

# TRADITIONAL MARKET WASTE MANAGEMENT BASED ON MERCHANT PARTICIPATION IN PADANG CITY

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## ABSTRACT

One of the biggest contributors to waste is traditional markets. Traditional markets are one of the economic containers for most urban communities. The problem of waste management in the City today is the result of various rapid changes, in terms of the order of social, economic, political, and cultural life. Waste problems arise because of the imbalance between waste production and management and the decreasing carrying capacity of nature as a waste disposal site. The purpose of this article is to discuss traditional market waste management based on the participation of traders in the city of Padang. The research method used is a mixed method. Mixed Method Research. The research population is all traders in 3 (three) traditional markets in Padang City, totaling 3098 respondents. The research sample in the study amounted to 100 respondents. The results showed that the level of knowledge of traders about market management in Padang City was low (50.5%). Meanwhile, the attitude of traders about market waste management in Padang City is negative (66.0%). Most of the facilities available for managing individual waste produced by traders are inadequate (73.2%). Most of the traders' participation in market waste management in Padang City is with low participation (62.9%). There is a significant relationship between knowledge and the participation of traders in market waste management in Padang City with a p-value of 0.0001 ( $p < 0.05$ ). This means that the higher the knowledge of traders, the higher the participation of traders in waste management. There is a significant relationship between the attitude of traders and the participation of traders in market waste management in Padang City with a p-value of 0.0001 ( $p < 0.05$ ). This means that the more positive the attitude of traders about waste management, the higher the participation of traders in waste management. There is a significant relationship between the availability of facilities and the participation of traders in market waste management in Padang City with a p-value of 0.0001 ( $p < 0.05$ ). This shows that the more adequate the available storage facilities, the participation of traders in managing waste will increase.

**Keywords:** Management, Waste, Traditional Markets, Merchant Participation.

## INTRODUCTION

Economic pollution is an externality that occurs if one or more individuals experience or suffer losses in the form of loss of welfare. Although every economic activity can give rise to externalities, economists do not recommend eliminating externalities. This is because the optimal externality does not have to be equal to zero. The view that being free from externalities is not an optimal decision can be explained in two ways, namely: basically, the environment tends to have assimilative abilities so that at a certain level of pollution, the environment can still cope

naturally; and the fact shows that at a certain level, economic activity is still able to overcome this pollution problem by using waste cleaning technology<sup>1</sup>.

Garbage as a result of waste from human production and consumption activities in the form of solid, liquid, or gas is a source of environmental pollution that can cause environmental damage. Problems in handling waste occur due to an imbalance between production and the ability to manage it, the volume of waste continues to increase in line with population growth and community activities<sup>2</sup>.

One of the biggest contributors to waste is traditional markets. Traditional markets are one of the economic containers for most urban communities. Existing activities, whether buying and selling between traders and visitors or buyers, can indirectly lead to the generation of waste in the market every day<sup>3</sup>.

Developing issues related to the current waste management system are waste management capacity, institutional capacity, financing capacity, community and business/private participation, laws, and regulations, and weak law enforcement<sup>4</sup>.

Traditional markets are markets built by the government, private sector, cooperatives, and non-governmental organizations. The place of business can be in the form of shops, kiosks, stalls, and tents that provide goods for people's daily consumption. Traditional markets are usually managed by small, and medium-sized traders and cooperatives. The process of selling and buying is done by bargaining<sup>5</sup>.

Traditional markets have such a big role in meeting the needs of the community, that it is necessary to have good management of traditional markets, where the objectives of managing and empowering traditional markets include; creating orderly, regular, safe, clean, and healthy traditional markets, improving services to the community, making traditional markets the driving force of the regional economy, and creating traditional markets that are competitive with modern shopping centers and shops. One of the traditional market problems is the waste problem<sup>6</sup>.

Garbage is closely related to environmental health because from the waste will live various disease-causing microorganisms (pathogenic bacteria), as well as nuisance animals such as insects as transfers/spreaders of disease (vectors). Therefore, waste must be managed as well as possible, so that it does not disturb or threaten the health of the environment and the surrounding community<sup>7</sup>.

The problem of waste management in the City today is the result of various rapid changes, in terms of the order of social, economic, political, and cultural life. Waste problems arise because of the imbalance between waste production and management and the decreasing carrying capacity of nature as a waste disposal site. This problem arises due to the difficulty of collecting, transporting, and final disposal of waste, but from offices, houses, and industrial, waste from the market<sup>8</sup>.

