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COMMUNITY PARTICIPATION IN EMERGENCY WASTE MANAGEMENT: BETWEEN SOCIAL MOVEMENTS AND COMMUNITY INDEPENDENCE

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Abstract

The waste emergency in Indonesia is not only a technical issue, but also a social problem closely related to community participation patterns. This study aims to analyze how communities engage in waste management efforts through two main approaches: environmentally based social movements and strengthening community independence. A qualitative approach was used with case studies in three urban areas: Jakarta, Makassar, and Yogyakarta. Data were collected through in-depth interviews, participant observation, and community documentation. The research results show that community participation grows through a combination of ecological awareness, social mobilization, and local leadership. Social movements are able to raise collective spirit, while community independence determines the sustainability of the program. Success factors include the presence of driving figures, networks between residents, and local policy support. This research confirms that synergy between social movements and strengthening community independence is an important foundation in responding to the waste emergency in an inclusive and sustainable manner.

Keywords : Community Participation, Waste Emergency, Social Movement, Community Independence, Environment

INTRODUCTION

Indonesia is currently facing an increasingly complex and systemic waste emergency**.** According to data from the Ministry of Environment and Forestry (KLHK) in 2023, Indonesia produces an average of 189,000 tons of waste per day, or approximately 68.9 million tons per year**.** Of this amount, more than 60% comes from households , and only about 13% is recycled , while the remainder ends up in landfills (TPA) or even pollutes terrestrial and marine environments (KLHK, 2023; SIPSN, 2024).

This situation is exacerbated by the increasing number of landfills that are overcapacity and facing a landfill crisis. For example, the Bantar Gebang landfill in Bekasi—which receives waste from Jakarta—receives more than 7,000 tons of waste per day and is predicted to reach its maximum capacity by 2025 (Jakarta Environmental Agency, 2024). Similar problems are occurring in other major cities such as Bandung (Sarimukti Landfill), Makassar (Tamangapa Landfill), and Denpasar (Suwung Landfill), all of which are experiencing operational pressures and social conflicts with surrounding communities due to pollution and health risks.

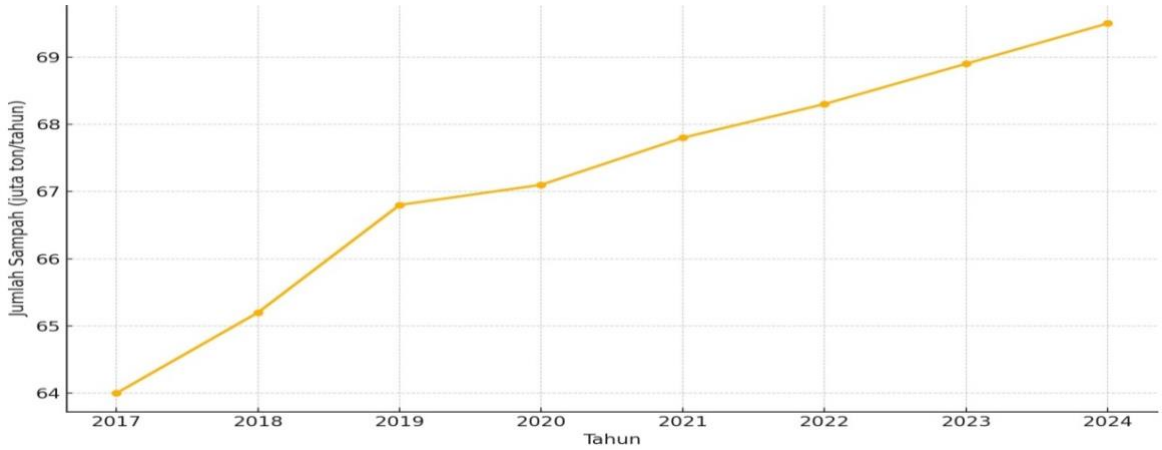

Figure 1. Indonesian waste production trends 2017-2024
Source: Ministry of Environment and Forestry (2023) https://sipsn.menlhk.go.id

This infographic shows the increasing trend in national waste volume from year to year. Between 2017 and 2024, Indonesia's waste production increased from 64 million tons to nearly 69.5 million tons per year. This increase reflects population growth**,** changes in consumer lifestyles, and the lack of an effective waste management system at the source level. This surge reinforces the argument that waste management can no longer be postponed and must involve various parties, including the community as the primary actor.

This infographic illustrates that the majority of waste produced is organic/food (58,2 %), which has significant potential for composting or local utilization. Plastic waste comes in second place (15.3 %) and is a major concern because it is difficult to decompose and contributes significantly to marine and land pollution. This is followed by paper, metal, and glass, which account for significant amounts. This data emphasizes the importance of waste sorting education at the household level, as most of this composition can be managed independently if the system and knowledge are available.

This infographic shows that households are the largest contributors to national waste , accounting for around 60.3 % . This makes it clear that the waste crisis cannot be solved solely by institutions or the formal sector, but relies heavily on the active participation of the community in sorting, processing, and reducing waste at its source. Traditional markets and commercial areas also contribute significantly, so management interventions must also target the informal sector and MSMEs.

