






The Dilemma of Island Mobility: Unraveling the Economic-Ecological Conflict of Interest in the Sustainable Transportation Development of Gili Tramena



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ABSTRACT

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Gili Trawangan, Gili Meno, and Gili Air, collectively known as Gili Tramena, are strategic tourism islands that maintain ecological sustainability and visitor comfort through a ban on motorized vehicles. However, the recent introduction of other electric transportation modes has created a growing dilemma between the economic interests of tourism operators and the preservation of local ecological and sociocultural values. This study examines the dynamics of economic-ecological conflict arising from sustainable transportation development in the islands. Using a qualitative approach, the study utilized field observations, in-depth interviews, and a review of normative documents to explore the social, economic, and regulatory shifts triggered by electric mobility. Data were analyzed using NVivo 12 Plus to identify thematic patterns. The results revealed three main themes of tension that emerged in this study: economic inequality between traditional transportation operators and electric mode providers, regulatory gaps that create uncertainty, and changes in ecological and cultural values within local communities. The study recommends regulatory harmonization, transportation zoning, and community-based collaboration to build a sustainable and equitable mobility system.

1. INTRODUCTION

Climate change and global environmental pressures are forcing the tourism sector to seek lower-emission, more efficient, and more socially equitable mobility models [1]. The transition to electric transport modes and micromobility is seen as a technical solution to reduce transport emissions in tourism destinations, including small island regions. However, the adoption of these new modes of transport often has complex socio-economic and normative consequences at the local level, especially for communities that rely on traditional modes of transport for livelihoods and as symbols of cultural identity. Literature indicates that although electric bicycles and other electric transport modes can change travel behavior and reduce dependence on fossil-fueled motor vehicles, their implementation in tourism destinations requires robust spatial planning, regulation, and community participation to prevent detrimental social and economic impacts on vulnerable groups [2].

Gili Trawangan, Gili Meno, and Gili Air, located in the Gili Islands, including Gili Trawangan in West Nusa Tenggara Province, are examples of tourist island locations facing this dilemma. These areas have long implemented restrictions on motorized vehicles as part of local wisdom (*awiq-awiq*) and ecological conservation strategies, while also maintaining traditional livelihoods such as bicycle rentals and the operation of *cidomo* (horse-drawn carriages). The introduction of

electric bicycles and motorbikes as new modes of transportation, driven by national policies aimed at accelerating transportation electrification, has created friction between decarbonization goals and the need to protect local economies. The sweeping and protests against electric bicycles in Gili reflect the conflict of interest that arises when national regulations, green tourism policies, and local customary rules are not aligned [3].

The mobility dilemma on small islands is multidimensional, encompassing ecological aspects (emission reduction and coastal ecosystem preservation), economic aspects (shifting revenue sources from traditional actors to more capitalist electricity providers), and public governance aspects (inconsistencies between national pro-electrification policies and local regulations protecting non-motorized transport). Studies in other island contexts, such as the Canary Islands, Malta, and Jeju, demonstrate the need for an integrative strategy encompassing mobility zoning, routes and capacity, charging infrastructure, and social compensation mechanisms, ensuring that environmental benefits do not come at the expense of equitable economic distribution [4]. Such an approach requires planning that aligns decarbonization goals with protecting local livelihoods and respecting customary rules [5].

From a user behavior and market perspective, the micromobility literature indicates that the adoption of e-bikes or electric sharing services in tourist destinations is influenced

by factors such as convenience, price, local regulations, perceived safety, and the availability of infrastructure, including bike lanes and pedestrian zones. However, without strong zoning policies and commercialization controls (such as banning mass rentals in sensitive areas), electric modes can exacerbate price competition and reduce the income of local operators who rely on traditional transportation [6]. Therefore, empirical studies exploring the interactions between these variables are crucial for formulating evidence-based policies for island destinations like Gili Tramenra [2, 7].

This study employs a qualitative approach, utilizing field observations, in-depth interviews, and normative document analysis to answer two main questions: What are the primary causes of conflict between electric mode providers and traditional transport operators in Gili Tramenra? And what policies can reconcile the goals of ecological sustainability with local economic justice? The results of the study are expected to contribute to the literature on small island mobility governance and provide pragmatic policy recommendations, such as harmonizing national and local regulations, transport zoning, registration, and restrictions on the commercialization of electric modes, as well as economic mitigation mechanisms for traditional actors to achieve adaptive and equitable sustainable transport.

