

Environmental Care Behavior through Waste Bank (Study at Teratai Waste Bank Pondok Pucung Sub-district, Pondok Aren District, South Tangerang City)

Alfitra Dewi Anjani, Budiaman, Achmad Nur Hidayat

Jakarta State University, DKI Jakarta, Indonesia

Email: aldafitra678@gmail.com, budiaman.fisunj@gmail.com, achmadnurhidayat@unj.ac.id

Abstract

This study investigates the effectiveness of Waste Bank Lotus in enhancing community environmental awareness in South Tangerang, Indonesia. With the escalating waste generation in tandem with population growth, waste management has emerged as a critical issue exacerbated by limited landfill capacity. The Lotus Waste Bank initiative seeks to mitigate these challenges by instilling environmental consciousness among residents. Employing descriptive research methods, including observation, interviews, questionnaires, documentation, and literature review, data were gathered from 63 participants selected through purposive sampling. The results reveal that Waste Bank Lotus has successfully raised community awareness regarding environmental issues, fostered responsible behaviors in waste, water, and energy management, and adopted eco-friendly products. Moreover, various factors, including intention, community support, personal autonomy, access to information, and favorable conditions, influence community environmental behavior. Environmental awareness through waste banks entails building awareness, motivation to act, evaluation, attempted implementation, and integration into daily routines. This research underscores the pivotal role of waste banks in promoting sustainable waste management practices and cultivating a culture of environmental stewardship within communities.

Keywords: Behavior, Environmental Awareness, Waste Bank

Introduction

Population growth has implications for meeting the needs of clothing, food and shelter. The rapid rate of population growth also increases various needs for each person to produce the amount of waste or residual consumption and the results of activities carried out in the form of waste. Law of the Republic of Indonesia Number. 18 Year 2008, Waste Management explains that waste is the residue of daily human activities or natural processes in solid form (Purba & Erliyana, 2020). The volume of waste will continue to grow along with the increasing population level, high consumption levels, and technological advances (Chen, Bodirsky, Krueger, Mishra, & Popp, 2020). Therefore, the more people there are, the more waste will be produced, impacting the environment if not handled properly.

According to data from the National Waste Management Information System (SIPSN) of the Ministry of Environment (KLKH), the generation of waste produced by Indonesian residents in 2022 was 35.83 million tons, up 6.3 million tons from the previous year, which amounted to 29.4 million tons (Domingo, Rosellon, Lorenzo, & Manejar, 2022). Then, waste generation 2020 reached 29 million tons, up around 300 thousand tons from 2019, which

amounted to 28.7 million tons (Alam et al., 2022). The waste volume generation 2022 is the highest in the last four years (Pungky, 2023).

Based on the total national waste generation in 2022, as much as 62.63% or 22.44 million tons of waste generation have been managed. Meanwhile, the remaining 37.37%, or around 13.39 million tons, have not been appropriately managed (Sari et al., 2023). The composition of these types of waste generation includes food waste, plastic waste, wood, paper, metal, cloth, glass, rubber, and other types of waste. Based on Sustainable Waste Indonesia (SWI) data from the total waste produced, around 3.2 million tons is plastic waste. Of this amount, Bottled Drinking Water (AMDK) products contributed 226 thousand tons. Plastic waste is the most significant cause of environmental pollution problems worldwide, especially plastic waste that is wasted without further processing (Muhamad, 2022).

Garbage is also a severe problem in Banten Province. Based on data from the Waste Management Information System (SIPSN) of the Ministry of Environment and Forestry (KLHK), in 2022, the volume of waste generation produced by communities in Banten Province reached 2.62 million tons (Muljaningsih et al., 2023). Details each area in the highest position in Tangerang Regency produces 841.49 thousand tons of waste, then South Tangerang City with a total of 504.25 thousand tons (Yanto, Sudaryanto, & Pratiwi, 2023).

Then, third place lies in Serang Regency, which produces 414.58 tons of waste. Next is the city of South Tangerang, which produces 355 thousand tons of waste. Followed by Lebak Regency, which produced 215.88 thousand tons of waste, then Serang City, which produced 213.464 waste, and finally, Cilegon City, which produced 83.16 thousand tons of waste (Putra, Permana, & Panulisan, 2022). This number will undoubtedly continue to grow along with the population rate; the increase in the amount of waste, if not in line with proper management, will cause various environmental impacts such as water and air pollution, soil degradation, and ecosystem damage.

