



DEPIK

Jurnal Ilmu-Ilmu Perairan, Pesisir dan Perikanan

Journal homepage: www.jurnal.usk.ac.id/depik



Multiplier effect analysis of Tulung Ni Lenggo Lake management as sustainable ecotourism

Irma Yuliana¹, Heru Susilo², Irman Irawan², Fitriyana^{2*}

¹Student of Fisheries Science Magister Study Program, Fisheries and Marine Faculty, Universitas Mulawarman, Indonesia.

²Lecturer of Fisheries Science Magister Study Program, Fisheries and Marine Faculty, Universitas Mulawarman, Indonesia.

ARTICLE INFO

Keywords:

Economic effect
Tulung Ni Lenggo
Lake
Berau Regency

DOI: 10.13170/depik.0.0.48205

ABSTRACT

Tulung Ni Lenggo is a lake area in Berau Regency that has been opened as an ecotourism location since 2016. The manager chose the ecotourism concept as an effort to implement the concept of sustainable development. This study aimed to analyze the direct, indirect and advanced economic impacts and multiplier effects of ecotourism of Tulung Ni Lenggo Lake in Berau Regency. The analysis method used was the multiplier effect economic impact analysis method. The direct economic impact on the business unit was IDR 273,043,166.67/year, the indirect economic impact was IDR 369,096,833.33/year and the further economic impact was IDR 173,880,000.00/year. The value of the Keynesian multiplier effect was 0.07, the value of income multiplier ratio type 1 was 2.35, and the value of income multiplier ratio type 2 was 2.99. This means that the management of Lake Tulung Ni Lenggo as sustainable ecotourism had been able to provide an economic impact on business unit income and labor in the ecotourism area, which also impacts increasing consumption and the local economy.

Introduction

Tourism has become one of the most important sectors of the global economy, contributing 11% of global gross domestic product (GDP) and employing 200 million people (Ghanbri *et al.*, 2019). Tourism provides employment opportunities for local communities and influences the economic growth of a country (Ghanbri *et al.*, 2019; Rasethuntsa, 2022; Soeswoyo, 2019; Wahyuni *et al.*, 2023). According to the report of the East Kalimantan Tourism Office in 2023, the tourism sector contributed IDR 9,142.9 billion or 1.74% of the value of East Kalimantan's GRDP in 2023.

Tourism is like a double-edged knife: it has a positive value as a tool to achieve goals, but it can also be destructive if its sustainability is not maintained (Nugroho & Adiyanto, 2023; Riani, 2021). Current threats and challenges to tourism are related to unsustainable resource use and climate change (Gössling *et al.*, 2023; UNWTO, 2017). People tired of the urban environment are looking

for natural conditions as a tourist destination. Natural resources continue to be damaged in quality and quantity, increasing the need for nature tourism (Yulianda, 2019).

Ecotourism is a type of nature-based tourism that pays attention to a sustainable tourism model that combines aspects of environmental protection and cultural awareness and contains elements of education and empowerment of local communities (Butarbutar, 2021; Kamah *et al.*, 2022; Wahyuni *et al.*, 2023). This approach is in line with the principles for implementing tourism in Law No. 10 of 2009, which deals with tourism. Sustainable tourism development and management should be a top priority for communities and enterprises (Chivandi *et al.*, 2023; Haribudiman *et al.*, 2023; Meng & Uysal, 2008; Prasetyo *et al.*, 2018).

The community once used Tulung Ni Lenggo for fishing and is a water source for the surrounding community for bathing and washing clothes (Putra, 2022). The lake is filled with natural rocks with views

* Corresponding author.

