

## COMMUNITY AWARENESS AND ITS IMPACT ON TOURISM INFRASTRUCTURE DEVELOPMENT IN THE COASTAL AREA OF KAMPUNG TUA NONGSA PANTAI

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### Informasi Naskah

Diterima: 12/05/2025; Disetujui terbit: 26/05/2025; Diterbitkan: 16/06/2025;  
<http://journal.uib.ac.id/index.php/jad>

### ABSTRACT

*This study explores the influence of community awareness on the development of tourism infrastructure in Kampung Tua Nongsa Pantai, a coastal heritage village in Batam, Indonesia. Despite its strategic location and rich cultural assets, the area faces challenges in infrastructure development due to limited funding, environmental degradation, and community resistance rooted in cultural preservation concerns. Using a qualitative descriptive approach, data were collected through observations, semi-structured interviews, and document analysis. The findings indicate that community awareness plays a dual role: it can either support or hinder infrastructure development, depending on the perceived alignment with local values and identity. While some residents, particularly elders, expressed concerns about cultural erosion, others, including local leaders and youth, supported infrastructure improvements to enhance tourism opportunities. The study also identified major infrastructure deficiencies such as unsafe access routes, lack of public amenities, and poor waste management. Despite these challenges, grassroots efforts—such as clean-up campaigns and cultural micro-enterprises—demonstrate a growing community commitment to sustainable tourism. This research contributes to the literature on community-based tourism by highlighting the importance of cultural sensitivity and inclusive planning in infrastructure development. Limitations of this study include its focus on a single case study and the constraints of qualitative generalizability. Future research should explore comparative studies across multiple coastal regions and integrate quantitative methods to broaden insights. The study concludes that sustainable tourism development requires not only physical infrastructure but also active and culturally grounded community engagement.*

**Keyword:** community awareness, tourism infrastructure, coastal heritage, cultural preservation, sustainable tourism

### ABSTRAK

Penelitian ini mengkaji pengaruh kesadaran masyarakat terhadap pengembangan infrastruktur pariwisata di Kampung Tua Nongsa Pantai, sebuah kawasan pesisir bersejarah di Kota Batam, Indonesia. Meskipun memiliki lokasi strategis dan kekayaan budaya lokal, wilayah ini menghadapi berbagai tantangan dalam pembangunan infrastruktur, seperti keterbatasan pendanaan, degradasi lingkungan, serta resistensi sebagian masyarakat yang khawatir akan hilangnya nilai-nilai budaya. Penelitian ini menggunakan metode deskriptif kualitatif dengan teknik pengumpulan data melalui observasi, wawancara semi-terstruktur, dan studi dokumentasi. Hasil penelitian menunjukkan bahwa kesadaran masyarakat berperan ganda: sebagai pendukung maupun penolak pengembangan infrastruktur, tergantung pada sejauh mana pembangunan dianggap selaras dengan identitas budaya lokal. Sebagian masyarakat, terutama tokoh adat, menunjukkan kekhawatiran terhadap modernisasi, sementara generasi muda dan pemimpin lokal cenderung mendukung peningkatan infrastruktur demi peluang pariwisata. Infrastruktur yang ada masih terbatas, dengan banyak fasilitas publik yang kurang memadai dan akses ke destinasi wisata yang tidak aman. Meski demikian, muncul berbagai inisiatif akar rumput seperti program bersih pantai dan pengembangan usaha mikro berbasis budaya. Penelitian ini berkontribusi pada kajian pariwisata berbasis masyarakat dengan menekankan pentingnya partisipasi dan kepekaan budaya dalam pembangunan infrastruktur. Keterbatasan penelitian ini terletak pada fokus wilayah tunggal dan sifat kualitatifnya yang terbatas dalam generalisasi. Penelitian lanjutan disarankan untuk melakukan studi komparatif di kawasan pesisir lain serta menggunakan pendekatan kuantitatif untuk memperluas cakupan temuan.

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**Keyword:** kesadaran masyarakat, infrastruktur pariwisata, kawasan pesisir, pelestarian budaya, pariwisata berkelanjutan

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## 1. Introduction

Coastal settlements hold significant potential in the tourism sector due to their rich natural, cultural, and historical resources. Globally, such areas have increasingly become focal points for sustainable tourism development, which not only boosts local economies but also reinforces environmental and cultural preservation efforts (Sulistyanto, 2017). The success of tourism development, however, is not solely determined by the availability of attractions or facilities; it hinges crucially on the level of community awareness and involvement. This awareness reflects residents' understanding of the importance of sustainability, cultural identity, and the long-term economic value of tourism infrastructure (Nursyamsu & Marcillia, Persepsi terhadap Kondisi Pelestarian Bangunan Cagar Budaya yang Menjadi Atraksi Wisata di Kotagede, 2022).