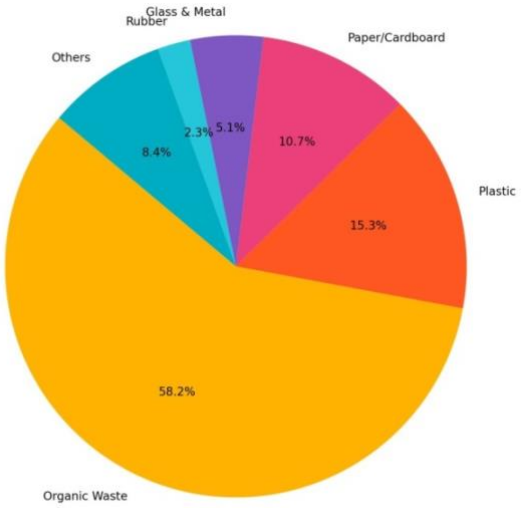

Figure 2. Composition of waste Types in Indonesia (2023)
Source: Ministry of Environment and Forestry: National Waste Profile 2023

The waste crisis is a structural problem in Indonesia that has yet to be comprehensively addressed. According to data from the National Waste Management Information System (SIPSN), national waste generation will exceed 18 million tons by 2023, with household waste accounting for 57.3% (KLHK, 2023). This situation is increasingly pressing in large cities like Jakarta, Bandung, and Surabaya, which are experiencing landfill overcapacity and a waste management crisis (UNDP, 2021; World Bank, 2021).

Furthermore, the waste crisis also impacts aquatic and marine ecosystems**.** According to a study by Jambeck et al. (2015), Indonesia is the second-largest contributor of plastic waste to the ocean in the world, after China. Each year, an estimated 1.3 million tons of Indonesian plastic waste enters the ocean**,** polluting coastal habitats, disrupting the marine food chain, and threatening tourism and the economy of coastal communities. This situation has prompted the government to set a national target to reduce plastic waste by 70% by 2025**,** but its implementation still faces serious challenges.

This crisis is not only a technical and infrastructure issue, but also reflects social and cultural problems, such as low public awareness of sorting waste, minimal public participation in environmental management programs, and weak community-based incentive and education systems. (Suwondo, 2020; Rahmawati, 2021). In many areas, waste management is still considered solely the responsibility of the government or sanitation workers, not the collective responsibility of the community (M. & Jackson, 2024; Parinduri et al., 2024).

In this emergency context, various community-based initiatives have emerged that seek to offer alternative solutions. For example, social movements like the "Indonesia Zero Waste Alliance" and the "Indonesia Plastic Bag Diet Movement" are encouraging people to reduce single-use consumption and pushing for stricter regulations. Meanwhile, local communities in various cities are establishing waste bank systems, recycling communities, household composting, and home sorting movements as a form of community independence in addressing the waste crisis (Yuliana, 2021; Kurniawan, 2022). These forms of participation not only impact waste reduction but also strengthen social solidarity, collective capital, and transform ecological values in a fast-paced and individualistic urban society (Kalra, 2019; Pretty & Ward, 2001).

However, this community approach often faces serious challenges, such as weak policy support, lack of program continuity, and even movement fatigue due to dependence on specific figures (Jones et al., 2014). This is where building a community participation model

that integrates social movements as triggers for collective awareness and community independence as an instrument for sustainably strengthening local institutions becomes crucial (Eko Handoyo et al., 2023; Mina et al., 2024).

Thus, this study is relevant and urgent. It aims to gain a deeper understanding of how communities respond to the waste emergency through two main approaches: environmental social movements and strengthening community self-reliance. This approach is crucial to ensure that solutions to the waste crisis are not solely top-down or technocratic, but rather based on social strengths, local values, and the capacity of citizens as agents of ecological change.

Based on these facts, the author formulates the problem as follows:

1. What are the forms of community participation in handling waste emergencies?
2. What is the role of environmental social movements in building collective awareness regarding the waste crisis?
3. How do local communities develop independence in waste management?
4. What factors support and hinder the success of community participation in the context of a waste emergency?

Thus, this research aims to:

1. Identifying forms of community participation in waste management.
2. Analyze the contribution of social movements to the formation of collective ecological consciousness.
3. Examining the role of community independence in sustainable waste management.
4. Revealing the supporting and inhibiting factors for the success of community participation in the context of a waste emergency.

THEORETICAL BASIS AND PREVIOUS RESEARCH

Community Participation Theory

Community participation in environmental management is an important foundation in a sustainable development approach (Njonge, 2023; Sulistyaningsih, 2022). According to Cohen and Uphoff (1980), participation is the active involvement of the community in decision-making, implementation, utilization of results, and evaluation of development programs (Li, 2006; Rijal, 2023). In the context of waste management, participation can take the form of contributions of energy, time, ideas, or innovations rooted in local conditions (Mashudi et al., 2023).

Arnstein (1969), in *his Ladder of Citizen Participation theory,* divides participation into eight levels, from manipulation to citizen control. In the context of a waste emergency, participation ideally reaches the "partnership" level or higher, where the community is not only given space but also has shared control over the decision-making process and environmental management actions.

New Social Movement Theory

Through the perspective of *New Social Movements* (NSM), Melucci (1989) emphasized that contemporary social movements do not merely mobilize material demands, but are oriented toward values, identity, and the meaning of life (Alfaro, 2004; Buechler, 1995). Environmental social movements are among them, where citizen participation is driven not solely by economic gain, but by concern for sustainability, ecological justice, and the rights of future generations to a decent environment (Kiss et al., 2022).

