

DOI: 10.5281/zenodo.19642761

ANALYSIS OF THE IMPLEMENTATION OF SUSTAINABLE WASTE MANAGEMENT POLICY IN PALEMBANG CITY

Akhmad Mustain^{1*}, Raniasa Putra²

STIA Bala Putra Dewa Palembang, Indonesia¹

Universitas Sriwijaya, Indonesia²

Received: 24/09/2025

Accepted: 20/02/2026

Corresponding Author: Akhmad Mustain

ABSTRACT

This study aims to analyze the implementation of sustainable waste management policies in Palembang City by examining policy standards and objectives, institutional capacity, inter-organizational coordination, implementer disposition and social, economic and political conditions influencing policy performance. The research seeks to explain the gap between sustainability-oriented policy goals and actual implementation outcomes. A qualitative research approach was applied through in-depth interviews with key informants from relevant government agencies, field observations and document analysis. The collected data were analyzed thematically to identify patterns and relationships among policy implementation variables. The findings indicate that although sustainable waste management policies in Palembang City are supported by clear regulatory frameworks, their implementation remains suboptimal. Waste management practices are still dominated by conventional collection and landfill disposal with limited emphasis on waste reduction and recycling. Major constraints include limited institutional capacity, inadequate budget allocation and infrastructure, weak inter-organizational coordination and misaligned incentive systems for policy implementers. Furthermore, low public participation, limited economic incentives and insufficient political prioritization significantly hinder policy effectiveness. This study concludes that sustainable waste management policy implementation is shaped by the interaction of institutional, organizational, and contextual factors. The implications highlight the importance of strengthening policy operationalization, enhancing institutional capacity, fostering collaborative governance and increasing political and community commitment to achieve sustainable waste management at the local level.

KEYWORDS: Implementation, Sustainable Waste Management Policy, Palembang City.

1. RESEARCH BACKGROUND

Urban development and population growth have become major drivers of increasing municipal solid waste generation particularly in developing countries. In Indonesia, rapid urbanization has intensified pressure on urban infrastructure and public services including waste management systems. Cities are facing complex challenges related to waste accumulation, limited landfill capacity, environmental pollution and declining public health quality. Palembang City as one of the largest metropolitan areas in Sumatra reflects these national challenges where the growing volume of waste has not been matched by effective and sustainable management practices.

Sustainable waste management has emerged as a critical policy agenda in response to global environmental concerns, climate change and the principles of sustainable development. Conceptually, sustainable waste management emphasizes waste reduction at the source, reuse, recycling, recovery and environmentally sound disposal commonly referred to as the 3R or 5R principles (reduce, reuse, recycle, recover and dispose). This approach aligns with the circular economy paradigm, which views waste as a potential resource rather than merely an environmental burden (Geissdoerfer et al., 2017). In the Indonesian context, sustainable waste management is formally regulated through national policies such as Law No. 18 of 2008 on Waste Management which mandates local governments to implement integrated and environmentally responsible waste management systems.

Despite the existence of regulatory frameworks, the implementation of waste management policies at the local level often faces significant obstacles. Policy implementation theory asserts that the effectiveness of a public policy is not determined solely by its formulation but by how it is executed in real-world settings (Pressman & Wildavsky, 1984). Implementation gaps frequently occur when policy objectives are unclear, resources are inadequate, coordination among implementing agencies is weak or stakeholders lack commitment and capacity. These challenges are particularly evident in environmental policies which require cross-sectoral collaboration and sustained public participation.

From a theoretical perspective, several policy implementation models provide a relevant analytical framework for examining sustainable waste management policies. Van Meter and Van Horn (1975) emphasize six critical variables influencing implementation performance: policy standards and

objectives, resources, inter-organizational communication, characteristics of implementing agencies, disposition of implementers and social, economic and political conditions. Similarly, Edwards III (1980) identifies communication, resources, disposition and bureaucratic structure as key determinants of successful policy implementation. These models underscore that environmental policies such as waste management are highly dependent on institutional capacity, governance quality and the interaction between government and society.

Previous empirical studies highlight that ineffective waste management policy implementation is a common issue in many developing urban areas. Research by Guerrero, Maas and Hogland (2013) demonstrates that institutional weakness, lack of financial resources and limited public awareness significantly hinder sustainable waste management initiatives in developing countries. In the Indonesian setting, studies have shown that waste management policies often fail due to fragmented institutional responsibilities, insufficient infrastructure and weak law enforcement (Damanhuri & Padi, 2012). Furthermore, Purwanto et al. (2019) found that local governments frequently struggle to integrate waste reduction and recycling programs into existing administrative and budgetary systems.

Community participation has also been identified as a crucial factor in sustainable waste management. According to Ajzen's Theory of Planned Behavior (1991), individual behavior related to waste sorting and recycling is influenced by attitudes, subjective norms and perceived behavioral control. Empirical research confirms that public awareness, education and socio-economic factors strongly affect participation in waste reduction programs (Miafodzzyeva & Brandt, 2013). In many Indonesian cities, low public awareness and limited incentives for waste separation contribute to the continued reliance on landfilling as the primary disposal method.

In Palembang City, waste management challenges are further exacerbated by rapid urban expansion, increasing consumption patterns and limited landfill capacity. Existing waste management practices still rely heavily on a collect-transport-dispose approach with minimal emphasis on waste reduction and recycling. Several local initiatives such as waste banks and community-based waste management programs have been introduced however, their effectiveness remains uneven and limited in scale. Most existing studies on waste management in

Palembang focus on technical aspects such as landfill management, waste composition analysis or environmental impacts rather than examining policy implementation processes comprehensively.

This indicates a significant research gap. While numerous studies have addressed waste management from environmental engineering or community-based perspectives, fewer studies have systematically analyzed how sustainable waste management policies are implemented at the local government level using established policy implementation frameworks. Moreover, existing research often treats policy implementation as a linear process without adequately considering the complex interaction between institutional structures, socio-economic conditions and political dynamics at the local level.

Therefore, an in-depth analysis of sustainable waste management policy implementation in Palembang City is urgently needed. Such analysis should integrate policy implementation theory with the principles of sustainable waste management to capture both governance and environmental dimensions. By examining policy objectives, institutional arrangements, resource allocation, inter-agency coordination and stakeholder participation, this research aims to provide a comprehensive understanding of the factors that support or hinder effective policy implementation.