In the tourism industry, there are four key elements commonly referred to as the "4A" components: Attractions (tourist sites or points of interest), Accessibility (transport and connectivity), Amenities (supporting facilities such as accommodations and restaurants), and Ancillary services (institutions or organizations that manage and support tourism activities) (Utomo, Gusadi, Rahmi, Ramadhan, & Pratiwi, 2024). Tourism infrastructure comprises both physical and non-physical elements, all of which are essential to support the development and sustainability of the tourism sector in a region. These elements span across various sectors, including transportation, accommodation, recreational facilities, and other supporting services that collectively enhance the overall tourism experience.

In Indonesia, the integration of community participation into tourism planning remains inconsistent, especially in coastal heritage villages such as Kampung Tua Nongsa Pantai. Despite its strategic location and abundant cultural and natural attractions—such as Malay culinary heritage, access to Putri Island, Bukit Cinta, and religious tourism sites like the Nong Isa Tomb—the village's tourism infrastructure remains underdeveloped. This condition has become a barrier to unlocking the area's full tourism potential. Community awareness and participation are often overlooked in policy formulation and infrastructure development, leading to disconnects between tourism planning and local values (Nursyamsu, et al., 2023).

Previous studies have examined tourism development and infrastructure in various regions of Batam and other parts of Indonesia, with a focus on economic impacts, environmental consequences, or planning frameworks. However, there is limited research that investigates the direct relationship between community awareness and infrastructure development, particularly in historically and culturally significant coastal settlements. This presents a research gap that this study aims to address.

The novelty of this research lies in its focus on how community consciousness—defined as the collective understanding, perception, and responsiveness of local people—drives or hinders infrastructure development in tourism. Unlike prior works that primarily measure development outcomes through quantitative indicators, this study centers on community perspectives and cultural integration as key determinants of sustainable tourism.

Accordingly, the research problem can be framed as follows: How does the level of community awareness in Kampung Tua Nongsa Pantai affect the development and maintenance of tourism infrastructure, and what are the implications for sustainability and cultural preservation?

The objective of this research is to:

- a. Analyze the current state of public awareness related to tourism infrastructure in Kampung Tua Nongsa Pantai.
- b. Identify gaps between community aspirations and government-driven infrastructure initiatives.
- c. Provide strategic recommendations to improve collaboration between stakeholders for sustainable infrastructure development that honors local culture.

By exploring the dynamic relationship between community awareness and tourism infrastructure, this study contributes to a deeper understanding of participatory development in coastal heritage areas. The findings aim to inform policymakers, planners, and tourism developers on how to design infrastructure that not only supports tourism growth but also strengthens community identity and ecological resilience.

## **2. Literature Review**

### **Coastal Areas**

Coastal areas are transitional zones between land and sea ecosystems that are ecologically, economically, and culturally significant. According to Indonesian Law No. 1 of 2014 on the Management of Coastal Areas and Small Islands (Indonesia, Undang-Undang Republik Indonesia Nomor 1 Tahun 2014 tentang Perubahan atas Undang-Undang Nomor 27 Tahun 2007 tentang Pengelolaan Wilayah Pesisir dan Pulau-Pulau Kecil, 2014), a coastal area is defined as the interface between terrestrial and marine ecosystems, which is subject to changes from both land and oceanic influences. (Kay, Alder, Brown, & Houghton, 2003) describe coastal zones as unique landscapes where land and sea converge, offering diverse ecological functions and socioeconomic opportunities.

Coastal settlements often face pressures from environmental degradation, unregulated tourism, and land use changes, yet they hold high tourism potential due to their natural beauty, biodiversity, and cultural heritage. Therefore, integrated and sustainable management of these areas is essential to balance development and conservation goals.

### **Community Awareness and Participation**

Community awareness is a critical factor in sustainable development. In the context of tourism, awareness involves understanding the importance of preserving environmental integrity, maintaining cultural identity, and maximizing local economic benefits. According to (Marton & Booth, 2013), awareness can be defined as a state of understanding and consciousness of one's social environment, responsibilities, and cultural norms.

