

Personal Shopping Bags usage to Reduce Plastic Bag (A case study on consumers at a retail store in South Tangerang, in Indonesia)

Rianto Nurcahyo*, Damar Aji Irawan, Chelsy Ivany, Imanuel Janson

Bina Nusantara University, Indonesia

Email: rnurtjahjo@binus.edu

Abstract - This research aims to determine the effect of attitudes, subjective norms, perceived behavioral control, and environmental awareness on the intention to use personal shopping bags in South Tangerang City in Indonesia. This was carried out in consideration of environmental awareness on the effects of single-use plastic bags as well as support for the government's ban on their usage. Furthermore, purposive sampling was applied with quantitative methods where questionnaires were distributed to 175 respondents which shopped at modern retail stores, through multiple linear regression tests. The results showed that the attitudes, subjective norms, perceived behavioral control, and environmental awareness had a direct and significant effect on the intention to use personal own shopping bags in South Tangerang City.

Keywords - Behavioral Intention, Plastic and Own Shopping Bag Use

I. INTRODUCTION

Plastic bags have become very popular among consumers due to their lightweight, portability, and load capacity (Chandra, 2019). Governor Regulation No. 142 of 2019 regarding The Obligation to Use Environmentally Friendly Shopping Bags. The subjects and objects that are governed in the regulation are as follow: Legal Subject - Supermarkets as well as Merchants or Shop Owners inside Shopping Centers and Traditional Market. Manager of Shopping Centers and Traditional Market, Objects of Law Environmentally Friendly Shopping Bag – Required Single-Use Plastic Bags – Prohibited, Single-Use Plastic Wrap – Allowed.

Although plastic bags function as a carrier for various goods, food, and others, their negative effect on the environment (Jakovcevic et al. In Novianti, 2017) is that it takes 1,000 years to decompose (Wright, 2019). According to statista.com, plastic production from 1950-2018 has increased in number. Furthermore, the lack of proper plastic waste disposal also poses a problem. Indonesia ranks second after China in contributing plastic waste to the sea (Jambeck et al., 2015). Wouter et. Al(2016) stated that the policy of using paid plastic bags can change consumer behavior. Therefore, since February 2016, the public policy regarding paid plastic bags has been implemented in 23 cities in Indonesia (Noviyanti, Kompas.com 2016). Based on the National Socioeconomic survey data in the 2017 Social Resilience

Module, the percentage of households that never carried their own shopping bag in 2017 was 54.8%, which signified that there was no awareness to use personal shopping bags. The policy implemented by the government enables retailers to provide solutions in form of reusable bags and recycled cardboard. Subjective norm is a person's perception of social pressure to act or not to act. A person's behavior depends on the intention, while the intention to behave depends on the attitude and subjective norms. Therefore, research by Ajzen (in Parkinson et al., 2017) involved a focus of control where attitudes or behaviors are based on individual perceptions that are related to the manifestation of certain behaviors. The formulation in this research are the following questions: Is there an effect of Attitude on the intention of retail consumers to use their own shopping bags? Is there an effect of Subjective Norm on consumers' intention to use their own shopping bags? Is there an effect of Perceived Behavioral Control on retail consumer intentions in using their own shopping bags? Is there an effect of Environmental Concern on consumers' intentions to use their own shopping bags? Finally, is there an effect of intention to use on consumer behavior in reducing single-use plastic bag behavior?

II. METHODOLOGY

This was an associative research which involved the distribution of questionnaires, and consists of both independent and dependent variables. The independent variables include Attitude, Subjective Norm, Perceived Behavioral Control, and Environmental Concern. Meanwhile, the dependent variable consists of Reducing Single-Use-Plastic Bag Behavior. The population was the people of South Tangerang which have previously performed retail shopping. This research was carried out in this city due to the inherent plastic problem: 105.5 tons of plastic waste are produced daily (Kirom, 2018). The method used was non-probability sampling and the sampling criteria included consumers aged 17-65 years which have shopped at retail stores. A reliability test of each variable was also conducted and measured using Cronbach's Alpha. The minimum reliability level for Cronbach's Alpha was 0.70. Furthermore, the research also conducted normality, Multicollinearity, Heteroscedasticity, and linearity tests as well as path analysis. These were performed to determine the causal relationship and direct or indirect effects between

exogenous and endogenous variables. Multiple linear regression requires at least two independent variable which can be ordinal level variables.

