

(Research/ Review) Article

The Effectiveness of Community-Based Sanitation Programs in Langkat Regency

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Abstract: The Community-Based Sanitation Program (PAMSIMAS) is a government initiative aimed at improving community access to proper sanitation facilities, particularly in rural areas. This study aims to evaluate the effectiveness of the program in Tanjung Aman Village, Wampu District, Langkat Regency. A qualitative approach was used with a phenomenological method, focusing on the experiences and perceptions of local residents and village officials regarding program implementation. Data were collected through in-depth interviews, field observations, and documentation, involving 15 informants comprising residents, sanitation cadres, and village officials. The findings show that technically, the sanitation facilities function well; however, sustainability in usage faces challenges such as low community participation, weak maintenance systems, and the absence of binding local regulations. Community perception of the program is generally positive, particularly regarding improvements in environmental cleanliness and comfort in using the facilities, yet unequal access remains a significant issue. The study concludes that the success of PAMSIMAS largely depends on collaboration among the community, local cadres, and village policies. Strategic recommendations include the formulation of Village Regulations, regular training for cadres, and the establishment of a community-based sanitation management institution. With this approach, the program is expected to operate sustainably and provide long-term benefits to rural communities.

Keywords: Community-Based Sanitation; Community Participation; Effectiveness; Program contributing to better public health

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1. Introduction

Sanitation is one of the fundamental issues in sustainable development, particularly in the context of rural communities in Indonesia. Amid global efforts to achieve the Sustainable Development Goals (SDGs), access to adequate and safe sanitation remains a significant challenge, especially in underdeveloped areas such as Langkat Regency. Inadequate sanitation not only affects the quality of life but also triggers various communicable diseases that have systemic impacts on public health and social productivity.

In recent years, sanitation issues have become more complex due to population growth, changing land-use patterns, and the limited public awareness regarding the importance of clean and healthy living behaviors. In Langkat Regency, this phenomenon is reflected in the continued practice of some households disposing of domestic waste directly into water bodies, the lack of integrated waste management systems, and the limited availability of proper public sanitation facilities. Additionally, infrastructure development—such as the Trans-Sumatra Toll Road that passes through Langkat (Haloho & Sugiarto, 2024)—has also increased pressure on the provision of basic infrastructure, including sanitation.

Data from the Langkat District Health Office indicates that diarrhea remains one of the leading causes of morbidity, particularly among children under five. Research by Silalahi and Sinambela (2019) found a significant correlation between community sanitation behaviors and the incidence of diarrhea in toddlers in Suka Mulia Village, Hinai District, Langkat

Regency. This highlights that poor sanitation behavior remains a critical issue that must be addressed.

The PAMSIMAS program (Community-Based Drinking Water and Sanitation Provision) is a national initiative aimed at improving access to drinking water and sanitation in rural areas through a participatory approach. The program involves communities in the planning, implementation, and maintenance stages, with the goal of fostering ownership and sustainability in the management of basic infrastructure at the village level.

Although PAMSIMAS has been implemented in several villages in Langkat Regency, there have been reports indicating that residents in Dusun Alur Hitam, Securai Selatan Village, have not benefited from the program. The water provided through PAMSIMAS was reportedly murky and unfit for consumption, leading the community to avoid its use (Utama News, 2020; Akus Harmoko et al., 2024). This reflects a mismatch between the program's implementation and the actual needs and expectations of the local population.

Community participation is the key to the success of community-based sanitation programs. However, research by Stiawati (2021) revealed that public participation in the STBM program in Kasunyatan Subdistrict, Serang City, remained low, particularly during the planning and evaluation stages. This low participation may negatively impact the program's effectiveness and sustainability.

The lack of sanitation infrastructure, such as proper toilet facilities and waste treatment systems, remains a challenge in several villages in Langkat Regency. In addition, limited human and financial resources are major barriers to implementing effective and sustainable sanitation programs (Karya, 2022 ; Ganguly & Acharyya, 2021; Hartini et al., 2023; Huang et al., 2024; Pangaribuan et al., 2024).