Community participation refers to the involvement of local populations in planning, decision-making, implementation, and evaluation processes related to development projects. Linton (Hiariey & Romeon, 2013) emphasizes that communities are dynamic social units capable of organizing themselves to respond to internal and external challenges. In tourism development, local participation ensures that initiatives are culturally appropriate, socially acceptable, and environmentally sustainable.

Several studies have shown that when communities are actively involved in tourism planning, they are more likely to support and maintain tourism infrastructure, engage in entrepreneurial activities, and adopt pro-environmental behavior (Oprasmani, Amelia, & Muhartati, 2020). Thus, fostering community awareness and participation is essential for ensuring the long-term success of tourism initiatives.

### **Infrastructure**

Infrastructure is a foundational component of regional development and economic growth. It includes physical systems and services such as transportation, water supply, sanitation, electricity, and public facilities that enable social and economic activities. (Macmillan Dictionary of Contemporary Economics, 1996) defines

infrastructure as the structural elements that facilitate the flow of goods and services between producers and consumers.

(Henner, 2000) notes that infrastructure exhibits positive and negative externalities, with characteristics such as high fixed costs, non-excludability, and non-rival consumption. (Larimer, 1994) further asserts that infrastructure includes not only physical assets but also institutions and systems that support regional planning and public service delivery.

In tourism, infrastructure plays a critical role in shaping visitor experiences and facilitating access to attractions. Poor infrastructure can hinder tourism growth and reduce visitor satisfaction, whereas strategic investments in infrastructure can increase the competitiveness and attractiveness of a destination.

### **Tourism**

Tourism is a multifaceted industry encompassing travel for leisure, cultural exploration, nature experiences, and religious purposes. According to Law No. 10 of 2009 on Tourism in Indonesia (Indonesia, Undang-Undang Republik Indonesia Nomor 10 Tahun 2009 tentang Kepariwisata, 2009), tourism involves a variety of activities supported by facilities and services provided by local communities, businesses, and governments. (Utomo et al., 2017) define tourism as a form of recreation involving travel to destinations outside the usual environment to enjoy and experience different cultures, environments, or events.

Tourism contributes to regional development by generating employment, increasing local income, fostering cultural exchange, and stimulating infrastructure development. In regions with limited industrial or agricultural potential, tourism often serves as a primary development engine (Kurniawati, 2015).

The success of tourism development hinges not only on the presence of natural or cultural attractions but also on how well these are managed and supported by infrastructure and community engagement. As such, sustainable tourism requires the integration of environmental stewardship, cultural preservation, and inclusive economic participation. The role of local communities is central in delivering authentic experiences, maintaining destination identity, and ensuring the equitable distribution of tourism benefits.

### **Tourism Infrastructure Development**

Tourism infrastructure encompasses all public and private facilities that support tourism activities, including roads, airports, accommodations, recreational facilities, signage, and sanitation systems. Its development is directly tied to tourism competitiveness and destination quality. According to (Widistari et al., 2017), tourism infrastructure is integral in enhancing accessibility, service quality, and the overall experience for tourists.

The tourism development process relies heavily on infrastructure as a backbone to enable safe and convenient travel and to support ancillary services. However, infrastructure development should align with principles of sustainability to avoid overdevelopment, cultural erosion, and environmental degradation. The involvement of local communities is key to ensuring that tourism infrastructure meets the actual needs of the destination and its people.

Several Indonesian case studies, including those in coastal and heritage areas, have highlighted the challenges in tourism infrastructure development, such as limited funding, bureaucratic inefficiencies, and lack of stakeholder coordination (Istiqah et al., 2023; Ilham et al., 2022). A participatory approach that involves government, private sector, and community actors is essential to overcome these barriers.

## **3. Method**

This study employs a qualitative descriptive research method aimed at understanding and explaining the social phenomena related to community awareness and its impact on tourism infrastructure development in the coastal area of Kampung Tua Nongsa Pantai. A qualitative approach is particularly suitable for exploring the

meanings, perceptions, behaviors, and cultural values held by the local community in their natural context, without imposing external variables (Hatie & Hay, 2012).

### **Research Design**

The research is descriptive in nature, focusing on portraying the existing conditions of tourism infrastructure and the role of community awareness. It explores how local perceptions and participation influence the development and maintenance of tourism-related facilities. The findings are presented in a structured narrative to facilitate interpretation and contextual understanding.

