

---

## Factors Related To Community Participation In Household Waste Management

Silfa Amalia<sup>1</sup>, Fajrina Hidayati<sup>2</sup>, Oka Lesmana S<sup>3</sup>, Hendra Dhermawan Sitanggang<sup>4</sup>,  
Ashar Nuzulul Putra<sup>5</sup>

<sup>1,2,3,4,5</sup> Public Health Study Program, Jambi University, Indonesia

\*Corresponding Author

Email : [silfaamalia.2003@gmail.com](mailto:silfaamalia.2003@gmail.com)

---

### Abstract

Community participation in household waste management is a crucial component in maintaining environmental quality and supporting sustainable waste management. This study aims to analyze the level of community participation and examine the relationship between knowledge, attitudes, education, availability of facilities, and the role of community leaders based on Lawrence Green's theory in Kenali Besar Subdistrict, Jambi City. This research employed a quantitative approach with a cross-sectional design involving 96 respondents selected through purposive sampling. Data were collected using structured questionnaires and analyzed using the chi-square test. The results showed that most respondents had a high level of participation. Significant relationships were found between knowledge ( $p=0.001$ ), attitudes ( $p=0.001$ ), education ( $p=0.001$ ), and availability of facilities ( $p=0.001$ ) with community participation. However, the role of community leaders was not significantly associated ( $p=0.406$ ). In conclusion, community participation is influenced by knowledge, attitudes, education, and the availability of facilities. Therefore, efforts to improve participation should focus on continuous education, provision of adequate facilities, and active community involvement.

**Keywords:** Community Participation, Waste Management, Knowledge, Attitudes, Facilities.

---

## INTRODUCTION

Waste management has become an increasingly serious environmental issue in various countries, including Indonesia. Population growth and increased consumption have led to an increase in waste generation, particularly from households. Data from the Central Statistics Agency (BPS) in 2023 showed that the volume of waste generated in Indonesia reached 70 million tons per year, with approximately 60% of this waste coming from households. (Badan Pusat Statistik, 2024). This phenomenon puts significant pressure on the capacity of final disposal sites (TPA), most of which are already overcapacity. Communities, as the primary actors in waste generation, play a crucial role in the waste management cycle (Sasana et al., 2022).

Community participation in sorting waste, processing organic waste into compost, and participating in waste banks is a contribution that can reduce the burden on final disposal sites (TPA) (Budiyarto, Clarke and Ross, 2025). However, community participation in household waste management is still relatively low (Ningsih, Sugiarto and Hilal, 2020). Many people still mix all types of waste without any sorting efforts (Pandyaswargo et al., 2025). Furthermore, most households still rely on traditional methods like burning waste without considering the risks to the environment or health. Sustainable waste management methods like recycling and composting are also still minimally implemented by the public (Lubna Afifah Azra, Aprilina and Qintharah, 2022). This situation reflects the still low level of public participation in sustainable waste management.

Poor household waste management can have negative impacts on the environment, such as water, soil, and air pollution (Erika and Gusmira, 2024). In addition, it can also create disease-causing vectors (Prajaningtyastiti and Pawenang, 2023). In Balqis's (2023) research, it was stated that there is a relationship between the incidence of DHF (Dengue Hemorrhagic Fever) and waste management behavior (Balqis, Elmayati and Salami, 2023). In Jambi City, the prevalence of dengue fever cases in 2024 reached 98 cases per 100,000 population. According to data from the Jambi City Health Office,

there were 639 cases in 2024, an increase from 294 in 2023. At the Kenali Besar Community Health Center, there were 84 cases (Dinas Kesehatan Kota Jambi, 2024)

