



## Determinants of Mother Behavior in Disposing Household Garbage in Ternate City

Sri Ayu M.U Buamona<sup>✉</sup>, Oktia Woro Kasmini H, Budi Laksono

Universitas Negeri Semarang, Indonesia

### Article Info

#### Article History:

Accepted 19 July 2020

Approved 07

December 2020

Published 23 April  
2021

#### Keywords:

Culture, Income,  
Education,  
Perception, Behavior

### Abstract

The garbage problem is increasing in line with the increase in population, especially in urban areas. Lifestyle and development impacts exacerbate the garbage problem. Poor management can have an impact on the health of residents, either due to pollution or flooding. The role of housewives in managing sampah at the family level is very important. The purpose of this study was to analyze the determinants of mother behavior in disposing of household garbage in Ternate City, North Maluku Province. This type of research is a quantitative study, using a correlation analytic research design and a cross sectional study design approach. The sample in this study amounted to 100 housewives. The instruments used were questionnaires, observation and checklist sheets. Data analysis This study uses path analysis techniques. The results showed that there was an effect of education on the behavior of mothers in disposing of household garbage in Ternate City, North Maluku Province, p-value of  $0.000 < \alpha (0.05)$ . There is no influence of income p-value of  $0.255 > \alpha (0.05)$ . Cultural p-value is  $0.749 > \alpha (0.05)$ . And there is a perception effect of p-value of  $0.042 < \alpha (0.05)$ . Education through perception is 35.2%, the rest is from other factors. Income through perception is 11.8%. Culture through perception of 31%. The conclusion from the study shows that the education and perception factors are more dominant and directly influence the behavior of mothers in disposing of garbage.

#### <sup>✉</sup>Correspondence Address:

Kampus Unnes Jl Kelud Utara III, Semarang, 50237, Indonesia  
E-mail: [sriayubuamona13@gmail.com](mailto:sriayubuamona13@gmail.com)

p-ISSN 2528-5998

e-ISSN 2540-7945

## INTRODUCTION

Garbage is the remains of human daily activities and / or natural processes in a solid form (RI Law No. 18 of 2008). Household garbage is garbage that comes from daily activities in the household which does not include feces and specific garbage. Household-like garbage is garbage originating from commercial areas, industrial areas, special areas, social facilities, public facilities, and / or other facilities (PP RI No. 81 of 2012).

The main source of garbage in Indonesia is household garbage, where most of it (50-70%) is garbage that easily decays from food scraps, fruit skins, vegetables, and so on (Trihadiningrum et al., 2015). The garbage problem occurs because the human population is increasing so that garbage production also increases, where the type of garbage that is most widely used is plastic garbage. The resulting plastic garbage is not managed properly and is disposed of in random places, resulting in the accumulation of garbage everywhere.

In Indonesia, the amount of garbage generation increased in 2016, reaching 65,200,000 tons per year with a population of 261,115,456 people. The projection of Indonesia's population shows that the number continues to increase and will certainly increase the amount of garbage generation. The addition of garbage generation is also due to changes in consumption patterns. The more it leads to urban areas, the more significant changes in consumption patterns increase the amount of garbage generation. Data on garbage generation The World Bank ignores garbage in rural areas because it produces at least garbage. Changing consumption patterns can be seen from the daily lives of urban residents, such as the habit of buying ready-to-eat food which produces garbage in the form of food containers, disposable spoons and forks, and their wrappers. This consumption pattern greatly affects the addition of garbage generation, especially in urban areas (Statistics, 2018).

The impact of poor household garbage processing will result in accumulation of garbage.

Garbage is a problem that can cause other problems, namely the occurrence of water, soil and air pollution in Pervez Alam and Kafeel Ahmade. The results of the 2014 and 2018 Village Potential Survey show an increase in water pollution and a decrease in air quality pollution (Statistics, 2018)

The factors that influence people's behavior in disposing of household garbage are education, income, culture and perception. Perception and behavior in disposing of garbage in the river is related to the environmental literacy of the community. Achievement of the goals of environmental education can be seen from changes in perceptions and behavior raised by the community. People who have low perceptions of the environment and still throw garbage in the river show that the goal of education has not been achieved. People with environmental literacy will have a high perception of the environment and participate in protecting the environment by throwing garbage in the trash (Isthofiyani et al., 2016).

