

ANALYSIS OF SUSTAINABLE TOURISM INDUSTRY DEVELOPMENT THROUGH THE ROLE OF TRANSPORTATION INFRASTRUCTURE AND GOVERNMENT REGULATION

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ABSTRACT: This study aims to analyze the development of sustainable tourism with a focus on the role of transportation infrastructure and government regulations as determining factors for the success of coastal tourism destinations in East Java. Using a descriptive qualitative approach, data were obtained through in-depth interviews, field observations, and document studies. The results show that improvements in transportation infrastructure, such as improved road access and port facilities, contribute to increased accessibility and economic opportunities for local communities. However, the limitations of public transportation, the unavailability of environmentally friendly modes, and the uneven distribution of supporting infrastructure are still obstacles. On the other hand, the government has established a tourism management policy, but its implementation has not been optimal due to inconsistent cross-sector coordination and supervision. The study confirms that success in sustainable tourism requires integration between strengthening infrastructure, collaborative governance, and utilizing supporting technologies.

Keywords: Sustainable Tourism; Transportation
Infrastructure; Government Regulations;
Qualitative

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INTRODUCTION

The tourism sector is one of the driving forces of the economy that has a significant contribution to national and regional development (Özgit & Akanyeti, 2022). In many countries, tourism has become an important pillar in creating jobs, increasing foreign exchange, expanding business opportunities, and driving the growth of related sectors such as transportation, hospitality, culinary, and the creative economy (Palacios-Florencio et al., 2021). Indonesia as an archipelagic country with high natural, cultural, and social diversity, has great potential to continue to improve the competitiveness of the tourism sector as part of its sustainable development strategy. However, the utilization of this potential is inseparable from various challenges, especially regarding the readiness of transportation infrastructure and the effectiveness of government regulations in ensuring the sustainability of the tourism sector.

Sustainable tourism development is a strategic approach that is not only oriented towards economic growth, but also ensures the preservation of natural and cultural resources, as well as improving the welfare of local communities (Streimikiene et al., 2021). This approach is in line with the concept of the Sustainable Development Goals (SDGs), especially goal 8 (inclusive and sustainable economic growth), goal 11 (sustainable urban development and settlements), and goal 13 (handling climate change). In the Indonesian context, the government continues to strengthen the implementation of sustainable tourism through various policies such as the development of super priority destinations, the development of transportation facilities and infrastructure, and the empowerment of local communities as part of tourism governance (Anwar et al., 2024; Mulyani et al., 2021; Risfandini, 2024). However, implementation in the field still faces complex challenges and requires a more in-depth research approach.

One of the fundamental factors that determine the competitiveness of a destination is the existence of adequate, reliable, and sustainability-oriented transportation infrastructure (Bire et al., 2021; Gavurova et al., 2023; Wendt et al., 2021). Transportation infrastructure serves as the backbone of tourist mobility, logistics distribution, and inter-regional connectivity. Good accessibility not only improves the tourist experience but also encourages local economic growth through the opening of business opportunities for the community around tourist destinations (Platov et al., 2021). In global developments, various studies confirm that modern transportation infrastructure such as adequate highways, rail networks, airports, ports, and environmentally friendly modes of transportation are important elements in a sustainable tourism ecosystem (Munir et al., 2025). However, in some regions in Indonesia, especially coastal and archipelago tourist destinations, the quality and availability of transportation infrastructure are still uneven, hindering the optimization of tourism potential.

In addition to infrastructure, government regulations play a central role as a governance framework that ensures the direction of tourism development remains aligned with sustainability principles. Good regulation is an instrument to control physical development, ensure the involvement of local communities, protect the environment, and regulate tourism investment so as not to cause social inequality and environmental damage (Amen Osamede et al., 2025). In practice, tourism development often faces a dilemma between the encouragement of short-term economic growth and the need for long-term environmental conservation. Therefore, government policies and regulations must be designed in an inclusive, adaptive, and evidence-based manner to be able to respond to the dynamics of social and environmental changes in the tourism sector.

