THE EFFECT OF WASTE MANAGEMENT POLICY IMPLEMENTATION ON THE EFFECTIVENESS OF WASTE REDUCTION THROUGH 3R *TPS* IN SUKABUMI CITY

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ABSTRACT

This study aims to determine the effect of waste management policy implementation on the effectiveness of waste management in Sukabumi City. This research method uses quantitative with associative approach. The population of this study was the people of Sukabumi City. The sampling technique in this study used probability sampling technique with cluster random sampling so that each sub-district in Sukabumi City could be represented with a total sample of 100 people. Data were collected using observation, documentation, questionnaires and interviews. Simple linear regression analysis test was conducted for data analysis in this study. The findings of this study are based on the results of hypothesis testing, the variable of waste management policy implementation affects the effectiveness of waste reduction variable by 0.468 or 46.78%. Based on the results of the study, it is known that the correlation coefficient test obtained a positive correlation value of 0.684 which shows the closeness of the strong category. This means that the effect of management policy implementation on the effectiveness of waste reduction is 46.78%, while 53.22% is influenced by other factors not examined in this study.

Keywords: *Policy Implementation, Effectiveness, Waste Management, TPS* 3R, *Sukabumi City*

A. INTRODUCTION

The waste problem in Indonesia is a serious problem and must be addressed immediately. The *Undang-Undang Nomor 18 Tahun 2008* concerning Waste Management states that waste is a solid object produced from the residue of daily human activities. Based on SNI 19-2454-2002, waste is an organic and inorganic material that is no longer useful and must be managed so as not to cause harm to

humans and the environment. This waste problem arises because of the increasing volume of waste that continues to be generated by human activities, the volume of waste will continue to grow along with the increasing rate of population growth and consumption levels in an area, if not handled seriously, the waste will accumulate in the final processing site *(TPA).*

Based on data from the National Waste Management Information System *(SIPSN)* of the Ministry of Environment and Forestry *(KLHK),* Indonesia is recorded to produce 35,953,862 tons of waste/year or equivalent to 98,503 tons/day throughout 2022. The increasing volume of waste will have an impact on the decline in the quality of the community's environment. A concrete solution is needed to overcome the waste problem in Indonesia.

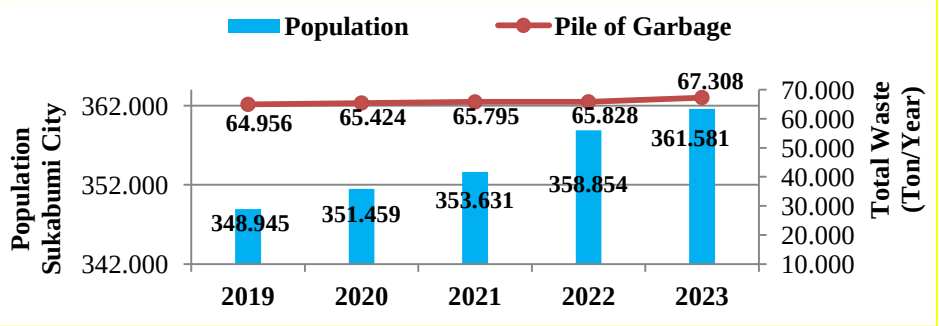
Based on the *Undang-Undang Nomor 23 Tahun 2014* concerning Regional Government, waste issues are included in concurrent government affairs whose authority is devolved to the regions. This is one form of implementation of regional autonomy. In this case, local governments have the authority to regulate waste problems in their respective regions that are still guided by higher laws and regulations in the hope that the efficiency and effectiveness of urban waste management will increase.

Waste management in Sukabumi City is regulated by the *Peraturan Daerah Kota Sukabumi Nomor 17 Tahun 2011* on Waste Management, which was revised by the *Peraturan daerah Kota Sukabumi Nomor 2 Tahun 2021*. In the *Peraturan daerah Kota Sukabumi Nomor 2 Tahun 2021*, it is explained that waste management policies carried out by the Sukabumi City government must have a comprehensive scope and be implemented in an integrated manner and involve community participation.

Government policies related to waste management are expected to produce outputs, namely well-managed waste. In article 1 of the *Peraturan daerah Kota Sukabumi Nomor 2 Tahun 2021* explains that the two main activities in waste management are reduction and handling. Waste handling includes waste segregation, collection, transportation, processing, and final processing. Waste reduction includes reducing the amount of waste disposed of, recycling, and reusing waste carried out by the government and community groups. The provision of 3R-based Waste Management Sites *(*Reduce, Reuse, Recycle) is one way to reduce waste in Indonesia. *TPS* 3R is very important in the waste management system because it helps reduce the amount of waste and improve the quality of waste that will be processed in the landfill.

