Effectiveness of the Performance of Ribang Bersinar Waste Bank Service in Ribang Village

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ABSTRACT

Ineffective waste management is one of the urgent environmental challenges in various regions. An increase in the volume of waste managed at the waste bank usually occurs in line with an increase in the number of active customers and a more routine weighing frequency. This study aims to analyze the effectiveness of the Ribang Bersinar waste bank in waste management in Ribang Village, Muara Uya District. Waste Bank effectiveness analysis using Waste Reduction Analysis. The sample used *Purposive Sampling.* The sample of Waste Bank Customers consists of Domestic Waste (DW) and Municipal Solid Waste (MSW) 10 each. The results showed that the waste effectiveness level reached 54.74%, which reflects the significant contribution of waste banks in reducing the volume of waste that has the potential to be disposed of into the environment. Waste Bank customers are very satisfied with the performance of Waste Bank services where the Customer Satisfaction Index (CSI) value of Bank Sampah Ribang Bersinar 81.457 is classified as the "Very Good" Category. This shows that for waste bank customers, the waste bank is able to be a forum that helps customers in terms of waste management.

INTRODUCTION

The problem of waste management in Indonesia has become a crucial issue that affects environmental, public health, and socio-economic aspects. Population growth, rapid urbanization, and changes in people's consumption patterns have also led to a significant increase in the volume of waste generation, especially in urban areas. Many major cities are facing a space crisis for Final Processing Sites (TPA), and this condition is exacerbated by low recycling rates and lack of public awareness in sustainable waste management.

According to Anggiyanti et al. (2025), Waste Management Policy in Indonesia Waste management in Indonesia is the main concern in efforts to maintain cleanliness, health, and environmental sustainability. With a large population and an increasing rate of urbanization, the volume of waste produced has also increased significantly. Effective waste management in Indonesia is needed to overcome the negative impact of waste on the environment and society. In recent decades, rapid urbanization in various regions has exacerbated waste management problems, with an increase in the amount of waste generated every day. As a result,

inadequate waste management systems can lead to public health problems, environmental pollution, and economic losses.

Ineffective waste management is one of the urgent environmental challenges in various regions in Indonesia, including in Tabalong Regency, South Kalimantan. As population growth and economic activity increase, the volume of waste generation continues to increase, but efforts to reduce it are still very limited. Based on 2019 data, the rate of waste reduction in Tabalong Regency is still below 5%, far from the national target set in the National Policy and Strategy (Jakstranas) for the Management of Domestic Waste and Municipal Solid Waste. Yunita & Suparti (2024) stated that the potential for waste with an estimated population of 250,000 people in Tabalong is estimated to be around 118 tons per day, this does not include waste from business actors and residents from outside living in Tabalong Of this potential amount, the amount of waste that enters the Bongkang Final Disposal Site (TPA) is around tens of tons.

Ribang Village is one of 14 villages in Muara Uya District, Tabalong Regency, South Kalimantan Province. The village with an administrative area of 12.02 km^2 is inhabited by 1,909 residents in 2019 (Ribang Village Profile, 2023). Due to its distance from the Regency Capital, Ribang Village has not been served by waste transportation, so through the Gema Sajadah Program in Ribang Village in 2020, the Bank Sampah Ribang Bersinar was formed to empower the community to optimize waste reduction through sorting and saving waste to the Waste Bank. The number of customers of Bank Sampah Ribang is currently 237 people.

The local government's assessment of the Bank Sampah Ribang Bersinar is one of the best waste banks in Tabalong in terms of institutions, transaction recording, and management innovation. Nevertheless, administrative and institutional success has not fully reflected the acceptance or active participation of the community. Based on initial observations, there are still many residents of Ribang Village who have not fully understood the purpose, benefits, and management mechanism of the waste bank. Lack of socialization, direct community involvement, and negative perceptions of waste can be major obstacles to the sustainability of this program. Therefore, a thorough evaluation and study of public perception of the management of the Bank Sampah Ribang Bersinar is needed. This evaluation is important to find out the most dominant elements of service.

