JOURNAL LA SOCIALE

VOL. 07, ISSUE 03 (1092-1107), 2026
DOI:10.37899/journal-la-sociale.v7i3.3123

Communication Strategy of the Makassar City Environmental Service in Waste Management

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Article Info

Article history:
Received 18 February 2026
Received in revised form 21 April 2026
Accepted 13 July 2026

Keywords:
Communication Strategy
Waste Management
Waste Bank

Abstract

This study aims to examine the communication strategy of Makassar City Environmental Agency in the government's efforts to address waste problems. This study aims to: (1) Analyze the communication strategy carried out by Makassar City Environmental Agency in waste management, (2) Identify supporting and inhibiting factors towards Makassar City Environmental Agency's communication strategy in waste management. The type of research used is qualitative research. The data in this study were obtained by conducting surveys and interviews with Makassar City Environmental Agency officials, waste bank management elements, Tamangapa Antang TPA managers and community elements. The results obtained from this study are: (1) Makassar City Environmental Agency has carried out waste management with the 3R (Reduce, Reuse, Recycle) waste management strategy, (2) waste management with waste banks, and (3) Waste management with mini-incinerators. In addition, the Makassar City government, through the Environmental Agency, plans long-term waste management by utilizing waste as electrical energy through the construction of PSEL or PLTSa or Waste to Energy Electricity Processing as a mitigation effort to address the waste problem in Makassar City. The communication strategy that the Makassar City Environmental Agency has implemented in waste management is by using mass communication through television, radio, newspapers, online media, and direct outreach to the community.

Introduction

Makassar City, the capital of South Sulawesi Province, is the largest metropolitan city in Eastern Indonesia (Rahim & Abbas, 2024; Harusi et al., 2025; Harusi et al., 2025). It continues to experience rapid development, accompanied by rapid urbanization, dynamic trade, services, and industrial activity. This development has significant implications for positive economic growth and development, but also presents serious challenges in waste management. The amount of waste in Makassar City increases daily, largely from households, markets, shopping centers, tourist areas, and industrial areas (Chen et al., 2022; Lu et al., 2023; Gauna Ruiz de León et al., 2026).

One factor influencing the increase in waste production in Makassar City is population growth, which leads to increased consumption of goods and services, which in turn generates an increasing amount of waste. This increase in waste poses an environmental problem, yet its management remains inadequate, particularly in densely populated areas like Makassar City.

Available data shows an increasing trend in waste production in Makassar City over the past three years, as follows:

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2021 = 868 tons/day,

2022 = 905 tons/day,

2023 = 1,032 tons/day,

2024 = 1,100 tons/day.

Daily waste production from households and markets is the primary cause of the increase in waste in Makassar City (Marsella et al., 2026; Annisya et al., 2026; Dai Koban et al., 2026). The waste generated daily by households and markets is transported to the Tamangapa Antang landfill, which is currently experiencing overcapacity. Operating since 1994, the Tamangapa Antang landfill covers an area of 20.8 hectares and is the only final waste disposal and processing site in Makassar City. Therefore, there are no other options or alternatives for waste disposal. The volume of waste piled up at the Tamangapa Antang landfill has now reached 40-50 meters. This situation has led to a mountain of waste piling up inside the Tamangapa Antang Landfill. If not addressed quickly and appropriately, this waste problem could lead to various environmental problems, such as air pollution, unpleasant odors, water pollution, and soil contamination, all of which will impact the health of the environment and the public health of Makassar City residents.

The solution to the waste problem requires public participation and awareness of the importance of environmental cleanliness (Mashi et al., 2026; Handini & Putra, 2026; Dixit et al., 2026). Furthermore, government participation and support are needed to maintain environmental cleanliness, focusing on the waste problem, which has become a major issue.

Waste management activities in several major cities in Indonesia, such as Makassar City, have been carried out optimally to prevent waste from piling up in various parts of the city (Fattah et al., 2026; Maulana et al., 2026; Utomo et al., 2026). The Makassar City government's waste management efforts were recognized by the central government with the award of the ADIPURA (Award for Excellence) in 2017-2018. The Makassar City government's municipal waste management efforts are still in the stage of preventing piles and spills of waste by cleaning and transporting it to the landfill. A future program is planned to transform the existing waste piles into an alternative source of income or Regional Original Income (PAD) for development activities in Makassar City.

