THE RELATIONSHIP OF KNOWLEDGE, ATTITUDE, AND BEHAVIOR WITH HOUSEWIVES' PARTICIPATION IN THE DISKI MANDIRI DELI SERDANG WASTE BANK

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Abstract

Community-based waste management innovation can be done through a waste bank which is the development of the 3R concept (reuse, reduce, recycle). Community participation, especially housewives, being customers of the waste bank is highly expected in supporting waste management towards a healthy, clean life while at the same time increasing economic value. This study aims to determine the relationship between knowledge, attitudes, and actions of housewives with participation in the waste bank. It is important to know and conduct an in-depth discussion so that the results obtained can be used as the basis for developing waste banks, as well as evaluating existing waste banks in the community. The type of research used is observational analytic with a case control research design with a sample size of 76 respondents (38 respondents are waste bank customers, and 38 respondents are non-waste bank customers). Data analysis using chi square test with 95% confidence level. The results showed that there was a relationship between knowledge (p value 0.004) and the participation of housewives in the waste bank. There is a relationship between attitudes (p value 0.000) with the participation of housewives in the waste bank. There is an action relationship (p value 0.001) with the participation of housewives in the waste bank. Knowledge, attitudes and actions of waste bank customers are better than those of housewives who are not waste bank customers. Increased knowledge of attitudes and actions can be carried out in the form of socialization, counseling and community empowerment, as well as improving facilities and infrastructure in waste management can increase the participation of housewives in the waste bank. Waste banks are expected to have an impact on housewives in increasing economic value, while maintaining environmental sustainability and cleanliness.

Keywords: knowledge, attitudes, actions, participations, waste bank

INTRODUCTION

Community involvement and participation greatly influences the success of urban waste management (Nugraha, et al, 2020) . One innovation in community-based waste

management is a waste bank, which uses the working principle of a bank, collecting segregated waste from the community and the results obtained are in the form of savings and cash (Dhokhikah, et al 2015) . Through waste banks, the community can directly participate in managing waste while increasing income and economic value (Auliani, 2020) .

Community participation in the waste bank program provides benefits for the government in making urban waste management a success (Wardani, et al, 2020) . Community participation in health care is influenced by several factors such as education level (p=0.008), income (p=0.010), knowledge (p=0.002), respondent perception (p=0.010), and family support (p=0.008) (Kusumaningrum, 2018). Besides that, there is a significant relationship between knowledge and attitudes (p<0.05) towards waste management activities carried out by communities in Northern Thailand (Laor et al., 2018) . Employment status (p=0.048) has a partial effect on community participation in waste bank activities (Ratiabriani & Purbadharmaja, 2016) . Apart from that, ownership of trash facilities (p=0.046) is related to community participation in waste banks (Yuliana & Wijayanti, 2019)

Various variables that relate to and influence community participation in waste banks have been studied by previous researchers, namely knowledge, attitudes, actions, education, income and waste bin facilities. Complementing previous research, this research will compare knowledge, attitude and action variables between people who actively participate and people who do not participate in waste banks. Knowing the relationship between knowledge, attitudes and community actions with waste bank program participation is important to know and carry out in-depth discussions. This is the basis for developing waste banks, as well as evaluating waste banks that already exist in the community. The presence of a waste bank can involve community members to take part in maintaining environmental cleanliness and the public's perception is that waste has no selling value and its use value will decrease (Widyastuti et al, 2020)

This research aims to determine the relationship between knowledge, attitudes and actions with housewives' participation in waste banks. Through this research, providing input to the community by managing waste through waste banks can directly improve the economy and health while teaching good habits to future generations.

RESEARCH METHODS

This research is an analytical observational study using a case control research design which was carried out by comparing the case group (non-customers) and the control group (customers) based on their participation status in the waste bank. The research was carried out at the Diski Mandiri Waste Bank and the surrounding communities, Sunggal District, Deli Serdang Regency, North Sumatra. The sampling technique in this research is proportional sampling . The number of samples was calculated using the Lemeshow formula and obtained 76 cases, with details in table 1 below:

Table 1. Number of Respondents in Research

Number of Respondents		
Non Customer (case)	Customer (control)	Total
38	38	76

To determine the relationship between the independent and dependent variables, a bivariate test with the chi statistical test was used square using a significance level ($\alpha = 5\%$) for the categorical data scale . The conditions for the Chi- square test are that the total number of samples is more than 40 and there are no cells with an expected value of less than 5. In bivariate analysis , the independent variables are knowledge, attitudes and actions of housewives, while the dependent variable is participation in banking. waste (non-customers - customers).