Various previous studies have emphasized the importance of infrastructure and governance in realizing sustainable tourism. Zamparini & Vergori (2021) highlighting the role of transportation in creating destination connectivity and supporting the sustainability of tourist mobility, while (Ruan & Zhang, 2021) shows empirical evidence that an integrated transportation network can increase tourist flows and strengthen the local economy. Moreover Achmad et al. (2023) and Gupta et al. (2024) emphasizing the importance of governance, community participation, and adaptive regulation in ensuring tourism focuses not only on economic growth but also environmental preservation and local empowerment.

Although the literature agrees that transportation infrastructure and government regulation are crucial factors in the development of sustainable tourism, most studies still examine these two aspects separately. At the local level, in-depth analyses of the integration between transportation infrastructure development and the effectiveness of local government policies at coastal

destinations remain limited, particularly in the context of implementing sustainability principles in East Java, Indonesia.

Many studies assume that improvements in infrastructure and the strengthening of regulations will automatically reinforce each other in promoting destination sustainability. However, in practice, the relationship between transportation infrastructure and regulatory effectiveness is not always complementary. Rapid infrastructure development is often not accompanied by adequate regulatory capacity and oversight, potentially leading to environmental pressures, governance challenges, and unequal distribution of economic benefits. Conversely, well-designed regulations frequently fail to function effectively due to limitations in transportation systems that hinder accessibility and the economic feasibility of destinations. These conditions indicate a research gap in understanding how the interaction—and tension—between transportation infrastructure and regulatory effectiveness shapes sustainable tourism practices.

In the context of East Java, this tension is clearly evident in coastal tourism destinations. Local governments have made various infrastructure investments, such as improving road access and port facilities, to stimulate tourism growth. However, the implementation of regulations related to environmental protection, spatial planning, and tourism governance has not fully kept pace with this physical development. Weak cross-sectoral coordination, limited monitoring capacity, and inconsistent policy enforcement mean that increased accessibility is not always accompanied by sustainable and inclusive tourism practices.

Based on the above background, this study aims to analyze the development of the sustainable tourism industry by focusing on the role of transportation infrastructure and government regulations as determining factors for the success of tourist destination development. The study adopts an integrative perspective to examine how alignment or misalignment between infrastructure development and regulatory implementation affects accessibility, environmental sustainability, and the quality of governance in coastal tourism destinations in East Java. This study uses a descriptive qualitative approach to deeply understand policy dynamics, stakeholder perceptions, and actual conditions in the field. Through empirical analysis of tourist destinations in the coastal region of East Java, this research is expected to make a theoretical contribution in enriching the literature on sustainable tourism governance, as well as practical contributions as a strategic recommendation for local governments, business actors, and the community in designing policies and development of transportation infrastructure that is more effective, inclusive, and environmentally friendly.

LITERATURE REVIEW

The Concept of Sustainable Tourism

Sustainable tourism is an approach to the development of the tourism sector that focuses on a balance between economic, social, cultural, and environmental aspects. According to UNWTO (2018), sustainable tourism must be able to meet the needs of current tourists and destinations without sacrificing the ability of future generations to meet their needs. This approach requires careful planning, efficient resource management, and local community participation in the decision-making process. The conceptualization of sustainable tourism includes three main pillars, namely *Economic Sustainability* which ensures tourism provides long-term economic benefits, *Social-Cultural Sustainability* that maintain local social and cultural sustainability, and *Environmental sustainability* which ensures that the carrying capacity of the environment is maintained in the long term. In practice, the implementation of sustainable tourism faces challenges in the form of trade-offs between economic exploitation and environmental conservation, thus requiring an adaptive and participation-based policy approach.

