
Identifying local challenges of sustainable tourism development in Tongging Village

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ABSTRACT

This study identifies the challenges of developing sustainable tourism in Tongging Village based on the analysis of local community perceptions. The study employs a qualitative descriptive approach, combining literature reviews, field observations and in-depth interviews with 12 key informants, namely local residents and the local government. The study found that the challenges faced by the community in Tongging Village include a lack of promotion and cultural preservation, as well as low and unsustainable environmental quality. This study contributes to the development of sustainable tourism villages in Indonesia, particularly Tongging Village, by providing recommendations to stakeholders to improve the quality of the village.

ABSTRAK

Penelitian ini mengidentifikasi tantangan pengembangan pariwisata berkelanjutan di Desa Tongging berdasarkan hasil analisa persepsi masyarakat lokal. Penelitian ini menggunakan pendekatan deskriptif kualitatif yang menggabungkan hasil tinjauan pustaka, observasi lapangan, dan wawancara mendalam dengan 12 informan kunci, yaitu masyarakat lokal dan pemerintah setempat. Hasil penelitian menemukan bahwa tantangan yang dihadapi masyarakat di Desa Tongging adalah kurangnya promosi dan pelestarian budaya, serta kualitas lingkungan yang rendah dan tidak berkelanjutan. Penelitian ini berkontribusi terhadap pengembangan desa wisata yang berkelanjutan di Indonesia, khususnya Desa Tongging, melalui pemberian rekomendasi bagi pemangku kepentingan untuk meningkatkan kualitas desa.

INTRODUCTION

Each tourist destination has its advantages and disadvantages that affect the well-being of the local community (Godovykh et al., 2025). Tourism generally provides positive impacts for the community, such as job creation, gender empowerment, and community development (UNEP & UN Tourism, 2005). Tourism also benefits tourists, the government, and the workers of tourism (Garzón Vásquez et al., 2025). Besides the positive aspects, tourism also has negative impacts on the environment and cultural integrity (Godovykh et al., 2025). Among them are the increase in CO2 emissions and energy consumption, which are the results of transportation and accommodation supporting tourism activities (Deb et al., 2023). Additionally, the lack of visitor responsibility, such as littering at destinations and the absence of proper waste management, contributes to ecosystem degradation (Ștefănică et al., 2021). As a result, waste not only pollutes the environment and diminishes the natural beauty of the destination, but also affects water quality when contaminated. (Bangani et al., 2023; Safir et al., 2024) The degradation of water quality at tourist destinations is a challenge faced by various tourist destinations (Pásková et al., 2024; Shakeela, 2015) and causes a decrease in the well-being of both the local community and tourists.

On the other hand, the challenges in tourism originate from the impact of globalisation, which threatens the integrity of local culture due to the influence of foreign practices and cultures brought along with tourism activities. Tourism activities promote local culture (Lestari et al., 2025), but enhanced effort and attention must be provided by the government, local communities, and other stakeholders to sustain and protect the culture, preventing its loss (Ginting et al.,

2024). This condition indicates the need for the implementation of practices that prioritise the sustainability of destinations, which not only conserve the environmental ecosystem but also provide social and economic benefits, as well as preserve cultural heritage (Dabamona & Salim, 2024); Pai et al., 2025).

Active participation from every stakeholder and local community involvement are important in the effort to develop sustainable tourism (Khadijah et al., 2025). Through direct participation, the community will feel connected to tourism activities, hence contributing to their development. Based on the research conducted by Wiweka et al. (2020), it was found that the community in Lake Toba is already actively participating in tourism activities and shows a positive perception towards its development. However, the community's opinions at each location cannot be precisely reflected in the findings of the tourism study conducted in Lake Toba as a whole. There are 8 regencies around Lake Toba, with 6 Key Tourism Areas (KTA) (Perpres No. 89, 2024) that require further studies in each key tourism area to comprehend the local community's perceptions in particular locations.