NSM observes that modern social movements develop through informal, symbolic, and non-hierarchical networks. This explains why community movements related to waste management often emerge organically in digital and community spaces, such as the "Zero Waste" movement, the "Plastic Bag Diet," or the "Sort Waste at Home" movement.

Social Capital Theory and Community Independence

Putnam (2000) defines social capital as social networks, norms, and trust that facilitate coordination and cooperation for mutual benefit. In waste management, social capital serves as a social glue that enables residents to organize waste sorting, collection, and processing independently (Tsai et al., 2008).

Meanwhile, Ife and Tesoriero (2006) emphasize the importance of community independence as a local force to identify, analyze, and address collective problems based on the community's own assets, rather than solely on external intervention (Mathie & Cunningham, 2003). Community-based waste management reflects a form of active, transformational participation oriented toward sustainable citizen empowerment (Afnan et al., 2025).

Relevant Previous Research

Various previous studies have shown the link between citizen participation, social movements, and waste management:

1. Wahyudi & Dewi (2021**)** examined the effectiveness of waste banks in Yogyakarta and found that the program's success depended heavily on social networks and the involvement of local figures. Active waste banks typically have participatory leadership structures and an educated community base.
2. Hapsari et al. (2020) examined environmental social movements in Jakarta within the context of a plastic reduction campaign. Their findings demonstrate that the power of community-based digital movements can push for regulatory change and inspire behavioral changes in citizens.
3. Sartika & Kurniawan (2019) found that the RT-based waste management program in Surabaya showed high effectiveness when the community was given authority and incentives, as well as assistance from NGOs.
4. Nugroho & Hasan (2022) showed that community independence in managing organic waste in DIY villages strengthens the community's adaptive capacity in facing environmental and economic pressures, especially during the COVID-19 pandemic.
5. Utami (2023) examined the synergy between religious leaders and green communities in mosque-based waste management. This study demonstrated that a cultural and spiritual approach broadened participation and enhanced ecological values.

Relevance and Research Gaps

Although the above studies have made a major contribution to the understanding of community participation in waste management, there are still few studies that simultaneously examine how social movements and community independence interact in responding to waste emergencies. Furthermore, there are not many studies that highlight socio-technical barriers and participatory gaps between segments of society.

Therefore, this research is here to fill this gap with a holistic approach that combines the dimensions of movements, community structures, and the dynamics of citizen participation in the context of urgent environmental crises.

RESEARCH METHODS

This research uses a qualitative approach with a case study design that focuses on community participation in handling waste emergencies in urban environments, particularly through community organizing and digital technology-based social movements such as digital waste banks. This approach was chosen because it is suitable for exploring the meaning, motivation, social dynamics, and construction of reality from community participatory experiences in depth.

Research Location and Subjects

This research was conducted in Makassar City, one of the major cities in Indonesia that is facing the pressure of a waste emergency and at the same time has community-based and digital participatory initiatives such as *the TPS3R Program (*Reduce, Reuse, Recycle Waste Processing Place). This location was chosen purposively because it shows the complex social and cultural dynamics related to waste management. Then, 3 sub-districts were selected that were considered the most active in waste management with the Community model, namely Untia, Sambung Jawa and Tamalanrea Sub-districts.

1. Untia Village – Biringkanaya District

   Has been a pilot project for community-based waste management since June–July 2025. The approach includes unit waste banks and organic processing using maggots and compost to approach a zero-waste system. A structured household waste sorting system and systematic recording system are in place.
2. Sambung Jawa Village

   Designated together with Untia as a pilot location for TPS3R community-based waste management in July 2025
3. TPS3R Tamalanrea

   Launched in August 2025 as an integrated waste management model, the waste bank's operations are coordinated by the Regional Technical Implementation Unit (UPTD) and sanitation workers, who receive incentives based on waste purchases by vendors. The reasons for selecting these three sub-districts include:

   The main informants consist of:
   a. Community management Community-based TPS3R waste management
   b. Members of society
   c. Community leaders or community leaders
   d. Local government apparatus related to waste management
   e. Academic or environmental activist

   The number of informants was 15 people who were selected using purposive sampling and snowball sampling techniques to obtain in-depth information.Data collection technique

Data is collected through:

1. In-depth interviews. Used to explore informants' perceptions, motivations, barriers, and experiences in their involvement in waste management. Interviews were conducted in a semi-structured manner to allow for flexible exploration (Braun & Clarke, 2006).
2. Participatory observation. Conducted during community activities, such as waste collection and sorting, waste bank training, and village-based environmental actions.
3. Documentation

   in the form of community activity reports, statistical data from the Environmental Service, and digital campaign materials from the waste bank platform.

Data Analysis Techniques

Data were analyzed using thematic analysis techniques as developed by Braun and Clarke (2006), which include:

1. Data transcription
2. Initial coding
3. Theme grouping
4. Interpretation of meaning
5. Preparation of narrative findings

Data validity is maintained through source and method triangulation techniques. Researchers also conducted member checking with key informants to confirm the accuracy of the interpretation.

