Analysis of Priority Tourism Objects and Impact of the Tourism Development of Disaster-Prone Areas in Morotai Island Regency

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ABSTRACT

The strategic role and contribution of the tourism sector to the Indonesian economy has encouraged the government to present ten New Balis or National Tourism Strategic Areas (KSPN), one of which is the Morotai tourism area. This study aims to (1) identify and analyze priority tourist attractions in disaster-prone areas in the Morotai Island Regency and (2) analyze the economic and social impacts of developing tourism areas in the Morotai Island Regency. Data analysis techniques employed include the PROMETHEE method, multiplier effect, and qualitative descriptive method. The results of the study indicate that there are ten priority tourist attractions to be developed in disaster-prone areas. The Morotai tourism area has a low economic impact, whereas the social impact of tourism development in Morotai is high. Implications for policies and practices for developing tourism in disaster-prone areas are, namely (1) implementing disaster mitigation-based tourism development policies, (2) forming a tourism office task force and regional management agency in facing tourism challenges in disaster-prone areas, (3) strengthening the capacity of local communities in disaster mitigation, and (4) applying technology in efforts to develop tourist destinations in disaster-prone areas.

1. INTRODUCTION

Indonesia's tourism potential in the eyes of the world is expected to become a foreign exchange-generating commodity for the country. Indonesia hopes that the tourism sector will become an export commodity that can replace the role of energy and minerals [1]. Tourism has played a strategic role in the Indonesian economy. This is reflected in its contribution to the formation of Gross Domestic Product (GDP), state foreign exchange receipts, and labour absorption [2]. The role and contribution of the tourism sector, which is strategic for the Indonesian economy, encourages the government to present 10 new Bali tourism objects that are expected to have an economic impact nationally, as well as tourism in Bali. The new 10 Bali tourism objects consist of 5 priority tourism destinations (Tanjung Lesung Banten, Jakarta Thousand Islands, Tanjung Kelayang Beach Bangka Belitung, Mount Bromo East Java, and Morotai North Maluku), and 5 superpriority tourism destinations (Borobudur Temple Central Java, Lake Toba North Sumatra, Mandalika West Nusa Tenggara, Labuan Bajo East Nusa Tenggara and Wakatobi Southeast Sulawesi) [3, 4].

The Morotai tourism area in North Maluku has the potential to attract both local and foreign tourists. The existing tourism potential includes natural tourism objects (underwater scenery and exotic beaches), WWII historical heritage tourism (wreckage of warships and fighter planes), and cultural

tourism, which is spread throughout the subdistrict. The results of the verification in the field with the Morotai Regency Tourism Office in January 2024 revealed that 50 tourist attractions were spread across South Morotai District (28), East Morotai (5), North Morotai (7), Morotai Jaya (4), West South Morotai (2), and Rao Island District (4). However, tourist visits during the COVID-19 pandemic (2019-2022) have experienced a significant decrease from 80,806 to 42,608 people (Morotai Satu Data, 2024), weakening the tourism industry in Morotai. The tourism industry to survive the COVID-19 pandemic, it is necessary to work efficiently to keep operational expenses as low as possible because it has not been able to increase business revenue [5].

Obstacles for tourists to visit include limited access by aircraft to Morotai Island Regency only once a week (Wednesday), expensive transportation costs (Ternate – Morotai IDR 1,000,000), and damage to tourist facilities due to lack of proper maintenance, inadequate infrastructure (electricity sources in some tourist attractions still use generators, unavailability of clean water, and road conditions for tourist attractions). There is only one star-rated hotel and adequate restaurants are still limited, connectivity between tourist attractions is still low, even though connectivity or tourist routes are important structural elements that play a role in shaping and strengthening tourist destinations, with the function of extending the duration of visits and improving the tourist experience [6]. Thus, the quality of human resources

that are still not active in supporting the tourism sector, there is still a lack of attention to disaster mitigation in tourism areas, and there are land ownership problems between the community, government, and the Indonesian Air Force. As a result, the tourism sector cannot contribute to PAD according to the target. The realisation of the PAD achievement of the tourism sector as of June 2023 is IDR 13 million from the target of IDR 532 million (tandaseru.com, 2023).

