

EVALUATION OF PLASTIC WASTE MANAGEMENT AT DEPO KOJA, NORTH JAKARTA



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Abstract

This research aims to analyze the evaluation of plastic waste management policy at Depo Kojja, North Jakarta. Based on the results of the study, it can be concluded that the goal of realizing a healthy and clean community environment from plastic waste from the plastic waste management policy at the Kojja Waste Depot, North Jakarta, is in accordance with that put forward by the policy manager. The problem with this plastic waste management policy is the lack of public awareness in helping to manage plastic waste, and many people still litter. The standardization of activities from this plastic waste management policy is reduce, reuse, and recycle. Where officers collect waste from the community, then sort out which waste can still be used, and there is also waste that is then recycled. Then, for the level of change that occurs from plastic waste management at the Kojja Waste Depot, North Jakarta, it has improved and has a high commitment to waste management. The changes observed are the result of these activities or due to other causes in waste management. In Kojja, North Jakarta Waste Storage Depot is a change occurs because there is a commitment relationship in plastic waste management. The management of plastic waste at the Kojja Waste Depot, North Jakarta, is felt by the community by reducing the sight of piled up garbage and unpleasant odors, as well as the utilization of plastic waste to be made into other materials or recycled at the Kojja Waste Bank, North Jakarta.

Keywords: Waste Storage Depot, Plastic Waste Management, Evaluation of Plastic Waste Management

INTRODUCTION

Waste is one of the problems in development in a country because its impact can affect various aspects of people's lives in particular, and the country in general. One of the waste problems faced by big cities, such as the Special Capital Region (DKI) of Jakarta. Poor waste management impacts the environment, causing various problems ranging from health problems to flooding. Waste production in DKI Jakarta continues to increase every year. Based on data from the DKI Jakarta Central Statistics Agency in 2022, it was recorded that the annual volume of DKI Jakarta waste at the Bantar Gebang Integrated Waste Disposal Site (TPST) at the end of 2022 reached 7,543.42 million tons, or an increase of 10.2% compared to 2021, which reached 7,233.82 million tons. The large volume of waste is certainly due to the large number of residents living in DKI Jakarta. According to Safitri, Putra, and Marini (2020) in their book "Ecolabel and Environmental Education," they say that "humans as part of nature are the main part of a complex environment. In the unity of the ecosystem, the position of humans is as one part of other elements, both biological and non-biological, which cannot be separated. The relationship between humans and the environment is circular; their activities will more or less change their environment" (Safitri, Putra, & Marini, 2020, p. 4).

According to data from the Central Statistics Agency (BPS), the population of DKI Jakarta in 2022 reached 10,748,230, and the World Population Review in 2023, DKI Jakarta was ranked the 28th most populous city in the world out of a total of 781 cities in the world. According to Soemarwoto (2001), an increase in population and income will lead to a consumerist lifestyle, which can have an impact on increasing the amount of waste produced (Soemarwoto, 2001).

The increasingly complex waste problem in DKI Jakarta is not only caused by the increasing population, but is also influenced by other factors, including the diverse socio-economic and cultural conditions of the city's people, the low level of seriousness of the government and the community in managing and handling waste problems, and the inappropriateness of the waste management concept applied in a particular area (Madina, 2012). Waste management in DKI Jakarta is mostly not managed sustainably, this is because the Bantargebang final disposal site (TPA) in Bekasi, as the DKI Jakarta waste TPA, is still in a worrying condition, and waste is piled up openly (open dumping) (Ubaidillah, 2016).

The worrying condition is said to be caused by the struggle for waste management by many interested parties, resulting in prolonged conflict.

Waste management itself is defined as the process of collecting, transporting, or moving waste, and final processing. Based on a regional and integrated approach, waste management can be further understood in several concepts as an effort to anticipate reducing the quantity of waste in coordination with the economic sector and population development; sorting, collecting, and improving household waste that is realized from an economic and ecological perspective; reducing negative pressures resulting from the management of the Final Processing Site by optimizing the final processing of waste (ISWA, 2017).

One type of waste that until now the whole world has been campaigning about is good waste management is plastic waste. According to Hasanzadeh and Mojaver (2023), plastic waste is a type of macromolecule formed by the polymerization process, namely the process of combining several simple molecules (monomers) through a chemical process into large molecules (macromolecules or polymers) (Hasanzadeh & Mojaver, 2023). Meanwhile, plastic can be grouped into two types, namely thermoplastic and thermosetting. Thermoplastic is a plastic material that, when heated to a certain temperature, will melt and can be reshaped into the desired shape. While thermosetting is a plastic that, when made in solid form, cannot be melted again by heating (Singh, Singh, Kumar, & Anda Brar, 2019).