RESULTS AND DISCUSSION
1. **The relationship between knowledge and housewives' participation in waste banks**

The chi-square statistical test obtained a P value of 0.004, this value < alpha (0.05), thus it was found that there was a relationship between knowledge and participation of housewives in waste bank activities. Knowledge influences housewives' participation in waste banks. Knowledge about the environment and waste management can be obtained from formal or non-formal education. All respondents had a formal educational background, from elementary school to bachelor's degrees. Higher education means better participation in participating in community-based waste processing activities (waste banks) in their environment (Nugraha et al., 2020)
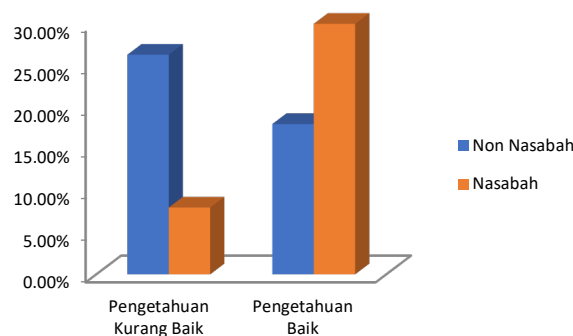
Figure 1 Diagram of Housewives' Knowledge of Waste Bank Participation

Based on Figure 1, it can be seen that good knowledge is higher among respondents who are waste bank customers (39.5%). Meanwhile, respondents who were not waste bank customers had poor knowledge (26.3%). Based on field observations, waste bank customers are more often exposed to information regarding waste management, such as waste sorting, waste utilization and waste handling. Apart from that, waste bank customers more often receive information through counseling conducted by waste bank officers. This is in line with research which suggests that people's knowledge about waste management is related to their attitudes towards waste bank-based waste management (Suwerda, et al 2018)
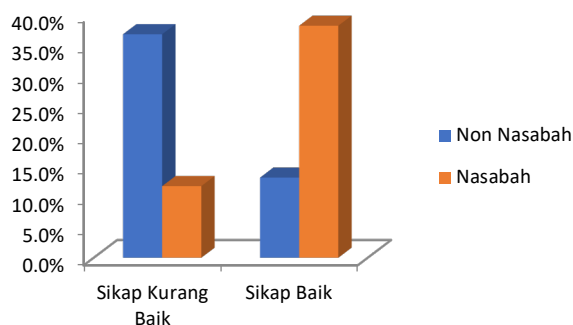
The results of the Risk Estimate Test obtained an OR value of 4.167, thus it can be concluded that respondents with poor knowledge are 4 times more likely not to become waste bank customers compared to respondents who have good knowledge. Based on the research results, poor knowledge was found among community respondents who were not waste bank customers. This happens because people who are not waste bank customers lack information, counseling or training related to waste bank management. This is in line with previous research which suggests that the low percentage of people participating in waste banks is related to the respondents' lack of knowledge about waste banks and the benefits of waste banks (Nugraha et al., 2020) . Therefore, it is necessary to provide education and outreach regarding waste management so that the public has good knowledge.

Information is the dominant factor that can influence a person's knowledge (Rahmawati & Juliansa, 2019) . Apart from school education, information dissemination activities can be carried out through non-formal activities such as counseling and training. Apart from that, the media for delivering information today can be through social media such as Facebook, Instagram, Twitter and WhatsApp. Based on the results of observations in the field, the Diski Mandiri Waste Bank often provides counseling and training for waste bank customers, such as providing information on how to sort waste properly, and how to make crafts from waste that have selling value. Diski Mandiri waste bank customers have Whatsapp and Facebook groups, which play a very important role in the media for disseminating information.

2. **The relationship between attitudes and housewives' participation in waste banks**

Chi-square statistical test, a P value of 0.000 was obtained; This value is < alpha (0.05), it can be concluded that there is a relationship between attitudes and housewives' participation in waste banks. This is in line with previous research which states that a person's attitude has a significant relationship to waste bank participation (Fajarini et al, 2019) . Attitude can be interpreted as the result of a person's perception who tends to respond more to support or not support waste bank activities (Yuliana, 2019) . Based on the results of field observations, attitudes are shown by agreeing or

disagreeing with statements related to waste management and waste bank participation. It is found that a person expresses an attitude of agreement or disagreement based on knowledge of the statement.

Figure 2 Diagram of Housewives' Attitudes towards Waste Bank Participation

Based on Figure 2, it can be seen that the most unfavorable attitudes were found among respondents who were not waste bank customers, namely 36.8%. Meanwhile, good attitudes were found to be highest among respondents who were waste bank customers at 38.2%. Respondents who have a good attitude are more likely to agree with statements regarding waste banks, including agreeing that waste banks are a solution to the waste problem, and agreeing that waste banks have economic benefits for families.