Email address: Fitriyana@fpik.unmul.ac.id

of the surrounding forest. The application of the ecotourism concept aligns with the vision of Tembudan Village, which hopes to become an ecotourism village based on natural and agricultural excellence. Since 2016, the local government has started to develop Tulung Ni Lenggo Lake as a tourist destination while maintaining its natural sustainability. Tulung Ni Lenggo is managed by the Village Owned Enterprise (BUMK) of Tembudan Village, known as BUMK Rindang Jaya Tembudan. This study aimed to analyze the direct, indirect and subsequent economic impacts and multiplier effects of ecotourism at Tulung Ni Lenggo Lake in Berau Regency.

Materials and Methods

Location and time of research

This research was conducted in Tulung Ni Lenggo Lake Ecotourism, commonly called "Telaga Biru," which is located in Tembudan Village, Batu Putih District, Berau Regency (Figure 1). The study lasted six months, from April 2024 to September 2024.

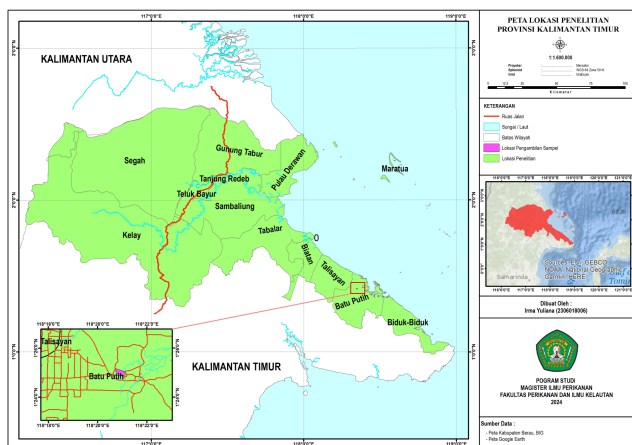


Figure 1. Maps Showing the Location of Berau Regency.

Sampling method

The population in the economic impact analysis is all ecotourism business unit managers and employees who work in the ecotourism area and visitors. The determination of the sample in the economic impact analysis is based on the following methodology:

- Business actors around ecotourism are taken by purposive sampling method.
 - Have a business unit located in the ecotourism area of Tulung Ni Lenggo (Tembudan Village).
 - The business unit is active and has been operating for over 2 years.
 - Willing to be interviewed as a respondent.

- Ecotourism managers and employees/workers in the ecotourism area selected as the sample were all respondents.
- Visitors who are determined based on the Slovin formula (Bungin, 2005), as follows:

$$n = \frac{N}{1 + N(d)^2}$$

Description:

n = Number of samples

N = Total population

d = Precision Value ($\alpha=10\%$)

Based on the data on the number of visitors provided by the ecotourism manager of Tulung Ni Lenggo in 2023, there were 44,717 tourists. Arikunto (2016) states that when the population is more than 100, the acceptable margin of error (α) is 10% to 15%. As a result of the calculation using the Slovin formula with a 10% margin of error, a minimum sample size of 100 visitor respondents was obtained. Based on this, based on the researcher's consideration to increase the accuracy of the data, the researcher will take a sample of 130 visitors as respondents. This study's respondents were selected randomly using simple random sampling techniques. Simple random sampling is a technique so that all individuals in the population have the same opportunity to participate in research, where the selection process is entirely based on chance, so that this sample ensures unbiased and representative probabilities (Noor et al., 2022).

Data analysis

The multiplier effect of the money flow will be used to measure the economic impact in this study. In measuring the economic impact of ecotourism activities at the local level, there are two types of multipliers, namely (Karyatun et al., 2021):

Keynesian Local Income Multiplier = $(D+N+U)/E$

Ratio Income Multiplier, Tipe 1 = $(D+N)/D$

Ratio Income Multiplier, Tipe 2 = $(D+N+U)/D$

Description:

E : Tourist expenditure (IDR)

D : Local revenue derived directly from E (IDR)

N : Local income derived indirectly from E (IDR)

U : Local income obtained induced from E (IDR)

Criteria for the value of the multiplier effect (Triyanti et al., 2020):

Income multiplier value ≤ 0 , the tourist area has not been able to have an economic impact.