2. LITERATURE REVIEW

Mobility transformation in island tourism destinations is a complex and multidimensional process, involving interactions between technological innovation, policy governance, economic dynamics, and the socio-ecological values of local communities. Sustainable mobility essentially aims to balance transportation efficiency with environmental protection and the quality of the tourism experience. Still, its implementation often faces challenges when innovations such as micromobility (e-bikes and e-scooters) develop faster than regulatory capacity and social adaptation [8, 9]. On the one hand, micromobility offers flexible, low-emission mobility solutions. Still, on the other hand, it can trigger mode substitution, exacerbate economic inequality, and put pressure on traditional transportation operators [10, 11].

This condition is further complicated by regulatory gaps and disharmony, both horizontal (between actors) and vertical (between community and government), which have the potential to create conflicts of interest and legal uncertainty [12, 13]. Furthermore, changes in the mobility system also affect cultural and ecological dimensions, including the erosion of local wisdom, changes in destination identity, and decreased community control over public spaces [14, 15]. Thus, the literature emphasizes that the development of sustainable transportation in island regions is not only oriented towards technological innovation, but must be accompanied

by governance that is adaptive, inclusive, and sensitive to the local socio-ecological context.

3. METHODOLOGY

This study uses a qualitative approach with an intrinsic case study design to gain a deeper understanding of the dynamics of economic-ecological conflict of interest in the operation of electric-based transportation modes in the Gili Tramenra area [16]. This approach was chosen because it can capture the social, political, and cultural context surrounding the conflict phenomenon, including the role of regulation, local wisdom (*awiq-awiq*), and the relationship between traditional transportation actors and electric mode providers. The research location focuses on Gili Trawangan as the center of conflict escalation, Gili Air as a comparison with lower conflict intensity, and Gili Meno as an integral part of the island community's socio-ecological structure.

Primary data were collected through in-depth interviews with selected stakeholders using purposive and snowball sampling, including *cidomo* drivers, bicycle rental owners, electric vehicle business operators, village government officials, hotel and homestay owners, the Head of the Village Consultative Body, and domestic and international tourists (Table 1). Additionally, field observations were conducted along transportation routes, in parking areas, on narrow roads, and at locations where friction between actors is high. Secondary data were obtained from national and regional regulations, official government reports, and local transportation study documents.

All primary data, in the form of interview transcripts and observation notes, as well as secondary data, in the form of regulatory documents and reports, were analyzed using NVivo 12 Plus [17]. The analysis began with the transcription process and imported all data into NVivo 12 Plus as an internal source. In addition, NVivo 12 Plus was used to conduct visual analysis, mapping relationships between actors and conflict structures. Triangulation was carried out by comparing interview data with observations, and primary data with policy documents [18]. Data credibility was maintained through a member-checking mechanism and documentation of the analytical process in NVivo memos. At the same time, reliability and confirmability were ensured through an audit trail and consistent analysis procedures [19]. The entire research process adhered to ethical standards for qualitative research, including the use of informed consent, anonymity, and protection of the social vulnerabilities of parties involved in the conflict. Using a structured methodological framework and NVivo 12 Plus software-based analysis, this study provides a comprehensive picture of conflict patterns, regulatory structures, and social dynamics that influence sustainable transport governance in Gili Tramenra.

Table 1. Characteristics of research informants

Num	Informant Category	Amount	Informant Selection Criteria	Duration
1	Cidomo Driver	8	Directly impacted by the existence of electric modes	60 minutes
2	Gayung Bike Rental	6	Have a bicycle rental business	60 minutes
3	E-bike Provider	5	Electric transportation mode provider	60 minutes
4	Village Officials	4	Involved in local transportation policy making and management	60 minutes
5	Tourism Business Actors (Hotels/Homestays)	3	Business owners/managers who depend on tourist mobility	60 minutes
6	Tourists (Domestic & International)	4	Direct users of transportation modes in the Gili Tramenra area	60 minutes
	Total	30		

Source: Processed by the author (2026)

4. RESULTS AND DISCUSSION

4.1 Economic inequality

The research findings show that the transformation of mobility on Gili Tramen, particularly through the introduction of electric vehicles such as e-bikes, has not only altered tourist movement patterns but also triggered significant economic inequality among local transportation operators. This inequality arises from shifts in market structure, changes in user preferences, and unequal adaptive capacity across groups (Figure 1). In this context, the research findings indicate that economic inequality does not exist as a single phenomenon but rather results from the interaction of several interrelated dynamics.