MATERIALS & METHODS

This research was conducted in Ribang Village, Muara Uya District, Tabalong Regency. Waste bank effectiveness analysis using Waste Reduction Analysis. The sample used uses Purposive Sampling. The sample of Waste Bank Customers consists of DW and MSW 10 each. The study was conducted on the 20 samples points within a minimum period of 8 consecutive days at the same location (SNI 3964:2025), to ensure sustainability in waste sorting and deposit activities. The following are the research coordinate points
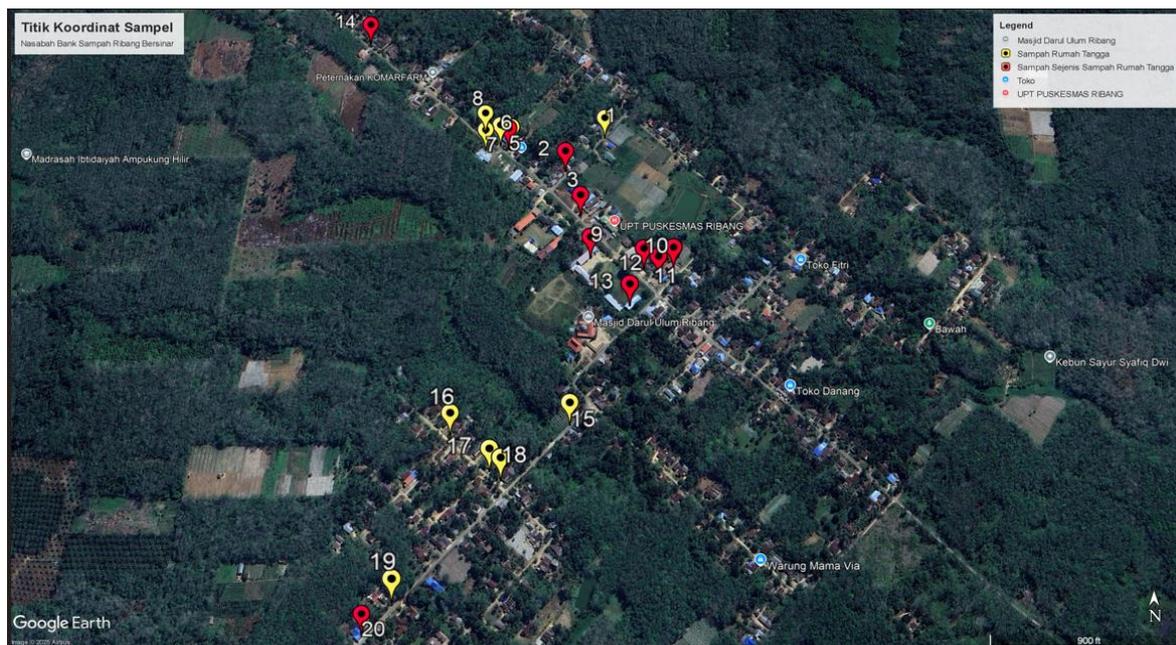
Figure 1. research coordinate points

The effectiveness of waste bank performance using waste reduction analysis. According to Kusuma et al. (2023), waste reduction measurement in waste banks is used to determine the achievement of reducing waste from the source before it is deposited into landfills. Waste reduction in waste bank activities can be divided into 2, namely sorting activities and waste sales activities to collectors. The formula used to measure waste reduction in waste banks is as follows:

WR = A - B

Information:

Waste Reduction

A: Total Inorganic Waste Generation

B: Managed Waste at the Waste Bank

The calculation of segregated/reduced waste is by measuring the volume of waste reduced by the waste residue produced. The calculation of waste reduction at each of the 20 sample points resulted in a total reduction output under existing conditions. The results of the reduction measurement can also produce a recovery factor (%) value or the value of waste that can be used or reused.

Analysis of Public/customer Perception data using the likert scale for customer satisfaction of waste bank. The likert scale is a measuremant method used to measure a person's opinion using a questionnaire to find out the scale of attitudes towards a certain object. On this likert scale, the questionnaire given gives a score on each answer (Sugiyono, 2012). According to Retnawati (2010), the most commonly used questionnaire model in Indonesia is in the form of a rating scale or better known as the Likert model. This Likert model instrument is relatively easy to make, and respondents also respond easily to it. According to Sugiyono (2019), the likert scale is used to measure the attitudes, opinions, and perceptions of a person or a group of people about social phenomena, so the variables to be measured are described as indicators which are then used as a benchmark to compile instrument items that can be in the form of questions or statements.

