

ANALYSIS OF HOUSEHOLDS' ATTITUDE TOWARDS WASTE SEGREGATION

Titik Desi Harsoyo
titik.desi@machung.ac.id

Etsa Astridya Setiyati
etsa.astridya@machung.ac.id
Management Study Program
Universitas Ma Chung, Malang, Indonesia

ABSTRACT

As consumption and production increase, waste problems emerge since the consumption is not followed by the proper post-consumption activities such as waste management. Today waste management becomes a current issue in various field studies, including marketing. This descriptive research aims to analyze the cognitive, affective, conative attitudes of households towards waste segregation. The primary data are collected from 100 households which are drawn with convenience technique. The descriptive data are analyzed by using five boxes index analysis method. The findings prove that the cognitive attitude has a very high index value. It means that samples have knowledge and belief on the importance of the waste segregation and for family, other people and environment. The affective attitudes shows a low index, indicating that most of the respondents feel uncomfortable in doing waste segregation due to some reasons. Conative attitude has a high index values, reveals that most of the respondents have a positive tendency to do the waste segregation regularly, educate and invite family and other people to do waste segregation. This research is expected to bring significant contributions for understanding the disposal attitude and provide insight for developing a more effective waste management campaign.

Keywords: attitudes, cognitive, affective, conative, waste segregation, disposal, household

INTRODUCTION

Nowadays, waste becomes a serious problem in many countries, includes Indonesia. As the number of population increase, the level of consumption is higher, and consequently, contribute to the rise of waste volume, kinds and characteristics (Aisyah, 2013). The lack of appropriate waste management system had worsen the waste problem in Indonesia. In 2012, Ministry of Environment of Indonesia recorded that Indonesian population produced around 625 liter millions of waste every day. Data revealed that 14.1 tons million waste that were produced by big cities in Indonesia, only 13.6 tons million were able to be processed in the final processing (Ministry of Environment of Republic Indonesia, 2008). This fact indicates there is a lack of attempts to reduce waste. The Indonesian Minister of Environment, Balthasar Kambuaya, stated that the current phenomenon of waste management in Indonesia is so alarming (Kompasmania, 2012). Therefore, many stakeholders are expected to take responsibility in the attempt of giving understanding and educating to the community with regards to waste management problem. This could be carried out by providing dissemination activities regarding the benefits of participating in maintaining / preserving the environment. Expectedly, by educating citizens to have more concern on waste management, the damage and natural disasters which may be caused by waste might be reduced. The willingness of society to participate in waste segregation program will also help the janitor to sort them for reuse and recycle purposes.

As one of highly populated cities in Indonesia, Malang Regency has faced the waste problem caused by the increasing population density. The number of local residents and immigrants has reached 867,832 and 300,000 respectively (Central Statistics Bureau of Malang Regency, 2013). Dinas Kebersihan dan Pertamanan of Malang Regency, the government unit that is responsible for waste management, mentioned that in 2013, the population had produced 659.21 tons of waste per day. Domestic waste (which is produced by households) dominated the total waste in Malang Regency. Waste generated by households reached 55.4% of the total amount of garbage (Hitachi, 2012). In 2014, Malang Regency generated 640 tons per day of household waste, and this figure increased to 660 tons per day in 2015. Unfortunately, only 420-440 tons per day were able to be transported to the final processing (Sukarelawati, 2015). The high volume of household waste in Malang Regency indicates that waste management has not been regarded as citizen responsibility. Most people consider that it is government responsibility to manage the waste that are dumped into final processing landfills (TPA/Tempat Pembuangan Akhir), and it is also their responsibility to solve the waste

problem. In fact, the best way to reduce waste should start from household level.

In household context, women play significant role in waste management since their activities are closely related to household chores. Moningka (2000) also finds that women have significant contribution in waste management because they carry on obligations in maintaining cleanliness inside and outside the house, paying bills for waste collection, and stimulating other parties within the society to participate in waste management.

As household waste is the largest generator of public waste, encouraging citizens to do waste segregation in domestic level is of great importance. However, this campaign should be based upon good understanding of households' attitude towards waste management in order to be able to conduct an effective campaign program in Malang Regency. This article aims to describe the analysis of cognitive, affective, and conative attitude of women in Malang Regency toward waste management. The implications for social marketing program on waste management will be elaborated subsequently.