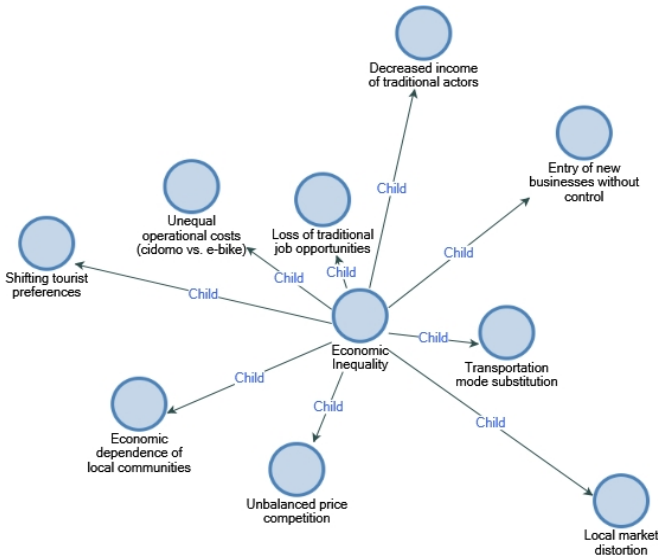


Figure 1. Economic inequality
Source: Processed using NVivo 12 Plus

Declining income for traditional transportation operators, especially for cidomo drivers and bicycle rental operators. Based on interviews, most informants stated that the number of customers has decreased since the increase in the use of electric vehicles by tourists. This shift did not occur suddenly but developed alongside tourists' growing preference for modes considered faster, more practical, and more efficient. From a transportation economics perspective, this condition can be understood as a form of modal substitution, in which new modes replace the functions of old modes in meeting mobility needs. Several studies show that micromobility has a high tendency to replace short-distance trips, especially those previously made by foot, bicycle, or conventional vehicles [11, 20].

However, in the context of Gili Tramen, this substitution is not neutral. Shifting tourist preferences are a significant factor accelerating changes in market structure. Tourists tend to choose electric vehicles because they offer comfort and time efficiency, especially in hot weather and dense traffic [21]. This rational choice, while reasonable from a consumer perspective, indirectly weakens the competitiveness of traditional modes of transportation, which hold high cultural and ecological value. This situation demonstrates an imbalance between modern market logic and the local values that have long underpinned mobility management on Gili.

Inequality is increasingly evident in the unequal price

competition. Traditional transportation operators face relatively high operational costs, including feed and care for horses in cidomo (horse-drawn carriages) and maintenance for manual bicycles. In contrast, electric vehicle providers have a simpler and more efficient cost structure, enabling them to offer more competitive prices. This disparity creates market distortions in which prices no longer reflect the social and ecological value of each mode, but only short-term economic efficiency [22, 23]. In the economic literature, this condition is often associated with market distortions that can weaken small and traditional businesses.

Furthermore, the entry of new business actors without clear control mechanisms has exacerbated the existing inequality. Without regulations governing quotas or licensing systems, the number of e-bike providers has increased significantly in a short time. This situation has created increasingly fierce competition, not only between existing and new players, but also between electric vehicle providers themselves. Studies on micromobility show that uncontrolled expansion can result in oversupply, leading to market instability [24, 25]. In the local context, this situation accelerates the decline in incomes of traditional players and increases economic pressure on groups with limited access to capital and technology.

Furthermore, this economic inequality is closely related to the local community's dependence on traditional transportation. For many families on Gili Tramen, activities like driving a cidomo (traditional horse-drawn carriage) or renting out bicycles are not just jobs, but a primary source of livelihood that has been passed down through generations. The decline in demand for these services impacts not only individuals but also the economic stability of households and the community as a whole. From a sustainable development perspective, this situation indicates the risk of increased socio-economic vulnerability due to poorly managed change.

Another emerging dimension is the reduction in traditional job opportunities. The creation of equivalent new jobs has not accompanied the transition to electric modes. Operating electric vehicles tends to require fewer workers than cidomo-based transportation systems, which involve activities such as animal care and daily operational management. As a result, there is a gap in the distribution of job opportunities that can deepen economic inequality at the local level.

However, it is important to understand that the economic inequality that occurs is not solely caused by the emergence of new technologies, but rather by the unpreparedness of governance to anticipate change. The literature shows that micromobility has great potential to support sustainable mobility, including reducing emissions and increasing transportation efficiency [26]. However, these benefits can only be achieved if integrated within a clear and inclusive policy framework. Without adequate regulation, innovation can actually widen disparities and trigger conflict between actors.

In the context of Gili Tramen, the lack of regulations governing the number, distribution, and operation of electric vehicles has led to uncontrolled market growth. This has strengthened the dominance of new players and weakened the position of traditional players, who are limited in their ability to adapt. Therefore, the emerging economic inequality can be understood as the result of the interaction between technological change, market dynamics, and weak governance.

