

THE GAP IN MARITIME TRANSPORTATION ACCESS AND ITS IMPACT ON BANDA ISLAND AS A MAJOR TOURISM DESTINATION IN MALUKU PROVINCE

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Abstrak

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Banda Island, Maluku Province, has high tourism potential due to its natural wealth, colonial history, and maritime culture. However, the optimization of this potential is significantly hampered by disparities in sea transport access, which is the backbone of inter-regional connectivity in this remote archipelago. This study systematically analyses maritime transport disparities and their implications for efforts to develop Banda Island as a leading tourist destination in Maluku Province, while also formulating strategies for improving sustainable and inclusive maritime connectivity for local communities. Using a qualitative descriptive approach based on factual field observation data and comprehensive literature review without formal hypothesis testing, this study reveals three crucial findings: (1) low and inconsistent sailing frequency directly limits the influx of domestic and foreign tourists; (2) inadequate and outdated port facilities hamper vessel operational efficiency and passenger comfort; and (3) the lack of integration between sailing schedules and seasonal tourist demand patterns and local community activities further exacerbates the geographical and economic isolation of Banda Island. In conclusion, maritime connectivity reforms are directed towards a sustainable transportation system through port revitalization, optimization of pioneer ships, and government-community-private sector collaboration to support inclusive tourism.

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INTRODUCTION

Banda Island in Central Maluku Regency is a maritime historical tourist area in eastern Indonesia. Consisting of ten small volcanic islands, with Banda Neira as the administrative center and main tourist spot. This area is known as the "Spice Islands"

because it has produced the best nutmeg in the world since the 16th century. There are many attractions here, including colonial heritage (Dutch Fort Belgica and Nassau), underwater attractions for diving and snorkeling, and authentic maritime culture of the local population (UNESCO, 2024; MDPI, 2025). Tourists come from Ambon, Jakarta, Surabaya, and other countries from Europe, Australia, and Japan, with peak season from October to April and drastic decline when access is difficult. Tourist visits show positive trends but vary (TripAdvisor, 2024; 12Go Asia, 2024).

Sea transportation, which is the main means connecting inter-island regions, is a challenge for Banda Neira's tourism growth. High travel costs, irregular schedules, and limited docking facilities due to low sailing frequency, fleet quality, port infrastructure, and inter-island connectivity. As a result, tourists and investors cannot come. (Journal Banda, 2024; Kompas.id, 2025; Desa Wisata, 2024).

In addition to supporting the important role in population mobility, goods flow, and tourist influx to the archipelago, sea transportation also plays an important component in regional economic development, forming spatial structures, and strengthening functional relations between connectivity nodes. The lack of this access directly hampers socio-economic integration and sustainable tourism growth in Maluku, which should promote and promote regional development.

This study aims to learn the current situation and factors that can influence the development of Banda Island as a major tourism destination in Maluku Province. The study also examines plans that can be used to improve connectivity and promote sustainable tourism development in the region. This study is important because not many studies have comprehensively studied the relationship between maritime connectivity, tourism development, and community welfare in eastern Indonesia. Moreover, this study provides evidence-based policy recommendations for local governments and stakeholders to develop strategies for improving connectivity and sustainable tourism development in the archipelago.

The purpose of this study is to learn the types and components that cause disparities in sea transport access in Banda Island, as well as how this affects tourism growth and local community welfare.

LITERATURE REVIEW

Maritime Connectivity Theory

Maritime connectivity theory is rooted in the understanding of the important role that inter-regional connections via sea routes play as structural components that determine economic growth, social mobility, and regional integration in archipelagic areas that are inherently dependent on maritime as the main medium for spatial interactions. Ducruet (2013) combines this idea into two main dimensionalities: spatial dimension, which covers route networks, connection frequency, and maritime connection density; and functional dimension, which measures the intensity of economic, social, and information interactions resulting from this connectivity. These two dimensions work together to form a competitive regional network structure. Notteboom and Rodrigue (2005) complete this framework with empirical evidence that areas with high maritime connectivity index statistically show positive correlation with Human Development Index (HDI), distribution efficiency, and economic diversification. This is because smooth population mobility allows comparative specialization between islands based on local resource potential.

Although the Banda Islands are geographically isolated, they have many maritime tourism and global cultural heritage potentials. Maritime connections are very important for the Banda Islands because they are the important link between the ten small volcanic islands with the regional economic center in Ambon and help accelerate structural transformation towards an integrated economy-tourism node. Literature and continuity of sea transport systems are operational indicators of regional connectivity level (connectivity level). Integrating tourist flows during the season, iconic spice trade, and local sea product distribution can increase economic multiplier effects and strengthen Banda's position in Maluku Central's maritime network. Anugrah (2023) states that increasing transportation service quality, both infrastructure or services, has the potential to generate greater economic growth, more equitable access to education, and revitalization of socio-cultural aspects that are truly.