The prevalence of diarrhea in Jambi City in 2024 reached 1,082 cases per 100,000 population. Diarrhea cases in Jambi City continue to increase annually, with 3,360 cases in 2022, 4,540 in 2023, and 7,032 in 2024. The number of diarrhea cases reached 785 at the Kenali Besar Community Health Center (Dinas Kesehatan Kota Jambi, 2024) . Based on data from the Jambi City Environmental Agency, waste generation in Jambi City in 2024 was 454,759.2 tons/day. Of the 11 sub-districts in Jambi City, Alam Barajo Sub-district had the highest waste generation, reaching 82,394.9 tons/day. Alam Barajo Sub-district has 7 urban villages, with Kenali Besar Sub-district having the highest waste generation rate, with 18,170.8 tons/day (Dinas Lingkungan Hidup, 2024) This is directly proportional to the high population in Kenali Besar Village. Based on this, this study aims to identify factors related to community participation in household waste management in Kenali Besar Village, Jambi City.

### RESEARCH METHODS

This study uses a quantitative approach with a cross-sectional research design. This study was conducted in the Kenali Besar Village, Alam Barajo District, Jambi City. The population in this study were all Heads of Families (KK) domiciled in Kenali Besar Village, Alam Barajo District, Jambi City. Based on population data for the third quarter of 2025, the number of heads of families in this village was 7,213 KK spread across 43 Neighborhood Associations (RT). The minimum sample size obtained was 96 samples to be used in this study or 96 KK. The sampling technique used was non-probability sampling. Data analysis used was univariate and bivariate analysis.

### RESULTS AND DISCUSSION

#### The Relationship Between Knowledge About Waste Management and Community Participation

Of the 11 respondents with low knowledge, all (100%) were in the moderate participation category, and none had high participation (0%). In the sufficient knowledge category, 25 respondents (92.6%) showed moderate participation, and only 2 respondents (7.4%) had high participation. Meanwhile, of the 58 respondents with high knowledge, 55 respondents (94.8%) showed high participation, and only 3 respondents (5.2%) were at the moderate participation level.

**Table 1. Relationship between Knowledge of Waste Management and Community Participation**

Knowledge	Community Participation				Total	P-Value	
	Medium		Hight				
	n	%	n	%	n	%	
Low	11	100	0	0	11	100	<b>0,001</b>
Enought	25	92,6	2	7,4	27	100	
Hight	3	5,2	55	94,8	58	100	

Source: Primary Data, 2025

The chi-square test results indicate a relationship between the level of knowledge and community participation in household waste management, with a p value of 0.001 ( $p < 0.05$ ). When someone understands that improperly managed waste can cause various diseases, environmental pollution, and damage aesthetics, they will be motivated to actively participate in maintaining cleanliness(Nanda *et al.*, 2024). This finding is supported by other research, such as that conducted by Utami (2025), which showed a significant positive relationship between housewives' knowledge and their participation in the waste bank program. Knowledge has been shown not only to be a factor influencing community participation but also a strategic entry point in encouraging the creation of a culture of sustainable waste management.

### The Relationship Between Attitudes and Community Participation

Of the 18 respondents with negative attitudes, 14 (77.8%) were in the moderate participation category, and only 4 (22.2%) showed high participation. Meanwhile, of the 78 respondents with positive attitudes, the majority, 53 (68%) were in the high participation category, and the remaining 25 (32%) were in the moderate participation category.

**Table 2. Relationship between Attitude and Community Participation**

Attitude	Community Participation				Total		P-Value	PR (95% CI)
	Medium		Hight		n	%		
	n	%	n	%				
Negative	14	77,8	4	22,2	18	100	0,001	2,42 (1,6-3,6)
Positive	25	32	53	68	78	100		

Source: Primary Data, 2025

These data indicate that high participation rates are highly prevalent among respondents with positive attitudes toward waste management. Conversely, negative attitudes are more prevalent among respondents with moderate participation, and very few among those with high participation. The chi-square test results show a p-value of 0.001, which is less than the 0.05 significance level. This indicates a statistically significant relationship between attitudes toward waste management and the level of community participation. The analysis also shows a PR of 2.42. Therefore, the more positive a person's attitude toward household waste management, the higher their tendency to actively participate in waste management activities.