Overall, the results of this study indicate that mobility transformation in island tourism areas, such as Gili Tramen,

needs to be managed with greater sensitivity to economic justice. Sustainable mobility is not only about efficiency and technological innovation, but also about how the benefits of these changes are distributed fairly among all actors. Without appropriate policy interventions, the modernization process risks eroding the foundations of the local economy and deepening existing inequalities.

4.2 Regulatory void

To understand the dynamics of the conflict over the management of electric-based transportation on Gili Tramena, it is important to examine how regulatory factors shape interactions among actors. In this context, regulation functions not only as a control instrument but also as a normative framework that guides social, economic, and ecological practices in the public sphere. When regulations fail to keep pace with technological change and local needs, what emerges is not simply disorder but a series of interconnected tensions. Therefore, the following visualization outlines how the regulatory vacuum becomes a central factor that triggers various derivative problems in the mobility system in this region.

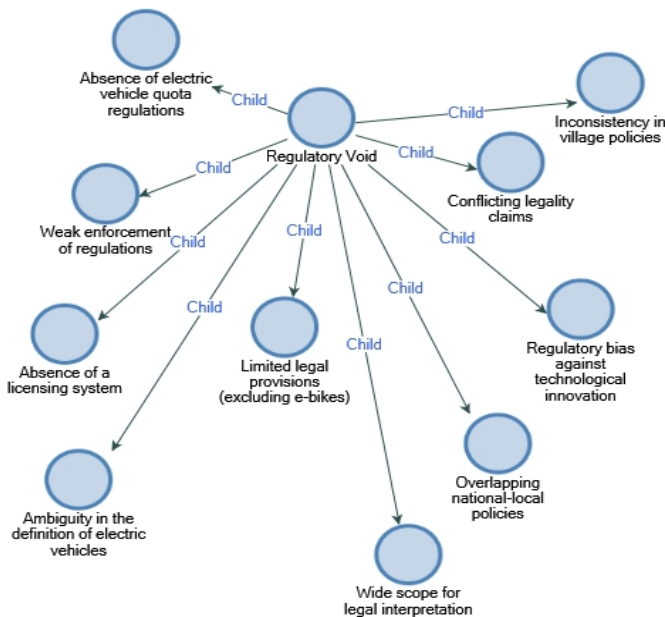


Figure 2. Regulatory void
Source: Processed using NVivo 12 Plus

Figure 2 shows that the regulatory vacuum is the main node connecting various issues in the governance of electric-based transportation in the Gili Tramena area. This vacuum is characterized not only by the absence of specific regulations regarding electric vehicles, but also by the weakness of existing legal instruments in anticipating the development of new technologies. The absence of a licensing system, vehicle quotas, and weak enforcement of regulations create conditions in which e-bike operations proceed without adequate oversight. Furthermore, the unclear definition of electric vehicles in local regulations widens the scope for interpretation, allowing actors involved to claim legality based on their respective perspectives. This situation indicates that existing regulations have not kept pace with the dynamics of innovation, resulting in inequities in their implementation on the ground.

This confirms that the regulatory vacuum triggers structural

policy conflicts, particularly through overlaps between national policies and local regulations. The national push for electric vehicle adoption has not been accompanied by harmonization at the village level, leading to policy inconsistencies and biases against certain technological innovations. Consequently, tensions have arisen between efforts to modernize transportation and the protection of local values traditionally maintained through customary law (*awiq-awiq*). This situation demonstrates that the primary problem is not simply the absence of regulations, but rather the failure to build an adaptive, context-specific regulatory framework. Thus, the regulatory vacuum becomes the starting point for a broader series of problems, ranging from legal conflicts to uncertainty in the management of public spaces and sustainable mobility.

The regulatory vacuum in the context of mobility transformation on Gili Tramena is one of the most crucial findings of this study. This vacuum not only indicates the absence of formal regulations but also reflects the unpreparedness of the governance system to respond to rapid and disruptive technological change. In this context, electric vehicles, particularly e-bikes, exist in an ambiguous regulatory space: neither explicitly regulated nor completely prohibited. This situation creates a broad scope for interpretation, ultimately leading to conflict among actors.

Conceptually, this phenomenon aligns with the global literature, which shows that micromobility development often outpaces existing regulatory capacity. Recent studies have highlighted significant gaps in governments' ability to regulate micromobility devices effectively, primarily due to the rapid pace of technological innovation and policy adaptation [27]. This leaves many cities facing a situation in which existing policies are no longer relevant, leading to reactive, incomplete decisions.

