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Implementation of Collaborative Governance-Based Waste Management Policy: Educational Perspective and Human Values (Study at the Tlekung Landfill, Batu City)

Diva Aqila Berliandy[1], Abdul Juli Andi Gani[2], Moh Said[3]
[1,2,3]Fakultas Ilmu Administrasi, Universitas Brawijaya Malang, Indonesia

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ABSTRACT

The complexity of waste management in Batu City has increased due to population growth, tourism activities, shifting consumption patterns, and low public awareness of waste sorting. This study aims to analyze the implementation of waste management policies using Merilee S. Grindle's implementation model and to evaluate the effectiveness of collaborative governance based on the framework developed by Ansell and Gash. A qualitative descriptive approach was employed, with data collected through interviews, observation, and documentation. The findings reveal that in terms of policy content, the Mayor's Regulation has incorporated essential principles such as waste reduction from source, sorting, and community participation. Regarding collaborative governance, initial forms of collaboration have emerged among the Environmental Agency, community groups, and the private sector. However, the overall waste management system in Batu City has not yet operated effectively, both in policy implementation and multi-stakeholder collaboration. This research is expected to serve as a reference for policymakers, particularly in tourism-oriented cities, in developing more effective and sustainable waste management systems.

Corresponding Author:

Diva Aqila Berliandy
Fakultas Ilmu Administrasi, Universitas Brawijaya Malang, Indonesia
Email: aqiladivaqila@gmail.com

1. INTRODUCTION

Indonesia is facing a plastic waste emergency, with the country being the second-largest contributor of plastic waste in the world after China [1]. Daily waste production in Indonesia reaches approximately 105,307.03 tons per day, with a significant proportion coming from plastic waste. The problem of waste management in Indonesia is becoming increasingly urgent with increasing population, urbanization, and consumption levels [2].

According to data from the Ministry of Environment and Forestry in 2023, total waste generation in Indonesia reached 38,437,064.87 tons per year, or approximately

105,307.03 tons per day. Java Island is the largest contributor of waste nationally, with East Java as the province with the highest total waste generation, at 6,117,220.18 tons per year, followed by Central Java with 5,510,974.14 tons, West Java with 4,279,095.54 tons, and Jakarta with 3,141,650.18 tons per year [3].

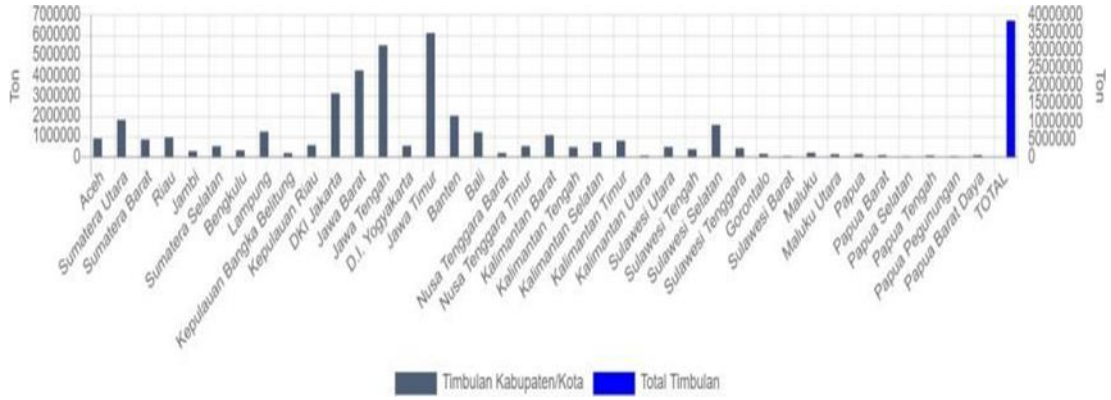

Figure 1. Graph of National Waste Generation in 2023.
Source: Ministry of Environment and Forestry 2023.

