



The Development of Transportation System for Tourism in Mandalika: A SWOT Analysis

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Abstract. Mandalika is one of several tourist's destination in Indonesia with the beauty of nature, the variety of cultures as well as the magnificent racing circuit lately. However, the development of this area as a tourist attraction is constrained by the availability of public transportation. Currently rent cars and taxis are dominant transportation toward the area which is costly for the visitors. This study aims to determine strategies in order to develop an integrated transportation system (ITS) in Mandalika. Focus group discussion were conducted in Mandalika, West Nusa Tenggara in November-December 2022 to several key actors involved in the development of Mandalika tourist's destination. SWOT analysis was applied to identify the strength, weaknesses, opportunity and threats in establishing ITS, while quantitative strategies planning matrix (QSPM) were implemented to define priority strategies to support ITS. The result showed that strengthening the Government Regulation No. 52 year 2014 about Specific Economic Zone is important to support the development of ITS. Moreover, optimizing existing transportation system as well as developing new infrastructures are necessary to create a sustainable ITS. In addition, empowering all stakeholders inclusively for the successful implementation of a sustainable ITS as well as promoting the diversity of Mandalika tourism globally and massively are required to increase the demand for ITS.

Keywords: Mandalika Exclusive Economic Zone · an integrated transportation system · strategy

1 Introduction

Mandalika is one of the tourist attraction destinations for local and international tourists that requires particular attention from the Government to boost the economy in the region, one of which is through the tourism sector. Mandalika is strategically located

in the Southern part of Lombok Island, West Nusa Tenggara Province with an area of 1,035.67 ha and faces the Indian Ocean [1]. Currently, Mandalika which has the potency for coastal and underwater attractions, become one of the Priority Tourism Destinations (PTD). The diversification of tourism that will be targeted to be increased including (1) natural tourism (ecotourism, marine tourism, adventure tourism); (2) cultural tourism (heritage tourism, culinary tourism, village tourism) and (3) artificial tourism (*meeting-incentive-convention-exhibition*) [2]. The existence of Mandalika as one of the world's prestigious arenas Moto Grand Prix 2022 on March 18 to 20, 2022 opens the opportunities for tourism development in the region. Based on data from Tourism Council of West Nusa Tenggara in May 2022, the number of foreign and domestic tourists visiting West Nusa Tenggara has increased by 22% or about 473,463 tourists. This number was about 73.7% larger compared to the number of tourists who came until the same period in 2021 which reached only 367,086 tourists [3].

To support the achievement of the government's strategic plan and improve the tourism ecosystem in the Mandalika area, supports are required in the form of transportation development that are able to bring foreign and domestic tourists to the desired tourism location. The study [4] indicated that transportation is important component for people's mobility in carrying out daily activities, to move from one place to another by using a vehicle, for example cars, motorcycles, planes and others. Lack of transportation system will impact on low mobilization of the community and also tourists. From the results of interviews with local and international tourists, to travel to Mandalika covers a distance of 21.5 km or takes 30 min to travel using four-wheeled or two-wheeled vehicles from Lombok International Airport.

Currently, hired transportation in the form of rent car, conventional and online taxis, and also private vehicles are the popular transportation that bring tourists to reach the tourism places. To attract tourists, the government has accommodated the public bus (DAMRI) to ease the movement of surrounding community and tourists to tourist locations in Mandalika. However, due to the majority of tourists who visiting Mandalika are frequently in groups or families resulted in the main use of car becomes more reasonable for them, while for residents, motorbikes are more convenience for their daily mobilization. This fact probably affects the interest of visitors to come to Mandalika due to high cost for rent car and it might also increase the traffic jam. To raise people's interest in traveling to Mandalika, the government should improve existing transportation for the better and also improve its governance. The harmony and integration between the principles of *good governance* and the tourism industry will make the goal of tourism achieved.