The waste problem in South Tangerang City is a record for the entire community because landfills are increasingly limited. In 2022, South Tangerang City has a population of 1,378,466 people with a population density of 8,361 per Km² (Riau & Budiati, 2024). The number of residents produces relatively high waste because the waste generated by residents of South Tangerang City is approximately 1000 tons per day (Salam, 2021).

The Cipeucang Final Processing Site (TPA) in Serpong, South Tangerang, as one of the official landfills in the South Tangerang City area, cannot accommodate waste anymore due to limited land. Janitors can only rely on the garbage layout, so there is still land available in this area that stretches along 0.8 hectares. However, the waste that the Cipeucang landfill can accommodate is only around 400 tons per day, and there are still hundreds of tons of waste that need to be overcome because quickly the waste will cause environmental pollution such as water and air pollution, soil degradation, and ecosystem damage that gets worse if not appropriately managed.

The problem of waste is not only related to managing and processing waste but also to culture and community behavior. The behavior of people who tend to be apathetic to the presence of waste around them causes many ideas to be born to overcome waste-related problems. The community needs to increase its sense of care for the environment to resolve all existing problems together. Building community environmental care behavior is closely related

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to community empowerment because, in addition to overcoming waste problems, it also encourages people to have a high sense of activity and initiative towards the environment.

Seeing this incident, it is necessary to make an effort so that the waste generation can be appropriately managed and the waste produced, especially household waste, can be reduced. One of the efforts can be made through daily activities, such as carrying your bags and shopping bags, bringing your eating utensils and drinks when buying food and drinks, not using plastic straws and sorting household waste. Reducing the use of single-use waste is expected to positively impact the environment.

Various methods have been attempted to reduce the volume of waste in Indonesia, including forming a waste bank. Based on the Law of the Republic of Indonesia Number 14 of 2021, a waste bank is a facility to manage waste with the 3R principle (reduce, reuse, and recycle) as a means of education, change, behavior in waste management, and the implementation of a circular economy formed and managed by the community, business entities, and/or local governments (Budiyarto, Clarke, & Ross, 2024). The concept of a waste bank is to collect and sort dry waste and have management like banking, but what is saved is not money but waste (Fauziah, Hamzah, & Rozy, 2021).

Reducing household waste or similar household waste at the Waste Bank is waste reuse, followed by handling activities by sorting, transporting, and managing waste. All forms of waste reduction and handling activities are adjusted to the type of waste managed by the Waste Bank. The implementation of waste bank activities is structured, comprehensive, and sustainable, which includes waste reduction and handling to improve public health, environmental quality, and environmentally caring behavior, and make waste as goods that have value. The purpose of this writing is to find out how behavior is formed and find out the process of forming environmentally caring behavior through waste banks.

With research conducted by (Ahmad & Samidjo, 2020) and (Muliawaty, Firdausijah, & Achmad, 2022), waste bank activities provide aspects to people's lives, one of which is awareness of environmental conservation. Researchers will discuss environmental care behavior built through waste banks at one of the waste banks in South Tangerang, namely the Lotus Waste Bank located in Pondok Pucung, Pondok Aren District, Kota. South Tangerang.

Research Methods

This research adopts a descriptive approach to depict the behavior and process of forming environmental awareness in the Pondok Pucung community through the Teratai Waste Bank in South Tangerang, Indonesia. Data were collected through questionnaire dissemination, interviews, observations, and documentation. Descriptive statistics were used to organize and analyze numerical data to provide a clear picture of the phenomena under investigation. The research was conducted at the Teratai Waste Bank located in Pondok Pucung Village, Pondok Aren District, South Tangerang City. The research subjects were selected from the population of Teratai Waste Bank customers who had been actively saving for the past year, totaling approximately 170 individuals. A sample of 63 individuals was chosen using a purposive sampling technique based on the Slovin formula. Data collection techniques included observation, interviews, questionnaires, literature review, and documentation. Closed-ended questionnaires with Likert scales were used to measure respondents' attitudes and opinions. Data were then analyzed by categorizing based on the mean and standard deviation using five

categories: shallow, low, moderate, high, and very high. Percentages were calculated based on the frequency of responses in each category. Data analysis was conducted to understand environmental awareness behavior and the influence of certain factors.