However, the reality in the Banda Islands shows systemic connectivity deficiencies, manifested by irregular sailing schedules, limited ship fleet capacity, and inadequate port infrastructure conditions. All these factors collectively hamper mobility of people, goods, and services across regions significantly. The lack of conditions not only disrupts the distribution chain of sea products and basic needs, but also creates a vicious cycle that causes imbalances in inter-island development, limits community access to health and education services in regional centers, and reduces the influx of potential tourists to attractive places like Belgica Fort and Hatta Island diving spots. As a result, economic disparities in the region are increasingly widening. Increasing the quality and frequency of sea transport services in Banda has strategic implications that go beyond the dimensions of mobility itself, namely functioning as a catalyst for sustainable tourism as defined by UNWTO (2015) which emphasizes that economic growth, environmental preservation, and local community welfare must be balanced. Accessibility that is increased will make major tourism assets more accessible to domestic and international tourists, simultaneously creating opportunities for local economic empowerment through homestays, community-based ecotourism, and local food processing.

However, mobility of people, goods, and services across regions is hampered by inadequate sea transport services in the Banda Islands, including irregular sailing schedules, limited ship capacity, and inadequate port infrastructure conditions. These conditions also hamper economic activities such as sea product distribution, basic needs, and tourist flows. Increasing frequency and quality of sea transport in Banda Island not only will facilitate the movement of goods and people, but also will promote tourism sector growth, trade, and sustainable services. Therefore, sea transport that is reliable functions as the backbone of archipelagic development and functions as an important factor in connecting Banda with economic growth centers in Maluku and its surroundings. This study uses maritime connectivity theory as the main analysis framework to measure variations in transport access in Banda. This also tests spatial-functional dimensions relevant in Indonesian eastern archipelagos, and builds development strategies that integrate tourism, local economy, and ecological sustainability.

Previous Studies

Wahyu (2018) evaluates sea transport connectivity throughout Maluku Province and finds that overall, they are in the "quite good" category, but with significant differences in areas such as Buru Regency, South Buru, and West Seram showing the

lowest values. To realize an integrated and efficient sea transport system, this study recommends optimizing PELNI ships as the main inter-large island link supplemented with perintis ships as feeders for remote areas. Wahyu's findings provide empirical basis relevant to determining the position of the Banda Islands in Maluku's connectivity spectrum and validate PELNI-perintis strategies that will be tested in the context of Banda tourism.

Nadia Khoerotunnisa et al. (2025) compare Indonesia's development disparities with China's approach and find that limited infrastructure and education access are the main causes of high disparities in 3T areas, including Maluku. National integrated policies, investment incentives, and consistent planning have helped China reduce differences. This study emphasizes that Banda's gap is very important because it manifests structural problems in the country's lagging areas. Maritime connectivity can function as a tool for local equalization, similar to what is done in China.

Rina Puspita et al. (2021) study the impact of port improvements on socio-economic activities in Ambon Island and find that modern docks, waiting rooms, and land transport connections are very important for island population mobility around. Activation of conventional ports promotes stakeholder involvement in port management. By not focusing on tourism orientation in the study, Ambon's infrastructure model can be adapted to Banda Neira.

These three studies, Wahyu on macro level Maluku connectivity, Khoerotunnisa on mezzo level national disparity context, and Puspita on micro level local infrastructure scale, collectively validate this study as an integrative case study to test causal relationships between increasing maritime connectivity, equalization of development, and sustainable tourism transformation in eastern Indonesian archipelagos.

RESEARCH METHOD

The descriptive qualitative method is used in this study to describe the real conditions regarding disparities in sea transport access in the Banda Islands and their relationship with tourism development (Sugiyono, 2020). Without testing hypotheses or causal analysis, the descriptive approach aims to explain facts as they are through direct observation and document studies (Arikuanto, 2019). The study was conducted in the Banda Islands, Central Maluku Regency, with Banda Neira Port as the main center. This method is chosen because it is suitable for uncovering complex social and policy realities, which cannot be measured only by numbers but require understanding of meanings, experiences, and local government and community perceptions. (Creswell 2014).

Data was collected through literature studies, which include official government documents, statistical reports, academic journals, and online publications related to port infrastructure, tourism development in Banda Island, and Maluku. Primary data sources are secondary based on BPS Maluku Province website, Ministry of Transportation, Ministry of Tourism and Creative Economy, and annual reports of ports and private ship operators.