The National Tourism Strategic Area (KSPN) in the Morotai Islands is a potential threat to natural disasters. According to Daryono, as reported by detik.com (2020), the Head of Earthquake and Tsunami Mitigation Division of BMKG, the Morotai region of North Maluku is an active seismic area because of its location adjacent to the subduction zone of the Philippine Sea plate, which has a plate subduction rate of between 10 and 46 mm per year. The megathrust zone of the Philippine Sea plate is a threat to earthquakes and tsunamis in the North Maluku region, especially Halmahera, Morotai, and the Talaud Islands, where the magnitude is targeted at M 8.2 [7]. Meanwhile, the Earthquake Risk Index in 2022, Morotai Island Regency has a score of 25.17 (high risk class), as well as the Tsunami Disaster Risk Index in 2022, has a score of 14.91 (high risk class). Overall, the Disaster Risk Index in Morotai Island Regency has a score of 200.15 (high risk class).

Morotai tourism potential and the threat of disasters that often occur, such as earthquakes and tsunamis, have always been related to beauty and pleasure [8]. However, tourism is a vulnerable and fragile economic activity. The material and non-material losses that occur are tangible forms of interaction between the tourism industry and disaster events [9]. One vulnerability of overshadowed tourism is the occurrence of natural disasters. Based on the research background described above, the research objectives to be achieved are (1) identifying and analysing priority tourism objects for disaster-prone areas in the Morotai Island Regency and (2) analysing the economic and social impacts of the development of tourism areas in the Morotai Island Regency.

2. METHODOLOGY

2.1 Data collection methods

Two types of data were used in this study: secondary and primary. Secondary data were obtained from the North Maluku Provincial Tourism Office, Morotai Island Regency Tourism Office, Morotai Island Regency BAPPEDA, Morotai Island Regency BPBPD, Morotai Island Regency PUPR Office and Morotai Island Regency BPS. Primary data were obtained through direct observations, in-depth interviews, and questionnaires from January to March 2024 (quarter 1). Direct observation was carried out to directly determine the phenomenon of the tourist area and to ensure that the data collected were more representative. In-depth interviews were conducted to gain an in-depth understanding of the tourism development in Morotai. In-depth interviews were conducted with the Acting Regent, Head of the Tourism Office, Assistant III, Secretary of the Social Service, and Head of the Physical Infrastructure Division of Morotai Island Regency Bappeda. Meanwhile, business actors were sampled using non-probability sampling, namely, those that are easily found in tourist attractions. The reason for using non-probability sampling is used to overcome limitations in terms of access,

time, and resources. One hundred tourist respondents were required to describe their knowledge of tourism, disasters, and spending during travel. The number of tourist respondents was obtained using the Slovin formula [10].

$$n = \frac{N}{1 + Ne}$$

$$n = 51{,}410/1 + 51{,}410 \times (0.1)^2 = 99.8 = 100$$

Description:
n = number of respondents;
N = population size (average tourist visits per year);
e = desired accuracy limit (percentage of inaccuracy allowance due to sampling error can still be tolerated).

In this study, the questionnaire design was replicated from (1) Yudhoyono et al. [2]; (2) Gesvita et al. [11]; and (3) Mangiri et al. [12]. Meanwhile, the potential bias in the study is that the sampling of culinary business actors is only in the tourist area, so it does not represent business actors as a whole.

2.2 PROMETHEE methods

The preference ranking organisation method for enrichment evaluation (PROMETHEE) is used to determine the priority order based on outranking, which is based on the binary relationship between two alternatives [13]. In PROMETHEE, this outranking relationship is called the preference index, or $\pi(\alpha, b)$. In the preference index, if option "a" dominates option "b", $\pi(b, \alpha) = 0$, but $\pi(\alpha, b)$ is not necessarily equal to 1. The reason for using The PROMETHEE method is used to determine priority tourism objects because it has advantages in multi-criteria decision-making (MCDM) by considering many factors. However, there are several weaknesses in the PROMETHEE research method, namely the quality and accuracy of the data used, and it is very subjective in determining the weight of the criteria. Mathematically formulated [14].

$$\pi(\alpha, b) = \frac{\sum_i^k wi\, P(\alpha, b)}{\sum_i wi} \qquad (1)$$

The selected option (outranking) in PROMETHEE was then calculated based on the value of $\emptyset^+(\alpha)$ which is called outgoing flow and $\emptyset^-(\alpha)$ or the outcoming flow (influenced). The mathematical equations are as follows.

$$\emptyset^+(\alpha) = \frac{1}{N-1}\pi_A(b, \alpha) \qquad (2)$$

$$\emptyset^-(\alpha) = \frac{1}{N-1}\pi_A(b, \alpha) \qquad (3)$$

The difference between $\emptyset^+(\alpha)$ and $\emptyset^-(\alpha)$ is then calculated as net flow or $\emptyset(\alpha) = \emptyset^+(\alpha) - \emptyset^-(\alpha)$.

