

## Tourism, Inequality, and Segregation in The North Lombok Regency

Taufan Handika Putra\*<sup>1</sup>, Didy Ika Supriadi<sup>2</sup>, Sahrul<sup>3</sup>

<sup>1,2,3</sup>Faculty of Economics and Business, University of Mataram.

E-mail : [taufan@unram.ac.id](mailto:taufan@unram.ac.id)<sup>1</sup>, [didyikas@unram.ac.id](mailto:didyikas@unram.ac.id)<sup>2</sup>, [sahrul@unram.ac.id](mailto:sahrul@unram.ac.id)<sup>3</sup>

Article History	Abstract
Accepted: 23 October 2023 Revised: 30 November 2023 Published: 02 December 2023	<p><i>The aim of this research is to look at the effects of tourism spatially and examine its impact on the aggregate welfare of the population. Therefore, the author asks two fundamental questions in this research. First, is the rapid demand for tourism capable of creating new regional growth poles spatially? Second, is increasing tourism receipts able to create welfare effects? The method used in this research is simple time series correlation and regression. The findings in this research are that the dependent variables tend to have a strong influence on education and employment indicators. Tourism seems to have only a false effect on economic activity in North Lombok Regency. It is proven that since this district was expanded, there have been no significant growth poles in this region. Regional and economic segregation is still clearly visible today.</i></p> <p><b>Keywords:</b> <i>Tourism, welfare, correlation, regression, segregation</i></p>



This work is licensed under a [Creative Commons Attribution-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-sa/4.0/)

### INTRODUCTION

There seems to be no doubt about the role of the tourism sector in regional economic development, it is even the backbone of the economy in certain regions. For example, López-López et al. (2006) from Los Cabos Mexico, Li et al. (2016) from China, (Ibret et al., 2013; Uzar & Eyuboglu, 2019) in Türkiye, as well as Ioannides et al. (2019) in the Netherlands and globally (Alam & Paramati, 2016; Brouder & Ioannides, 2014; Fang et al., 2020; Mahadevan & Suardi, 2019a; Nguyen et al., 2020a; Seetanah et al., 2023). Indonesia is one of the countries that relies on tourism as a driving sector of the economy. A world tourist destination that is quite popular in the eyes of the world today is the Three Gili Area, North Lombok.

After separating from West Lombok Regency in 2008, the economy of North Lombok Regency seemed to be based on the tourism sector. In the following years, this sector continued to experience rapid development as shown by the high number of tourists visiting North Lombok Regency, both foreign and domestic tourists and the Tiga Gili area was the destination. This destination is a beach destination with inherent biodiversity. Therefore, this area has become popular for world tourists, to this day. It seems that the popularity of the Three Gili Area is a blessing in itself for the economy of the people of North Lombok Regency. Thanks to the high demand for tourism in this area, it is able to leverage the economy of North Lombok Regency in aggregate. In general, this sector certainly has a multiplier effect on other sectors such as trade, infrastructure and services. For example, the high number of tourists visiting the Tiga Gili area has contributed to the development of supporting infrastructure such as

increasing the number of accommodations, including hotels, home stays, villas and the like. In the Central Statistics Agency's report from 2016 – 2019, there was an increase in the number of hotels from 370 to 449. With the increase in the number of accommodation, the derivative facilities such as restaurants and eateries will also apply linearly.

Even though it relies on the tourism sector, North Lombok Regency in the macroeconomic assessment is still unable to compete with several districts/cities in West Nusa Tenggara Province because it is ranked 8th out of 10. This is proven by the accumulated growth of regional output, namely Gross Domestic Regional Income per capita (GRDP). North Lombok Regency's GDP per capita according to BPS data for 2022 is IDR 19,697,000. This condition is slightly better compared to the other 2 districts, namely Central Lombok Regency and East Lombok Regency which are ranked 9th and 10th respectively in NTB Province. Moreover, 13 years after expansion, the urban landscape in North Lombok Regency has not had any significant changes where there is only 1 growth center and 2 buffer areas. This refers to research López-López et al. (2006) that tourism can change the regional landscape because it is accompanied by derivative industries that accompany it. The author sees that after expansion, and even though it was supported by the tourism sector as an engine of growth, regional segregation was only concentrated in previously urban points in North Lombok such as Tanjung and Bayan. North Lombok tourism has not been able to create new positive segregation for the surrounding area. Apart from that, it is also believed that the tourism sector has not been able to create growth in prosperity for the people of North Lombok in aggregate.