Ternate City is a city that has grown very rapidly in the last decade. The total area of the city of Ternate is 5,709.84 km<sup>2</sup>. In addition, various development processes also produce byproducts such as garbage, both in the form of solid, liquid and gas as well as pressure and noise levels (Ternate City Regional Regulation Number 39 of 2012). With increasing population growth, garbage production will increase. Garbage production in Ternate City reaches 300 tons per day, such as plastic disposal and so on. This garbage production can increase on certain days, such as Wednesday and Saturday, because these two days are market days so that the number increases significantly from other days, data from the Ternate City Environmental Service, 2019.

The results of the jailan research show that the garbage management in Ternate City is not good enough, several factors that influence the garbage management system in Dufa-Dufa Village are still experiencing problems, namely the cultural attitudes and behavior of the community, piles and characteristics of garbage, as well as means of collection, transportation,

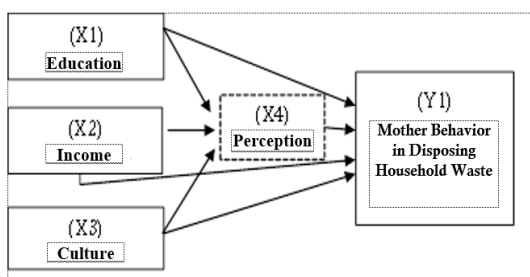
management and disposal. end of garbage (Jailan et al., 2016).

The purpose of this study is to analyze the determinants of mother behavior in disposing of household garbage in Ternate City, North Maluku Province.

**METHOD**

This type of research is a quantitative research. The research design was correlation analytic with cross sectional study approach. The population in this study were all housewives in Ternate City, North Maluku Province. With a total population of 10,966 housewives. The sampling technique used in this study is cluster random sampling. The number of samples in this study were 100 housewives. This research data consists of primary data and secondary data. Primary data were data obtained from the research results, while secondary data in this study were data from the Ternate City Environmental Service (DLH). The instruments that will be used in this research are questionnaires and observation sheets. The variables in this study consisted of independent variables, namely education, income, culture and perception and the dependent variable, namely the behavior of mothers in disposing of household garbage. This study uses path analysis techniques (path analysis), which is an analysis technique which is a developmental analysis technique of linear regression analysis techniques.

The path analysis scheme can be described as follows:



**Figure 1.** The path analysis scheme

**RESULTS AND DISCUSSION**

The results of this research which was carried out in Ternate City, North Maluku Province, in June-September 2020 on housewives totaling 100 research respondents. The results of this study are presented in the following tables:

**Table 1.** Frequency distribution of respondent characteristics in Ternate City.

Characteristics	Category	Total	Frequency
Gender	Female	100	100(%)
Total		100	100(%)
Age	20-30 years	26	26
	31-40 years	39	39
	41-50 years	24	24
	51-60 years	8	8
	61-70 years	3	3
Total		100	100
Profession	Pensionary	1	1
	Civil Servant	6	6
	Entrepreneur	20	20
	Housewife	71	71
	Farmer	2	2%
Total		100	100

Based on table 1. The majority of respondents were all female because those involved in this study were housewives with a total of 100 respondents or (100%). Based on the age of the respondents in this study, they were in the age range of 31-40 years, namely 39 respondents or (39%), while the least was found in the 61-70 years age range, namely 3 respondents or (3%). Based on the type of work, respondents who work as housewives (IRT) dominate in this study with 71 respondents or (71%) while the least is retirees with 1 respondent or (1%).