The PROMETHEE analysis of priority tourism objects uses seven indicators (Table 1), which consist of four indicators that determine the development of tourist objects [11]: (1) the number of tourists, (2) tourist support accommodation, (3) the existence of high accessibility to be visited, and (4) the participation of the local community, and three additional parameters according to tourist conditions in Morotai Island Regency, namely (5) tourist attractions, (6) the level of disaster danger, and (7) the availability of the Internet network. The

reason for adding tourist attractions as a variable for developing tourist attractions is that they attract tourists to a destination. The existence of interesting attractions and activities creates a unique experience for tourists. Meanwhile, the danger of disasters is the reduction in disaster risks for the community and tourists in tourist areas. The reason for including elements of telecommunication technology (Internet network) is that the existence of an Internet network in tourist locations greatly affects the speed of promotion of tourists who visit and facilitate communication during the emergency response process. All PROMETHEE indicators have sub-indicators with parameter assessments ranging from very weak to very strong, with each weight equal, namely, a value of 1 for tourism development, which is further on the regional economy [13] (see Table 1).

Table 1. Indicators and sub-indicators of tourism object assessment

No.	Assessment Indicators	Potential Value				
		Very Weak (1)	Weak (2)	Medium (3)	Strong (4)	Very Strong (5)
1.	Tourist	Not yet known	<5,000 /year	5,000-10,000/year	10,001-15,000/year	>15,000 /year
2.	Accesibility	> 5 km from the city center	4.1-5 km	3.1-4 km	2.1-3 km	1-2 km
3.	Infrastructure	There are no facilities	1-2 facilities radius 1 km	3 facilities radius 1 km	4-5 facilities radius 1 km	>5 facilities radius 1 km
4.	Society participation	Don't know	Just know	Development	Planning and development	Planning, development and responsibility
5.	Internet network	There isn't any	Weak	Medium	Strong	Very strong
6.	Disaster dengar level	Very high	High	Medium	Low	Safe from disaster
7.	Attraction	1	2	3	4-5	>5

Source: Model modification Gesvita et al. [11]. Analysis of Tourism Objects and Tourism Development Plan in Pesisir Selatan Regency, West Sumatra

2.3 Multiplier effect methods

Economic impacts were analysed using the multiplier effect method, which considers the following: (1) direct benefits, (2) indirect benefits, and (3) follow-up benefits [12]. The use of the multiplier effect method in research is because it is a more effective approach to explain the overall impact of increased tourist spending on the local economy (META, 2001). However, this method has limitations because it only focuses on economic aspects without considering social or environmental impacts.

According to Marine Ecotourism for Atlantic Area (META) (2001), the multiplier effect method is used to calculate the direct impact, namely tourist expenditure directly on the local community's business, and the indirect impact is to calculate the manager's expenditure to pay labour wages, while the follow-up impact is to calculate changes in economic activity at tourist sites from the labour expenditure to meet their needs. The multiplier effect is measured in two ways [15].

Keynesian Income Multiplier (KIM) is a change in the tourist expenditure unit that provides a change in the income level of the local community.

$$KIM = (D+N+U)/E \qquad (4)$$

The Ratio Income Multiplier (RIM) describes how much of an impact it has on the local economy, by including follow-up impacts and indirect impacts.

$$RIM \ Tipe \ I = (D+N)/D \qquad (5)$$

$$RIM \ Tipe \ II = (D+N+U)/D \qquad (6)$$

Information:
D: Local revenue received directly from E (IDR);
N: Local revenue received indirectly from E (IDR);
E: Tourist expenses (IDR);
U: Local revenue received continuously from E (IDR).

The multiplier effect has the following criteria.
o If the value of the multiplier coefficient is less than or equal to zero (≤ 0), then the tourist area has not been able to have an economic impact on its tourism activities.
o If the value of the multiplier coefficient is between zero and one ($0 \leq x \leq 1$), then the tourist area has a low economic impact on tourism activities.
o If the value of the multiplier coefficient is more or equal to one (≥ 1), then the tourist area is able to have an economic impact on its tourism activities.