Systematic evaluation and monitoring of community-based sanitation programs are also still lacking. A study by Puspita, Kawuryan, and Handayani (2023) showed that the lack of evaluation of the PAMSIMAS program in Temanggung Regency contributed to its low effectiveness. This demonstrates the importance of continuous evaluation to ensure the success of sanitation programs.

A study by Hidayat et al. (2023) & Sugiarto et al. (2023). in Medan City revealed that the success of sanitation infrastructure management is largely determined by active community participation, integration with spatial planning, and support from local policy. Similarly, Nuraini et al. (2023) emphasized that residential planning should consider local social and ecological structures to ensure that facilities built are accepted and used sustainably.

In essence, community-based sanitation emphasizes participatory principles, in which the community is not only a beneficiary but also a key actor in the planning, implementation, and evaluation of the program. However, in practice, several villages in Langkat still face challenges such as limited capacity of sanitation cadres, misalignment between the program and residents' needs, and the absence of systematic evaluation mechanisms. These findings are supported by studies such as Hartini et al. (2023), which highlight the inefficiency of drainage and sanitation systems in densely populated areas when not accompanied by appropriate participatory approaches.

These conditions form the basis for this research—not only to examine the effectiveness of community-based sanitation programs in Langkat Regency but also to understand the local dynamics that influence them. This study views sanitation not only as a technical infrastructure but also as a product of social, cultural, and spatial policy interactions. In this context, research by Aini et al. (2023) is particularly relevant, emphasizing the importance of preserving residential spaces based on local character and community-adaptive needs.

Furthermore, the community-based approach is considered to have great potential in addressing sanitation issues if implemented with a responsive and contextual framework. Therefore, this research contributes not only academically but also provides policy recommendations for local governments in designing sustainable and community-responsive sanitation strategies.

Based on the aforementioned background, several key research questions can be formulated: How effective is the community-based sanitation program in Langkat Regency? What factors influence the success or failure of the program at the local level? And how do communities perceive the sustainability of the provided facilities? This study aims to evaluate the effectiveness of the implementation of the community-based sanitation program in Langkat Regency by examining community participation, the quality of the facilities, and the sustainability strategies employed. Additionally, this research seeks to identify the challenges in program implementation and provide evidence-based recommendations to strengthen policy and program execution. The findings of this study are expected to serve as a valid

source of information for local governments, academics, and development practitioners in understanding the local context of sanitation and the importance of participatory approaches in creating healthy and sustainable settlements.

2. Preliminaries or Related Work or Literature Review

Program Effectiveness Theory

Program effectiveness refers to the extent to which the predetermined goals and objectives can be achieved optimally. Robbins and Coulter (2022) state that effectiveness is a measure of success in achieving desired outcomes without compromising implementation efficiency. In the context of development programs—particularly sanitation—effectiveness is not only measured by physical outputs but also by community participation, quality of implementation, and the resulting social impacts (Nuraini et al., 2023).

Community Participation Theory

Community participation is a key element in the success of community-based development. According to Rachmawati (2023), participation encompasses community involvement in planning, implementation, and program evaluation. The higher the participation, the greater the sense of ownership and sustainability of the development outcomes. A successful participation model can be achieved through equal collaboration between the community and the village government, which is highly relevant to the context of community-based sanitation.

Community-Based Sanitation and the PAMSIMAS Model

The PAMSIMAS program (Community-Based Drinking Water and Sanitation Provision) is a national initiative designed to increase access to drinking water and sanitation in rural areas through a community-based approach. The Directorate General of Human Settlements (Karya, 2022) & Sugiarto (2024) notes that PAMSIMAS emphasizes participatory principles, local capacity building, and sustainable management of sanitation infrastructure. This concept aligns with the total sanitation approach (STBM), which positions the community as the main actor in behavioral change.