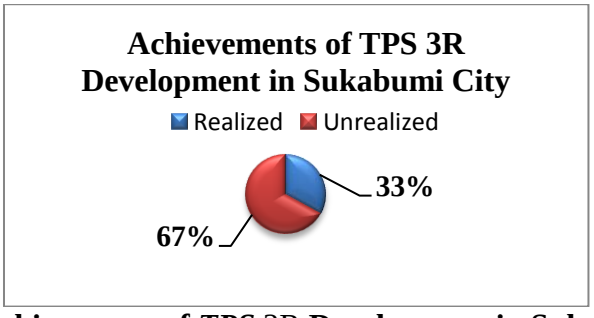
Based on initial observations, several phenomena were found related to the ineffectiveness of waste management in Sukabumi City, including the objective of waste management policies not in accordance with the targeted output, namely the reduction of the amount of waste in Sukabumi City. Based on the graph below, the amount of waste in Sukabumi City continues to increase. Sukabumi City with a population of 361,581 people generates daily waste generation of 181 tons/day. Waste generation in Sukabumi City in 2022 was 65,828 tons/year and increased by 2% in 2023 to 67,308 tons/year. This should be a concern for the government that the policies implemented have not been able to produce the appropriate output, namely a reduction in the amount of waste in Sukabumi City.

This can be seen in the following graph:



Graph 1 Population and Waste Generation in Sukabumi City 2019-2023
Source: Ministry of Environment and Sukabumi City Dukcapil Office, 2023

Waste management in Sukabumi City also has problems related to the lack of waste management facilities and infrastructure. Efforts to reduce waste in Sukabumi City are carried out by building *TPS* 3R waste banks, which are waste management sites with the concept of reduce, reuse, and recycle. In the *Peraturan Daerah Nomor 14 Tahun 2019* Concerning Household Waste Management Policies, Strategies, and Categories of Household Waste *(Jakstrada),* Sukabumi City targets to build 33 *TPS* 3R facilities spread across 33 sub-districts with each sub-district having at least 1 *TPS* 3R as a means of reducing waste. However, until now not all sub-districts in Sukabumi City have *TPS* 3R facilities. In addition, the limited remaining landfill land area of only ± 1.2 Ha and the remaining useful life of only about one year is also a problem. (*DIKPLHD* Sukabumi City, 2020). Therefore, the Sukabumi City government needs to find alternatives to manage waste so that the amount of waste entering the landfill can be reduced. One way is to improve the function of *TPS* 3R in the Sukabumi City area.



Graph 2 Achievement of *TPS* 3R Development in Sukabumi City
Source: Sukabumi City Environment Agency, 2023

Based on the graph above, Sukabumi City currently only has 11 (eleven) or 33% of sub-districts that have *TPS* 3R facilities with a total of 13 *TPS* 3R. Of the 13 *TPS* 3R, 11 (eleven) are still operating and 2 (two) are not operating, namely *TPS* 3R Babakan and *TPS* 3R Cisarua, so there are still 22 (twenty-two) or 67% of sub-districts that do not have *TPS* 3R.

Graph 3 Number of Waste Recycling in Sukabumi City 2019-2023
Source: Sukabumi City Environment Agency, 2023

On the other hand, graph 3 shows the amount of waste recycling in Sukabumi City in tons per year for the period 2019-2023. In 2019, the amount of recycled waste was recorded at 659.02 tons. This figure continued to increase significantly in the following years, reaching 5,210.65 tons in 2020, 3,258.07 tons in 2021, and 14,003.53 tons in 2022. But in 2023, the amount decreased sharply to 11,285.21 tons. This decrease is quite large, about 2,718.32 tons or about 19.4% lower than the previous year.

Based on the description of the problem phenomenon above, the Van Meter and Van Horn model (1975:445-488) is being considered by researchers to investigate the issues stemming from inadequate policy execution.

This model, selected for its six relevant dimensions to waste management in Sukabumi City, reveals at least five dimensions evident in the observed phenomenon.

The failure to decrease waste, which actually rose by 2% from 2022 to 2023, reflects the policy goal and target dimension. The resource dimension is apparent through limited landfill space and the scarcity of 3R *TPS* facilities in most sub-districts.