2.4 Qualitative descriptive analysis methods

The social impact analysis of tourism uses a descriptive analysis method with a qualitative approach based on the literature and questionnaire distribution. The qualitative descriptive analysis method analyzes, describes, and summarises various conditions and situations from various data collected in the form of interviews or observations regarding problems being researched in the field [16]. A qualitative research approach aims to study the relationship between the characteristics of local business actors and their perceptions of tourism development [17]. Qualitative descriptive methods were used to analyze the social impact of tourism by measuring the perceptions and views of local communities that have not been revealed in an economic analysis. However, the weakness of qualitative descriptive analysis is its very high level of subjectivity because it is greatly influenced by the interaction between researchers and respondents, which can cause bias in the results of the analysis.

3. RESULTS AND DISCUSSION

3.1 Analysis of priority tourism objects for disaster-prone areas in Morotai Island Regency

The tourism development of the Morotai Island Regency is

contained in Government Regulations (PP), including Government Regulation No. 26 of 2008 concerning the Determination of National Strategic Areas, Government Regulation No. 50 of 2011 concerning National Tourism Strategic Areas (KSPN), and Government Regulation No. 50 of 2014 concerning Special Economic Zones (SEZs). Presidential Decree Number 34 of 2015 concerning the Spatial Plan of the State Border Area in North Maluku Province and West Papua Province, Daruba, was designated as a national strategic activity centre (PKSN). The Morotai area, located in the North Maluku Province, is included in the National Tourism Destination (DPN) of Halmahera-Morotai and its surroundings. The Morotai Island Regency is located between the Pacific Ocean and Halmahera Island. The area of Morotai Island Regency is in the form of a land area of 2,337.15 km^2 and a sea area of 4 miles covering an area of 1,970.93 Km^2. The number of small islands in Morotai Island Regency is 33 islands with details of inhabited islands, totalling seven islands, and uninhabited (inhabited) islands, totalling 26 islands [18]. Geostrategically, Morotai is the outermost island in eastern Indonesia that borders the Philippines and Palau. Its geoeconomic advantage is that it is located along the Pacific route, which is close to that of Taiwan and Japan.

The Morotai tourist area has potential for natural, historical, artificial, and cultural tourism. There are 50 tourist attractions spread across the South Morotai District (28 objects), East Morotai District (five objects), North Morotai District (seven objects), Morotai Jaya District (four objects), West South Morotai District (two objects), and Rao Island District (four tourist objects). The potential of tourism objects based on type dominates natural tourism at 32 (64%), historical tourism at 5 (10%), artificial tourism at 7 (14%), natural and historical tourism at 5 (10%), and natural and cultural tourism at 1 (2%). After determining the potential value of each indicator, both the bad indicator (min) and good indicator (max), the tourism potential value data are filled in: the number of tourists, accessibility, facilities and infrastructure, public perception, internet networks, disaster hazards, and tourist attractions. Subsequently, an analysis was conducted by determining the preference function that produces the results of outranking or the use of scores in relation to higher rankings.

Based on the results of the analysis of priority tourism objects in Morotai Island Regency, it is known that the ranking results on the net flow score of 50 tourist attractions, 22 tourist attractions that have a positive non-value are Army Dock Beach (0.7143), Waterfront City 1 (0.6764), Religious Tourism (0.6472), Army Dock Park (0.6297), Trikora Museum and WWII Museum (0.5860), Central Business District (CBD) (0.5685), Dodola Island (0.4519), Sail Morotai Area (0.36730), Air Kaca (0.3032), Muhlis Eso Independent Museum (0.2886), Amphibious Tank Tour (0.2420), Waterfront City 2 (0.2391), Zum Zum Island (0.2187), Study and Sport Center Area (0.1837), Raja Waterfall (0.1808), Tabailenge Island (0.1283), Tanjung Amerika(0.1283), Mitita Island (0.0933), Daruba Mangrove (0.0845), Kolorai Island (0.0816), Tanjung Balitako Beach (0.0350), and Moromadoto (0.0292) (see Figure 1). This result shows that 82% of tourist attractions are in the South Morotai District, which is the centre of the Morotai Island Regency (refer to Figure 1). This result is in accordance with the tourism development scenario agreed upon by stakeholders, who prioritise the handling of the Moro Point Key Tourism Area (KTA) as a Priority KTA which is the epicentre of Morotai tourism [19]. Reviewed the implementation of tourism policies in Bangladesh and found

that to support national tourism development, it is necessary to determine priority areas, policy instruments, and provide incentives for the private sector [20].
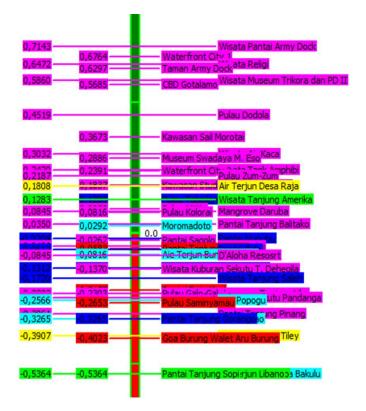