The problem that can be formulated in this research is that the development of tourism does not seem to guarantee sustainability for other regions equally. So the author's assumption is that tourism has not been able to leverage community welfare in aggregate. Therefore, the author asks two fundamental questions in this research. First, is the rapid demand for tourism capable of creating new regional growth poles spatially Second, is increasing tourism receipts able to create welfare effects Apart from that, even though the flow of tourists visiting this area is increasing, the multiplier effect that has an impact on people's welfare is still not felt. We suspect that the Three Gili tourism area will not have a significant effect on the economy of North Lombok Regency. This research seeks to investigate the role of tourism from spatial aspects, such as suggestions(Wei, 2012).

Based on the problem formulation above, the aim of this research is to look at the effects of tourism spatially and examine its impact on the aggregate welfare of the population.

## **RESEARCH METHOD**

The type of research used in this research is descriptive research with a qualitative approach. Determining the research location was carried out randomly *purposive* namely determining the research location deliberately, the research location is North Lombok Regency (KLU).

### **Data Types and Sources**

The type of data in this research is quantitative data, namely the data required in research in the form of numbers that can be measured in size and can be calculated with certainty. The data used in this research is secondary data, sourced from the North Lombok

Regency Tourism Office, NTB Province Central Statistics Agency, shp file data for mapping obtained from Open Street Map, and shapefile data obtained from the Geospatial Information Agency.

### Data collection techniques

The technique used to collect data in this research is a library study, namely collecting data by reviewing the literature with the objects to be discussed and reading materials related to the problem being studied.

### Data analysis technique

To answer the first research question. We use assisted mapping techniques software Quantum GIS. Meanwhile, to answer the second research question, we used a quantitative approach with the OLS regression and Quantile Regression methods.

### Research variable

In accordance with the objectives achieved in this research, the variables used are as follows:

1. Dependent variable. The dependent variables in this research are welfare variables which refer to the research of Usrtasun and Gutiérrez (2006). The welfare variables used include:

Indicator	Sub indicator	Measurement	Symbol
Health	Life expectancy	Year	W1.1
	Infant death cases	Number of cases	W1.2
	Infant mortality (in 1000 lives)	Number of cases	W1.3
	Malnourished toddlers	percentage	W1.4
Health services	Distance from hospital to residential areas	dummy	W2.1
	BPJS rates	dummy	W2.2
	Practice doctor fees	dummy	W2.3
Education	Pure Participation Figures		
	elementary school equivalent	Percentage	W3.1
	Middle school equivalent	Percentage	W3.2
	Gross Participation Figures		
	elementary school equivalent	Percentage	W3.3
	Middle school equivalent	Percentage	W3.4
	Average length of school	Year	W3.5
	Dropout		
Culture	elementary school equivalent	Percentage	W3.6
	Middle school equivalent	Percentage	W3.7
	Village etiquette council	Percentage	W4.1
	Preservation of noble values and cultural riches	Percentage	W4.2
	TPAK	Percentage	W5.1
Work achievements	Unemployment rate	Percentage	W5.2
	Work	Number of Kindergartens	W6.1
Housing	Unemployment	Amount	W6.2
	One's own	Percentage	W7.1
	Rent free	Percentage	W7.2

	Service	Percentage	W7.3
	Family owned	Percentage	W7.4
	Rent/contract	Percentage	W7.5
Infrastructure	Road condition is steady	Percentage	W8.1
	Coverage of clean water piping	Percentage	W8.2
Environmental quality	Waste handling	Percentage	W9.1
	Response time rate	Percentage	W9.2
	Disaster Resilient Village	Number of villages	W9.3

2. Independent Variable. The independent variables used in this research include:

- A. Distribution of per capita income (T). The explanation for this variable is that the research uses Regional Original Income as a proxy for T. PAD distribution is considered to represent an independent variable which is thought to influence indicators of welfare variables.
- B. Gini Index (G). This research uses an indicator of per capita income inequality as one of the variables that is thought to influence welfare.
- C. Total economic activity (E). Meanwhile, GDP per capita is used as a proxy for economic activity variables which are thought to have an influence on variable welfare indicators

More than that, the use of independent variables and dependent variables is a process of adoption and modification from the research of Usrtasun and Gutierres (2006). However, there are differences in adopting welfare indicators based on the availability of existing data. The methods used are not the same.