The purpose of this study is to analyze the implementation of sustainable waste management policies in Palembang City and to identify the key factors influencing their effectiveness. Specifically, the research seeks to (1) Assess the alignment between policy objectives and implementation practices, (2) Analyze institutional capacity and coordination among implementing agencies, (3) Examine the role of social, economic and political conditions in shaping policy outcomes and (4) Identify supporting and inhibiting factors affecting sustainable waste management implementation.

The novelty of this research lies in its integrative and governance-oriented approach. Unlike previous studies that focus primarily on technical or environmental outcomes, this study emphasizes the policy implementation process by applying classical implementation theories within the context of sustainable waste management. By situating the analysis within Palembang City, this research provides context-specific insights that enrich the theoretical discourse on policy implementation while offering practical recommendations for improving sustainable waste management governance at the local level. The findings are expected to contribute to

the development of more effective, inclusive and sustainable waste management policies in urban Indonesia.

2. LITERATURE REVIEW

2.1 *Public Policy and Policy Implementation*

Public policy refers to a set of decisions and actions undertaken by government institutions to address public problems and achieve collective goals. According to Dye (2013), public policy is “whatever governments choose to do or not to do,” emphasizing both action and inaction as policy choices. In the context of environmental governance, public policies play a crucial role in regulating human activities that affect ecological sustainability and public welfare.

Policy implementation is a critical phase of the policy process that translates policy objectives into concrete actions. Pressman and Wildavsky (1984) argue that policy implementation often determines policy success or failure as many policies fail not due to poor formulation but because of weaknesses in implementation. Implementation involves complex interactions among multiple actors, institutions, and environmental factors particularly in decentralized governance systems such as Indonesia.

2.2 *Theories of Policy Implementation*

Several theoretical models have been developed to explain the dynamics of policy implementation. One of the most widely used frameworks is the model proposed by Van Meter and Van Horn (1975) which identifies six variables influencing implementation performance: (1) Policy standards and objectives, (2) Resources, (3) Inter-organizational communication and enforcement activities, (4) Characteristics of implementing agencies, (5) Disposition of implementers and (6) Social, economic and political conditions. This model is particularly relevant for analyzing complex public policies that require coordination across multiple institutions.

Another influential model is Edwards III's (1980) implementation framework which highlights four key factors: communication, resources, disposition and bureaucratic structure. According to Edwards even well-designed policies can fail if communication is unclear, resources are insufficient or implementers lack commitment. These theories emphasize that policy implementation is a multidimensional process influenced by both internal administrative factors and external environmental conditions.

2.3 *Sustainable Waste Management Concept*

Sustainable waste management is grounded in the

principles of sustainable development which seek to balance environmental protection, economic efficiency and social equity. According to the United Nations Environment Programme (UNEP, 2015), sustainable waste management involves reducing waste generation, promoting reuse and recycling and ensuring environmentally sound disposal. This approach aligns with the circular economy concept which emphasizes closing material loops and minimizing waste through resource efficiency (Geissdoerfer et al., 2017).

In urban contexts, sustainable waste management requires integrated systems that involve government agencies, private sectors and communities. Damanhuri and Padmi (2012) argue that sustainable waste management in developing countries must consider local socio-economic conditions, institutional capacity and public behavior. Therefore, sustainability in waste management is not only a technical issue but also a governance challenge.

2.4 Waste Management Policy in Indonesia

Indonesia's waste management policy framework is primarily regulated by Law No. 18 of 2008 on Waste Management which emphasizes waste reduction and waste handling through environmentally sound approaches. This law mandates local governments to develop and implement waste management strategies that prioritize the 3R principles and community participation. Subsequent regulations further reinforce the role of local governments in managing municipal solid waste sustainably.

However, several studies indicate that the implementation of waste management policies in Indonesia remains suboptimal. Research by Damanhuri et al. (2014) reveals that many local governments still rely on conventional waste disposal methods and lack adequate infrastructure for waste separation and recycling. Additionally, limited budget allocation and weak inter-agency coordination often constrain policy implementation at the local level.

2.5 Community Participation and Stakeholder Involvement

Community participation is a key determinant of successful sustainable waste management. Arnstein's (1969) ladder of citizen participation conceptualizes participation as varying levels of public involvement in decision-making processes. In waste management, active community engagement is essential for waste separation, recycling and reduction initiatives.

Behavioral theories such as Ajzen's Theory of Planned Behavior (1991), provide insight into factors influencing individual participation in waste management practices. Empirical studies demonstrate that public awareness, education and socio-economic status significantly affect waste-related behaviors (Miafodzyeva & Brandt, 2013). In Indonesia, community-based waste management programs such as waste banks have shown potential but often face sustainability challenges due to limited institutional support and inconsistent community involvement.

2.6 Institutional Capacity and Inter-Organizational Coordination

Institutional capacity refers to the ability of government organizations to implement policies effectively including human resources, financial capacity and organizational structure. According to Grindle (1997), weak institutional capacity is a major obstacle to policy implementation in developing countries. In the context of waste management, coordination among local government agencies, private service providers and community organizations is essential to ensure integrated and sustainable outcomes.

Several studies highlight that fragmented institutional responsibilities and lack of coordination undermine waste management policy implementation (Guerrero et al., 2013). Effective inter-organizational communication and collaboration are therefore critical components of sustainable waste governance.

2.7 Previous Studies on Sustainable Waste Management Policy Implementation

Empirical studies on sustainable waste management policy implementation indicate that policy outcomes are influenced by governance quality, stakeholder participation and local socio-economic conditions. For example, research conducted by Zurbrügg et al. (2012) emphasizes the importance of inclusive governance and stakeholder collaboration in achieving sustainable waste management in urban areas. In the Indonesian context, studies by Purwanto et al. (2019) reveal that local policy implementation is often constrained by limited resources and weak enforcement mechanisms.

However, most previous studies focus on specific aspects of waste management such as technical efficiency or community-based programs rather than providing a comprehensive analysis of policy implementation processes. This highlights the need

for further research that integrates policy implementation theory with sustainable waste management practices at the local government level.

2.8 Conceptual Framework of the Study

Based on the reviewed literature, this study adopts the policy implementation framework of Van Meter and Van Horn to analyze the implementation of sustainable waste management policies in Palembang City. The framework integrates policy standards, resources, institutional characteristics, implementer disposition, inter-organizational coordination and socio-economic and political conditions to assess policy implementation performance. This approach enables a holistic analysis of governance and sustainability dimensions within local waste management policies.

3. RESEARCH METHODOLOGY

3.1 Research Design and Approach

This study employed a qualitative research approach with a descriptive-analytical design to examine the implementation of sustainable waste management policies in Palembang City. A qualitative approach was considered appropriate because the study aimed to explore in depth the processes, dynamics and contextual factors influencing policy implementation rather than to measure variables quantitatively. According to Creswell (2014), qualitative research enables researchers to understand social phenomena from the perspectives of the actors involved and to capture complex interactions within real-life contexts.