East Java is the province with the highest total annual waste generation nationally, with the city of Surabaya being the largest contributor, with daily waste generation of 1,800.05 tons, equivalent to 657,016.64 tons per year. Jember Regency ranks second, generating 1,033.69 tons of waste per day, equivalent to 377,298.02 tons per year. Meanwhile, Malang Regency ranks third in East Java, generating 966.92 tons of waste per day, or approximately 352,927.26 tons per year [3].

Waste management in East Java is influenced by how the government implements public policy. In the context of waste management, public policy theory serves as an important framework for analyzing the planning, implementation, and evaluation of government policies. According to policy implementation theory [4], the success of a policy, including waste management, depends on: a. Policy clarity: Policies must have clear objectives, such as reducing waste generation or increasing recycling; b. Commitment and coordination between actors: Policy implementation requires coordination between the central government, regional governments, the private sector, and the community; c. Resources: Adequate infrastructure, such as modern landfills and recycling facilities, is essential to support policy implementation.

In East Java, waste management policies face several obstacles, such as insufficient budget allocation for waste management, technological limitations, and weak oversight of policy implementation at the regional level. This results in the volume of waste continuing to increase without optimal management. Public policies often involve various actors with different roles, interests, and responsibilities in the process from policy formulation to implementation [5]. The dynamics of policy actors encompass the roles of various stakeholders, such as the government, communities, and the private sector. Local governments play a key role in waste management, but often have limited authority and resources.

Furthermore, community participation in waste sorting is often low due to a lack of education and awareness. Moreover, the private sector, despite its potential to assist with recycling and waste management, has not been fully utilized. Improving the quality of education should be done by relying on internal potential. This process utilizes various available techniques and data to empower components in a continuous effort to improve their capabilities to meet the expectations of students and the community [6].

The large amount of waste in East Java stems not only from the urbanization of large cities in East Java, such as Surabaya, Malang, and Jember, which have high rates of urbanization. Furthermore, the growth of cities in East Java has led to increased consumption, resulting in greater amounts of domestic, commercial, and industrial waste. The presence of industrial and tourist cities in East Java also includes large industrial areas and popular tourist destinations, such as Batu City, which contribute to additional waste generation, particularly plastic and organic waste [7]

Batu City attracts over 5 million tourists annually. Waste from these tourism activities, such as plastic packaging, beverage bottles, and food waste, poses a serious challenge to the city's waste management system. Tourist destinations often face unique waste management challenges, such as high waste production during peak seasons and a lack of tourist awareness of cleanliness. Batu City is an interesting place to understand how waste management policies are implemented amidst these dynamics. The Batu City Government has involved various actors in waste management, such as the Environmental Agency, community groups, tourism groups, and the private sector. This creates a complex dynamic of policy actors, which is interesting to examine in the context of policy implementation and cross-sector collaboration [8].

Although Batu City is not among the regions with the highest waste generation in East Java, the city has unique characteristics due to the pressure of waste generated by tourism activities. For example, Surabaya, Jember, and Malang Regencies have much higher waste volumes quantitatively. However, the characteristics of waste in Batu City are more dynamic because the amount of waste in Batu City can fluctuate depending on the time and specific circumstances. For example, during the holiday season or weekends, the amount of waste tends to increase due to the large number of tourists visiting Batu City. Conversely, on weekdays or off-peak seasons, the amount of waste can be lower [9].

One of the collaborative efforts between the government and the community that the Batu City Government has undertaken to improve waste management is the construction of the Reduce, Reuse, Recycle Waste Management Facility (TPS 3R) Jalibar Berseri in Oro-Oro Ombo Village. The TPS aims to reduce waste generation before being transported to the Tlekung Landfill. However, the implementation of management at the TPS 3R Jalibar Berseri is not optimal, because most waste collectors work independently and are not part of the TPS 3R management. As a result, the collected waste is directly taken to the landfill without undergoing any processing, so the level of waste reduction is still very low, covering only 4.43% of the total households served [10].

Regular assessments of the effectiveness of collaboration between actors involved in implementing this policy are necessary. This aims to evaluate the policy's success, identify potential obstacles, and provide recommendations for further improvements in waste

management policymaking in Batu City. These assessments can also help ensure that each actor has a clear role and that coordination between relevant parties is smooth, leading to the goal of better and more sustainable waste management [11].