This finding aligns with the theory of Laoli et al. (2022), which states that attitudes are shaped by experiences and information received by individuals, ultimately influencing their readiness to act. The more positive a person's attitude toward environmental issues, the greater their willingness and participation in pro-environmental actions, including household waste management (Bahrina and Sari, 2025). Meanwhile, research by Hartono et al. (2024) also confirmed that attitudes have a strong relationship with participatory behavior in waste management. The practical implication of this finding is the importance of fostering positive attitudes from an early age through environmental education in schools, homes, and public media.

### The Relationship Between Education and Community Participation

Of the 16 respondents with low education levels, most (13 respondents (81.2%) were in the moderate participation category, and only 3 respondents (18.8%) showed high participation. In the moderate education group, of the 29 respondents, 15 respondents (51.7%) showed moderate participation, and the remaining 14 respondents (48.3%) showed high participation. Meanwhile, of the 51 respondents with high education levels, 40 respondents (78.4%) showed high participation, and only 11 respondents (21.6%) were in the moderate participation category.

**Table 3 Relationship between Education and Community Participation**

Education	Community Participation				Total		P-Value
	Medium		Hight		n	%	
	n	%	n	%			
Low	13	81,2	3	18,8	16	100	0,001
Medium	15	51,7	14	48,3	29	100	
Hight	11	21,6	40	78,4	51	100	

Source: Primary Data, 2025

The chi-square test results showed a p-value of 0.001, which is smaller than the 0.05 significance level, so it can be concluded that there is a relationship between education level and community participation in household waste management. The higher the respondent's education level, the greater the tendency to show active participation. This finding confirms that education plays a significant role in shaping residents' awareness and actions in maintaining the cleanliness of their residential environment. Education shapes attitudes and improves a person's ability to receive

information and apply it in everyday life, including in maintaining environmental cleanliness (Saftha *et al.*, 2024). The findings of this study are also supported by the results of a study by Eruauw and Sompie (2022) in Kairagi Dua Village, Manado City, which shows that education level is directly proportional to participation in waste bank activities.

Another study by Ayyasnabilah (2021), which examined community participation in the waste bank program in Depok, also confirmed that education level was closely related to the intensity of community involvement. The practical implication of this finding is that waste management policies need to incorporate an educational approach tailored to the community's educational background.

### The Relationship between Infrastructure and Community Participation

**Table 4. Relationship between Attitude and Community Participation**

Infrastructure	Community Participation				Total		P-Value	PR (95% CI)
	Medium		Hight		n	%		
	n	%	n	%				
No	33	94,3	2	5,7	35	100	0,001	9,58 (4,4-20,5)
Yes	6	9,8	55	90,2	61	100		

Source: Primary Data, 2025

The chi-square test showed a p-value of 0.001, indicating a relationship between the availability of infrastructure and the level of community participation. The analysis also showed a PR of 9.58. This means that the more available waste management support facilities are, the higher the community participation rate. This finding indicates the importance of infrastructure-based interventions as a strategy to increase community participation in sustainable household waste management.

From a theoretical perspective, Green & Kreuter (2021) in the PRECEDE-PROCEED Model explain that supporting factors (enabling factors) such as facilities and infrastructure function to facilitate individuals or groups to behave as expected (Rany, 2021). People who live in areas with minimal facilities tend to have a permissive attitude towards the habit of littering, while people in areas with complete facilities show more responsible and active waste management behavior (Nanda *et al.*, 2024). Good facilities not only facilitate residents' activities, but also strengthen the sense of collective responsibility for environmental cleanliness (Saftha *et al.*, 2024). The practical implications of the results of this study emphasize that the success of a waste management program cannot rely solely on public awareness, but also needs to be supported by adequate infrastructure.