The research focused on analyzing policy implementation using the policy implementation framework of Van Meter and Van Horn which emphasizes policy standards and objectives, resources, inter-organizational communication, characteristics of implementing agencies, disposition of implementers and social, economic and political conditions. This framework was used as an analytical lens to interpret empirical findings related to sustainable waste management governance in Palembang City.

3.2 Research Location and Time

The research was conducted in Palembang City, South Sumatra Province, Indonesia which was selected purposively due to its status as a major metropolitan city facing increasing waste management challenges. Palembang City represents a relevant case for examining sustainable waste management policy implementation because of its rapid urban growth, high waste generation rate and

ongoing local government initiatives related to waste reduction and environmental sustainability.

The study was carried out over a period of six months from April–November 2025 which included stages of preliminary observation, data collection, data analysis and report writing. This time frame allowed for sufficient engagement with key informants and in-depth exploration of policy implementation practices.

3.3 Research Subjects and Informants

The research subjects consisted of key stakeholders involved in the formulation and implementation of sustainable waste management policies in Palembang City. Informants were selected using purposive sampling based on their roles, responsibilities and relevance to the research objectives. To enrich the data, snowball sampling was also applied to identify additional informants recommended by initial participants. The main informants in this study included:

1. Officials from the Palembang City Environmental Agency (Dinas Lingkungan Hidup) particularly those responsible for waste management planning, operations and supervision.
2. Officials from relevant local government agencies, such as the Regional Development Planning Agency (BAPPEDA) involved in policy coordination and budgeting.
3. Sub-district and urban village officials (Camat and Lurah) who play a role in implementing waste management programs at the community level.
4. Community leaders and managers of waste banks (Bank Sampah) involved in community-based waste management initiatives.
5. Private sector actors or waste service providers where relevant, involved in waste collection or recycling activities.
6. Local residents representing community members affected by and participating in waste management programs.

These informants were chosen to ensure a comprehensive understanding of policy implementation from institutional, community and operational perspectives.

3.4 Data Collection Techniques

Data were collected using multiple qualitative data collection techniques to ensure data richness and triangulation:

1. In-depth Interviews

Semi-structured interviews were conducted with key informants to explore their perceptions,

experiences and roles in implementing sustainable waste management policies. Interview guides were developed based on the variables of the Van Meter and Van Horn implementation model. Interviews were conducted face-to-face and when necessary through online platforms.

2. Observation

Non-participant observation was conducted to examine waste management practices in selected locations including waste collection points, waste banks, and disposal sites. Observation focused on policy implementation practices, inter-agency coordination and community participation.

3. Document Analysis

Relevant policy documents were analyzed including national and local regulations, strategic plans, government reports, budget documents and program evaluation reports related to waste management. Document analysis provided contextual and institutional insights into policy objectives and implementation mechanisms.

3.5 Data Analysis Technique

Data analysis followed an interactive qualitative analysis model as proposed by Miles, Huberman and Saldaña (2014) which includes data condensation, data display and conclusion drawing/verification. The analysis process was conducted concurrently with data collection to allow for continuous refinement of emerging themes.

Data were coded and categorized according to the variables of the Van Meter and Van Horn policy implementation framework. Patterns, relationships and discrepancies among data sources were identified to explain supporting and inhibiting factors in policy implementation.

3.6 Data Validity and Trustworthiness

To ensure the credibility and trustworthiness of the research findings, several validation strategies were employed:

- Triangulation of data sources and methods by comparing interview, observation and document data.
- Member checking by confirming key findings with selected informants.
- Peer debriefing through discussions with academic peers to enhance analytical rigor.
- Thick description to provide detailed contextual explanations and enhance transferability.

3.7 Ethical Considerations

Ethical considerations were carefully observed throughout the research process. Informants were

informed about the purpose of the study and their voluntary participation was ensured through informed consent. Confidentiality and anonymity of informants were maintained by using codes or pseudonyms in reporting the findings. The research was conducted in accordance with academic ethical standards and institutional research guidelines.

4. FINDINGS

4.1 Overview of Sustainable Waste Management Policy Implementation in Palembang City

The overall findings indicate that the implementation of sustainable waste management policies in Palembang City has progressed at the regulatory and programmatic levels, however its practical realization remains limited and uneven across implementation units. Based on interviews, observations and document analysis, the implementation process demonstrates a discrepancy between formal policy commitments and actual practices on the ground. While local government institutions have adopted sustainability-oriented narratives and programs, operational activities continue to prioritize waste collection and disposal rather than waste reduction and resource recovery.

At the policy level, Palembang City has aligned its waste management agenda with national regulations particularly Law No. 18 of 2008 on Waste Management which emphasizes waste reduction, recycling and environmentally sound disposal. Local strategic planning documents and technical guidelines explicitly promote the principles of sustainable waste management and community participation. Informants from the Environmental Agency confirmed that sustainability objectives are clearly articulated in official planning and regulatory documents.

However, empirical findings show that the dominant implementation pattern still follows a conventional “collect–transport–dispose” approach. Waste sorting at the source is not yet institutionalized and recycling initiatives remain supplementary rather than integral components of the waste management system. Field observations revealed that most household waste is collected without prior separation, resulting in mixed waste being transported directly to landfill facilities. This practice indicates that sustainability principles have not been fully mainstreamed into daily operational routines.

Furthermore, the implementation of sustainable waste management policies varies significantly across districts and neighborhoods. Some areas with

active waste banks and community initiatives demonstrate partial implementation of waste reduction and recycling practices. In contrast, other areas show minimal engagement, largely due to limited facilitation, weak supervision and lack of supporting infrastructure. This uneven implementation suggests that policy execution is highly dependent on local leadership, community initiative and available resources rather than being uniformly driven by institutional mechanisms.

Interviews with sub-district and village officials revealed that sustainable waste management programs are often treated as complementary or project-based activities rather than core public service responsibilities. As a result, these programs are vulnerable to budget constraints, changes in leadership and shifting policy priorities. This condition weakens policy continuity and reduces the long-term impact of sustainability-oriented initiatives.

From a governance perspective, the findings indicate that policy implementation in Palembang City is still characterized by a top-down administrative approach with limited horizontal coordination and stakeholder integration. While government agencies play a central role, collaboration with community groups, private sector actors and informal waste collectors remains fragmented. Consequently, the implementation process lacks an integrated system that connects policy objectives, institutional capacity and community participation in a coherent manner.

