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Original Research

The Long-Lived Relationship with Public Perception of the Existence of a Water Final Disposal Site (TPA) in Bengkulu City

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Abstract

Background: Length of stay near a landfill can affect public perception of landfills. The longer people live near landfills, they tend to have a more ordinary or neutral perception of the existence of landfills, and may even not pay much attention to them because they are used to it. However, there is also the possibility that negative perceptions remain if the negative impacts of landfills, such as odors or other environmental problems, are still felt. The distance of the settlement must be more than 1 km, to overcome the direct impact on the quality of the environment, such as on air, water, health and environmental comfort. The Sebakul Water Final Disposal Site (TPA) was established in 1991, and the current condition of each block is almost full of garbage so that in the rainy season garbage trucks cannot enter the garbage pile will accumulate in the settlement dean's emergency block.
Objective: This study aims to determine the relationship between length of stay and public perception of the existence of Sebakul Water landfill (TPA) in Bengkulu City.
Methods: The research method used in this study is descriptive analytics with a cross sectional approach which was carried out from December 2024 to May 2025. The population in this study is the entire community around the Sebakul Water Landfill as many as 93 families and all were used as research respondents. Data collection techniques were carried out through questionnaires, interviews, observations, documentation studies and literature studies. The instrument used in this study is a questionnaire. Data analysis was carried out in a quantitative descriptive manner.
Results: The results of the study found that there is no relationship between the length of stay around the landfill and environmental conditions, there is a relationship between the length of stay around the landfill and health. The suggestion to the government is to reclaim the landfill.
Conclusion: Advice for people around the landfill, to get out of the work of scavengers and not focus on their livelihood in such places, and can also use the waste to have economic value, so that family health is maintained.
Keywords: Final Disposal Place; Length of Stay; Perception

Introduction

The current waste problem is something that requires special attention because waste that is left alone will have a negative impact on the environment. Waste has become a national problem and even the world because it has not been overcome until now. Waste is a problem that needs to be considered, in addition to its smell that disturbs the environment, it can also endanger health because waste is a cause of disease. Therefore, waste disposal and destruction must be done as best as possible. The waste in question is household solid waste such as food scraps, paper, plastic and from other household activities. Therefore, a good waste management system is needed so that it does not provide waste to public health (Emilda, 2019).

Based on the Law of the Republic of Indonesia Number 18 of 2008 concerning waste management. Landfills are places to process waste and return waste to the environment safely for humans and the environment. Landfills are an important part of the waste management system. Environmental cleanliness and safe landfills will provide benefits for public health and the environment, if environmental cleanliness and unsafe landfills will cause losses for the health and environment of the community (Dr. Surya, 2018).

The location and condition of the landfill must absolutely not interfere with the surrounding environmental activities. This aims to minimize the occurrence of: Noise and dust resulting from the activities of trucks transporting garbage or from operating heavy equipment engines. It is possible to smell a strong smell from existing garbage or a lot of flies. Air pollution derived from gases due to the

decomposition of waste. Pollution of residential water and groundwater resulting from *leachate* (waste liquid) that settles into the soil (Ministry of Environment, 2009).

The impact of landfills on the surrounding community is the decline in environmental quality caused by piles of garbage producing various pollutants that can cause air pollution. Settlements around landfills are very risky to the health of their residents. The decomposition of waste will produce, among others, *methane* gas (CH4), *ammonia* gas (NH3) and *hydrogen sulfide* gas (H2S) which are toxic to the body. In addition to being toxic, H2S also smells bad so it is aesthetically unacceptable, so the accumulation of rotting garbage cannot be justified (Triwibowo, 2015).

Air pollution around landfills causes environmental health to be disrupted, including indoor air quality around landfills, especially increasing acute respiratory tract inspection (ISPA) diseases. It is known that the risk of ISPA pneumonia and other respiratory disorders is caused by poor air quality inside the house and outside the home both physically, chemically and physiologically. Almost every place in Indonesia, the waste disposal system is carried out in open *dumping* without any further processing. The disposal system, in addition to requiring a large area of land, also causes air, soil and water pollution in addition to the materials can also be a breeding ground for vectors of infectious diseases (Sudrajat, 2015).