Spatial and Social Approaches in Settlements

Sanitation approaches cannot be separated from the spatial and social context of settlements. Aini et al. (2023) explain that the preservation of local settlement spaces must consider the social values, culture, and architecture present in the community. Meanwhile, Nuraini (2024) emphasizes that adaptive and sustainable sanitation can only be achieved when planners understand the relationship between spatial structure and community behavior.

Previous Research

Several previous studies relevant to this topic include:

- Putri & Handayani (2022), who found that the effectiveness of STBM in Sleman was highly influenced by the intensity of community assistance and access to proper sanitation facilities.
- Nugraha & Damayanti (2022), who examined the role of sanitation cadres and concluded that regular cadre training was a key success factor for sanitation programs.
- Rachmawati (2023), who studied the participation of Bandung residents in managing communal sanitation and found that facility functionality was strongly influenced by the level of community involvement.
- Hidayat et al. (2023), who highlighted the importance of community participation in managing sanitation infrastructure in Medan Deli and underscored the need for structured participatory strategies.
- Hartini et al. (2023), who identified limitations in drainage management in Medan Sunggal and stressed the importance of social integration in designing sanitation for densely populated areas.

Conceptual Framework

Based on theories and previous studies, this research formulates a conceptual framework that focuses on the relationship between the following elements:

- Community participation in sanitation programs

- Quality and functionality of sanitation facilities
- Community perceptions of the program's benefits
- Sustainability of infrastructure use and maintenance

All of these components contribute to one main goal: the effectiveness of the community-based sanitation program.

Conceptual Diagram (Qualitative Model)

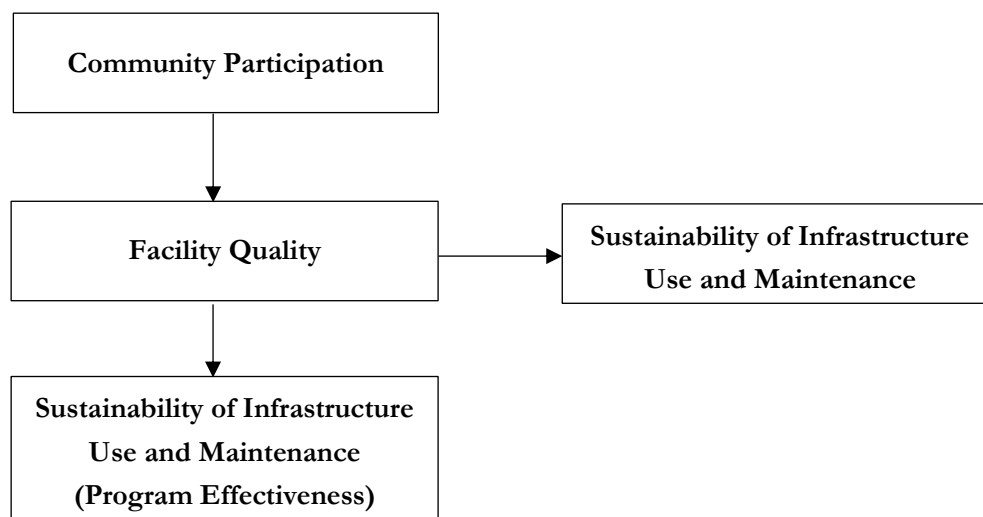


Figure 1. Conceptual Diagram of the Research

Source: Personal Design, 2025

This model serves as a guide for developing interview protocols, analyzing data, and evaluating program effectiveness.

3. Proposed Method

This research employs a qualitative approach using a phenomenological method, aiming to deeply understand the experiences and perceptions of both community members and village officials regarding the effectiveness of the Community-Based Sanitation Program in Langkat Regency. This approach was chosen because it enables the exploration of the subjective meanings behind program implementation, including aspects of participation, functionality of facilities, community perceptions, and sustainability. This focus aligns with the previously constructed conceptual framework, where the effectiveness of sanitation programs is examined through the interconnectedness of community involvement, the physical condition of facilities, beneficiary satisfaction, and the sustainability of practices after the intervention.