**Table 2.** Distribution of respondents based on the influence of education, income, culture, and perceptions

Characteristics	Category	Total	Percentage
Education	ES	13	13
	JHS	14	14
	SHS	67	67
	Diploma/S1	6	6
Income	Low	31	31
	Medium	66	66
	High	3	3
Culture	Not good	20	20
	Good enough	50	50
	Good	30	30
Perception	Not good	15	15
	Good enough	59	59
	Good	26	26

Of the total 100 respondents, 67 respondents or (67%) have high school education, while the respondents with DIPLOMA / SMA education are 6 respondents or (6%). Meanwhile 66 respondents or (66%) had moderate income, while respondents with high income were only 3 respondents or (3%). As many as 50 respondents who had a fairly good culture, while the least respondents with a bad culture were 20 respondents or (20%). And as many as 59 respondents or (59%) had a fairly good perception, while 15 respondents or (15%) had bad perceptions.

**Table 3.** Path Analysis 1 Table of influence of education, income, and culture on perceptions

Variable	Regression coefficient (B)	t <sub>count</sub>	Sig t
Constant	0.986	8.506	.000
Education (X1)	.006	0.462	.645
Income (X2)	.007	0.533	.595
Culture (X3)	-.008	-	.936
			0.080
F <sub>count</sub> =0.162			
R Square =0.005			

Dependent Variable: Perception (X4)

Based on table 3, the results of the analysis of the test of the influence of education (X1), income (X2) and culture (X3) on perceptions (X4). The results of the regression path analysis show that education does not affect the behavior

of mothers in disposing of household garbage through perception with a t value of 0.462 p-value (sig.) Of 0.645, this means sig> 0.05, thus it means that education has no effect significant towards perception (X4). From the regression results of the income variable we can see that the t value is 0.533 with a p-value (sig.) Of 0.595, this means that sig> 0.05, thus it means that income has no significant effect on perception (X4). While the regression results of cultural variables we can see that the t value is -0.080 with a p-value (sig.) Of 0.936, this means that sig> 0.05, thus it means that culture has no significant effect on perception. By looking at the t value, it means that culture (X3) has no positive effect on perception (X4).

**Table 4.** Path analysis II tables the effect of education, income, culture, and perceptions on mother behavior in disposing of garbage

Variable	Regression coefficient (B)	t <sub>count</sub>	Sig t
Constant	1.126	1.187	0.062
Education (X1)	-.186	-3.658	.000
Income (X2)	.056	1.145	.255
Culture (X3)	-.127	-0.320	.749
Perception (X4)	.816	2.059	.042

F<sub>count</sub> = 4.840

R Square=0.169

Dependent variable: Mother Behavior (Y)

Based on the results of the analysis of the educational variable path, we can see that the t value of -3.658 with a p-value (sig) of 0.000, this means that sig <0.05, thus it means that education has a significant effect on the behavior of mothers in disposing of household garbage. By looking at the t value, it means that education (X1) has a negative effect on the behavior of mothers in disposing of household garbage (Y). Similar results were also obtained (Chusnul & Muh, 2015), that the level of education of housewives in Sekaran Village was high, because at most (34.7%) were high school graduates (12 years of success). With higher education, the hope is that people will have better insight into

understanding and knowledge related to behavior in disposing of garbage. In this case an understanding can be a basis for behavior, therefore it can be expected that with a good understanding good behavior will emerge (Okta et al., 2019). The level of education can be influenced by their attitudes, although environmental factors and habits also play a role, but education is still important for shaping a person's character in doing or overcoming a problem that arises from garbage (Afwatunnati et al., 2016). These results are not in line with other studies which show that education has no effect on garbage management behavior. The results of the SPSS statistical test on the education level variable obtained  $t_{count} = 4.075$  and  $sig = 0.00 = 0.000\% < 5\%$  so  $H_0$  was accepted. This means that the level of education has no effect on garbage management behavior (Eldo et al., 2018). Likewise, the results of research can state that the level of education is the smallest category in determining community behavior in managing household garbage. with a sig value of 0.537, meaning that this indicator has the lowest relationship to internal factor variables (Ni, et al, 2017). Where it can be explained that environmental governance can be built based on community participation and awareness which comes not only from knowledge but also conscience, such as desire, will to form behavior (Retno & Suryani, 2015).

