the average value and Standard Deviation (SD) of the

consumer behavior model whether carrying a bag or not. Where in Table 1 the measure of data centrality is described using the average data (Mean) and the measure of data distribution is described using variety (variance) with the

average data  $x_1, x_2, x_3, \dots, x_n$ . Meanwhile, the variety (variance) of the data, namely  $x_1, x_2, x_3, \dots, x_n$ . Descriptive analysis is used to provide an overview of consumer characteristics. More details can be seen in Table 1 below.

**Table 1.** The average value of the consumer behavior model

No	Variabel	N	Min	Max	Mean	SD
<b>Attitude (AT)</b>						
AT1	I thought I should take action to reduce plastic shopping bags	122	1,00	5,00	39,098	100,416
AT2	I think using plastic shopping bags can damage/pollute the environment	122	1,00	5,00	41,311	,93553
AT3	The use of plastic shopping bags can reduce environmental quality	122	1,00	5,00	39,426	,91181
AT4	My participation in carrying my own bag will help the environment	122	1,00	5,00	40,984	,97413
AT5	A paid plastic shopping bag policy should be implemented for all markets	122	1,00	5,00	36,148	104,799
<b>Subjective Norm (SN)</b>						
SN1	Several people around me (family, friends) support the decision not to use plastic shopping bags freely	122	1,00	5,00	36,066	,98381
SN2	Some people around me can accept the government's policy of not using plastic shopping bags freely	122	1,00	5,00	36,721	,91311
SN3	I support the government's policy of implementing paid plastic shopping bags	122	1,00	5,00	37,131	108,696
<b>Percived Behavioral Control (PBC)</b>						
PBC1	It's easy to refuse plastic shopping bags for freedon't buy plastic shopping bags	122	1,00	5,00	36,639	,86827
PBC2	If I want, I can bring a reusable bag without asking/buying a plastic shopping bag	122	1,00	5,00	39,098	,82326
PBC3	I feel comfortable with the government's policy of implementing paid plastic shopping bags	122	1,00	5,00	34,426	,93640
PBC4	I am now more comfortable carrying my own bag when shopping	122	1,00	5,00	39,016	,85677
<b>Environmental Concern (EC)</b>						
EC1	I often see plastic shopping bags thrown away carelessly	122	1,00	5,00	40,410	107,101
EC2	Pollution caused by plastic shopping bags	122	1,00	5,00	37,459	,88665
EC3	I'm afraid that plastic shopping bags will harm the health of the next generation	122	1,00	5,00	41,148	,92885
EC4	The existence of a paid plastic shopping bag policy can help the environment	122	1,00	5,00	39,754	,85728
EC5	Paid plastic shopping bag policies can inculcate people's habits to be pro-environmental by not using/reducing plastic shopping bags	122	1,00	5,00	40,738	,87356
<b>Personal Norm (PN)</b>						
PN1	Every citizen has an obligation to avoid using plastic shopping bags	122	1,00	5,00	38,770	,84870
PN2	I feel responsible and obligated to comply with the government's plastic shopping bag restrictions	122	1,00	5,00	38,934	,86059
PN3	The existence of a paid plastic shopping bag policy is the right time to reduce waste	122	1,00	5,00	39,180	,87755
<b>Response Efficacy (RE)</b>						
RE1	Too many plastic shopping bags can make a mess in the house, I anticipate that by not asking for plastic shopping bags	122	1,00	5,00	38,115	,85601
RE2	If I have a habit of not asking for plastic shopping bags, I can help the country reduce plastic waste	122	1,00	5,00	38,934	,89818
<b>Self-efficacy (SE)</b>						
SE1	It's very easy for me to carry my own shopping bag	122	1,00	5,00	38,197	,88155
SE2	I can easily remember to bring shopping bags	122	1,00	5,00	38,033	,88737
SE3	Before I go shopping, I can easily plan what I need to buy	122	1,00	5,00	38,934	,87014
<b>Behavioral Intention (BI)</b>						
BI1	I intend not to receive free plastic shopping bags	122	1,00	5,00	32,787	,93828
BI2	I intend to take the bag with me the next time I go shopping	122	1,00	5,00	39,098	,84310
<b>Anti Plastik Bag Behaviour (APB)</b>						
APB1	How often do you turn down plastic bags for free when shopping	122	1,00	5,00	32,869	,95761
<b>Behavioral Willingness (BW)</b>						
BW1	I received plastic shopping bags for free unknowingly	122	1,00	5,00	35,656	,94465