In the context of Gili Tramena, this regulatory vacuum is evident in the lack of a clear definition of electric vehicles in the local legal framework. Customary law, as a customary norm, only prohibits fossil-fueled motorized vehicles, without defining electric vehicles. As a result, e-bikes technically do not violate the law, even though they share many of the characteristics of motorized vehicles. This situation creates what is referred to in the literature as a regulatory grey area, a legal gray area that allows for various interpretations and claims of legality. This is shown in Table 2.

The regulatory vacuum is also reflected in the absence of licensing mechanisms and restrictions on the number of electric vehicles. In many global contexts, micromobility regulations include measures such as fleet quotas, licensing systems, and operational area restrictions. However, in the context of this research, the absence of these instruments has led to uncontrolled growth in electric vehicle adoption. Comparative studies of policies across cities show that factors such as fleet caps, licensing fees, and operational regulations are key to controlling the impact of micromobility [28]. Without these mechanisms, the market tends to develop unevenly.

The regulatory vacuum is also closely related to the disharmony between national and local policies. On the one hand, the central government is promoting the use of electric vehicles as part of its decarbonization and energy transition agenda. On the other hand, local norms in Gili Tramena seek to maintain a car-free zone to maintain ecological sustainability and tourist comfort. This lack of synchronization creates a legitimacy conflict, in which two policy frameworks

point in different directions for the same phenomenon. The literature shows that such conflicts often occur in mobility

transition processes, especially when technological innovation is not accompanied by cross-level policy coordination [29].

Table 2. Comparison of national, regional, and local regulations

Regulatory Level	Regulation	Main Substance	Relevance to Gili Tramena	Potential Conflict
National	Presidential Decree No. 55 of 2019 concerning the Acceleration of the Battery-Based Electric Motor Vehicle Program	Encourage the use of electric vehicles to reduce emissions	Legitimizing the use of electric vehicles including e-bikes	Contrary to the ban on motorized vehicles on Gili
Regional	Law No. 10 of 2009 concerning Tourism	Promoting sustainable tourism development	Supporting tourism transportation innovation	Does not specifically regulate the ecological boundaries of small islands
Local	NTB Provincial Regulation on the Regional Tourism Master Plan Awiq-awiq Village Regulations	Sustainability-based tourism development Banning fossil fuel-powered motor vehicles Regulating village area governance	Recognizing Gili as a leading tourist area Maintaining eco-island identity Be the basis of local arrangements	Does not regulate local transportation technicalities Does not explicitly regulate electric vehicles No e-bike quotas, permits, or zoning yet

Source: Processed by the author (2026)

Furthermore, the lack of regulation also demonstrates a lack of attention to social and spatial justice. Recent studies have shown that many micromobility regulations fail to consider the dimensions of justice, including the distribution of access and the economic impact on specific groups [30]. In the context of Gili Tramena, the absence of regulation actually exacerbates the inequality between traditional operators and providers of electric modes, as there are no protection or affirmative action mechanisms for vulnerable groups.

Another important dimension is the limited institutional capacity to respond to new risks. The presence of electric vehicles carries various implications, from user safety to public space management. However, without a clear regulatory framework, village governments tend to be reactive. Case studies in Singapore show that managing micromobility requires a combination of regulatory strategies, oversight, and public participation to address emerging risks [13]. Without such capacity, the resulting policies tend to be inconsistent and difficult to enforce.

The regulatory vacuum also contributes to the legal uncertainty players feel. For electric vehicle providers, the absence of explicit prohibitions allows them to operate freely. However, for traditional players, this situation is seen as unfair because existing regulations fail to protect their interests. This uncertainty exacerbates horizontal and vertical conflicts and undermines trust in governing institutions.

Furthermore, the literature shows that the lack of standards and evaluation frameworks is a major challenge in micromobility development. Recent studies confirm that there is currently no comprehensive standard framework for assessing the impacts of micromobility, whether from an environmental, social, or economic perspective [31]. This situation makes the policy formulation process even more complex, due to the lack of clear guidelines for determining boundaries and priorities.

In a broader perspective, this regulatory vacuum reflects the governance lag, namely the delay in the governance system's response to technological innovation. Other studies show that micromobility often develops faster than the government's ability to provide adequate infrastructure and regulations [32, 33].

4.3 Changes in ecological and cultural values

To understand the deeper impact of the mobility transformation on Gili Tramena, it is important to look not only at changes in economic and regulatory aspects, but also at the ecological and cultural dimensions that shape the region's identity. Mobility is not simply movement, but a social practice imbued with meaning, values, and symbols embedded in people's daily lives. When the transportation system changes, the values inherent in it also shift, whether gradually or significantly. Therefore, the following visualization helps explain how changes in transportation modes trigger transformations in tourist perceptions, social structures, and cultural meanings that have long underpinned Gili Tramena's sustainability as an eco-island destination.