The results of the analysis of the income variable path can be seen that the t value is 1.145 with a p-value (sig.) Of 0.255, this means that  $sig > 0.05$ , thus it means that the income variable has no significant effect on the behavior of mothers in disposing of household garbage. . By looking at the t value, it means that income (X2) does not have a negative effect on the behavior of mothers in disposing of household garbage (Y). In line with the results of the study (Manoso et al., 2014), it shows that statistically there is no significant relationship between income and household garbage management actions in environment II of Sumompo Village, Tuminting District, Manado City with a probability of 0.122 ( $p > 0.05$ ) . Comparable to the results of the research which shows that the family income

variable has a significant value of  $0.122 > 0.05$ , then  $H_a$  is rejected, so there is no effect of family income on the implementation of PHBS in a household setting (Wardani et al., 2019) However it is not in line with the results. Other studies have shown that income has a significant positive effect on household garbage generation, this result seems reasonable because of the increased demand for convenience and service factors contained in commodities (Afroz et al., 2011). This is the same as the research result which shows that the p-value for family income is 0.002 or less than  $\alpha = 0.05$ . This condition means that family income affects family attitudes in managing household garbage in Condongcatur Village, based on his research that high-income families will be more concerned with managing their household garbage compared to those with lower incomes (Putra et al., 2013). With optimal route costs all garbage trucks can be emptied and trash can be transported to landfills. So that they do not huddle in temporary dumps (Antoni et al., 2019). There are findings that explain that the income factor plays a very small behavioral role in sorting household garbage (Wichitra et al., 2017).

While the results of the path analysis of cultural variables, we can see that the t value is -0.320 with a p-value (sig.) Of 0.749, this means that  $sig > 0.05$ , meaning that cultural variables do not have a significant effect on mother's behavior in disposing of household garbage. By looking at the value of t means that culture (X3) has a negative effect on the behavior of mothers in disposing of household garbage (Y). The results of the study (Ryan et al., 2016) The behavior of littering is currently still a culture in society. This is due to a lack of knowledge and public awareness of the impact of littering. For this reason, it is necessary to have supervision from the Pontianak City Gardening and Sanitation Office on the behavior of people who like to litter. This is evident from the observations of researchers at the location of the temporary disposal site (TPS). In the TPS located in Sungai Jawi Kelurahan the community tends to throw garbage out of the TPS that has been provided. It is in line with the results of the research which

states that most respondents still lack a sense of concern in their neighborhood so that the culture of throwing garbage under the house and around residential areas is still practiced by most of the respondents (Yuliana & Haswindy, 2018). Where the environmental conditions of the community determine a regional condition. Because social, cultural and economic factors as well as education determine the way of thinking of the community which indirectly becomes a pattern of behavior in society (Erвина et al., 2020) So in this case one must have a strong commitment to health promotion, involvement and program awareness. families are needed that are regulated and conditioned by government policies (Oktia et al., 2017). Therefore, a garbage management strategy is needed that refers to all activities related to collection, processing, control, and disposal of garbage in accordance with public health principles (Indrianti, 2016).

Meanwhile, the result of the perception path analysis shows that the t value is 2.059 with a p-value (sig.) Of 0.042, this means that sig <0.05, thus it means that the perception variable has a significant effect on the behavior of mothers in disposing of household garbage. By looking at the t value, it means that the perception (X4) has a negative effect on the behavior of mothers in disposing of household garbage (Y), meaning that if the perception increases, the behavior of housewives has an effect. In line with the results of the study stated that the increasing perceptions of high school students about garbage management using composter bins (X1) partially had a significant effect on the increasing understanding of environmental health (Y) (Rarindo et al., 2010). river is a place for garbage disposal and the habit of making public toilets by disposing of sewage directly into the river, thus people do not have the behavior to maintain the river properly because they often throw household garbage so that it can lead to pollution of the river environment and river water quality according to lack of behavior good (Putri et al., 2019). This is in line with research which states that household perceptions of the garbage collection system are currently being transferred to the city government because households

perceive that the environmental cleanliness of an area depends on the rules that are the responsibility of the city government (Wegedie, 2018).