In summary, the overview of policy implementation reveals that sustainable waste management in Palembang City is institutionally acknowledged but operationally constrained. Policy objectives related to sustainability have been formally adopted, however their translation into consistent and comprehensive implementation practices remains incomplete. This overview provides a critical foundation for the subsequent analysis of specific implementation dimensions including policy-practice alignment, institutional capacity, inter-organizational coordination, implementer disposition and socio-economic and political influences as discussed in the following subsections.

4.2 Alignment between Policy Standards and Implementation Practices

The alignment between policy standards and implementation practices constitutes a central indicator of policy implementation performance. Findings from document analysis, in-depth

interviews and field observations reveal that although sustainable waste management standards and objectives are clearly articulated in regulatory and planning documents their translation into operational practices in Palembang City remains partial and inconsistent.

Local waste management policies emphasize waste reduction at the source, the application of the 3R principles increased community participation and a gradual reduction in landfill dependency. These objectives are formally embedded in local development plans and technical guidelines issued by the Environmental Agency. Informants at the policy-making level consistently emphasized that sustainability principles have become an official policy orientation and are recognized as strategic goals within the city's waste management agenda.

However, empirical evidence indicates a substantial gap between these policy standards and their implementation at the operational level. Field observations demonstrate that waste sorting at the household level is not systematically enforced or facilitated. Waste collection services largely treat waste as a homogeneous stream with limited differentiation between organic and inorganic waste. As a result, the majority of collected waste continues to be transported directly to landfill sites without prior processing or recovery.

Interviews with sub-district and village officials further revealed that recycling initiatives particularly waste banks, operate in a fragmented and inconsistent manner. While some communities actively manage waste banks and engage in recycling activities, others lack operational support, technical guidance and incentives. This situation reflects the absence of standardized implementation mechanisms and performance indicators across administrative units.

Moreover, community participation which is a core policy standard in sustainable waste management remains uneven. Although awareness campaigns and community-based programs have been conducted, these efforts are not sustained or integrated into routine public service delivery. Consequently, public involvement in waste reduction and recycling activities tends to be sporadic and dependent on local initiatives rather than institutionalized policy enforcement.

The continued reliance on landfill disposal further illustrates the misalignment between policy objectives and implementation practices. Despite policy commitments to reduce landfill dependency, limited investment in waste processing

infrastructure and recycling facilities constrains the city's capacity to operationalize sustainability principles effectively. These findings are

summarized in Table 4.1 which illustrates the level of alignment between key policy objectives and actual implementation practices.

Table 4.1 Alignment between Policy Objectives and Implementation Practices

Policy Objectives (Regulatory and Planning Documents)	Implementation Practices Observed	Level of Alignment
Waste reduction at source	Limited household waste separation	Low
Application of 3R principles	Waste banks operate inconsistently	Moderate
Community participation	Sporadic and project-based involvement	Moderate
Reduction of landfill dependency	Continued reliance on landfill disposal	Low

Overall, the findings indicate that policy standards related to sustainable waste management in Palembang City are normatively strong but operationally weak. The absence of clear operational guidelines, standardized implementation procedures and performance monitoring mechanisms contributes to inconsistent policy execution. This misalignment highlights the need for stronger institutionalization of sustainability principles within routine waste management practices and reinforces the relevance of policy implementation theory in explaining the observed gaps.

4.3 Institutional Capacity and Resource Availability

Institutional capacity and resource availability constitute fundamental determinants of policy implementation effectiveness. The findings indicate that limitations in institutional capacity significantly constrain the implementation of sustainable waste management policies in Palembang City. Although the Environmental Agency functions as the lead implementing institution, its capacity to operationalize sustainability-oriented policies remains limited due to structural, financial and human resource constraints.

From a human resource perspective, interviews with Environmental Agency officials reveal that the number of personnel specifically trained in sustainable waste management is insufficient relative to the scale and complexity of the city's waste management challenges. Most staff are primarily assigned to operational tasks such as waste collection and transportation with limited opportunities for capacity building related to waste reduction, recycling systems or community engagement. This condition reduces the agency's ability to shift from a disposal-oriented approach to a sustainability-driven

management model.

Financial resources also emerged as a major constraint. Document analysis of budget allocation indicates that the majority of waste management funding is allocated to routine operational expenditures including fuel, vehicle maintenance and labor costs. In contrast, investment in waste processing infrastructure, recycling facilities and community empowerment programs remains limited. Informants from BAPPEDA confirmed that budget prioritization tends to favor visible and short-term outputs rather than long-term sustainability outcomes, thereby restricting the implementation of innovative waste management strategies.

Infrastructure availability further reflects institutional capacity limitations. Field observations show that waste sorting facilities, composting units and recycling centers are insufficient in number and unevenly distributed across the city. This infrastructure gap undermines policy efforts to promote waste separation at the source as communities lack access to adequate facilities to support sustainable practices. Consequently, waste management operations continue to rely heavily on landfill disposal.

In terms of organizational characteristics, coordination among implementing agencies remains fragmented. While the Environmental Agency is formally responsible for waste management, effective implementation requires collaboration with sub-district and village administrations, planning agencies and community organizations. However, findings indicate that institutional roles and responsibilities are not clearly delineated, resulting in overlapping functions and coordination gaps. This fragmentation weakens policy coherence and slows decision-making processes.

The findings related to institutional capacity and resource availability are summarized in Table 4.2.

Table 4.2 Institutional Capacity and Resource Availability in Policy Implementation

Aspect	Empirical Findings	Implications for Implementation
Human resources	Limited number of trained personnel	Low capacity for sustainability-oriented innovation
Budget allocation	Focused on operational costs	Minimal investment in waste reduction and recycling
Infrastructure	Inadequate sorting and recycling facilities	Continued reliance on landfill disposal
Institutional coordination	Fragmented roles among agencies	Inefficient and inconsistent policy execution

Overall, the findings indicate that institutional capacity in Palembang City remains oriented toward conventional waste management practices rather than sustainable waste governance. The limited availability of resources and weak organizational coordination hinder the effective translation of policy objectives into practice. These constraints reinforce the argument that strengthening institutional capacity and reallocating resources toward sustainability-oriented initiatives are essential for improving policy implementation performance.

This analysis directly addresses the second research objective and provides a critical foundation for examining inter-organizational coordination and implementer disposition in the subsequent subsections.