The pattern of disparities such as low sailing frequency, old dock conditions, and their impact on tourist influx were found through content analysis techniques. Data was processed using triangulation of sources to validate results, and year comparisons 2019 – 2025 were used to measure post-pandemic disparity trends.

The study was conducted for two months, from October 2025 to November

2025. In January, data was collected, classified, and initial thematic analysis was conducted. In February, triangulation was conducted, visualizations were made, initial reports were made, revised, and finalized. This method ensures high efficiency without depending on physical mobility, even though there are access limitations to remote areas like Banda Island. Overall, this study is hoped to provide a deeper understanding and comprehensive analysis of how transport access disparities affect efforts to develop Banda Island as a major tourism destination in Maluku Province, simultaneously providing practical policy bases for local governments to make policies for transport and tourism that are more inclusive and sustainable.

RESULT AND DISCUSSION

Sea Transport Access Conditions

One important infrastructure connecting the Banda Islands with the regional economic center Ambon is sea transport. However, current maritime connectivity still shows significant structural deficiencies in terms of frequency, services, and resilience to weather. According to PT PELNI's operational data, the number of passengers arriving at Banda Neira Port reached 49,529 people in 2024 and 42,200 people until September 2025. This shows a positive trend in passenger growth, driven by increased interest from domestic and foreign tourists towards Banda's marine potential (Antara, 2025).

However, fast boats (fast boats) like Cantik 88 connecting Tulehu to Ambon only operate on certain schedules, such as Thursday and Sunday round trips, with travel time of 5-6 hours. PELNI regular ships record travel time of 11 – 14 hours, depending on waves and east monsoon winds, which are often disruptive to operations. Banda Neira port infrastructure also experiences physical limitations that are old. This includes short docks (80 meters) and structural damage reaching 35 – 40%. In addition, there is a lack of important docking facilities such as air-conditioned waiting rooms, 24-hour lighting systems, and integrated logistics areas. All this makes the port less efficient and uncomfortable for passengers. (TripAdvisor, 2024; 12Go Asia, 2024).

Impact on Tourism

Although the Banda Islands have world-class coral ecosystems, colonial heritage sites such as Belgica and Nassau Forts, and authentic maritime culture attracting heritage and diving tourists from Europe, Australia, and Japan, disparities in sea transport access directly hamper Banda Island's tourism development as Maluku Province's leading destination. Compared to other island destinations with better connectivity such as Raja Ampat or Wakatobi, Banda becomes less attractive to tourists due to unpredictable sailing schedules and long travel times. Reviews on online platforms often complain about the lack of real-time information about ship schedules and high dependence on weather forecasts that reduce Banda's appeal compared to other island tourist places such as Raja Ampat or Wakatobi. In addition, seasonal logistics imbalances further worsen the situation. Limited accommodations of 20-30 homestays and boutique hotels with low capacity (less than 200 rooms), no integrated tourist information centers, and no land transport connecting ports to main locations. As a result, the potential for ecotourism and heritage cannot be exploited to the fullest in accordance with sustainable tourism accessibility frameworks.

The tourism sector in Banda still faces many infrastructure problems. The only way to reach the island is through charter boats or sea routes. Fast boats from Tulehu

(Ambon) only operate 1 – 2 times per week and take 5 – 6 hours, while PELNI regular ships take 11 – 14 hours. This condition increases high dependence on weather, limiting tourist and logistics mobility (Putra & Nurhadi, 2023). In addition, accommodation options in Banda are still limited to homestays and small hotels with low capacity, and there are no facilities that support tourism such as information centers, integrated land transport, and digital infrastructure to promote destinations (BPS Maluku Tengah, 2024).

This reduces Banda's attractiveness as a potential tourist place. However, Banda has extraordinary natural and cultural wealth, starting from living sea ecosystems, remnants of world spice trade history, and authentic local traditions. However, this potential is wasted without adequate support. As stated by Inskeep (1991), Accessibility of a destination is very important for sustainable tourism growth because it determines how easy it is for visitors to reach and enjoy it.

Socio-Economic Impact

If sea transport is not available, this not only limits the tourism industry, but also exacerbates socio-economic disparities between regions in Central Maluku due to continuous disruptions in essential goods distribution chains and local trading activities. There is no shipping that causes distribution of basic needs such as food, medicine, and fuel to be unpredictable, causing local inflation up to 20 – 30% higher than Ambon. On the other hand, fresh sea products and spices from surrounding islands are not sold on time, causing large post-harvest losses. Sea transport access that is lacking also impacts the continuity of tourism life schemes in the Banda Islands, which emphasize balance between economic growth, environmental preservation, and local community welfare (UNWTO, 2023).