RESULT AND DISCUSSION

Forms of Community Participation in Emergency Waste Management in Makassar City

Makassar, as one of Indonesia's major cities, faces serious challenges in waste management, primarily due to the high volume of household waste produced and the limited capacity of its landfills (TPA). To this end, various forms of public participation have emerged, both facilitated by the government and emerging organically through community initiatives. This participation reflects a social response to the "waste emergency" and is a crucial part of efforts to build a sustainable city.

1. Participation in Education and Social Campaigns

   Many residents are actively involved in educational activities and social campaigns related to waste management awareness, such as:

   a. Home waste sorting training by the Makassar Main Waste Bank community and the Environmental Agency.
   b. Anti-single-use plastic waste campaign in schools, markets and places of worship.
   c. The "Clean Friday" and "*Makassar Tidak Rantasa*" movements are a form of mutual cooperation to clean the environment every week.

   This education helps build collective awareness among residents that waste is a shared problem that requires collaborative solutions.
2. Participation in Waste Bank Management

   Waste banks are one of the most concrete and structured forms of participation. Residents participate through:

   a. Establish and manage waste bank units at the RT/RW level or ward.
   b. Saving trash and obtain economic incentives from the results of sorting inorganic waste.
   c. Participate in organic waste processing training, such as making compost or cultivating maggots (black soldier flies).

   Examples of active areas: Untia, Paccerakkang, and Sambung Jawa sub-districts.
3. Participation in Community-Based TPS3R Management

   Residents also participate in the construction and operation of the Reduce-Reuse-Recycle Waste Processing Site (TPS3R), such as:

   a. Volunteer in the waste sorting process.
   b. Involved in the sorted waste collection team**.**
   c. Manage recycled results for use or resale.

   TPS3R in Tamalanrea and Untia are successful examples of community involvement in this scheme.

   TPS3R stands for Reduce, Reuse, and Recycle Waste Processing Site. It is a community-scale waste management facility that aims to reduce waste volume through sorting, processing, and reusing waste before it is disposed of at a final disposal site (TPA).

   According to the Ministry of PUPR (2021), TPS3R is a community-based waste management system at the regional or neighborhood level that includes waste reduction, reuse, and recycling activities. TPS3R is usually managed by the community or self-help groups with support from local government.

   TPS3R Objectives

   a. Reducing the burden on landfills by filtering waste that still has useful value.
   b. Increase community participation in waste management.

c. Promote a circular economy, especially from inorganic and organic waste.
d. Improving the quality of residential environments.

Activities at TPS3R

a. Sorting waste from source (organic and inorganic).
b. Composting organic waste (leaves, food scraps).
c. Recycling of inorganic waste (plastic, paper, metal).
d. Transporting residue (unprocessable waste) to landfill.
e. Environmental education for local residents.

4. Participation in Environmental Innovation and Technology
   As environmentally friendly technologies develop, citizens are also starting to get involved in:
   a. Making biopore holes and eco-enzymes for organic waste processing.
   b. Urban farming initiative based on compost from household waste.
   c. Use of digital waste recording applications in the waste bank network.

   Programs such as "Green *and Clean*" encourage citizen innovation in recycling waste into useful products.
5. Participation in Environmental Forums and Advocacy
   Several community groups participated in:
   a. Environmental Forum at the sub-district/district level**.**
   b. Development planning meeting (Musrenbang) with a focus on waste issues.
   c. Encourage the birth of village regulations regarding the obligation to sort waste**.**

   This participation is important in decision-making and encouraging public policies that are responsive to the waste emergency.

   Makassar City community participation in handling the waste emergency includes educational, technical, social, and political aspects. This movement is not only reactive to the waste crisis, but also proactive in encouraging environmental cultural transformation. From waste sorting to policy advocacy, Makassar residents demonstrate that solutions to waste problems require comprehensive involvement, not only from the government, but also from the community as the main actors of change.

The Role of Environmental Social Movements in Building Collective Awareness of Makassar City Residents Regarding the Waste Crisis

In the face of an increasingly worrying waste crisis, Makassar City residents are demonstrating active involvement through various forms of environmental social movements. This movement is generally grassroots in nature, pioneered by individuals, local communities, and civil society organizations who are concerned about environmental sustainability. This involvement has become a trigger for the emergence of collective awareness, namely a shared awareness among residents to act cooperatively in overcoming the waste problem.

1. Social Campaign and Environmental Education
   One concrete example of the role of social movements is the implementation of public awareness campaigns**,** whether through social media, environmental murals in public spaces, or face-to-face activities. Communities such as the Makassar *Recover Green Community* **,** the Makassar City Main Waste Bank **, and** urban village youth communities have held waste sorting training in schools, mosques, and neighborhood associations (RT-RW). This education not only aims to shape new behaviors but also unites residents in a shared understanding that waste is a collective responsibility.
2. Mentoring and Initiation of Waste Banks
   Environmental social movements also support the establishment of waste bank units at the sub-district and neighborhood association (RT) levels. For example, in Paccerakkang Sub-district**,** the local community collaborated with environmental NGOs to

organize residents in establishing a circular economy-based waste savings system. This initiative not only reduced waste volume but also created economic benefits for residents, particularly housewives and recycling micro, small, and medium enterprises (MSMEs) (KLHK, 2023; Widodo, 2021).