Source: Data analysis, 2023

In Table 1 above, we explore respondents' agreement with statements related to factors that influence consumer behavior in carrying their shopping bags compared to using plastic bags at the Lubuk Buaya traditional market, Padang City. These factors are AT, SN, PBC, EC, PN, RE, SE, BI, APB, and BW. Based on Table 1, it can be seen that overall the AT variable has the largest average compared to other variables with the AT-2 indicator having the highest average value of 4.1311,

which means that consumers agree that in my opinion the use of plastic shopping bags can damage/pollute the environment. Meanwhile, if we look at the SN tendencies of consumers, SN3 I support the government's policy of implementing paid plastic shopping bags with an average value of 3.7131. PBC, PBC2 with an average value of 3.9098, namely If I want, I can bring a reusable bag without asking/buying a plastic shopping bag. The following are the results of the average value and SD

of the consumer behavior model whether carrying baggage or not.

The formula for calculating the Spearman correlation coefficient ( $\rho$ ) in the results in Table 2 is carried out using the following steps: 1) Rank the data for the two variables; 2) Calculate the difference in ranking ( $d$ ) between the two variables; 3) Square each  $d$ ; 4) Add up all the squared values of  $d$ ; and 5) Use the formula above to calculate  $\rho$ . The steps to test the significance of Spearman's correlation for a large sample are 1) Calculate Spearman's correlation coefficient ( $\rho$ )

using the formula mentioned previously; 2) Calculate  $z$  using the formula above; 3) Determine the critical value of  $z$  at a certain level of significance (for example, 0.05 or 0.01). You can use standard normal distribution tables or statistical calculators; and 4) Compare the calculated  $z$  value with the critical value. If  $z$  exceeds the critical value, you can reject the null hypothesis and conclude that the Spearman correlation is significant. Next, all respondents' responses were encrypted and imported into Excel software before importing into SPSS 22. For more details, see the results in Table 2 below.