## CONCLUSION

Based on the results of research and discussion carried out in Ternate City, North Maluku Province, it can be concluded that the results of the study show that there is an influence of educational and perceptual factors that directly influence the behavior of mothers in disposing of household garbage.

## REFERENCES

- Afroz, R., Hanaki, K., & Tudin, R. (2011). Factors affecting garbage generation: a study in a garbage management program in Dhaka City, Bangladesh. *Environ Monit Assess*, 1(4), 509–519.
- Afwatunnati, Sunarko, & Setyaningsih, W. (2016). Pengaruh Pengetahuan Terhadap Sikap Ibu Rumah Tangga Dalam Upaya Mengatasi Pencemaran Lingkungan Akibat Sampah Di Tpa Jatibarang. *Edu Geography*, 4(1), 24–32.
- Antoni, K., Roger, K., & Katarzyna, G. (2019). A MILP Model for the Municipal Solid Garbage Selective Collection Routing Problem. *Decision Making in Manufacturing and Services*, 13(1), 17–35.
- Chusnul, C. D., & Muh, S. (2015). Hubungan Tingkat Pendidikan Ibu Rumah Tangga Dengan Praktik Pemilahan Sampah Di Kelurahan Sekaran Kecamatan Gunungpati Kota Semarang. *Edu Geography*, 3(7), 30–36.
- Eldo, S. R., Puji, H., & Hariyanto. (2018). Hubungan Tingkat Pendidikan dan Tingkat Pengetahuan Penduduk terhadap Perilaku Pengelolaan Sampah di Kelurahan Patemon Kecamatan Gunungpati. *Edu Geography*, 6(3), 177–181.
- Erвина, M., Sapta, H., & Tutik, W. F. (2020). Analisis faktor-faktor yang mempengaruhi pola perilaku masyarakat membuang sampah di sungai musi (studi kasus kelurahan 10 ulu). *UNBARA Environmental Engineering Journal (UEE)*, 1(1), 1–6.
- Indrianti, N. (2016). Community-based Solid Garbage Bank Model for Sustainable Education. *Procedia - Social and Behavioral*