Figure 1. Priority tourist objects in Morotai Island Regency

However, challenges and opportunities are faced when developing tourism in disaster-prone areas. The challenges faced include developing tourism that is vulnerable to disasters, such as earthquakes and tsunamis. Therefore, tourism organizers must ensure the safety of tourists by promoting tourist destinations with minimal disaster risks. To develop disaster-prone destinations, it is necessary to develop an effective disaster-mitigation system to create disaster-resilient tourism. Meanwhile, opportunities for developing tourism in disaster-prone areas include providing tourists with experience and knowledge about disaster mitigation, creating disaster-resilient infrastructure, and increasing collaboration between the government, private sector, and local communities to support tourism development in disaster-prone areas.

On the other hand, implications are needed for policies and practices to develop tourism in disaster-prone areas, namely (1) implementing disaster mitigation-based tourism development policies, (2) forming a task force for the tourism office and regional management agency in facing tourism challenges in disaster-prone areas, (3) strengthening the capacity of local communities in disaster mitigation, and (4) implementing technology in efforts to develop tourist destinations in disaster-prone areas.

Meanwhile, based on the results of the analysis, it is known that tourist objects that have a negative phi value or tourism are not yet prioritised because of accessibility of > 5 km from the city centre. The location of tourist attractions that rely on natural conditions and have limited accessibility is difficult to develop [21]. There is no availability or very limited facilities and infrastructure, but several tourist attractions have been built to support these facilities, such as Zum Zum Island, Lifao

Beach, Bido Beach, Tanjung Saleh Tourism, Tanjung America Tourism, and Waterfront City II. However, these facilities are not functional because they are damaged and covered with tall grass. In addition, the condition of tourist objects is not maintained due to budget limitations and lack of community participation in managing tourist areas, even though around seven Tourism Awareness Groups (Pokdarwis) have been formed and spread across a number of tourist attractions. Government efforts and local community involvement largely drive the tourism sector development [22]. Community-based tourism significantly benefits both locals and tourists [23]. There is a threat to disaster hazards that requires disaster mitigation efforts to reduce disaster risk. Disaster mitigation is divided into structural and nonstructural mitigation methods. Structural mitigation focuses on mechanical aspects, whereas nonstructural mitigation includes knowledge, values, decision-making mechanisms, and group solidarity [24]. In addition, there are still limited attractions that tourists can access at tourist sites. Furthermore, data on tourist visits are not known, and the small number of tourist visits is also the cause of the lack of development of tourist objects.

3.2 Analyzing the economic and social impacts of the development of tourism areas in Morotai Island Regency

3.2.1 Analysis of the economic impact of tourism development in Morotai

Tourism development can provide benefits for local communities to gain financial benefits owing to visitor demand for products and services at tourist destinations. The direct economic benefits of tourism strongly correlate with visitor spending. In addition, tourist areas equipped with better infrastructure and facilities can provide jobs for residents, increase regional revenue, and increase tax revenue. The economic impact of tourism activities comes from visitor spending on shops, restaurants, lodgings, and so on in tourism areas. The interaction between tourists and local communities or business actors in meeting their needs during tourism will get economic benefits the local community. The direct economic benefits of tourism strongly correlate with visitor spending. The multiplier effect occurs in four stages: tourist spending, direct income, indirect income and follow-up income [25].

1) Tourist expenditure

The amount of money spent by tourists has a significant impact on businesses and turnover in the local economy. Tourist spending consists of several categories such as transportation, lodging, consumption, souvenir purchases, local transportation, and tickets. The tourism target in Morotai is not an immediate growth in the number of tourists, but the number of tourist expenditures in tourist areas [19]. Overall, the average expenditure of each tourist visiting the Morotai tourist area was IDR 2,953,200, with an average length of stay of 2.61 days / visit [26]. The average expenditure of tourists outside the tourist area is the cost of transportation from the area of origin to Morotai IDR 1,240,550 (42%). Meanwhile, expenditure in the Morotai tourist area was IDR 1,712,650 (58%). The largest expenditure in the area was the accommodation or lodging of IDR, with a total of 579,400 (19.62%) speedboat rentals of IDR 478,750 (16.21%). The large amount of tourist spending is due to the choice of a 3-star hotel (Moloka'i by Sahid) and renting a speedboat to cross small islands, such as Dodola Island and Zum Zum Island, at a cost of IDR 800,000 – IDR 1,200,000 per trip. Furthermore,

based on the average expenditure of tourists visiting Morotai and then multiplying by the number of tourists in 2023 of 40,951 people, the total tourist expenditure was IDR 120,936,493,200, where the total money turnover within the Morotai tourist area was IDR 70,134,730,150, whereas the money turnover outside the Morotai tourist area was IDR 50,801,763,050 (see Table 2). This is considered an economic leakage from tourism activities that causes local communities to no longer benefit from this income.