The behavior of implementing agents correlates with the inactivity of several 3R *TPS*. Social, economic, and political factors are mirrored in the growing population and daily waste output. Additionally, the implementers' attitudes are reflected in the notable decrease in waste recycling in 2023. Although the dimension of communication between organizations and implementation activities is not overtly evident, it likely influences the existing challenges. Through the Van Meter and Van Horn model (1975:445-488), the researcher thoroughly assess how these six dimensions impact waste management policy implementation in Sukabumi City, hey emphasize the factors that hinder policies from effectively enhancing waste management and reduction through 3R *TPS* in Sukabumi City. Pinpointing factors contributing to policy inefficacy in waste reduction and management enhancement based on *TPS* 3R in Sukabumi City.

B. LITERATURE REVIEW

Public Administration Science

Leonard D. White in Inu Kencana Syafiie said, "Administration is a process commonly carried out by business groups, both government and private, both civilian and military, both large and small." (Harbani Pasolong, Public Administration Theory, 2019: 3). Administration is a public administration process with the cooperative efforts of one or more people in various groups, whether government, private, business, or civil society, to achieve predetermined goals. This administration exists and is used in various fields that require administrative processes with the support of existing infrastructure to achieve goals.

Public administration according to Chandler & Plano quoted by Harbani Pasolong in his book Public Administration Theory (2019: 8) explains that: "Public administration is an art and science aimed at managing public affairs and carrying out various predetermined tasks. Public administration as a scientific discipline aims to solve public problems through improvements, especially in the fields of organization, human resources, and finance."

David H. Rosenbloom quoted by Harbani Pasolong in his book Public Administration Theory (2019: 8) explains that: "Public administration is the use of theories and processes of management, politics and law to fulfill the wishes of the government in the legislative, executive fields, in the context of regulatory functions and services to society as a whole or in part." Public administration is a process carried out by the government in the legislative and executive fields with the aim of overcoming public problems in providing services for the public interest. The government in overcoming public problems can start from making policy formulation, implementation, monitoring to evaluation aimed at the general public.

Public Policy

In general, policy is often interpreted by the public as a regulation. A regulation is certainly made with the aim of solving a problem, so that the goals set before the regulation can be achieved. A regulation certainly involves actors who have the authority to make and implement the regulation. This view is in line with Anderson's (2003: 21) statement, he states that public policy is "a series of actions or inactions that have certain goals and objectives carried out by an actor or group of actors in dealing with a problem or a matter of concern." Public policy is the taking of actions that have certain goals and objectives carried out by an actor or group of actors in addressing a problem or a matter of concern. This means that public policy is not random but has goals and objectives; public policy is carried out by public authorities; public policy consists of a pattern of action within a certain period of time; public policy is the result of a demand, is a series of directed government actions in response to pressure regarding a problem. Public policy can be positive (actions taken) and can also be negative (actions not taken).

According to Dye (Dwiyanto Indiahono: 2009: 17) public policy is "whatever the government chooses to do or not do." This means that any government activity, whether explicit or implicit, is policy. Public policy is

basically a strategy made by the government to bring society from the initial conditions that are entering a transition period, towards the ideal society that is aspired to. In principle, all public policy formulations boil down to "what the government does". Therefore, the characteristics of public policy are very broad and multidimensional, as stated by Thomas R Dye at the beginning, who defined public policy simply and very broadly including "everything and nothing" done by the government.

Public Policy Implementation

Van Meter & Van Horn (1975: 447) in his journal entitled The Policy Implementation Process: A Conceptual Framework, namely policy implementation includes actions taken by individuals (or groups) of government and private which are directed at achieving the objectives set out in previous policy decisions. This includes both one-time efforts to transform decisions into operational terms, as well as ongoing efforts to achieve the major and minor changes mandated by policy decisions.

The policy implementation model from (Van Meter and Van Horn, 1975: 445-488) is called the Policy Implementation Process Model. This model explains that policy implementation performance is influenced by several interrelated independent variables, namely: 1) Policy goals and objectives; 2) Resources; 3) Communication between organizations and implementing activities; 4) Characteristics of implementing agents; 5) Social, economic, and political conditions; and 6) Disposition of implementers.

According to Winarno (2021: 146), policy implementation is a crucial stage in the public policy process. A policy program must be implemented in order to have the desired impact or goal. Public policy implementation is between policy formulation and policy evaluation. Policy implementation contains top-down logic, which reduces abstract or macro alternatives to concrete or micro alternatives. Meanwhile, policy formulation contains bottom-up logic, starting from mapping public needs, continuing with the search and selection of alternative solutions, then proposed for adoption. Implementation functions to form relationships so that the goals or objectives of public policy can be realized as outcomes of government activities, or as a policy delivery system consisting of elements and activities directed at achieving goals.

