Relationship Between Knowledge and Income With Community Participation in the Program of Cimahi Master Waste Bank Unit 2018

Budiman[1,*] Fitriani Manan[2,] Nevi Amelia Yasmin[3]

[1] *Public Health Study Program, STIKES A. Yani Cimahi*
[2] *Public Health Study Program, STIKES A. Yani Cimahi*
[3] *Public Health Study Program, STIKES A. Yani Cimahi*
[*] *Corresponding author Email:* budiman_1974@yahoo.com

ABSTRACT

Community participation in the waste management program can certainly reduce the environmental burden. The potential for reducing waste at the source can reach 50% of the total waste generated. The reduction in waste can save landfill land and can also reduce the amount of waste transport and produce recycled material that is good enough because it is not mixed with other waste. The study aimed to determine the relationship between knowledge and income with community participation in the Cimahi Central Garbage Bank Unit program in Cimahi Selatan District, Cimahi City. The research method used was cross-sectional. The research sample was taken from respondents who had become customers and had not yet become customers in the waste bank. As many as 100 people sampled by simple random sampling. The research instrument used a questionnaire. Data analysis used Chi square test and the magnitude of the relationship. The results of the study were 27.0% of samples had insufficient knowledge, 47.0% were low income, 94.0% had not become customers in the Waste Bank, and there was no relationship between knowledge (p value = 0.66) and income (p value = 0.21) with community participation in the Cimahi Induk Garbage Bank Unit program, Cimahi Selatan District, Cimahi City. It is recommended that DLH and the main Cimahi Waste Bank increase socialization and motivation for the community up to the RW level and provide waste disposal facilities that meet the requirements.

Keywords: *Cross sectional, Knowledge, Income, Participate, Waste bank.*

1. INTRODUCTION

The development of cities in developing countries, especially in Indonesia, raises many problems of development. Starting from the increasing problems of urbanization, the problem of slums, and resulting in poor sanitation to urban waste problems as a result of population activities [1]. In Indonesia, a large number of people moved from village to city to find work, such as construction workers, domestic servants and even beggars, will indirectly have social impacts [2].

The deteriorating environment makes the earth's carrying capacity to support life decreases. Environmental problems occur due to high population growth [3]. A sufficient population and economic growth has triggered an increase in industrial service activities, the business will lead to increased production of waste or garbage. The generation of waste can be a place for the development of disease and reduce the

quality of the environment and cause aesthetic disturbances if not handled properly [4].

Waste has become a national problem so that its management needs to be carried out comprehensively and integrated from upstream to downstream in order to provide economic benefits, make a healthy community and safe environment, and also can change people's behavior (UU No.18, 2008). The problem of waste in Indonesia is a complicated problem because of the lack of understanding of the community about the consequences that can be caused by waste and the lack of government costs to seek good garbage disposal and fulfill the requirements. Another factor that cause more complicated waste problems in Indonesia is the increasing standard of living of the people who are not accompanied by harmonious knowledge about waste and also less community participation to maintain and dispose of garbage in its place. Along with the increasing in population, income will also increase. The increasing in income causes a consumptive lifestyle so

that our consumption level increases, starting from food and packaging [5].

In Indonesia, especially in big cities, including the Greater Bandung region (Bandung City, Cimahi City, Bandung Regency and West Bandung Regency), waste is one of the main problems. The generation volume that exceeds the management capacity causes a pile of rubbish in the locations of Temporary Shelter. Likewise with the limited land for the location of the final disposalsite.

The explosion of Leuwigajah (Cimahi) landfill in 2005, which claimed casualties indicates that garbage is a serious problem [6]. Based on the results of the performance evaluation of solid waste services in the Bandung Raya metropolitan area, the waste generation in Cimahi City with a population of 550,594 people produced 1,653 M^3 or equal to 0,413 tons. The results of this calculation use the product assumption of waste = 3 liters / person / day with waste specific gravity = 0.25 kg /m^2 [7]. Unmanaged landfills can cause pollution to soil, water, and air, and also very potential as a source of outbreaks of diseases such as diarrhea and so on [8].

Limited land for waste disposal is the beginning of environmental problems. Such conditions have occurred in various regions, especially in densely populated areas and regions that are in economic development [3]. In the Law of the Republic of Indonesia number 18 of 2008 concerning waste management chapter 4 article 13, it is stated that residential area managers, commercial areas, industrial zones, special areas, public facilities, social facilities, and other facilities must provide waste sorting facilities. The community in carrying out waste reduction activities uses materials that can be reused, recycled, and easily decomposed by natural processes which include sorting in the form of grouping and separating waste according to the type, amount, and or nature of waste. According to the regulation of the Minister of State and Environment Number 13 of 2012 concerning Guidelines for the implementation of Reduce, Reuse, Recycle article 1 paragraph 1, activities to reduce, reuse, and recycle waste, which are then called 3R activities are all activities that can reduce everything that can cause garbage, reuse waste that is suitable for other functions, and manage waste to become a new product.