Table 2. Tourist expenditure in the Morotai tourist area

No.	Cost Per Visit	Average Expenditure (i) (IDR)	Share (%) (ii=i/c*100)
1	Transportation to Morotai	1,240,550	41.01
2	Local transportaion	248,700	8.42
3	Comsumption while traveling	318,300	10.78
4	Accommodation	579,400	19.62
5	Admission	5,000	0.17
6	Charter speedboat	478,750	16.21
7	Tour guide	27,500	0.93
8	Souvenir	55,000	1.86
9	Amount of tourist expenditure (c)	2,953,200	100
10	Number of visits in 2023 (d)	40,951	
11	Total tourists spend per year (e)=(c)*(d)	120,936,493,200	

Source: Survey results for the 1st quarter, 2024

2) Direct economic impact

The direct economic impact on business actors is highly dependent on tourism. The more tourists come, the more they will spend, which can increase the flow of money and the welfare of the local community. Tourism development can alleviate poverty by involving the local communities [27]. Similarly, tourism has the potential to provide jobs in rural areas with the development of pro-poor tourism [23].

The results of tourist expenditure as direct income are then used to pay labour wages, rent business locations, purchase raw materials, clean water, electricity, and maintenance/cleaning. The business unit has the highest monthly expenses at 75% and a profit (profit) of 25%. The income of each type of business varies. A profit margin of 15% indicates sufficient performance and above 20% indicates good performance [27, 28]. Thus, a profit margin of 25% shown by the business unit in the Morotai tourist area indicates the company's good performance. Accommodation occupies the highest average income that has a direct economic impact of IDR 9,420,000,000 (68.62%), restaurants/restaurants with IDR 2,484,000,000 (18.09%), car rental of IDR 864,000,000 (6.29%), speedboat of IDR 360,000,000 (2.62%), and cleaners of IDR 324,000,000 (2.36%) (see Table 3).

3) Indirect economic impact

The indirect economic impact is the expenditure on each business unit and the income of the local workers. Business unit expenses are divided into two categories: variable costs (purchase of raw materials, electricity, clean water, labour, maintenance/cleaning, security, and advertising) and fixed costs (licencing, venue rental, and other costs such as disaster insurance). The largest expenditure of business units is on accommodations. Meanwhile, the largest expenditure is on the purchase of raw materials and labour. The existence of tourist

areas has opened jobs for local communities. For example, D'Aloha has a workforce of 38 people, consisting of 35 local people and 3 people from West Java and DKI Jakarta. However, most types of business employ one to five workers. The workforce is divided into permanent and daily labourers. The workforce still has 8-12 hours of working hours per day, while the daily workforce is adjusted to needs. Daily labour is needed when there is a surge in the number of tourists, with very controlled costs. Labour wages remain according to the type of business: the type of accommodation business is IDR 1,500,000–IDR 3,000,000. Workers in restaurants/taverns earn wages of IDR 1,000,000–IDR 2,000,000, tourism services of IDR 1,500,000, and IDR 2,000,000. However, not all workers are given BPJS labour and health guarantees, only 3-Star Hotel and resort business units (for example, D'Aloha

and Molokai) provide these facilities.

The indirect economic impact of the Morotai tourist area can be determined by examining the percentage of business unit expenditure for labour and raw materials, electricity, clean water, and rent. In general, the indirect economic impact in one year was IDR 15,189,075,000. Accommodation has an indirect economic impact of IDR 9,345,000,000 (61.52%), restaurants/restaurants of IDR 2,493,000,000 (16.41%), car rental of IDR 1,512,000,000 (9.95%), speedboat of IDR 990,000,000 (6.52%), cleaners of IDR 567,000,000 (3.73%), tour guides of 120,000,000 (0.79%) and souvenirs of 94,575,000 (0.62%) (see Table 4). Thus, tourist spending provides economic benefits even though it has not had an overall impact; it is still limited to the area around the centre of Morotai.