Income multiplier value $0 \leq x < 1$, the tourist area has a low economic impact.

Income multiplier value ≥ 1 , the tourist area has provided economic impact.

Results

Overview of the research site

Tulung Ni Lenggo (Telaga Biru) is one of the ecotourism sites in Tembudan Village. Tulung Ni Lenggo, or which can be interpreted as Telaga Nek Lenggo in Indonesian, is a lake shaped like a bowl with clear, bluish water. It is connected to a river that leads to the sea. Tulung Ni Lenggo is also the main source of water for the people of Tembudan village. It was named Tulung Ni Lenggo because it honors Nek Lenggo, who discovered the lake. Nek Lenggo is one of the figures or people worshipped in Tembudan Village, and he was very influential in the past (Kampung Tembudan, 2023).

Tulung Ni Lenggo as an ecotourism location is maintained in such a way as to remain pristine to this day. As much as possible, the current infrastructure development will not disturb or damage the naturalness of the existing tourist sites. Tulung Ni Lenggo has 2 toilets and 4 changing rooms, some of which are currently damaged. This ecotourism also provides a gazebo as a shelter for visitors, which amounts to 5 gazebos measuring 2.5 x 3 m and 1 gazebo measuring 3 x 4 m, and there is 1 hut which is a gallery for selling handmade trinkets from the surrounding community. At the top, there is also seating in the form of long chairs shaped like a bus stop to relax and enjoy the view. Tulung Ni Lenggo Ecotourism is currently managed by the Village-Owned Enterprise (BUMK) Rindang Jaya. The cost incurred for this ecotourism entrance ticket is IDR 10,000 per person.

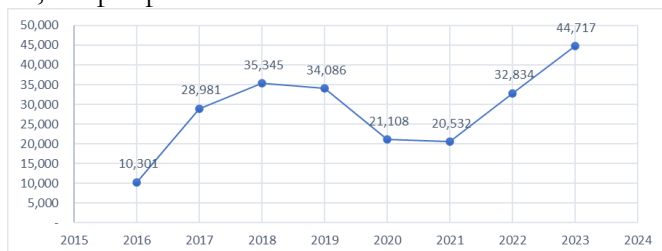


Figure 2. Number of Visitors to Tulung Ni Lenggo Ecotourism 2016-2023.

The number of visitors to Tulung Ni Lenggo Ecotourism fluctuates every year. At the beginning of the opening, ecotourism experienced a stable increase, but in 2019, there was a decrease in the number of visitors due to the COVID-19 pandemic, which required physical and social distancing. The COVID-19 pandemic resulted in a decrease in activity and the number of visitors until 2020 and 2021. After the COVID-19 pandemic, the number of visitors increased in 2022 and 2023. The peak number of visitors occurred in 2023 and reached 44,717 people (Figure 2).

The number of visitors increased on national holidays, such as January 1, 2023, which could reach 3,381 people in one day, and the Eid holiday on April 23-25, 2023, which could reach 2,849 people in one day. The spike in the number of visitors was repeated on January 1, 2024, where the number of visitors on that day reached 3,534 people, and on the Eid holiday from April 11 to 14, 2024, which could reach 2,930 people in one day.

Economic impact of ecotourism

Economic impact can be measured by the multiplier effect of the flow of money that occurs. It can take the form of direct, indirect, or induced impact (Table 1).

Table 1. The proportion of Average Expenditure of Visitors to Tulung Ni Lenggo.

No.	Cost	Average Expenditure (IDR/Visit)	Tourist Proportion (%)	Tourist Expenditure (IDR/year)
A. Tourist Expenditures Outside the Area				
1	Transportation	182.884,62	67,31	8.178.051.346,15
2	Consumption	40.846,15	15,03	1.826.517.461,54
Expenditures Outside the Region		223.730,77	82,35	10.004.568.807,69
B. Tourist Expenditures within the Area				
1	Consumption	20.153,85	7,42	901.219.538,46
2	Tourist Pass	11.846,15	4,36	529.724.461,54
3	Souvenirs	5.461,54	2,01	244.223.615,38
4	Other Costs	10.500,00	3,86	469.528.500,00
Expenditures Within the Area		47.961,54	17,65	2.144.696.115,38
Total Tourist R expenditure		27.692,31	100,00	12.149.264.923,08

Source: Primary Data, 2024.

