

# Environmental Sanitation Facilities and Pro-environmental Behavior of Traders in Air Bangis Market, West Sumatra

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## Abstract:

**Background:** Pro-environmental behavior refers to the involvement of citizens in the provision, use, and maintenance of environmental sanitation facilities and services. This study aims to assess the availability of environmental sanitation facilities and the environmental sanitation behavior of market traders.

**Materials and Methods:** This research was conducted at Air Bangis Market, West Sumatra, Indonesia. Access to environmental sanitation facilities consists of clean water sources, access to toilets, types of toilets, and types of sewers. Meanwhile, environmental sanitation behavior consists of types of clean water storage facilities, garbage disposal methods, distance to the nearest drinking water source, distance to the nearest toilet, and factors that reduce interest in using toilets.

**Results:** The results showed that 23% of traders had trash storage containers without lids and 30% plastic bags. 20% of the basket. 27% sacks. The method of waste disposal is 80% collected by garbage collectors, 5% is burned, 2% is thrown into the bushes, and 5% is thrown into the sea. Most of the distance from clean water sources is close and affordable; 83% of respondents <50 meters. Most market toilets are close and affordable; 66% of respondents <50 meters. In the findings on factors that influence the interest in using the toilet, 66% answered that it was due to poor sanitation conditions, 28% answered that it was because of the long distance, and 8% answered that they used the toilet at home.

**Conclusion:** Environmental sanitation facilities and pro-environmental behavior of market traders have met the requirements.

**Key Word:** pro-environmental; behavior; traders; traditional ;market.

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## I. Introduction

The idea of reducing the environmental and human health consequences arising from poor sanitation practices has been put in place by past and present government administrations.<sup>1</sup> One of them is the practice of environmental sanitation. This practice is carried out in urban and rural environments including markets.<sup>2</sup>

Environmental sanitation behavior refers to the involvement of citizens in the provision, utilization, and maintenance of environmental sanitation facilities and services and compliance with environmental laws.<sup>3</sup> Attitudes and behavioral practices of traders determine market sanitation conditions. Thus, to achieve proper environmental sanitation conditions in the market, good sanitation behavior and availability of facilities and services must work in tandem.

Traditional markets in Indonesia are often uncomfortable to visit because they are synonymous with dirty, smelly, muddy, stuffy places. It is also a breeding ground for disease-transmitting animals, such as cockroaches, flies and mice. Information from various health authorities noted that there are more than 250 types of diseases transmitted through unsafe food. An unhealthy market certainly has an impact on the sale of unsafe food. Data from 2005 shows that 60% of Indonesians obtain food and other daily necessities from traditional markets.<sup>4</sup>

At different time points, much information has been provided in the literature regarding the relationship between environmental facilities and sanitation behavior.<sup>5-8</sup> However, most of these studies place little emphasis on environmental sanitation in market locations which constitute a significant share of commercial land use in cities.

This study aims to assess the availability of environmental sanitation facilities and environmental sanitation behavior of market traders in terms of utilization of available environmental sanitation facilities and response when environmental sanitation facilities are not available. Using a case study approach, this study will focus on the Air Bangis market in West Pasaman Regency, West Sumatra, Indonesia

## II. Material And Methods

The market under study is the Air Bangis Market, West Pasaman Regency, West Sumatra Province. Air Bangis Market is a market located on the west coast of Sumatra Island.

The variables in this study include access to environmental sanitation facilities and environmental sanitation behavior. Access to environmental sanitation facilities consists of: clean water sources, access to toilets, types of toilets, types of sewers. Meanwhile, environmental sanitation behavior consists of: types of clean water storage facilities, garbage disposal methods, distance to the nearest drinking water source, distance to the nearest toilet, factors that reduce interest in using toilets.

The research population is all traders in Air Bangis Market. The sampling method of systematic random sampling was used in selecting 96 traders as research respondents. Primary data collected through a questionnaire survey is the environmental sanitation conditions of traders and their environmental sanitation behavior in response to the availability and unavailability of environmental sanitation facilities. Secondary data that supports the research results will be collected from the Office of Market Management and Government of Nagari Air Bangis. Data analysis was carried out descriptively for each research variable.

## III. Result and Discussion

### Overview of Research Sites

Air Bangis Market is one of the traditional markets located in West Pasaman Regency, precisely on the edge of the west coast of Sumatra Island which is united with the city, namely the Sikabu estuary. The people of Air Bangis often call it the Aie Bangih market. Air Bangis Market is open every day regardless of holidays, but has market days, namely Saturday and Sunday. Every Saturday and Sunday Air Bangis Market becomes very crowded. Various traders from other areas came, such as from Bukittingi, Batusangkar, Medan, Solok, and others. This causes traders to fill the market even to the edges of the road.

**Table 1. Access to Environmental Sanitation Facilities**

Facilities	%
<b>Clean Water Sources</b>	
Tap water	0
Bor wells	15
Dug wells	52
Refill water	36
<b>Access to The Toilet</b>	
Yes	100
No	0
<b>Temporary Trash Disposal</b>	
Easy to reach	97
Wet and dry trash can available	2
Available carrier equipment	1
<b>Waste Water Sewer Type</b>	
Piping	0
Closed channel	76
Open channel	24
<b>Hand Washing Facilities</b>	
Location easily reached	67
Equipped with soap	4
Flowing water available	9
Do not have hand washing facilities	36

Table 1 show that the sources of clean water that are widely used by traders at Air Bangis Market are dug wells, as much as 52%, and refill water as much as 36%, while only 15 people use drilled shafts or 15%, and no one uses tap water. Based on the results of interviews with several traders, Air Bangis Market has used PAM water, but currently the management of PAM water is reduced so that traders do not use PAM water anymore.