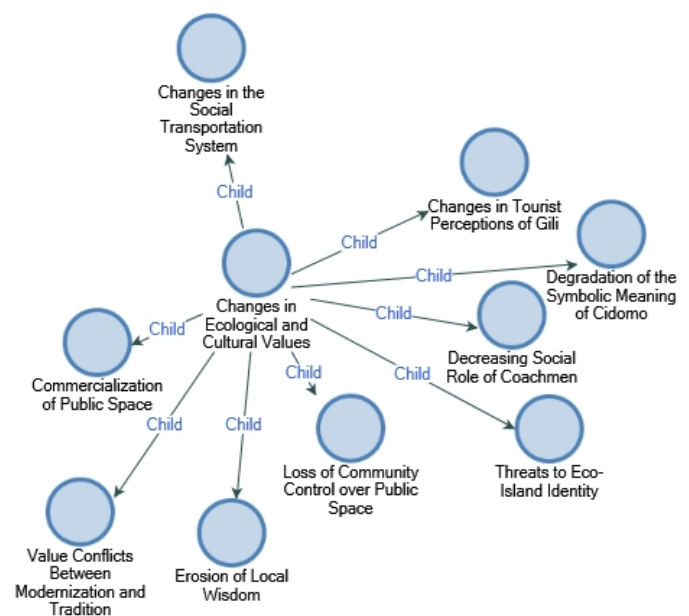


Figure 3. Changes in ecological and cultural values
Source: Processed using NVivo 12 Plus

The transformation of the transportation system on Gili Tramena has not only resulted in changes in mobility and the

economy, but also impacted a more fundamental dimension: ecological and cultural values that have shaped the region's identity. Figure 3 shows that changes in ecological and cultural values is a central node connected to several important sub-dimensions, such as changes in tourist perceptions of Gili, the degradation of the symbolic meaning of cidomo, threats to eco-island identity, the decline in the social role of coachmen, the loss of community control over public spaces, the erosion of local wisdom, and the increasing commercialization of space. These findings confirm that the conflicts arising from the presence of electric vehicles cannot be reduced solely to technical transportation issues, but are also related to shifts in the social and ecological meanings of the island's tourism space.

One of the most obvious changes is the decline in the symbolic significance of the cidomo as a local cultural icon. Before the introduction of electric vehicles, the cidomo was positioned not simply as a means of transportation, but as a representation of the island's slow, ecological, and distinctive lifestyle. In interviews, several informants stated that the presence of the cidomo had previously distinguished Gili from other, more urban and mechanistic tourist destinations. However, the increasing dominance of electric vehicles has seen the cidomo gradually shift from a cultural symbol to simply a less efficient transportation alternative. This phenomenon aligns with studies on the transformation of tourist destinations, which show that uncontrolled modernization can lead to the erosion of local symbolic values and reduce the authenticity of destinations [14, 34].

Furthermore, this study found a shift in tourists' perceptions of Gili's identity. Tourists who previously associated Gili Tramena with a car-free zone, a tranquil atmosphere, and non-motorized mobility experiences began to view the area as a more pragmatic and efficiency-oriented destination. This shift in perception is important because ecological identity is a key symbolic asset in the competitiveness of island destinations. Recent studies have shown that tourists tend to have strong expectations for consistency between destination image and actual experiences on the ground [35]. When the reality of mobility begins to conflict with the eco-tourism destination image, the risk of decreased tourist satisfaction and a shift in destination positioning increases.

Another notable finding is the threat to the eco-island's identity. For years, Gili Tramena has built a narrative of a pollution-free zone and environmentally friendly mobility through restrictions on motorized vehicles. Ironically, the arrival of electric vehicles has sparked a new debate about the meaning of ecology itself. Technically, electric vehicles are seen as cleaner than fossil-fueled vehicles. However, from the perspective of local communities, electric vehicles are still seen as disrupting social rhythms, increasing spatial density, and contradicting the philosophy of low-intervention mobility. This demonstrates that the concept of sustainability is not always understood solely in terms of low-emission technology, but also in terms of its alignment with local social and cultural values [36].

This change then has implications for the decline in the social role of cidomo drivers. In the local context, drivers function not only as transportation operators but also as part of the community's social structure. They have relationships with tourists, local businesses, and the surrounding community, thus contributing to social cohesion. When demand for cidomo declines, it impacts not only economic income but also the drivers' social standing within the local tourism ecosystem.

Studies on the transformation of the tourism economy show that the marginalization of traditional professions is often accompanied by a decline in social status and a weakening of community social networks [37].