Sampling of customer/community perception using purposive sampling The number of samples taken is 30% of the total population, which is 59 people from 198 customers of the Ribang Bersinar Waste Bank.

Table 1. Likert Scale

Scale	Score	Scale Range
Strongly agree	4	3,26 – 4,00
Agree	3	2,51 – 3,25
Disagree	2	1,76 – 2,50
Verry Disagree	1	1,00 – 1,75

Source: Sugiyono (2019)

RESULTS

The results of the waste reduction analysis carried out by the Ribang Bersinar Waste Bank are based on the type of waste and its source, namely Domestic Waste (DW) and Municipal Solid Waste (MSW). This analysis aims to find out the amount of waste generated that enters the waste bank, the volume of waste that is successfully received or processed, and the level of reduction achieved can be seen in the following table 2.

Table 2. Analysis of the Reduction and Effectiveness of Ribang Bersinar Waste Bank

No	Types of Garbage	Waste Generation (kg)		Quantity (kg)	Accepted	Not Accepted	Effectiveness
		DW	MSW				
1	Plastic	9.42	16.92	26.35	26.35	-	54.74%
2	Paper	14.48	38.57	53.05	53.05	-	
3	Metal	1.53	1.59	3.12	3.12	-	
4	Glass	1.28	8.49	9.77	9.77	-	
5	Rubber	0.06	0.00	0.06	0.06	-	
6	Cloth	0.00	0.00	0.00	-	0.00	
7	Other Waste	26.50	49.87	76.37	-	76.37	
Total (kg)		53.27	115.44	168.72	92.35	76.37	
Average (kg/customer)				8.44	168.72		
Average (kg/customer/day)				1.05			

(Source: Primary Data, 2025)

Based on the table above, the total waste generated by the Ribang Bersinar Waste Bank reached 168.72 kg, consisting of 53.27 kg (DW) and 115.44 kg (MSW). Of this total, as many as 92.35 kg have been successfully received or processed through waste bank activities, while 76.37 kg has not been received because it is not included in the category of waste that can be recycled or resold.

The results of the customer satisfaction survey per respondent using a likert scale to see the performance of the Ribang Bersinar Waste Bank in Ribang Village, Muara Uya District can be seen in the following table 3.

Table 3. Customer satisfaction survey results

Element No.	Elements of Service	NRR per Element	Weighted NRR per Element
U1	Ease of Requirements	3.331	0.366
U2	Providing Customer Understanding	3.241	0.357
U3	Waste Bank Service Speed	3.462	0.381
U4	Segregated Waste Prices	3.083	0.339
U5	Suitability of the Type of Waste Received	3.138	0.345
U6	Competence of Waste Bank Managers	3.290	0.362
U7	Waste Bank Manager Behavior	3.186	0.350
U8	Facilities and Infrastructure	3.193	0.351
U9	Handling Complaints, Suggestions and Feedback	3.697	0.407
Total		29.621	3.258
CSI Waste Bank Service			81.46

(Source: Primary Data, 2025)

The overall CSI value of the Waste Bank Service is 81.46. On a scale of 0-100, this value indicates an excellent or very high level of satisfaction. Most Satisfactory Service Element: The element that has the highest weighted NRR value per Element (the most influential value on total satisfaction) U9: Complaint Handling, Suggestions and Feedback, with a weighted NRR value of 0.407 This shows that customers are very satisfied with the way the

Waste Bank handles complaints, suggestions, and inputs from them

DISCUSSION

Waste is an inseparable part of human daily activities. These activities have an impact on increasing waste generation in the environment (Nagong, 2021). This condition is exacerbated by several factors such as the rate of urbanization, population growth, increased income, and unenvironmentally friendly behavior. This results in the generation of the amount of waste increasing (Xu et al., 2017).

Traditional performance assessment frameworks for solid waste management typically employ multidimensional indicator systems encompassing qualitative, quantitative, and hybrid metrics. These systems are operationalized through benchmarks such as collection coverage rates and diversion tar- gets, process efficiency indicators (e.g., treatment technology performance), and impact-based parameters, including public health outcomes and pollutant emission levels (Turcott Cervantes et al., 2018).