3. Environmental Cleanup and Zero Waste Community Action

   Social movements are also manifested in environmental clean-up movements, which involve residents voluntarily in coastal areas, markets, canals and densely populated settlements. Prominent examples include the "Makassar Without Plastic" movement and collaborative activities with schools under the "Clean Friday" initiativ. These actions are routinely held and serve as a means of building shared commitment across ages and professions, as well as strengthening the value of mutual cooperation in waste management.

4. Collaboration with Government and Private Sector

   Social movements in Makassar are also actively promoting multi-stakeholder collaboration, including partnering with the Environmental Agency (DLH), the City Family Welfare Movement (TP PKK), and private companies in environmental CSR programs. One concrete example of this collaboration is the implementation of the 1,000 Biopore Holes program, eco-enzyme processing, and productive tree planting in areas affected by the waste crisis. This collaboration reinforces public awareness that solving environmental problems cannot be done by one party alone.

5. Advocacy and Participation in Policy Making

   Environmental social movements also play a strategic role in advocating for environmental policies. More participatory and equitable waste management**.** Residents involved in environmental forums (such as the Makassar Waste Bank Communication Forum) actively voiced the need for an incentive system for waste sorters and urged the issuance of village regulations on community-based waste management. Through public discussions, hearings, and development planning meetings (Mussrenbang), residents participated in the democratic process to create regulations responsive to the waste crisis.

Local Community Independence in Waste Management in Makassar City

The waste crisis that has hit major cities in Indonesia, including Makassar, has sparked the birth of various grassroots initiatives. Amidst limited waste collection services and limited landfill capacity, Makassar residents have begun to develop forms of independence in managing waste locally. This independence is not born from government intervention alone, but from the collective awareness of citizens who are moved to act to create a clean, healthy, and sustainable environment. The independence of local communities is reflected in their ability to organize themselves, design household-based waste management systems, and build circular economic schemes from processed waste.

One concrete example of this independence can be found in Untia Village, Biringkanaya District. Here, residents formed a Living Waste Bank which is managed independently by local community groups. This waste bank not only collects and sorts inorganic waste to be saved and sold, but also processes organic waste into compost and liquid fertilizer that is useful for urban agriculture. In addition, they provide environmental education to children and housewives to instill the habit of sorting and reducing waste from an early age. This activity is conducted without relying on government funding, demonstrating that the community is able to cover daily operations through waste processing proceeds and voluntary contributions.

Similar self-reliance is evident in Buloa Village, Tallo District, a densely populated area that has developed a waste bank community as part of its economic empowerment strategy. There, residents not only save trash but also process plastic waste into handicrafts

such as bags, flower pots, and souvenirs. The proceeds from this activity are sold to support the community's operational needs and empower women in micro-enterprise groups. Through this activity, the community not only reduces waste, but also fosters social interaction, community solidarity, and collective pride in the surrounding environment.

Another example is the community of residents in Paccerakkang Village, who have successfully developed organic waste processing technology using Black Soldier Fly (BSF) larvae or maggots. Household kitchen waste is collected and used as feed for maggots, which are then sold as high-value animal feed. In addition, organic residue from maggot cultivation is used as compost for plants. This model has generated new income for residents and attracted the attention of the private sector for partnership. Not only is this community economically empowered, it has also become a reference for other regions in innovation-based waste management.

In the Tamalanrea area, community independence is seen in the management of the TPS3R (Reduce-Reuse-Recycle Waste Processing Facility) which is fully managed by community self-help groups. With a waste collection system based on resident subscriptions and a work rotation system between residents, the TPS3R has succeeded in operating independently. Organic waste is processed into compost and inorganic waste is distributed to recycling partners. In fact, part of the sales proceeds are used for other environmental social activities such as tree planting and youth training.

Community independence in waste management in Makassar City has produced various positive impacts. Not only does it reduce the volume of waste disposed of in landfills, but it also increases environmental literacy among residents, strengthens social cohesion, and creates new economic opportunities at the local level. The success of these communities demonstrates that communities are not merely the objects of waste management programs, but can be the primary actors in creating change. With responsive policy support and access to training, these self-reliance models have significant potential for replication in other areas facing similar challenges.

The independence of local communities was found to be a manifestation of high *social capital.* Communities with high levels of trust, strong networks, and a culture of mutual cooperation are able to create independent and sustainable waste management systems (Putnam, 2000; Pramono, 2020; Fitriani, 2020). In many cases, communities are even able to create social and economic innovations from waste management.

However, socio-technical challenges remain an obstacle. Digital literacy inequality, limited infrastructure, and cultural resistance still limit the inclusiveness of participation (Hardiansyah, 2023; Sihombing, 2022). This confirms Giddens' (1984) view that social structures have a dual role in empowering and constraining citizens' social actions.

Supporting and Inhibiting Factors of Community Participation in Emergency Waste Management in Makassar City

Community participation is a key element in addressing the emergency waste problem in Makassar City. However, this level of participation is greatly influenced by a number of interrelated factors, both supportive and inhibiting. These factors reflect the social, cultural, structural, and ecological dynamics that shape citizens' awareness and behavior towards waste management.

Figure 3. The atmosphere of weighing waste at the Pegadaian Partner Waste Bank on Jalan Asoka, Makassar, Monday (27/3/2023).