## RESULT AND DISCUSSION

The results of this research are presented in three stages. The three stages are correlation testing, OLS regression testing, and robust estimation testing using quantile regression. The detailed correlation test results can be seen in Appendix 1. In general, it is described that each independent variable used in this research has a different relationship and direction to the dependent variable investigated in this research. Table 2 provides a clear picture regarding the direction of the relationship between variables.

Table 2 Direction of variable relationship (Correlation Test)

Sub indicator	Symbol	T	G	AND
Life expectancy	W1.1	-0.7	0.8	-0.6
Infant death cases	W1.2	0.2	-0.7	0.0
Infant mortality (in 1000 lives)	W1.3	0.7	-0.8	0.6
Malnourished toddlers	W1.4	0.6	-0.9	0.4
Distance from hospital to residential areas	W2.1	-0.5	0.9	-0.3
BPJS rates	W2.2	-0.1	0.8	-0.2
Practice doctor fees	W2.3	0.3	0.8	0.5
elementary school equivalent	W3.1	-0.6	0.9	-0.3
Middle school equivalent	W3.2	-0.6	0.9	-0.4
elementary school equivalent	W3.3	-0.6	0.9	-0.4
Middle school equivalent	W3.4	-0.5	0.9	-0.3

Average length of school	W3.5	-0.7	0.9	-0.6
elementary school equivalent	W3.6	0.8	-0.8	0.6
Middle school equivalent	W3.7	0.8	-0.8	0.5
Village etiquette council	W4.1	-0.6	0.9	-0.4
Preservation of noble values and cultural riches	W4.2	-0.5	0.9	-0.2
TPAK	W5.1	-0.6	0.4	-0.7
Unemployment rate	W5.2	-0.2	0.4	-0.4
Work	W6.1	-0.9	0.6	-0.8
Unemployment	W6.2	-0.3	0.5	-0.6
One's own	W7.1	0.3	-0.1	0.4
Rent free	W7.2	-0.1	0.3	0.1
Service	W7.3	0.4	-0.4	0.4
Family owned	W7.4	-0.4	0.2	-0.4
Rent/contract	W7.5	0.3	-0.1	0.4
Road condition is steady	W8.1	-0.8	0.8	-0.6
Coverage of clean water piping	W8.2	-0.8	0.7	-0.5
Waste handling	W9.1	-0.7	0.8	-0.6
Response time rate	W9.2	0.2	-0.7	0.0
Disaster Resilient Village	W9.3	-0.8	0.8	-0.6

The OLS regression test results can be seen in detail in appendix 2. The test results can be seen in summary in Table 3 below.

Table 3. OLS estimation results

Sub indicator	Symbol	Coefficient T	Coefficient G	Coefficient AND	constant	R-sq
Life expectancy	W1.1	-1.569 (7.862)	7.724** (1.507)	0.041 (0.111)	64.070*** (1.166)	0.932
Maternal death cases	W1.2	2.766 (0.706)	-12.942 (0.399)	-0.401 (0.900)	8.649 (0.456)	0.515
Infant mortality (in 1000 lives)	W1.3	3.946 (3.897)	-20.074 (7.472)	-0.064 (0.551)	22.188 (5.782)	0.911
Malnourished toddlers	W1.4	1.834 (1.405)	-8.780* (2.694)	-0.119 (0.198)	3.939 (2.085)	0.926
Distance from hospital to residential areas	W2.1	-2.165 (2.129)	9.930 (4.082)	0.201 (0.301)	-0.151 (3.159)	0.864
BPJS rates	W2.2	-1.111 (2.409)	10.642 (4.618)	-0.020 (0.340)	2.091 (3.573)	0.845
Practice doctor fees	W2.3	-7.143 (2.176)	6.969 (4.173)	0.317 (0.307)	-3.196 (3.229)	0.773
elementary school equivalent	W3.1	-4.809 (3.280)	18.041 (6.288)	0.453 (0.463)	89.122*** (4.865)	0.909
Middle school equivalent	W3.2	-6.469 (3.918)	33.489** (7.511)	0.424 (0.554)	85.561*** (5.812)	0.956