The distance of settlements must be more than 1 km, to counteract the direct impact on the quality of the environment (TPA) is not managed properly. Final disposal sites (TPAs) cause many problems, be it water quality pollution, air pollution, soil pollution from accumulated waste. If there is a buildup of garbage, of course, there will be a buildup of garbage that produces gas (CH4) and hydrogen sulfide gas (H25) which smells bad, which can invite rats, mosquitoes and flies that eat. Rats and rats are one of the potential disease vectors, which multiply at landfill locations. Of course, if the rate of breeding flies and rats is left unchecked, it will create new problems, namely the risk of diseases to the health of the surrounding community such as typhus, dysentery, skin diseases, cholera and diarrhea. Data from the WHO states that as many as 24% of global diseases are caused by all kinds of preventable environmental factors and more than 13 million deaths each year due to preventable environmental factors. The four main diseases caused by a bad environment are, diarrhea, lower respiratory tract infections, various types of non-intense wounds, malaria and so on (Alfan, M.2017).

Based on the results of a survey at RT 24 Air Sebakul Sukarami Village, their perception is that the existence of a landfill is very helpful for them because most women work as scavengers to support their family income, because their husband's income is very small so that it is not enough to meet the needs of the family so they are forced to do scavenging work to meet their living needs. And lack of sanitation and health knowledge also makes some scavengers around pay less attention to hygiene so that they still experience diarrhea. People have lived around the Sebakul Water Landfill starting from 5 years and at most 30 years, with the distance of their houses from the Sebakul Water Landfill between 200 meters to 2 kilometers.

Methods

Study Design

This study employed a descriptive analytic design with a cross-sectional approach to examine the relationship between length of residence and community perceptions regarding the presence of the final disposal site (TPA) Air Sebakul in Bengkulu City.

Samples/Participants

The study population consisted of all household heads living around the TPA Air Sebakul area, specifically in RT 24 Kelurahan Sukarami, totaling 93 families. The sample was determined using total sampling, involving all 93 respondents who met the inclusion criteria of residing in RT 24 and consenting to participate.

Instruments

The primary instrument used was a structured questionnaire designed to measure community perceptions regarding the TPA, supported by field observation sheets to measure distance between residences and the TPA site, as well as documentation and literature study forms.

Data Collection

Data were collected from December 2024 to May 2025 through direct interviews using the questionnaire, observation of environmental conditions, and review of supporting documents and literature relevant to the research topic.

Data Analysis

Data analysis was performed using descriptive statistics to summarize respondent characteristics and perception data. Cross-tabulation with chi-square tests was conducted to examine relationships between length of residence and community perceptions on environmental and health conditions.

Ethical Considerations

Prior to data collection, informed consent was obtained from all participants. The study protocol was approved by the relevant ethical committee at Universitas Muhammadiyah Bengkulu. Participant confidentiality and anonymity were strictly maintained throughout the research process.

Results

Respondent Characteristics

Table 1 of the frequency distribution of respondent characteristics based on the age above shows that almost most of the respondents are 46-55 years old, as many as 45 respondents (48.5%) and a small percentage of respondents are in the age group of 25-35 years and the age group of >65 years. Then for the education category, most of them are basic education, namely 60 respondents (64.5%), and a small part (8.6%) are high school education.

Table 1 Distribution of Respondents Based on Characteristics in the Sebakul Water Landfill Area, Bengkulu City in 2025.

From the character	Frequency	Presentase (%)
Age		
25 – 35 year	6	6.5
36 – 45 year	20	21.5
46 – 55 year	45	48.5
56 – 65 year	16	17.2
>65 year	6	6.5
Education		
Primary school	60	64.5
Junior High School	25	26.9
High School	8	8.6

Source : Primary Data 2025

Length of Stay Around the Landfill Location

Based on table 2, it is known that 47 respondents (50.5%) of respondents who stated that living around the Sebakul Water Landfill location had a negative impact on environmental pollution, while 46 respondents (49.5%) had a perception that the existence of the Sebakul Water Landfill did not have a negative impact on environmental pollution. Education

Table 2 Distribution of Respondents Based on Length of Stay at Landfill Locations in the Sebakul Water Landfill Area, Bengkulu City in 2025.