4.4 Inter-Organizational Communication and Coordination

Inter-organizational communication and coordination play a crucial role in determining the effectiveness of sustainable waste management policy implementation. The findings indicate that communication and coordination among implementing actors in Palembang City remain weak, fragmented and predominantly hierarchical. Although formal coordination mechanisms exist, they are not consistently operationalized in daily implementation practices.

Interviews with officials from the Environmental Agency, sub-district offices and community organizations reveal that communication related to waste management policy is largely administrative and procedural rather than strategic. Policy directives are typically transmitted in a top-down manner through official letters, coordination meetings or technical instructions. However, these communication channels are not supported by continuous feedback mechanisms, resulting in limited opportunities for bottom-up input from implementing units and community actors.

At the operational level, coordination among government agencies involved in waste management is often informal and project-based. The Environmental Agency acts as the central implementing authority while other agencies such as BAPPEDA and sub-district administrations play supporting roles that are not clearly institutionalized. This condition leads to overlapping responsibilities, delayed decision-making and inconsistent implementation across different administrative areas.

Furthermore, coordination between government institutions and non-government stakeholders

including community organizations, waste banks and informal waste collectors remains limited. Although community-based initiatives are acknowledged as important components of sustainable waste management they are not fully integrated into the formal policy implementation structure. As a result, these initiatives operate independently and rely heavily on local leadership and voluntary participation rather than being systematically supported by institutional mechanisms.

Field observations confirm that the absence of integrated coordination mechanisms undermines policy effectiveness. For example, waste banks often lack clear communication with local government agencies regarding waste collection schedules, incentive schemes and monitoring systems. This disconnect reduces the sustainability and scalability of community-based waste management programs.

From a policy implementation perspective, the findings suggest that communication and coordination in Palembang City are still oriented toward command-and-control administration rather than collaborative governance. The lack of horizontal coordination among agencies and stakeholders weakens collective ownership of policy objectives and limits innovation in sustainable waste management practices. To illustrate the coordination pattern observed in this study, the inter-organizational communication flow is presented in the revised diagram below.

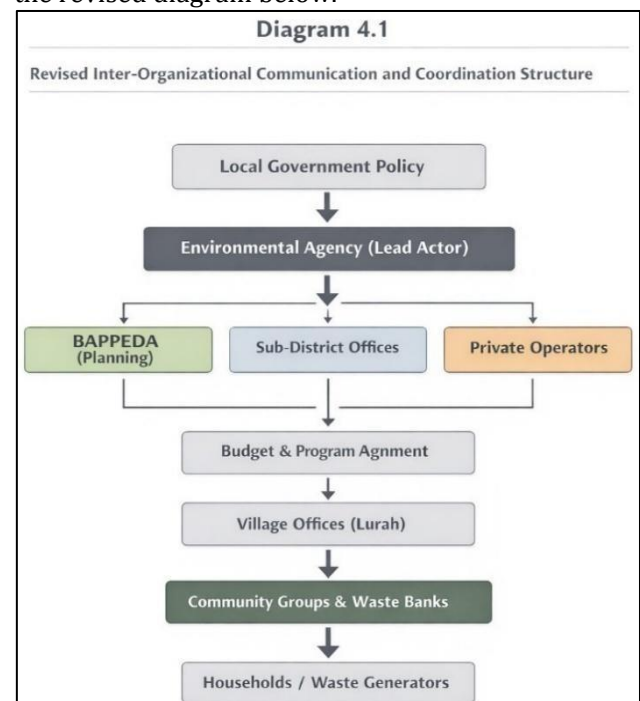


Diagram 4.1 Revised Inter-Organizational Communication and Coordination Structure

Overall, the findings demonstrate that weak inter-organizational communication and coordination significantly hinder the effective implementation of sustainable waste management policies in Palembang City. Although institutional actors acknowledge the importance of collaboration, existing governance arrangements do not yet support an integrated and participatory implementation model. Strengthening communication channels, clarifying institutional roles and fostering collaborative governance mechanisms are therefore essential to improve policy implementation performance. This analysis directly addresses the third research objective and provides a logical transition to the subsequent discussion on implementer disposition and commitment.

4.5 Disposition and Commitment of Policy Implementers

The disposition of policy implementers defined as their attitudes, understanding, commitment and willingness to execute policy objectives plays a decisive role in shaping policy implementation outcomes. The findings reveal that although policy implementers in Palembang City generally demonstrate a positive attitude toward sustainable waste management, their commitment to fully operationalize sustainability principles remains moderate and uneven across institutional levels.

Interviews with officials from the Environmental Agency and sub-district administrations indicate that most implementers possess a basic understanding of sustainable waste management concepts and acknowledge the importance of waste reduction and recycling. This normative acceptance reflects the successful diffusion of sustainability discourse

within formal institutional settings. However, this understanding has not consistently translated into proactive and innovative implementation practices.

At the operational level, implementers tend to prioritize routine administrative and technical tasks over sustainability-oriented initiatives. Informants emphasized that performance evaluations and institutional incentives are largely based on operational efficiency such as waste collection coverage and disposal volume rather than sustainability outcomes. As a result, implementers have limited motivation to innovate or invest additional effort in waste reduction and community engagement programs which are perceived as time-consuming and resource-intensive.

Furthermore, the findings suggest that implementer disposition is influenced by organizational culture and structural constraints. In institutions characterized by rigid bureaucratic procedures, implementers often exhibit compliance-oriented behaviour rather than adaptive or problem-solving approaches. This condition limits responsiveness to community initiatives and reduces the flexibility needed to support locally driven waste management innovations.

Differences in disposition were also observed across administrative levels. While senior officials generally expressed strong policy support at the conceptual level, frontline implementers displayed varying degrees of commitment, largely depending on workload, resource availability and leadership support. This discrepancy contributes to inconsistent implementation across districts and neighborhoods. The findings related to implementer disposition and commitment are summarized in Table 4.3.

Table 4.3 Disposition and Commitment of Policy Implementers

Indicator	Empirical Findings	Implications for Policy Implementation
Understanding of policy objectives	Generally high among officials	Strong normative support for sustainability
Commitment to sustainability practices	Moderate and uneven	Partial implementation of policy objectives
Innovation and initiative	Low	Limited development of alternative waste management practices
Responsiveness to community initiatives	Inconsistent	Weak integration of community-based programs
Incentive and evaluation system	Output-oriented	Sustainability outcomes are underprioritized

Overall, the findings indicate that implementer disposition in Palembang City supports sustainable waste management in principle but remains constrained in practice. The absence of incentive structures aligned with sustainability objectives and the dominance of routine administrative priorities limit implementers' willingness and ability to translate policy goals into concrete actions. Strengthening

implementer commitment through capacity building, performance-based incentives and organizational reform is therefore essential to enhance policy implementation effectiveness. This analysis directly addresses the fourth research objective and provides a critical transition to the subsequent discussion of social, economic and political conditions influencing policy implementation.