Community understanding about the importance of the using of waste still needs to be improved. Solving waste problems cannot be done by relying on janitors only. All layers of society must participate in helping the government to move together in handling waste, one of which is a garbage bank [9].

During 2017, the population of Cimahi City, South Cimahi Sub-district, had the largest population of 226,167 people [10]. Based on the results of the interview with the Director of Samici Bank, the most customers are in the South Cimahi area, which are 152 customers. Population growth and changes in community consumption patterns lead to increasingly diverse volumes, types and characteristics of waste [11].

The physical development of Cimahi City, which was accompanied by population growth and increased waste generation, required a system for managing and handling good waste problems. By seeing the increasing amount of waste generated along with the increasing of population in the city of Cimahi, problems seem to raise in waste management given the limitations of hygiene infrastructure [12].

Cimahi City established the Cimahi Main Waste Bank (SAMICI) as an innovation in waste management. The establishment of a waste bank is a social engineering activity in which the community learns to sort waste as well as foster public awareness in wisely processing waste and in turn reducing waste transported to landfill [13].

Waste Bank is a collective waste management system that encourages the community to play an active role in it. This system will accommodate sorting and channeling waste of economic value. The waste deposited by the customer must be sorted. This requirement encourages people to separate and group waste. For example, based on the type of material: plastic, paper, glass and metal. So a waste bank will create a new culture so that people want to sort out waste [9]. The main purpose of establishing the Samici Bank is to help handling waste management and reduce the volume of waste in Cimahi City and to make people aware of a healthy, neat and clean environment [6].

A simple concept to reduce dependence on landfill is to reduce waste transported to landfill by maximizing the waste management process before being transported to landfill through waste management since at the source level and at the regional level. One important aspect that can support the process is community participation [14].

The community will participate well if the government hygiene manager provides a good system. From the results of Bebassari's research in 1996, it was proven that community participation in waste segregation must be supported by the provision of adequate facilities (e.g. separate carts or different transport schedules), and consistency of the process, so increasing community participation in municipal waste management is included in the policy contract by prioritizing social values [14]. From the results of interviews with the Director of Bank Samici, a small proportion of the people of Cimahi City who participated in the Cimahi Main Waste Bank program reached 2.97% of the total population of South Cimahi sub-district 226,167 and the total number of customers in the Cimahi Selatan District Unit 152 customers.

Community behavior is influenced or determined by factors both from within and from outside the subject. Internal factors are perceptions, knowledge, beliefs, desires, motivations, intentions and attitudes. Whereas external factors are experience, facilities (income or facilities and infrastructure) and socio-culture [15].

Knowledge provides an influence on people's participation because it will play a role in the actions they take. The cause of a person's behavior to be environmentally friendly is that the information needed

by the community is not only how good waste management is, but also information that encourages people to change behavior. Relatively high people's income, allows someone not only to think about efforts to meet the needs of daily life, but also can divide and set aside for other living needs such as providing infrastructure to accommodate and manage household waste [16].

2. METHOD

The research used in this study was analytic survey with cross sectional design. The sampling technique used was simple random sampling with the number of samples used was 100 people. The inclusion criteria were people who already had identity cards and student identification cards and reside in South Cimahi District. Data collection was carried out directly by the researcher (primary) by collecting data from the community by filling out questionnaires and interviews when the researcher visited the respondent's house.

3. RESULTS

Table 1. Frequency distribution of community knowledge with community participation in the cimahi main waste bank unit unit in south cimahi district, cimahi city year 2018.

Knowledge	n	%
Less	94	94.0
Good	6	6.0
Total	100	100

Table 2. Distribution of frequency of community revenue with community participation in the cimahi main waste bank unit program in south cimahi district, cimahi city year 2018.

Income	n	%
Low	47	47.0
High	53	53.0
Total	100	100

Table 3. distribution of frequency of community participation in the cimahi main waste bank unit program in south cimahi district, cimahi city year 2018

Income	n	%
Yes	94	94.0
No	6	6.0
Total	100	100

Table 4. Distribution of frequency of community participation in the cimahi main waste bank unit program in south cimahi district, cimahi city year 2018

Knowledge	Participation				Total		p value
	No		Yes				
	n	%	n	%	n	%	
Less	88	93.6	6	6.4	94	10.0	1.000
Good	6	10.0	0	0	6	10.0	
Total	94	94.0	6	6.0	100	100	

Table 5. Distribution of frequency of community participation in the cimahi main waste bank unit program in south cimahi district, cimahi city year 2018.

Income	Participation				Total		p value
	No		Yes				
	n	%	n	%	n	%	
Low	46	97.9	1	2.1	47	10.0	0.210
High	48	90.6	5	9.4	53	10.0	
Total	94	94.0	6	6.0	100	100	

4. DISCUSSION

The results showed the value of p = 1,000, it can be concluded that there was no relationship between knowledge and community participation in the Cimahi Waste Bank Unit program. To change behavior there are factors that influence one of them, namely: predisposing factors which include knowledge, attitudes, habits, traditions and beliefs. While other factors was enabling factors in the form of garbage cans. Therefore, the benefits of waste banks to change behavior in community participation need support from other factors.