Length of Stay	Frequency	Presentase (%)
5 – 10 year	9	7,7
11 – 20 year	73	78,5
20 – 30 year	11	11,8
Total	93	100

Source : Primary Data 2025

Respondents' Perception of Health

Based on table 3, it is known that most of the respondents who stated that living around the Sebakul Water Landfill location had a negative impact on the onset of disease as many as 24 respondents (25.8%), while those who had the perception that the existence of the Sebakul Water Landfill did not have a negative impact on the onset of disease as many as 69 respondents (74.2%).

Table 3 Frequency Distribution Based on Respondents' Perception of Health in the Sebakul Water Landfill Area, Bengkulu City in 2025.

Perception of Health	Frequency	Presentase (%)
Negative	24	25,8
Positive	69	74,2
Total	93	100

Source : Primary Data 2025

Respondents' Perception of the Environment

Based on table 4, it is known that respondents who stated that living around the Sebakul Water Landfill location had a negative impact on environmental pollution as many as 37 respondents (39.8%) out of all respondents (93 respondents), while those who had the perception that the existence of the Sebakul Water Landfill did not have a negative impact on environmental pollution as many as 56 respondents (60.2%).

Table 4 Frequency Distribution Based on Respondents' Perception of Environmental Conditions in the Sebakul Water Landfill Area, Bengkulu City in 2025

Perception of the Environment	Frequency	Presentase (%)
Negative	37	39,8
Positive	56	60,2
Total	93	100

Source : Primary Data 2025

The Relationship of Length of Stay with Respondents' Perception of Environmental Conditions

Based on table 5, it is known that respondents who live in the Sebakul Water Landfill between 5 – 10 years old 5.4% have a negative perception of environmental conditions and 4.3% have a positive perception of the environment, while respondents who have lived 11 – 20 years have a negative perception of 31.2%, while those who have a positive perception of 47.3% have a positive perception. For respondents who have lived between 20 – 30 years old who have a negative perception of 3.2% and who have a positive perception of 8.6%. Based on the results of *the calculation of Chi Square, a* value of 0.435 was obtained greater than the alpha of 0.05, meaning that there was no relationship between the length of stay and the respondents' perception of the environmental conditions around the Air Sebakul Landfill.

Table 5 Relationship of Length of Stay with Respondents' Perception of Environmental Conditions in the Sebakul Water Landfill Area, Bengkulu City in 2025

Length of Stay	Perception of Environmental Conditions				Total	P
	Negative Perceptions		Positive Perception			
	n	%	n	%		
5 – 10 year	5	5,4	4	4,3	9 (9,7 %)	0,438
11 – 20 year	29	31,2	44	47,3	73 (78,3)	
20 – 30 year	3	3,4	8	8,6	11 (12%)	
	37	39,8	56	60,2	93 (100%)	

Source : Primary Data 2025

Long-Lived Relationship with Respondents' Perceptions of Health

Based on table 6, it is known that respondents who live in the Sebakul Water Landfill between 5 – 10 years old 8.6% have a negative perception of health and 1.1% have a positive perception of the environment, while respondents who have lived 11 – 20 years old have a negative perception of 16.1%, while those who have a positive perception of 62.4% have a positive perception. For respondents who have lived between 20 – 30 years old who have a negative perception of 1.2% and who have a positive perception of 11.3%. Based on the results of *the calculation of Chi Square*, a value of 0.000 was obtained that was less than the alpha of 0.05, meaning that there was a relationship between the length of stay and the respondents' perception of health around the Air Sebakul Landfill.

Table 6 Long-Lived Relationship with Respondents' Perception of Health in the Sebakul Water Landfill Area, Bengkulu City in 2025.