The study was conducted in several villages in Langkat Regency, North Sumatra, which have implemented the PAMSIMAS Program or other community-based sanitation initiatives. The locations were selected purposively, considering active community engagement, the presence of communal sanitation facilities, and the willingness of informants to participate in interviews. The research activities took place from October 2024 to February 2025, encompassing field observations, interviews, documentation, as well as data analysis and validation.

Data were collected from primary sources through in-depth interviews with beneficiaries, village sanitation cadres, and village government officials directly involved in the program's implementation. A purposive sampling technique was used to select informants who have firsthand experience and knowledge of the program. The estimated number of informants is between 15 and 25 people, following the principle of data saturation—where data collection is stopped when no new insights are being obtained.

Data collection methods included a combination of in-depth interviews, participatory observation, and field documentation. The interviews were semi-structured to maintain thematic focus while allowing space for informants' personal narratives. Observations were

conducted on-site to assess the condition of the facilities, community interactions, and usage habits. Documentation consisted of field notes and photos of the facilities, which served to reinforce the data obtained through interviews and observations.

Data analysis was conducted thematically, referring to the model by Miles, Huberman, and Saldaña. The analysis process began with data reduction—sorting and coding relevant information—followed by data display in narrative and thematic matrix forms, and finally drawing conclusions linked to theoretical frameworks and previous research findings. This analysis aimed to understand the relationships among themes such as participation, facility quality, community perceptions, and program sustainability within the local context.

The validity of the data was ensured through triangulation of techniques and sources by combining interviews, observations, and documentation. Member checking was conducted by reconfirming findings with informants to ensure interpretive accuracy, while peer debriefing involved discussions with supervisors or colleagues to obtain objective perspectives on the analysis results. Through this approach, the study aims to present a comprehensive and meaningful picture of the effectiveness of the community-based sanitation program in Langkat Regency, and serve as a basis for improving future policies and implementation.

4. Results and Discussion

General Description of Research Location and Informants

This study was conducted in Tanjung Aman Village, located in Wampu Subdistrict, Langkat Regency, North Sumatra. The village is one of the implementation sites of the Community-Based Sanitation Program (PAMSIMAS), which has been running for more than two years. Geographically, the village is situated in a lowland area, and the population is predominantly composed of farmers and daily laborers. Basic infrastructure such as roads and electricity networks are well established; however, household sanitation systems remain limited, particularly in terms of wastewater drainage and access to hygienic toilets.

The village government has made efforts to improve environmental quality by forming sanitation cadres and involving residents in the construction of communal septic tanks. However, challenges persist, such as the community's low awareness of clean living practices and limited funds for maintaining the existing facilities. These conditions make the village a suitable site for exploring the effectiveness of participatory implementation of community-based sanitation programs.

A total of 15 informants participated in this study, comprising 9 individuals from the group of program beneficiaries, 3 sanitation cadres, and 3 village officials. The informants' ages ranged from 28 to 52 years old, with occupational backgrounds reflecting the village's socioeconomic life, including housewives, farmers, traders, and village staff such as hamlet heads and village secretaries.

Informants were selected purposively based on their direct involvement in the sanitation program—whether as users, implementers, or facilitators. They represent a variety of perspectives and experiences, which are essential for illustrating the dynamics of program implementation. In-depth interviews and field observations were conducted to understand their perceptions of facility quality, levels of participation, and the sustainability of the program. The following table presents the characteristics of the research informants:

Table 1. Characteristics of Research Informants

No	Informant Code	Category	Gender	Age	Occupation
1	I-01	Resident	Female	34	Housewife
2	I-02	Resident	Male	45	Farmer
3	I-03	Resident	Female	39	Trader