2 Objectives

A common problem that exists in tourist locations in Indonesia is the difficulty of reaching tourist attractions, even though the easier a tourist spot is reached, the higher the interest of tourists to visit these tourist attractions. The growth of tourists in certain destinations is closely related to the provision and level of development in the transportation system [5]. In transporting, people need a safe, comfortable mode of transportation, given alternative modes, costs, travel time and accompanying facilities on the transportation. The problem

that occurs in the Mandalika Tourist Area is the limitation of public transportation modes to tourist areas in Mandalika; and tourists' interest has not been supported by easy access to the Mandalika tourist area. Therefore, this study aims to find out the priority strategies that can be applied to the development of tourist transportation in Mandalika.

3 Theoretical Review

According to Law Number 22 of 2009, transportation is defined as an activity of moving passengers and goods from one place to another, in which there is an element of movement. As a part of the national transportation system, traffic and transportation must be developed both its potential and role to realize security, safety, order, and smoothness of traffic and road transportation in order to support economic development and regional development.

Transportation services for people with Public Motorized Vehicles in Article 140 of the Law of the Republic of Indonesia Number 22 of 2009 concerning Road Traffic and Transportation consist of: (a.) Transportation of people with Public Motorized Vehicles on the Transportation route; (b.) Transportation of people by Public Motor vehicles is not on the route. Transportation of people by public motor vehicles on a route is a transport served by public passenger cars or public buses within an urban area and/or a certain area or from one place to another, having a fixed origin and destination of track and time. Transportation of people with Public Motorized vehicles not on the route is transportation that is served by public passenger cars or public buses in urban areas and/or certain areas or from one place to another, has an origin and destination but does not have a fixed track and time (Article 1 paragraph (3) of the Regulation of the Minister of the Republic of Indonesia Number 32 of 2016 concerning the Implementation of Transportation of People with Public Motorized Vehicles Not on the Route).

Most of the transportation in Mandalika is the transportation of people with Public Motor vehicles not on the route Transportation of people with Public Motor vehicles not on the route is a transport that is served by public passenger cars or public buses within a certain urban area and/or area or from one place to another, has an origin and destination but does not have a track and time that [6].

Transportation of people by public motorized vehicles on the route as referred to is explained in Article 142 of the Law of the Republic of Indonesia Number 22 of 2009 concerning Road Traffic and Transportation including: (a) Intercity Transportation Within the Province Inter-City Transportation within the Province is transportation from one city to another between regencies/cities within one provincial area that is bound by the route; (b) Urban Transport Urban transport is transportation from one place to another in an urban area bound in the route The urban area in question is in the form of: 1) The city as an autonomous region, 2) The part of the district area that has urban characteristics, or 3) The area that is in part of two or more areas that are directly adjacent and have urban characteristics. Rural Transportation Rural transportation is transportation from one place to another in a district area that does not intersect with urban transportation routes (Explanation of Article 142 letter e of the Law of the Republic of Indonesia Number 22 of 2009 concerning Road Traffic and Transportation).

According to Law Number 22 of 2009 on 151, the transportation of people public motor vehicles not on the route includes taxis that are specially marked and equipped with



Fig. 1. Collaborative Partnership [8].

a meter that serves from door to door with the area of operation in an urban area; Public Passenger Cars or Public Bus Cars for the purposes of shuttles, employee transportation, settlement transportation, charter transportation, and public rental transportation as well as special rental transportation; General Passenger Cars and Public Bus Cars equipped with special signs for tourist purposes and have tourist attraction purposes; and General Passenger Cars operated on local roads and neighborhood roads [7].

An area can be used as a tourist area because it has potential that can be developed which will affect the socio-economic order of its people. The welfare of the community, especially from the economic side, is a factor that will affect the development of a tourism potential area. In addition, governance and cooperation with various interested parties, both from the side of the government, society, universities, the private sector and the media are also influencing the development of a tourism potential area.

In Fig. 1, it is a form of collaborative partnership in the development of *tourism* (*smart* tourism), where there are five actors who play a role in shaping the tourism ecosystem, including government, tourism companies, local communities, tourists and residents [8].

4 Methods

The research was approached by qualitative methods using the procedures and methods that are part of it. Qualitative methods are part of the process of knowledge that can be considered as a social product as well as a social process. Knowledge as a process has at least three basic principles, namely empiricism which rests on facts and data, objectivity and control. Qualitative research aims to describe the meaning of reality and social phenomena that develop in society.