III. RESULTS

A. Figures and Tables

To test the relationship between variables, the conceptual framework of this research was designed based on the theory to planned behavior. The following is the framework used in this research:

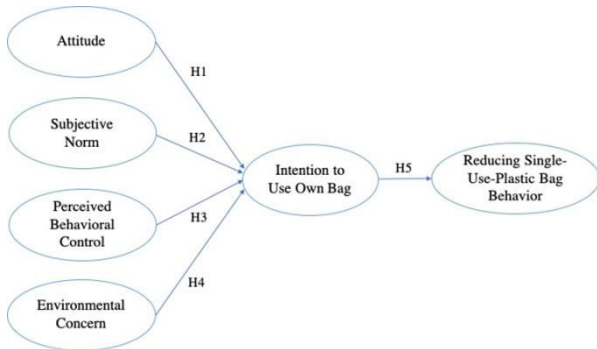


Figure 3.1: Conceptual Framework

The respondents consisted of 56% women and 44% men. Meanwhile, based on age, the majority of respondents were from the 19-25 year age group at 88.6%. The data on the behavior of respondents in using plastic is shown in Table 3.1.

TABLE 3.1 DATA ON RESPONDENTS' BEHAVIORAL USE OF PLASTIC BAGS

Characteristics	Category	Number of Respondents	Percentage
Ever shopped at a modern retail store	Yes	175	100%
	No	0	0%
The frequency of visits to modern retail stores in one month	1 - 2	8	4,6%
	3 - 4	65	37,1%
	5 - 6	63	36,0%
	7 - 8	20	11,4%
	9 - 10	8	4,6%
	> 11	11	6,3%
The average number of plastic bags taken home after shopping at a retail store	1 - 2	31	17,7%
	3 - 4	86	49,1%
	5 - 6	47	26,9%
	7 - 8	8	4,6%
	> 9	3	1,7%

Source: Data processing results (2021)

Validity Test -Validity is related to whether the indicator measures what should be measured (Sekaran & Bougie, 2016). The table 3.2 shows the validity and reliability test results.

TABLE 3.2 VALIDITY AND RELIABILITY TEST

Variable	Validity Test				Cronbach's Alpha
	No.	r-count	r-table	Description	
Attitude	ATT1	0,669	0,361	Valid	0,865
	ATT2	0,695	0,361	Valid	
	ATT3	0,728	0,361	Valid	
	ATT4	0,769	0,361	Valid	
Subjective Norm	SN1	0,794	0,361	Valid	0,921
	SN2	0,711	0,361	Valid	
	SN3	0,822	0,361	Valid	
	SN4	0,735	0,361	Valid	
	SN5	0,831	0,361	Valid	
	SN6	0,764	0,361	Valid	
Perceived Behavioral Control	PBC1	0,401	0,361	Valid	0,832
	PBC2	0,662	0,361	Valid	
	PBC3	0,619	0,361	Valid	
	PBC4	0,646	0,361	Valid	
	PBC5	0,676	0,361	Valid	
	PBC6	0,735	0,361	Valid	
Environmental Concern	EC1	0,654	0,361	Valid	0,932
	EC2	0,717	0,361	Valid	
	EC3	0,725	0,361	Valid	
	EC4	0,789	0,361	Valid	
	EC5	0,717	0,361	Valid	
	EC6	0,710	0,361	Valid	
	EC7	0,695	0,361	Valid	
	EC8	0,767	0,361	Valid	
	EC9	0,731	0,361	Valid	
	EC10	0,805	0,361	Valid	
Intention to Use Own Bag	ITU1	0,798	0,361	Valid	0,933
	ITU2	0,853	0,361	Valid	
	ITU3	0,855	0,361	Valid	
	ITU4	0,832	0,361	Valid	
	ITU5	0,772	0,361	Valid	
Reducing Single Use Plastic Bag Behavior	RP1	0,725	0,361	Valid	0,860
	RP2	0,735	0,361	Valid	
	RP3	0,761	0,361	Valid	

Source: Data processing results (2021)

Normality Test

This test is performed to determine if the data is well modeled by a normal distribution through the use of skewness and kurtosis ratios. When the two ratios are between -2 to 2, the data, the data distribution is normal. However, when they are outside this range, the data is not normally distributed.