The increasing use of plastic in human life is a problem that must be resolved properly. The increase in plastic use occurs because plastic is light, practical, economical, and can replace the function of other goods. This practical and economical nature causes plastic to often be used as a single-use item, thus contributing to the increase in the amount of plastic waste. This causes serious environmental problems. A study entitled Plastic Waste Associated with Disease Coral Reefs conducted by Lamb et al. (2018) explains that Indonesia is one of the countries that spreads the most plastic waste into the sea in the projected time between 2010-2025 (Lamb, et al., 2018). The government itself has set various central-regional hierarchical policies to deal with the problem of plastic waste in Indonesia, but it is still less than optimal. This can be seen from the large amount of plastic waste, which still dominates 15% of the total waste, and becomes 69% of the total waste managed by the Final Disposal Site (TPA).

Plastic waste is likely still piled up in landfills without being processed because the condition of landfills in Indonesia still prioritizes dumping activities, not processing activities. Meanwhile, in the realm of waste management policies, plastic waste has its own characteristics, where its management has begun with the behavior of producers. Plastic waste producers need to adjust their production activities with the projected results of their production so that they do not become waste or pollution. The Ministry of Home Affairs as the axis of the central government in the regions, is deemed necessary to review and foster waste management policies that are quite significantly supported by regional governments. Provisions such as the attachment to Law No. 23 of 2014 concerning Regional Government mandate that districts/cities are required to carry out waste management under the coordination of the Province. In line with this, policies at the regional government level have emerged, with the position of 14 regional governments having set regulations to reduce the rate of plastic waste production in their jurisdiction.

The issue of plastic waste management has been the subject of international studies, such as that conducted by Aryan, Yadav, & Ranjan (2019) in India, with the finding that the most environmentally friendly plastic waste management is:

1. Recycling;
2. Incineration with energy conservation;
3. Incineration without energy conservation; and
4. Stockpiling without biogas conservation(Aryan, Yadav, & Ranjan, 2019)

Lebreton and Andrady (2019) studied the projection of plastic waste growth and found that third-world countries located in Africa and Asia were the largest producers of plastic waste, and the investments made by these countries in waste management infrastructure were thought to be able to answer the problem of plastic pollution in the world (Lebreton & Andrady, 2019). For DKI Jakarta itself, based on data from the DKI Jakarta Environmental Agency, it was stated that during 2020, there was an increase in plastic waste of 21 percent of the total waste compared to the composition in 2018 of 15 percent. Meanwhile, based on the results of a survey conducted by Sustainable Waste Indonesia in 2020, plastic waste in DKI Jakarta reached 4,525 tons, or 20.57 percent, and was the highest compared to the western part of Java. The high amount of plastic waste in DKI Jakarta shows

that the regulations on the use of plastic shopping bags in DKI Jakarta are not running optimally. Through the implementation of DKI Governor Regulation Number 142 of 2019 concerning the Obligation to Use Environmentally Friendly Shopping Bags in Shopping Centers, Supermarkets and Traditional Markets, the DKI Provincial Government, through the Environmental Agency (LH), admitted that it was optimistic that the amount of plastic waste would decrease by around 14 percent. Since July 1, 2020, with the issuance of Pergub Number 142 of 2019, it is hoped that it can reduce the production of single-use plastic waste in DKI Jakarta. However, it turns out that plastic waste in DKI Jakarta is so high. Based on the research results of the waste management company, Waste4Change, in 2021, found that most of the plastic waste in DKI Jakarta is not recycled and ends up in the final disposal site (TPA). From the results of Waste4Change's research in 5 cities in DKI Jakarta, it was found that 87.52% or 244.72 tons of plastic waste per day still end up in the TPA. This is exacerbated by data findings from the World Economic Forum-National Plastics Action Partnership (WEF-NPAP) and SYSTEMIQ in 2022, which stated that plastic waste dominates three-quarters or 76% of the waste that leaks into the Indonesian environment (Fajrian, 2022).

Based on the explanation above, the researcher is interested in conducting research on plastic waste management at waste storage depots in DKI Jakarta Province. From the number of waste storage depots in DKI Jakarta, in this study, the researcher took a case study at the Koja waste storage depot, North Jakarta. The reason the researcher chose the waste storage depot in Koja, North Jakarta, is that, based on data from the North Jakarta Environmental Sub-dept., 130 tons of waste are dumped here every day, and this depot has the largest volume compared to other depots in North Jakarta (Simanjuntak, 2023).