Based on this background, this study will examine the implementation of waste management policies in Batu City. It is hoped that this research will provide recommendations for the Batu City Government to improve existing waste management policies and increase community and private sector involvement.

2. METHOD

The type of research used to analyze actor collaboration in policy implementation is a qualitative method with a descriptive approach. The data sources for this study are categorized into primary and secondary data. Primary data was obtained through interviews with informants involved in the implementation of waste management policies at the Tlekung Landfill. Secondary data was then obtained through additional report documents related to the policy implementation. Data collection techniques were carried out through observation, interviews, and document analysis [12]. Data validity testing is the stage to ensure the data obtained is reliable and reflects the actual conditions. Data validity testing methods can be carried out using credibility testing and data triangulation. According to Miles, Huberman, and Saldana, qualitative data analysis is carried out by encompassing three main components: data condensation, data presentation, and drawing and verifying conclusions [13].

The data collection techniques in this study utilized three main, complementary methods. First, field observations were conducted by directly observing waste management activities at the Tlekung Landfill, including the unloading process, sorting by scavengers, the operation of heavy equipment, and interactions between landfill staff and visitors. Observations were also conducted at several TPS3R (Recycling Sites for Waste Management) and waste banks to observe waste processing mechanisms at the community level. All observations were recorded in structured field notes and documented with photographs to strengthen the analysis. Second, semi-structured interviews served as the primary instrument for gathering qualitative data, with researchers using a flexible interview guide to allow informants to express their views and experiences more openly and in-depth. Interview questions were designed to explore key themes such as informants' understanding of the policy, the roles and responsibilities of each actor, communication and coordination patterns between parties, obstacles encountered in collaboration, and expectations for future policy improvements. Third, documentation analysis was conducted by critically examining all collected documents to identify relevant factual information, such as policy targets, budget allocations, standard operating procedures, and data on waste management program achievements.

To ensure the validity and credibility of the data obtained, this study implemented credibility testing through source triangulation and technical triangulation. Source triangulation was conducted by comparing and verifying information obtained from various informants with different backgrounds and interests. For example, comparing statements from Environmental Agency officials with statements from TPS3R managers

and local residents surrounding the landfill to determine consistency and possible differences in perspectives on a phenomenon. Technical triangulation was conducted by checking the consistency between data obtained through interviews and data from direct field observations and findings from documentation analysis. This allowed for the identification of any discrepancies between what informants said and the reality observed or documented in official documents. In addition to triangulation, this study also employed member checking by reconfirming the interview summary with several key informants to ensure that the researcher's interpretations aligned with the informants' intentions.

Data analysis in this study refers to the interactive analysis model developed by Miles, Huberman, and Saldana, which was conducted continuously from data collection in the field to the writing of the final report. The data analysis process encompasses three main, interrelated components [13]. The first component is data condensation, which involves selecting, focusing, simplifying, and transforming raw data obtained from interview transcripts, observation notes, and supporting documents. The vast and diverse data are sorted based on their relevance to the research focus, then summarized in the form of thematic summaries and analytical codes that reflect key issues such as actor roles, collaboration patterns, implementation barriers, and policy impacts.

The second component is data display, which involves organizing the condensed data into an organized and easily understood format, such as a systematic narrative text, a comparison matrix between informants, a collaboration process flowchart, and a table of research findings. Good data presentation allows researchers to see patterns of relationships, tendencies, and specific configurations that emerge from the data, thus facilitating the drawing of conclusions.

The third component is drawing and verifying conclusions, which involves formulating meaning from the presented data by searching for patterns, explanations, causal flows, and relevant propositions. The initial conclusions obtained are still tentative and will be continuously verified throughout the research process by reviewing field data, discussing findings with colleagues, and seeking additional evidence to support or refute these preliminary conclusions. The verification process continues iteratively until a final conclusion is reached that is credible, consistent, and scientifically accountable in accordance with the established research objectives.