Length of Stay	Perception of Health				Total	P
	Negative Perceptions		Positive Perception			
	n	%	n	%		
5 – 10 year	8	8,6	1	1,1	9 (9,7 %)	0,000
11 – 20 year	15	16,1	58	62,4	73 (78,5)	
20 – 30 year	1	1,1	10	11,3	11(12,4%)	
	24	39,8	69	74,8	93 (100%)	

Source : Primary Data 2025

Discussion

Characteristics

Characteristics are the meaning of psychiatric traits, morals or ethics that distinguish a person from others, habits, dispositions. According to Notoatmodjo (2012), a person's characteristics are traits that distinguish a person from others in the form of education, employment, income, number of children, and the number of families in the household that affect a person's behavior. From the results of the study, it was found that the most respondents were respondents who had an age range of 46 – 55 years, which was 48.4%. According to the Indonesian Ministry of Health (2009), the division of human life is divided into toddlers (0-5 years), childhood (5-11 years), adolescents (12-17 years), early adults (25-35 years), late adults (36-45 years), early elderly (46-55 years), late elderly (56-65 years) and elderly (≥65 years).

Some of the respondents in this study worked as scavengers (45.2%). According to Law no. 14 of 1969, work is to do work to produce goods or services to destroy the needs of the community. Scavengers are people who struggle with waste to find something that is still valuable to sell to buyers of used goods (recycling entrepreneurs), including iron, used bottles, mineral water glasses, cardboard, paper, used plastic (Parmonagan, 2013). The reasons for becoming a scavenger besides living around the landfill area according to Acehkini (2020) include the urgency of the needs of life and the difficulty of getting other better jobs, Another reason, being a scavenger keeps you healthy because you continue to work.

Length of Stay in the Location Around the Landfill

The problem of landfills is a problem that is not easy to solve today, related to that some studies say that landfills are places that have the potential to affect health, especially for people who live and do their daily activities in landfills, because the landfill has many piles of waste that invite bacteria, disease vectors and viruses that develop (Astry Axmalia, Surahma Asti Mulasari, 2020).

Based on the table above, data was obtained that in general respondents have lived around the landfill for about 11-20 years, and based on the results of a short interview the respondents said that the community is still quite comfortable living around the landfill area and is aware of the water and air pollution in the landfill but can still tolerate it. In addition to living around the landfill area, there are also people who work as scavengers in the landfill area, this will certainly bring a high risk of being exposed to diseases due to landfills.

The motivation of the community to live around the Sebakul Water Landfill is driven by the motive, namely the fulfillment of household needs and jobs with a fixed income, including as a scavenger or collector. This is in line with the research of Neni Sujianti et al. (2020), who stated that landfills not only cause negative impacts but also feel positive impacts by the community, namely by scavenging plastic waste and also some items that can still be used is a job that cannot be underestimated. The sales results of scavenging a day can reach 1 million rupiah for two people.

Long-lived relationship with respondents' perception of environmental conditions

The environment is a medium where living things live, seek, and have distinctive characters and functions which are mutually related to the existence of living things that occupy them, especially humans who have a more complex and real role (A. Rusdiana, 2015). The environmental component consists of abiotic factors (soil, water, air, weather, temperature) and biotic factors (plants, animals, and humans). The environment can consist of the natural environment and the artificial environment, while the natural environment is a state created by God for humans (Candra B, 2012).

The environmental condition around the landfill in Air Sebakul can be seen that the garbage has piled up, even to the point of scattering on the road and emitting a very strong stench, this is very disturbing to the residents who live in the vicinity, there have been many complaints about the pungent smell of garbage, until now it can be seen that the garbage in the landfill has been scattered, actually the garbage does not reach the road, if there are many heavy equipment, Because the heavy equipment used is inadequate, the work process is hampered. An environment like this certainly carries threats such as the potential for large environmental pollution, such as soil pollution due to leachate followed by pollution of water sources to air pollution that reduces the quality and aesthetics of the environment around the landfill. Not only that, but the increasing pile of garbage allows landslides to occur that threaten those who are active in the landfill. Not to mention that several previous cases have even often occurred landfill fires due to methane gas produced by garbage plus extreme weather that burns (Nurlia Sila 2023).