RESEARCH METHOD

This study aims to evaluate the management of plastic waste management at the Koja waste depot in North Jakarta. The approach used in this study is qualitative. The type of research used in this study uses descriptive research, which aims to describe systematically based on facts and accurately regarding facts and characteristics of a subject or object. For data collection techniques, it is done through interviews and observations, as well as

document studies. The data analysis used in this study is as follows: (1) Data organization stage; (2) Data processing stage; (3) Data interpretation stage; and (4) Conclusion stage (Neuman, 2018, pp. 417-443).

RESULTS AND DISCUSSION

The process of evaluating plastic waste management policies in Koja, North Jakarta

In this study, the researcher uses the policy evaluation theory proposed by Weiss (1972). According to Weiss (1972), in policy evaluation, there are six steps to evaluate it. Therefore, based on the research results, the researcher describes it as follows:

a. Identify the program objectives to be evaluated

Based on the research results, it can be stated that this plastic waste management policy aims to create a healthy and clean community environment free from plastic waste, following the Regional Regulation of the Special Capital Region of Jakarta Province Number 3 of 2013 concerning Waste Management.

Related to this objective, the researcher asked the community. According to the community, waste management at the Koja North Jakarta Waste Depot has reduced the community's environmental problems from waste. Based on the results of the study, it can be stated that the objective of realizing a healthy and clean community environment from plastic waste from the plastic waste management policy in Koja North Jakarta is as stated by the policy manager.

b. Analysis of the problem

In plastic waste management, there are certainly problems faced. Based on the data obtained, it is known that the problem faced is the behavior of littering carried out by the community. So that waste management does not run optimally. Based on the research results, it can be stated that the problem with this plastic waste management policy is the lack of public awareness in helping to manage plastic waste, and there are still many people who litter. Related to this problem, the researcher asked the public. According to the public, there are still people who litter.

Based on the research results, the problem with this plastic waste management policy is the lack of public awareness in helping to manage plastic waste, and many people still throw away their waste carelessly.

c. Description and standardization of activities

Activity plastic waste management at the Koja Waste Depot, North Jakarta, is carried out through Reduce, Reuse, and Recycle, hereinafter abbreviated as 3R. 3R is an activity to reduce waste by reducing, using or reusing, and recycling. Based on the results of the study, it can be stated that the standardization of activities from this plastic waste management policy is reduce, reuse, and recycle. Where officers collect waste from the community, then sort out which waste can still be used, and there is also waste that is then recycled.

d. Measurement of the level of change that occurs

Regarding changes in waste management, according to waste management informants in Koja Waste Storage Depot, North Jakarta's been better for the past 4 years. Based on the research results, it can be stated that the level of change that has occurred in the management of plastic waste at the Koja Waste Depot, North Jakarta, has improved, and has a high commitment to waste management.

e. Determine whether the observed changes are a result of the activity or due to other causes.

Associated with the observed changes are a result of the activity or due to other causes in waste management in Koja Waste Storage Depot, North Jakarta, based on the results of interviews with informants, it was acknowledged that there had been changes in waste management in the community because the waste management carried out by the sub-district had truly had a high level of commitment.

Based on the research results, it can be stated that the observed changes are a result of the activity or due to other causes in waste management in Koja North Jakarta Waste Storage Depot is a change occurs because there is a commitment relationship in plastic waste management.

f. Determining the existence of an impact

The impact of plastic waste management at the Koja Waste Depot, North Jakarta is felt by the community with the reduction in the sight of piled up garbage and unpleasant odors and the utilization of plastic waste to be made into other materials or recycled. Based on the results of the study, it can be stated that the impact of plastic waste management at the Koja Waste Depot, North Jakarta is felt by the community with the reduction in the sight of piled up garbage and unpleasant odors and the utilization of plastic waste to be made into other materials or recycled at the Koja waste bank, North Jakarta.

Discussion

Waste is unwanted residual material after the end of a process. The process in question is a process carried out by humans; in natural processes, there is no waste, there are only products that do not move (Apriadji, 2005). In human life, waste is mostly produced by industrial activities, which are then known as waste. Not only from industry, waste can also be produced from mining activities, manufacturing (factory processes), and consumption. Almost all industrial products will become waste at some point, with the amount of waste being approximately similar to the amount of consumption. To solve the waste problem, the DKI Jakarta Regional Government issued a waste management policy as stipulated in the Regional Regulation of the Special Capital Region of Jakarta Province Number 3 of 2013 concerning Waste Management. For this reason, this policy was then implemented by the DKI Jakarta Regional Government hierarchically to the sub-district level.