Focus Group Discussion (FGD) was done in November-December 2022 involving about the existing transportation system in Mandalika. Key person as a representative from several parties who involved in Mandalika integrated transportation system development (Table 1). FGD is a data collection method that relies on obtaining data or information from an informant or respondent interaction based on the results of discussions in a group that focuses on discussing solving certain problems. The discussion

through these stakeholders obtained an overview of the strength, weakness, opportunity and threat (SWOT) of transportation development in Mandalika.

The data or information obtained through this technique, in addition to being group information, is also an opinion and decision of the group. The FGD method provides richer data and adds value to data that is not obtained when using other data collection methods, especially in quantitative research [9]. The characteristics of the implementation of the FGD method was explained by using a semi-structured interview with a group of individuals with a moderator who leads the discussion with an informal order and aims to collect data or information on a specific issue topic [10]. In this case, participants who was invited to the FGD in this study include agencies/parties related to the transportation system in the Mandalika Tourist Area (Table 1).

Data gathered were analyzed using a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis which is used to identify and evaluate factors that are in control and out of control (*controllable and non-controllable factors*) related to interventions – potential interventions or strategies that required to improve system performance [11–13]. SWOT analysis is specifically carried out in an interactive group meeting with a common theme/topic [14] utilizing SWOT analysis procedures. SWOT and QSPM analysis have been widely used to determine problems and determine management strategies on various topics including in the evaluation of tourist attraction management [15, 16] and determination of the transportation system [17, 18].

Participants who attended the FGD in this study included agencies/parties related to the transportation system in the Mandalika Tourism Area, including PT ITDC The Mandalika, Tourism District Office, Transportation District Office, Road Transportation Organization, Universities, Community Leaders, Tourism Event Organizer's, Traditional leaders, youth, Indonesian transportation community, NGOs, Civil Society, Transportation Community, Tourism/Hospitality Community.

Based on the analysis of internal factors and external factors, the Strategic Position and Action Evaluation Matrix is used to determine the type of strategy that needs to be pursued (aggressive strategy – SP strategy; conservative strategy – WO strategy; defensive strategy – WT strategy or competitive strategy – ST strategy). The next step is to analyze the quantitative strategies planning matrix (QSPM) to choose the best strategy more objectively and develop priorities. Quantitative *Strategic Planning Matrix* (QSPM) evaluates more appropriate strategic options, and even provides solutions for prioritizing recommendation strategies.

5 Findings and Discussion

5.1 External Factors Evaluation and Internal Factors Evaluation

According to the survey and FGDs, there were some factors identified as strengths and weaknesses which were able to be controlled, while there were also factors beyond control which were categorized into opportunities and threats. These factors were evaluated by *Quantitative Strategic Planning Matrix* (QSPM) and considered as internal factor evaluation (IFE) for strengths and weaknesses and external factor evaluation (EFE) for opportunities and threats. The result of IFE and EFE matrix were showed in Table 2 and 3.

The evaluation of the external matrix in Table 1 shows that the total score of opportunity factors was 1.43250 and threat factors was 1.37200, indicates that the opportunity to develop an integrated transportation system in Mandalika is higher compared to the threats. With the total score of external factors that reached 2.80450, it is likely that the strategy to develop transportation system in Mandalika has a higher opportunity to be optimized. This particularly supported by the interest of investor and visitor to invest and visit Mandalika, as well as the potency to integrate transportation and various tourism objects. However, in order to implement this strategy, it is also required to aware on the potential threats that might occur particularly regarding the environment' damages.

Moreover, the evaluation of the internal matrix presented in Table 3 shows that the total score of strength factors was 1.82320 and weakness factors was 0.82744. The highest weighted score of strength was demonstrated by the diversity of attractive tourist attractions for domestic and international tourists that is the most effective factor to be used as the basis for the Mandalika transportation system development strategy. The total score of internal factors counted for 2.65064 indicates that the strategy to develop transportation system in Mandalika can be carried out effectively by maximizing strength factors while minimizing the negative impact of weakness factors.