This program has been realized through the construction of a final waste disposal site (TPA) using a Sanitary Landfill system, which previously used an Open Dumping system (Magriasti, 2026; Jonianto et al., 2026; Amadia & Humairo, 2025). This system will minimize potential impacts such as odor, methane gas, fire hazards, and potential disease vectors. This system can also be implemented with leachate treatment ponds to prevent water pollution and the installation of PVC pipes to handle the methane gas produced during the decomposition of organic materials in the waste. Organic waste is processed into quality products such as organic fertilizer and compost through biological decomposition. This program has been implemented by the Makassar City government, but has not yet been able to address the current waste problem. Waste generation in Makassar City is significantly influenced by the population and the dominant types of activities within the city. The results of calculations of waste generation in Makassar City over the past few years are significantly influenced by its population. Makassar's population growth over the past year was recorded at approximately 1.78 percent, the highest growth rate compared to the previous year's 1.65 percent. This is likely due to Makassar's status as a gateway to Eastern Indonesia and an economic center, attracting people to seek employment, invest, and pursue education (Salim et al., 2026; Mubah et al., 2026;

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Anwar et al., 2026). This population increase will impact waste generation in the city, which can disrupt the city's beauty and comfort if waste is not managed properly.

With this significant population growth, it is estimated that daily waste production will increase year after year (Kassahun et al., 2025; Chauhan et al., 2025; Bensmain et al., 2025). This increase is in line with the population growth rate of 1.78%. Makassar City has a larger landfill development area than several cities in South Sulawesi Province, but the landfill is no longer capable of accommodating the volume of waste entering the site daily.

In an effort to address the waste problem in Makassar City, the government is attempting various communication strategies with various parties to find solutions. The Makassar City government is exploring alternative waste management options, including establishing contacts with various investors who would partner with the Makassar City government in waste management.

The Makassar City Government, specifically the Environmental Agency, as the technical agency responsible for waste management, has implemented various efforts and strategies, such as renovating the Tamangapa Antang Landfill, establishing waste banks at the sub-district level, and implementing a household waste management program based on the 3Rs: Reuse, Reduce, and Recycle. Furthermore, the government has also issued regulations through Makassar Mayoral Regulation No. 21 of 2023 concerning the prohibition of plastic bags for shopping.

According to Waste Management Law No. 18 of 2008, waste is the solid residue of daily human activities and/or natural processes. Waste has two interrelated and interdependent components in the environment. For example, an imbalance caused by one factor will affect the surrounding organisms and ecosystems (Berebon, 2025; Steinert et al., 2025; Thakur et al., 2025).

Waste is the residue of human activities that often causes environmental problems in urban areas. Not all of the waste generated by human activities can be managed or removed from the environment by humans, resulting in various problems and impacts. Waste originating from various sources, especially residential areas, mostly consists of food scraps, leaves, and fruit scraps, which are prone to decomposition. This type of waste can become a source of disease breeding and a source of disease hosts or intermediaries, which can pose problems for human health and the environment (Raji et al., 2025; Hussien et al., 2025;

Waste is unwanted material left over after a process has ended. Waste is a man-made concept; in natural processes there is no waste, only inert products. Waste can exist in any phase of matter: solid, liquid, or gas. When released in the latter two phases, especially gas, waste can be considered an emission. Emissions are usually associated with pollution. In human life, large amounts of waste come from industrial activities (also known as waste), such as mining, manufacturing, and consumption. Almost all industrial products will become waste at some point, with the amount of waste roughly similar to the amount of consumption. According to Manik (2003: 67), waste is defined as any unused or unwanted object that must be discarded, resulting from human activities. Meanwhile, the National Standardization Agency, in its Operational Technical Procedures for Urban Waste Management, defines waste as solid waste consisting of organic and inorganic materials that are deemed useless and must be managed to prevent environmental harm and protect development investments.

Waste is an item considered unusable and discarded by its previous owner/user, but for some people, it can still be used if managed properly (Nugroho, 2013: 31). Waste accumulation is caused by several factors, including the extremely large volume of waste that exceeds the capacity of final waste disposal sites (TPA). Current waste management is perceived to have

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no positive impact on the environment, and there is a lack of policy support from the government.