3. RESULTS AND DISCUSSION

3.1. Results

The Tlekung Final Processing Site (TPA) is the only landfill in Batu City. It is located at Jl. Raya Tlekung No. 2. Established in 2009 and operating since 2010, the Tlekung TPA is the primary waste management center in Batu City. Since its inception, this landfill has served as the final disposal site for waste from various areas in Batu City, including household waste, market waste, public facilities, and other types of waste. However, over time, new challenges have emerged, such as increasing waste volume, limited land, a lack of waste segregation at source, and growing public awareness of environmental issues. The following image shows the location of the Tlekung Final Processing Site (TPA) in Batu City.

The Tlekung TPA's location emphasizes its strategic position as the final waste management center in Batu City. Its location on the outskirts of the city makes it ideal for final processing, but it also presents challenges in terms of access, land expansion, and social interaction with the surrounding community. This situation demands the active involvement of policymakers, particularly the Batu City Environmental Agency, in ensuring efficient, environmentally friendly, and sustainable waste management. Furthermore, decision-making related to infrastructure development, the implementation of a source-separation system, and public education cannot be separated from cross-sectoral coordination, making the interests of policymakers a key factor in the successful management of the Tlekung Landfill.

In response to these challenges, the Batu City Government issued Batu Mayoral Regulation Number 66 of 2020 concerning Regional Policies and Strategies for the Management of Household Waste and Household-Like Waste. This regulation does not form the initial basis for the establishment of the Tlekung Landfill, but rather serves as a more specific policy guideline to strengthen waste reduction efforts at source, implement the 3R principle (reduce, reuse, recycle), enhance cooperation between stakeholders, and involve the community in waste management. Interviews with the Batu City Environmental Agency (DLH) revealed that their primary concern as policymakers is to ensure that waste management follows the new policy direction, with targets for reducing waste generation at the landfill, increasing sorting, and optimizing existing facilities.

The actor with the highest stake in waste management in Batu City is the Environmental Agency (DLH), with a weighting of 30%. This is understandable, considering that the DLH is the primary agency that formulates policies, carries out supervision, and is directly responsible for waste management operations at the landfill (TPA) and waste processing facilities (TPS3R). The DLH's importance is reflected in the following informant's statement:

> "Waste management is carried out by the DLH, waste banks (processing recyclables), and TPS3R (processing fertilizer and recycling). For recycling, there is Ecoenzim, or the main waste bank. It is an organization/association for outreach. They also have recycling equipment. In addition to DLH members, stakeholders include TPS3R processors, waste bank processors, and village officials. Their activities involve evaluating ongoing activities, including their progress. Results must be provided." (Interview with V on April 16, 2025, at the DLH Block Office in Batu City at 12:00 WIB)

Furthermore, the Village Government ranks second with a 20% interest percentage. Village governments play a crucial role in supporting the decentralized system through the management of the Waste Management Sites (TPS3R) and the allocation of 2% of village funds for waste management activities. This importance has grown stronger with the shift in policy orientation from centralization to decentralization following the temporary closure of landfills (TPA) in 2024.

TPS3R itself has a 15% stake as it spearheads community-based waste management. The presence of 19 TPS3Rs across various locations in Batu City

demonstrates that the local government, through the Environment Agency (DLH), has promoted a significant technical role for TPS3R.

The Environmental Agency (DLH) plays a strategic role in waste management in Batu City, particularly at the Tlekung Landfill (TPA Tlekung). The DLH is responsible for formulating effective waste management policies, providing necessary infrastructure, such as the construction and operation of incinerators for environmentally friendly waste combustion, and ensuring strict oversight of waste management sites, such as the TPS3R (Reuse, Reduce, and Recycle Waste Management Site) and other waste-prone areas, such as tourist attractions. In this regard, the Head of the Waste Division at the DLH explained that his office has successfully built and operated 19 TPS3Rs at various strategic locations, aiming to reduce the waste load at the landfill.