4.6 Social, Economic and Political Conditions Affecting Policy Implementation

Social, economic and political conditions constitute the external environment that significantly shapes the implementation of sustainable waste management policies. The findings indicate that these contextual factors play a decisive role in either enabling or constraining policy implementation in Palembang City. Although policy frameworks and institutional structures exist, their effectiveness is strongly influenced by prevailing societal behavior, economic incentives and political priorities.

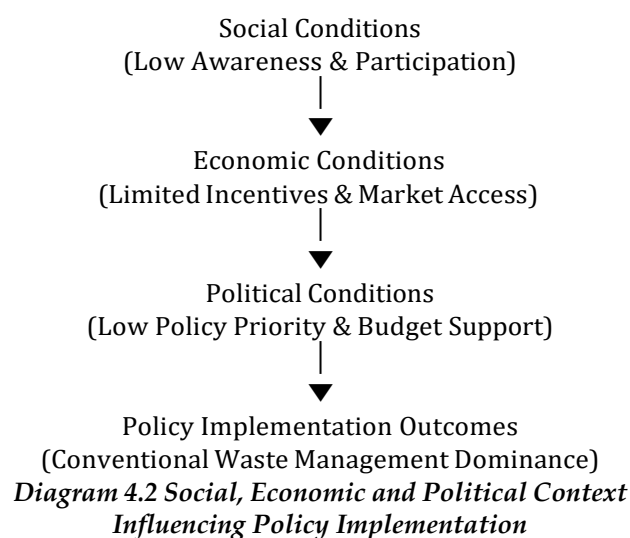
From a social perspective, public awareness and behaviour related to sustainable waste management remain relatively low. Interviews with community leaders and waste bank managers reveal that many residents perceive waste management as solely a government responsibility. Waste separation at the household level is not yet a common practice, largely due to limited environmental awareness and inadequate socialization programs. Field observations further confirm that mixed waste disposal remains dominant in most residential areas. This condition undermines policy efforts to promote waste reduction and recycling as community participation is a core prerequisite for sustainable waste management.

Economic conditions also significantly affect policy implementation. Informants highlighted that for many households, particularly in lower-income communities, participation in waste separation and recycling is driven primarily by economic incentives rather than environmental considerations. Waste bank programs that offer tangible financial benefits tend to attract higher participation rates, however these programs remain limited in scale and inconsistent in operation. The absence of stable market mechanisms for recycled materials and insufficient financial incentives reduce the economic attractiveness of sustainable waste management practices for both communities and implementers.

Politically, sustainable waste management has not yet been positioned as a top development priority within local government agendas. Although environmental issues are formally acknowledged in policy documents, they often compete with other development priorities such as infrastructure, economic growth and social welfare programs. Interviews with policy makers indicate that waste management initiatives are more likely to receive political support when they yield visible and short-term outcomes. Consequently, long-term sustainability-oriented investments such as recycling infrastructure and behavioural change programs,

receive limited political attention and budgetary support.

The interaction of these social, economic and political conditions creates a complex implementation environment. Low public awareness reduces community participation, limited economic incentives weaken behavioural change and insufficient political prioritization constrains resource allocation. Together, these factors reinforce a cycle of conventional waste management practices that prioritize disposal over sustainability. To illustrate the interrelationship among these contextual factors, the following conceptual diagram summarizes their influence on policy implementation.



Overall, the findings demonstrate that the effectiveness of sustainable waste management policy implementation in Palembang City cannot be separated from its broader social, economic and political context. While institutional efforts are necessary, they are insufficient without parallel strategies to enhance public awareness, strengthen economic incentives and elevate political commitment to sustainability goals. Addressing these contextual factors is therefore essential to achieving more effective and sustainable policy implementation. This analysis directly addresses the fifth research objective and provides a comprehensive foundation for synthesizing supporting and inhibiting factors in the subsequent subsection.

4.7 Supporting and Inhibiting Factors in Sustainable Waste Management Policy Implementation

This subsection synthesizes the empirical findings from the previous analyses to identify the key

supporting and inhibiting factors influencing the implementation of sustainable waste management policies in Palembang City. Rather than viewing these factors in isolation, the findings reveal that policy implementation outcomes are shaped by the interaction between institutional capacity, implementer disposition, inter-organizational coordination and the broader social, economic and political context.

4.7.1 Supporting Factors

The findings indicate several factors that support the implementation of sustainable waste management policies. First, the existence of a formal regulatory framework provides a strong normative foundation for policy implementation. National and local regulations clearly mandate waste reduction, recycling and community participation, offering legal legitimacy and policy direction to implementing agencies. Second, the presence of community-based waste management initiatives, particularly waste banks serves as an important enabling factor. In areas where waste banks are actively supported by local leaders and community members, partial implementation of sustainable waste practices can be observed. These initiatives demonstrate the potential effectiveness of bottom-up approaches in complementing government-led programs.

Third, positive attitudes among policy implementers toward sustainability constitute an important supporting factor. Although implementation remains constrained, most officials express awareness of environmental issues and acknowledge the importance of sustainable waste management. This normative acceptance provides a basis for future capacity-building and institutional

reform efforts.

4.7.2 Inhibiting Factors

Despite these supporting conditions, the findings reveal that inhibiting factors are more dominant and structurally embedded within the implementation process. Limited budget allocation and human resource capacity significantly restrict the ability of implementing agencies to move beyond conventional waste management practices. The prioritization of operational expenditures over sustainability-oriented investments perpetuates dependence on landfill disposal.

Weak inter-organizational coordination further undermines policy implementation. Fragmented communication among government agencies and between government and community actors results in inconsistent program execution and limits the scalability of successful initiatives. Additionally, the absence of integrated monitoring and evaluation mechanisms weakens accountability and learning processes.

Low public awareness and limited economic incentives constitute major social and economic barriers. Without sufficient motivation or support, community participation in waste reduction and recycling remains sporadic. Politically, the lack of strong leadership and prioritization of sustainable waste management constrains long-term planning and resource mobilization.

4.7.3 Summary of Supporting and Inhibiting Factors

The supporting and inhibiting factors identified in this study are summarized in Table 4.4 which links each factor to its implications for policy implementation performance.