One main factor influencing Banda Island's appeal as a major tourism destination in Maluku Province is the disparity in sea transport access. Sea transport helps economic, social, and cultural integration between regions in the archipelago (Satria, 2021). This condition causes tourist flows, tourism logistics, and goods and services distribution that support tourism activities to be limited. As a result, the potential for optimal local tourism sector development is lower. Dwiatmoko (2019) states that high mobility levels indicate better economic growth and community welfare. Three main factors are responsible for disparities in sea transport access in Banda. First, the number of passenger and cargo ships serving the Banda – Ambon and Banda – Seram routes. Second, sea transport policies do not prioritize development in remote areas, causing subsidized pioneer ship programs to not meet all community needs. Third, the sea transport system is not fully integrated with tourism sector growth, so management focuses on meeting basic logistics needs and not on increasing tourist visits.

Because of the lack of maritime connectivity in Banda Neira, there are spatial inequalities, or disparities, between the central area (Ambon) and the peripheral area (Banda). This causes low tourist influx, low investment in tourism, and low local economic diversification. Small islands around Banda Neira experience structural isolation, worsening access to basic health and vocational education services in regional centers. Schedule cancellations have increased hospital transport costs by 40%, prolonging poverty cycles and local economic stagnation. In addition, uncoordinated maritime transport networks cause tourism facility distribution such as signage, information, and land transport to be worse, which is an important component in

determining tourism destination quality (Putra & Nurhadi, 2023). This phenomenon shows historical differences between Ambon's administrative center and Banda's peripheral areas, where private investment in tourism and micro-business diversification is low due to high logistics risks.

Sustainability Implications

The lack of maritime connectivity in the Banda Islands has significant impacts on the sustainability framework of tourism life, which requires balance between economic growth, environmental preservation, and local community empowerment. Community-based tourism models (CBT) become worse due to unequal tourism benefit distribution due to limited access. In this situation, community participation in homestays, guides, and local product processing is hampered by fluctuating tourist flows during holidays, which can cause sporadic overtourism or chronic undertourism that threatens fragile coral ecosystems and traditional social structures. To make Banda a competitive leading destination in Maluku Province at national and international levels, policies that strengthen maritime connectivity, sustainable tourism management, and integrated promotion are needed. Disparities in ship fleet, lack of pioneer ship subsidies for remote routes, and lack of integrated policy collaboration between Central Maluku Transportation and Tourism Offices are the main structural causes. All these factors reduce destination capacity without increasing economic resilience. Spatially inclusive tourism in Banda risks failing without holistic maritime connectivity interventions.

To overcome sea transport access problems in Banda, comprehensive and sustainable policy approaches are needed. In developing maritime infrastructure strategies, local governments should increase collaboration between transportation and tourism sectors. To strengthen Banda's connection with Maluku's economic centers, improving port quality, availability of regular ships with fixed schedules, and access to digital information services about sailing schedules can be initial steps. In addition, providing incentives to private ship operators to open regular routes to Banda can increase efficiency and sustainability of sea transport in the region.

Banda Island tourism destination development requires better maritime connectivity. Banda's position as a maritime tourism center in eastern Indonesia can be strengthened by optimizing regular sailing routes, increasing fast boat frequency, and improving port facilities. In addition, enhancing local community capacity and integrating connectivity with digital promotion platforms will enhance tourism ecosystems that are resilient to global changes. Therefore, it will be futile to realize Banda as a leading destination in Maluku Province effectively and sustainably if sea transport access is not improved.

CONCLUSION

According to empirical analysis, one of the main structural obstacles hindering Banda Island from becoming an attractive tourist destination is the disparity in maritime transportation access. Inadequate port infrastructure, low sailing frequency, and limited inter-island connectivity systematically hinder tourist influx, slow down local economic capital accumulation, and reduce the exploitation of natural and cultural potential. This phenomenon is not just a technical manifestation; they are natural barriers to regional development equalization and economic inclusion in the Maluku archipelago.

This study finds that maritime connectivity theory, which considers inter-island

mobility as a key factor that will accelerate economic growth, social integration, and tourism development in maritime areas, is valid. To build a dynamic and inclusive local economic network, strong connectivity is required. This will enable the Banda Island community to gain access to broader socio-economic opportunities through better maritime transportation rather than just physical factors. Therefore, maritime transportation system reforms must become a top priority in Maluku tourism policies. This should be done in collaboration with various parties, including the government, private sector, and local organizations. This method will not only strengthen regional connectivity but also help overcome geographical isolation, improve community health, and increase Maluku's competitiveness at national and international levels.

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