5.2 Strategy to Develop an Integrated Transportation System in Mandalika

According to the mapping of EFE and IFE results into a matrix of strategic positioning and action evaluation (Fig. 2), the recommended strategy is categorized into an aggressive strategy which is using existing *strengths* by taking advantage of available *opportunities*. Figure 1 shows that the vertical axis represents the score of external factors, while the horizontal axis describes the score of internal factors. The mapping of the total score of external factors was 2.80450 and the score of internal factors was 2.65064.

According to the result of matching strength and opportunity factors, there are several strategies determined as SO strategy as follows:

5.2.1 Strengthening the Government Regulation No. 52 year 2014 About Specific Economic Zone Through Various Transportation Policies in Regards with INFRAStructure's Investment, Price Instrument and Other Regulation to Support an Integrated Transportation System

The development of SEZ is an effort to develop regional economic activities that are strategic for the development of the national economy. SEZ development is focused on driving economic growth, equitable development, and increasing competitiveness. The objectives of SEZ development are: (a) increasing investment through the arrangements of areas that have geo-economic and geo-strategic advantages, (b) optimizing other economic activities that have high economic value, (c) accelerating regional development through the development of new economic growth centers for the balance of development between regions, and (d) realizing a breakthrough model of regional development for economic growth in order to create employment. The SEZ is designed according to the specific conditions and situations of the region/area. Mandalika SEZ has the concept of developing environmentally friendly tourism with the development of tourist objects

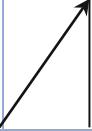
Internal factors' score = 2.65064					
1	2	3	4		
Conservative		Aggressive		4	External factors' Score = 2.80450
				3	
Defensive		Competitive		2	

Fig. 2. Strategic Position and Action Evaluation Matrix for Developing an Integrated Transportation System in Mandalika

and tourist attractions that are oriented towards the preservation of environmental values and quality in the community.

The six main aspects that require to be considered in SEZ development are an attractive investment policy framework, fiscal incentives, integrated trade facilitation, qualified infrastructure, linkages to regional and global value chains, and service and business development for SMEs. One of the main challenges of developing the Mandalika SEZ is the construction of transportation connectivity nodes to and from the tourist objects offered. Transport connectivity is not only limited to the travel of people, but also includes the provision of logistics distribution channels. In the context of support for the success of the Mandalika SEZ, the development of an integrated transportation system (facilities and infrastructure) is a vital element that is urgently needed for the operationalization of most economic and social services. The integrated transportation system aims to ensure the existence/availability of suitable, safe and interconnected infrastructure for various types of transportation, such as private cars, freight cars, public transportation, motorcycles, bicycles, pedestrian paths that will have an impact on increasing people’s accessibility to work, services and other daily activities. The integrated transportation system involves the combination of different types of transportation which focused on maximizing effectiveness and efficiency for users with regard to time, cost, convenience, easiness, safety and accessibility.

Therefore, the Government regulation No. 52, year 2014 requires to be equipped by various transportation policies related to infrastructure investment, price instruments policies and regulations that will affect the supply and demand for integrated transportation. Investment policies are led to the development of new transport infrastructure (e.g. highways, railways, or airports), improving existing transport networks and technologies, or improving transportation services. Price incentive policies, including subsidies or taxes, are designed to influence more general option of transportation modes and

Table 1. External Factors Evaluation Matrix for the development of an integrated transportation system in Mandalika.