Transportation and Tourism Infrastructure

Transportation infrastructure has a strategic role in supporting the growth of tourist destinations through improving accessibility, connectivity, and the quality of tourist experience. Dileep & Pagliara (2023) mentioned that transportation is a key element in the modern tourism system that determines the efficiency of tourist mobility, the distribution of economic benefits, and the environmental impact caused. Good transportation access increases the competitiveness of

destinations, expands the reach of the tourist market, and supports the tourism value chain such as accommodation, culinary, and public services. From a systemic perspective, transportation infrastructure includes physical facilities such as roads, ports, airports, and modes of public transportation, but also includes non-physical aspects such as transportation management, information technology, and service systems. The challenge of transportation development for tourism in the modern era is how to create a green transportation system that is low-emission, energy-efficient, and adaptive to the needs of digital tourists and sustainable travel trends.

Government Regulations in Tourism Development

Government regulations are policy instruments that ensure the direction of tourism development in accordance with the principles of sustainability, accountable governance, and protection of public interests. Khan et al. (2021) affirms that *Tourism Governance* play a role in controlling the impact of tourism, encouraging synergy between stakeholders, and ensuring accountability in destination management. Tourism regulations can be in the form of destination planning policies, operational standards for tourism implementation, incentives for environmentally friendly investments, and the enforcement of rules related to nature and cultural conservation. In addition, the government plays a role in developing collaborative governance mechanisms (*Collaborative Governance*) which involves the community, business actors, academics, and non-governmental organizations in decision-making. In practice, however, the main challenges are weak cross-sectoral coordination, inconsistency in policy implementation, and limited regional capacity to adopt evidence-based approaches (*evidence-based policy*) and data digitization.

Synergy of Transportation Infrastructure and Government Policies

The synergy between transportation infrastructure development and government regulations is a determining factor for the success of sustainable tourism. Infrastructure without a proper regulatory framework can fuel overtourism, environmental damage, and social inequality; On the contrary, regulations without infrastructure support will hinder the accessibility and competitiveness of destinations. Afrisal (2022) and Sinaga (2021) through the *Collaborative Governance* explained that the success of tourism development requires multi-actor collaboration that is structured, transparent, and results-oriented. In the context of coastal tourism areas, this synergy is increasingly important given the limited geographical access, ecological vulnerability, and the need for local community empowerment. Therefore, the integration of transportation policies and tourism management strategies is the basis for creating resilient, inclusive, and sustainable destinations.

From a governance perspective, regulatory capacity—which encompasses policy quality, consistency of implementation, cross-sectoral coordination, and monitoring mechanisms—determines whether transportation infrastructure development generates sustainable benefits or instead triggers ecological and social pressures. Transportation infrastructure developed without effective regulatory support risks encouraging over-accessibility, environmental degradation, and unequal distribution of economic benefits. Conversely, strong regulations that are not supported by adequate infrastructure can restrict accessibility and undermine the economic viability of tourism destinations.

These conditions become increasingly critical in coastal tourism destinations, which exhibit high levels of ecological vulnerability. Coastal areas function not only as economic spaces for tourism but also as sensitive ecosystems that are highly susceptible to pressure from increased tourist mobility. Therefore, the sustainability of coastal tourism is largely determined by the extent to which regulatory capacity can guide, constrain, and manage the impacts of transportation infrastructure development through a collaborative governance approach involving government authorities, business actors, and local communities.

METHODS

This study adopts a qualitative approach with an exploratory case study design. This design was selected to obtain an in-depth understanding of the interaction between transportation

infrastructure development and the effectiveness of government regulation in the context of sustainable tourism development. An exploratory case study is considered appropriate because the research not only aims to describe the phenomenon but also to explore governance mechanisms and policy dynamics that shape tourism development practices at the local level (Creswell & Poth, 2016).