The calculation of community waste reduction from the source uses mass balance analysis. The amount of household waste reduction was obtained from the results of the calculation of the average waste processed per person/day obtained from the results of the questionnaire multiplied by the number of existing residents of the village (Rifai et al., 2024). Based on the table, the total waste generation from all customers of the Ribang Bersinar Waste Bank reached 168.72 kg, consisting of 53.27 kg from household customers (DW) and 115.44 kg from schools/household social units (MSW). The type of waste with the largest generation is other waste (76.37 kg), followed by paper (53.05 kg) and plastic (26.35 kg). Meanwhile, the smallest generation comes from rubber waste (0.06 kg) and fabric (0.00 kg). Of the total waste, 92.35 kg (54.74%) was successfully received and managed by the waste bank, while 76.37 kg (45.26%) had not been handled. This shows that the waste effectiveness rate reaches 54.74%, which reflects the significant contribution of waste banks in reducing the volume of waste that has the potential to be disposed of into the environment. The average waste generation was recorded at 8.44 kg per customer or around 1.05 kg per customer per day.

The value shows great potential in optimizing collection and management, especially in the category of waste that has low economic value or has not been fully accommodated in the waste bank system.

The results of the customer satisfaction survey of the Bank Sampah Ribang Bersinar in Ribang Village, Muara Uya District, provide an overview of public perception of the quality of services provided by the waste bank. Measurements were carried out using the Likert Scale with nine service elements (U1–U9) which included important aspects such as service reliability, punctuality, ease of procedure, attitude of officers, and cleanliness and comfort of the service environment.

Based on the results of the analysis, a Customer Satisfaction Index (CSI) of 81.457 was obtained, which if converted into a scale of 0–100 is included in the "Excellent" category. These results show that in general, customers are satisfied with the services provided by Bank Sampah Ribang Bersinar. When associated with the satisfaction score interpretation interval (0–100), the score of 81.457 was in the range of 81–100, reflecting that most respondents gave a rating of "Satisfied" to "Very Satisfied" on each element of service. Thus, it can be concluded that the service performance of Bank Sampah Ribang Bersinar has been able to meet the expectations of the majority of its customers. In detail, the service elements that obtained the highest scores were generally related to the attitude and friendliness of the officers, ease of access to services, and the clarity of the information provided. This shows that the interaction and communication aspect between officers and customers is the main

strength in maintaining the level of satisfaction of service users. Meanwhile, some elements with relatively lower values tend to be related to the frequency of services and the accuracy of waste weighing schedules, which can still be improved to provide more optimal service consistency.

The results of this survey illustrate that the Bank Sampah Ribang Bersinar has been operating with a good level of service and has a positive impact on community satisfaction and participation in waste management activities. Nevertheless, continuous improvement is still needed, especially in terms of operational efficiency, the development of digital weighing systems, and the improvement of supporting infrastructure facilities so that service quality is maintained and can continue to improve customer satisfaction in the future.

The survey results showed that of the total registered customers, as many as 133 customers (91.7%) were classified as DW (Domestic Waste), while 12 customers (8.3%) were classified as MSW (School Waste/Municipal Solid Waste). These findings show that the Bank Sampah Ribang Bersinar is dominated by customers from domestic groups, which means that waste collection activities mostly come from daily domestic activities. The dominance of the DW group reflects that waste banks function effectively as a forum for domestic waste management, but the participation of educational institutions and social communities still needs to be increased.

CONCLUSION

The conclusion of the research was that the waste effectiveness level reached 54.74%, which reflects the significant contribution of waste banks in reducing the volume of waste that has the potential to be disposed of into the environment. Waste Bank customers are very satisfied with the performance of Waste Bank services where the Customer Satisfaction Index (IKN) value of Bank Sampah Ribang Bersinar 81.457 is classified as the "Very Good" Category. This shows that for waste bank customers, the waste

bank is able to be a forum that helps customers in terms of waste management. The element of handling complaints and suggestions is the best performance provided by customers with an average element value (NRR) of 3.697 and the lowest performance element with an NRR of 3.083 is the Segregated Waste Price which will be an evaluation for the Bank Sampah Ribang Bersinar.

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