Handling the waste problem cannot only be done by a group of people. Good cooperation between the government, business people, and the wider community is a requirement. The government is the main person in charge of managing and formulating policies, either directly or indirectly. Because the government must have control over information regarding the source of waste

production, the management process, and how the management results are utilized as a source of regional income.

Based on the description that has explained the market problems and the cleanliness of their waste, issues in the behavior of the community and traders who do not participate actively, and regulations regarding waste hygiene that have not been carried out optimally in traditional market waste management based on the participation of traders in Padang City.

## **METHOD**

The research method is a mixed method. Mixed Method Research (M2R)<sup>9</sup>. The population of this research area is traders in 3 (three) traditional markets in Padang City. They are Padang Raya Market traders, Nanggalo Market traders and Lubuk Buaya Market traders. Total population of 3098 respondents. The sample in this study amounted to 100 respondents. The materials used in this study were based on maps and statistical data for the province of West Sumatra. While the tools used in this study are a set of computers equipped with software for statistical analysis, and Microsoft Office 2019.

## **RESULTS AND DISCUSSIONS**

### **A. Research result**

#### **Traditional Market Waste Management in Padang City**

##### *Waste management system*

The organization and management of the Padang City Trade Office also have a key role in mobilizing, activating, and directing the waste management system, personnel, and management (planning, implementation, and control) for strategic, tactical, and operational levels. Waste management is all activities starting from storage, waste sorting, waste collection, transportation, and processing to transportation to the TPA. For accommodation, only a small number of traders do it, and even then use a makeshift container. There is no waste sorting process. The collection and transportation process is carried out by the market cleaners of the Trade Office. Furthermore, there is no waste processing in the market, so all waste is transported to the TPA.

##### *The Role of Local Governments in Market Waste Management in Padang City*

The government's role in waste management in Padang City is one of the factors that can encourage the process of handling waste problems. The role of the government in this research is known through interviews with several competent informants in their fields. The results of the narrative of the Head of UPTD Lubuk Buaya Market said that the waste management policy at Lubuk Buaya Market had a desire to be clean and wanted a waste processing that could be useful so that the waste could be used up in the market and no longer needed to be transported to the TPA. the government has tried its best to manage market waste in Padang by making a regional regulation on market waste management.

##### *Challenges Faced by the Government in Waste Management*

The increasing number of traders and the number of visitors who are not proportional to the scope of service is caused by the low level of public awareness in waste sorting and waste management efforts with the 3R concept, Limited facilities, and infrastructure such as waste processing systems. Cleanliness facilities and infrastructure are needed to create market cleanliness, with

complete facilities that can facilitate and expedite janitors to manage market cleanliness. Provision of cleaning facilities as a form of attention from market managers to maintain market cleanliness. However, the cleaning facilities in the market are still an obstacle for market cleaners. This is because waste management services have not been optimal, especially at the Air Dingin TPA.

The market manager is very open to cooperating with anyone. But here some things have not been fulfilled until now, namely the lack of facilities, facilities, and infrastructure for cleanliness such as Temporary Disposal Sites (TPS), waste baskets, and other cleaning tools. However, sometimes traders tend to be realistic so a good and sustainable socialization process is needed. Traders must be given an understanding of the benefits, effectiveness, and efficiency of the waste management program to participate. Without an understanding of the traders, waste management will be difficult to implement for various reasons including being busy, not having time, and many other reasons. Waste management policies will be successful if there is good leadership, and fully supported by community leaders, a clear vision, mission, and organizational goals

### **Merchant Participation in Waste Management in the Market**

#### *Knowledge*

Based on the results of the frequency distribution of respondents' answers, the question with a high percentage of answers is question No. 5 in the question column regarding the knowledge of traders, namely "According to you, providing your trash bag is the role of traders in waste management" with the percentage of answers "YES" as much as 67,0%. Meanwhile, the question with a low percentage of answers is question no. 6, namely "Do you know what the waste transportation stage is" with a percentage of "YES" answers as much as 16.5%.

#### *Attitude*

Based on the results of the frequency distribution of respondents' answers, the most agreeable answers are on question No. 13 with a percentage of 54.6% "Cleaning the trading place after finishing trading is the responsibility of the market cleaner". While the questions with the least agreeable answers are in question no 8 with a percentage of 4.1%, namely "The market waste transportation cycle is carried out once a day (night)".

#### *Facility Availability*

Based on the results of the observed frequency distribution of respondents' trading places, with the most inadequate availability of facilities, namely in statement no 4 with a percentage of 74.2%, namely "Is the trash can provided every day by traders". While the availability of inadequate facilities is at least in statement no 1 with a percentage of 19.6%, namely "Do traders provide their trash cans".