Rank	Opportunities	Weight	Score	Weighted Score
I	Investors' interest to invest in Mandalika Specific Economic Zone (SEZ) and its buffer areas (O-1)	0.10425	4	0.41700
II	Integration of tourism transportation with various tourism objects (Beach, Racing Circuit, Mandalika Circle Villages, Cultural Tourism) are potentially in Mandalika SEZ (O-2)	0.08275	4	0.33100
III	<i>Trend</i> of increasing tourist's interest in visiting Mandalika (O-3)	0.07175	3	0.21525
IV	Potency for optimizing of small-medium enterprises participation in tourism development in Mandalika (O-4)	0.06125	3	0.18375
V	Potency for increasing employment (O-5)	0.05675	2	0.11350
VI	Potency for increasing the income of community particularly in Mandalika (O-6)	0.04875	2	0.09750
VII	Trends in the development of facilities and infrastructure supporting access to/from Mandalika (O-7)	0.04775	1	0.04775
VIII	Availability of fast boat access from Bali to Mandalika (O-8)	0.02675	1	0.02675
	Total opportunities	0.5		1.43250
Rank	Threats	Weight	Score	Weighted Score
I	Natural damage due to the construction of tourist facilities and infrastructure that can interfere the sustainable environmental governance (T-1)	0.17600	4	0.70400
II	The holding of seasonal events that hinder the development of targeted business (T-2)	0.12500	3	0.37500
III	Lack of tourists/traders/communities' awareness towards hygiene aspects that potentially damage the environment (T-3)	0.09400	2	0.18800
IV	The possibility of lowered investors' interest in investing tourism in Mandalika (hotels, restaurants, tourism spot development) due to the Lombok's earthquake and the Covid-19 pandemic (T-4)	0.10500	1	0.10500
	Total threats	0.5		1.37200
	Total external factors			2.80450

Table 2. Internal Factors Evaluation Matrix for the development of an integrated transportation system in Mandalika.

Rank	Strength	Weight	Score	Weighted Score
I	The diversity of attractive tourist attractions for domestic and international tourists (Beach, Circuit - Sport Tourism, Mandalika Circle Village, cultural tourism) (S-1)	0.12420	4	0.49680
II	The establishment of the Government regulations No 52 year 2014 that support the Mandalika SEZ as a Tourism SEZ (availability of the national master plan for the Mandalika SEZ) (S2)	0.10050	4	0.40200
III	The availability of special route infrastructure (e.g. Songgong round about) to ease the access to Mandalika (S-3)	0.09850	4	0.39400
IV	The increase trend of the hotel industry development in Mandalika (S-4)	0.08120	3	0.24360
V	The availability of adequate road access from international airports (S-5)	0.05050	3	0.15150
VI	The increase trend of safety and comfortable traveling in Mandalika (S-6)	0.04510	3	0.13530
	Total strengths	0.5		1.82320
Rank	Weaknesses	Weight	Score	Weighted Score
I	Limited availability of routes and public transportation facilities to/from Mandalika at this time (W-1)	0.11120	2	0.22240
II	Tourists' interest to Mandalika is depending on seasonal events organised in that area (W-2)	0.08350	2	0.16700
III	The growth of new economic activities tends to be temporary depending on events held in Mandalika (W-3)	0.07224	2	0.14448
IV	The availability of tourism access information to Mandalika (related to destinations, transportation, hotels) is still not optimal (W-4)	0.06050	2	0.12100
V	The insurance system for passengers and vehicles has not been well organized (W-5)	0.05275	1	0.05275
VI	The transportation business licensing process still takes a long time due to lack of socialization (W-6)	0.04911	1	0.04911

(continued)

Table 2. (continued)

VII	The safety of travel to/from Mandalika is less guaranteed, especially at night due to lack of light and quiet place (W-7)	0.04336	1	0.04336
VIII	Unorganized public facilities for visitors in the Mandalika tourist area such as parking lots, toilet facilities, mosques, and waste management (W-8)	0.02734	1	0.02734
	Total weaknesses	0.5		0.82744
	Total internal factors			2.65064

behaviors (e.g., reductions in student rates, tolls, parking rates, fuel taxes, and transportation subsidies). Regulatory policies are directed to establish rules, for example in order to reduce emissions directly (fuel emission standards, restrictions on the use of vehicles), or to organize the transportation sector (various types of transportation for passengers and goods) and the infrastructure construction sector.

5.2.2 Optimizing and Developing/improving Existing Infrastructure that Oriented Towards the Realization of a Sustainable Integrated Transport System

Well-defined the hierarchy of transportation network as well as well-designed road networks to accommodate all types of transportation continue to play a key role in the efficient operationalization of transportation systems. However, the importance of optimizing and developing public transportation infrastructure and implementing various transportation schemes (for example, discounts for students and seniors) even plays a crucial role in supporting the sustainability of an integrated transportation system. This strategy also needs to be supported by prioritizing the governance of transportation assets/infrastructure, reducing the cost of maintaining transportation and service infrastructure, as well as strengthening and harmonizing policies, legalization, regulations and institutional frameworks for the operationalization of these infrastructures. Therefore, the development of sustainable transportation infrastructure is important for the Mandalika SEZ which has the concept of developing environmentally friendly tourism. It means that the sustainable transportation system requires to meet current mobility; safe for public health or ecosystems, and meets the need for consistent access to sustainable resource use, without compromising the ability of future generations to meet their needs.