TABLE 3.3 NORMALITY TEST RESULTS

Variable	N Statistic	Skewness		Ratio	Kurtosis		Ratio
		Statistic	Std. Error		Statistic	Std. Error	
Attitude	175	-0,331	0,184	-1,799	-0,705	0,365	-1,932
Subjective Norm	175	-0,190	0,184	-1,033	-0,713	0,365	-1,953
Perceived Behavioral Control	175	-0,308	0,184	-1,674	-0,692	0,365	-1,896
Environmental Concern	175	-0,360	0,184	-1,954	-0,488	0,365	-1,337
Intention to Use Personal Bag	175	-0,361	0,184	-1,964	-0,668	0,365	-1,830
Reducing Single Use Plastic Bag Behavior	175	-0,351	0,184	-1,904	-0,549	0,365	-1,504

Source: Data processing results (2021)

Linearity Test

In this linearity test, if the probability value is significant > 0.05, the relationship between the two research variables is linear. Conversely, if the probability value is significant < 0.05, the relationship between the two research variables is not linear. Table 4:12 below shows the linearity test results.

TABLE 3.4 LINEARITY TEST RESULTS

Linearity of Sub Structure 1	Sig. Deviation from Linearity
Attitude on Intention to Use Personal Bag	0,245
Subjective Norm on Intention to Use Personal Bag	0,508
Perceived Behavioral Control on Intention to Use Personal Bag	0,113
Environmental Concern on Intention to Use Personal Bag	0,123
Linearity of Sub Structure 2	
Intention to Use Personal Bag on Reducing Single-Use Plastic Bag Behavior	0,237

Source: Data processing results (2021)

Based on the linearity test results in the table 3.4, all relationships between variables in this research had a significant value, > 0.05.

Multicollinearity Test

The test is carried out to determine whether the regression model has a correlation between the independent variables.

TABLE : 3.5 MULTICOLLINEARITY TEST

		Attitude	Subjective Norm	Perceived Behavioral Control	Environmental Concern
Attitude	Pearson Correlation	1	,142	,241**	,261**
	Sig. (2-tailed)		,061	,001	,000
	N	175	175	175	175
Subjective Norm	Pearson Correlation	,142	1	,422**	,413**
	Sig. (2-tailed)	,061		,000	,000
	N	175	175	175	175
Perceived Behavioral Control	Pearson Correlation	,241**	,422**	1	,457**
	Sig. (2-tailed)	,001	,000		,000
	N	175	175	175	175
Environmental Concern	Pearson Correlation	,261**	,413**	,457**	1
	Sig. (2-tailed)	,000	,000	,000	
	N	175	175	175	175

Description: **. Correlation is significant at the 0.01 level (2-tailed).

Source: Data processing results (2021)

Based on the multicollinearity test results in the table above, the value of the Pearson correlation between the independent variables in this research model does not exceed 0.9.

Path analysis

Path analysis in this research is divided into two sub-structures of the relationship, namely:

Simultaneous Test of Sub-Structures 1

The test of sub-structure 1 was conducted to measure the effect of the variable attitude (X1), subjective norm (X2), perceived behavioral control (X3), and environmental concern (X4) on the intention to use personal bag (Y). The table shows a summary of the path coefficient values for sub-structure 1

TABLE 3.6 MODEL SUMMARY OF SUB-STRUCTURES 1

Effect between variables	Path Coefficient(Beta)	Sig.	t- count	Test result	R- Square	Other Variable Coefficients
Attitude on Intention to Use Own Bag	0,368	0,000	6,414	+ (S)	0,489	0,715
Subjective Norm on Intention to Use Own Bag	0,150	0,018	2,391	+ (S)		
Perceived Behavioral Control on Intention to Use Own Bag	0,246	0,000	3,776	+(S)		
Environmental Concern on Intention to Use Own Bag	0,233	0,000	3,575	+(S)		
F-count = 40,597 Sig.F-count = 0,000 Hypothesis decision: There are simultaneous effects of attitude, subjective norm, perceived behavioral control, and environmental concern on intention to use own bag						

Source: Data processing results (2021)

Test of Sub-Structures 2

The hypothesis test on the effect of the intention to use personal bag (Y) on reducing single-use plastic bag behavior (Z) can be seen through the following model summary table.