This study was conducted in Tongging Village, which is located in one of the key tourism areas, KTA Merek. Tongging Village is a tourist site along the shores of Lake Toba, renowned for its stunning natural resources; however, it remains relatively unfamiliar to both foreign and domestic travellers (Utami & Azhar Badrawi, 2019). Also, the tourism potential of Tongging Village has not been optimally developed (Habib Auliya et al., 2025), and the public facilities at the destination remain inadequate (Ginting & Effendi, 2020). Research on the challenges of developing sustainable tourism in Tongging Village is still limited, and the perception of sustainable tourism

development in the village by the local community has never been analysed. Therefore, this study aims to identify the challenges of developing sustainable tourism in Tongging Village, analyse the local community's perception of sustainable tourism development, and provide strategies to enhance the village's sustainability.

LITERATURE REVIEW

Sustainable tourism

Sustainable tourism is a concept developed to provide positive impacts on economic, social, and environmental aspects while considering current and future developments (Kemenparekraf, 2021). The concept of sustainable tourism does not solely focus on tourism activities in a particular destination, but through its implementation, it is expected to achieve the global agenda, namely the 2030 Agenda for Sustainable Development, which derives from the 17 Sustainable Development Goals (SDGs) (WTO & UNDP, 2017). International organisations such as the Global Sustainable Tourism Council (GSTC) and UN Tourism develop standards for the tourism sector to educate all stakeholders at tourist destinations about sustainability (Kemenparekraf, 2021). Achieving sustainability in a tourism destination requires continuous monitoring (UNEP & UN Tourism, 2005) of the implementation of the four sustainable tourism criteria, namely socio-economic sustainability, environmental sustainability, cultural sustainability, and sustainable governance. (Kemenparekraf, 2021).

Stakeholders in sustainable tourism have their own needs, goals, and perceptions regarding tourism development (Gao et al., 2024; Sharma & Arora, 2024). According to the Regulation of the Minister of Tourism and Creative Economy Number 14 of 2016 regarding

Guidelines for Sustainable Tourism Destinations, there are five stakeholders in sustainable tourism development, namely local communities, government, businesses, academics, and the media. Local communities are the stakeholders who immediately feel the effects of tourism (Godovykh et al., 2025). This is because they live in the destinations, own businesses, and work in the tourism sector (Aysin Örnek et al., 2025). Therefore, the development of tourist destinations should prioritise the well-being of the local communities.

Local perception

The positive perception of the local community towards tourism activities at a destination is an indication that the criteria for sustainable tourism development are being fulfilled (Demirović Bajrami et al., 2020). By understanding the perceptions of the local community, destination development can be adapted to their needs, thereby reducing negative perceptions of tourism activities (Ginting et al., 2019). Research conducted by Kim et al. (2021) found that active participation by locals in tourism enhances positive perception and overall satisfaction. This is supported by Wiweka et al. (2020) in their study on locals' perspectives towards tourism participation at Lake Toba. The study found that the communities around Lake Toba act as partners with the government, where more than 60% of respondents actively participate and have a positive perception of tourism development. Strong support and good relations with the local government are key to achieving sustainable tourism (Godovykh et al., 2025). An important role in tourism governance activities at Lake Toba is to foster a sense of ownership and cooperation among the local community, thereby strengthening responsibility towards the environment and governance (Priatmoko et al., 2021; Purwoko et al.,

2021). Community participation in every aspect of tourism generates a more positive perception and enhances satisfaction with tourism activities at the destination (Rasoolimanesh et al., 2017). As a result, the local community fulfils a crucial role in developing sustainable tourism (Pardosi et al., 2021).