5.2.3 Promoting the Diversity of Mandalika Tourism Massively and Well-Targeted in Order to Increase the Demand for ITS




The development of tourist destinations by focusing on improving the quality of service and competitiveness of destinations based on market trends and existing market opportunities. Currently, the development of tourism in Mandalika is increasingly diverse, and there are still many that are not widely known by tourists. Promotion is a very important thing to do to increase public interest in visiting Mandalika. The NTB Regional Government through the Tourism Office has done tourism promotion, for example to the Middle East, and countries in Asia. Tourism promotion is also carried out to Bali as a favorite tourist destination. Promotion is carried out through print media (leaflets, posters, flyers), electronics (social media, television, websites), and tourist ambassadors.

Currently the motto for tourism promotion in NTB is *Land of Infinite Experience*, which means NTB has a variety of tourist destinations, namely mountains, beaches, waterfalls, sports tourism, Motocross Grand Prix (MXGP), MotoGP, World Superbike (WSBK), culinary, and tourist villages. As directed by the NTB governor, all circles must socialize this motto to promote NTB as a tourism province.

5.2.4 Empowering All Stakeholders Inclusively for the Successful Implementation of a Sustainable ITS

Mandalika SEZ can be viewed as a common resource with ITDC appointed as the main manager of the tourism area. However, it will be very difficult to be able to limit access (non-excludable) from other parties who have influence in tourism activities in Mandalika, including district and provincial governments, as well as social communities and business communities that have existed since before the Mandalika SEZ was established. This is the basis that tourism management, especially the transportation aspect must be managed inclusively with the aim of achieving optimal benefits for each party.

Table 3. Matching Strength Factors and Opportunity Factors

	Strengths	Weaknesses
Opportunities		<p><i>Strength-Opportunity – Aggressive</i></p> <ul style="list-style-type: none"> • Strengthening the Government Regulation No. 52 year 2014 about Specific Economic Zone through various transportation policies in regards with infrastructure’s investment, price instrument and other regulation to support an integrated transportation system. • Optimizing and developing/improving existing infrastructure that oriented towards the realization of a sustainable integrated transport system • Promoting the diversity of Mandalika tourism massively and well-targeted in order to increase the demand for ITS • Empowering all stakeholders inclusively for the successful implementation of a sustainable ITS
Threats		

The existence of various tourist attractions directly adjacent to Mandalika SEZ (Mandalika Ring Village) as well as a variety of other supporting attractions that are integrated in a comprehensive tourism plan on Lombok Island, is a potential that can only be utilized with the support of various parties. Better management of tourist attractions in the target of continuous visits throughout the year, is a form of optimization of the available tourism potential. This potential can only be a benefit when tourist mobility can run effectively and efficiently, so that it can have a positive impact on regional economic progress.

Table 4. Quantitative Strategic Planning Matrix (QSPM)

		Strategy 1		Strategy 2		Strategy 3		Strategy 4		
		Strengthening the Government Regulation No. 52 year 2014 about Specific Economic Zone through various transportation policies in regards with infrastructure's investment, price instrument and other regulation to support an integrated transportation system		Optimizing and developing/improving existing infrastructure that oriented towards the realization of a sustainable integrated transport system		Promoting the diversity of Mandalika tourism massively and well-targeted in order to increase the demand for ITS		Empowering all stakeholders inclusively for the successful implementation of a sustainable ITS		
	Opportunity	Weight	Score	Weighted score	Score	Weighted score	Score	Weighted score	Score	Weighted score
1	Investors' interest to invest in Mandalika Specific Economic Zone (SEZ) and its buffer areas (O-1)	0.10425	4	0.41700	4	0.41700	3	0.31275	3	0.31275
2	Potency for optimizing of small-medium enterprises participation in tourism	0.06125	3	0.18375	2	0.12250	2	0.12250	2	0.12250