The results of this study were different from the results of Selemo et al. (2016) that found a significant relationship between the level of knowledge and community participation in saving at the Waste Bank. This result didn't mean that those who had less knowledge always throw littering and vice versa. This happens because other aspects had more powerful influences, for example attitudes, lack of awareness and long-established habits [17]. The results of this analysis were in line with the opinion of Damanhuri (2009) in Maulina (2012) that stated that waste sorting activities at the source level (household) are very dependent on the characteristics, habits and perceptions of waste producers which will later form a behavior towards waste [18].

For respondents who had sorted out, participation in sorting was more based on personal awareness even though it had not been facilitated as disaggregated trash. While for respondents who had not yet sorted out, this factor was a reason not to participate. In line with the study conducted by Jakus et al. (1997), the availability of storage space was an important factor because some people who already have adequate facilities are likely to participate [19]. In addition, the availability of facilities also provides convenience in sorting [18]. Having behavior that cares about the environment, or environmental care, shows the desire and awareness of the community to maintain cleanliness and health of their environment.

Socialization related to solid waste, especially sorting waste, can be one aspect that needs to be considered in an effort to increase community participation. Socialization has a role in opening up people's insights and knowledge and forming awareness of things. The source of information for the community is actually not limited to government socialization because it can also be obtained easily from printed or electronic media. But socialization can be one of the more effective sources of information for people who do not have access to information from print or electronic media (related to the socio-demographic characteristics of the community) disaggregated transportation system [18].

The results of this study were in line with Sari and Mulasari's research in 2017 which obtained the value of p = 1,000 with α = 0.05 which meant that there was no correlation between knowledge and behavior of waste management in Bener Village, Regalrejo Subdistrict, Yogyakarta, which meant that knowledge was not statistically significant and biology [20].

Knowledge about waste management and management of Waste Banks in the dominant South Cimahi Subdistrict is still not good because of the residents' lazziness and do not want to bother with the waste problem. This is in accordance with previous research which stated that there was no relationship between knowledge and waste management behavior. In addition, respondents who were well-informed do not all respondents who have good knowledge have good behavior in waste management.

The results showed the value of p = 0.210, it can be concluded that there was no relationship between income and community participation in the Cimahi Waste Bank Unit program. Respondents' income in this study was categorized according to Regency or City minimum wages in the West Java Province in 2018, groups of people with low income averaged under Rp. 2,600,000 per month, groups of people whose average income is more or equal to Rp. 2,600,000 per month. The results of this study indicated that there was no relationship, meaning there was no difference in the

frequency of people who participated in saving at the Cimahi Waste Bank Unit due to differences in income.

The income variable is proposed as a variable that is thought to influence the participation of the community in saving in a waste bank based on the assumption that low income earners assume that the activity is important because it can add to their family income significantly. Therefore, the absence of income relations and community participation in saving at the Cimahi Main Waste Bank Unit can be due to income from savings only being used as additional income so someone who has low income does not necessarily have the opportunity to save garbage [11].

This research is in line with the results of Kartini's research which found that there was no significant effect on the significance level (α) of 10% between respondents' income and the decision to save at Gemah Ripah Waste Bank (the case of Badegan Hamlet, Yogyakarta). The difference in household income between the two groups of respondents was not significantly different from zero so that no matter how much the income level did not influence the decision to save in a waste bank. In line with the results of this study, the results of the Maulina study showed that the calculated Chi square value was 8.34 smaller than the Chi square value of the table (9.24), it can be concluded that there was no correlation between respondents' income factors and community decisions to sort waste in North Cimahi District. Scott also found no significant relationship between income and participation in recycling [11].

This research is not in line with Ratiabriani's research in 2016 that stated there was an influence of family income on the opportunity of community participation in the waste bank program as a result of research by Ratiabriani which found that family income had a positive and significant effect on opportunities for community participation. The Banga described earlier showed that there was a negative and significant relationship between income and waste sorting at a 10% confidence level. The results of this study are also not in line with Arifiani et al. who found a significant difference in income between community groups who participated in saving at the Malang Waste Bank and community groups who did not participate in saving [11], [21].

This suggests indirectly that high income households are less involved in waste sorting. This is probably due to the fact that high income households are able to pay for garbage transportation services. Therefore, high-income households do not see any reason to sort out the waste before disposal. Second, the majority of those who sort waste do so to sell recycled materials and get income. This activity is not important for high income households. The results of this study are supported by the results of the Furedy study which found that

households that have low income, are relatively more selling trash than high income households [11].

5. CONCLUSION

Knowledge of the community in the South Cimahi Sub-District which is lacking and low income has no relationship with community participation in the Cimahi Parent Bank Bank Unit program in South Cimahi District.

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