Sustainable tourism challenges

Sustainable tourism development is an effort to improve and resolve issues arising from tourism activities (Streimikiene et al., 2021). Achieving sustainability at a tourist destination requires identifying challenges for solutions to be developed. Tourism challenges are diverse, ranging from a lack of government and financial support, ecosystem degradation, declining quality of life, to the loss of cultural identity (Gabbrakmanov et al., 2015). One of the main issues facing tourism-related activities is governance (Farmaki, 2015). The development of tourism governance cannot be achieved solely through reliance on regional or local governments (Dinica, 2009). Although globally the challenges faced in developing sustainable tourism show similarities, each destination is confronted with specific challenges that impact the well-being of its community (Farmaki, 2015). Lake Toba is one of the tourist destinations in North Sumatra Province that offers stunning natural beauty along with a rich cultural heritage and traditions that have been preserved and passed down through generations. Based on several studies (Anele & Sam-Otuonye, 2021; Ginting et al., 2023; Habib Auliya et al., 2025; Nainggolan et al., 2020), Tourist destinations at Lake Toba still face various challenges, such as environmental pollution, inadequate visitor facilities and waste management, lack of promotion of culture and destinations, as well as insufficient funding.

RESEARCH METHODS

This research was conducted in Tongging Village, Merek District, Karo Regency, North Sumatra Province. This destination was chosen based on the various challenges faced in relation to sustainable tourism. As a village located at Lake Toba, it requires careful consideration in tourism development to prevent disruption of the lake's ecosystem and to enhance the well-being of its inhabitants. This study employs a qualitative descriptive approach to illustrate the social phenomenon that occurs in Tongging Village based on the collected empirical data. Qualitative data is obtained through literature review of sustainable tourism development, field observation, and in-depth interviews with 12 key informants, consisting of the local community and local government. The observations and interviews were conducted concurrently with the socialisation activities carried out by the research team regarding the development of sustainable tourism. Informants were chosen based on the research aim, which is to analyse local perception towards sustainable tourism development in Tongging Village. Whereas the literature review focuses on similar past studies that focus on the development of sustainable tourism to comprehend local perception, and identify the challenges in tourism development, specifically in Lake Toba. The aim is to acquire similar theories before comparing them with the case study.

The in-depth interview consists of 34 questions to discover the locals' perception towards sustainable tourism development in Tongging Village. The questions are divided into 4 sustainable tourism aspects, namely governance, socio-economic, cultural, and environmental aspects.

Table 1. Informant data

Code	Job/ Occupation	Gender	Age
P1	Village Secretary	M	37
P2	Government Official	F	40
P3	Government Official	F	35
M1	MSME Owner	F	43
M2	MSME Owner	F	39
M3	Farmer	F	39
M4	Farmer	F	32
M5	Housewife	F	54
M6	Farmer	F	60
M7	Entrepreneur	F	40
M8	Entrepreneur	F	46
M9	Farmer	F	42

Interview and observation results are analysed by comprising three phases: data presentation, data reduction, and concluding data. At the data reduction stage, the researchers categorised the interview data based on informants' positive, neutral, and negative perceptions of sustainable tourism in Tongging Village. Then, conclusions were drawn based on data validation results through source triangulation and technique triangulation (Denzin, 2017) to determine the overall perceptions of the informants regarding the development of sustainable tourism in Tongging Village.

RESULTS AND DISCUSSIONS

This study involved interviews with 12 key informants, consisting of local community members from diverse occupational backgrounds and local government officials, to discover their perceptions on sustainable tourism development in Tongging Village. After data reduction by grouping the informants' responses based on their perceptions, a total of 23 positive perceptions, 6 neutral perceptions, and 5 negative perceptions were identified. Each indicator within the aspect of sustainable governance was answered by informants with positive perceptions, and although there were neutral perceptions in the socio-economic sustainability aspect, there were no

significant negative perceptions. However, the negative perceptions expressed by informants were concerned with cultural sustainability and environmental sustainability aspects.

Sustainable governance

Based on observations, Tongging Village has implemented inclusive tourism governance by inviting local community participation in discussions on tourism development, as well as welcoming academics to conduct community outreach related to sustainable tourism. According to informant M5, the community has been given a platform to express complaints and recommendations to the government.