(continued)

Table 4. (continued)

	development in Mandalika (O-4)								
3	Availability of fast boat access from Bali to Mandalika (o-8)	0.02675	1	0.02675	1	0.02675	1	0.02675	1
4	Integration of tourism transportation with various tourism objects (Beach, Racing Circuit, Mandalika Circle Villages, Cultural Tourism) are potentially in Mandalika SEZ (O-2)	0.08275	4	0.33100	3	0.24825	2	0.16550	3
5	Trend of increasing tourist's interest in visiting Mandalika (O-3)	0.07175	3	0.21525	3	0.21525	2	0.14350	2
6	Potency for increasing the income of community particularly in Mandalika (O-6)	0.04875	2	0.09750	2	0.09750	1	0.04875	2
7	Trends in the development of facilities and infrastructure supporting access to/from Mandalika (O-7)	0.04775	1	0.04775	1	0.04775	1	0.04775	1
8	Potency for increasing employment (O-5)	0.05675	2	0.11350	2	0.11350	2	0.11350	2
	Threats	Weight	Score	Weighted score	Score	Weighted score	Score	Weighted score	Score
1	The possibility of lowered investors' interest in investing tourism in Mandalika (hotels, restaurants, tourism spot development) due to the Lombok's earthquake and the Covid-19 pandemic (T-4)	0.10500	2	0.21000	1	0.10500	1	0.10500	1
2	The holding of seasonal events that hinder the development of targeted business (T-2)	0.12500	3	0.37500	3	0.37500	2	0.25000	2
3	Lack of tourists/traders/communities' awareness towards hygiene aspects that potentially damage the environment (T-3)	0.09400	2	0.18800	1	0.09400	1	0.09400	1
4	Natural damage due to the construction of tourist facilities and infrastructure that can interfere the sustainable environmental governance (T-1)	0.17600	3	0.52800	3	0.52800	2	0.35200	3
				2.73350		2.39050		1.78200	
	Strengths	Weight	Score	Weighted score	Score	Weighted score	Score	Weighted score	Score

(continued)

Table 4. (continued)

1	The establishment of the Government regulations No 52 year 2014 that support the Mandalika SEZ as a Tourism SEZ (availability of the national master plan for the Mandalika SEZ) (S2)	0.10050	4	0.40200	4	0.40200	3	0.30150	3	0.30150
2	The diversity of attractive tourist attractions for domestic and international tourists (Beach, Circuit - Sport Tourism, Mandalika Circle Village, cultural tourism) (S-1)	0.12420	4	0.49680	4	0.49680	3	0.37260	4	0.49680
3	The availability of special route infrastructure (e.g. Songgong round about) to ease the access to Mandalika (S-3)	0.09850	4	0.39400	3	0.29550	2	0.19700	3	0.29550
4	The availability of adequate road access from international airports (S-5)	0.05050	3	0.15150	3	0.15150	2	0.10100	2	0.10100
5	The increase trend of the hotel industry development in Mandalika (S-4)	0.08120	3	0.24360	3	0.24360	2	0.16240	2	0.16240
6	The increase trend of safety and comfortable traveling in Mandalika (S-6)	0.04510	3	0.13530	2	0.09020	1	0.04510	2	0.09020
	Weaknesses	Weight	Score	Weighted score	Score	Weighted score	Score	Weighted score	Score	Weighted score
1	The availability of tourism access information to Mandalika (related to destinations, transportation, hotels) is still not optimal (W-4)	0.06050	2	0.12100	1	0.06050	1	0.06050	1	0.06050
2	The growth of new economic activities tends to be temporary depending on events held in Mandalika (W-3)	0.07224	2	0.14448	2	0.14448	1	0.07224	1	0.07224
3	Tourists' interest to Mandalika is depending on seasonal events organised in that area (W-2)	0.08350	2	0.16700	2	0.16700	1	0.08350	2	0.16700
4	Limited availability of routes and public transportation facilities to/from Mandalika at this time (W-1)	0.11120	2	0.22240	2	0.22240	2	0.22240	2	0.22240
5	The safety of travel to/from Mandalika is less guaranteed, especially at night due to lack of light and quiet place (W-7)	0.04336	1	0.04336	1	0.04336	1	0.04336	1	0.04336
6	Unorganized public facilities for visitors in the Mandalika tourist area such as parking lots, toilet facilities, mosques, and waste management (W-8)	0.02734	1	0.02734	1	0.02734	1	0.02734	1	0.02734
7	The insurance system for passengers and vehicles has not been well organized (W-5)	0.05275	1	0.05275	1	0.05275	1	0.05275	1	0.05275
8	The transportation business licensing process still takes a long time due to lack of socialization (W-6)	0.04911	1	0.04911	1	0.04911	1	0.04911	1	0.04911
				2.65064		2.44654		1.7908		2.1421