According to Suhatro (2011:43), the government has not yet taken this waste issue seriously. Although the government has made several breakthroughs, mountains of garbage in several temporary disposal sites (TPS) continue to be a significant public nuisance and a concern. The waste problem is crucial and difficult to resolve. Therefore, if not handled properly, it will have negative impacts, such as water, air, and soil pollution, which can lead to disease. Furthermore, decomposing waste produces and emits odors that can disrupt human life. From an aesthetic standpoint, the presence of scattered or even mountains of garbage makes the environment unsightly and detracts from the overall beauty of the city. Scattered garbage can also enter water bodies, increasing the area affected by pollution. If left to accumulate, garbage can also cause runoff, which can disrupt and emit gases or heat, which are also very detrimental to the environment. The waste problem is no longer just a matter of cleanliness and the environment; it has become a social issue with the potential to cause conflict. Worse still, almost all cities in Indonesia, both large and small, lack a proper waste management system (Damanhuri, 2005:1-1). Generally, Indonesian cities use the same waste management method: collect, transport, and dispose. This classic waste management method has ultimately led to the practice of indiscriminately dumping waste without following technical regulations in designated locations.

Waste negatively impacts aesthetics and produces unpleasant odors. However, burning it creates a new problem: air pollution. Waste is classified according to its origin. Generally, waste is divided into two groups: organic waste and inorganic waste. Organic waste is waste derived from living organisms, such as vegetable and fruit scraps, and leaves. Inorganic waste, on the other hand, is waste derived from non-living materials, such as plastic, paper, glass, cans, and metal. Much of this inorganic waste is difficult to decompose and is difficult to process. Processing this waste requires high costs and technology. According to Kurniawan (Grahanida, 2012:2), population growth results in an increasing amount of waste. The increase in waste is often not matched by a proper waste management system. This ever-increasing volume of waste cannot be managed effectively if the old paradigm (collect-transport-dispose) is still used. Waste is an environmental problem that remains poorly addressed, especially in large cities. Waste management capacity is not commensurate with production, resulting in waste piling up everywhere. Poorly managed waste can lead to a decline in environmental health and aesthetics due to water and air pollution, and the proliferation of pests and diseases. Residential areas near these piles are no longer suitable for residents. The waste problem in Makassar City stems from the difficulty of collecting, transporting, disposing of, utilizing, and disposing of waste, including household, market, industrial, and office waste. The difficulty of waste management is closely related to the poor condition of residential areas, as uncontrolled residential growth complicates waste collection and transportation, leading to waste accumulation.

Waste density can be influenced by the composition of the waste. In developed industrial countries, waste density ranges from 100-150 kg/m3. In developing countries, waste density varies between 250-500 kg/m3 (Bappenas, 2023). Based on research conducted by the Overseas Development Agency (ODA) in 1990, domestic and market waste had a density of 300 kg/m3. Furthermore, waste density is also influenced by the type and composition of the waste, and by climatic conditions. Because waste components retain water during the rainy season, the waste increases in weight due to the increasingly compacted condition or components.

ISSN 2721-0960 (Print), ISSN 2721-0847 (online)

Improperly managed waste can disrupt environmental aesthetics, produce odors, and lead to the spread of disease. Environmental disruptions caused by waste can arise from the source, where waste producers fail to handle it properly. Waste problems arise from an imbalance between waste production and management and the decreasing capacity of natural resources as waste disposal sites. On the one hand, the amount of waste continues to grow at a fairly rapid rate, while on the other hand, waste management capacity remains inadequate.

Waste in everyday life has both benefits and drawbacks. It is beneficial if utilized properly and detrimental if left unmanaged. The negative impacts of improper waste management can cause several disadvantages. Poor waste management results in pollution of the air, groundwater, and soil, as well as the emergence of various diseases that threaten public health.

Waste has a negative impact on health, potentially triggering various diseases if not managed properly. Piles of waste can potentially attract disease-carrying animals and organisms to breed and congregate. These effects include outbreaks of diseases such as malaria, diarrhea, dengue fever, and other illnesses.

Proper waste management and processing can yield positive benefits for the community. The environment becomes cleaner, pollution is minimized, and useful products can be created through recycling. Waste can be used as compost for organic fertilizer, and can also be processed into bio-charcoal, biogas, and electricity. Furthermore, waste can be used to produce accessories, functional items, and building materials. This research aims to address this gap by focusing on the Makassar City Environmental Agency's communication strategy for waste management and providing an analysis of the interaction between the government and the community regarding the Makassar City Environmental Agency's waste management program. Thus, this research will provide new contributions in developing communication strategies for successful waste management in Makassar City and major cities in Indonesia.

