

RELATIONSHIP OF KNOWLEDGE WITH PUBLIC BEHAVIOR IN WASTE BANK MANAGEMENT

Bunga Oktora*, Dhifa Fadilla

Wijaya Husada Health Institute

Jl. Letjend Ibrahim Adjie, No. 180, Sindang Barang, Bogor, West Java, Indonesia

*corresponding author: wijayahusada@gmail.com

ABSTRACT

In Indonesia waste is a very serious problem that need attention and also become a social, economic and cultural problem. All cities in Indonesia mostly experience obstacles in processing waste. Objective this research to find out the relationship between knowledge about waste and community behavior in managing the waste bank in RW 06, Gunung Batu Village, Working Area of the UPTD Puskesmas Mekarwangi, Bogor City, 2020.

Type this research is descriptive analytic with a Cross Sectional Study design, using Kendall Tau's data analysis carried out in RW 06 Gunung Batu Subdistrict, Working Area of the UPTD Mekarwangi Health Center, Bogor City on 17-19 July 2020 with a sample of 200 households using the technique accidental sampling. Instrument sheets are used questionnaire regarding knowledge about waste with community behavior in managing waste banks.

Knowledge of univariate analysis for variable knowledge about waste from 200 respondents which has knowledge Good as much (47.0%), enough knowledge (21.5%) and less knowledge (31.5%). For the results of the univariate analysis of community behavior variables in managing the waste bank, the number of respondents who had positive behavior was (57.5%) and the respondents who had negative behavior were (42.5%). The results of the analysis obtained 69 respondents (73.4%) had good knowledge with positive behavior, and obtained p value = 0.00 which means there is a relationship.

From the results study can be concluded between theory and research results that knowledge about waste and community behavior in managing the waste bank in RW 06 Gunung Batu Subdistrict, Working Area of the UPTD Mekarwangi Health Center, Bogor City in 2020, is obtained p value = 0.00 smaller than α (> 0.05), which means there is connection between independent variables with dependent variable.

Keywords : Knowledge, Behavior, Waste , Waste Bank Management, Society

INTRODUCTION

The community's understanding of waste management is currently lacking, so that a lot of waste pollutes the environment, one of which is plastic waste. Most people still view waste as useless waste. Some residents in managing waste still rely on the end-of-pipe approach, by collecting, transporting and disposing of waste to the final waste processing site. Meanwhile, the case regarding waste can be overcome, one of which is through the creative industry. But there are still many residents who are not familiar with waste management and use waste into something more useful, the impact is that there are still many numbers of waste accumulation in landfills, due to the lack of community explanation about 3R.1

In Indonesia waste is a very serious problem that need attention and also become a social, economic and cultural problem. Most cities in Indonesia experience obstacles in processing waste. 2 This happens because the processing of TPA (final disposal site) in a city area is still

lacking, so that many people throw garbage into rivers. Based on data obtained by Jambeck (2015). Indonesia is ranked second in environmental pollution by dumping garbage into the sea after China³

Waste management includes collection, transportation, up to the destruction or management of waste in such a way that it does not become a nuisance to public health and the environment. Environmental health is essentially a condition or condition that is optimal so that it has a positive effect on the realization of optimum health status as well. The scope of environmental health includes: housing, disposal of human waste (feces), provision of clean water, disposal of garbage, disposal of dirty water (waste) and so on. As for what is meant by environmental health business is an effort to improve or optimize the human living environment so that it is a good medium for the realization of optimal health for humans who live in it.

According to the Big Indonesian Dictionary (KBBI) waste is goods that are no longer used or no longer wanted, such as feces, drink cans, leaves, paper, and others. ⁵

According to the Act Republic of Indonesia Number 18 of 2008 concerning Waste Management, waste is the residue of human or natural activities in solid form.⁶

Garbage Bank According to the Regulation of the Minister of Environment of the Republic of Indonesia Number 13 of 2012 concerning Guidelines for the Implementation of Reduce, Reuse and Recycle. Through the Garbage Bank Article 1 paragraph 1 defines a waste bank as a place for sorting and collecting waste that can be recycled and/or reused that has economic value. ⁷

According to the Ministry of Environment and Forestry, the waste bank contributes to reducing national waste by 1.7% (1,389,522 tons/year) with an average income of Rp. 1,484,669,825 per year. The benefits of the circular economy are obtained from waste management carried out by the waste bank by applying the 3R principles (reduce, reuse, and recycle). The active participation of the community in sorting and processing waste at the source is the key to successful waste bank management