The research site was purposively selected in one coastal tourism destination in East Java Province. The selection of this location was based on three main analytical considerations. First, the area has experienced a significant increase in transportation infrastructure development in recent years as part of the regional tourism development strategy. Second, coastal areas exhibit a high level of ecological vulnerability, making them a relevant context for examining the sustainability implications of infrastructure development. Third, various local government regulations related to coastal spatial planning and tourism management are in place, with their implementation demonstrating variations in effectiveness and cross-sectoral coordination. Given these characteristics, the research site is analytically significant for understanding how regulatory capacity conditions the impacts of infrastructure development on tourism sustainability (Sugiyono, 2021). The data used consists of primary and secondary data. Primary data was obtained through in-depth interviews with key informants, such as tourism officials, destination managers, transportation actors, and local communities. Secondary data were obtained from official government documents, tourism statistics reports, academic literature, and relevant previous research results (Yin, 2018).

Primary data were collected through in-depth interviews with 12 key informants who were purposively selected based on their involvement in and knowledge of tourism and infrastructure development at the research site. The informants consisted of: (1) local government officials responsible for tourism and transportation, (2) tourism destination managers, (3) local tourism business actors, and (4) representatives of the local community. The criteria for informant selection included direct experience in decision-making processes, policy implementation, or operational tourism activities. Each interview lasted between 45 and 90 minutes and was conducted face-to-face.

Three main techniques for data collection are used. In-depth interviews is employed to explore stakeholders' perceptions and experiences of the role of government infrastructure and regulations (Kvale, 2015). The interviews used a semi-structured interview guide developed based on the research focus and literature review. The main interview themes included: (1) informants' perceptions of the role and condition of transportation infrastructure, (2) experiences with the implementation and monitoring of tourism regulations, (3) coordination among stakeholders, and (4) the implications of infrastructure development for environmental and social sustainability in coastal areas. The semi-structured approach allowed for in-depth exploration of informants' experiences while maintaining consistency across interviews. Secondly, Field observation is conducted to observe the actual condition of transportation facilities and tourist activities at the research site. Observational data were used to complement and validate the interview findings, particularly regarding the physical condition of infrastructure, tourist mobility patterns, and on-site management practices. Lastly, documentation study includes policy analysis, regional regulations, and tourism development planning documents.

Data is analyzed interactively with the model (Miles et al., 2014). The analysis process was conducted through several stages. First, interview transcripts and observation notes were read repeatedly to gain a comprehensive understanding of the data. Second, initial coding (open coding) was carried out to identify key concepts and issues emerging from the data. Third, related codes were grouped into broader thematic categories. Fourth, major themes were developed by linking the data categories to the study's conceptual framework, particularly the interaction between transportation infrastructure, regulatory capacity, and tourism sustainability.

Data validity is tested through triangulation of sources and methods to ensure the reliability and consistency of findings (Patton, 2015). Source triangulation was conducted by comparing information obtained from government officials, business actors, and local community members. Method triangulation involved contrasting interview findings with field observations and relevant policy and planning documents related to tourism and transportation. Consistency of findings across sources and methods was used as the basis for strengthening the interpretation of the research results.

The researcher acknowledges that qualitative data interpretation is inherently influenced by the researcher's position and background. To minimize potential interpretive bias, reflexivity was applied by critically reviewing initial assumptions throughout the analysis process and cross-checking findings through peer discussions and repeated examination of the raw data.

RESULTS

Transportation Infrastructure in Sustainable Tourism Development

The results of the study show that transportation infrastructure has a very significant role in increasing the accessibility and attractiveness of the coastal tourist destinations studied. Repairs to the main road to tourist areas have been carried out by the local government, making it easier for tourists to travel, especially during the holiday season and weekends. Access to two-wheeled and four-wheeled vehicles is now relatively smoother than two years ago. This contributes to an increase in the number of visitors and opens up new business opportunities for the local community, especially in the culinary sector, tourist transportation, and resident's home-based lodging services.

Nevertheless, the available transportation infrastructure capacity remains significantly constrained. The results of field observations show that the improvement of transportation infrastructure has not been evenly distributed. Some alternative road access to tourist areas are still in inadequate condition; There are narrow roads, not yet perfectly paved, and there is little lighting and directional signs. This causes tourists who are not familiar with the location to have difficulty navigating, especially at night. In addition, the parking area around the destination is also not well organized. On weekends or public holidays, limited parking capacity often leads to vehicle congestion, especially during peak visiting hours.