Methods

Research Approach and Design

This study employs a qualitative research approach with a descriptive research design. Qualitative research seeks to explore and understand social phenomena within their natural settings, emphasizing meaning, context, and the complexity of human interaction. As explained by Leedy & Ormrod (2005), qualitative research focuses on phenomena as they occur naturally and examines them holistically, acknowledging their complexity. Similarly, I Made Jaya (2021) emphasizes that qualitative research positions the researcher as the primary instrument, generating findings in the form of words derived from valid and in-depth data rather than statistical generalization.

The descriptive strategy is chosen because the study aims to systematically and accurately describe the communication strategies implemented by the Government of Makassar City in waste management. Rather than testing hypotheses, this research seeks to provide a comprehensive and contextualized account of how communication strategies are formulated, implemented, and perceived by relevant stakeholders. The qualitative descriptive design enables an in-depth exploration of policies, practices, and stakeholder experiences related to waste management communication.

The Role of the Researcher

In qualitative research, the researcher functions as the primary instrument of data collection and interpretation. As highlighted by Lexy J. Moleong (2016), the researcher plays a central role in gathering, interpreting, and validating data. In this study, the researcher acts as a full participant observer whose presence is known to the informants.

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The researcher is responsible for designing the study, collecting data through interviews, observations, and documentation, analyzing findings, and drawing conclusions. Beyond technical roles, the researcher also establishes rapport with informants to foster trust and openness. This relational approach minimizes the possibility of biased or artificial responses and enhances the authenticity and credibility of the data collected.

Research Site and Timeframe

This research was conducted at the Technical Implementation Unit (UPT) for Waste Management under the Environmental Agency (Dinas Lingkungan Hidup) of Makassar City. The site was selected purposively because it is the primary institution responsible for formulating and implementing waste management policies and communication strategies in Makassar.

The study was carried out over a three-month period, from September to November 2025. This timeframe allowed sufficient opportunity for in-depth interviews, field observations, document collection, and data verification processes. Conducting the research within the institutional setting ensured direct access to policy actors and operational activities relevant to the study objectives.

Research Informants

In qualitative research, informants are selected based on their relevance, knowledge, and involvement in the phenomenon under study. Unlike quantitative research, qualitative research does not emphasize population size but rather the depth and richness of information. Informants were selected using purposive sampling, a technique that involves selecting participants based on specific criteria relevant to the research objectives, as explained by Sugiyono (2014).

The key informant in this study was the Head of the Environmental Agency of Makassar City, as the principal authority responsible for waste management policy and communication strategy. Supporting informants included the Head of the Waste Management Division, the Head of UPT TPA Tamangapa, one waste bank manager, one representative from a waste-focused non-governmental organization (NGO), and three community representatives. In total, eight informants participated in this study. The selection was based on the principles of relevance, adequacy, and representation of diverse perspectives related to waste management communication.

Types and Sources of Data

This study utilizes both primary and secondary data sources. Primary data were obtained directly from informants through in-depth interviews and field observations. Interview data consisted of recorded conversations and detailed field notes capturing participants' perspectives, experiences, and explanations regarding communication strategies in waste management. Observational data included notes on institutional practices, communication activities, and interactions between stakeholders.

Secondary data were obtained from official documents, policy reports, institutional archives, academic literature, journals, and other relevant written materials. These sources provided contextual and supporting information to strengthen and complement the primary data. The combination of primary and secondary data enabled a comprehensive understanding of the research problem.

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Data Collection Techniques

Data collection was conducted in natural settings to ensure authenticity and contextual relevance. Three main techniques were employed: in-depth interviews, observation, and documentation.

First, in-depth interviews served as the primary data collection method. Interviews were conducted with selected informants to explore their perspectives on communication strategies, implementation mechanisms, challenges, and outcomes. The interviews were semi-structured, allowing flexibility for probing while maintaining alignment with the research objectives.

Second, observation was conducted to examine actual practices and communication processes in waste management operations. Through direct field observation, the researcher was able to identify behaviors, interactions, and operational realities that may not have been fully captured through interviews.

Third, documentation involved collecting and analyzing written and visual materials such as policy documents, strategic plans, activity reports, photographs, and other relevant records. Documentation analysis provided additional evidence and helped triangulate findings from interviews and observations.