THEORETICAL REVIEW

Consumer Behavior and Disposal Behavior

Schiffman and Kanuk (2008) define consumer behavior as behaviors in searching, buying, and disposing products that are expected to satisfy their needs. Refers to the definition, disposal behavior is related to how consumer attempts to consider how they will dispose the product and how it contribute to the number of waste, and environment sustainability. This disposal should be considered during decision making process; in other words, consumers should not only think of buying products that satisfy the needs but also aim to generate less waste to the environment. Jacoby *et. al.* (in Chang, 2013) also emphasize that consumer behavior is not just a matter of buying the product, but also choosing to ignore or discard the product.

In taking the decision to dispose the goods (for example: old stuff), there are several factors that are considered by consumers (Chang, 2013). These factors include internal factors, external factors, situational factors of the products used, and psychological factors. Internal factors include the depreciation of the product, scarcity, the volume size, the characteristics of the brand, the quality of commodities (such as the origin of goods). External factors or market factors are related to transaction costs, market prices, references, purchase price, market size, and the promotion of commodity prices. Situational factors are related to the number of transactions, ongoing or temporary needs, comfort, experience with the product, and warranty of commodities. Person's psychological factors are related to the function of the product and the amount of products that are not used anymore.

Household Waste Management in Indonesia

In the explanation of paragraph (1) of article 1 of Indonesian Law No. 18 of 2008 on Waste Management, it is mentioned that waste is the leftover of human daily activities and / or processes of nature in the solid form. In general, garbage include those from households, farms, offices, companies, hospitals, schools, and markets (Sudarwanto, 2010). Waste from households is also known as domestic waste. The domestic waste usually are in the form of food waste, plastic, paper, cardboard / carton, cloth, wood, glass, leaf, metal, and sometimes large garbage like a tree branch. Household residents may also generate B3 class garbage (i.e. hazardous and toxic materials), such as batteries, fluorescent lamp (tubular lamp), drugs, and used oil.

According to Indonesian Government Regulation Number 18 in 2012, waste management is a systematic, thorough, and continuous covering waste reduction and handling. Waste management activities include: sorting, collection, transportation, processing and final processing of garbage. As the number of population is increasing, the sum of households grows faster, making the amount of household waste volume is the highest compared to other waste sources.

1.1. Attitude

Solomon (2013) states that attitude consists of three components, namely cognitive, affective, and conative. Relationship between the three is described as follows.

1. Cognitive component refers to consumer's belief and knowledge regarding the object (product attributes). The more positive consumers' belief toward a product, the whole attitude will be supported by the cognitive component.
2. Affective component is related to emotional aspect which describe the feeling of a person toward an object, whether the object is desirable or merely preferred.
3. Conative component is described as the tendency to perform an action toward an object.

RESEARCH METHOD

3.1 Variables and Measurements

In this study, the attitude on waste segregation is measured with several items as follows:

- (1) Cognitive:
 - a. Belief that waste management is important (CG1)
 - b. Belief that sorting domestic waste will reduce waste (CG2)

- c. Belief that sorting domestic waste will contribute to environment sustainability (CG3)
- d. Knowledge to sort waste accordingly (organic, inorganic) (CG4)
- e. Passing the knowledge to family members is important (CG5)
- (2) Affective
 - a. Doing waste segregation is convenient (AF1)
 - b. Doing waste segregation gives pride (AF2)
 - c. Doing waste segregation will be appreciated by others (AF3)
 - d. Feel satisfied for doing something good for the environment through waste segregation (AF4)
- (3) Conative
 - a. Doing waste segregation on daily basis (CN1)
 - b. Educate family members to dispose waste accordingly (CN2)
 - c. Having willingness to continue doing waste segregation (CN3)
 - d. Having intention to invite other people to do waste segregation (CN4)

Saya mengajak orang lain untuk berpartisipasi dalam program Bank

All the three attitudinal variables were measured using 5-points Likert scale as follows: (1) Strongly Disagree; (2) Disagree; (3) Neutral; (4) Agree; (5) Strongly Agree.