Results and Discussion

Characteristics of Respondents

Of the 63 respondents, the distribution of respondents by gender is known to be as many as 81% of respondents are women and 19% of respondents are men. Of the 63 respondents who filled out the questionnaire distribution of respondents based on age, it was known that most respondents were around 45 years old, as many as 56% or 35 people, then respondents with ages in the range of 39-45 years, as many as 24% or 15 people. Then, in the range of 21 - 26 years, as many as 13% or eight people, the range of 33 - 38 years, as much as 5% or three people, and finally, in the range of 27 - 32 years, as many as 3% or two people.

Of the 63 respondents, the distribution of respondents based on education is known to be as many as 46% or 29 respondents took Bachelor education 1 / 2 / 3 / equivalent, then 35% or 22 respondents took high school / equivalent education. As many as 11% or seven respondents took Diploma I / II / III / IV / Equivalent, and the last 8% or five people took Junior High School / Equivalent.

Research Analysis Results

Research on factors and forms of community environmental care behavior formed through the Lotus Waste Bank program is measured through several indicators. The dimensions of factors that influence behavior are seen through indicators based on Karr's theory (in Winarni and Rusyan 2022), namely intention, community support, affordable information, personal freedom, and possible conditions. Then, the dimension of the form of environmentally caring behavior is taken based on the Department for Environment Food and Rural Affairs (DEFRA) (in the Central Bureau of Statistics, 2018), a government body that is responsible for environmental protection, explaining efforts to protect and develop the environment by increasing the contribution of environmentally caring behavior from individuals and communities Seen through behavior towards water use, waste management, energy use, and eco-product utilization.

Factors influencing environmental care behavior

Existence of Intention (Intention)

A person's intention will influence his behavior in increasing his concern for the environment. The influence of intention in community environmental care behavior through waste banks found that from 63 respondents, as many as 75% or 47 respondents had desires or intentions that were in the very high category in caring for the environment. As many as 24% or 15 respondents had a high category. As many as 2% or one person was in the medium category. Based on this percentage, it can be concluded that most respondents already have very high intentions in themselves, increasing concern for the surrounding environment.

Surrounding Community Support (social support)

In running a community life, a person needs to get encouragement from the surrounding community to do something. The influence of community support in shaping community environmental care behavior through waste banks found that out of 63 respondents, as many as 70% or 44 people had a very high category. As many as 30% or 19 people had a high

category. Based on the answers given by respondents, it can be concluded that the support of the surrounding community is very influential in the formation of environmentally caring behavior, especially related to waste management. The existence of facilities provided by waste banks makes people more confident about doing this without fear of thinking about other people's views.

Accessibility of Information

The availability of information about waste banks will affect the action someone will take. The effect of affordable information on environmental care behavior can be seen in that of 63 respondents; as many as 60% or 38 respondents have a very high category, then 38% or 24 people have a category, and as many as 2% or one person have a medium category. Based on respondents' answers, it can be seen that the ease of obtaining information affects environmental care behavior. Various information provided by waste banks opens people's minds about the importance of having environmental awareness.

Personal Freedom (personal autonomy)

The effect of personal freedom on environmental care behavior can be seen in that of the 63 respondents, as many as 60% or 38 respondents fall into the very high category, and 40% or 25 respondents fall into the high category. Based on the answers given by respondents, the freedom of a person to make decisions without coercion from others will affect the actions of that person, and he will not feel burdened with policies made by others. That way, they will be more willing to care about the surrounding environment.

Possible conditions (action situation)

In acting, the right conditions and situations are needed. The influence of possible conditions on environmental care behavior can be seen in that of the 63 respondents; as many as 73% or 46 people have a very high category, then 22% or 14 people have a high category, and the remaining 5% or three people have a medium category. Based on the answers given by respondents, surrounding conditions will encourage someone to do something, and most respondents assume that they are worried about the surrounding environment after seeing problems with waste.

Forms of environmentally caring behavior formed through waste bank programs.