TABLE 3.7 MODEL SUMMARY OF SUB-STRUCTURES 2

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,544 ^a	,296	,292	,63005
a. Predictors: (Constant), Intention to Use Own Bag				

Source: Data processing result (2021)

The R-Square value of the intention to use personal bags on reducing single-use plastic bag behavior is 0.296. Therefore, the intention has a significant effect on

reducing single-use plastic bag behavior by 29.6% while 70.4% is influenced by other variables.

IV. CONCLUSION

Based on the results, all hypotheses in this research are accurate. In connection with the hypothesis testing, there are several factors to be considered by retail stores, the public, and the government.

- The government maintains the policy of paid plastic bags and establishes more policies to reduce their use, by preventing and limiting the production and distribution. This will promote perceived behavioral control for the use of personal shopping bags.
- Furthermore, there is a need for continuous socialization to all consumers regarding the use of plastic bags. For example, the dangers of plastic bags for the environment. This is an effort to increase public environmental concern on the importance of reducing their use. This also promotes the community's attitude and subjective norms related to the use of personal shopping bags.
- The implication for retail stores is to provide paid, reusable shopping bags at low prices. Furthermore, retail stores can implement a discount policy for consumers which carry their own shopping bags. This plays a role in promoting perceived behavioral control and the intention to use personal shopping bags. This also helps to realize the behavior of reducing single-use plastic bags. However, the aim is for society and individuals to get used to carrying personal shopping bags.

REFERENCES

- Aibek Doszhanov and Zainal Ariffin Ahmad. (2015). Customers' Intention To Use Green Products: The Impact Of Green Brand Dimensions And Green Perceived Value. *SHS Web of Conferences EDP Sciences*.
- Ajzen, I., & Fishbein, M. (2000). Attitudes and attitude behavior relation: Reasoned and automatic processes. *European Review of Social Psychology*, 10, 1–33.
- Arsilan, T., Yilmaz, V., & Aksoy, H. K. (2012). Structural equation model environmentally conscious purchasing behavior. *International Journal of Environmental Research*, 6(1), 323–334.
- Aldi Geri, L. T. (22 Januari 2020). *Ini Pelopor Pasar Bebas Plastik Di Jakarta*. Retrieved from <https://jakarta.go.id/artikel/konten/5965/ini-pelopor-pasar-bebas-plastik-di-jakarta>
- Ali, Murti L. (1 Maret 2019). *Mulai Hari Ini, Kantong Plastik Tidak Lagi Gratis di Ritel Modern*. Retrieved from kompas: <https://ekonomi.kompas.com/read/2019/03/01/064645326/mulai-hari-ini-kantong-plastik-tidak-lagi-gratis-di-ritel-modern>
- Angriani, Desi. (2 Juli 2019). *Gerai Ritel Hasilkan 9,85 Miliar Sampah Plastik Setahun*. Retrieved from medcom.id: <https://www.medcom.id/ekonomi/mikro/GNIY6Ggb-gerai-ritel-hasilkan-9-85-miliar-sampah-plastik-setahun>
- Ari, E., & Yilmaz, V. (2016). Consumer attitudes on the use of plastic and cloth bags. *Environment, Development and Sustainability*. Springer Science+Business Media Dordrecht.
- Badan Pusat Statistik. (2020). *Jumlah Penduduk Kota Tangerang Selatan, 2010-2017*. Retrieved from tangselkota.bps.go.id: <https://tangselkota.bps.go.id/dynamic/table/2017/05/09/49/jumlah-penduduk-kota-tangerang-selatan-2010-2017.html>