3.2 Sample

The study employs purposive-sampling technique to gain better understanding of how women, who are responsible for waste management within their household, form their attitude toward waste segregation activities. One hundred (100) women in Malang Regency who have conducted waste segregation in their household were selected as the sample. Women, in their domestic role, are highly involved in producing and managing household waste.

3.3 Validity and Reliability Test of the Research Instrument

To determine the validity of each item questionnaire, Pearson Product Moment analysis was performed by correlating the score of each item questions with a total score of each measured variables. If the significance of the correlation value < 0.05 then the item is declared valid, and vice versa. Reliability tests was performed by setting Cronbach Alpha rule of thumb > 0.60 . After performing validity and reliability tests, it is noted that all item in the questionnaires were valid and reliable, and therefore are acceptable to be analyzed further (Table 1).

Table 1. Validity and Reliability

Variable	Items	Significant Level Validity*	Cronbach Alpha**
Cognitive	CG1	0.004	0.613
	CG2	0.001	
	CG3	0.001	
	CG4	0.000	
Affective	AF1	0.000	0.788
	AF2	0.000	
	AF3	0.000	
	AF4	0.000	
Conative	CN1	0.000	0.797
	CN2	0.000	
	CN3	0.000	
	CN4	0.000	

*Significant level at 0.05

** Rule of thumb > 0.60

Data Analysis

Data analysis technique that was used in this research is Index Analysis with Five Box Method. This technique is used to classify variables based on five criteria boxes. The index value of each answers from respondents can be calculated using the following formula:

$$\text{Value index} = \{(\% F1x1) + (\% F2x2) + (\% F3x3) + (\% F4x4) + (\% F4x5)\} / 5$$

Where:

F1 is the frequency of respondents who answered 1 (Strongly Disagree)

F2 is the frequency of respondents who answered 2 (Disagree)

F3 is the frequency of respondents who answered 3 (Neutral)

F4 is the frequency of respondents who answered 4 (Agree)

F5 is the frequency of respondents who answered 5 (Strongly Agree)

After the index value of each components of attitude was calculated, the next step is to determine the level of the index value based on the five categories that have been formulated.

- a) below 20% (very low),
- b) 20% -40% (low),
- c) 41% - 60% (average) ,
- d) 61% - 80% (high),
- e) 81% - 100% (very high).

RESULTS & DISCUSSION

4.1 Cognitive attitude

The result of the index value calculation for the attitude components are presented in Table 2. The results of the average value of cognitive attitude index is 81.02%, which is classified as very high. In sum, this result indicates that households believe on the importance of doing waste segregation for the family members and environment. They also have sufficient knowledge about the importance of sorting waste, the importance of waste segregation in reducing waste.

The results give a good suggestion for government to support the households' knowledge about the waste management which is broader than just waste segregation. The support could be in the form of waste management campaign. This is supported by the result which reveals that the first item of Cognitive Attitude (CG1) has the highest mean compared to others.

4.2 Affective components

As seen in Table 2, the AF4 shows the lowest mean (39.02%) compared to other items. It reflects that households not to satisfied for doing something good for the environment through waste segregation. It seems become an interesting for further research to investigate the reasons. Meanwhile, the mean of AF3 proves that women get appreciation from others with doing sorting the waste. It seems that if people do something good and get appreciation for that, they will then feel enjoy to do the activity.

The results of the average index value calculation for affective attitude components is 39.62%, which can be classified in low category. Low-affective attitude component indicates that respondents do not feel proud of their participation in waste sorting, that they actually do not like doing garbage sorting activities due to the inconvenience of this activity. The respondents state that they dissatisfied by the fact that the janitor do not have separated part on their garbage cart.

4.3 Conative components

The average index values of conative components is 74.67%, and therefore can be classified as high. It indicates that overall, women agree for doing waste segregation on daily basis, educate family members to dispose waste accordingly, willing to continue doing waste segregation and intent to invite other people to participate in doing waste segregation. The findings contribute for government to support women doing the waste segregation due to the reasons that households have a very positive conative attitude toward waste management and that they become influencers for their family members and other people to promote waste management.