The next node demonstrates a loss of community control over public space. The growing presence of electric vehicles, without clear regulations, has led communities to feel a loss of control over spaces previously regulated by social norms and customary laws. Roads, parking areas, and public spaces that were once relatively orderly have now become arenas for new competition. From the perspective of local communities, this issue is not simply a physical disorder but a symbol of their diminishing authority to determine how shared spaces are used. Recent literature emphasizes that community control over public space is a crucial element in maintaining the social sustainability of community-based tourism destinations [38].

Furthermore, the erosion of local wisdom has serious long-term implications. Traditional customs have functioned not only as customary rules but also as ecological governance mechanisms, born from communities' collective experience in maintaining the balance of small islands. When transportation innovations develop without adequate adaptation of norms, the regulatory function of traditional customs weakens. This condition demonstrates a gap between local knowledge systems and modern technological developments. A study by Wang and Bramwell [39] shows that the failure to integrate local wisdom into tourism governance can accelerate social fragmentation and conflicts of interest.

4.4 Conflict dynamics

The conflict dynamics in transportation management on Gili Tramena do not exist in isolation; rather, they intersect through several themes that connect the main categories. These themes demonstrate how conflict develops within a complex social space, where actors, regulations, and the physical environment interact (Figure 4).

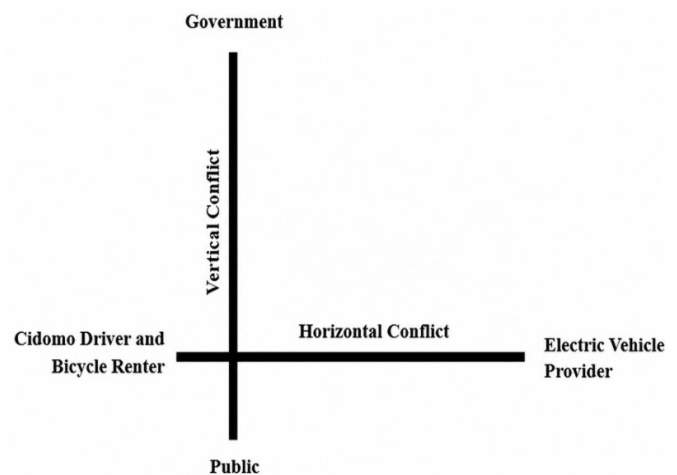


Figure 4. Conflict dynamics

Source: Processed using NVivo 12 Plus

One of the most prominent themes is horizontal conflict between transportation operators, which has emerged as a direct consequence of changes in market structure. Traditional transportation operators, such as cidomo drivers and bicycle rental operators, are increasingly under pressure from electric vehicle providers. This tension is not only about economic competition but also about the struggle for operational space

and social legitimacy. In some cases, this conflict manifests as direct friction on the ground, such as fights over lanes and parking spaces, demonstrating that public space is becoming an increasingly intense arena for negotiation.

On the other hand, vertical conflict between the community and the government reflects dissatisfaction with a perceived unresponsive governance. Local communities, particularly those operating in traditional transportation, believe the village government has not been able to provide clear, consistent regulations governing the operation of electric vehicles. This lack of clarity has led to the perception of unequal protection of interests, with some actors feeling neglected in the policy-making process. This vertical conflict demonstrates that mobility issues are not merely technical but also touch on dimensions of trust and institutional legitimacy.

The next theme is spatial density and limited infrastructure, which amplify various forms of conflict. Gili Tramenas characteristics as a small island with a narrow road network mean that the increasing number of transportation modes, particularly electric vehicles, directly impacts spatial capacity. This density not only creates micro-congestion but also increases the potential for conflict between road users. In this context, public spaces are no longer shared facilities but have become contested spaces for various interests.

This situation has implications for tourist safety, a crucial concern in destination management. This study found an increase in minor accidents, particularly involving tourists unfamiliar with electric vehicles. Factors such as a lack of understanding of road conditions, driving at night, and the absence of an adequate monitoring system contribute to these risks. This demonstrates that mobility transformation impacts not only local economic actors but also the quality and safety of the tourism experience.

Ultimately, all of these dynamics culminate in the tourism experience visitors have. While electric vehicles offer convenience and efficiency, poorly managed changes can degrade the overall quality of the tourism experience. Overcrowding, stakeholder conflicts, and a diminished sense of security can diminish the appeal of Gili Tramenas as a destination known for its serene, environmentally friendly atmosphere. Therefore, the tourism experience is determined not only by the facilities available but also by how social and ecological spaces are harmoniously managed.