Based on the chi square statistical test, a p value of 0.448 was found to be greater than the alpha of 0.05, meaning that there was no relationship between the length of stay and the respondents' perception of environmental conditions. Environmental perception is how a person understands and assesses the surrounding environment. This perception is influenced by a variety of factors, including experience, knowledge, and personal values. The relationship between length of stay and respondents' perception of environmental conditions shows that the longer a person stays in a place, the higher their perception of the environmental conditions. This is due to the experience and knowledge accumulated

over time, which allows them to better understand and assess the conditions of the surrounding environment. Length of stay near the Final Disposal Site (TPA) can affect public perception of the landfill. The longer people live near landfills, they tend to have a more ordinary or neutral perception of the existence of landfills, and may even not pay much attention to them because they are used to it. However, there is also the possibility that negative perceptions remain if the negative impacts of landfills, such as odors or other environmental problems, are still felt.

Based on table 5, it is known that respondents who live in the Sebakul Water Landfill environment between 5 – 10 years old have a negative perception of environmental conditions and 4.3% have a positive perception of the environment. People who have lived near landfills for a long time may have adapted to the surrounding environmental conditions, including the impact of landfills. They may already have ways to address or minimize those impacts in their daily lives. For respondents who have lived between 20 – 30 years old who have a negative perception of 3.2% and who have a positive perception of 8.6%. From the results of the study, it was found that the longer a person lives in a place, the more they will adapt and get used to living in that environment, including around landfills.

In addition to the length of stay, a person will be more adaptable. The length of stay can also increase a person's emotional attachment to the environment. They may have formed a strong relationship with the environment, both socially and culturally, so they are more concerned about the conditions of their environment. Some studies show that respondents with longer stays have a better perception of air, water, and general environmental quality. They are also more likely to have concern for environmental problems and are more active in finding solutions. In this study, there are still respondents who have lived around the area for a long time but still have a negative perception of environmental conditions because in addition to distance, public perception is also influenced by other factors such as education level, income, employment, and distance from residence to landfill locations (Wulan, et al., 2023).

Long-Lived Relationship with Respondents' Perception of Health

The existence of accumulated garbage has been proven to cause a number of diseases. Malaria, diarrhea, and acute respiratory infections are common in residents living in areas with poor waste management. The use of garbage-contaminated water for bathing, food irrigation, and drinking water can also expose people to disease-causing organisms and other contaminants. In addition, respiratory symptoms, skin, nose, and eye irritation, gastrointestinal problems, fatigue, headaches, psychological problems, and allergies are common in people who live near landfills (Tizita Atea.et al., 2021).

Risk Factors for Health Problems that occur around final waste disposal, including air pollution from landfills, are identified as the dominant risk factors for health problems. Water pollution is mentioned by some as a cause of health problems, especially for livestock. Soil pollution is not recognized as a risk factor for health problems. Unpleasant odors and smoke were identified as the main factors causing health problems from open landfills by all participants. Inhaling unpleasant odors and fumes from burning and decay of garbage is believed to affect the respiratory organs and cause respiration-related health problems. The odor and smoke from festals and plastics are believed to be the main causes of health problems.

Poor waste management in landfills can be a source of disease, both directly and indirectly. It can directly be a place for the development of various types of parasites, while indirectly it can be a nest for various disease-carrying animals. Various diseases that can arise include diarrhea, worms, malaria, dysentery and dengue fever. The community around the landfill feels this and expresses concern about the increasing number of flies near the village due to the proximity of the location of the landfill to the residence.

Based on table 6, it is known that the results of *the Chi Square calculation* obtained a value of P = 0.000 that is smaller than the alpha of 0.05, meaning that there is a relationship between the length of stay and the respondents' perception of health around the Air Sebakul Landfill. The relationship between length of stay around landfills (landfills) and respondents' perceptions of health suggests that the longer a person lives near landfills, the greater the potential for perceived negative impacts on their health. This is because constant exposure to harmful substances released by landfills can lead to a variety of health problems, and respondents' perceptions of their health are also influenced by their experience and knowledge of landfill's impacts. The community around the landfill is not worried about the presence of landfills around settlements, even though they feel disturbed by bad smells or unpleasant during the rainy season. Monitoring of water and wells in the area around waste processing sites and residential areas is carried out routinely every three months. Monitoring is carried out to check the condition of the well water whether it is contaminated by waste from waste from waste liquid and to find out the hygiene of the well water. The water source of the community around the landfill comes from the water of the Regional Drinking Water Company (PDAM) which is far from the landfill (Kasam 2011).