> "We have a DSL support team, and we are now capable of building and operating 19 TPS3Rs." (Interview with V on April 16, 2025, at the DLH Block Office in Batu City at 12:00 WIB)

This success demonstrates significant progress in improving community-based waste management. The support team provided by the Environmental Agency (DLH) plays a crucial role in providing guidance and mentoring communities to manage waste independently at the village level, thus strengthening public awareness and active involvement in maintaining a clean environment. However, despite significant progress, challenges remain in ensuring equitable distribution of TPS3R facilities across the region, ensuring the ongoing maintenance of the facilities built, and ensuring the policy's effectiveness.

Table 1. Actor's Interests in Waste Management in Batu City

Actor	Primary Interest	Power/Role	Impact on Policy
Service Environment Life (DLH)	Reduce waste generation, implement policies, improve sorting, and provide education	Very High – Regulator and implementer	Very dominant; direction-setting implementation
Village Government	Support decentralization, use of village funds, construction of TPS3R	Medium – Local implementer	High if collaborative with DLH
TPS3R (19 units)	Organic & inorganic waste processing at the village level, landfill load reduction	Currently – Technical operations	Tall for an effective decentralized system
Garbage Bank	Education, recycling, community outreach	Currently	Important in education and waste reduction
PT Arta Son (Private)	Processing organic waste with self-contained incinerator	Low–Medium – Complementary	Supporting landfill load reduction
Public General	Environmental health, participation in waste sorting, and comfort of place stay	Variable – from low to medium	Critical in support reduction from source
Tourism Actors	Maintaining the image of the city's cleanliness and comfort traveler	Low	Supporters indirect

Source: Data Processing by Researchers, 2025

The table above shows that the implementation of waste management policies in Batu City, particularly at the Tlekung Landfill, involves various actors with varying roles, interests, and levels of influence. The Environmental Agency (DLH) occupies the most dominant position as both regulator and policy implementer. The DLH's primary interests focus on reducing waste generation, optimizing sorting, and providing public education. This significant role of the DLH makes it a key actor in determining the direction and success of the implementation of Mayoral Regulation No. 66 of 2020, as it has control over regulations, technical facilities, and cross-sectoral coordination.

3.2. Discussion

This analysis of policy implementation can also be linked to the Top-Down and Bottom-Up Approach theories in public policy studies. In a top-down approach, as explained, successful policy implementation depends heavily on clarity of policy objectives, adequate resources, and adherence by implementing actors to the initial policy design. Mayoral Regulation No. 66 of 2020 demonstrates a clear normative direction and strategic objectives, but field findings indicate that not all implementers at the grassroots level can implement this policy effectively due to limited resources, technical capacity, and supporting infrastructure. Conversely, a bottom-up approach emphasizes the importance of local initiative, policy flexibility, and the adaptability of implementing actors in the field. In this context, the success of several waste banks and TPS3R (Recycling Waste Processing Sites) in adapting policies to local conditions reflects the importance of a bottom-up perspective in ensuring policies are not only normatively appropriate but also relevant to the local social and technical context [14].

The Institutional Analysis and Development (IAD) theory developed by Elinor Ostrom is also relevant to explaining how local institutions influence environmental policy implementation. Within the IAD framework, the success of a policy is influenced by the interaction between formal regulations (such as mayoral regulations), actors, and biophysical or technical conditions. The findings of this study indicate that although formal regulations (Mayoral Regulation No. 66 of 2020) are in place, the effectiveness of their implementation is greatly influenced by the strength of local institutions, such as the existence and capacity of waste banks, waste management facilities (TPS3R), and community participation. In some areas, when local institutions are able to function actively and are supported by sufficient resources, the policy's impact is evident. However, in other areas, weak institutions render the policy ineffective and even create new social burdens for communities surrounding landfills. This reinforces Ostrom's idea that the governance of shared resources, such as waste, requires a combination of formal regulations, strong local institutions, and community involvement [15].