No	Informant Code	Category	Gender	Age	Occupation
4	I-04	Sanitation Cadre	Female	28	Posyandu Cadre
5	I-05	Resident	Male	50	Construction Worker
6	I-06	Village Official	Male	40	Village Secretary
7	I-07	Resident	Female	33	Honorary Teacher
8	I-08	Sanitation Cadre	Female	31	Health Cadre
9	I-09	Resident	Male	49	Daily Laborer
10	I-10	Resident	Female	36	Tailor
11	I-11	Village Official	Male	52	Hamlet Head
12	I-12	Resident	Male	30	Village Youth
13	I-13	Resident	Female	41	Housewife
14	I-14	Sanitation Cadre	Male	29	Environmental Cadre
15	I-15	Resident	Female	38	Farmer

Source: Personal Field Observation, 2025

Based on field observations, it was found that most of the sanitation facilities built through the PAMSIMAS program are still technically functional. However, not all residents are using them optimally. Some community members continue to dispose of waste into rivers, despite the availability of communal septic tanks. On the other hand, there are residents who actively maintain the cleanliness of the facilities and participate in outreach activities conducted by sanitation cadres. This variation reflects that the success of the program is heavily influenced by the local social and cultural context, as well as community leadership.

The data collected from the 15 informants serves as the basis for analyzing the four main themes established in the conceptual framework: community participation, facility quality, perception and satisfaction, and sustainability of the sanitation program. These four themes will be discussed in detail in the following sections.

Community Participation in the Sanitation Program

Community participation is one of the main indicators in assessing the success of a community-based sanitation program. Based on interviews with informants, it was found that the level of community involvement in the program in Tanjung Aman Village varied considerably.

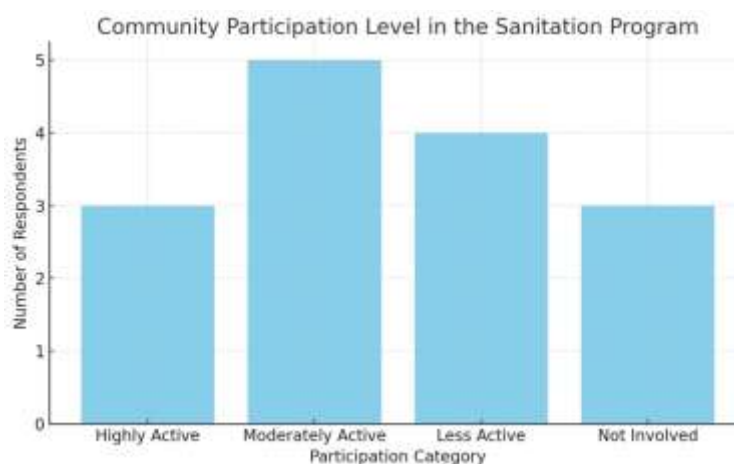


Figure 2. Bar Chart of Community Participation Levels

Source: Primary Research Design, 2025

Most residents reported that they had been invited to attend initial program socialization sessions; however, only a small number were actively involved in the physical construction or maintenance of sanitation facilities.

A sanitation cadre informant stated that residents' enthusiasm increased after seeing tangible results from the construction of the communal septic tanks. She noted, "When the program was first introduced, many stayed quiet, but after the septic tanks were built and people saw the results, they started helping with cleaning and checking the drainage." This statement indicates that community participation often emerges after residents experience the direct benefits of the program.

However, not all residents showed high levels of engagement. Some informants from the community stated they did not feel sufficiently involved in the planning process. One resident mentioned, "We only found out about the program after the construction was finished, so we don't understand why it was designed this way." This highlights a gap in communication and information flow between the program implementers and the community members.

Despite this, village officials claimed that efforts had been made to involve the community through village deliberations. However, active participation still depended on individual interest and willingness. According to one hamlet head, "We already announced and invited residents through the neighborhood heads, but not everyone wanted to attend."

Observational data supported this claim, showing that residents who were previously active in social groups such as arisan or the Family Welfare Movement (PKK) were also more likely to participate in sanitation-related community clean-up and mutual aid activities. This indicates that participation in the sanitation program correlates with general community social engagement.