Table 3. Direct economic impact on the Morotai tourist area

No.	Type of Business	Number of Population (a)	Average Income (IDR/year) (b)	Direct Economic Impact (c=a*b)	Share (%) d=c/e*100
1	Accommodation	21	448,571,428	9,420,000,000	68.62
2	Restaurant	17	146,117,647	3,484,000,000	18.09
3	Souvenir	2	34,250,000	68,500,000	0.50
4	Speedboat	6	60,000,000	360,000,000	2.62
5	Tour guide	2	48,000,000	96,000,000	0.70
6	Cleaner	18	18,000,000	324,000,000	2.36
7	Car rental	12	72,000,000	864,000,000	6.29
8	Tourist attraction manager	2	56,000,000	112,200,000	0.82
9	Total				100

Source: Survey results for the 1st quarter, 2024

Table 4. Indirect economic impact of tourism in Morotai

No.	Type of Business	Labor Population (people)	Labor Income (IDR/year)	Expenditure of Business Units in the Region (IDR/year)	Indirect Economic Impact (IDR)	Share (%)
1	Accommodation	95	24,000,000	7,065,000,000	9,345,000,000	61.52
2	Restaurant	35	18,000,000	1,863,000,000	2,493,000,000	16.41
3	Souvenir	4	10,800,000	51,375,000	94,575,000	0.62
4	Speedboat	12	60,000,000	270,000,000	990,000,000	6.52
5	Tour guide	2	24,000,000	72,000,000	120,000,000	0.79
6	Cleaner	18	18,000,000	243,000,000	567,000,000	3.73
7	Car rental	12	72,000,000	648,000,000	1,512,000,000	9.95
8	Tourist attraction manager	3	18,000,000	13,500,000	67,500,000	0.44
9	Total				15,189,075,000	100

Source: Survey results for the 1st quarter, 2024

4) Induced economic impact

The induced economic impact comes from the income workers received from business units. Income is then spent on the living needs. Expenses included routine expenses, instalments, savings, lifestyle, social needs, and educational costs. A large type of expenditure is routine expenditure. The circulation of money in tourist areas can improve local economies. There are still many labour incomes that are not in accordance with the district minimum wage (UMK), but there are some that have been appropriate. Most workers earn no income, other than those in the tourism sector. Based on the results of the research, although wages are not in line with MSEs, they still choose to work in the tourism sector to meet many new people, bright and increasing prospects, and promising salaries. Workers in the tourism industry have

varying tenures, ranging from one month to 12 years. Information on jobs in the tourism sector was obtained from family (88.9%) and friends (11.1%). Overall, monthly income in the tourism sector is insufficient to meet the needs of families. However, they hope that tourist visits will continue to increase to increase their income. The workforce with the highest continued economic impact was car-rental workers in IDR 216,000,000, accommodation in IDR 190,000,000, and speedboats in IDR 150,000,000. The continued economic impact on the Morotai tourist area was an IDR of 624,620,000 (see Table 5). The workforce with the highest continued economic impact is influenced by high expenditures and number of workers. Thus, the higher the income and number of workers in the tourism sector, the greater the economic impact on the tourist area.

Table 5. Further economic impact of the Morotai tourist area

No.	Labor	Number of Labor (People) (a)	Total Average Labor Expenditure (b)	Percentage of Expenditure (c)	Advanced Economic Impact (d=a*b*c)
1	Accommodation	95	20,400,000	9.80	190,000,000
2	Restaurant	35	15,300,000	7.35	39,375,000
3	Souvenir	4	9,180,000	4.41	1,620,000
4	Speedboat	12	51,000,000	24.51	150,000,000
5	Tour guide	2	20,400,000	9.80	4,000,000
6	Cleaner	18	15,300,000	7.35	20,250,000
7	Car rental	12	61,200,000	29.41	216,000,000
8	Tourist attraction manager	3	15,300,000	7.35	3,375,000
9	Total		208,080,000		624,620,000