The policy implementation model being examined in this study is the Van Meter and Van Horn model (1975:445-488), offering a comprehensive framework for comprehending the policy implementation process. This model takes a systematic and thorough approach to analyzing policy implementation, taking into account a range of factors from technical to contextual aspects. Additionally, Winarno's (2021) insights are incorporated to provide further context on policy implementation in general, rather than as a model for testing. By utilizing the Van Meter and Van Horn model (1975:445-488), this study will concentrate on a detailed examination of how these six variables interact and impact the implementation of waste management policies in Sukabumi City.

Effectiveness

Effectiveness is a measure that asks the extent to which a target (quality and quantity) has been achieved by someone, where the target has been determined in

advance. An organization is declared effective if the goals of the organization's members and the goals of the organization itself are well achieved or above the predetermined target. This means that internal and external customers are satisfied. The level of effectiveness and efficiency is a measure of the quality of an organization's success.

Mahmudi (2010: 86) argues that effectiveness is the relationship between output and goals, the greater the contribution (contribution of output) to the achievement of goals, the more effective the organization, program or activity is. Effectiveness focuses on outcomes, programs or activities are said to be effective if the outputs produced can meet the expected goals or are said to be wise spending.

According to Nugroho (2021: 51-54), there are basically "five correct" indicators or benchmarks of effectiveness that need to be met to measure the effectiveness of policy implementation, namely 1) Right Policy; 2) Appropriate Implementation; 3) Right Target; 4) Right Environment; and 5) Right Process.

Garbage

Based on *SNI 19-2454-2002*, waste is defined as solid waste consisting of organic and inorganic materials that are considered no longer useful and need to be managed to prevent negative impacts on the environment and protect development investments. Meanwhile, waste is simply defined by *Undang-Undang Nomor 18 Tahun 2008* as the residue of daily human activities and/or natural processes in solid form.

Waste Management

Waste management is a series of processes used to handle waste with several series of systems ranging from containerization, waste collection, waste transportation, waste processing and final processing in landfills. One of the efforts made by the government is to provide *TPS* 3R facilities which aim to reduce and utilize waste starting from the source of waste generation, so as to reduce the volume of waste disposed of in the landfill.

Waste Management Station with 3R **Concept (TPS** 3R**)**

According to the *TPS* 3R Technical Guidelines (2017), Waste Management Reduce-Reuse-Recycle (TPS 3R) is a pattern of waste management approach on a communal or regional scale that involves the active role of the government and the community, through a community empowerment approach, including for low-income communities and/or those living in dense settlements and slums. Waste handling with the *TPS* 3R infrastructure approach emphasizes the reduction, utilization, and processing of waste from sources on a communal scale (residential areas, commercial areas, office areas, educational areas, tourist areas, and others).

The 3R concept (Reuse, Reduce, Recycle) is a new paradigm in consumption and production patterns at all levels by giving top priority to waste management oriented towards preventing waste generation, minimizing waste by encouraging reusable items and biodegradable items, and implementing environmentally friendly waste disposal. The first principle of Reduce is any activity that can reduce and prevent waste generation. The second principle of Reuse is the activity of reusing waste that is still suitable for use for the same function or another function. The third principle, Recycle, is the activity of

managing waste to be used as a new product (Guidebook for community-based 3R in residential areas).

C. METHODS

The object of research conducted by researchers is the people of Sukabumi City. This research uses quantitative methods with an associative approach. The population in this study is the people of Sukabumi City until 2023 as many as 361,581 people. The sample in this study was 100 people with a standard error of 10%. Data collection techniques used in this study was observation, documentation, questionnaire distribution, and interviews. This research tool is a questionnaire with Likert scale measurements used to measure attitudes, opinions, and perceptions Sugiyono (2020: 93), about the impact of waste management policy implementation on the efficiency of waste management via TPS 3R in Sukabumi City.

Validity and reliability tests were conducted on the research questionnaire to obtain appropriate and consistent research results. Because this research is associative research, data analysis is carried out using the correlation coefficient test, the coefficient of determination test, and simple linear regression analysis. Data analysis measures the strength and weakness of the relationship between implementation and efficacy of policies using the correlation coefficient test. To determine the magnitude of the influence of the independent variable (X) on the dependent variable (Y) is determined using the coefficient of determination (R^2). Then, to determine the approximate relationship of the independent variable (X) to the dependent variable (Y) is determined using the equation with the formula Y = a + BX.

D. DISCUSSION

Judging from the research that has been conducted, the researcher divides the characteristics of the respondents into several parts, as follows

The characteristics of respondents based on male gender amounted to 62 people or 62% and women amounted to 38 people or 38%. So the largest respondent based on gender in this study was female.