Data Analysis and Trustworthiness

Data analysis was conducted systematically following qualitative data analysis procedures. The process began with organizing and transcribing interview data, followed by data reduction, categorization, and thematic interpretation. The researcher carefully reviewed all collected data to identify patterns, recurring themes, and meaningful relationships related to communication strategies in waste management.

To ensure trustworthiness and credibility, this study employed triangulation techniques. Source triangulation was conducted by comparing information obtained from different informants to verify consistency and reliability. Method triangulation was applied by cross-checking data collected through interviews, observations, and documentation. As noted by Michael Quinn Patton (as cited in Moleong, 2012), triangulation enhances the credibility of qualitative findings by validating information through multiple sources and methods.

Results and Discussion

Communication Strategy of the Makassar City Environmental Agency in Waste Management

The results of this research indicate that the waste management strategy implemented by the Makassar City government, specifically the Makassar City Environmental Agency, to reduce the accumulation of household, market, and industrial waste in Makassar City is revealed by informants who served as sources for this research. The following are the results of the researcher's interviews with informants that overlap with the research regarding the Makassar City Environmental Agency's Communication Strategy in Waste Management. The results of the interviews conducted with officials from the Makassar City Environmental Agency include the Head of the Waste and Hazardous and Toxic Waste Division (LB3), the Head of the Waste Bank Technical Implementation Unit (UPT), the Head of the Tamangapa Antang Landfill Technical Implementation Unit (UPT), the Green Community Forum (NGO), which works in the environmental and waste sectors, and community members involved in waste management. Based on the interview with the Head of the Waste and Hazardous and Toxic Waste Division of the Makassar City Environmental Agency, Dr. Bau Asseng, S.T., M.Si. revealed that there

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are three main strategies implemented in waste management in Makassar City, as outlined below:

3R waste management (Reduce, Reuse, Recycle) is an effective method for reducing waste by applying three main principles: Reduce, Reuse, and Recycle. The goal is to minimize waste, conserve resources, and protect the environment from pollution, starting with reducing consumption, reusing goods, and recycling materials into new products. The Makassar City Environmental Agency's 3R waste management concept focuses on reducing waste at its source through community participation, through 3R waste management to reduce the burden on the Tamangapa Antang Landfill. This approach integrates the separation of organic (compost/maggots) and inorganic (economic value/recycling) waste to create a circular economy and a clean environment. This management is not just about cleanliness, but also about environmental sustainability and improving the welfare of residents through waste reuse. The benefits of 3R waste processing are to reduce the pile of waste in landfills, save natural resources, prevent environmental pollution, and create value-added products from waste.

> *"To motivate the community to collect household waste that has economic value, the waste bank managers have formulated and determined the rates or prices for each type of waste that can be exchanged or sold at the waste bank, both at the waste bank in the sub-district and the central waste bank."*

Mini incinerators are an alternative solution, especially when composting or recycling methods are inadequate to address the piles of waste at the local level, specifically at the neighborhood unit (RT/RW) level in sub-districts. In addition to the waste management methods outlined above, the Makassar City Government, through the Environmental Agency, will manage waste by converting it into electrical energy by building a waste-to-energy plant (PSEL) or waste-to-energy plant (PLTSa) in collaboration with investors. This will serve as a long-term solution to address the city's waste problem. The PSEL or PLTSa will utilize waste as raw material for electrical energy, eliminating all waste generated by residents from being disposed of in landfills (TPA) and instead utilizing it for the needs of the PSEL or PLTSa. Dr. Bau Asseng, S.T., M.Si., Head of the Waste and Hazardous and Toxic Waste Division of the Makassar City Environmental Agency, also explained that:

> *"The Makassar City Environmental Agency's communication strategy for disseminating information to the public about the waste management strategy implemented by the Makassar City Government generally utilizes public and interpersonal communication strategies. Public communication utilizes mass media, including television, radio, newspapers, online media, and social media. Interpersonal communication utilizes leaflets and direct community outreach activities. Another effort is to establish community motivators in the sub-districts, who are expected to provide information to other residents at the neighborhood (RT) and neighborhood (RW) levels regarding the waste management strategy implemented by the Makassar City Government, specifically the Environmental Agency."*

Veronica A.T., SP., M.Si., Head of the Makassar City Central Waste Bank Technical Implementation Unit (UPT), expressed a similar sentiment:

> *"The Makassar City Environmental Agency's communication strategy for implementing its waste management strategy utilizes public communication through television and radio, print media, social media, and online media. This communication strategy is considered quite effective in conveying information to the public about waste management strategies."*

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Carried out by the Makassar City Government through the Environmental Agency. Mr. Nasrun, Head of the Tamangapa Antang Landfill Technical Implementation Unit (UPT TPA), also conveyed a similar sentiment regarding the communication strategy for conveying information to the public regarding waste management carried out by the Makassar City Government through the Environmental Agency, as follows:

> *"The communication strategy implemented by the Makassar City Environmental Agency involves providing information directly to the community in the sub-districts, involving community leaders, religious leaders, youth leaders, and women's leaders through direct outreach activities at the sub-district offices. The aim is to convey information directly to the public regarding the government's waste management strategy so that the public understands and can directly participate in an effort to reduce the pile of waste dumped at the Tamangapa Antang Landfill, which is currently overloaded, resulting in a pile of waste at the landfill, approximately 40-50 meters high." (Interview with Mr. Nasrun, Friday, January 30, 2026).*

The statements made by several informants above were also confirmed by the results of an interview with Mr. Acmad Yusran, chairman of the Makassar City Green Community Forum Non-Governmental Organization (NGO), who stated that:

> *"The Makassar City Environmental Agency's communication strategy for waste management must begin with the concept of how to utilize the agency's human resources more effectively in a changing environment. The implementation of a strategy must be prepared to select its targets according to the mainstream of change, so it is necessary to analyze the implications of social changes in society in determining the strategy. Environmental analysis is to pay attention to trends, opportunities, and threats faced. Strategy planning and strategy implementation need to be combined to achieve the goal. By optimizing online media and social media as well as websites visually and technically, government agencies can increase their visibility to attract more people interested in the waste management strategies offered by the city government, such as waste banks, TPS 3R and mini incinerators, as well as PSEL-based waste management plans or PLTSa which utilize waste to generate electricity as a long-term solution to address the waste problem in Makassar City. Continuous socialization at the grassroots level is carried out so that the government's strategies in waste management can be directly adopted by the grassroots community as an effort to reduce waste disposed of at the Tamangapa Antang Landfill." (interview conducted on Monday, December 22, 2025).*

Furthermore, researchers also conducted interviews with community members directly involved in waste management at the sub-district level. This included Ms. Fara Indah, the manager of the Somida waste bank and a motivator in Bakung Sub-district, Sudiang District. She stated that:

> *"The government, specifically the Makassar City Environmental Agency, has repeatedly implemented communication strategies regarding waste management through media such as television, newspapers, and online media. However, public interest in receiving this information remains limited. Therefore, a direct, personal communication strategy with the community is needed to foster understanding and comprehension of the government's waste management strategies, such as the existence of waste banks, in an effort to reduce the existing waste problem. In this regard, Ms. Farah suggested that the government conduct more intensive outreach activities*

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directly with the community, involving motivators in the sub-district." (Interview, Tuesday, January 6, 2026).

Ms. Fatma, a community leader and neighborhood head in Bakung Sub-district, Sudiang District, echoed this sentiment. Ms. Fatma stated that:

"The communication strategy implemented by the government, in this case the Makassar City Environmental Agency, in conveying waste management activities has been carried out using direct communication methods with the community, which are implemented through direct socialization with the community and local government, as well as through social media and no less important is the provision of information through motivators who directly visit residents from house to house and waste banks in the sub-district to provide information and explanations regarding waste management implemented by the government, including information regarding waste retribution rates imposed on the community, delivered through the media and direct socialization activities. According to Mrs. Fatma, the waste retribution rates imposed on the community are in accordance with the regulations of the Mayor of Makassar, where low-income residents are exempt from retribution fees, but wealthy residents are still subject to retribution. The amount of retribution is determined based on the PLN light meter installed at home, namely; R 450 - R1 900V is free, R1 M 900V = Rp. 15,000 / month, R1 1300V = Rp. 20,000 / month, R1 2,200 = Rp. 35,000/month and business category = Rp. 50,000/month. (interview Tuesday, January 6, 2026).