Source: Survey results for the 1st quarter, 2024

5) Assess the multiplier effect

Based on the results of the analysis of the value of economic multipliers in the context of households, the value of the Keynesian Income Multiplier in the Morotai tourist area was 0.42. This means that every increase in tourist expenditure of IDR A total of 100,000 people will increase the income of the local community by IDR 42,000. The Income Multiplier Type I Ratio is 2.11, which means that every increase in IDR 100,000 in business units will increase the income of labour and business units by IDR 211,000. Then, the value of the Type II Income Multiplier Ratio is 2.15, where every increase in IDR 100,000 in business units increases the income of IDR 215,000 in business units, labour income, and labour expenditure on the local economy. Overall, the results show that the Morotai tourist area has a low economic impact on tourism activities. The reasons for the low economic impact of tourism in Morotai are the reduced number of tourist visits, limited accessibility to Morotai (planes only once a week), the lack of star-rated hotels and restaurant facilities, the lack of promotion and marketing, the local community not fully supporting tourism development, and the national tourism master plan policy issued in 2023. In addition, the survey was conducted in the first quarter, when the implementation of the regional government budget had not been running optimally, and business actors were still evaluating the previous year. On the other hand, if data collection is carried out in the second or third quarter, there might be an increase in economic impact. While calculating the overall economic impact, the multiplier effect method has limitations in only focusing on the economic aspect but tends to ignore the long-term aspects and social and environmental impacts of tourism development.

This result is the same as the Labuan Bajo tourist area, the contribution of tourism to the economy and welfare is still low even though a lot of infrastructure has been built around the tourist area [29]. The low economic impact is due to fewer tourist visits, spending on food and drink shopping outside tourist sites, few or many business units closed, and limited air transportation services to and from Morotai. Although the resulting economic impact is still low, when viewed from the Ratio Income Multiplier Type I and Ratio Income Multiplier Type II, which are more than one, it shows that the turnover of money from tourist expenditure can create jobs so that the flow of money is not limited to business units, but broadly. In the future, joint efforts are needed to promote tourist destinations and create package tourism programs to improve the economy of the Morotai community.

3.2.2 Social impact analysis of tourism development in Morotai

Tourism has always been associated with the economy, even though the economic impact of tourism activities has certainly had a positive impact. Tourism also needs to be associated with social impact. The social impact of tourism is an activity in society (interaction and reaction) due to the presence of tourists [30]. The positive impact of tourism development is that the local community preserves various cultures to be presented to tourists [31]. Other social impacts include a shift from one field of work to another, changes in friendly relationships, the availability of jobs that bring people from outside the region, and the development of patterns of social relationships. Although crucial social changes have occurred, they have not changed the way of life of the community as a whole [32].

Seven positive and negative social impacts were analysed based on respondents' perceptions using a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with interval values of 1-1.8 (very low), 1.81-2.8 (low), 2.61-3.2 (moderate), 3.21-4.1 (high), and 4.2-5 (very high). The results of the analysis showed that the positive social impact, first, the formation of social relations between the community and tourists to get to know each other was very high (4.25), and the change in profession or job to become a tourism business actor was also very high (4.2). As for negative social impacts, first, local communities imitate the behaviour of tourists so that they change the norms or values that exist in the medium category (3); second, the growth of materialistic mental attitudes in the medium category (3.15); third, the increase in crime in the low category community (2.5); fourth, the emergence of new values and norms in the medium category (2.9); and fifth, the existence of a very high category of land interest conflicts (4.2). Overall, the community believes that the social impact of tourism development in Morotai is high.

4. CONCLUSION

Priority tourist attractions (10 tourist attractions) in disaster-prone areas of Morotai Island Regency are the Army Dock Beach, Waterfront City 1, Religious Tourism, Army Dock Park, Trikora Museum, WWII Museum, Central Business District (CBD), Dodola Island, Sail Morotai Area, Air Kaca, and Muhlis Eso Self-Help Museum. Economic impact analysis shows a Keynesian Income Multiplier value of 0.42. The Ratio Income Multiplier Type I is 2.11, and the Ratio Income Multiplier Type II value is 2.15. The Morotai tourist area has a low economic impact on tourism activities, but when viewed from the Ratio Income Multiplier Type I and Ratio Income Multiplier Type II, which are more than one, it shows that the turnover of money from tourist expenditure can create jobs so that the flow of money is not limited to business units but

broadly. Meanwhile, the social impact of tourism development in Morotai was high. As for the research suggestions, (1) This study found that the economic impact of tourism is in the low category; therefore, government intervention is needed in the form of capital assistance for small and medium businesses, holding sustainable national/international events, increasing connectivity between tourist attractions, increasing regular flight routes to Morotai, and opening up investment with tax incentive schemes. (2) The limitations of this study are the limited number of respondents that affected the quality of the data, the multiplier effect method only focused on calculating the local economic impact, and the research time was only in the first quarter. Therefore, further research is needed to analyze policies and calculate the sustainability of tourism on the long-term impacts of economic, social, environmental, and disaster aspects.

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