'The government has invited the community to participate in tourism discussions and has also accepted public input outside formal forums.' (P1)

However, informants M3 and M4 clarified that even though the community is invited to village meetings, decisions are still made unilaterally by the government. This is contrary to the opinions of other locals, who reported that they were included in the decision-making process.

Additionally, the observation results found that signs and infographics are still inadequate at the destination. One of the challenges identified is the lack of information boards and signs, especially at the key sites of Tongging Village. This is validated by the responses of informants M3 and M4, who stated that they feel the signs and infographics at the destinations are still minimal. This was confirmed by Informant P1, who explained that although disaster evacuation protocols have been developed and the community has been informed, they have not been implemented in the form of signs that are visible to the general public or tourists.



Figure 1. Community outreach at the Village head's office

Source: Author, 2025

Socio-economic sustainability

The perception of the local community and local government toward the development of the socio-economic aspect in Tongging Village has been positive. Informants agree that local enterprises such as SMEs, culinary businesses, and handicrafts have been operating well, although still experiencing certain obstacles. However, informant M2, a SME owner, claims that there is still minimal support from the government, which makes it challenging for them to operate their business. On the other hand, informant P1 reported that the government has provided locations for community businesses, but business operators must prepare their own equipment. Despite facing obstacles, the local community remains actively supportive of tourism activities, and five informants (M1, M2, P1, P2, P3) expressed interest in investing in the tourism sector if given the opportunity.

One of the challenges identified through interviews with the community is the employment of underage children. However, informant M9 emphasised, *'The children (underaged) in this village help their parents after school or on holidays. So, it is not considered employing minors.'*

In addition, all informants agreed that Tongging Village is a safe and comfortable destination for both tourists and locals, although half of the informants

(P1, M5, M6, M7, M8, M9) articulated dissent concerning the accessibility of law enforcement. Informant P1 explained that residents can report to the village head's office if they encounter problems to receive assistance, but in urgent situations, such as criminal acts, the report will be made directly to the Merek District police office, which is approximately 2 hours away from Tongging Village. He added that the process of contacting the police office is uncomplicated, but the long distance remains an obstacle.

During the observation, the comfort of the destination was not evident in the infrastructure of Tongging Village for people with disabilities; only one restaurant (Vhi Vhi Resto) provided a ramp. However, the interview results indicated otherwise, as the community felt that Tongging Village had provided adequate accessibility for people with disabilities. Informant M6 stated that there are many routes in Tongging Village that can be navigated by wheelchair users. Another observation result was that the visitor facilities were still in good condition, although some damage was present. When questioned about the state of the facilities, informant M7 explained that although the local community attempts to keep the facilities in good condition, occasionally tourists fail to participate in maintaining the provided facilities.

Cultural sustainability

Tongging Village has a strong cultural identity, and its locals regularly perform rituals and inherited traditions. However, the lack local culture management hinders its tourism potential (Daryana et al., 2025). The community's perception of sustainable tourism development in relation to cultural aspects has not been entirely positive. This is due to the lack of a platform for residents or visitors to provide suggestions regarding

the preservation of intangible cultural heritage, as conveyed by informant M8. Based on observations, there is no online platform for providing feedback for Tongging Village, although P2 stated that offline, residents can give suggestions to the Tourism Awareness Group (*Pokdarwis*). Additionally, online promotional media for the destination have not yet been implemented.

Cultural preservation in Tongging Village is only visible through the rituals and traditions still practised by the local community. Based on the observations, there is only one communal hall (*jambur*) used by the community for cultural activities; beyond that, tangible culture in Tongging Village is not apparent. *'Previously, visitors came to learn and participate in cultural activities, but cultural activities are not held regularly and there are no craft makers here (Tongging Village), so visitor numbers have declined.'* (P3)

Nevertheless, the people of Tongging Village agree that their village remains easily accessible for visitors who wish to learn about Batak culture.