#### *Participation*

Based on the results of the frequency distribution of respondents' observations, the lowest respondent participation is in statement no. 2 with a percentage of 68.0%, namely "Do traders throw garbage in the place that has been provided". While the lowest respondent participation is

in statement no 1 with a percentage of 17.5% "Do traders always collect merchandise after they finish trading".

### Univariate Analysis

#### *Merchant Knowledge Frequency Distribution*

Below you can see the frequency distribution of traders' knowledge about market waste management in Padang City.

Table 1. Frequency distribution of traders' knowledge about market waste management in Padang City in 2022

Knowledge	F	%
Low	51	50,5
High	49	49,5
Amount	100	100

Based on Table 1 it can be seen that the respondents' knowledge about waste management in the market is mostly low, namely 50.5%.

#### *Trader's Attitude Frequency Distribution*

Below you can see the frequency distribution of traders' knowledge about market waste management in Padang City in 2022.

Table 2. Frequency distribution of traders' attitudes about market waste management in Padang City in 2022

Attitude	F	%
Negative	66	66,0
Positive	34	34,0
Amount	100	100

Based on Table 2 we can see the frequency of traders' attitudes about market waste management that most traders have a negative attitude, which is 66.0%, and traders who have a positive attitude of 34.0%.

#### *Frequency Distribution of Availability of Waste Management Advice*

Below you can see the frequency distribution of the availability of waste management facilities for traders regarding market waste management in Padang City.

Table 3. Frequency distribution of availability of market waste management facilities in 2022

Facility Availability	F	%
Inadequate	73	73,2
Adequate	27	26,8
Amount	100	100

Based on Table 3 we can see that most of the respondents have inadequate container facilities for managing waste at the source, which is 73.2%

#### *Merchant Participation Frequency Distribution*

Below you can see the distribution of the frequency of traders' participation in market waste management in Padang City.

Table 4. Frequency Distribution of Trader's Participation in Market Waste Management in Padang City in 2022.

Participation	F	%
Low	63	62,9
High	37	37,1
Amount	100	100

Based on Table 4 we can see that the participation of traders in market waste management in Padang City is mostly low at 62.9% and the high participation is 37.1%.

### Bivariate Analysis

Relationship between knowledge of traders and participation of traders in market waste management in Padang City in 2022. Below you can see the relationship between knowledge of traders and traders' participation in market waste management in Padang City in 2022.

Table 5. Relationship of trader's knowledge with trader's participation in market waste management in Padang City in 2022

Knowledge	Participation						<i>P-Value</i>
	Low		High		Amount		
	F	%	F	%	F	%	
Low	48	93,9	5	6,1	51	100	0,0001
High	16	31,3	34	68,8	49	100	
Amount	64	62,9	39	37,1	100	100	

Based on Table 5 we can see that respondents with low knowledge show low participation in waste management, which is 93.9% when compared to respondents with high knowledge of 68.8%. The results of the Chi-square statistical test show a significant relationship between the knowledge of traders and the participation of traders in market waste management with a *P-Value* of 0.0001. The relationship between traders' attitudes and traders' participation in market waste management in Padang City in 2022. Below you can see the relationship between traders' attitudes and traders' participation in market waste management in Padang City in 2022.

Table 6. Relationship between traders attitude and trader's participation in market waste management in Padang City in 2022

Knowledge	Participation						<i>P-Value</i>
	Low		High		Amount		
	F	%	F	%	F	%	
Negative	60	90,6	7	9,4	66	100	0,0001
Positive	4	9,1	32	90,9	34	100	
Amount	64	62,9	38	37,1	100	100	

Based on Table 6 we can see that respondents with negative attitudes about waste management also showed low participation in market waste management, which was 90.6% when compared to respondents who showed a positive attitude relationship, which was 90.9%. The results of the

Chi-square statistical test show a significant relationship between the attitude of traders and participation in market waste management with a value of 0.0001.

The relationship between the availability of merchant waste management facilities and the participation of traders in market waste management in Padang City in 2022. Below you can see the relationship between the availability of merchant waste management facilities and the participation of traders in market waste management in Padang City in 2022.