One of the main factors supporting community participation is the high level of environmental awareness and social solidarity among residents. This awareness generally grows from education carried out consistently by environmental communities, schools, and religious institutions. For example, in Untia Subdistrict, regular campaigns conducted by the Living Waste Bank have succeeded in increasing residents' understanding of the importance of sorting waste at home. This awareness encourages the emergence of independent initiatives from residents to participate in waste collection and processing activities. In addition, support from community leaders and informal leaders such as mosque imams, RT heads, or PKK mothers is also a significant driving force. When local figures are actively involved in environmental movements, citizen participation tends to increase due to the emergence of trust and emotional attachment.

Another supporting factor is the availability of adequate waste management facilities and infrastructure. The presence of waste banks, waste disposal sites (TPS3R), and equipment such as composters, plastic shredders, and trash carts significantly facilitates participation. For example, at the Tamalanrea TPS3R, the organized transportation system and sorting infrastructure allow residents to contribute more easily without feeling burdened. Economic incentives**,** whether in the form of cash from waste sales or a savings system, also encourage participation, especially in lower-middle-income areas. Residents perceive a dual benefit: a cleaner environment and additional income.

However, public participation also faces various complex obstacles**.** One is a lack of awareness and a persistent culture of littering, particularly in densely populated and impoverished urban areas. In some areas, such as Kampung Lette and parts of the coastal areas of Makassar, people still dump trash into canals or the sea due to the lack of easily accessible disposal sites. In addition, the lack of ongoing education means that some residents do not understand the importance of sorting waste and only see waste management as a government matter. This obstacle is compounded by the lack of active local leadership, where RT heads or neighborhood administrators lack the initiative or motivation to organize residents.

Another significant inhibiting factor is the uncertainty of government support, both in terms of policy, budget, and program continuity. Many communities were initially enthusiastic about establishing waste banks but ultimately ceased operations due to a lack of follow-up support or because promises of equipment never arrived. Dependence on government assistance also makes some groups reluctant to act before promised incentives are received. On the other hand, time and energy constraints Residents, especially in urban areas

where residents work full time, are a barrier to being active in community-based waste management activities.

Overall, community participation in handling the waste emergency in Makassar City is greatly influenced by a combination of structural support, social motivation, and inspiring local leadership. When these supporting factors are present simultaneously, participation can grow and develop sustainably. Conversely, if these obstacles are not addressed, community-based waste management efforts will tend to stagnate or fail midway. Therefore, a comprehensive and adaptive approach is needed to strengthen community participation as a key pillar in addressing the increasingly pressing waste crisis.

Discussion and Interpretation

Emergency waste management is not just a technical and policy issue, but also involves complex social transformation. The research findings indicate that community participation in this context is a form of *social practice* involving individual motivation, collective relations, technology, and accompanying power structures. Sociological interpretations of these findings encompass the following important dimensions:

Participation as Social Action and Cultural Process

The forms of community participation found reflect *social action* as defined by Max Weber, namely subjectively meaningful actions directed at others. Sorting waste, joining a digital waste bank, and organizing clean village activities are all actions driven by values, norms, and rational considerations (Giddens, 1984; Yuliana, 2021).

Furthermore, this participation develops into *a cultural process,* where waste management practices become part of the community's culture. In this context, new values such as ecological responsibility, collective awareness, and social solidarity are beginning to replace old patterns of passivity and reliance solely on government.

Social Movements as Drivers of Collective Consciousness

New Social Movement (NSM) theoretical framewo. In contrast to traditional movements that focus on economics or class, new social movements emphasize cultural and identity issues, including the environment.

Movements like *Kang Pisman* or *Zero Waste Indonesia* not only offer technical solutions but also shape new social identities as environmentally responsible citizens. This process parallels the arguments put forward by Alain Touraine (1985) and Alberto Melucci (1996), who argued that social movements function to create meaning and champion symbols.

Community Independence as Social Capital and Empowerment Practice

The emergence of community independence in waste management demonstrates that communities are not merely objects, but empowered subjects (*empowered community*). This concept can be explained through the *social capital theory* of Pierre Bourdieu (1986) and Robert Putnam (2000), which emphasizes the importance of social networks, trust, and norms for collective success.

Communities with strong social networks, trust between leaders, and strong norms of solidarity are able to create independent waste management systems. This is an example of *bottom-up governance,* born from active citizen participation, not external intervention.

Sociotechnical Factors and Inclusivity Challenges

Public participation does not take place in a vacuum, but is influenced by socio-technical conditions, a combination of social and technological systems. Barriers such as low

digital literacy, cultural resistance, and unequal access indicate the existence of *environmental injustice* that often prevents vulnerable groups from fully participating.

This is in line with Anthony Giddens' (1984) view on *the duality of structure,* that social structure can both empower and limit. In this context, digital technologies such as waste bank applications can be a tool of empowerment, but they can also create exclusion if not accompanied by literacy and institutional support.

Transformation of Social Interaction in the Digital Era

The research results also show a transformation in social interaction patterns, where the use of digital technology creates new spaces for communication, collaboration, and social control. Residents' WhatsApp groups, waste bank app leaderboards, and online environmental community forums are all forms of *digital socialization* that strengthen social control and collective cohesion.

This indicates a shift from interactions based on physical space to *imagined communities* in the context of the environment, which strengthens participation across regions and across social classes in a more flexible manner.

This discussion shows that community participation in waste emergency management is a complex sociological practice. It not only reflects responses to environmental issues, but also indicates social dynamics, changing values, community strengths, and the structural challenges that surround it.