5.3 Quantitative Strategic Planning Matrix (QSPM)

QSPM was applied to evaluate optional strategies and also define the recommended strategy. Table 5 shows that the highest score was for first strategy which is Strengthening the Government Regulation No. 52 year 2014 about Specific Economic Zone through various transportation policies in regards with infrastructure's investment, price instrument and other regulation to support an integrated transportation system. This result considered external factors and critical internal factors that influence the strategic decision by comparing the total number of attractiveness external scores and internal factors. Table 5 shows that ranking of strategies defined which are the highest one is Strategy 1 due to the highest summation value, then followed by Strategy 2, Strategy 4, and Strategy 3. In the context of developing an integrated transport system in Mandalika SEZ, the four identified strategies can basically be proposed, but it is recommended to be executed in order of priority.

Table 5. Prioritization of Mandalika SEZ for integrated transport system development strategies

Prioritas	Strategi (<i>Strategy</i>)	External Factor Evaluation	Internal Factor Evaluation	Total
P-1	Strengthening the Government Regulation No. 52 year 2014 about Specific Economic Zone through various transportation policies in regards with infrastructure's investment, price instrument and other regulation to support an integrated transportation system	2.73350	2.65064	5.38414
P-2	Optimizing and developing/improving existing infrastructure that oriented towards the realization of a sustainable integrated transport system	2.39050	2.44654	4.83704
P-4	Promoting the diversity of Mandalika tourism massively and well-targeted in order to increase the demand for ITS	1.78200	1.79080	3.57280
P-3	Empowering all stakeholders inclusively for the successful implementation of a sustainable ITS	2.08950	2.14210	4.23160

6 Conclusion

SWOT and QSPM analysis formulated four strategic options for developing a tourist transportation system in the Mandalika Specific Economic Zone. All four options are recommendations for research results; however, it is suggested to execute the strategies in order to the priority which are from Strategy 1, 2, 4 and 3. Priority Strategy 1 is strengthening the government regulation No. 52 of 2014 through various transportation policies regarding infrastructure investment, price instruments and regulations that support the realization of an integrated transportation system. Strategy priority 2 is Optimizing and developing/improving existing infrastructure that oriented towards the realization of a sustainable integrated transport system, followed by Strategy Priority 3 which is empowering all *stakeholders* collectively and inclusively as a prerequisite for the successful operationalization of a sustainable integrated transportation system; and finally Strategy Priority 4 is Promoting the diversity of Mandalika tourism objects in a *massive and well-targeted* manner in order to increase consumer demand for the needs of an integrated transportation system.

Acknowledgments. We are grateful to the National Research and Innovation Agency to be funding to this work. Many thanks for all team, ITDC The Mandalika and related stakeholders.

Authors' Contributions. **NK:** conceptualization, methodology, investigation, data curation; formal analysis; writing original draft; project administration, supervision, review. **WA:** methodology; data curation; formal analysis; writing original draft, review. **MRTM:** investigation; data curation, project administration; writing original draft, editing, review. **TA:** writing, review, editing. **IGAPM:** investigation; writing original draft, review, editing. **EPP:** conceptualization, investigation; writing original draft, review and editing. **IWW:** conceptualization, investigation, writing original draft, review, supervision. All authors read and approved the final manuscript.

Competing Interest Statement. This article is free from any conflict of interest regarding the data collection, analysis, and the publication process itself. Either replicate or modify the previous sentence for this part.

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