The waste problem is closely related to population growth, economic growth and changes in people's consumption patterns. In 2016 the amount of waste generated in Indonesia reached 65,200,000 per year with a population of 261,115,456 people. Indonesia's population projections show a population that continues to grow and of course will increase the amount of waste generation, quite high waste production per day occurs on the island of Java, including Surabaya produces 9,896.78 m³ of waste per day and Jakarta produces 7,164.53 m³ of waste , while outside Java Island, among others, Makassar produces 6,485.65 m³ of waste per day, then Denpasar, Manado, and Medan respectively produce 3,657.20 waste; 2064.00; and 1,892.00 m³ per day.⁹

Efforts to improve the community environment have been carried out by most Regional and City Governments in Indonesia through the planning of various aligned business programs such as the Garbage Bank. A waste bank is a place for processing waste using the 3R system and depositing a certain amount of waste into a waste bank unit that is formed and approved by the local community to accommodate waste that has a sale value, waste is saved up to a certain amount and time, then exchanged for an amount of money. The construction of Garbage Banks in Indonesia has grown from 1,172 units in 2015 to 5,244 units in 2017, all of which are spread across 34 provinces and 219 districts/cities in Indonesia. ⁹ And the number of Garbage Banks in Bogor City rose to 223 units from previously 72 units

People who lack knowledge and behave poorly in processing waste can cause waste to accumulate and make the environment dirty, causing various diseases such as diarrhea, dysentery, hepatitis, typhus. Physically, waste can also contaminate water

Environmental and health problems due to waste continue to increase, such as blockage of waterways which can cause flooding, forest fires, environmental pollution which causes and increases various vector-borne diseases. The quality degree of river water in Indonesia is generally at status heavily polluted in 2018 as much as 25.1% The village is experiencing water pollution, and 2.7% village polluted land. Poor waste generation and handling directly contributes against floods (World Bank) and sources of diseases such as diarrhea (UN-Habitat, 2010). Based on data from the National Disaster Management Agency (BNPB) in Indonesia, there were 1,085 cases of flooding in 2016-2017, this number continues to increase when compared to previous years. Apart from that, the impact of the floods which caused the death and loss of victims reached 433 fatalities. In areas experiencing poor/poor waste handling services, the incidence of diarrhea was twice as high in 2016 as much as 3.04% and acute respiratory infections six times higher than areas with good waste management (UN-Habitat, 2010).⁹

Based on the City Sanitation Strategy Source (SSSK) for Bogor City, the amount of waste generated in West Bogor District is 390 m³/day and the total volume of waste transported to the landfill is 2.6 m³. Efforts to handle waste management in Bogor City cover various aspects, namely technical operational, financial, management, and socio-cultural aspects. Waste management is a system related to many parties ranging from waste revenue (such as households, markets, institutions, industry and others), management (contractors), regulators, the informal sector, as well as communities affected by the waste management so that the solution is requires a comprehensive approach and involvement of all relevant parties

Factors driving the success of implementing waste management are the Regional or City Government and the community. This starts from understanding or knowledge, attitude and behavior as well as public awareness about waste management as a reflection of the success of waste management in the city. Efforts to manage waste can be through the waste bank program which requires dissemination of knowledge about the waste bank program to the community in waste management, in addition to the government's role as a facilitator. Lack of public awareness of waste will result in degradation of environmental quality which will affect the quality of life of people in an area. Environmental quality is triggered by the bad behavior of people who pay little attention to the environment, such as throwing garbage in water bodies

health in the environment which is in the scope of work of the Mekarwangi Health Center is one of the problems of waste management. Gunung Batu Village is one of the working areas of the Mekarwangi Health Center where there are environmental problems regarding poor waste management. The problem factor is supported by the dense population in the Batu Mountain area, the absence of land to collect garbage and public TPS and the existing ones often experience an overload of garbage, as a result many residents still throw garbage into the river and burn garbage. Small road access prevents garbage trucks from entering residents' settlements.