The Policy Feedback Theory approach can be used to understand how experiences with policy implementation shape actors' responses to the policy itself. This theory, widely developed in social policy studies, states that policies are not only the result of political processes but also shape the political arena and the future behavior of actors. In the case of the Tlekung Landfill, it appears that the positive experiences of some implementing actors, such as the waste bank, which successfully increased the volume of recycled waste

managed, encouraged institutional strengthening and a greater spirit of collaboration. Conversely, dissatisfaction among communities surrounding the landfill due to negative environmental impacts could actually fuel policy resistance and weaken citizen participation. Therefore, the long-term success of this waste management policy depends not only on its initial design but also on how its implementation on the ground shapes public perceptions, incentives, and trust in the policy [16].

The implementation of Mayoral Regulation No. 66 of 2020 in Batu City brought about a wide range of changes, both in terms of regulations, governance, and the waste management paradigm itself. Previously, waste management in Batu City tended to focus on collection and final disposal at the Tlekung Landfill, without in-depth consideration of waste reduction at the source. However, with this new policy, the local government is pushing for a shift towards a more integrated system, starting with waste reduction, sorting at the household level, processing through the Waste Management and Recycling (TPS3R), and finally, recycling waste for economically valuable purposes. These changes include clearer institutional restructuring, the establishment of multi-sectoral collaboration networks, and the creation of new technical procedures that direct all stakeholders from the Environment Agency (DLH), village officials, TPS3R, waste banks, and the community to work within a unified system. Such institutional changes can only be successful if accompanied by a restructuring of duties, authorities, and clear communication channels between actors [17].

In addition to institutional changes, the scope of change sought through this policy also encompasses a transformation of community behavior, which is one of the most difficult yet most crucial elements. Interpretation of research data indicates that before the implementation of Mayoral Regulation No. 66 of 2020, most Batu City residents believed that waste management was the government's responsibility. This policy seeks to reverse this paradigm, positioning the community as a crucial part of the waste management chain, particularly in separating organic, inorganic, and residual waste at the household level. However, behavioral change is not sufficient to be regulated in policy; it requires effective outreach, education, incentives, and sanctions, as emphasized by Armi et al. in their study on the effect of community waste management outreach on river dumping behavior in Mideun Geudong Village, Samalanga District, Bireun Regency. Without intensive public communication efforts, the behavioral changes envisioned in this policy will be difficult to achieve evenly [18].

Another effort is to improve waste management technology and infrastructure. The local government, through the Environment Agency (DLH), is attempting to improve the previously overloaded Tlekung Landfill by increasing heavy equipment capacity, expanding the processing area, and developing more efficient and environmentally friendly processing methods. Research data shows that although some initiatives are already underway, the implementation of technological change still faces numerous obstacles, ranging from budget constraints, lack of private sector support, to the readiness of human resources for field managers. This aligns with the findings of Lasaiba et al., who stated that technological innovation in waste management can only succeed if there is a strong partnership between the government, the private sector, and communities, accompanied by

intensive training for technical operators in the field. Without adequate infrastructure readiness, the waste burden in landfills will remain a threat, even if regulations are in place [19].

From a socio-economic perspective, the scope of changes sought by this policy includes creating new job opportunities, increasing residents' incomes through the recycling sector, and strengthening the capacity of vulnerable groups such as scavengers or women's groups involved in waste processing. Data shows that through the establishment and strengthening of waste banks, many residents can now earn additional income from sorting non-organic waste, producing compost, and creating creative recycled products. However, these socio-economic changes only occur in areas with strong supporting ecosystems, while in many other villages, stagnation remains due to a lack of institutional and market support. This is reinforced by studies that show that the success of a waste bank program as a driver of the local economy depends heavily on systemic support, including adequate training, marketing, and economic incentives. Without such support, the potential economic benefits of this policy will be difficult to share equally with all parties [18].

Overall, the scope of changes sought through the implementation of Mayoral Regulation No. 66 of 2020 encompasses regulatory, behavioral, technological, and socio-economic transformations, with the primary goal of creating a sustainable, participatory, and environmentally friendly waste management system. However, interpretation of research data indicates that the success of these changes is highly dependent on several crucial factors: government political commitment, local institutional capacity, sustainable funding support, multi-sector partnerships, and public awareness. These findings align with a study by Riduan, which emphasized that the success of environmental policies at the local level is not solely a matter of regulatory quality, but also of consistent technical execution, adaptive flexibility to field challenges, and the ability to build consensus among stakeholders. Therefore, to achieve the desired scope of change, Batu City needs to ensure that all supporting pillars of this policy work together, not only formally on paper but also substantively on the ground [20].