Table 1 Characteristics of respondents based on age

No.	Age	Total	Percentage (%)
1	18-20 Years	11	11%
2	21-30 Years	64	64%
3	31-40 Years	13	13%
4	41-50 Years	6	6%
5	> 50 Years	6	6%
Total		100	100%

Source: researcher, 2024

The characteristics of respondents based on age <18-20 years totaled 11 people or 11%, age 21-30 years totaled 64 people or 64%, age 31-40 totaled 13 people or 13%, age 41-50 years totaled 6 people or 6%, age> 50 years totaled 6

people or 6%. So the most respondents based on age in this study are 21-30 years old.

Table 2 Characteristics of Respondents Based on Last Education

No.	Education	Total	Percentage (%)
1	SD	1	1%
2	SMP	0	0%
3	SMA/SMK	52	52%
4	S1	43	43%
5	S2	3	3%
6	S3	1	1%
	Total	100	100%

Source: researcher 2024

The characteristics of respondents based on their latest education were dominated by the last education of *SMA / SMK* as many as 52 respondents or 52%, S1 education as many as 43 respondents or 43%, S2 education as many as 3 respondents or 3%, S3 education and SD each as many as 1 respondent or 1%, and the last education of *SMP* as many as 0 respondents or 0%.

Table 3 Characteristics of Respondents Based on Type of Work

No.	Jobs	Total	Percentage (%)
1	Teacher/Lecturer	5	5%
2	Civil Servant	3	3%
3	Private Employee	31	31%
4	Stundent	32	32%
5	Entrepreneur	5	5%
6	More	24	24%
	Total	100	100%

Source: researcher 2024

The characteristics of respondents were dominated by students as many as 32 respondents or 32%, private employees as many as 31 respondents or 31%, others as many as 24 respondents or 24%, self-employed as many as 5 respondents or 5%, teachers/lecturers as many as 5 respondents or 5%, and civil servants *(PNS)* as many as 3 respondents or 3%.

Implementation of Waste Management Policy in Sukabumi City

The researcher presented respondents' responses regarding the implementation of waste management policies in Sukabumi City based on the policy implementation theory of Van Meter and Van Horn (1975: *445-488*). Based on the accumulated values of respondents' responses to statements on the variable implementation of waste management policies in Sukabumi City, the following data were obtained:

Table 4 Respondents' Responses Regarding the Implementation of Waste Management Policies in Sukabumi City

Respondent's Response		Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
No.	Indicator Statement	F	%	F	%	F	%	F	%	F	%
Policy Goals and Objectives											
1	Clarity of policy goals and objectives	4	1%	22	14%	38	36%	22	28%	14	22%
2	Realism of goals and objectives	2	1%	5	3%	44	37%	32	36%	17	24%
3	Policy goals and objectives are implemented consistently	10	3%	30	21%	31	33%	22	31%	7	12%
Resources											
4	Availability of adequate staff	7	2%	23	16%	45	46%	19	26%	6	10%
5	Availability of facilities and infrastructure	17	6%	18	13%	34	36%	26	37%	5	9%
6	Budget availability	12	4%	21	15%	43	46%	21	30%	3	5%
Interorganizational Communication and Implementation Activities											
7	Availability of information and authority	3	1%	28	19%	42	42%	19	25%	8	13%
8	Intensity of waste management information delivery	10	4%	32	23%	31	33%	22	31%	5	9%
9	Smooth communication among implementers	4	1%	23	15%	44	43%	22	29%	7	11%
Implementing Agent Characteristics											
10	Implementing agent education level	5	1%	11	6%	25	21%	40	45%	19	27%
11	Ability and technical skills of implementers	2	1%	12	7%	47	43%	32	39%	7	11%
12	The attitude or work motivation of the implementers	0	0%	14	8%	41	36%	34	40%	11	16%
Social, Economic and Political Conditions											
13	The government implements good waste management policies	6	2%	12	7%	46	43%	27	34%	9	14%
14	Target group attitudes and responses	1	0%	12	7%	48	43%	27	32%	12	18%
15	Conducive social, economic and political conditions	1	0%	8	4%	35	29%	37	41%	19	26%
Executor's Disposition											
16	Carry out tasks in accordance with the SOP	0	0%	9	5%	49	43%	31	36%	11	16%
17	Implementers' support for the waste management program	1	0%	7	4%	37	30%	34	37%	21	29%
18	Application of democratic nature in managing waste	1	0%	9	5%	48	43%	35	41%	7	10%

Source: researcher, 2024

Based on the data presented in table 4 above, the highest approval value on the policy implementation variable is in the implementer disposition dimension with an indicator of the implementers' support for the waste management program with a frequency value of 21 or a percentage of 29%. The data shows that the waste management implementers in Sukabumi City are considered to have provided good support for the implementation of the waste management program. The lowest approval value on the policy implementation variable is in the resource dimension on the budget availability indicator, with a frequency value of 3 or a percentage of 5%. The data shows that budget resources for waste management in Sukabumi City are inadequate, an inadequate budget will affect the availability of other resources such as facilities and infrastructure for waste management and this will make the implementation of waste management policies in Sukabumi City less optimal.