The Garbage Bank in the Gunung Batu area was founded by the head of RW 06 Kelurahan Gunung Batu out of concern for the environment which is increasingly being filled with organic and inorganic waste. Garbage that is not managed and accumulates will certainly cause many problems so that it requires processing such as turning waste into useful materials. Waste management with a waste bank system is expected to be able to assist the government in dealing

with community waste. This waste bank cooperates with and is supported by the Ministry of Environment and involves cadres in RW 06. The waste bank program coordinates with the Puskesmas. However, there is still a lack of people participating in waste bank management.

The results of a preliminary study conducted by researchers at RT 04 RW 06 Kelurahan Gunung Batu, 5 out of 10 respondents did not know the difference between organic and non-organic waste, 5 of them knew the difference between organic and non-organic waste but had never separated waste. Not all people are aware of the importance of waste management and not all people know about the waste bank program. Some already know but don't understand that this program is a positive effort to change society for the better and has many benefits besides getting economic value. There are still many people who have low understanding and awareness about waste management.

Based on the results of the survey and interviews regarding the problems described above, the researcher is interested in the title "Relationship between Knowledge About Waste and Community Behavior in the Management of Waste Banks in RW 06 Gunung Batu Village, Working Area of the UPTD Puskesmas Mekarwangi, Bogor City 2020".

RESEARCH METHODS

This type of research is a quantitative analytical research. The design used in this study is quantitative analytic with a cross sectional approach. Cross sectional is a study to study the dynamics of the correlation between risk factors and effects, by way of approach, observation or data collection at one time (point time approach).

This design is used to determine the relationship between the independent variable (knowledge about waste) and the dependent variable (people's behavior in waste bank management) which is observed and measured at the same time.

The research was conducted in RW 06 Gunung Batu Subdistrict, Working Area of the UPTD Mekarwangi Health Center, Bogor City. The time of the research was carried out on July 17-19 2020. The population in this study was the RW 06 community with 395 families and the number of samples in this study was 200 families. Probability Sampling with Accidental Sampling type.

The variables of this study consist of knowledge about waste as the independent variable (free) and community behavior in waste bank management as the dependent (bound) variable. Data processing and data analysis using the computer program SPSS for windows series 17.

The analysis consists of univariate analysis and bivariate analysis, where bivariate analysis uses Kendall-Tau to analyze the relationship between knowledge about waste and community behavior in managing the waste bank in Rw 06 Gunung Batu Sub-District Work Area UPTD Puskemas Mekarwangi Bogor City in 2020

RESEARCH RESULT

Table 1: Frequency Distribution of Respondents Based on Knowledge of Garbage in RW 06 Gunung Batu Village Work Area UPTD Mekarwangi Health Center in 2020

No	Knowledge	Frequency (F)	Percentage (%)
1	Not enough	63	31.5%
2	Enough	43	21.5%
3	Good	94	47.0%
Total		200	100%

Source: SPSS 17.0

Based on table 1, it shows that the results of the analysis of the frequency distribution of Knowledge About Garbage mostly have good knowledge about waste, namely as many as 94 respondents (47.0%).

Table 2: Frequency Distribution of Respondents Based on Community Behavior in the Management of the Waste Bank in RW 06, Gunung Batu Sub-District, Working Area of the Mekarwangi Health Center UPTD in 2020.

No	Behavior	Frequency (F)	Percentage (%)
1	Negative	85	42.5%
2	positive	115	57.5%
Total		200	100%

Source: SPSS 17.0

Based on table 2, it shows that the results of the analysis of the frequency distribution of community behavior in the management of waste banks mostly have positive behavior in managing waste banks, namely as many as 115 respondents (57.5%).

Table 3: The Relationship between Knowledge About Waste and Community Behavior in the Management of a Waste Bank in RW 06, Gunung Batu Village, UPTD Work of the Mekarwangi Health Center

Knowled ge	Community Behavior				Total		<i>p value</i>
	Negative		Positive		F	%	
	F	%	F	%			
Not enough	43	68.3%	20	31.7%	63	100%	0.000
Enough	17	39.5%	26	60.5%	43	100%	
Good	25	26.6%	69	73.4%	94	100%	
Total	85	42.5%	115	57.5%	200	100%	

Based on table 3 regarding the results of statistical tests on the relationship between knowledge about waste and community behavior in the management of the waste bank in RW 06, Gunung Batu Village, from 200 respondents, 69 respondents (73.4%). who have good knowledge with positive behavior. Kendall Tau statistical test results obtained ρ value = 0.000, which means α (<0.05), so that there is a significant relationship between knowledge about waste and community behavior in managing waste banks in RW 06 Gunung Batu Sub-District Work Area UPTD Puskesmas Mekarwangi, Bogor City.