Table 4.4 Supporting and Inhibiting Factors in Policy Implementation

Category	Factors Identified	Empirical Evidence	Implications for Policy Implementation
Supporting Factors	Clear regulatory framework	National and local waste management laws	Provides legal legitimacy and policy direction
	Community-based initiatives (waste banks)	Active waste banks in selected areas	Enables partial implementation of sustainable practices
	Positive implementer attitudes	Interviews with government officials	Potential foundation for institutional strengthening
Inhibiting Factors	Limited budget and human resources	Budget documents and interviews	Constrains infrastructure and program development
	Weak inter-organizational coordination	Fragmented communication patterns	Leads to inconsistent and inefficient implementation
	Low public awareness	Community interviews and observations	Reduces participation in waste reduction and recycling
	Limited economic incentives	Waste bank sustainability challenges	Weakens motivation for behavioral change
	Low political prioritization	Policy agenda and budget allocation	Limits long-term sustainability investments

Overall, the findings indicate that while supportive elements exist, the implementation of sustainable waste management policies in Palembang City is predominantly constrained by structural and contextual inhibiting factors. These inhibiting factors outweigh supporting conditions, resulting in partial and uneven policy implementation. Addressing these challenges requires an integrated approach that strengthens institutional capacity, enhances coordination, incentivizes community participation and elevates political commitment to sustainability objectives. This synthesis directly addresses the final research objective and provides a critical transition to the Discussion and Conclusion sections where theoretical implications and policy recommendations can be elaborated.

4.8 Discussion: Synthesis of Findings in Relation to Theory and Previous Studies

This subsection discusses the research findings by synthesizing empirical evidence with policy implementation theory and relevant previous studies. The discussion aims to explain why sustainable waste management policy implementation in Palembang City has not fully achieved its intended objectives, despite the existence of a comprehensive regulatory framework and formal institutional arrangements.

4.8.1 Policy Practice Gap in Sustainable Waste Management Implementation

The findings reveal a persistent gap between policy standards and implementation practices as discussed in Subsections 4.1 and 4.2. Although sustainable waste management objectives are clearly articulated in regulatory and planning documents, their operationalization remains limited. This finding aligns with the arguments of Pressman and Wildavsky (1984) who emphasize that policy failure often occurs during implementation rather than formulation. The Palembang case demonstrates that formal policy commitments to sustainability are insufficient without effective implementation mechanisms.

Previous studies on waste management policy in developing countries similarly report that sustainability-oriented policies often remain symbolic or normative (Guerrero et al., 2013). In Indonesia, Damanhuri and Padmi (2012) found that local governments tend to prioritize waste collection and disposal due to immediate operational demands, reinforcing a conventional waste management paradigm. The present study confirms these findings by showing that landfill dependency remains dominant despite sustainability-oriented policy goals.

4.8.2 Institutional Capacity and Resource Constraints

The analysis of institutional capacity (Sub 4.3) demonstrates that limited human resources, constrained budgets and inadequate infrastructure significantly hinder policy implementation. According to Van Meter and Van Horn (1975), resource availability is a critical determinant of implementation performance. The findings from Palembang City strongly support this theoretical proposition, as insufficient investment in recycling infrastructure and capacity building restricts the implementation of waste reduction and recycling programs.

This finding is consistent with Edwards III's (1980) model which identifies resources as one of the four key variables influencing policy implementation. Empirical studies by Purwanto et al. (2019) and Zurbrügg et al. (2012) also highlight that limited institutional capacity and budget prioritization toward short-term operational needs undermine sustainable waste management initiatives. Therefore, the Palembang case reinforces existing empirical evidence that sustainability-oriented policies require long-term investment and institutional strengthening.

4.8.3 Fragmented Inter-Organizational Coordination

Subsection 4.4 highlights weak inter-organizational communication and coordination as a major implementation barrier. The findings indicate that coordination among government agencies and between government and community actors remains fragmented and hierarchical. This condition reflects the characteristics of a top-down implementation model which according to Mazmanian and Sabatier (1983) is less effective for complex policies requiring multi-actor collaboration.

Previous studies emphasize that integrated and collaborative governance is essential for sustainable waste management (Guerrero et al., 2013; Zurbrügg et al., 2012). The lack of horizontal coordination and stakeholder integration in Palembang City limits policy learning, innovation and scalability. Thus, the findings corroborate theoretical and empirical arguments that effective policy implementation requires strong inter-organizational networks rather than isolated institutional actions.

4.8.4 Disposition of Implementers and Organizational Culture

The analysis of implementer disposition (Sub 4.5) reveals that while policy implementers generally support sustainability goals in principle, their commitment to operationalizing these goals remains constrained by bureaucratic routines and incentive

structures. Van Meter and Van Horn (1975) emphasize that implementer attitudes and commitment directly affect policy performance. The Palembang case illustrates that positive attitudes alone are insufficient when not supported by performance evaluation systems aligned with sustainability outcomes.

This finding is consistent with Edwards III (1980) who argues that implementer disposition must be accompanied by supportive organizational structures. Similar conclusions were drawn by Grindle (1997) who noted that bureaucratic behaviour in developing countries often prioritizes compliance over innovation. Therefore, the present study reinforces the theoretical proposition that organizational culture and incentive systems play a decisive role in shaping implementer behaviour.

4.8.5 Influence of Social, Economic and Political Context

The findings discussed in Sub 4.6 demonstrate that social, economic and political conditions significantly influence policy implementation outcomes. Low public awareness, limited economic incentives and insufficient political prioritization constrain community participation and long-term investment in sustainable waste management. Van Meter and Van Horn (1975) explicitly identify social, economic and political conditions as external variables affecting implementation and the Palembang case provides empirical support for this dimension of the model.

Behavioural studies based on Ajzen's Theory of Planned Behavior (1991) suggest that individual participation in waste management is influenced by attitudes, norms and perceived control. The limited participation observed in Palembang City aligns with findings by Miafodzyeva and Brandt (2013) who emphasize the importance of incentives and social norms in shaping recycling behavior. Politically, the findings echo those of Purwanto et al. (2019) who argue that environmental policies often receive lower priority compared to other development agendas at the local level.

4.8.6 Integrated Explanation of Policy Implementation Performance

Synthesizing all findings, this study demonstrates that the implementation of sustainable waste management policies in Palembang City is shaped by the interaction of multiple factors rather than a single determinant. The dominance of inhibiting factors such as: limited resources, weak coordination, moderate implementer commitment and

unfavorable contextual conditions explains why policy outcomes remain suboptimal.