Meanwhile, the accumulated scores of respondents' responses to the implementation of waste management policies in Sukabumi City are presented in the following table:

Table 5 Accumulated Respondents' Responses Regarding the Waste Management Policy Implementation Variable

No.	Dimensions	Score	Total Score
1	Policy Goals and Objectives	963	5.810
2	Resources	860	
3	Interorganizational Communication and Implementation Activities	886	
4	Implementing Agent Characteristics	1.029	
5	Social, Economic and Political Conditions	1.023	
6	Executor's Disposition	1.049	

Source: researcher, 2024

Based on table 5, it is known that the accumulation on the waste management policy implementation variable is 5,810. The highest dimension score is in the implementer disposition dimension of 1,049. The lowest dimension score is in the resource dimension of 860. From the six dimensions above, the level of Waste Management Policy Implementation in Sukabumi City can be described as follows.

Total Ideal Score = 18 (all statement items) x 100 x 5 = 9,000

The Policy Implementation rate is 5,810: 9,000 x 100% = 64.5%.

Table 6 Measurement Scale and Classification

Measurement	Criteria
≤20%	Very Low
21%-40%	Low
41%-60%	Medium
61%-80%	High
81%-100%	Very High

Source: *Sugiyono, (2020: 184)*

Based on the calculation results obtained data of 64.5% on the Implementation of Waste Management Policy in Sukabumi City. Based on table 5 regarding the measurement scale and classification, the variable implementation of waste management policies in Sukabumi City is included in the high category.

This shows that the implementation of waste management policy in Sukabumi City has been running well. Of the eighteen indicators, the lowest achievement was in the resource indicator. The government needs to increase the availability of adequate resources both in terms of waste management personnel, facilities and infrastructure as well as waste management budgets to facilitate and facilitate the implementation of various activities and programs that have been planned in policy implementation. Limited or lack of resources can be a major obstacle that can slow down or even stop the policy implementation process. However, overall the implementation of waste management policy in Sukabumi City is considered good, seen from the highest achievement in the implementer disposition dimension, where the implementers have been able to work in accordance with the duties and functions listed in the *Peraturan Walikota Sukabumi Nomor 143 Tahun 2022* regarding the Position, Composition, Organization, Main Duties, Functions, and Work Procedures of the Sukabumi City Environmental Service. In this case, employees can already know and understand about the duties and functions in accordance with their fields. Applicable regulations can be applied in the Sukabumi City Environmental Service, meaning that implementers can carry out job duties in accordance with predetermined standards.

Effectiveness of Waste Reduction through *TPS* 3R in Sukabumi City

Table 7 Respondents' Responses Regarding the Implementation of Waste Management Policies in Sukabumi City

Respondent's Response		Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
No.	Indicator Statement	F	%	F	%	F	%	F	%	F	%
The Right Policy											
1	Reducing the amount of waste in Sukabumi City	0	0%	4	2%	17	12%	32	30%	47	56%
2	Prevent environmental pollution from organic and inorganic waste	0	0%	3	1%	21	15%	31	30%	45	54%
3	Fulfillment and protection of the right to a good and healthy environment	0	0%	2	1%	18	13%	38	36%	42	50%
Proper Implementation											
4	Socialization by Sukabumi City Government	2	1%	19	12%	46	43%	24	30%	9	14%
5	Participation of waste management implementers	1	0%	10	6%	43	37%	31	36%	15	21%
6	Service coverage and transportation frequency on routes	0	0%	13	8%	44	39%	32	38%	11	16%
Right on Target											
7	Decrease in the volume of waste disposed to TPS and TPA	0	0%	7	4%	33	26%	37	39%	23	31%
8	Increased volume of waste segregated and recycled	8	3%	15	10%	47	46%	21	27%	9	15%
9	Improved waste management process in the community	10	3%	16	10%	35	34%	30	38%	9	14%