Supporting and Inhibiting Factors in the Makassar City Environmental Agency's Waste Management Strategy

The following are the results of interviews with informants regarding the supporting and inhibiting factors in the implementation of the Makassar City Environmental Agency's Communication Strategy in waste management. The Head of the Makassar City Central Waste Bank Technical Implementation Unit, Mrs. Veronica A.T. SP., M.Si., outlined the supporting and inhibiting factors as follows:

"Supporting factors in waste management by the Makassar City Environmental Agency are evident in the success and trust achieved by the community at the sub-district level in utilizing waste banks as a platform for collecting and selling household waste that can still be reused or recycled and has economic value. Furthermore, the culture of providing services to the community through direct communication is a key factor in attracting and motivating the community to utilize waste banks as a place to collect and exchange waste that generates economic value."

The condition of waste banks at the sub-district level still has limited facilities and infrastructure to accommodate waste collected from the community. Similarly, waste bank managers have not been provided with special facilities such as incentives, so they work voluntarily, willingly, to participate and work in managing their waste banks (interview on Wednesday, January 7, 2026). This statement was also echoed by Ms. Fara Indah, a waste bank manager in Bakung Sub-district. Sudiang, regarding the factors supporting and hindering the implementation of the Makassar City Environmental Agency's waste management communication strategy, stated:

"The supporting factors in implementing the waste management communication strategy implemented by the government, in this case the Makassar City Environmental Agency, are easy access to information through various mass media such as television, newspapers, social media, and online media, as well as direct information through community outreach activities at the village level. Meanwhile, inhibiting factors include

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the community's lack of understanding of the government's waste management program and the lack of adequate facilities for waste bank managers at the village level (interview, Tuesday, January 6, 2026).

Furthermore, Mr. Achmad Yusran, Chairman of the Makassar Green Community Forum, expressed a similar sentiment regarding the supporting and inhibiting factors in implementing the Environmental Agency's communication strategy for waste management in Makassar City. The following is an excerpt from the interview:

"According to Achmad Yusran, the supporting factor is the ease of access to information for the general public, especially the grassroots, through the public communication strategy used by the government to convey the waste management model implemented through mass media, print media, social media, and online media. Meanwhile, the inhibiting factor is the limited resources and budget for continuously disseminating this information through mass media such as television, radio, newspapers, and online media due to the cost involved." (Interview on Friday, December 22, 2025).

The Makassar City Environmental Agency's Communication Strategy for Waste Management

There are many formulations of strategy, one of which relates to the decision-making process that must be taken in carrying out an activity or program to ensure the desired outcome. Therefore, directed activities are necessary to achieve these objectives. A defined strategy can be defined as the determination of the fundamental, long-term goals and objectives of an institution. This strategy involves formulating a series of actions and allocating the necessary resources to achieve the stated goals. All of these formulations culminate in strategic ideas and strategic concepts, which are the guiding principles for strategic thinkers and players. Mudjono (2017) states that communication strategy is an active process for conveying messages to target audiences with specific objectives. Communication strategies can be verbal, non-verbal, and include public or personal communication. The purpose of a communication strategy is to shape and change public behavior, persuade public opinion, meet employee needs, and increase workplace knowledge. Key factors in communication strategy are identifying target audiences, developing messages, and selecting media. The communication strategy begins with the concept of how to utilize the human resources of the institution (the Makassar City Environmental Agency) more effectively in a changing environment. Strategists must be prepared to select their targets according to the mainstream of change; therefore, it is necessary to analyze the implications of social changes in determining strategies. Environmental analysis takes into account trends, opportunities, and threats.

Strategic planning and implementation need to be combined to achieve the desired goals. By optimizing existing resources such as social media and websites, organizations/institutions can increase their visibility to publicize and communicate their programs or strategies to attract more people or communities interested in the programs offered in waste management. Socialization is carried out both personally and by organizations/institutions and also designs forms of cooperation with social institutions such as non-governmental organizations. Furthermore, efforts are made to conduct direct visits to the community to provide direct information and education to grassroots communities at the neighborhood (RT) and community (RW) levels about waste management initiated by the government in an effort to address and mitigate the waste problem in Makassar City. The research results also show that the strategy implemented by the Makassar City Environmental Agency in waste management is by using a public communication strategy using mass media (television, radio, newspapers), social media

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and online media. In addition, collaboration with various relevant non-governmental organizations is also carried out to facilitate the process of conveying and disseminating information about the waste management strategy implemented by the Makassar City government through the Environmental Agency.