From the perspective of supporting facilities, parking areas around the destination have not been managed optimally. Limited parking capacity and inadequate organization result in vehicle congestion during peak visitation periods. This condition directly affects tourist comfort and the efficiency of movement within the destination area. In addition, supporting transportation facilities such as pedestrian pathways, environmentally friendly transport options, or shuttle systems are not yet adequately available. Transportation support facilities such as small piers for marine tourism access are available, but capacity and safety facilities still need to be improved. Local marine transportation service providers have grown as tourist interest increases, but have not fully implemented sustainable tourism safety and service standards.

These conditions indicate that, despite progress in the provision of transportation infrastructure, its implementation has not yet fully supported sustainability principles. The absence of integrated environmentally friendly transport systems, the limited availability of public transportation, and suboptimal supporting facilities highlight the need for more comprehensive and careful planning. More structured, modern, and environmentally friendly infrastructure has become an urgent necessity to strengthen destination competitiveness while safeguarding the sustainability of coastal environments.

Government Regulations in Sustainable Tourism Development

The findings of the study show that local governments have prepared a number of regulations and strategic plans related to the development of tourist destinations, including strengthening accessibility, managing coastal spaces, and empowering local communities. These regulations are covered by regional medium-term development plans, detailed spatial plans for coastal areas, and tourism business management policies. Local governments have also established rules regarding environmental management zoning to prevent excessive tourism activities in areas vulnerable to ecological damage.

The results of interviews with tourism office officials show that the government has sought to improve cross-sector coordination, including with the transportation and environmental offices. However, policy integration and implementation in the field has not been fully optimal. There is still an overlap in information and the timing of the implementation of the program between agencies. In addition, the implementation of the policy of supervision of tourism and environmental activities has not reached the required level of consistency. Some tourism business actors have

not fully followed hygiene standards, environmental conservation, and safety SOPs for tourism services.

From a coordination perspective, the findings reveal institutional fragmentation in the implementation of tourism policies, in which agencies responsible for tourism, transportation, and environmental management operate in a relatively siloed manner. The absence of structured cross-sectoral coordination mechanisms means that formulated policies are not always aligned with the practical needs of infrastructure management and environmental protection at the destination level.

Furthermore, local community involvement in tourism monitoring and management has been promoted through the establishment of tourism awareness groups (*Pokdarwis*). However, the findings indicate that community participation remains largely symbolic and has not been fully institutionalized within the regulatory framework, as support in the form of capacity-building, delegated authority, and access to decision-making processes remains limited.

Overall, the results suggest that government regulations function more as an administrative framework than as an effective governance mechanism. Consequently, regulatory capacity to guide and control the impacts of infrastructure development on tourism sustainability remains weak. These findings underscore that the mere existence of regulations does not automatically translate into effective governance at the implementation level.

Institutional Coordination and Collaborative Governance

The findings indicate that the development of coastal tourism involves multiple institutional actors, including local governments, destination managers, tourism business actors, and local communities. Normatively, such multi-stakeholder involvement is expected to form a pattern of collaborative governance in destination management. However, the empirical evidence shows that institutional coordination among actors remains partial and is not formally institutionalized. Interviews with informants from various agencies suggest that cross-sectoral cooperation generally occurs on an ad hoc basis and depends on individual initiatives or situational needs, rather than on structured and sustainable coordination mechanisms.

This study also found the absence of a regularly functioning cross-sectoral coordination forum to align infrastructure planning, tourism policies, and environmental management. As a result, programs and activities implemented by different agencies are often not operationally integrated, despite having interrelated objectives.