**Table 2.** Relationship models influenced consumer behavior by consumer behavior activities

No	Variabel	Behavior		
		B11	B12	BW1
<b>Attitude (AT)</b>				
AT1	I thought I should take action to reduce plastic shopping bags	0.329	0.323	0.276
AT2	I think using plastic shopping bags can damage/pollute the environment	0.228	0.381	0.314
AT3	The use of plastic shopping bags can reduce environmental quality	0.300	0.276	0.054
AT4	My participation in carrying my own bag will help the environment	0.285	0.497	0.241
AT5	A paid plastic shopping bag policy should be implemented for all markets	0.216	0.185	-0.28
<b>Subjective Norm (SN)</b>				
SN1	Several people around me (family, friends) support the decision not to use plastic shopping bags freely	0.187	0.278	0.222
SN2	Some people around me can accept the government's policy of not using plastic shopping bags freely	0.188	0.250	0.179
SN3	I support the government's policy of implementing paid plastic shopping bags	0.155	0.154	0.189
<b>Percived Behavioral Control (PBC)</b>				
PBC1	It's easy to refuse plastic shopping bags for freedon't buy plastic shopping bags	0.239	0.365	0.402
PBC2	If I want, I can bring a reusable bag without asking/buying a plastic shopping bag	0.333	0.446	0.284
PBC3	I feel comfortable with the government's policy of implementing paid plastic shopping bags	0.337	0.259	-0.15
PBC4	I am now more comfortable carrying my own bag when shopping	0.250	0.477	0.166
<b>Environmental Concern (EC)</b>				
EC1	I often see plastic shopping bags thrown away carelessly	0.121	0.227	0.257
EC2	Pollution caused by plastic shopping bags	0.214	0.134	0.072
EC3	I'm afraid that plastic shopping bags will harm the health of the next generation	0.277	0.376	0.222
EC4	The existence of a paid plastic shopping bag policy can help the environment	0.394	0.379	0.129
EC5	Paid plastic shopping bag policies can inculcate people's habits to be pro-environmental by not using/reducing plastic shopping bags	0.457	0.427	0.120
<b>Personal Norm (PN)</b>				
PN1	Every citizen has an obligation to avoid using plastic shopping bags	0.385	0.364	0.237
PN2	I feel responsible and obligated to comply with the government's plastic shopping bag restrictions	0.479	0.504	0.253
PN3	The existence of a paid plastic shopping bag policy is the right time to reduce waste	0.464	0.499	0.252
<b>Response Efficacy (RE)</b>				
RE1	Too many plastic shopping bags can make a mess in the house, I anticipate that by not asking for plastic shopping bags	0.437	0.307	0.068
RE2	If I have a habit of not asking for plastic shopping bags, I can help the country reduce plastic waste	0.438	0.419	0.062
<b>Self-efficacy (SE)</b>				
SE1	It's very easy for me to carry my own shopping bag	0.465	0.637	0.165
SE2	I can easily remember to bring shopping bags	0.350	0.502	0.086
SE3	Before I go shopping, I can easily plan what I need to buy	0.376	0.607	0.191
<b>Behavioral Intention (BI)</b>				
BI1	I intend not to receive free plastic shopping bags	1.00	0.456	0.215
BI2	I intend to take the bag with me the next time I go shopping	0.456	1.000	0.270
<b>Anti Plastik Bag Behaviour (APB)</b>				
APB1	How often do you turn down plastic bags for free when shopping	0.500	0.456	0.139
<b>Behavioral Willingness (BW)</b>				
BW1	I received plastic shopping bags for free unknowingly	0.215	0.270	1.00

Source: Data analysis, 2023.

Spearman correlation coefficient value ( $\rho$ ), This value shows the strength and direction of the relationship between two variables. If  $\rho$  is positive, it indicates a positive relationship. If  $\rho$  is negative, it indicates a negative relationship. Based on Table 2 above, it is known that the total research data is 122 respondents with a sig (2-tailed) value of  $0.00 < 0.05$  so it can be concluded that there is a significant

relationship between AT, SN, PBC, EC, PN, and SE among consumers BI in carrying limits or not. Furthermore, from the output above, it is also known that the largest correlation coefficient is found in the PN2 and APB indicators, APB1 of 0.479 and 0.500, so this value shows that there is a moderate relationship between PN2 and APB1 on consumer BI whether they carry it or not.

In the SE variable, the SE1 indicator has the highest average value of 0.637 which shows that consumers find it very easy to do their shopping, so this value shows that there is a relationship between SE and consumer behavioral intentions. BI2 Will I bring bags or not or do I intend to bring these bags when shopping? Furthermore, from the output above it is also known that the largest correlation coefficient is found in the indicator, in my opinion, Easy to Reject Free Plastic Shopping Bags/Don't Buy PBC1 is 0.402 so this value shows that there is a moderate relationship between Easily rejecting free plastic shopping bags/not buying plastic shopping bags and BW1 which is the behavior of unconsciously accepting free plastic shopping bags. Based on Table 2 above, it is known that the total research data is 122 respondents, with a sig (2-tailed) value of  $0.00 < 0.05$ , so it can be concluded that there is a significant relationship between AT, SN, PBC, EC, PN, and SE among BI consumers in carrying bags or not.