DISCUSSION

Based on table 3 regarding the results of statistical tests on the relationship between knowledge about waste and community behavior in managing the waste bank in RW 06 Gunung Batu Village, from 200 respondents, 69 respondents (73.4%) had good knowledge with positive behavior.

The results of the Kendall Tau statistical test obtained ρ value = 0.000, which means α (<0.05) so that there is a significant relationship between knowledge about waste and community behavior in managing waste banks in RW 06 Gunung Batu Sub-District Work Area UPTD Puskesmas Mekarwangi Bogor City Year 2020.

The results of this study are comparable to research conducted by Ahmad Khoiri and Eko Rudiansyah (2019) examining the "Relationship of Waste Management Knowledge and Environmental Care Behavior (Correlational Study on STKIP Melawi Students)" results from 100 students who have positive knowledge and behavior with correlation test results obtained at 0.679.

The results of the study with the correlation test, the correlation coefficient for the line equation X1 to Y is significant, this can be seen from the correlation coefficient value of 0.679 with a Sig value. (2-tailed) $0.000 < 0.05$. Simple regression equation: $Y = 51.530 + 1.356X1$. The results of the calculation show that there is a positive and significant relationship between students' knowledge about waste management and environmental care behavior. The contribution of students' knowledge about waste management to environmental care behavior is 46.1%. 18

Knowledge is someone who already knows or senses a certain object. Sensing is done through the human senses, such as: senses (sight, hearing, smell, taste, and touch). Most of human knowledge is obtained through the eyes and ears

Knowledge or cognitive is a very important domain for the formation of one's actions (overt behavior). Research states that behavior based on knowledge will be more relevant than behavior that is not based on knowledge. 15

Behavior is all kinds of human experiences and interactions with their environment which are manifested in the form of knowledge, attitudes and actions. Behavior is a person's response/reaction that comes from outside and from within him

The concept of behavior, namely KAP (Knowledge-Attitude-Practice) is knowledge that becomes the basis for the formation of a person's behavior. This was explained by Lawrence Green that behavior is formed by various factors and one of them is a predisposing factor, namely knowledge, attitudes, beliefs, beliefs, values, socio-economic and so on.17

The results of the study can be concluded that between theory and research results that knowledge about waste and community behavior in managing waste banks in RW 06 Kelurahan

Gunung Batu UPTD Work Area Mekarwangi Health Center Bogor City in 2020, namely the results obtained p value = 0.000 smaller or less than α (<0.05) which means that H_0 is rejected and H_a is accepted, meaning that there is a significant relationship between the independent variables and the dependent variable.

From the results of data analysis, it shows that there is a significant relationship between knowledge about waste and people's behavior in managing waste banks. This means that the higher the public's knowledge about waste, the higher the positive behavior of the community. This also applies vice versa, the lower or lack of public knowledge about waste is always followed by negative behavior.

From this it can be concluded that respondents who have good knowledge with positive behavior indicate that these respondents apply the knowledge they have into the behavior of everyday life. With this knowledge can build public awareness to behave in accordance with the knowledge they have.

With counseling activities through posters or directly inviting the public to participate in waste bank management activities such as waste sorting competitions, clean Friday, giving rewards to people who are diligent in collecting and sorting and bringing waste to the waste bank and other activities that carried out by the waste bank manager. This method is to add information to the public's knowledge so that they can know about the waste bank program and feel the benefits/benefits obtained from managing the waste bank, thereby increasing community participation in the management of the waste bank with the existence of a waste bank. The community considers that managing this waste bank can overcome environmental problems, especially the trash problem.

CONCLUSION

1. It is known that the frequency distribution of Knowledge About Garbage mostly has good knowledge about waste, namely as many as 94 respondents (47.0%).
2. It is known that the frequency distribution of Community Behavior in Waste Bank Management most of them have positive behavior in managing waste banks, namely as many as 115 respondents (57.5%).
3. There is a relationship between Knowledge About Garbage and Community Behavior in Managing the Waste Bank in Rw 06, Gunung Batu Village, Working Area of the UPTD Mekarwangi Health Center, Bogor City, 2020. Of the 200 respondents who had good knowledge and positive behavior, there were 69 people (73.4%). The Kendall Tau statistical test results obtained p value = 0.000, which means p value (<0.05).