### **Data Collection Techniques**

The data were collected using three main techniques:

- a. **Observation:** Direct field observations were conducted to examine the physical conditions of the tourism infrastructure, environmental quality, and public spaces in Kampung Tua Nongsa Pantai. This includes documentation of access roads, tourist attractions such as Bukit Cinta and Makam Nong Isa, and supporting amenities.
- b. **Interviews:** Semi-structured interviews were held with key stakeholders, including local residents, community leaders (e.g., RT head), and informal tourism operators. These interviews aimed to uncover community perceptions, levels of awareness, and attitudes toward infrastructure development and its perceived impacts on culture and livelihood.
- c. **Documentation:** Supporting data were obtained through literature reviews, government planning documents, tourism brochures, and visual documentation (photos of infrastructure and tourism sites) collected during field visits.

### **Data Analysis**

The data analysis was conducted using a thematic content analysis approach. This involved coding the interview transcripts and field notes to identify key themes related to; community perceptions of tourism infrastructure, attitudes toward cultural preservation versus modernization, community involvement in infrastructure initiatives, challenges and aspirations for tourism development.

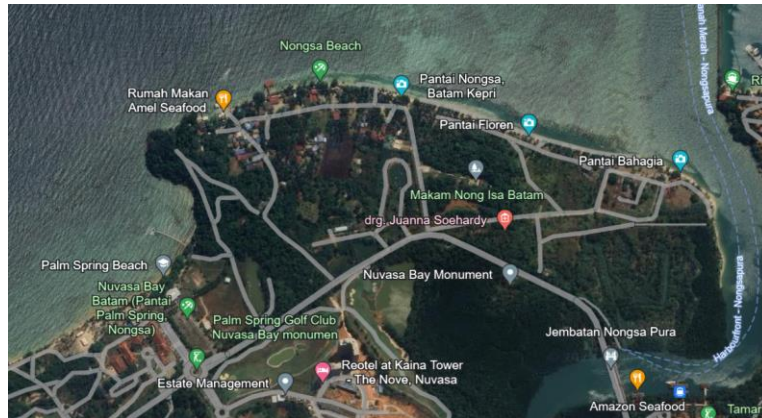
Patterns and discrepancies were analyzed to interpret how awareness and participation correlate with the condition and progress of tourism infrastructure. These themes directly informed the structure and discussion in the Results and Discussion section.

### **Validity and Reliability**

To ensure the credibility of the findings, triangulation was applied by cross-verifying information from observations, interviews, and documentation. Member-checking with selected respondents was also conducted to validate the researchers' interpretations of the interview data.

### **Research Site and Scope**

The study was conducted in Kampung Tua Nongsa Pantai (figure 1), a coastal heritage village located in the Nongsa sub-district of Batam City. The area was selected due to its strategic tourism potential, rich Malay cultural heritage, and ongoing discourse surrounding tourism development and community resistance. The scope of the study focuses on tourism-related infrastructure and community dynamics within this specific locality, making the findings context-specific but with implications for other similar coastal regions.



**Figure 1.** Kampung Tua Nongsa Pantai as Research Site  
Source: Google Earth, 2024

#### 4. Result and Discussion

##### **Cultural and Environmental Context of Kampung Tua Nongsa Pantai**

Kampung Tua Nongsa Pantai is a historic coastal settlement located in the northern part of Batam Island, recognized for its strong Malay cultural heritage and religious significance. The village contains valuable tourism assets such as the Tomb of Nong Isa (figure 2), Bukit Cinta (figure 3), and various traditional Malay seafood restaurants, which reflect both tangible and intangible cultural heritage.

Despite its potential, the region is facing increasing pressures from urban development, tourism commodification, and environmental neglect. Observations during the study revealed that waste management practices are suboptimal—waste from food vendors and coconut processing is frequently disposed of into coastal waters, threatening both ecological and tourism sustainability. Nevertheless, community-initiated efforts such as beach clean-ups and local signage campaigns show a rising environmental awareness, especially among younger generations and university collaborators.

This complex interplay between tradition, nature, and tourism underlines the need for a balanced development strategy that can preserve the character of Kampung Tua Nongsa while unlocking its tourism potential.



**Figure 2.** The Tomb of Nong Isa  
Source: Haluan Kepri, 2024



**Figure 3.** View from Bukit Cinta  
Source: Author, 2024

### **Community Awareness and Perception of Infrastructure Development**

Community awareness emerged as a central theme in shaping the trajectory of tourism infrastructure. Interviews revealed two dominant perspectives: one group, consisting mostly of older or long-term residents, expressed resistance to modernization, fearing the erosion of traditional identity and cultural displacement. For example, traditional architectural elements and symbolic colors like yellow and green are considered expressions of cultural identity and are perceived to be under threat from modern infrastructure projects.