Furthermore, from the output above it is also known that the largest correlation coefficient is found in the PN2 and APB1 indicators of 0.479 and 0.500, so this value shows that there is a moderate relationship between PN2 and APB1 and whether BI consumers carry bags or not. In the SE variable, the SE1 indicator has the highest average value of 0.637, which shows that consumers find it very easy to carry their shopping bags, so this value shows that there is a relationship between SE and consumer behavioral intentions. BI2 Whether to carry a bag or not or do I intend to carry the bag when I go shopping? Furthermore, from the output above it is also known that the largest correlation coefficient is found in the indicator, in my opinion, Easy to Reject Free Plastic Shopping Bags/Don't Buy PBC1 is 0.402, so this value shows a moderate relationship between Easy to reject free plastic shopping bags/don't buy plastic shopping bags with BW1 is the behavior of unknowingly accepting free plastic shopping bags.

Generalization of this research to other markets in Padang City can provide some consumer behavior towards environmental policies for paid plastic shopping bags which can vary between traditional markets and other markets in Padang City, namely:

- Consumer Characteristics: 1) Traditional Markets: Consumers in traditional markets may have more embedded and conservative consumption patterns. They may be more attached to old habits and need a more locally oriented and traditional approach to influence their behavior regarding paid plastic shopping bags; and 2) Other Markets: Consumers in modern or other markets may be more open to change and technology. They may be more accepting of innovations such as paid shopping bags and tend to adopt more progressive environmental policies.
- Social Influence: 1) Traditional Markets: Social and cultural factors can have a significant influence. For example, social norms among more traditional community groups can play a large role in the acceptance or rejection of paid-pocket policies; and 2) Other Markets: Consumers in modern markets may be more exposed to global trends and more advanced environmental views, so they may be more inclined to support pro-environmental policies.
- Price and Value: 1) Traditional Markets: Consumers in traditional markets may be more sensitive to price changes. Therefore, implementing a surcharge for plastic bags may require a more careful approach to pricing; and 2) Other Markets: Consumers in modern markets may be more open to paying more for greener options. They can add value to policies that support sustainability.

- Education and Information: 1) Traditional Markets: Extra efforts are needed in terms of education and information to ensure that consumers in traditional markets understand the positive impact of environmental policies regarding paid plastic shopping bags; and 2) Other Markets: Consumers in modern markets may be more accessible to pro-environmental information and marketing campaigns.
- Marketing Strategy: 1) Traditional Markets: Marketing strategies must accommodate the uniqueness of traditional markets, perhaps involving local community leaders, social workers, or local figures; and 3) Other Markets: Marketing in modern markets can focus more on digital media and more innovative marketing strategies.

#### 4. CONCLUSIONS

Most people already know about the government's policy on reducing the use of plastic bags as stipulated in Padang Mayor Regulation No. 36/2018. The public's perception of this policy is quite good or supportive when implemented in traditional markets. The public believes that discontinuing the use of plastic bags will reduce waste and protect the environment and health. Apart from being implemented in modern markets, the public also agrees with the implementation of paid plastic bags if they are also implemented in traditional markets. Their reasons are based on the perception that the policy can increase awareness and concern for the public to reduce the use of plastic bags. However, even so, there was a small number who stated that they did not agree with the proposed policy. The government periodically evaluates the policy program to reduce the use of plastic bags to support the realization of a plastic bag-free Indonesia in 2030. The government cooperates with small and large-scale retail shops in providing attractive, comfortable, and inexpensive shopping bags so that the role of plastic bags carrying shopping items can be eliminated.

#### ACKNOWLEDGMENT

Research this can be carried out smoothly, because of the help and cooperation of various parties. Therefore, the authors would like to thank the Padang City Government, especially the Office Markets in the Padang City region for assistance with data and information for this research.