From the community perspective, the findings show that the presence of tourism awareness groups (*Pokdarwis*) has provided a channel for local community participation in destination management. Nevertheless, the collaborative capacity of local communities remains limited to the operational level, such as cleanliness management and tourism services, and does not yet extend to meaningful involvement in planning, decision-making, or policy oversight. Furthermore, field findings indicate that asymmetries in roles and authority among institutional actors affect the effectiveness of collaborative governance. Local governments continue to play a dominant role in policy formulation, while non-government actors tend to function primarily as policy implementers, with limited space to provide feedback or corrective input into destination management processes.

Overall, the findings demonstrate that collaborative governance in coastal tourism development has not yet evolved into a coherent institutional system, but remains at the level of limited functional coordination. This condition reflects that collaboration among actors has not fully supported the integration of infrastructure development, regulatory effectiveness, and tourism sustainability at the destination level.

DISCUSSION

Transportation Infrastructure as a Catalyst for Sustainable Tourism Development

The results of the study show a significant increase in destination accessibility through the improvement of main roads and small port facilities. This condition strengthens the role of transportation infrastructure as an *Enabler* tourism, where good access increases the ease of travel for tourists, expands the tourist market, and encourages the creation of local community

business opportunities. Transportation improvements constitute a fundamental element of modern tourism systems and play a decisive role in determining the efficiency of tourist mobility and the distribution of economic benefits (Gössling & Hall, 2019). However, the results of this study indicate that enhanced physical access does not automatically translate into the development of a sustainable tourism system.

The study also finds that public transportation and environmentally friendly mobility facilities remain inadequately available. Limitations in infrastructure capacity particularly on secondary roads, public transport systems, and supporting facilities suggest that infrastructure development in coastal destinations remains oriented toward basic connectivity rather than the systemic management of tourist mobility. Tourists continue to rely heavily on private vehicles and rental transportation, potentially increasing carbon emissions, noise pollution, and congestion risks, especially during peak visitation periods. These conditions indicate that, despite improvements in physical accessibility, the principles of sustainable transportation have not yet been fully implemented. This finding reinforces the argument of (Hall et al., 2021) that transportation infrastructure functions as an enabler of sustainability in a conditional sense. Without well-planned public transport systems and effective traffic management in tourism areas, improved accessibility may instead generate environmental pressure, congestion, and a decline in the quality of the tourism experience.

Furthermore, the limitation of alternative roads, lack of lighting, and limited parking capacity also reflect the need for an integrated transportation planning system. Uneven infrastructure has the potential to create gaps between regions and affect tourists' perception of the quality of destinations. This is in line with Zhang & Zhang (2021) which found that equitable transportation investment increases the competitiveness of destinations and supports equitable distribution of welfare.

In the context of coastal destinations with high ecological vulnerability, these limitations become increasingly significant. Infrastructure that is not integrated with environmental planning risks encouraging concentrated visitation patterns, excessive reliance on private vehicles, and degradation of coastal spaces. Therefore, the findings of this study extend the discourse on tourism sustainability by emphasizing that the quality and governance of infrastructure are as important as its physical presence.

Furthermore, the results reveal a gap between infrastructure development and destination management capacity. Infrastructure tends to be developed as a physical project, while systems for managing tourist mobility such as visitor flow control, parking management, and the provision of environmentally friendly transportation alternatives have not been adequately developed. This condition underscores that tourism sustainability cannot be achieved solely through infrastructure investment, but requires integration with coherent policies, regulations, and management mechanisms.

Accordingly, the principal contribution of these findings lies in reaffirming that transportation infrastructure development is not an end in itself, but a policy instrument whose effectiveness is highly dependent on governance capacity. Infrastructure will support the sustainability of coastal tourism only when it is designed and managed as part of an integrated system that aligns accessibility, environmental protection, and the control of socio-economic impacts.

The Effectiveness of Government Regulations in Ensuring Sustainability

This study finds that the existence of government regulations in coastal tourism development does not automatically guarantee effective destination management. The government has established a regulatory foundation through the formulation of tourism development plans, the designation of coastal zoning, and the implementation of tourism business licensing. Although policy frameworks and regulations are in place, the findings indicate that regulatory capacity operates primarily at an administrative level rather than as an active mechanism guiding the impacts of infrastructure development. This confirms that regulations must not only exist normatively but also possess sufficient implementation capacity to substantively influence development outcomes.