Table 7. Relationship between availability of waste management facilities and traders participation in market waste management in Padang City in 2022

Knowledge	Participation						<i>P-Value</i>
	Low		High		Amount		
	F	%	F	%	F	%	
Inadequate	52	70,4	5	6,1	73	100	0,0001
Adequate	12	42,3	16	57,7	27	100	
Amount	64	62,9	39	37,1	100	100	

From Table 7 we can see that respondents who have inadequate storage facilities show low participation in market waste management, which is 70.4% when compared to respondents with adequate facilities, which is 57.7%. The results of the Chi-square statistical test show a significant relationship between the availability of facilities and participation in market waste management with a p-value of 0.0001.

## B. Discussions

For the three markets in Padang City, there is no storage, sorting, and processing of waste. The government does not provide trash containers/bins, so far only a small number of traders provide containers with makeshift containers. The waste containers that are often used by market traders in Padang City are plastic bags, trash cans, plastic sacks, plastic baskets, and bins, while the government has provided communal containers with a volume of 6 m<sup>3</sup>.

Garbage collection is carried out by janitors because most traders do not collect their merchandise. Then the collected waste is transported by cleaners who are distributed in all market locations in Padang City using one-wheeled carts approximately 15-20 times a day to be transported to TPS. The process of processing market waste in Padang City has not been carried out. All market waste is transported to the TPA. The system of transporting waste to the TPA is carried out at the market in Padang City by using trucks, both with an open body type and with an Arm-roll. The truck used with a capacity of 8 m<sup>3</sup> and the tailgate can be moved hydraulically so that the process of unloading garbage can be effective.

These findings are not in line with the findings made by<sup>10</sup> which revealed that technical waste management includes activities of storage, waste sorting, waste collection, waste transportation, waste processing, and final disposal of waste. Market waste management in Padang City for storage, sorting, and processing of waste has not been maximized.

The Padang City Government has tried to overcome the problem of waste generation, including in market waste management in Padang City, namely by issuing Regional Regulation No. 21/2012 for Padang City concerning "waste management" which was derived by the Mayor of Padang City Regulation No. 109/2019 regarding the implementation instructions of Regional



Regulation No. 21/2012 concerning "waste management". Then Padang City itself made a law, namely "Perwalikota" Padang City No. 44/2018 concerning "regional policies and strategies in the management of household waste and waste similar to household waste."

The results of this study are in line with the results of research conducted by<sup>11</sup> which revealed that the government's role as a regulator or policy maker is said to be ideal if it has formulated policies by the policies of the central government and local needs of the region to solve problems.

The government's obstacles and challenges in managing market waste in Padang City are the increasing amounts of a waste generation that are not proportional to the scope of services and not optimal waste management services, especially at the Air Dingin TPA. This is due to the low level of awareness of traders in waste management. For this reason, Padang City's waste-producing sources need to be identified to be able to estimate waste generation and assist direction in planning its management system because each source has its uniqueness in every aspect of waste management. The calculation of this waste generation unit is important as a basis for projecting the total amount of market waste generation in Padang City that must be managed throughout the year. The total market waste generation in Padang City is the most basic data for making a waste management system.

Market waste management involves many parties, ranging from traders as waste producers and the government as regulators who have various socio-cultural backgrounds. According to<sup>12</sup> a socio-cultural-based waste management pattern should be carried out in an integrated manner between community elements, both by the community, non-governmental organizations, and the government so that the goal of waste management is to create a clean, healthy, safe, beautiful and sustainable environment is achieved.

## CONCLUSIONS

Market waste management in Padang City, namely: 1) making policies in market waste management in Padang City; 2) improving the quality of human resources in market waste management in Padang City; 3) providing market waste management budgets in Padang City; 4) increasing the Participation of Traders in waste management; and 5) providing facilities and infrastructure for waste management. The level of knowledge of traders about market management in Padang City is low (50.5%). Meanwhile, the attitude of traders about market waste management in Padang City is negative (66.0%). Most of the facilities available for managing individual waste produced by traders are inadequate (73.2%). Most of the traders' participation in market waste management in Padang City is with low participation (62.9%). There is a significant relationship between knowledge and the participation of traders in market waste management in Padang City with a p-value of 0.0001 ( $p < 0.05$ ). This means that the higher the knowledge of traders, the higher the participation of traders in waste management. There is a significant relationship between the attitude of traders and the participation of traders in market waste management in Padang City with a p-value of 0.0001 ( $p < 0.05$ ). This means that the more positive the attitude of traders about waste management, the higher the participation of traders in waste management. There is a significant relationship between the availability of facilities and the participation of traders in market waste management in Padang City with a p-value of 0.0001



( $p < 0.05$ ). This shows that the more adequate the available storage facilities are, the participation of traders in managing waste will increase.

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