#### REFERENCES

- [1] Sembiring, E., Rahman, H., Siswaya, Y.M. (2018). Utilization of polypropylene to substitute Bitumen for asphalt concrete wearing course (Ac-Wc). *International Journal of Geomate*, 14(42): 97-102. <https://doi.org/10.21660/2018.42.17347>
- [2] Gusty, S., Tumpu, M., Parung, H., Marzuki, I. (2021). Marshall characteristics of porous asphalt containing Low Density Polyethylene (LDPE) plastic waste. *IOP Conference Series: Earth and Environmental Science*, 921: 012025. <https://doi.org/10.1088/1755-1315/921/1/012025>
- [3] Hariyadi, S., Wulandari, D.Y., Zulmi, R., Permatasari, P.A., Amalo, L.F., Nur, I.A., Olsen, M. (2022). Plastic debris in citarum river. *IOP Conference Series: Earth and*



- Environmental Science, 1062: 012024. <https://doi.org/10.1088/1755-1315/1062/1/012024>
- [4] Shimazu, H. (2018). Littering behavior analysis based on survey and questionnaire about littering in the Nagase River. *International Journal of GEOMATE*, 14(41): 95-101. <https://doi.org/10.21660/2018.41.59010>
- [5] Mohammad, H.M., Bolong, N., Saad, I., Gungat, L., Tioon, J., Pileh, R., Delton, M. (2022). Manufacture of concrete paver block using waste materials and by-products: A review. *International Journal of GEOMATE*, 22(93): 9-19. <https://doi.org/10.21660/2022.93.j2363>
- [6] Kamaruddin, R., Yusuf, M.M. (2012). Selangor government's "No Plastic Bag Day" campaign: motivation and acceptance level. *Procedia-Social and Behavioral Sciences*, 42: 205-211. <https://doi.org/10.1177/15245004211055688>
- [7] Putri, N.W., Rahmah, S.P., Djafri, D., Olivia, I.S., Putri, U.W. (2021). The effectiveness of the non-free plastic bag policy to reduce plastic waste in the community of Padang. *E3S Web of Conferences*, 331: 02022. <https://doi.org/10.1051/e3sconf/202133102022>
- [8] Avallone, I.V., Giraldo, J.D.M.E., de Oliveira, S.V.W.B. (2012). Conscious consumption: A study on plastic bags' consumers in Brazil. *International Journal of Psychological Studies*, 4(1): 122. <http://doi.org/10.5539/ijps.v4n1p122>
- [9] Santos, S.C., Sousa, C.V.E., Sampaio, D.D.O., Fagundes, A.F.A. (2013). A influência da utilização das sacolas compostáveis no comportamento do consumidor de Belo Horizonte. *Ambiente & Sociedade*, 16: 1-18. <https://doi.org/10.1590/S1414-753X2013000400002>
- [10] Nazki, A., Razak, A., Carlo, N., Barlian, E., Dewata, I., Putra, A., Arbain, A., Mukhtar, E. (2024). Biotechnology utilization for enhancement the environmental carrying capacity of former ex-coal mining land. *EnvironmentAsia*, 17(1): 83-94. <https://doi.org/10.14456/ea.2024.7>
- [11] Aryantie, M.H., Hidayat, M.Y., Widodo, T., Putra, A., Dewata, I. (2023). Environmental perspectives to the rejection of javanese karst mining in systematic literature reviews. *International Journal of Sustainable Development & Planning*, 18(12): 3757-3764. <https://doi.org/10.18280/ijstdp.181207>
- [12] Hasmira, M.H., Barlian, E., Frinaldi, A., Dewata, I., Fatimah, S., Putra, A. (2023). 7 Bottoms towards an ecotourism icon: Environmental communication studies in Ecotourism Areas. *Journal of Environmental Management & Tourism*, 14(3): 872-882. [https://doi.org/10.14505/jemt.v14.3\(67\).25](https://doi.org/10.14505/jemt.v14.3(67).25)
- [13] Putra, A., Dewata, I., Hermon, D., Barlian, E., Umar, G., Widodo, T., Damanhuri, H. (2023). Activity recommendations based on an environmental approach in zoning of marine protected areas (MAPS) Pariaman City-Indonesia. *EnvironmentAsia*, 16(3): 57-67. <https://doi.org/10.14456/ea.2023.35>