The presence of government regulation in coastal tourism development does not, in itself, ensure effective destination management (Bramwell & Lane, 2011). Persistent shortcomings remain in areas such as cleanliness monitoring, enforcement of tourism service standards, and

cross-departmental coordination. Institutional misalignment among agencies highlights the need for stronger institutional capacity and more structured collaborative governance arrangements (Ansell & Gash, 2008). Community participation has emerged organically through tourism awareness groups (*Pokdarwis*), further support in the form of training, access to information, and capacity-building for tourism-related enterprises is still required to enable local communities to function as key actors in sustainable tourism development.

This study further affirms that regulation functions as a conditioning factor for the sustainability of infrastructure development. The same transportation infrastructure can generate different outcomes depending on the extent to which regulations are able to govern the intensity of spatial use, the behavior of business actors, and tourist visitation patterns. In the context of ecologically vulnerable coastal destinations, the absence of consistent monitoring risks shifting the function of regulation from a control instrument to merely a formal legitimization of tourism activity expansion.

Limited inter-agency coordination in regulatory implementation weakens the role of regulation as an integrative mechanism. Misalignment among tourism policies, environmental management, and infrastructure development prevents regulations from operating effectively across sectors. These findings indicate that the core problem lies not in the absence of rules, but in the weak governance capacity to translate regulations into coordinated practice.

Accordingly, the conceptual contribution of this discussion lies in reaffirming that regulation should be understood as a key variable conditioning the relationship between infrastructure development and tourism sustainability. Without adequate regulatory capacity, infrastructure development risks accelerating environmental degradation and social inequality rather than supporting sustainability objectives. This argument positions regulatory capacity not as a supporting factor, but as a central mechanism in the governance of coastal tourism.

Synergy between Transportation Infrastructure and Regulation as Pillars of Sustainable Tourism Development

The findings indicate that collaborative governance in coastal tourism development has not yet functioned as an integrative mechanism that unifies infrastructure development and regulatory implementation. The involvement of government authorities, destination managers, business actors, and local communities remains limited and has not been institutionalized within a sustainable coordination framework. This condition suggests that collaboration does not automatically emerge from the presence of multiple stakeholders, but instead requires clear institutional design. Tourism sustainability is strongly influenced by the interactions among actors operating within the tourism environment itself (Munir et al. (2025).

Cross-sectoral collaboration is often positioned as a normative solution to the complexity of destination management. However, this study deepens that perspective by demonstrating that the effectiveness of collaboration is largely determined by the balance of roles, the distribution of authority, and communication mechanisms among actors. When collaboration is functional in nature and confined to technical implementation, its capacity to integrate infrastructure objectives, regulatory frameworks, and environmental protection remains highly limited.

This study affirms that collaborative governance serves as a bridge between infrastructure and regulation. Transportation infrastructure provides the physical capacity for tourist mobility, while regulation offers the normative framework to control its impacts. Yet, in the absence of effective collaborative mechanisms, these two instruments tend to operate in isolation. As a result, infrastructure development may progress more rapidly than regulatory capacity and oversight.

Furthermore, the predominantly operational involvement of local communities indicates that the potential of local knowledge and social monitoring has not been optimally utilized in destination governance. These findings imply that meaningful collaboration extends beyond symbolic participation and requires the integration of non-government actors into planning, decision-making, and policy evaluation processes. Accordingly, collaborative governance should be understood as an institutional capacity rather than merely an informal coordination mechanism.

Overall, the sustainability of coastal tourism cannot be achieved through infrastructure development or regulatory strengthening in isolation. Collaborative governance constitutes a key

prerequisite for integrating transportation infrastructure and regulatory capacity into a coherent destination management system. Without such integration, efforts to achieve sustainable coastal tourism will remain fragmented and vulnerable to implementation failure.