Conforms to the Environment											
10	TPS 3R Sukabumi City manages waste well	0	0%	17	10%	47	43%	26	32%	10	15%
11	Protection of Sukabumi City area from the threat of environmental pollution by poorly managed waste	1	0%	5	3%	27	21%	40	41%	27	35%
12	TPS 3R can minimize the adverse impacts caused by landfill.	1	0%	1	1%	28	21%	44	45%	26	33%
The Right Process											
13	Efforts to preserve the environment	0	0%	5	3%	24	18%	42	43%	29	37%
14	The community independently manages waste by Reduce, Reuse, and Recycle (3R)	1	0%	3	2%	26	20%	41	42%	29	37%
15	Community readiness for waste management program	3	1%	12	7%	34	29%	30	34%	21	30%

Source: researcher, 2024

Based on the data presented in table 7 above, the highest approval value on the effectiveness variable is on the indicator of reducing the amount of waste in Sukabumi City in the right policy dimension with a frequency value of 47 or a percentage of 56%. The lowest approval value on the effectiveness variable was on the indicator of waste management socialization by the Sukabumi City government in the right implementation dimension with a frequency value of 9 or a percentage of 14% and on the indicator of improving the waste management process in the community in the right target dimension with a frequency value of 9 or a percentage of 14%. The data shows that the implementation of socialization carried out by the Sukabumi City government is considered not optimal and has not reached all levels of society and the people of Sukabumi City are also considered not implementing waste management with the 3R concept, this can also be caused by a lack of education and awareness in the community. For this reason, the government must improve the socialization of waste management that is more effective and reaches all levels of society in Sukabumi City.

Table 8 Accumulated Responses of Respondents on the Effectiveness of Waste Reduction through *TPS* 3R in Sukabumi City

No.	Dimensions	Score	Total Score
1	The Right Policy	1260	
2	Proper Implementation	1009	
3	Right on Target	996	5.617
4	Conforms to the Environment	1109	
5	The Right Process	1143	

Source: researcher, 2024

Based on table 8, it is known that the accumulation on the performance variable is 5,617. The highest dimension score is in the right policy dimension with a score of 1,260. The lowest dimension score is in the right dimension of the traget of 996. From the five dimensions above, the level of effectiveness of waste reduction through *TPS* 3R in Sukabumi City can be described as follows.

Total Ideal Score = 15 (all statement items) x 100 x 5 = 7,500

The employee performance level is 5,617: 7.500 x 100% = 74,8%.

The results of the study obtained data of 74.8% on the effectiveness of waste reduction through *TPS* 3R in Sukabumi City. Based on table 6 regarding the measurement scale and classification, the effectiveness variable of the effectiveness of waste reduction through *TPS* 3R in Sukabumi City is included in the very high category. This means that the effectiveness of waste reduction through *TPS* 3R in Sukabumi City is effective. Although it is said to be effective, it is necessary to increase socialization and improve the waste management process in the community by applying the 3R concept so that people in Sukabumi City are increasingly educated to manage waste sustainably and will minimize waste disposed of in *TPS* and *TPA.*

The Effect of Waste Management Policy Implementation on the Effectiveness of Waste Reduction through *TPS* 3R in Sukabumi City

This research uses associative research, so data analysis is carried out using the correlation coefficient test, the coefficient of determination test, and simple linear regression analysis. Researchers will use the correlation coefficient test to measure the strength of the relationship between variables. The results of the correlation coefficient test using the product moment formula of policy implementation on the effectiveness of waste reduction through *TPS* 3R in Sukabumi City are as follows:

Correlation Coefficient Test

Table 9 Testing Results of *Product Moment* Correlation Coefficient

Correlation

		Implementation of Waste Management policy	Effectiveness of Waste Reduction through TPS 3R
Implementation of Waste Management policy	Pearson Correlation	1	,684**
	Sig (2-tailed)		,000
	N	100	100
Effectiveness of Waste Reduction through TPS 3R	Pearson Correlation	,684**	1
	Sig (2-tailed)	,000	
	N	100	100

**. Correlations are significant at the 0.01 level (2-tailed).

Source: IBM Statistics SPSS 26

From the calculation results it can be seen that the effect or positive relationship is 0.684. So to determine the closeness of the relationship, namely between variable X and variable Y, the correlation interpretation criteria according to Sugiyono (2019: 248) can be used as follows:

Table 10 Interpretation of Correlation Coefficient

Coefficient Interval	Relationship Level
0,00 - 0,199	Very low
0,20 - 0,399	Low
0,40 - 0,599	Medium
0,60 - 0,799	Strong
0,80 - 1,000	Very strong

Source: *Sugiyono (2019: 248)*

Based on table 10 above, it can be seen that the influence or positive relationship between variable X (Waste Management Policy Implementation) and variable Y (Effectiveness of Waste Reduction Through *TPS* 3R) has a value of 0.684 with a strong category relationship level.