Direct impact

The direct economic impact is the amount of money received by ecotourism managers and business managers in the Tulung Ni Lenggo ecotourism area (Table 2).

Table 2. Direct Economic Impact of Tulung Ni Lenggo Ecotourism.

Business Unit	Population	Revenue (IDR/month)	Direct Impact (IDR/year)
Shop	4	1.285.500,00	61.704.000,00
Ticketing	1	15.176.666,67	182.120.000,00
Rental	1	1.889.722,22	22.676.666,67
Gallery	1	545.208,33	6.542.500,00
Total		18.897.097,22	273.043.166,67

Source: Primary Data, 2024.

Indirect Impact

The indirect economic impact is obtained from business unit labour income and business unit

expenditure in Tulung Ni Lenggo. The business unit within Tulung Ni Lenggo Ecotourism has several employees who depend on the income from the business unit. Tulung Ni Lenggo Ecotourism has a total of 9 workers, 7 of whom work directly as managers of the Tulung Ni Lenggo Ecotourism, 1 person as an employee of the rental business unit and 1 other person as an employee of the gallery business unit (Table 3).

Table 3. Indirect Economic Impact of Tulung Ni Lenggo Ecotourism.

Labor Type	Number of Laborers	Labor Income (IDR/Year)	Expenditure of Business (IDR/Year)	Indirect Impact (IDR/Year)
Shop	-	-	107.376.000,00	107.376.000,00
Ticketing	7	126.000.000,00	76.380.000,00	202.380.000,00
Rental	1	18.000.000,00	1.323.333,33	19.323.333,33
Gallery	1	18.000.000,00	22.017.500,00	40.017.500,00
Total		162.000.000,00	99.720.833,33	369.096.833,33

Source: Primary Data, 2024.

Induced impact

The induced impact of Tulung Ni Lenggo ecotourism is calculated from the amount of labor expenditure while in the Tulung Ni Lenggo ecotourism area. Details of further economic impact analysis of the Tulung Ni Lenggo ecotourism business can be seen in Table 4.

Table 4. Further Economic Impact of Tulung Ni Lenggo Ecotourism.

Labor Type	Number of Laborers	Labor Income (IDR/Year)	Proportion (%)	Induced Impact (IDR/Year)
Shop	-	-	-	-
Ticketing	7	22.114.285,71	91,47	141.600.000,00
Rental	1	23.760.000,00	84,85	20.160.000,00
Gallery	1	21.240.000,00	57,06	12.120.000,00
Total				173.880.000,00

Source: Primary Data, 2024.

The number of workers in the ecotourism area is 9 people with different total expenses. Labour expenditures while in the ecotourism area can have a positive impact on the economy of the surrounding community.

Multiplier effect

Ecotourism in Tulung Ni Lenggo has several economic impacts on the community because of the expenditure of visitors who come to travel and spend some money in these tourism activities (Table 5).

Table 5. Value of the Multiplier Effect of Ecotourism in Tulung Ni Lenggo.

No.	Economic Impact Criterion	Values
1	Tourist Expenditures in Tourism Areas (E)	12.149.264.923,08
2	Direct Impact (D)	273.043.166,67
3	Indirect Impact (N)	369.096.833,33
4	Induced Impact (U)	173.880.000,00
No.	Multiplier Criterion	Value
1	Keynesian Income Multiplier	0,07
2	Ratio Income Multiplier Type 1	2,35
3	Ratio Income Multiplier Type 2	2,99

Source: Primary Data, 2024.