Table 1 show that 97% of traders have a temporary waste disposal site that is easily accessible, and there are 2 traders who have wet and dry trash cans, and 1 person also has a garbage transporter. 76% of traders have closed sewerage, and 24% of traders have open sewerage. Based on observations, Air Bangis Market does not have a container or temporary garbage disposal. However, every shop or kiosk already has its own garbage disposal. Air Bangis Market also has cleaning and waste management officers. The janitor is in charge of cleaning the market environment every afternoon and transporting garbage in every trader's trash bin. The collected waste is then transported to a TPS which is about 5 km from the market.

As shown in Table 1, 67% of traders have hand washing facilities that are easily accessible, 4% are equipped with soap, 9% are available with running water, and 32% do not have hand washing facilities. Traders who don't have hand washing facilities usually use mineral water to wash their hands. Good hand washing facilities should be equipped with soap and running water. The lack of hand washing places can also affect the clean living behavior of traders. According to research Agustina et al. (2009) on traditional snack food traders that 47.8% of traders do not have personal hygiene or clean and healthy behavior (PHBS) and 65.2% of respondents do not have clean equipment (sanitary), as many as 30.4% of respondents sell food that is not fresh (good).<sup>9</sup>

### Pro-environmental Behavior

**Table 2. Pro-environmental Behavior**

Facilities	%
<b>Type of Waste Storage Facilities</b>	
Container Without Cover	23
Plastic Bags	30
Basket	20
Sack	27
<b>Waste Disposal Method</b>	
Thrown into the nearest bush	2
Disposed into temporary landfills	14
Burned	5
Collected by garbage collection officers	74
Thrown into the sea	5
<b>Distance from the Nearest Clean Water Source</b>	
< 50 meters	97
51 – 100 meters	2
>100 meters	1
<b>Distance from the toilet</b>	
< 50 meters	0
51 – 100 meters	76
>100 meters	24
<b>Interest in Using the Toilet</b>	
Bad Sanitary Conditions	64
Distance away	28
Other reason	8

Table 2 show that as many as 23% of traders have waste storage containers without covers, such as cardboard and wooden blocks, 30% use plastic bags, 20% use baskets, and 27% use sacks. As well as in the Wonodri Market, Semarang there are still some traders who do not provide garbage containers or bags independently.<sup>10</sup> Garbage bins at kiosks are generally trash bins that do not meet the requirements, namely not waterproof and not covered. Traders use wooden baskets, plastic baskets, buckets that are not waterproof and do not have lids, and some use sacks. In addition, the majority have not separated organic and inorganic waste. In addition, the other 2% only put the garbage on the trade table before being transported by the officers.

Table 2 show that as much as 74% of traders' waste is collected by garbage collectors, Disposed into temporary landfills 14%, 5% is burned, 2% is thrown into the bushes, and 5% is thrown into the sea. Air Bangis Market has a janitor who picks up trash every afternoon. However, there are still some traders who burn garbage and throw it into the bushes. Traders who sell near the estuary usually throw them there immediately. This can have an impact on sea water pollution.

Table 2 show that the majority of the distance from clean water sources is close and affordable, as many as 83% of respondents have a distance from clean water sources less than 50 meters, 51-100 meters as many as 9% of respondents, and 100 meters only 8% of respondents.

Table 2 show that the majority of market toilets are close and affordable, as many as 66% of respondents have a distance of less than 50 meters from market toilets, 21% of respondents have 51-100 meters, and only 12% of respondents have a distance of 100 meters. Same as in Tamale market, Ghana, most traders preferred touse the toilet facility inside the market dueto proximity, despite it bad state. The badstate of the toilet was attributed to the poormaintenance of the toilet facility by theoperator.<sup>11</sup>

There are several factors that influence the interest of traders to market toilets. As many as 64% of respondents answered that due to poor sanitation conditions, 28% of respondents answered that it was because of the long distance, and 8% of respondents answered that they used the toilet at home because their house was close. The proportion of respondents who makeuse of the public toilet in selected market in Nigeria is very low.<sup>12</sup> In line with Gusti and Sari's research (2020) in the Nanggalo market, most of the reasons traders do not

use market toilets are for reasons of poor sanitation.<sup>13</sup> Attitudes of people also contribute to poor sanitation in urban cities.<sup>14</sup>

#### IV. Conclusion

This study examines environmental sanitation and pro-environmental behavior of traders in the Air Bangis traditional market, West Pasaman Regency. This study found that the existing sanitation facilities at Air Bangis Market are quite good, but there are still some aspects that need to be improved and improved. The results of the study revealed that Air Bangis Market is clean and there are trash bins available, but there are still few traders who separate waste according to type. Based on the findings, all traders have access to market toilets, but there are some traders who admit that they do not use market toilets because they are far away and lack of sanitation. So traders use the residents' house toilets, mosque toilets, and school toilets.

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