To better understand the scope of changes sought in the implementation of this policy, the Three Streams Framework theory provides a relevant lens. In this theory, the success of a policy is heavily influenced by the intersection of three streams: the problem stream, the policy stream, and the political stream. The implementation of Mayoral Regulation No. 66 of 2020 appears to have emerged because the waste problem in Batu City had become a real crisis (problem stream), coupled with the availability of technical policy alternatives such as the 3R Waste Management System (TPS3R) and waste banks (policy stream), and strong political support from the local government during the formulation of the mayoral regulation (political stream). However, for this policy to truly achieve systemic change, the synchronization of these three streams must be maintained throughout the implementation phase. If any one stream weakens, for example, due to declining political support or weakening local institutional capacity, the sustainability of the change will be compromised [21].

The Transformational Change Theory approach of organizational change theorists is also relevant to explaining the process of structural and behavioral change sought in this policy. According to Kotter, major change can only be successful if preceded by creating a sense of urgency, forming a coalition of change advocates, developing a clear vision, and empowering change agents at all levels. In this context, Mayoral Regulation No. 66 of 2020 only partially establishes the prerequisites for change: formal regulations and institutions are in place, but the sense of urgency has not yet been fully embraced by the community and implementing officials. This interpretation aligns with findings that changes in community behavior are still very partial, and technological transformation efforts are still limited to specific regions. Therefore, the scope of the desired change can only be realized if transformation is viewed as a gradual process accompanied by changes in work culture, cross-sector communication, and transformative leadership at the local level [14].

The theory of Adaptive Governance, developed in contemporary environmental policy studies, also offers important insights. This theory emphasizes that addressing complex challenges such as waste management requires an adaptive, participatory governance system capable of flexibly responding to social and ecological dynamics. In the context of Batu City, the implementation of Mayoral Regulation No. 66 of 2020 embodies this adaptive spirit, particularly in encouraging community participation and strengthening local institutions such as waste banks. However, the data also shows that not all actors have sufficient adaptive capacity; some waste management facilities (TPS3R) are inactive, the public is not fully educated, and the decision-making system still tends to be centralized. Therefore, the scope of change will only be optimal if the waste management system is designed as a learning system, where policies can be continuously evaluated, adjusted, and strengthened based on input from local actors and changing field dynamics [22].

One interesting aspect of the process of drafting Mayoral Regulation No. 66 of 2020 was the emergence of dynamics between actors, particularly between local governments and civil society. Research data shows that in some cases, input from community groups such as waste bank groups or local environmentalists successfully encouraged the government to include important clauses related to waste sorting at source, public education, and strengthening local institutions such as the TPS3R (Recycling Waste Management Unit). However, not all input was successfully accommodated, particularly those related to budget support or fairer distribution of incentives for active community groups. This aligns with the findings, which stated that the involvement of non-governmental actors in regional policy development is often limited to consultative aspects, rather than strategic decision-making [23].

This reinforces the need for a governance model that creates a more inclusive and sustainable space for collective deliberation. This concept emphasizes three key components: legitimacy and accountability among actors, trust developed through ongoing interaction, and open communication that enables transparent and constructive information exchange. The implementation of this collaboration aims to ensure that policies are not merely administrative formalities but rather the result of a consensus that addresses

complex issues on the ground, such as waste management in Batu City. However, field data indicate that these collaborative principles have not been fully realized, primarily because public participation patterns remain focused on the consultation stage and do not yet address strategic decision-making processes, thus weakening the effectiveness of policy implementation [17].