Table 5 shows the Keynesian multiplier effect value of 0.07, which is less than 1. Thus, it can be interpreted that Tulung Ni Lenggo ecotourism has a very low economic impact on improving the local community's economy. This figure means that every rupiah spent by visitors will increase the income to the business unit and labour by IDR 0.07.

The value of the type 1 income multiplier ratio shows a value of more than 1, which means that Tulung Ni Lenggo ecotourism has had a significant impact on business units and labour income. The value of 2.35 means that each rupiah increase in business unit revenue will have an impact on increasing IDR 2.35 on the income of business owners and labour. The income multiplier ratio value of type 2 shows a value of more than 1, which means that Tulung Ni Lenggo ecotourism has significantly impacted the income of business units, workers and the level of local community consumption. The value of 2.99 means that each one rupiah increase in the income of business owners will result in an increase of IDR 2.99 for business owners and workers and expenditure for consumption in the local economy of the surrounding community.

Discussion

Economic impact of ecotourism

Data on the number of visitors from Tulung Ni Lenggo ecotourism shows that the number of ecotourism visitors in 2023 is 44,717 people, so the total expenditure of visitors to Tulung Ni Lenggo ecotourism in 2023 is IDR 12,149,264,923.08. Table 1. shows that the average visitor expenditure is IDR 271,692.31/person/visit, which consists of expenditure outside the area and inside the Tulung Ni Lenggo ecotourism area. Visitor expenditure outside the ecotourism area in the form of consumption and transportation is about 82.35% of the total visitor expenditure. In contrast,

expenditure inside the ecotourism area in the form of consumption in ecotourism, entrance tickets, souvenir purchases and others (tyre rental and snorkelling equipment) is only about 17.65% of the total visitor expenditure. The proportion of this data shows that the cost of visitor expenditure is higher outside the ecotourism area because the cost of consumption during travel and transportation is quite high.

The largest visitor expenditure is transportation costs outside Tulung Ni Lenggo Ecotourism, IDR 182,884.62/person/visit or about 67.31% of the total visitor expenditure. These transportation costs are the cose incurred by visitors to travel from their residence to Tulung Ni Lenggo Ecotourism for tourism. Travel to ecotourism can be done by private vehicle (car or motorbike) or travel at a certain cost. Restrictions on the purchase of fuel in the form of pertalite are also a condition that contributes to the high transportation costs of tourists.

The results of the interview indicate that the respondents are primarily visitors who originate from other sub-districts within Berau Regency, as well as from external regions, including East Kutai Regency, Kutai Kartanegara Regency, Bontang City, Samarinda City, and Tarakan City. However, it cannot be denied that there are also foreign tourists who visit. The money spent by out-of-town and foreign tourists in tourist destinations is an important element that directly contributes to the local tourism industry and positively impacts the local economy (Rasethuntsa, 2022).

Direct impact

Table 2. shows the economic impact analysis on business units carried out in stalls, ecotourism managers (tickets), rentals (life tyres and snorkelling equipment) and galleries. The direct economic impact on the business unit is IDR 273,043,166.67. The income earned in each business varies. The average income of the largest business unit is the manager (ticket) of Tulung Ni Lenggo ecotourism, which is IDR 182,120,000.00 / year. This is due to the large number of visitors daily, especially on weekends and national holidays. Visitors who come are usually alone and bring friends and family to vacation together.

The lowest income is in the gallery business unit, with an income of IDR 6,542,500.00/year. This is because not all visitors know about the existence of galleries whose location is not always passed by tourists. Based on the results of interviews with the gallery manager, some items can only be purchased

by ordering, but when ordering, sometimes the provider has not made production, so it reduces buyer interest. Some other items, such as rattan bags, batik and plaques, are sold at quite high prices because they are original handmade products from the surrounding community. Most tourists are visitors in the income range of IDR 2,000,000.00 to IDR 3,999,999.00, so they have different spending priorities during tourism trips. For example, cultural, convention, or shopping tourism will have different patterns and costs than nature or special interest tourism (Nurhidayati & Fandeli, 2011).