- [9]Dirgantara, Alvino. (19 Desember 2019). *Plastik, Benda yang Sukar Terurai dan Berbahaya untuk Lingkungan*. Retrieved from <https://environment-indonesia.com/plastik-benda-yang-sukar-terurai-dan-berbahaya-untuk-lingkungan/>
- [10]Gewati, Mikhael. (9 September 2019) Pemkot Tangsel Keruk Sampah Menumpuk di Bahu Jalan. Retrieved from Kompas: <https://regional.kompas.com/read/2019/09/09/21171691/pemkot-tangsels-keruk-sampah-menumpuk-di-bahu-jalan>
- [11]I. Ajzen. (1991). *The Theory of Planned Behavior*. Organizational Behavior and Human Decision Processes, 50, 179–211.
- [12]Karen Glanz, Barbara K. Rimer, K. (2015). *Health Behavior: Theory, Research, and Practice 5th Edition*. San Fransisco, CA : Jossey-Bass Public Health, a Wiley Brand.
- [13]Khare, A. (2015). Antecedents to green buying behaviour: a study on consumers in an emerging economy. *Mark. Intell. Plan.*
- [14]Kotler, P., Kartajaya H., & Setiawan.. (2010). *Marketing 3.0 From Products to Customers to the Human Spirit*. USA: John Wiley & Sons, Inc.
- [15]Moser, A.K. (2015). Thinking green, buying green? Drivers of pro-environmental purchasing behavior. *J. Consum. Mark.*
- [16]Nathania, Bella. (6 Februari 2020). 4 masalah dalam larangan penggunaan kantong plastik di Jakarta yang mulai berlaku Juli. Retrieved from the conversation: <https://theconversation.com/4-masalah-dalam-larangan-penggunaan-kantong-plastik-di-jakarta-yang-mulai-berlaku-juli-130953>
- [17]Ohtomo, S., & Ohnuma, S. (2014). Psychological interventional approach for reduce resource consumption: Reducing plastic bag usage at supermarkets. *Resources, Conservation and Recycling*, 84, 57–65.
- [18]Paul, J., Modi, A., & Patel, J. (2016). Predicting green product consumption using theory of planned behavior and reasoned action. *Journal of Retailing and Consumer Services*.
- [19]S. Tih, & Z. Zainol. (2012). Minimizing Waste and Encouraging Green Practices. *Jurnal Ekonomi Malaysia*, 46(1), 157–164.
- [20]Situs Resmi Pemerintah Kota Tangerang. (2020). *Pemkot Imbau Pembatasan Kantong Plastik di Toko Ritel*. Retrieved from tangerangkota.go.id: <https://www.tangerangkota.go.id/pemkot-imbau-pembatasan-kantong-plastik-di-toko-ritel>
- [21]Statista. (2020). *Global plastic production from 1950 to 2018 (in million metric tons)*. Retrieved from Statista: <https://www.statista.com/statistics/282732/global-production-of-plastics-since-1950/>
- [22]Steg, L., Lindenberg, P., & Keizer, K. (2016). Intrinsic Motivation, Norms and Environmental Behaviour: The Dynamics of Overarching Goals. *International Review of Environmental and Resource Economics*.
- [23]Sun, Y., Wang, S., Li, J., Zhao, D., & Fan, J. (2017). Understanding consumers' intention to use plastic bags: using an extended theory of planned behaviour model. *Springer Science+Business Media; Natural Hazards*.
- [24]T. Ramayah, W.C. Lee Jason, & O. Mohamad, (2010). Green Product Purchase Intention: Some Insights from a Developing Country. *Resources, Conservation and Recycling*, 54, 1419–1427.
- [25]Utomo, Trisno. (2015). *Sampah Plastik Timbun Lautan, Indonesia Peringkat Kedua*. Retrieved from Kompasiana: <https://www.kompasiana.com/lhapiye/562e24180323bda309c47e2b/sampah-plastik-timbun-lautan-indonesia-peringkat-kedua?page=all>
- [26]World Economic Forum. (2016). *The New Plastics Economy: Rethinking the Future of Plastics*. Geneva.
- [27]Yadav, R., & Pathak, G. S. (2017). Determinants of Consumers' Green Purchase Behavior in a Developing Nation: Applying and Extending the Theory of Planned Behavior. *Elsevier B.V. Ecological Economics*.
- [28]Y.N. Sang, N.S. Othman, I.N. Jazari. (2019). What Do We Know about Intention to Discard Single-Use Plastic? Empirical Evidence in Malaysia. *International Journal of Recent Technology and Engineering (IJRTE)*.