Public communication plays a crucial role in achieving behavioral change related to waste management by raising public awareness, encouraging engagement, and supporting sustainable practices. Public communication plays a crucial role in driving behavioral change related to waste management through various means, such as: effective communication provides clear information about the importance of proper waste management, helping people learn how to sort, recycle, and reduce waste. Public communication raises public awareness of environmental issues and the negative impacts of improper waste management, and encourages individuals to participate in waste management programs. Public communication through platforms such as mass media (TV, radio, newspapers), online media, and social media has demonstrated a strong relationship with public knowledge and behavior regarding waste management, demonstrating that modern communication channels can effectively engage the public. Public communication can facilitate collaboration between various parties, including the government, non-governmental organizations, and the community. By building strong networks, various parties can work together to create more effective solutions for waste management (Dewi & Purwanto, 2024).

The public communication strategy implemented by the Makassar City Environmental Agency is a communication strategy concept that involves all communication media, integrating various communication channels such as mass media (TV, radio), newspapers, social media, and online media, along with direct, massive and continuous outreach to provide maximum understanding to the public and achieve results in accordance with the activity's objectives, namely, enabling the public to understand and participate in implementing the government's waste management strategy. Regarding direct efforts undertaken by the Makassar City Environmental Agency, these include maximizing and building communication with village heads, neighborhood unit (RW) and neighborhood unit (RT) heads, and community leaders. Outreach activities are efforts and steps taken in implementing the communication strategy. Direct outreach to the community at the village level involves various elements within the community.

Supporting and Inhibiting Factors in the Makassar City Environmental Agency's Waste Management Strategy

Based on the research results, we can analyze the supporting and inhibiting factors in waste management by the Makassar City Environmental Agency. The researchers have highlighted several supporting and inhibiting factors, both internal and external, from informants. The following analysis provides the following: Supporting factors are anything that helps facilitate an activity or facilitates individual or group behavior, including skills. These factors include the availability and affordability of resources, and a strong desire to achieve mutually agreed-upon goals. A supporting factor in waste management by the Makassar City Environmental Agency is the availability of various communication media to convey information to the public. This is evident in the success and trust achieved by the community at the sub-district level in utilizing waste banks as a platform for collecting and selling household waste that can still be reused or recycled and has economic value. Furthermore, a culture of providing services to the community through public and direct personal communication with the community is a key factor in attracting and motivating the public to utilize waste banks as a place to collect and exchange waste, generating economic value. Another supporting factor is the ease of access to information for the general public, especially grassroots stakeholders, through the

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government's public communication strategy to convey the waste management model, which utilizes mass media, print media, social media, online media, and direct outreach. Every activity undertaken by an institution or organization will encounter obstacles. These obstacles enable the institution or organization to improve by evaluating and correcting any deficiencies that hinder it. Inhibiting factors are conditions that slow down the progress of an activity. This is evident in the failure to achieve targets or objectives due to implementation obstacles, such as the limited use of mass media (TV, radio, and newspapers) due to budget constraints and the lack of outreach by the government, in this case the Makassar City Environmental Agency. In addition, inhibiting factors in waste management in Makassar City are the condition of waste banks at the sub-district level which still have limited facilities and infrastructure in accommodating waste collected from the community, likewise, waste bank managers have not been given special facilities such as incentives so that waste bank managers work voluntarily with their own awareness to be involved and work in managing waste banks in the sub-district. Another inhibiting factor is limited resources and budget in implementing the continuous delivery of waste management information using mass media because it requires large costs.

Conclusion

The Makassar City Environmental Agency's waste management communication strategy has been successfully implemented through a public communication strategy utilizing various mass media such as television, radio, newspapers, online media, and social media. It also implemented outreach at the village level involving various community elements. It also employed an interpersonal communication strategy by forming a team of community motivators tasked with directly disseminating waste management information to the community. A supporting factor in waste management by the Makassar City Environmental Agency is the availability of various communication media to convey information to the public. This is evident in the success and trust achieved by the community at the village level in utilizing waste banks as a platform for collecting and selling household waste that can still be reused or recycled and has economic value. The inhibiting factor is the still limited use of mass media (TV, radio and newspapers) due to budget limitations and the lack of socialization carried out by the Makassar City Environmental Service due to limited resources and budget in implementing the delivery of information on waste management in a sustainable manner using mass media and socialization activities because they require large costs.

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