Indirect impact

Table 3 shows data on the total indirect economic impact of ecotourism in Tulung Ni Lenggo is IDR 369.096.833,-/year. This amount is dominated by business unit expenditures from stalls, amounting to IDR 107,376,000, - and salary expenditures at the Tulung Ni Lenggo business unit with a workforce of 7 people, amounting to IDR 126,000,000, - / year. This aligns with research by Karyatun et al., (2021), which states that tourism activities have created circulating capital in business units. However, suppose the business owner spends money from his business income to buy his business inputs from outside the area. In that case, there will be economic leakages that result in a lack of ecotourism impact on the local economy (Putra et al, 2017).

Induced impact

The total further economic impact of Tulung Ni Lenggo ecotourism is IDR 173,880,000,-/year. This amount is labour income from the ecotourism business (visitor expenditure), which in turn is also finally used by the workforce to buy their needs in locations around the ecotourism location, which is still in Batu Putih District. The workforce at Tulung Ni Lenggo ecotourism is generally a community that lives around ecotourism, so expenses within the area are greater than expenses outside the area. Based on the results of interviews with Tulung Ni Lenggo ecotourism workers, it is known that expenditures within the ecotourism area are for consumption needs while working (ice, coffee, fried foods and other snacks), daily needs, children's school fees, electricity and other needs. The costs incurred outside the area are costs for recreation outside the area (outside the sub-district or the region) and other costs outside the area, such as shopping from outside the area. Tourism has become the second largest employer worldwide, among other important sectors that drive economic growth (Esakki, 2015).

Further economic impact results from the calculation of money obtained from ecotourism business activities that are used to buy daily necessities in the area. However, suppose the income is used to make purchases or purchases outside the area. In that case, it can result in economic leakage so that this amount does not affect local economic activities. This is supported by Putra et al (2017), who state that economic leakage can be caused by money spent by tourists and received by local communities not being spent again within the region.

Keynesian multiplier effect

Keynesian multiplier effect value has a very low economic impact on improving the local community's economy. This is due to leakages from visitor expenditures that incur costs within the ecotourism location and outside the Tulung Ni Lenggo ecotourism. Visitor expenditure in the ecotourism area is lower than visitor expenditure outside the ecotourism area, such as consumption and transport. Looking at the proportion, the largest visitor expenditure is transportation costs, where there is no public transportation available at low prices to the site, so if you want to visit it, it requires a large enough cost for travel costs or use a private vehicle by spending fuel costs. This is in line with the findings of Putra et al., (2017) that leakage (economic lack) is due to components of travel costs, such as fuel, that occur outside the tourist area. Furthermore, other research by Ramadhan & Rifani (2023) also argues that low accessibility increases the cost burden of tourists, thus increasing leakage from the calculation of potential benefits of the tourist area.

The number and type of products offered in the tourist area have not attracted many visitors to buy, and several tourist objects in Tulung Ni Lenggo Ecotourism do not function optimally, so it becomes one of the factors that lead to low visitor spending in the ecotourism area. This is in line with the research of Ramadhan & Rifani (2023), which states that economic leakage also occurs because residents do not widely use souvenir shopping and tour package facilities for tourists.

The value of the type 1 income multiplier ratio shows that Tulung Ni Lenggo ecotourism has had a significant impact on business units and labor income. This amount occurs because of the circulation of money in the area. However, suppose the party receiving the direct impact makes expenditures or brings in business inputs from outside the area. In that case, it will result in

economic leakages so that it has no impact on the local economy. This is supported by the opinion of Lemma (2014), who states that the effect of tourism on the economy of each country is different, mainly depending on the structure of the tourism industry and the relationship between local economic actors.