Environmental sustainability

Some of the main challenges identified through field observations are the village's cleanliness and the use of alternative energy sources. In implementing sustainability, a destination is expected to utilise renewable energy sources (Deb et al., 2023). However, Tongging Village has yet to adopt alternative energy sources, such as solar panels. Besides that, environmental sustainability is also evaluated based on adequate waste management at the destination (Ștefănică et al., 2021). The community agrees that the government has provided wastebins, but the amount is still insufficient to ensure environmental cleanliness. They also noted that visitors frequently litter and do not maintain the

cleanliness of the destination. Informant P1 stated that the shortage of trash bins provided by the government is due to limited funding. On the other hand, the community mentioned that despite the low cleanliness of the destination, the public toilets are clean and well-maintained.

'The villagers and restaurant owners always clean the (public) toilets, even though the tourists are dirty most times.' (M5)

The government's management in developing environmental sustainability in Tongging Village has received positive perceptions from the local community. Residents reported that the management of liquid waste is adequate and does not disrupt the village's water quality. However, informants P2 and P3 added that the liquid waste channels have leaks that affect environmental cleanliness. These two informants also stated that liquid waste products reduce the quality of clean water at the destination. Consequently, based on interviews with the community and the village government, it was found that the locals' perception of environmental sustainability in Tongging Village is still mostly negative.

Table 2. Local perceptions of sustainable tourism development

Aspect	Interview Questions	Perception		
		Positive	Neutral	Negative
Governance	'Actively involved in tourism management activities'	v		
	'Involved in every decision/activity related to tourism management'	v		
	'This tourist destination's promotion and information are effectively executed and accessible'	v		
	'Invited to attend meetings or discussions related to tourism management'	v		
	'Given the opportunity to propose innovations or improvements in tourism management'	v		
	'Tourist destinations have signs/ infographics/ evacuation procedures'	v		
	'Interest in investing in the tourism sector if the opportunity arises'	v		
Social Economy	'The local community actively supports tourism activities'	v		
	'The destination provides decent employment opportunities for the local community'	v		
	'Work in the tourism industry is easily accessible to the locals'	v		
	'Local businesses (culinary, handicrafts, MSMEs) are performing well'	v	v	
	'The local government supports the development of local entrepreneurship'		v	
	'Tourism entrepreneurs do not employ underage children'			
	'The location is devoid of human trafficking'	v		
	'The destination is safe and comfortable for all visitors'	v		
	'Visitor facilities are well maintained'	v		
	'Healthcare services are accessible to visitors'	v		
	'Security services are available and easy to contact'		v	
	'The destination is accessible for people with disabilities'	v		
	'The road access to the destination is excellent'	v		
Culture	'Destination promotion has reached the wider public'	v		
	'Intangible cultural heritage (rituals, traditions, arts) is routinely protected and celebrated'	v		
	'A platform/media (online/offline) is available to provide input or feedback regarding the preservation of intangible cultural heritage'			v
	'Traditional crafts are created appropriately and are accessible to the public'			v
	'This destination is easily accessible to the locals and visitors who want to learn or participate in cultural activities.'	v		
Environment	'Solar panels are used as an alternative source of electricity'			v
	'The available water is suitable for use'	v		
	'The public toilets are clean and well-maintained'		v	
	'Visitor management is well organised'	v		
	'Visitors maintain environmental cleanliness'			v
	'The government or management provides adequate wastebins.'		v	
	'The amount of wastebins at the destination is sufficient.'			v
	'The liquid waste management at this destination is adequate'		v	
'Liquid waste does not affect the water quality at this destination'	v			

Analysis of findings and development recommendations

Previous research on tourism activities in Tongging Village has identified various challenges faced. Therefore, this study aims to validate these challenges based on field observations and interviews with local residents. This study found that the overall perception of the community toward sustainable tourism development in Tongging Village is positive, but perceptions regarding cultural and environmental sustainability aspects are still lacking. The absence of an online platform for residents to provide suggestions on destination cultural preservation has become a barrier to the development of cultural sustainability in Tongging Village. Although local tourism awareness groups are already operational, in the digital era, ease of access is needed to be more effective. Besides serving as a feedback medium, an online platform is also important as a destination promotion tool.