Length of stay near landfills had a significant relationship with respondents' perception of their health. Exposure to hazardous substances and knowledge of landfill impacts can affect how respondents assess their health conditions. Therefore, it is important to consider these factors in an effort to reduce the negative impact of landfills on public health.

Conclusion

The existence of landfills has had both positive and negative impacts on the surrounding communities. On one hand, it has provided new sources of livelihood for residents, such as working as waste collectors, informal recyclers, or small-scale farmers, thereby contributing to household income and reducing unemployment. On the other hand, residents are still affected by environmental issues such as unpleasant odors, particularly during the rainy season, and water pollution, especially in wells near the site. The increased traffic of waste trucks has also caused damage to road infrastructure. The study found no significant relationship between the length of residence near the landfill and perceptions of environmental conditions; however, a significant relationship was found with public health, as some residents reported experiencing environment-related illnesses.

Therefore, it is recommended that the government initiate a gradual reclamation and environmental rehabilitation program for the Sebakul Water Landfill. For the local community, it is advisable to reduce dependence on high-risk occupations such as informal scavenging by exploring alternative ways to gain economic value from waste, including waste processing and recycling education. These efforts are expected to help improve long-term public health and environmental sustainability in the area.

References

Abidin, J., et al. (2019). The impact of air pollution on health to increase public understanding of the dangers of air pollution. Proceedings of the National Physics Seminar of Riau University IV.

Astry, A., & Surahma, A. (2020). The impact of landfill sites on public health disorders. Journal of Community Health (Keskom).

Azhari, S. K. (2012). Sketch of scavengers in Bandung City. Sosioteknologi, 17(8), 696–702.

Chandra, B. (2012). Introduction to environmental health. Jakarta: EGC.

Environmental Agency. (2022).

Bengkulu Provincial Health Office. (2023). Health profile of Bengkulu City 2010. Bengkulu: Bengkulu Provincial Health Office.

Emilda, E. (2019). The impact of waste management on health. Health Insight, 5(2), 246–252. https://doi.org/10.33485/jiik-wk.v5i2.138

Harjanti, I. M., & Pramaningtyas, A. (2020). Waste management at Jati Barang landfill site, Semarang City. Planology Journal, 17(2), 185–197.

Hasan, N., Fattah, I., & Risna. (2020). Analysis of air pollution based on Government Regulation No. 41 Year 1999 on Air Pollution Control. Madani Legal Review.

Nugroho, H., & Firmansyah, M. N. (2018). Determination of landfill site in Sumedang Regency. Reka Geomatika, 2017(1). https://doi.org/10.26760/Jrg.v2017il.1461

Nurlia, S. (2023). Review of the current condition of landfills in Indonesia: Solution or threat. https://unair.ac.id/telaah-kondisi-terkini-tpa-di-indonesia-solusi-atau-ancaman/

Regulation of the Minister of Environment and Forestry No. P.10/MENLHK/SETJEN/PLB.0/4/2018. (2018). Guidelines for preparing regional policies and strategies for household waste management and similar waste. Jakarta.

Regional Environmental Management Center of Sumatra. (2009). Environmentally sound final waste processing sites. Ministry of Environment of the Republic of Indonesia.

Rahmaniah, R. (2014). Potential waste reduction through urban waste management at the TPS in Mataram District. Journal of Urban and Regional Planning, 5(2), 119–128.

Tizita, E., Girma, E., & Mamo, K. (2020). Risk perceptions and experiences of residents near open waste dumping sites in Ginchi City, Ethiopia: A qualitative study. Risk Management and Healthcare Policy, 14, 2035–2044. https://doi.org/10.2147/RMHP.S309295

Syafrina, J. (2022). Thesis on waste management at Taman Gapa landfill site, Makassar City. http://repository.ub.ac.id/eprint/162767/1/Syafrina5%20Juhaidah.pdf