The income multiplier ratio value of type 2 shows that Tulung Ni Lenggo ecotourism has significantly impacted the income of business units, workers and the level of local community consumption. Based on the analysis above, it can be seen that visitor expenditure has had an impact on the income of business units and workers in the ecotourism area, which ultimately also has an impact on increasing consumption and the local economy

Conclusion

Tulung Ni Lenggo is a lake area in Berau Regency that has been open as an ecotourism location since 2016. The manager chose the ecotourism concept as an effort to implement the concept of sustainable development. The Tulung Ni Lenggo tourist spot remains original to this day. As much as possible, current infrastructure development will not disrupt or damage the naturalness of the tourist location. The direct economic impact on the business unit is IDR 273,043,166.67/year, the indirect economic impact is IDR 369,096,833/year and the subsequent economic impact is IDR 173,880,000/year.

The Keynesian multiplier effect value is 0.07, the type 1 income multiplier ratio value is 2.35, and the type 2 income multiplier ratio value is 2.99. Based on these values, visitor spending has impacted the income of business units and workers in the ecotourism area, which ultimately also impacts increasing consumption and the local economy.

Acknowledgements

The authors would like to thank the management of Ecotourism who has helped the researchers during research at Tulung Ni Lenggo Lake.

References

- Arikunto, S. 2016. *Prosedur Penelitian Suatu Pendekatan Praktek*. Rineka Cipta, Jakarta
- Bungin, B. 2005. *Metodologi Penelitian Kuantitatif: Komunikasi, Ekonomi, dan Kebijakan Publik Serta Ilmu-ilmu Sosial Lainnya*. Kencana, Jakarta.
- Butarbutar, R. R. 2021. *Ekowisata Dalam Perspektif Ekologi Dan Konservasi*. In N. Rismawati (Ed.). CV. Widina Media Utama, Bandung.
- Chivandi, A., M. Sikhauli, T. Mlilo. 2023. *Green Innovation Sustainability & Green Practice Behaviours in Tourism & Hospitality*. *Athens Journal of Tourism*. 10(2): 99-124.
- Esakki, T. 2015. *Role of Tourism Industry in Employment Generation: A Case Study of Nagaland*.
- Ghanbri, A., R. Naghizadeh. N. Omrani. 2019. *Tourists' Satisfaction and Loyalty to Tourism Product of Ardabil City: Emphasizing on*