According to [Utami & Azhar Badrawi's \(2019\)](#) research, one of the challenges is the lack of an online platform for promotion. However, based on the results of the interviews conducted for this study, it was discovered that information and promotion about tourist destinations in Tongging Village are already well-conducted and easily accessible, therefore showing promising development within six years. Ideally, the online platform that is utilised to promote the tourist destination would also be used to allow both locals and visitors to provide feedback on Tongging Village's tourism services. Such as the research by [de las Heras-Pedrosa et al. \(2020\)](#), which found that social media not only enhances the promotion of tourist destinations but also facilitates online interactions.

In addition, this study has successfully validated the findings of [Habib Auliya et al \(2025\)](#), who stated that

the tourism potential of Tongging Village has not been optimally developed. This study found that the community has a negative perception of cultural sustainability due to the absence of activities for preserving traditional crafts. This has led to a decrease in the number of tourist visits to learn about the local culture. To increase visits, the government should collaborate with tourism awareness groups by providing training to the community to revive the fading culture of Tongging Village. Additionally, the government should regularly hold cultural festivals in Tongging Village to attract tourists.

On the other hand, Tongging Village's environmental sustainability requires greater consideration, particularly in terms of cleanliness and waste management. The community has an extremely poor perception of the availability of garbage containers and the cleanliness of the environment. The behaviour of tourists who fail to participate in preserving Tongging Village's environment is one of the issues identified. Specifically, regarding Tongging Village being on the edge of Lake Toba, it is alarming if waste contaminates the water. This would result in lowering the quality of life, not only for the locals, but also for the wildlife in the area ([Bangani et al., 2023](#); [Safir et al., 2024](#)). Therefore, it is advised that the government establish strict rules and install additional signage concerning environmental cleanliness to ensure that tourists are compliant and aware of the importance of maintaining the destination's cleanliness and not causing damage to facilities.

In addition to environmental cleanliness, energy efficiency is a goal of sustainable tourism development ([Deb et al., 2023](#)). Interview results show that Tongging Village has not yet used alternative energy sources; therefore, the Tongging Village government is

recommended to implement the use of solar panels for street lighting. The implementation of renewable energy has already been executed in Merek District (Ginting et al., 2025) and can serve as an example for the governance of Tongging Village.

Therefore, this study highlights that participatory governance, digitalisation, enforced environmental regulations, and renewable energy implementation are the key strategies for enhancing Tongging Village's sustainability.

The limitation of the research is the number of informants, as interviews were conducted during an outreach activity with limited public engagement. The findings on Tongging Village's local perception would provide a higher level of validity if future research combined quantitative methods by distributing questionnaires to assess the community's satisfaction with sustainable tourism development in Tongging Village. Additionally, further research could develop an assessment framework to measure the level of local community satisfaction with sustainable tourism development in Tongging Village.

CONCLUSION

Tongging Village has not fully implemented sustainable principles in the development of its tourism. Based on the research findings, the governance of Tongging Village is already inclusive and receives positive feedback from the local community. Tourism activities in Tongging Village have had a positive impact on the community, although the study found that the community still faces several challenges regarding cultural and environmental sustainability. The research findings contribute to the development of sustainable tourism villages in Indonesia by successfully identifying and analysing the challenges faced by locals in Tongging

Village and providing strategy recommendations for enhancing sustainability. Highlighting cooperation between tourism awareness groups (*Pokdarwis*) and the local government is a key strategy to develop cultural sustainability and the government's prioritisation of environmental quality in the development of the village's tourism. Furthermore, future research could concentrate on analysing local community satisfaction by applying a specialised evaluation framework.

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