This integrated explanation validates the relevance of the Van Meter and Van Horn implementation model for analyzing complex environmental policies in urban governance contexts. At the same time, the findings extend previous studies by highlighting how governance fragmentation and incentive misalignment reinforce conventional waste management practices even in the presence of sustainability-oriented policies.

4.8.7 Contribution to Theory and Practice

The discussion underscores two key contributions of this study. Theoretically, it enriches policy implementation literature by providing empirical evidence from a local Indonesian context, demonstrating the continued relevance of classical implementation models in contemporary environmental governance. Practically, the findings offer insights for policymakers by emphasizing the need to strengthen institutional capacity, foster collaborative governance, align incentives with sustainability goals and elevate political commitment to sustainable waste management.

5. CONCLUSIONS

This study concludes that the implementation of sustainable waste management policies in Palembang City has not yet been fully effective in achieving the intended sustainability objectives. Although policy standards and goals related to waste reduction, recycling and community participation are clearly defined, their implementation remains limited and continues to rely predominantly on conventional waste collection and landfill disposal practices.

The findings indicate that policy implementation performance is primarily constrained by limited institutional capacity, including insufficient human resources, budget allocation and waste processing infrastructure. In addition, weak inter-organizational coordination among implementing agencies reduces policy coherence and hinders integrated action required for sustainable waste management.

Furthermore, the commitment of policy implementers to sustainability objectives is not consistently supported by organizational incentive systems and performance indicators, resulting in partial and procedural implementation. Social, economic and political conditions particularly low public participation, limited economic incentives and insufficient political prioritization also significantly affect policy outcomes.

Overall, the study concludes that the gap between policy objectives and implementation outcomes in Palembang City is driven by the interaction of institutional, organizational and contextual factors. These findings directly address the research objectives by demonstrating how policy standards, institutional capacity, implementer behaviour and external conditions collectively shape the effectiveness of sustainable waste management policy implementation.

6. SUGGESTIONS/ RECOMMENDATIONS

Based on the research findings and conclusions, several strategic recommendations are proposed to improve the implementation of sustainable waste management policies in Palembang City.

6.1 Strengthening Policy Operationalization

Local government should translate sustainability-oriented policy objectives into clear operational guidelines, performance indicators and measurable targets. Waste reduction, recycling rates and community participation should be explicitly incorporated into implementation plans and evaluated regularly to reduce the gap between policy formulation and practice.

6.2 Enhancing Institutional Capacity and Resource Allocation

It is recommended that the municipal government increase investment in human resource development, waste processing infrastructure and technological innovation. Budget allocation should gradually shift from a sole focus on waste collection and disposal toward upstream waste reduction and recycling programs to ensure long-term sustainability.

REFERENCES

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Andrews, R., Boyne, G. A., & Walker, R. M. (2011). The impact of management on administrative and service outcomes. *Public Administration Review*, 71(3), 361–371. <https://doi.org/10.1111/j.1540-6210.2011.02361.x>
- Bardach, E. (2012). *A practical guide for policy analysis* (4th ed.). Thousand Oaks, CA: Sage Publications.
- Damanhuri, E., & Padmi, T. (2012). *Pengelolaan sampah*. Bandung: ITB Press.
- Edwards, G. C. III. (1980). *Implementing public policy*. Washington, DC: Congressional Quarterly Press.
- Grindle, M. S. (1997). *Getting good government: Capacity building in the public sector of developing countries*. Cambridge, MA: Harvard Institute for International Development.
- Guerrero, L. A., Maas, G., & Hogland, W. (2013). Solid waste management challenges for cities in developing countries. *Waste Management*, 33(1), 220–232. <https://doi.org/10.1016/j.wasman.2012.09.008>
- Howlett, M., Ramesh, M., & Perl, A. (2009). *Studying public policy: Policy cycles and policy subsystems* (3rd ed.). Oxford: Oxford University Press.
- Mazmanian, D. A., & Sabatier, P. A. (1983). *Implementation and public policy*. Glenview, IL: Scott, Foresman and Company.

6.3 Improving Inter-Organizational Coordination

Effective coordination mechanisms among government agencies, community organizations and private sector actors need to be strengthened through formal collaboration platforms and integrated planning systems. Clear division of roles and shared responsibilities are essential to support collaborative governance in waste management.

6.4 Aligning Incentive Systems with Sustainability Goals

Performance evaluation and incentive systems for policy implementers should be aligned with sustainability outcomes rather than procedural outputs. Providing institutional incentives for innovation and cross-sector collaboration can enhance implementer commitment and policy effectiveness.

6.5 Increasing Community Participation and Awareness

Public awareness programs should be intensified to promote waste segregation, recycling and reduction at the household level. Economic and social incentives such as reward-based programs and community-based waste initiatives can be introduced to encourage active public participation.

6.6 Strengthening Political Commitment and Policy Prioritization

Sustainable waste management should be elevated as a strategic development priority within local political agendas. Strong political leadership and long-term commitment are required to ensure policy continuity, adequate funding and institutional support.

- Miafodzyeva, S., & Brandt, N. (2013). Recycling behaviour among householders: Synthesizing determinants via a meta-analysis. *Waste and Biomass Valorization*, 4(2), 221–235. <https://doi.org/10.1007/s12649-012-9144-4>
- Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). Thousand Oaks, CA: Sage Publications.
- OECD. (2016). *Extended producer responsibility: Updated guidance for efficient waste management*. Paris: OECD Publishing.
- Pressman, J. L., & Wildavsky, A. (1984). *Implementation: How great expectations in Washington are dashed in Oakland* (3rd ed.). Berkeley, CA: University of California Press.
- Purwanto, E. A., Sulistyastuti, D. R., & Haryanto. (2019). *Implementasi kebijakan publik: Konsep dan aplikasinya di Indonesia*. Yogyakarta: Gava Media.
- Saldaña, J. (2016). *The coding manual for qualitative researchers* (3rd ed.). London: Sage Publications.
- UNEP. (2015). *Global waste management outlook*. Nairobi: United Nations Environment Programme.
- Van Meter, D. S., & Van Horn, C. E. (1975). The policy implementation process: A conceptual framework. *Administration & Society*, 6(4), 445–488. <https://doi.org/10.1177/009539977500600404>
- World Bank. (2018). *What a waste 2.0: A global snapshot of solid waste management to 2050*. Washington, DC: World Bank.
- Zurbrügg, C., Gfrerer, M., Ashadi, H., Brenner, W., & Küper, D. (2012). Determinants of sustainability in solid waste management: The Gianyar Waste Recovery Project in Indonesia. *Waste Management*, 32(11), 2126–2133. <https://doi.org/10.1016/j.wasman.2012.01.011>