The Power Dynamics theory reveals a deeper dimension of how power can operate covertly in the policymaking process. Lukes states that power is not only seen in the decisions taken (first dimension) or in controlling the discussion agenda (second dimension), but also in the ability to shape the perceptions, desires, and needs of other actors so that they accept the status quo without resistance (third dimension). In the context of Mayoral Regulation No. 66 of 2020, the dominance of local governments in decision-making and the limited space for communities to influence policy reflect how structural power limits effective participation, both explicitly and implicitly. Therefore, efforts to improve waste management policy formulation need to adopt a power redistribution approach and increase the capacity of community actors so that their participation is meaningful and has a real impact on policy outcomes, not just a formality [24].

In policy implementation studies, the top-down and bottom-up theories proposed are highly relevant for understanding the role of implementers in this context. The top-down approach emphasizes that successful implementation depends on how policies formulated by the central or regional government are consistently communicated and implemented by implementers in the field. However, this approach often faces obstacles when technical implementers lack adequate resources or capacity. In contrast, the bottom-up approach views implementers as central actors who not only implement policies but also adapt, modify, and interpret them to suit the local context. In the case of the Tlekung Landfill, a combination of these two approaches is crucial for the effective implementation of Mayoral Regulation No. 66 of 2020, which requires clear policy support and the flexibility of implementers to innovate and adapt [25].

The street-level bureaucracy theory proposed by Lipsky (1980) provides a critical understanding of how implementing actors at the field level, such as landfill officers, waste management teams (TPS3R), and waste banks, operate. These implementing actors play a crucial role in determining how policies are actually implemented. These lower-level implementers often face limited resources, pressure from various parties, and the need to make quick decisions that directly impact policy effectiveness. In the context of waste management in Batu City, implementers must be able to balance administrative demands with real-world conditions, ensuring optimal management despite significant challenges. This underscores the importance of empowerment, training, and systemic support for implementers to carry out this function effectively [26].

4. CONCLUSION

This study reveals that the implementation of waste management policies at the Tlekung Landfill in Batu City, based on collaborative governance, has resulted in a significant paradigm shift from a centralized to a decentralized system. The main findings indicate that although Batu Mayor Regulation No. 66 of 2020 has encouraged the

establishment of 19 TPS3R units and succeeded in reducing daily waste volume from approximately 100 tons to 30 tons, along with increasing household waste sorting practices from 23% to 56%, the implementation outcomes remain uneven. Power asymmetry persists, with the Environmental Agency and Mayor maintaining dominance in top-down policy formulation, limiting meaningful participation from communities and the private sector. Furthermore, capacity disparities between villages, weak private sector integration, and initial community resistance demonstrate that the policy design did not fully anticipate the varying levels of social and technical preparedness at the grassroots level.

The implications of this research are twofold. Practically, the findings underscore the need for policymakers to move beyond formal regulatory frameworks and invest in strengthening local institutional capacity, ensuring equitable distribution of infrastructure, and developing targeted educational programs that address behavioral resistance. Theoretically, this study contributes to the collaborative governance and policy implementation literature by demonstrating that even when collaborative mechanisms are formally established, their effectiveness is contingent upon redistributing decision-making authority and building adaptive capacity among all stakeholders. Several limitations bound this research. First, the study focuses specifically on the Tlekung Landfill and waste management policies in Batu City, which may limit the generalizability of findings to other regions with different socio-economic and geographical characteristics. Second, the qualitative nature of this research, while providing in-depth insights, does not allow for statistical generalization. Third, the dynamic nature of waste management policies and stakeholder configurations during the research period may affect the temporal stability of the findings.

For future research, it is recommended that subsequent studies conduct comparative analyses across multiple tourist cities in Indonesia to identify contextual factors that influence the success or failure of collaborative waste management policies. Longitudinal studies are also needed to track how community participation and private sector involvement evolve as policies mature. Additionally, future research could employ quantitative methods to measure the precise impact of specific collaborative mechanisms on waste reduction outcomes. The contribution of this study to the general public lies in its illumination of the critical gap between policy design and grassroots implementation, serving as a valuable reference for communities, civil society organizations, and policymakers in tourist cities to advocate for more inclusive, adaptive, and sustainable waste management systems.

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