4.5 Handling efforts and policy proposals efforts and policy proposals

Addressing transportation conflicts on Gili Tramenas requires an approach that focuses not only on technical regulations but also on understanding the social dynamics, cultural values, and ecological sensitivities of the island's communities. The first step is to develop a clear, adaptable regulatory framework that bridges the gap between national policies promoting electrification and local regulations emphasizing environmental preservation. These regulations should include an explicit definition of electric vehicles, a licensing mechanism, and restrictions on the number and zoning of electric vehicles to prevent uncontrolled growth. Ideally, the development of these regulations should involve a joint consultative forum that includes cidomo drivers, e-bike renters, e-bike providers, village government officials, traditional leaders, and tourism managers so that the resulting policies truly reflect the needs and aspirations of the local community (Figure 5).

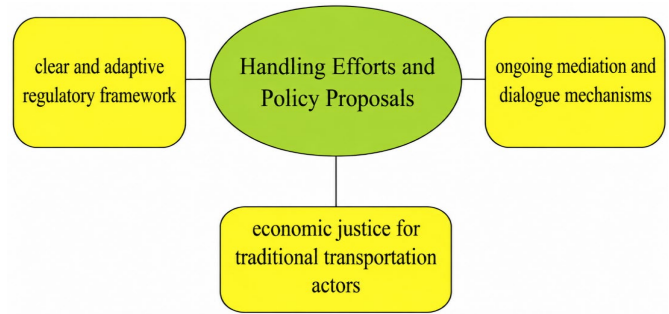


Figure 5. Handling efforts and policy proposals

Source: Processed using NVivo 12 Plus

Problem-solving efforts must also consider economic fairness for traditional transportation operators. In this context, local governments can implement electric vehicle quota schemes, offer incentives to traditional operators such as horse care support or improved bicycle lane facilities, and create business adaptation opportunities, including integrating cidomo-based cultural tourism. This approach not only alleviates economic pressures but also sustains the cultural values that have long defined Gili's identity as an ecological island. Furthermore, improving mobility infrastructure requires dedicated e-bike parking areas, safe pedestrian paths, and safety information systems for tourists. These arrangements aim to reduce friction between users of public spaces while improving the quality of the tourist experience.

Equally important is establishing mechanisms for mediation and ongoing dialogue. The conflict on Gili Tramenas demonstrated that the absence of structured communication spaces makes tensions more likely to erupt and harder to manage. Regular forums between the community, village government, and business actors can serve as a platform to address grievances, assess policy effectiveness, and formulate adaptive measures as tourism dynamics evolve. This participatory approach is crucial for communities to feel in control of their living spaces and foster a sense of justice, which is the foundation of social stability.

Ultimately, resolving the transportation conflict on Gili Tramenas requires policies that not only regulate vehicles but also protect the ecological values, cultural dignity, and economic sustainability of the local community. An ideal mobility governance system manages change without compromising collective identity; enables innovation without marginalizing tradition; and promotes social justice. It also ensures that tourism modernization proceeds in a sensitive, equitable, and sustainable manner. With such a policy framework, Gili Tramenas can move toward a more organized and adaptive mobility system that truly reflects the island's unique character.

5. CONCLUSION

This research demonstrates that the transportation conflict on Gili Tramenas is not simply about the arrival of electric vehicles, but rather a complex mix of economic tensions, regulatory gaps, and shifting ecological and cultural values. Income inequality between traditional transportation operators and electric vehicle providers creates a deep sense of injustice, while the lack of clear regulations leaves public spaces riddled with conflicting legal interpretations. At the same time, the introduction of electric vehicles disrupts the social systems

and ecological values that have long defined Gili Tramenas' identity as an eco-island, leaving local communities feeling a loss of control over their living spaces and the traditions they have maintained for years. These findings underscore that mobility issues cannot be separated from broader concerns about governance, social justice, and ecological sustainability.

Substantially, this research highlights the importance of designing adaptive mobility governance, particularly a regulatory framework that bridges the needs of modern tourism with the preservation of local wisdom. The research findings are also relevant to other island tourism destinations facing the pressures of electrification and transportation modernization, yet lacking adequate institutional preparedness.

However, this study has limitations due to its reliance on contextual qualitative data. This may not fully reflect the variation in dynamics across regions or other actor groups not involved in the interviews. Further research is recommended to broaden the scope of the analysis through a comparative approach across different tourist islands, using quantitative data on mobility patterns and spatial burdens, and exploring more participatory and collaborative governance models. This research will not only map the conflicts that have occurred but also create space for the design of mobility policies that are more equitable, sustainable, and sensitive to the cultural values of island communities.

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