Based on these findings, community participation in the sanitation program in Tanjung Aman Village can be categorized as partial and situational. While involvement is not yet widespread, there is a tendency for increased participation when the benefits of the program become apparent. This aligns with the findings of Rachmawati (2023), who emphasized that community involvement in development tends to increase when the outcomes align with their needs and expectations.

Therefore, it can be concluded that community participation in the sanitation program in this village is a crucial element that needs to be strengthened—both through more inclusive communication approaches and through empowering local cadres as bridges between the village government and the community.

Quality of Sanitation Facilities

The quality of sanitation facilities is one of the key determinants of success in community-based programs, particularly regarding usage and sustainability. Based on direct field observations and interviews with informants, it was found that most of the sanitation facilities built through the PAMSIMAS Program in Tanjung Aman Village are in relatively good physical condition. The communal septic tanks, drainage systems, and public toilet facilities—built through gotong royong (community self-help)—are still functional and in use.

A resident informant stated, "The public toilet near the health post is still clean, and there's enough water. But sometimes the door gets damaged because children play there." This comment reflects that although the facilities are available and functioning, routine maintenance remains a challenge. A similar complaint came from a sanitation cadre, who noted that there is no established schedule or clear division of responsibilities for regular cleaning.

On the other hand, several residents expressed satisfaction with the construction quality, highlighting the use of permanent materials and a well-sealed drainage system. "We used to make toilets with bamboo pits; now it's much better—cleaner and no smell," said one resident whose home is connected to the communal tank.

However, inequality in facility distribution was also observed. Not all hamlets in the village have equal access to sanitation infrastructure. Some residents reported they were unable to use the facilities because of their distant location and the lack of household connections to the main system. This suggests that physical availability does not necessarily guarantee accessibility for all residents.

Observation revealed that facilities located near community centers such as the village hall or mosque tend to be better maintained. In contrast, those situated in more remote or hidden areas receive less attention. This underscores the importance of strategic location planning in the design and construction of communal sanitation facilities.

Overall, the physical quality of the facilities can be considered good, but operational and maintenance aspects still require improvement. These findings are consistent with Hartini et al. (2023), who reported that the loss of sanitation functionality is strongly influenced by maintenance regularity and community roles in infrastructure upkeep. Additionally, the suitability of facility design to local needs is key to ensuring optimal usage.

Taking into account both observations and informant perceptions, it can be concluded that the technical quality of sanitation facilities in Tanjung Aman Village is adequate, though not yet fully optimal in terms of utilization and maintenance. This provides an important basis for developing technical training and community empowerment strategies in managing community-based sanitation facilities.

To reinforce these findings, the following figure presents residents' perceptions across five key aspects of sanitation facility quality: cleanliness, functionality, accessibility, maintenance, and user satisfaction, as outlined below:

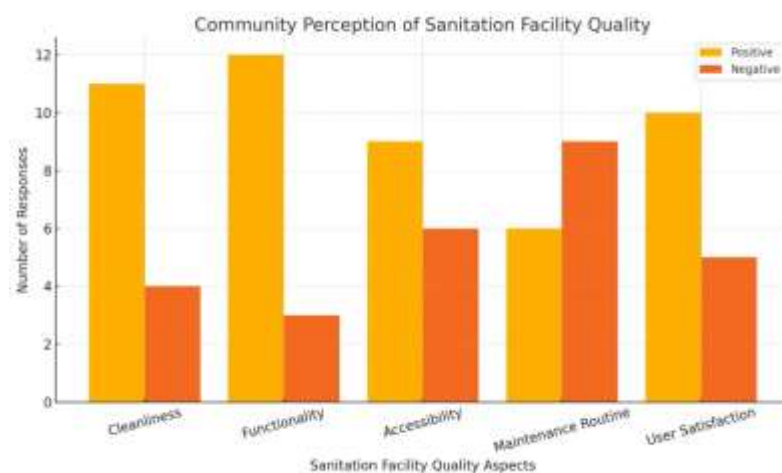


Figure 3. Community Perceptions of Sanitation Facility Quality

Source: Primary Research Data, 2025

The figure shows that functionality and cleanliness received the highest number of positive responses, with 12 and 11 respondents respectively. This indicates that most residents believe the facilities built are still usable and meet their basic sanitation needs. However, maintenance received the most negative responses (9 people), highlighting the weakness in post-construction facility management. Accessibility also emerged as an issue, as not all residents felt they had easy access to the facilities. Meanwhile, user satisfaction was relatively high but still indicated room for improvement.

Overall, the graph reinforces that the quality of sanitation facilities is not solely judged by technical standards but also by accessibility and the sustainability of community-based management.

Community Perception and Satisfaction

Community perception and satisfaction are crucial indicators for evaluating the success of sanitation programs, particularly from the beneficiaries' perspective. Based on in-depth interviews, the majority of informants stated that the program had positively impacted environmental cleanliness and everyday comfort. One resident said, "We used to go to the river, but now we have our own toilets, even though they're connected to the communal tank. Our children are also healthier now."

However, perceptions varied across age and occupational groups. Younger and socially active informants were more receptive to the program and reported higher satisfaction. In contrast, older informants or those not involved in community activities tended to be less informed about the program and rated its benefits lower.

Resident satisfaction was also influenced by the functionality of the facilities and their proximity to homes. Those living closer to the communal septic tanks and main drainage

systems reported more positive experiences than those living on the outskirts of the hamlets. Additionally, health education conducted by sanitation cadres significantly increased residents' awareness of clean and healthy living behaviors.

To illustrate this perception, the following table summarizes resident responses across four key aspects: environmental cleanliness, ease of access, usage comfort, and overall satisfaction.

Table 2. Community Satisfaction Level with the Sanitation Program

Aspect	Very Satisfied	Satisfied	Dissatisfied
Environmental Cleanliness	6	7	2
Ease of Access	4	6	5
Usage Comfort	5	8	2
Overall Satisfaction	6	6	3

Source: Personal Research Summary, 2025

The table above shows that overall, residents reported a high level of satisfaction with the program. However, ease of access remains a challenge, consistent with earlier findings on the uneven distribution of facilities.

In conclusion, community perceptions of the sanitation program in Tanjung Aman Village are generally positive, especially regarding improved quality of life and environmental conditions. Nevertheless, the program still requires improvement in terms of equitable access and community education to ensure its benefits are felt more inclusively.

Synthesis and Comparison of Research Findings

Based on the four main themes discussed previously, it can be concluded that the effectiveness of the community-based sanitation program in Tanjung Aman Village demonstrates technical success but still faces challenges in terms of community participation and operational sustainability. These findings align with the study by Hidayat et al. (2023) & Purba et al. (2024), which emphasizes the importance of community involvement in maintaining sanitation infrastructure to ensure its long-term functionality.

In terms of facility quality, the results of this study show that most physical facilities were well constructed and functional, although maintenance issues persist. This supports the findings of Hartini et al. (2023), who found that the quality of sanitation infrastructure is strongly influenced by community management and the presence of active cadres who conduct regular monitoring.

Meanwhile, the level of community satisfaction in this study is relatively high, particularly concerning improvements in environmental cleanliness and user comfort. These findings reinforce the conclusions of Nuraini et al. (2023), who argue that participation in the use of facilities that align with local needs enhances collective satisfaction.

However, the uneven distribution of facilities and limited access in several hamlets indicate that spatial equity remains a challenge, as also highlighted in the study by Haloho & Sugiarto (2024) on the impact of infrastructure on regional disparities in Langkat Regency.

From the perspective of participation, this study underscores that resident involvement remains situational and tends to increase after visible results are achieved. This intersects with participatory planning theory, as proposed by Aini et al. (2023) & Sugiarto et al. (2023), which suggests that effective participation is not solely formed through formal invitations, but also through direct experience of program benefits. Therefore, the role of local sanitation cadres is crucial as communicators and motivators of resident engagement Sugiarto & Ramadania (2024).