Theoretical and Practical Implications

Theoretically, this study both reinforces and extends the perspective that transportation infrastructure cannot be understood as a direct determinant of tourism sustainability. Infrastructure functions as an enabler whose effectiveness is conditional and highly dependent on accompanying regulatory capacity and collaborative governance. Moreover, this study contributes to the tourism governance literature by positioning regulatory capacity as a conditioning mechanism that bridges the relationship between physical development and sustainability outcomes. Finally, this research enriches the discourse on collaborative governance by emphasizing that cross-actor collaboration should be understood as an institutionalized capacity rather than merely functional interaction or symbolic participation. These findings challenge normative approaches in the literature that often assume multi-stakeholder involvement automatically leads to effective governance, without sufficient attention to the distribution of authority and mechanisms for policy integration.

Practically, transportation infrastructure development should be designed not only to enhance accessibility but also to support the sustainable management of tourist mobility. This includes the development of public transportation to destinations, the regulation of destination carrying capacity, and the provision of environmentally friendly supporting facilities. In addition, local governments need to strengthen regulatory capacity by improving the consistency of monitoring, clarifying the division of authority among agencies, and enforcing effective sanctions for regulatory violations. Such capacity building is essential to ensure that regulations function as instruments for controlling infrastructure development and tourism activities, rather than merely as administrative requirements. Finally, strengthening collaborative governance should be directed toward establishing institutionalized and sustainable cross-sectoral coordination mechanisms. Regular coordination forums involving government authorities, business actors, and local communities can serve as platforms for integrating infrastructure planning, regulatory implementation, and environmental protection. Furthermore, enhancing local community capacity through training and meaningful involvement in decision-making processes will strengthen social oversight and increase the legitimacy of tourism policies.

CONCLUSION

This study concludes that the development of sustainable tourism in the coastal areas of East Java is highly determined by the synergy between the availability of transportation infrastructure and the effectiveness of government regulations. Improved transportation infrastructure such as improved road access and dock facilities have strengthened the accessibility of destinations and sparked economic growth for local communities through the development of community-based tourism businesses. However, access to public transportation is still limited, the condition of alternative roads, the lack of environmentally friendly transportation, and the lack of optimal parking governance show that these efforts are still partial and have not fully supported sustainable tourism mobility. On the other hand, the government's regulatory framework is available through coastal spatial planning, business license management, and empowerment of tourism-aware groups, but its implementation still faces obstacles in the form of suboptimal inter-agency coordination, inconsistent supervision, and a lack of a digital data-based monitoring system. Thus, sustainable tourism development requires stronger support both in terms of strengthening green transportation, integrated infrastructure planning, and the effectiveness of collaborative governance between the government, the community, and business actors.

This research has several limitations that need to be realized. First, the research was only conducted on one coastal destination so that the findings were contextual and could not be generalized to tourist destinations with different geographical and social characteristics, such as mountainous destinations or urban areas. Second, the qualitative approach used carries the consequence that the depth of information is highly dependent on the perception and experience

of the informant and the extent of the researcher's access to policy documents and tourist visit data. Therefore, further research is recommended to expand the study locations on various types of tourist destinations in different regions in order to gain a comparative understanding of the sustainable tourism development model. Future research may also use *a mixed methods* or quantitative approach to empirically examine the relationship between the quality of transportation infrastructure, the effectiveness of government regulations, and its impact on sustainability indicators such as local economic improvement, coastal environmental sustainability, and the quality of the tourist experience. In addition, the follow-up study can explore the role of digital technology and *smart tourism systems* in supporting evidence-based policies and destination management more efficiently and adaptively in the era of digital transformation.

ETHICAL DISCLOSURE

All researchers provided written informed consent before participating in this study. They adhered to the ethical principles of scientific writing as outlined in academic regulations.

CONFLICT OF INTERESTS

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