- Sciences*, 224, 158–166.
- Isthofiyani, S. E., Prasetyo, A. P. B., & Iswari, R. S. (2016). Persepsi dan Pola Perilaku Masyarakat Bantaran Sungai Damar dalam Membuang Sampah di Sungai. *JISE*, 5(2), 128–136.
- Jailan, S., Mimien, M. H., Fachtur, R., & Istamar, S. (2016). Sistem Pengelolaan dan Upaya Penanggulangan Sampah Di Kelurahan Dufa- Dufa Kota Ternate. *BIOeduKASI*, 4(2), 478–487.
- Manoso, F., Paledeng, H., & Tucunan, A. (2014). Hubungan Antara Tingkat Pendidikan Dan Tingkat Pendapatan Dengan Tindakan Pengelolaan Sampah Rumah Tangga Di Lingkungan II Kelurahan Sumompo Kecamatan Tuminting Kota Manado. *Jurnal Penelitian Fakultas Kesehatan Masyarakat Universitas Samratulangi Manado*.
- Okta, H. K. W., Ii, W., Bambang, R. B., & Efa, N. (2019). The Reproduction Health Behavior of High School Teenagers in Semarang, Indonesia. *The Open Public Health Jurnal*, 12, 309–314.
- Okta, H. K. W., Macdonald, McCuaig, Rahayu, Budiono, & Windraswara. (2017). Substitution Program In Indonesia And Australia As Health Promotion Model At Schools. *KEMAS*, 12(2).
- Peraturan Daerah Kota Ternate Nomor 39 Tahun 2012. (2012). Rencana Pembangunan Jangka Panjang (RPJP) Kota Ternate Tahun 2005-2025. Kota Ternate: Badan Perencanaan Pembangunan Daerah.
- PP RI No 81 tahun. (2012). Pengelolaan Sampah Rumah Tangga Dan Sampah Sejenis Sampah Rumah Tangga. [www.hukumonline.com](http://www.hukumonline.com).
- Putra, H. P., Taufiq, A. R., & Juliani, A. (2013). Studi Hubungan antara Tingkat Pendidikan dan Pendapatan Keluarga terhadap Sikap dalam Pengelolaan Sampah Rumah Tangga (studi kasus di Desa Condongcatur, Depok, Sleman, Yogyakarta). *Jurnal Sains Dan Teknologi Lingkungan*, 5(2), 91–101.
- Putri, M. K., Septinar, H., & Daulay, W. (2019). Analisis Pengaruh Pengelolaan Lingkungan terhadap Kondisi Masyarakat Hilir Sungai Musi. *JURNAL GEOGRAFI*, 16(2), 80–89.
- Rarindo, H., Husodo, A. H., Soebijanto, & Tandjung, S. D. (2010). Hubungan Antara Persepsi Dan Kesadaran Siswa Sma Tentang Pengelolaan Sampah Memakai Tong Komposter Dengan Pemahaman Kesehatan Lingkungan. *Teknologi Dan Kejujuran*, 33(2), 171–182.
- Retno, D., & Suryani, S. (2015). Garbage Bank as Community-based Environmental Governance: A Lesson Learned from Surabaya. *Procedia - Social and Behavioral Sciences*, 184, 171–179.
- Ryan, P. A., Kiki, U. P., & Dian, J. R. (2016). Perilaku Masyarakat Dalam Membuang Sampah Di Tempat Penampungan Sementara (Tps) Di Kecamatan Pontianak Barat Kota Pontianak. *Jurnal Teknologi Lingkungan Lahan Basah*, 4(1), 1–10.
- Statistik, B. P. (2018). *Pengelolaan Sampah di Indonesia*. (Nona Iriana, A. Supriyani, & A. Nanik, Eds.). Kota Ternate: Badan Pusat Statistik/BPS–Statistics Indonesia.
- Sukerti, N. L. G., Sudarma, I. M., & Pujaastawa. (2017). Perilaku Masyarakat Dalam Pengelolaan Sampah Dan Faktor-Faktor Yang Mempengaruhi Di Kecamatan Denpasar Timur Kota Denpasar, Provinsi Bali. *ECOTROPHIC*, 11(2), 148–155.
- Trihadiningrum, Y., Laksono, I. J., Dhokhikah, Y., Moesriati, A., Radita, D. R., & Sunaryo, S. (2015). Community activities in residential solid garbage reduction in Tenggilis Mejoyo District , Surabaya City , Indonesia. *Journal of Material Cycles and Garbage Management*, 19(1), 526–535.
- UU RI No 18 tahun. (2008). *Tentang Pengelolaan Sampah*. Ternate.
- Wardani, Ismail, E., Anto, H. J., & Asriwati. (2019). Pelaksanaan Perilaku Hidup Bersih Dan Sehat Dalam Tatanan Rumah Tangga Di Wilayah Kerja Puskesmas Cot Ie Jue Kabupaten Bireuen. *PROMOTIF*, 9(1), 93–105.
- Wegedie, K. T. (2018). Households solid garbage generation and management behavior in case of Bahir Dar City, Amhara National Regional State, Ethiopia. *Cogent Environmental Science*, 4(1), 1–18.
- Wichitra, S., Kidanun, D., & Warapon, K. (2017). Household Recycling Behaviours and Attitudes toward Garbage Bank Project: Mahasarakham Municipality. *Journal of ASIAN Behavioural Studies*, 2(5), 17–26.
- Yuliana, F., & Haswindy, S. (2018). Partisipasi Masyarakat Dalam Pengelolaan Sampah Pemukiman Pada Kecamatan Tungkil Ilir Kabupaten Tanjung Jabung Barat. *Jurnal Ilmu Lingkungan*, 15(2), 96–111.