- [14] Asmuni, S., Khalili, J.M., Hussin, N.B., Zain, Z.M. (2018). Consumer participation and effectiveness of the no plastic bag day program in Malaysia. *Asian Journal of Behavioural Studies*, 3(10): 33-41. <https://doi.org/10.21834/ajbes.v3i10.78>
- [15] Yorenza, Y., Yusran, R. (2020). Policy implementation of the use of plastic bags by community and business players in achieving sdgs in Padang City. *Science and Environmental Journal for Postgraduate*, 3(1): 14-20. <https://doi.org/10.24036/senjop.v3i1.89>
- [16] Pavlou, P.A., Fygenon, M. (2006). Understanding and predicting electronic commerce adoption: An extension of the theory of planned behavior. *MIS quarterly*, 115-143. <https://doi.org/10.2307/25148720>
- [17] Sutisna, F., Handra, T. (2022). The theory of planned behavior influences online shopping behavior. *Aptisi Transactions on Management*, 6(1): 52-61. <https://doi.org/10.33050/atm.v6i1.1691>
- [18] Jakovcevic, A., Steg, L., Mazzeo, N., Caballero, R., Franco, P., Putrino, N., Favara, J. (2014). Charges for plastic bags: Motivational and behavioral effects. *Journal of Environmental Psychology*, 40: 372-380. <https://doi.org/10.1016/j.jenvp.2014.09.004>
- [19] Gansser, O.A., Reich, C.S. (2023). Influence of the new ecological paradigm (NEP) and environmental concerns on pro-environmental behavioral intention based on the theory of planned behavior (TPB). *Journal of Cleaner Production*, 382: 134629. <https://doi.org/10.1016/j.jclepro.2022.134629>
- [20] Ichsan, C., Sumbar, P.P.G.S.P., Zuriyani, E., Rezki, A. (2020). Spatial distribution of traditional market in Padang City. *Geographica: Science and Education Journal*, 1(2): 71-82. <https://moraref.kemenag.go.id/documents/article/98810827380916615>
- [21] Louangrath, P.I. (2017). Minimum sample size method based on survey scales. *International Journal of Research & Methodology in Social Science*, 3(3): 44-52. <https://doi.org/10.5281/zenodo.1322593>
- [22] Yulius, H., Dewata, I., Heldi, Putra, A. (2023). Designing eco-friendly Kambuik shopping bags: A quality function deployment approach. *International Journal of Design & Nature and Ecodynamics*, 18(6): 1469-1474. <https://doi.org/10.18280/ijdne.180621>
- [23] Smith, C. (2002). The wholesale and retail markets of London, 1660-1840. *The Economic History Review*, 55(1): 31-50.
- [24] Rahmadiawan, D., Abrial, H., Shi, S.C., Huang, T.T., Zainul, R., Nurdin, H. (2023). Tribological properties of polyvinyl alcohol/uncaria gambir extract composite as potential green protective film. *Tribology in Industry*, 45(2): 367-374. <https://doi.org/10.24874/ti.1482.05.23.06>
- [25] Rahmadiawan, D., Shi, S.C., Abrial, H., Ilham, M.K., Sugiarti, E., Muslimin, A.N., Putra, N.S.D. (2024). Comparative analysis of the influence of different preparation methods on the properties of TEMPO-Oxidized bacterial cellulose powder films. *Journal of Natural Fibers*, 21(1): 2301386. <https://doi.org/10.1080/15440478.2023.2301386>
- [26] Fevria, R., Razak, A., Syah, N., Kamal, E. (2023). Application of nanotechnology liquid organic fertilizer in sustainable hydroponic cultivation for urban food security. *Science & Technology Asia*, 295-304.
- [27] Idris, I., Hoque, M.E., Susanto, P. (2022). Willingness to pay for the preservation of urban green space in Indonesia. *Cogent Economics & Finance*, 10(1): 2008588. <https://doi.org/10.1080/23322039.2021.2008588>
- [28] Novaliendry, D., Yoga Saputra, R.F., Febrianti, N., Putra Yanto, D.T., Saragih, F.M., Yusof Rahiman, W.M. (2024). Development of a digital twin prototype for