Key Research Findings

1. Community Participation is Diverse and Contextual**.** Research has found that community participation varies widely, from individual actions such as sorting waste at home to collective involvement in waste bank communities and clean village movements. In the cities of Bandung and Surabaya, participation is facilitated by digital technology through waste bank applications that encourage incentive-based engagement and self-reporting. However, in suburban Makassar, participation relies more on face-to-face approaches and the value of mutual cooperation.
2. Social Movements Act as Agents of Environmental Cultural Transformation Social movements such as *the Zero Waste Community*, *Kang Pisman*, and other local communities have proven successful in shifting the societal paradigm from "throwing away" to "managing" waste. These movements not only encourage behavioral change but also create a new identity for citizens as "ecological agents" aware of their collective responsibility for the environment. This process aligns with the *New Social Movement theory*, which emphasizes the symbolic and cultural dimensions of social change.
3. Community Independence Grows through Local Social Capital. Communities with high levels of trust between leaders, active social networks, and strong norms of mutual cooperation demonstrate a self-sufficient capacity to build waste management systems. For example, in Untia Village in Makassar City, residents manage an independent waste bank that can afford digital scales and provide rewards for active participants. This demonstrates how social capital is a crucial asset in driving the sustainability of environmental programs at the grassroots level.
4. Digital Technology Plays a Dual Role: Both an Enabler and a Barrier**.** Digital waste bank technology can simplify the process of recording, monitoring, and coordinating with residents. However, low digital literacy, particularly among the elderly and the urban poor, creates a participation gap. This unequal access poses a risk of social exclusion in digital-based environmental movements.
5. Support Factors Come from Local Leaders, Economic Incentives, and Basic Infrastructure:

Community leaders such as neighborhood association (RT) heads, neighborhood cadres, and religious leaders have proven to be key elements in driving participation. Economic incentives like waste savings and clean village competition rewards also strengthen community motivation. In places with basic facilities like segregated waste storage and composting facilities, participation tends to be more stable and sustained.

6. Structural Barriers Still Hinder Inclusivity**.** Strong cultural resistance persists, particularly the perception that "waste is the responsibility of government officials." Coupled with minimal technical training and weak inter-agency coordination, community participatory initiatives often operate independently without adequate institutional support.
7. Social Transformation Occurs Through a Combination of Technology, Local Culture, and Awareness Collective citizen participation in waste emergency management is not merely technical or administrative, but rather the result of complex social interactions. Digital technology, local values, and social movement symbols interact to shape changes in the lifestyles and social structures of communitie.

CONCLUSIONS

REFERENCES

Afnan, D., Wijaya, M., Kartono, D. T., & Wibowo, A. (2025). Community empowerment model in the refuse-derived fuel waste management program in Indonesia. *Cleaner Waste Systems, 12*(December 2024), 100364. https://doi.org/10.1016/j.clwas.2025.100364

Alfaro, V. (2004). Social Movements Facing the Processes of Globalization: Beyond the Paradigms of Class and Identity. *PORTAL Journal of Multidisciplinary International Studies, 1*. https://doi.org/10.5130/portal.v1i2.57

Astuti, R. (2019). Pro-Environmental Behavior and Social Capital Among Urban Communities. *Journal of Sociohumanities, 21*(2), 101–113.

Bourdieu, P. (1986). The forms of capital. Dalam J. Richardson (Ed.), *Handbook of Theory and Research for the Sociology of Education* (hlm. 241–258). Greenwood.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Buechler, S. M. (1995). New Social Movement Theories. *Sociological Quarterly, 36*(3), 441–464. https://doi.org/10.1111/j.1533-8525.1995.tb00447.x

Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (Edisi ke-4). SAGE Publications.

Eko Handoyo, E. H., Wahyu Beny Mukti Setiyawan, W. B. M. S., Natal Kristiono, N. K., Siti Muslikhatul Ummah, S. M. U., Muhammad Wildan Khunaefi, M. W. K., & Fathurrahman Prasetyo Aji, F. P. A. (2023). Community Participation Model And The Role Of Local Wisdom In The Prevention Of Corruption Of Village Funds. *Journal of Social Science (JoSS), 2*(8), 720–734. https://doi.org/10.57185/joss.v2i8.108

Fitriani, L. (2020). The Role of Community Leaders in Mobilizing Environmental Participation. *Journal of Rural Sociology, 8*(2), 177–190.

Giddens, A. (1984). *The Constitution of Society: Outline of the Theory of Structuration*. University of California Press.

Hadi, S. (2022). Citizen Participation in the Clean Village Program in Urban Areas. *Journal of Public Administration, 10*(1), 88–100.

Hardiansyah, A. (2023). Analysis of Institutional Barriers in the Waste Bank Program. *Journal of Public Administration, 13*(1), 75–85.

Jones, S., Oven, K., Manyena, B., & Aryal, K. (2014). Governance struggles and policy processes in disaster risk reduction: A case study from Nepal. *Geoforum, 57*, 78–90. https://doi.org/10.1016/j.geoforum.2014.07.011

Kalra, N. (2019). *Community Participation and Waste Management (Sustainable Waste Management: Policies and Case Studies Vol:1)*. Springer. https://doi.org/10.1007/978-981-13-7071-7

Kiss, B., Sekulova, F., Hörschelmann, K., Salk, C., Takahashi, W., & Wamsler, C. (2022). Citizen participation in the governance of nature-based solutions. *Environmental Policy and Governance, 32*, 247–272. https://doi.org/10.1002/eet.1987

Kurniawan, R. (2022). Analysis of Participation in the Digital Waste Bank Program. *Journal of Community Service, 4*(1), 55–63.