Conversely, local leaders such as the RT head and youth representatives showed support for infrastructure development, citing its potential to increase tourism income and improve public amenities. There is also growing interest in leveraging cultural micro-enterprises, such as batik gonggong production and local crafts, as ways to preserve heritage while engaging economically with tourism.

Thus, community awareness acts both as a catalyst and a gatekeeper—supporting infrastructure development when aligned with local values, and rejecting it when seen as a threat to cultural continuity. This underscores the importance of culturally sensitive planning and inclusive governance mechanisms in infrastructure initiatives.

### **Infrastructure Conditions, Development Challenges, and Strategic Opportunities**

The current tourism infrastructure in Kampung Tua Nongsa Pantai is limited, fragmented, and in some areas, unsafe. Field observations documented several infrastructural deficiencies, such as the poor access path to Bukit Cinta (figure 4), the lack of proper sanitation facilities, and minimal support amenities for tourists (figure 5). These inadequacies contribute to a suboptimal visitor experience and limit the village's ability to capitalize on its tourism potential, despite receiving an estimated 10,000 visitors annually.



**Figure 4.** Access to Bukit Cinta  
Source: Author, 2024



**Figure 5.** Pendopo at Bukit Cinta  
Source: Author, 2024

The development of tourism infrastructure in this context is constrained by several factors:

- a. Limited funding and governmental support;
- b. Lack of technical planning and integration of tourism zones;
- c. Community mistrust toward large-scale development that does not involve them.

Nonetheless, there are promising opportunities:

- a. Revitalizing abandoned buildings for cultural tourism purposes;
- b. Expanding local participation in tourism service provision;
- c. Improving basic infrastructure (e.g., waste bins, signage, safer stairways) with low-cost, high-impact interventions.

The research findings suggest that a collaborative development model—involving government, community leaders, local businesses, and academic institutions—can bridge existing gaps. The goal is to foster a sustainable, culturally embedded, and economically inclusive tourism system.

## 5. Conclusion

This study aimed to investigate the influence of community awareness on the development of tourism infrastructure in the coastal settlement of Kampung Tua Nongsa Pantai, Batam. Specifically, it sought to answer the research question: How does the level of community awareness affect tourism infrastructure development and

sustainability in a culturally significant coastal area? The findings reveal that community awareness plays a dual role—as both a driving force and a regulatory filter—in shaping infrastructure development. On one hand, segments of the local population, particularly community leaders and youth, recognize the economic benefits of tourism and support improvements in infrastructure. On the other hand, traditionalists express concern over the potential erosion of local identity, especially if development projects are perceived to neglect cultural sensitivity. The study also highlights several infrastructural challenges, such as unsafe access routes, inadequate public amenities, and environmental degradation due to waste mismanagement. Despite these limitations, the presence of community-led initiatives—such as clean-up programs and cultural preservation efforts—demonstrates an emerging grassroots awareness and willingness to participate in sustainable tourism. From a theoretical perspective, this research contributes to the growing literature on community-based tourism and participatory infrastructure planning by emphasizing the nuanced roles of awareness, perception, and cultural values in development processes. It reinforces the importance of context-sensitive, inclusive planning models, particularly in heritage-rich coastal regions where tourism intersects with tradition.

This study was limited by its geographic focus on a single case study, which may not fully represent the diversity of coastal communities in other regions. Furthermore, while the qualitative approach provided in-depth insights, the findings may not be generalizable beyond similar socio-cultural contexts. The research also faced temporal constraints, as field data collection was conducted over a limited time period, potentially excluding seasonal variations in tourism activity or perception.

Future studies are encouraged to:

- a. Conduct comparative research across multiple coastal heritage sites to examine patterns and variations in community awareness and infrastructure responsiveness.
- b. Incorporate quantitative methods (e.g., surveys, impact assessments) to complement qualitative insights and allow for broader generalization.
- c. Explore the role of policy frameworks, stakeholder power dynamics, and institutional collaboration in shaping infrastructure development in similar tourism contexts.
- d. Investigate the long-term effects of community involvement on tourism sustainability and cultural resilience.

Ultimately, this study underscores that sustainable tourism infrastructure development cannot succeed without the active, informed, and culturally grounded participation of the community it aims to serve.

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