Waste management

Waste management can be interpreted as a recycling process to process solid waste, which includes the separation, collection, processing, distribution, and manufacturing of used goods into something profitable. The influence of waste management on environmental concerns can be seen in that of the 63 respondents. As many as 71% of respondents, or 45 people, have a very high category. As many as 24% of respondents, or 16 people, have a high category, and the remaining 3% or two people, have a medium category. Based on the answers given by respondents, excellent and correct waste management will affect the environmental care behavior of the surrounding community.

Water management

Water utilization and management are essential indicators in seeing the community's environmental care behavior because the clean water crisis can be seen from the malfunction of wells as water sources, decreasing groundwater discharge, reduced groundwater supply, and reduced water catchment areas, causing drought in the dry season and floods in the rainy season. The influence of water management on environmental concern can be seen from 63

respondents; as many as 89% of respondents, or 56 people, have a very high category, and as many as seven people or 11%, have a high category. Based on the answers given by respondents, most respondents were influenced to behave environmentally caring in water management, such as being happy and enthusiastic about planting plants and using clean water to avoid disease.

Energy management

Energy waste is still a serious problem because people tend to throw away an item and buy it when they need it rather than recycle it. Therefore, energy management behavior is one of the indicators used to measure environmental care behavior. The influence of energy management on environmental concern can be seen in that of the 63 respondents; as many as 67% or 42 people have a very high category, then as many as 27% or 17 people have a high category, and the remaining 6% of respondents or four people have a medium category. Based on the answers given by respondents, most respondents are influenced to behave environmentally caring in energy management, such as using energy-saving lamps, turning off electricity when not in use, and minimizing energy use so that waste does not occur.

Eco-product

Using or consuming eco-products consists of awareness, attention, interest, and action. Awareness of environmentally friendly consumption or eco-products, for example, realizing the dangers of using a product with too many essential ingredients. Attention refers to how someone responds to the problem of using such consumer goods. Interest means reducing the use of environmentally unfriendly packaging with the aim of avoiding risks that will be accepted. The effect of the use of eco-product goods on environmental concern is known that of the 63 respondents, as many as 43% or 27 people are in the very high category, then 43% or 27 people are also in the high category, and the remaining 14% or nine people are in the medium category. Based on the answers given by respondents, public interest in eco-products is said to be quite good. This is because most people strongly agree to recycle inorganic waste rather than directly dispose of it without being treated first.

Discussion

The intention and awareness that exist in a person are the most significant factors in increasing concern for the environment. When the person is aware of the importance of protecting the environment around him, then he will always think about the impact that will occur when he does something. Ibu Sunarti, one of the interviewees, said that concern for the environment is a form of her responsibility to the surrounding environment. In addition, after seeing various environmental problems that often occur at this time, people become aware that if our environment is not maintained, it will have a negative impact on the surrounding environment.

Mr Heri felt sorry and uncomfortable if there were people who littered around his home environment, even when the person was in the car. If this were not prevented, then the accumulated garbage would gradually have a destructive impact on sewers or water disposal so that it would cause flooding. He also said that the ethics of caring for the environment need to be applied to ourselves as early as possible. Therefore, it must begin in the smallest sphere, namely our own family.

Mrs. Diah, the administrator and customer of the Lotus Waste Bank, said that the

presence of this waste bank, in addition to making her interact more often with many other people to exchange ideas about caring for the environment, various programs in the waste bank, such as waste management, cultivation of toga plants and other plants also have a positive impact on her daily life in protecting the surrounding environment. Awareness of waste management allows most people to reuse inorganic waste to be processed into something useful and not waste food waste and other organic waste because it can be used as maggot feed cultivated by the Lotus Waste Bank or compost and eco-enzymes.

In addition to awareness and intention in oneself, the support of the surrounding community will also significantly affect one's actions and behavior. With the motivation, education, and socialization provided by the Lotus Waste Bank, the community has become more interested in taking action to improve environmental care. This is because if the behavior does not get support from the community, then his efforts in acting can be said to be less than optimal. The community needs to gain legitimacy so that it does not become the subject of other people's conversations and makes them more confident in doing something; besides that, community support is vital so that this environmentally caring behavior is not in vain and gets mutual benefits.