- Demographic and Social Characteristics. *Athens Journal of Tourism*, 6(1): 39–56.
- Gössling, S., M. Balas, M. Mayer, Y. Sun. 2023. A review of tourism and climate change mitigation: The scales, scopes, stakeholders and strategies of carbon management. *Tourism Management*. 95: 1-18.
- Haribudiman, I., M. Berliandaldo, A.W. Holman Fasa. 2023. Implications of the Role of Tourism Carrying Capacity in the Development of Sustainable Tourism Destinations. *Jurnal Kepariwisata Indonesia: Jurnal Penelitian Dan Pengembangan Kepariwisata Indonesia*, 17(2): 272–292.
- Kamah, M. H., F. M. Sahami, A. S. Baruadi. 2022. Coastal tourism development of Diyonumo Island, East Sumalata District, Gorontalo-Indonesia, based on natural resources and carrying capacity. *Aquatic Science & Management*, 10(1): 23.
- Kampung Tembudan. 2023. Profil kampung Tembudan. Kecamatan Batu Putih, Kabupaten Berau, Indonesia.
- Karyatun, S., K. Wiweka, R. H. Demolingo, P. P. Adnyana, I. Nurfikriyani. 2021. Tourist Village Multiplier Effect Studies: Small Scale Approach. *International Journal of Management, Innovation & Entrepreneurial Research*, 6(2): 139–153.
- Lemma, A. F. 2014. Tourism Impacts: Evidence of Impacts on employment, gender, income. Overseas Development Institute, EPS Peaks.
- Meng, F., M. Uysal. 2008. Effects of Gender Differences on Perceptions of Destination Attributes, Motivations, and Travel Values: An Examination of a Nature-Based Resort Destination. *Journal of Sustainable Tourism*, 16(4), 445–466.
- Noor, S., O. Tajik, J. Golzar. 2022. Simple random sampling. *International Journal of Education & Language Studies*. 6: 97–109.
- Nugroho, R. Y. Y., M. R. Adiyanto. 2023. Persepsi Masyarakat Untuk Pengembangan Wisata Berkelanjutan di Pesisir Madura. *Jurnal Kebijakan Sosial Ekonomi Kelautan Dan Perikanan*. 13(1): 13-23.
- Nurhidayati, S. E., C. Fandeli. 2011. Analisis Pola Belanja Wisatawan Kelompok di Kota Batu. *Jurnal Masyarakat, Kebudayaan Dan Politik*. 24(4): 328–335.
- Prasetyo, J. B., F. Muhammad, D. N. Sugianto. 2018. Pengembangan Wisata Bahari Pantai Karang Jahe Dalam Mendukung Pembangunan Lingkungan Berkelanjutan. *Prosiding Seminar Nasional Aplikasi Sains & Teknologi (SNAST)* , September, 173–185.
- Putra, A. P., T. Wijayanti, J. S. Prasetyo. 2017. Analisis Dampak Berganda (Multiplier Effect) Objek Wisata Pantai Watu Dodol Banyuwangi. *Journal of Tourism and Creativity*. 1(2): 141–154.
- Putra, Y. P. 2022. Strategi Badan Usaha Milik Kampung Rindang Jaya Tembudan Dalam Pengembangan Destinasi Wisata Tulung Ni Lenggo Di Kecamatan Batu Putih Kabupaten Berau. *EJournal Administrasi Bisnis*. 10(1): 27–37.
- Ramadhan, M. I., I. Rifani. 2023. Analysis of Multiplier Effect Tourism in the National Tourism Strategic Area of Pulisan Beach, East Likupang : 1935–1944.
- Rasethunsa, B. C. 2022. The Tourism Industry and Economic Growth Nexus in Lesotho. *Athens Journal of Tourism*. 9(1): 19–32.
- Riani, N. K. 2021. Pariwisata Adalah Pisau Bermata 2. *Jurnal Inovasi Penelitian*, 2(5): 1469–1474.
- Soeswoyo, D. M. 2019. Kontribusi Sektor Pariwisata Dan Realisasi Rencana Induk Pembangunan Kepariwisata Kota. *Jurnal Sosial Humaniora*, 10(2): 108.
- Triyanti, R., U. Muawanah, N. Kurniasari, P. A. Soejarwo, T. Febrian. 2020. Potensi Pengembangan Ekowisata Bahari Berbasis Masyarakat Adat Sebagai Kegiatan Ekonomi Kreatif Di Kampung Malaumkarta, Papua Barat. *Jurnal Sosial Ekonomi Kelautan Dan Perikanan*, 15(1): 93–105.
- UNWTO. 2017. Tourism and the Sustainable Development Goals – Journey to 2030. World Tourism Organization (UNWTO).
- Wahyuni, S., H. Susilo, E. Erwiantono. 2023. Priority Strategies for Sustainable Community-Based Ecotourism Management on Kaniungan Besar Island, Indonesia. *Sodality: Jurnal Sosiologi Pedesaan*, 10(3): 284–294.
- Yulianda, F. 2019. Ekowisata Perairan: Suatu Konsep Kesesuaian dan Daya Dukung Wisata Bahari dan Wisata Air Tawar. PT. Penerbit IPB Press, Bogor.

How to cite this paper:

Yuliana, I., H. Susilo, I. Irawan, F. Fitriyana. 2025. Multiplier effect analysis of Tulung Ni Lenggo Lake management as sustainable ecotourism. *Depik Jurnal Ilmu-Ilmu Perairan, Pesisir dan Perikanan, Special Issue The 5th ICFM: 132-138*