### The Relationship Between the Role of Community Leaders and Community Participation

Of the 1 respondent who stated that community leaders did not play a role, all (1 respondent or 100%) were in the moderate community participation category, and none showed high participation (0%). Meanwhile, of the 95 respondents who stated that community leaders played a role, 57 respondents (60%) were at a high level of participation, and the remaining 38 respondents (40%) showed moderate participation.

**Table 5. Relationship between the Role of Community Leaders and Community Participation**

The Role of Community Leaders	Community Participation				Total		P-Value	PR (95% CI)
	Medium		Hight		n	%		
	n	%	n	%				
No	1	100	0	0	1	100	0,406	2,5 (1,9-3,1)
Yes	38	40	57	60	95	100		

Source: Primary Data, 2025

Descriptively, this data shows that the majority of high participation occurred among residents who stated that there was a role for community leaders, however, because the number of respondents in the "no role for community leaders" category was very small (only 1 person), the statistical test results showed that the relationship was not statistically significant. This is proven by the results of the Fisher's Exact Test which produced a p value = 0.406 ( $p > 0.05$ ). Therefore, it can be concluded

that there is no relationship between the role of community leaders and the level of participation in household waste management in Kenali Besar Village, Jambi City.

The involvement of community leaders is crucial in building two-way communication between residents and the government and in ensuring the success of various environmental programs. They act as voices and motivators for residents to participate in environmental cleanup activities (Kurniawan *et al.*, 2025) Wahyuni dan Fatimah (2021) also emphasized that the success of the waste bank and mutual cooperation activities is very dependent on the participation of respected community figures who are followed by residents (Nanda *et al.*, 2024). However, the findings of this study demonstrate a discrepancy with the results of these studies, which can be explained by specific field conditions. Although almost all respondents reported the presence of community leaders in waste management activities, the role of community leaders in the research area is more symbolic than functional. Community leaders are not fully actively involved in organizing waste management activities, such as waste sorting, waste bank programs, or regular educational campaigns.

Field interviews revealed that some community leaders are only formally involved in events or programs facilitated by external parties, such as the village or environmental agency, but do not engage directly with residents on an ongoing basis. Furthermore, there is a tendency for communities to develop their own understanding and awareness of waste management, gained from previous education, social media, and personal experience, so the role of community leaders is no longer the sole guideline for action. This is further supported by the finding that variables such as knowledge and attitudes have a significant relationship with community participation, indicating that individual awareness and internal motivation are more dominant than the external influence of community leaders.

Theoretically, the role of community leaders falls into the category of reinforcing factors in Green's (2021) Precede-Proceed theory, which serves to reinforce behavior. However, this theory also emphasizes that reinforcement will be effective if accompanied by supporting enabling factors (such as infrastructure) and predisposing factors (such as knowledge and attitudes). In this context, the influence of community leaders will be less than optimal if not supported by other structures and support (Rany, 2021).

## CONCLUSION

Based on the research results, it can be concluded that community participation in household waste management in Kenali Besar Village, Jambi City is relatively good, as reflected in the active involvement of the community in various waste management activities in their environment. This participation is influenced by the characteristics of the community, which is predominantly of productive age, a relatively high level of education, and a long experience of living in the area. In addition, factors such as knowledge, attitudes, education levels, and the availability of infrastructure play an important role in encouraging community involvement, where the better the understanding, attitudes, and support facilities available, the higher the participation. Although the role of community leaders does not directly determine the level of participation, their presence still contributes to building awareness and encouraging involvement through social influence and role models. Thus, community participation in waste management is the result of the interaction of various individual and environmental factors that need to be supported sustainably.