In the questionnaire that has been distributed, most respondents agreed that the behavior of concern for the environment is increasing after participating in the activities at the Lotus Waste Bank, in addition to the facilities provided by the Lotus Waste Bank in supporting skills such as sorting waste by type, training in recycling waste, conducting hydroponic cultivation, and other activities are one of the innovations so that the views of the community who considering waste as a trivial thing becomes a valuable thing. Then, support from both the surrounding community and the community institution itself will also make someone more confident and motivated to carry out caring behavior for the environment.

The results of interviews with resource persons consisting of the chairman and customers of the Lotus Waste Bank also said that the support from the Lotus Waste Bank, such as socialization, education, training and skills, as well as invitations to love the surrounding environment more which is carried out every day through various means and media made them moved in implementing environmentally caring behavior. One of the goals to be achieved by several resource persons is at least maintaining cleanliness both from home as the closest place to community life and the surrounding environment wherever they are.

The program from the Lotus Waste Bank can be said to have succeeded in improving the community's environmental care behavior. However, an evaluation is still needed so that the program runs well. This evaluation is a benchmark for success between the Lotus Waste Bank program itself and its customers or members. The Lotus Waste Bank provides freedom and openness to customers to express their input and opinions so that the general public can accept the continuity of the waste bank program. With this evaluation, of course, the public, especially customers, increasingly believe in the education delivered by the Lotus Waste Bank.

After the community and the Lotus Waste Bank trust each other and are open, the programs in the Lotus Waste Bank can be applied in everyday life. Mrs Tyas, one of the customers of the Lotus Garbage Bank since its establishment, thinks that after she participated in the activities at the Lotus Garbage Bank, she became more concerned with the cleanliness of the surrounding environment, primarily related to waste problems, for example when she felt that the environment around her house was dirty because of scattered garbage such as used

bottles and plastic, Mrs Tyas preferred to collect it first to be weighed later at the Lotus Waste Bank. The thought that has been formed after he became a customer is one form of his concern for the environment.

Collecting some inorganic waste to be weighed in the waste bank, of course, will help reduce waste that will be taken to the final processing site (TPA) because only waste that cannot be recycled goes to the landfill so that we can minimize the generation of waste generated from households. Most people warmly welcomed the presence of the Lotus Garbage Bank. Various positive impacts of the Lotus Waste Bank programs can be seen with the naked eye. For example, waste that was just thrown into the final processing site without prior selection has had many changes; now, waste that can still be recycled and has value is collected first and then weighed to be exchanged into a balance in the form of money. The balance is a form of appreciation and reward given to customers as a result of collecting inorganic waste and minimizing the generation of household waste in the surrounding community.

Education and innovation carried out by the Lotus Waste Bank have been carried out continuously until now so that public concern for the environment is increasing and does not break in the middle of the road. Although education in the community is not accessible, the Lotus Waste Bank can overcome this well. For example, education and guidance in sorting inorganic waste by type is carried out for one full year, starting from the establishment of the Lotus Waste Bank. Initially, the waste deposited into the Lotus Waste Bank was still often mixed and did not go through waste sorting first. However, now, the waste deposited by customers to the Lotus Garbage Bank is in accordance with its type and is in a neat state. The community accepted the change in their behavior and positive actions towards the environment after the presence of the Lotus Waste Bank.

Conclusion

The existing program at the Lotus Waste Bank has a positive impact on increasing awareness of the surrounding community's environment. Based on respondents who have been distributed to 63 respondents, most people strongly agree with the sustainability of the programs in the Lotus Waste Bank. The awareness and intention that originate in a person are the most critical factors in changing behavior. Support and ease of information from the Lotus Waste Bank in the form of education and provision of facilities and others are present so that the community is motivated and moved to change behavior that was initially still apathetic to the problems that exist in the surrounding environment to be more concerned with the benefits of the surrounding environment. This can be seen after the existence of the Lotus Waste Bank; the community prefers to manage organic waste into maggot feed or compost and inorganic waste to be recycled back into items that can be used or collected for re-weighing. In addition, the Lotus Waste Bank has continuously instilled a sense of concern for the environment in the community through processing and education programs about organic and inorganic waste since 2016. Currently, 1 in 3 residents of RW 04 have routinely sorted and processed inorganic waste to be deposited every month into the Lotus Waste Bank.

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