Policy implementation is an effort to find solutions to various problems faced by the community; therefore, a policy must have a vision of siding especially with those who have problems, for example, in certain communities. Therefore, the policy can also be called an intervention. Therefore, Parsons (2005: 54) stated that the public is a human activity that is considered necessary to be regulated or intervened in by the government. Nugroho (2009: 17) confirmed Parson's opinion above, that is why he said that the essence of policy is to carry out intervention or action, namely an effort to identify problems that must be intervened, which is intended to affirm the objectives to be achieved following the design of the implementation process structure. Grindle (in Nugroho, 2009: 17) stated that the success

of policy implementation is determined by the degree of policy implementation, which includes:

- a. Interests affected by the policy;
- b. The type of benefits generated;
- c. Degree of desired change
- d. Position of policymaker
- e. Who is implementing the program, and
- f. Driven resources.

Thus, the waste management policy at the Koja Waste Depot, North Jakarta, as per the results of research data, it can be concluded that the implementation of the waste management policy at the Koja Waste Depot, North Jakarta, is following its presence to solve problems that exist in society, in this case the problem of plastic waste.

Based on the results of the Researcher's research based on the six steps in evaluating public policy according to Weiss (1972), it can be concluded that the objectives of the program are appropriate. Then the problem faced is more about the community that still does not have the awareness not to litter. Then the standardization of activities related to waste collection, sorting, processing, and recycled. While the changes that occur are related to the management of plastic waste, which is getting better. In addition, the changes that occur are related to the commitment to waste management by the Koja North Jakarta party. Meanwhile, the impacts felt are starting to reduce the accumulation of waste and reduce the unpleasant odor due to waste, and the utilization of plastic waste to be used as other materials or recycled at the Koja North Jakarta waste bank.

Of course, the waste management carried out by Koja North Jakarta is in accordance with the mandate of the Republic of Indonesia Law Number 18 of 2008 concerning Waste Management, Article 22, which includes:

- a. Sorting in the form of grouping and separating waste according to the type, quantity, and/or nature of the waste;
- b. Collection in the form of taking and moving waste from the waste source to a temporary storage area or an integrated waste processing area;

- c. Transportation in the form of carrying waste from the source and/or from a temporary waste storage area or an integrated waste processing area to the final processing area;
- d. Processing in the form of changing the characteristics, composition, and quantity of waste;
- e. Final waste processing in the form of returning waste and/or residue from previous processing to the environmental media safely.

Through plastic waste management carried out at the Koja Waste Depot, North Jakarta, it directly solves the waste problems that occur in society.

CONCLUSION

Based on the results of the research conducted, it can be concluded that:

1. Organizational Culture has a positive effect on Employee Performance. This shows that the higher the Organizational Culture perceived by employees working in Digital Banks in Indonesia, throughout Indonesia it affects Employee Performance.
2. Organizational Culture has a positive effect on Knowledge Sharing. This shows that the higher the Organizational Culture perceived by employees working in Digital Banks in Indonesia, throughout Indonesia it affects Knowledge Sharing.
3. Organizational Culture has a positive effect on Job Satisfaction. This shows that the higher the Organizational Culture perceived by employees working at Digital Banks in Indonesia, throughout Indonesia, it affects Job Satisfaction.
4. Job Satisfaction has a positive effect on Employee Performance. This shows that the higher the Job Satisfaction perceived by employees working at Digital Banks in Indonesia throughout Indonesia has an effect on Employee Performance.
5. Knowledge Sharing has a positive effect on Employee Performance. This shows that the higher the Knowledge Sharing perceived by employees working at Digital Banks in Indonesia, throughout Indonesia it affects Employee Performance.
6. Job Satisfaction can fully and significantly mediate between Organizational Culture and Employee Performance. This shows that the higher the perception of Job Satisfaction that mediates the relationship between Organizational Culture, the higher the perception of Employee Performance.

7. Knowledge Sharing can fully and significantly mediate between Organizational Culture and Employee Performance. This shows that the higher the perception of Knowledge Sharing that mediates the relationship between Organizational Culture, the higher the perception of Employee Performance.
8. Employee Performance has a positive effect on Organizational Performance. This shows that the higher the Employee Performance perceived by employees working at Digital Banks in Indonesia, throughout Indonesia it affects Organizational Performance.

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