Table 2. Index of all Attitude Components

Variable	Items	Means	Index	The average of Indeks	Category of Indeks
Cognitive	CG1	4.11%	82.2%	81.02%	Very high
	CG2	4.09%	81.8%		
	CG3	3.99%	79.7%		
	CG4	4.02%	80.3%		
	CG5	4.06%	81.1%		
Affective	AF1	3.20%	40.1%	39.62%	Low
	AF2	3.08%	39.2%		
	AF3	3.23%	41.1%		
	AF4	3.02%	38.1%		

Conative	CN1	3.97%	79.5%	74.67%	High
	CN2	3.49%	69.8%		
	CN3	3.67%	73.5%		
	CN4	3.79%	75.9%		

CONCLUSION

The high index value of cognitive and conative components indicates that respondents who have done waste segregation in their household have embraced the importance of waste separation, knowing the positive impact on environmental hygiene and sustainability. However, since the affective components is classified as low, it is important to increase this component through social marketing campaign on waste management, in order to improve the satisfaction and increase the participation of households to do waste segregation. This can be obtained by providing annual award for environment contributions that encourage the communities to do waste segregation, equipping the janitor with garbage cart that have separated part for organic and inorganic waste, coaching clinic for reusing and recycling products, and endorse anti-consumption behaviors that aim to reduce waste.

Acknowledgement

The authors would like to acknowledge the Ministry of Higher Education, Research, and Technology for the research grant (scheme 2015-2016) that enables the authors to conduct this study. This article is composed as a part of research series on disposal behavior.

Thank you for Kementerian Riset, Teknologi, dan Pendidikan Tinggi Republik Indonesia (Kemenristekdikti RI) for funding this research through Penelitian Hibah Bersaing Year 2015-2016. This article is part of the results of the research.

REFERENCES

- Aisyah. (2013). Pengelolaan Sampah Rumah Tangga Berbasis Masyarakat Di RT 50 Kelurahan Sungai Pinang Dalam Kecamatan Samarinda Utara (Tinjauan Peraturan Daerah Kota Samarinda No 02 Tahun 2011 Tentang Pengelolaan Sampah). *Jurnal Beraja Niti*. Volume 2, Nomor 12, Halaman 4.
- Badan Pusat Statistik Kota Malang. (2013). *Statistik Daerah Kota Malang 2013*. Diakses tanggal 20 September 2015 dari <http://malangkota.bps.go.id>.
- Chang., Lin, C.I. 2013. A Study to Explore How Disposing Old-Goods factors Influence Consumer's Behavior. *Journal of Advanced Management Science*. Vol 1, No. 4.
- Hitachi (2012). Study on The Integrated Waste to Energy Project in Greater Malang, *The Overview of waste disposal and landfills/dumps in Asian countries*. Material Cycles and Waste Management in Asia. Retrieved from www.scirp.org/journal/PaperInformation.aspx.
- Kementrian Negara Lingkungan Hidup (KNLH). (2008). *Statistik Persampahan Indonesia Tahun 2008*. Jakarta: KNLH.
- Kompasmania*. (2012). *Peningkatan Pemahaman Peraturan Lingkungan Hidup di Tanah Papua*. Retrieved by: <http://www.menlh.go.id/peningkatan-pemahaman-peraturan-lingkungan-hidup-di-tanah-papua>
- Moningka, Laura. (2000). *Community Participation in Solid Waste Management: Factors Favouring the Sustainability of Community Participation, A Literature Review*. Netherland: UWEP Occasional Paper.
- Solomon, M. R. 2013. *Consumer Behavior Buying, Having, And Being*. Harlow: Pearson.
- Sudarwanto, S. 2010. Peran Strategis Perempuan Dalam Pengelolaan Limbah Padat Bernilai Ekonomi. *Jurnal EKOSAINS*, Vol. II, No. 1, 65-66.
- Sukarelati, E. (2015). Kota Malang Hadapi Masalah Peningkatan Volume Sampah. Diakses tanggal 21 Desember 2015 dari <http://www.antarajatim.com/lihat/berita/167835/kota-malang-hadapi-masalah-peningkatan-volume-sampah>.
- Undang-Undang Republik Indonesia Nomor 18 Tahun 2008 Tentang Pengelolaan Sampah. Retrieved from <http://www.menlh.go.id/DATA/UU18-2008.pdf>, 3.