Overall, the synthesis of this research indicates that community-based sanitation programs can succeed if supported by three key components: the design of facilities that align with local conditions, community involvement from the planning stage, and a sustainable post-construction management system. The PAMSIMAS program in Tanjung Aman Village shows signs of early success but requires more systematic strategies to foster long-term behavioral change and equitable benefit distribution throughout the village.

Evaluation of Program Sustainability

The sustainability of the community-based sanitation program in Tanjung Aman Village depends on several interrelated factors, including community commitment, management capacity, village policy support, and funding continuity. Based on interviews with village officials and sanitation cadres, it was found that post-construction, there is no consistent formal mechanism to ensure facility maintenance and oversight. This poses a risk to the long-term functionality of the infrastructure.

Generally, resident enthusiasm for maintaining sanitation facilities remains individualistic and has yet to be institutionalized within village governance structures. Some cadres noted that maintenance contributions are collected occasionally and on a voluntary basis, with no established regulations. As emphasized by Nuraini et al. (2023) & Pribadi (2025), the sustainability of sanitation management requires a participatory governance system based on community consensus.

Limited technical capacity among sanitation cadres is also a challenge. Several cadres admitted they had not received advanced training on septic tank maintenance or wastewater systems, so when minor damage occurs, they often must wait for assistance from sub-district or district-level agencies. This condition can delay prompt responses to technical problems and reduce public confidence in the program's sustainability.

On the other hand, observations revealed that the presence of local leaders who care about environmental cleanliness has become a driving force for sustainability, although their influence remains localized and uneven across hamlets. This finding is consistent with Hidayat et al. (2023) & Linda et al. (2024), who stressed the strategic role of community leaders in internalizing sanitation values into the community culture.

Village government support is still needed in the form of proportional village budget allocations for facility maintenance and sanitation development activities. At present, there are no explicit village regulations governing communal sanitation management. Therefore, the formulation of a village regulation (Perdes) on community-based sanitation is a crucial step to ensure long-term sustainability.

In conclusion, the sustainability of the sanitation program in Tanjung Aman Village remains vulnerable if not reinforced with strong local policies, ongoing cadre training, and the establishment of a community-based institutional system. These components are essential prerequisites for transforming project-based interventions into long-term collective habits.

5. Conclusions

Based on field findings and in-depth analysis, it can be concluded that the Community-Based Sanitation Program (PAMSIMAS) in Tanjung Aman Village has had a positive impact in improving access to basic sanitation facilities. Most residents have directly benefited from the presence of communal septic tanks and health education activities initiated by sanitation cadres. However, challenges remain in the areas of maintenance, sustained community involvement, and the absence of a management system embedded in village institutions.

The success of this program is strongly influenced by the synergy between community participation, local policy support, and the technical capacity of village-level implementers. Community involvement tends to increase as residents experience the tangible benefits of the program. However, the program will be difficult to sustain without regulations and long-term strategies that are adaptive to the social dynamics of the local community.

Based on the research results, the following strategic recommendations are proposed:

1. Formulation of a Village Regulation (Perdes) on Communal Sanitation, including mechanisms for contributions, maintenance procedures, and shared responsibilities among residents.
2. Ongoing training for sanitation cadres, especially in the technical aspects of septic tank maintenance and environmental health promotion.
3. Establishment of a Village Sanitation Working Group, a non-formal body functioning as a facilitator and liaison between the community and village government.
4. Allocation of dedicated funds within the Village Budget (APBDes) for sanitation operations and cadre incentives.
5. Strengthening inter-hamlet communication to foster a sense of collective ownership and equitable benefit distribution across the village.

These recommendations are expected to serve as concrete steps to reinforce program sustainability, expand its impact, and integrate it into the community's clean and healthy lifestyle culture.

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