## REFERENCES

- Badan Pusat Statistik (2024) *Statistik Lingkungan Hidup Indonesia 2024.*, BPS.
- Bahrina, I. and Sari, E. (2025) ‘Hubungan Pengetahuan dan Sikap Terhadap Partisipasi Pedagang Sayur dalam Pengelolaan Sampah di Pasar Induk Kota Langsa’, *JURNAL Promotif Preventif*, 8(1), pp. 140–146.
- Balqis, N., Elmayati and Salami (2023) ‘Hubungan perilaku masyarakat dalam pengelolaan sampah dengan kejadian DBD ( demam berdarah dengue )’, *Jurnal Sains Riset (JSR)*, (September), pp. 583–589.
- Budiyarto, A., Clarke, B. and Ross, K. (2025) ‘Overview of waste bank application in Indonesian regencies’, *Waste Management and Research*, 43(3), pp. 306–321. doi: 10.1177/0734242X241242697.
- Dinas Kesehatan Kota Jambi (2024) ‘Data Penyakit DBD dan Diare Kota Jambi’, in.
- Dinas Lingkungan Hidup (2024) ‘Data Timbulan Sampah Kota Jambi’. DLH.
- Erika and Gusmira, E. (2024) ‘Analisis Dampak Limbah Sampah Rumah Tangga Terhubung Pencemaran Lingkungan Hidup’, *Profit: Jurnal Manajemen, Bisnis dan Akuntansi*, 3(3), pp. 90–102. doi: 10.58192/profit.v3i3.2245.
- Kurniawan, R. *et al.* (2025) ‘Pengolahan dan Pemanfaatan Sampah Rumah Tangga di Lingkungan Desa Tanung Baru Kecamatan Indralaya Kabupaten Ogan Ilir’, *JPMN*, 4(2), pp. 177–183.
- Lubna Afifah Azra, Aprilina, V. and Qintharah, Y. N. (2022) ‘Pemilihan Dan Pemanfaatan Sampah Rumah Tangga Ditinjau Dari Segi Nilai Ekonomis’, *Kreativasi : Journal of Community Empowerment*, 1(2). doi: 10.33369/kreativasi.v1i2.23803.
- Nanda, M. *et al.* (2024) ‘Hubungan tingkat pendidikan, pengetahuan dan sikap dengan perilaku pengelolaan sampah masyarakat di lorong mesjid lk iv bagan deli belawan’, *Jurnal Kesehatan Tambusai*, 5(September), pp. 8427–8433.
- Ningsih, A. S., Sugiarto and Hilal, T. S. (2020) ‘Faktor yang Berhubungan dengan Pengelolaan Sampah Rumah Tangga di Kecamatan Danau Teluk Kota Jambi Factors Related to Household Waste Management in Danau Teluk District, Jambi City’, *Jurnal Ilmu Kesehatan Masyarakat Berkala*, 2(2), pp. 18–24.
- Pandyaswargo, A. H. *et al.* (2025) ‘Between Awareness and Action: Understanding Public Participation in Waste Sorting and Waste Bank Programs’, *Indonesian Journal of Urban and Environmental Technology*, 8(2), pp. 305–323. doi: 10.25105/urbanenvirotech.v8i2.23086.
- Prajaningtyastiti, A. R. and Pawenang, E. T. (2023) ‘Pengelolaan Sampah dengan Tingkat Kepadatan Lalat pada Tempat Penampungan Sementara (TPS)’, *HIGEIA (Journal of Public Health Research and Development)*, 7(1), pp. 55–66. doi: 10.15294/higeia.v7i1.56198.
- Rany, N. (2021) *Perilaku Kesehatan dan Pengukurannya*.
- Saftha, D. *et al.* (2024) ‘Hubungan Pengetahuan , Ketersediaan Sarana Prasarana Dan Kebijakan Terhadap Perilaku Pedagang Dalam Mengelola Sampah Di Pasar Sayur Kota Batu’, 6(2), pp. 218–228. doi: 10.17977/um062v6i22024p218-228.
- Sasana, H. *et al.* (2022) ‘The Importance of Sustainable Waste Management Due to Socio-Economic Changes’, *International Journal of Energy Economics and Policy*, 12(3), pp. 170–174. doi: 10.32479/ijeep.12665.