So the alternative hypothesis is accepted and the null hypothesis is rejected. So that there is a significant relationship between knowledge about waste and community behavior in the management of the waste bank in Rw 06, Gunung Batu Subdistrict, Working Area of the UPTD Mekarwangi Health Center, Bogor City.

SUGGESTION

1. For the Wijaya Husada Bogor STIKE Institute

This research is expected to be useful for the institution as material for library literature for further research, as a source of information about waste management, and as a development Proceeding International Seminar

of student materials as well as a scientific reference regarding environmental health.

2. For UPTD Mekarwangi Health Center, Bogor City
The results of this study are expected to be used as input information in extension activities to apply community knowledge about waste and community behavior to waste bank management.
3. For Respondents
Applying knowledge about waste in the behavior of disposing of waste or in managing waste and actively participating in waste bank management.
4. For Further Researchers
Further research is needed to examine other factors related to waste management and processing.

REFERENCE

1. Husnul K. Reducing Garbage, Bogor City Awarded KLHK Award. *comebogor.com*. Published 2019. Accessed January 26, 2020. <https://www.ayobogor.com/read/2019/01/15/2358/kurangi-sampah-kota-bogor-diganjar-penghargaan-klhk>
2. Nining's gift. Garbage Becomes an Environmental Problem in Indonesia. *Kompasiana.com*. Published 2019. Accessed January 26, 2020. <https://www.kompasiana.com/niningkurnia/5cbef26595760e2b081e54a4/garbage-become-problem-environment-di-indonesia?page=all>
3. Wahyuni T. Indonesia Contributes to the World's Second Largest Plastic Waste. *Indonesian CNN*. Published 2016. Accessed 7 February 2020
4. Notoatmodjo S. Health Behavior Education. PT. Rineka Cipta; 2003.
5. KBBI. Garbage Meaning. *kbbi.web.id*. Published 2019. <http://kbbi.web.id/spah.html>
6. Hughes R. Republic of Indonesia Law No 18 of 2008 concerning Waste Management. *J Chem Inf Model*. 2008;53(9):287. doi:10.1017/CBO9781107415324.004
7. Indonesian MNLHR. Regulation of the Minister of Environment of the Republic of Indonesia Number 13 of 2012 concerning Guidelines for the Implementation of Reduce, Reuse and Recycle Through Waste Banks. *J Chem Inf Model*. 2013;53(9):1689-1699. doi:10.1017/CBO9781107415324.004
8. Djati W. Garbage Bank Grows Circular Community Economy. *ppid.menlhk.go.id*. Published 2018. Accessed January 26, 2020. http://ppid.menlhk.go.id/siaran_pers/browse/1667
9. Central Bureau of Statistics. Indonesian Environmental Statistics (SLHI) 2018. Pus Stat Agency. Published online 2018:1-224. doi:3305001
10. KLHK. National Waste Management Information System. *sipsn.menlhk.go.id*. Published 2018. Accessed January 25, 2020. <http://sipsn.menlhk.go.id/?q=3a-data-umum&page=5>
11. BAPPEDA. Bogor City City Sanitation Strategy (SSK) 2015-2020. *sanitation.kotabogor.go.id*. Published 2020. Accessed February 1, 2020. <https://sanitas.kotabogor.go.id/profile/post/single/8-perampahan.html>
12. Bambang S. Garbage Bank; Theory and Application Studies. Rihama Library; 2012.
13. Notoatmodjo S. Health Research Methodology. PT. Rineka Cipta; 2015.
14. Syam DM. The relationship between knowledge and attitudes of the community with waste management in Loli Tasiburi Village, Banawa District, Donggala Regency. *Hig J Proceeding International Seminar "Ethics, Integrity And Management In Health Profession" (4-7 February 2021)*

- Environmental Health. 2016;2(1):21-26.
15. Notoatmodjo S. "Science and Art." . PT. Rineka Cipta; 2011.
 16. Rahmi A, Study P, Community K, Study P, Community K. Managing Waste in Kurao Pagang Village in 2018. 2018;2:164-169.
 17. Notoatmodjo S. Health Research Methods. PT. Rineka Cipta; 2010.
 18. Khoiri A, Rudiansyah E. Correlational, Student Studies, On Melawi, Stkip. 2019;7(2):12-18.