Determination Coefficient Test

Table 11 Test Results of the Coefficient of Determination

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,684[a]	,468	,463	7,035

a. Predictors: (Constant), Implementation of Waste Management policy

b. Dependent Variable: Effectiveness of Waste Reduction through TPS 3R

Source: IBM Statistics SPSS 26

From the calculation of the coefficient of determination, it is obtained that the contribution of waste management policy implementation to the effectiveness of waste reduction through *TPS* 3R is 46.78%, while the difference of 53.22% is influenced by other factors besides the implementation of waste management policies.

Simple Linear Regression Analysis Test

Table 12 Simple Linear Regression Analysis Test Results

Coefficient[a]

Model		Unstandardized Coefficient		Standardized Coefficient	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	22,784	3,557		6,405	,000
	Implementation of Waste Management policy	,557	,060	,684	9,287	,000

a. Dependent Variable: Performance

Source: IBM Statistics SPSS 26

Based on Table 12 above, the simple linear regression analysis results obtained are 22.78 + 0.557□, meaning that each increase in the score on the waste management policy implementation variable can increase 0.557 of the variable score on the effectiveness of waste reduction through *TPS* 3R in Sukabumi City. Overall, policy implementation has a close relationship with effectiveness in achieving predetermined goals. Good policy implementation can have a positive impact on achieving policy objectives effectively. According to Van Meter and Van Horn, an important variable affecting policy implementation is *goal achievement* or what is also known as effectiveness. The higher the level of effectiveness of a policy implementation, the greater the success of the policy. The effect of waste management policy implementation on the effectiveness of waste reduction through *TPS* 3R in Sukabumi City is 46.78%. The difference between previous research and current research is the theory of policy implementation, the theory of effectiveness, the locus of research and the accumulation of responses to each indicator in policy implementation and effectiveness. The results showed that the implementation of waste management

policy had a positive effect on the effectiveness of waste reduction through *TPS* 3R in Sukabumi City.

E. CONCLUSIONS

Based on the results of research and data analysis conducted by researchers on the effect of policy implementation on the effectiveness of waste reduction through *TPS* Based on the graph below, the amount of waste in Sukabumi City continues to increase. Sukabumi City with a population of 361,581 people generates daily waste generation of 181 tons/day. Waste generation in Sukabumi City in 2022 was 65,828 tons/year and increased by 2% in 2023 to 67,308 tons/year. This should be a concern for the government that the policies implemented have not been able to produce the appropriate output, namely a reduction in the amount of waste in Sukabumi City.

in Sukabumi City is included in the strong relationship level. This shows that the variable of waste management policy implementation affects the effectiveness of waste reduction through *TPS* 3R in Sukabumi City. In addition, the implementation of waste management policies can have a positive influence on the effectiveness of waste reduction through *TPS* 3R in Sukabumi City.

Then, based on the correlation coefficient test, the variable of waste management policy implementation on the effectiveness of waste reduction through *TPS* 3R in Sukabumi City obtained a high level of relationship of 0.684. This means that the better the implementation of waste management policy, the effectiveness of waste reduction in Sukabumi City will increase. Meanwhile, based on the determination test (R^2), it was found that the effect of waste management policy implementation (X) on the effectiveness of waste reduction through *TPS* 3R (Y) was 46.78%, while the difference of 53.22% was influenced by other factors outside the study besides implementation.

The implications highlight the intricacies of waste management systems, with policy implementation being just one aspect of the broader picture. Contextual elements like local culture, geography, and socio-economic characteristics of the community can have a significant impact. Moreover, technological advancements, community engagement levels, economic incentives, collaborative partnerships, and the influence of national policies or global trends can also enhance the efficacy of these initiatives. These findings underscore the necessity for a more holistic approach to comprehend and enhance the efficiency of waste reduction through *TPS* 3R. Further investigation is required to identify and assess factors beyond policy implementation and to formulate more comprehensive implementation frameworks. Consequently, this study not only offers insights into the role of policy implementation but also sets the stage for a deeper comprehension of the intricate dynamics in urban waste management. While the estimated relationship between the variable implementation of waste management policy (X) on the effectiveness of waste reduction through *TPS* 3R (Y) in Sukabumi City is determined by simple linear regression analysis obtained as 22.7 + 0.557□. This means that every increase in the score of the waste management policy implementation variable can increase 0.557 variable score of the effectiveness of waste reduction through *TPS* 3R in Sukabumi City.

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