Li, W. (2006). Community decisionmaking: Participation in development. *Annals of Tourism Research, 33*, 132–143. https://doi.org/10.1016/j.annals.2005.07.003

M., T.-U.-Z., & Jackson, K. (2024). Solid Waste Management Policies and Practices: A Case Study of Citizen Participation in Rural Japan. *Journal of Public Policy, 44*, 81–110.

Mashudi, Sulistiowati, R., Handoyo, S., Mulyandari, E., & Hamzah, N. (2023). Innovative Strategies and Technologies in Waste Management in the Modern Era Integration of Sustainable Principles, Resource Efficiency, and Environmental Impact. *International Journal of Science and Society, 5*, 87–100. https://doi.org/10.54783/ijsoc.v5i4.767

Mathie, A., & Cunningham, G. (2003). From Clients to Citizens: Asset-Based Community Development as a Strategy for Community-Driven Development. *Development in Practice, 13*, 474–486. https://doi.org/10.1080/0961452032000125857

Melucci, A. (1996). *Challenging Codes: Collective Action in the Information Age*. Cambridge University Press.

Mina, R., Fality, F., Miranda, M., & Imani, R. A. (2024). Communities for Environmental Protection: Fostering Responsibility and Sustainability. *Journal of Judicial Review, 26*(2), 227–244. https://doi.org/10.37253/jjr.v26i2.9617

Ministry of Environment and Forestry. (2023). *National Waste Management Information System (SIPSN)*. https://sipsn.menlhk.go.id

Ministry of Environment and Forestry. (2023). *National Waste Management Profile 2023*. Directorate General of PSLB3.

Njonge, T. (2023). Influence of Psychological Well-Being and School Factors on Delinquency, During the Covid-19 Period Among Secondary School Students in Selected Schools in Nakuru County: Kenya. *International Journal of Research and Innovation in Social Science, VII*(2454), 1175–1189. https://doi.org/10.47772/IJRISS

OECD. (2020). *The Circular Economy in Cities and Regions*. https://www.oecd.org/environment

Parinduri, R. Y., Zsazsa, C. S. K. M., & Yusup, M. (2024). Optimizing Community-Based Waste Management: A Review of the Literature. *Journal of Community Dedication, 4*(2), 354–367.

Pramono, B. H. (2020). Social Capital and Community-Based Waste Management. *Journal of Society & Culture, 22*(3), 235–250.

Pretty, J., & Ward, H. (2001). Social Capital and the Environment. *World Development, 29*, 209–227. https://doi.org/10.1016/S0305-750X(00)00098-X

Putnam, R. D. (2000). *Bowling Alone: The Collapse and Revival of American Community*. Simon & Schuster.

Rahmawati, N. (2021). Collective Awareness in Household Waste Management. *Journal of Development Communication, 19*(2), 85–95.

Rijal, S. (2023). The Importance of Community Involvement in Public Management Planning and Decision-Making Processes. *Journal of Contemporary Administration and Management (ADMAN), 1*(2), 84–92. https://doi.org/10.61100/adman.v1i2.27

Saputra, D. (2020). Community Strategies to Address Urban Waste Problems. *Jurnal Bina Praja, 12*(3), 251–262.

Setiawan, A., & Astuti, P. (2019). Social Innovation and Participation in the Zero Waste Movement. *Journal of Social and Political Sciences, 23*(1), 34–49.

Sihombing, D. (2022). Inequality of Technology Access in Digital Environment Initiatives. *Journal of Technology and Society, 4*(2), 90–105.

Sulistyaningsih, E. (2022). Community Participation In Improving Environmental Protection and Effort Management. *IOP Conference Series: Earth and Environmental Science, 1030*, 12021. https://doi.org/10.1088/1755-1315/1030/1/012021

Suwondo, R. (2020). Community-Based Waste Management Policy. *Journal of Government Science, 6*(2), 100–112.

Touraine, A. (1985). An Introduction to the Study of Social Movements. *Social Research, 52*(4), 749–787.

Tsai, T.-H., Rahmayani, C. A., & Aminah, A. (2008). The impact of social capital on regional waste recycling. *Sustainable Development, 16*(1), 44–55. https://doi.org/10.1002/sd.326

UNDP Indonesia. (2021). *Integrated Waste Management in Urban Areas: Lessons from Community-Based Initiatives*. United Nations Development Programme.

UN-Habitat. (2020). *Waste Wise Cities Tool: Step-by-step guide to assess waste management performance at city level*. https://unhabitat.org

Widodo, T. (2021). Digitizing Waste Banks for Community Economic Empowerment. *Indonesian Journal of Economics and Development, 21*(2), 112–121.

World Bank. (2021). *Indonesia: Toward a Circular Economy for Waste*. https://www.worldbank.org

Yuliana, E. (2021). Technology and Environmental Behavior: A Case Study of a Digital Waste Bank. *Journal of Environmental Technology, 22*(1), 55–66.