The results of the Risk Estimate Test obtained an OR value of 9.022, thus it can be concluded that respondents with a poor attitude were 9 times more likely to have no desire to participate in the waste bank program compared to housewife respondents who had a good attitude. Poor attitudes are usually caused by a lack of knowledge regarding waste management. Knowledge significantly influences a person's attitude. Attitude statements are not only in the form of intentions to support or not provide support, but are also related to estimates and consequences of the behavior. Research shows that respondents tend to have less good attitudes, this is due to a lack of confidence values in managing waste and even tend to think negatively and don't care, there are even some who don't get any benefits at all, so their attitude towards managing waste is not good (Saputra & Mulasari, 2017)

3. **The relationship between attitudes and housewives' participation in waste banks**

The significant figure (p-value) is 0.001 <0.05, indicating that there is a relationship between action and housewives' participation in the waste bank. The relationship between housewives' actions and participation in waste banks is influenced by knowledge, namely the benefits obtained, profits obtained, and how the waste bank itself works (Wildawati, 2020) . Knowledge regarding waste management for customers is obtained through socialization, counseling and community empowerment carried out by the Diski Mandiri waste bank manager.

Socialization regarding the understanding of waste starting from the type of waste, waste source, and its form is very much needed. In simple terms, carrying out household activities with the 3Rs (reuse, reduce, recycle) can create a spirit of caring for the environment and waste management in the household.

In Figure 3, it can be seen that 30.8% of the bad actions were those who were not waste bank customers. Meanwhile, 28% who had good actions were waste bank customers. Based on the results of observations in the field, good actions can be seen from daily activities that care about the environment and waste management, such as the availability of waste storage areas, both segregated and unsegregated. The concrete action taken by waste bank customers is reducing the use of single-use plastic bags and replacing them with bags that can be used repeatedly. Apart from that, the action taken by waste bank customers is to sort waste based on type. Waste bank customers with good actions have separate waste disposal sites. Waste bank customers with good actions implement household waste management through the 3 R movement (Reuse, Reduce, Recycle).
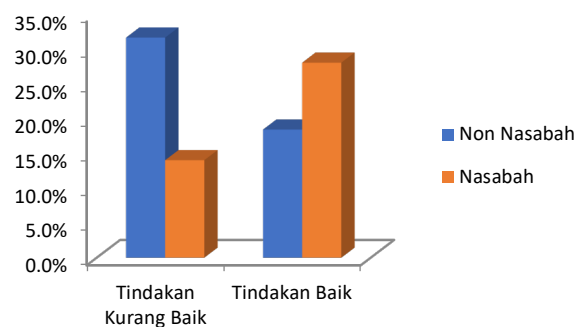
Figure 3 Diagram of Housewives' Actions towards Waste Bank Participation

In Figure 3, it can be seen that 30.8% of the bad actions were those who were not waste bank customers. Meanwhile, 28% who had good actions were waste bank customers. Based on the results of observations in the field, good actions can be seen from daily activities that care about the environment and waste management, such as the availability of waste storage areas, both segregated and unsegregated. The concrete action taken by waste bank customers is reducing the use of single-use plastic bags and replacing them with bags that can be used repeatedly. Apart from that, the action taken by waste bank participants is to sort waste based on type. Waste bank customers with good actions have separate waste disposal sites. Customers who have good actions manage household waste through the 3 R activities (Reuse, Reduce, Recycle).

The results of the Risk Estimate Test obtained an OR value of 4.800, thus it can be concluded that respondents with poor actions are 4 times more likely to not

become waste bank customers compared to respondents who have good actions. The benefits of waste banks are felt by housewives who are waste bank customers. Not only does it increase income, but it can also make people care about the cleanliness of their homes. With the existence of a waste bank, housewives can form habits in creating a clean and healthy environment. In this way, the amount of waste that was previously thrown into the landfill can be diverted into useful objects, meaning that the amount of waste thrown into the landfill can be reduced. Similar research suggests that the amount of waste a person collects per day has a significant impact on reducing the total volume of waste, thereby reducing the amount of waste that is not transported to the landfill (Nugraha et al., 2020) . Waste banks have been proven to be able to help the government reduce the amount and volume of waste and have been proven to have a positive impact on society and the environment.

CONCLUSION

The conclusions that can be summarized based on this research are as follows: (1) There is a relationship between housewives' knowledge and waste bank participation, with a P value of 0.004, respondents with poor knowledge are 4 times more likely not to become waste bank customers compared to respondents who have good knowledge. (2) There is a relationship between housewives' attitudes and waste bank participation, with a p value of 0.000. Respondents with a poor attitude are 9 times more likely not to become waste bank customers compared to respondents who have a good attitude. (3) There is a relationship between housewives' actions and waste bank participation, p value 0.001. Respondents with poor actions are 4 times more likely not to become waste bank customers compared to respondents who have good actions.

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Restu Auliani, Mustar Rusli, Julietta Br Girsang, Desy Ari Apsari The