elementary school equivalent	W3.3	-3.307* (1.048)	18.558** (2.010)	0.269 (0.148)	91.455*** (1.555)	0.988
Middle school equivalent	W3.4	-1.669 (8.893)	9.160** (1.704)	-0.030 (0.125)	97.912*** (1.319)	0.978
Average length of school	W3.5	-5.058 (2.590)	3.071** (0.496)	0.004 (0.036)	4.660*** (0.384)	0.979
elementary school equivalent	W3.6	3.839*** (3.417)	-9.344*** (0.655)	-0.237** (0.048)	5.113*** (0.507)	0.997
Middle school equivalent	W3.7	4.254* (1.166)	-11.286** (2.237)	-0.297 (0.165)	6.410* (1.730)	0.979
Village etiquette council	W4.1	-0.001* (5.069)	917.748** (97.179)	11.244 (7.169)	-300.647* (75.192)	0.988
Preservation of noble values and cultural riches	W4.2	-0.001 (0.001)	591.340 (240.938)	14.074 (17.772)	-235.815 (186.426)	0.859
TPAK	W5.1	1.275 (1.374)	16.195 (26.353)	-1.082 (1.944)	81.826 (20.391)	0.530
Unemployment rate	W5.2	6.338** (1.374)	10.197* (2.635)	-0.978** (0.194)	9.600** (2.039)	0.939
Work	W6.1	-0.023 (0.017)	66516.3 (33659.3)	-952.186 (2483.44)	116808** (26044.1)	0.942
Unemployment	W6.2	0.007** (0.001)	13635.6** (2983.38)	-1195.3** (220.116)	11579.5** (2308.38)	0.955
One's own	W7.1	-8.808 (5.042)	-1.495 (9.666)	0.275 (0.713)	86.741 (7.479)	0.172
Rent free	W7.2	-8.212 (2.326)	12.948 (44.601)	1.269 (3.290)	-15.478 (34.510)	0.157
Service	W7.3	-2.652 (2.514)	-2.498 (4.820)	0.108 (0.355)	-0.244 (3.729)	0.256
Family owned	W7.4	3.939 (3.999)	20.236 (76.682)	-1.904 (5.657)	24.727 (59.332)	0.216
Rent/contract	W7.5	-5.057 (2.646)	-0.729 (5.074)	0.148 (0.374)	-1.390 (3.926)	0.164
Road condition is steady	W8.1	-4.020* (1.217)	105.749** (23.337)	1.959 (1.721)	25.648 (18.057)	0.978
Coverage of clean water piping	W8.2	-1.112 (8.863)	200.191 (169.924)	-3.213 (12.537)	77.750 (131.478)	0.626
Waste handling	W9.1	-4.502 (3.082)	253.957 (59.096)	0.539 (4.360)	-6.431 (45.725)	0.961
Response time rate	W9.2					
Disaster Resilient Village	W9.3	6.915 (1.590)	-32.355 (30.500)	-1.003 (2.250)	36.623 (23.599)	0.515

The estimation results in the table above show that in general the three main variables used as estimates for welfare indicators have quite a large influence together which can be seen from the Rsquare value, except for several housing indicators. In health variables, G and E have



a significant effect on life expectancy at alpha levels of 5% and 1%. Apart from that, G has a significant effect at the 10% level on malnourished toddlers. Meanwhile, both T, G and E had no real effect on cases of maternal death and infant mortality. This also happens to health service indicators, where, based on OLS results there is no significant influence.

For education indicators, especially the NER indicator, variable G has a significant influence on the NER percentage for junior high schools and the equivalent at the 5% level. Meanwhile, the APK G indicator has a significant influence at the 5% level on the percentage of elementary school equivalent, junior high school equivalent, and average years of schooling. In the School Dropout indicator, all independent variables influence the percentage of the dependent variable at alpha 1%.

In terms of cultural indicators, only variables T and G have an influence on the krama jaya assembly at the 10% and 5% levels. In the work achievement indicator, all independent variables have an influence on the percentage of unemployment. Also, in the labor force indicator, the variables T, G and E have a significant influence on the unemployment rate variable. All independent variables do not have a significant effect on each dependent variable on the housing indicator. Likewise, what happens to infrastructure and environmental quality indicators?

The unequal distribution of local income of course has an impact on the education sector in each region in the North Lombok district. Likewise, economic activities in certain areas can create economic inequality, which has an impact on social and economic welfare in North Lombok Regency. The concentration of the economy in the Tanjung and Juara subdistricts has an impact on regional and economic segregation which results in exclusive concentration in these areas. Apart from that, this research also presents the effects of independent variables in the context of quantile regression which is presented in Appendix 3 of this research. So far, geographically it is not visible that economic activity, especially the tourism sector, has had a trickle-down effect on other areas in North Lombok.

Researchers suspect that the low economic effects of tourism activities do not flow to surrounding areas. As far as tourism activities are concerned up to now, the economic concentration is only based on Selamat and Tanjung Districts. The map below shows the strong hill that Selamat is still the economic center of North Lombok.

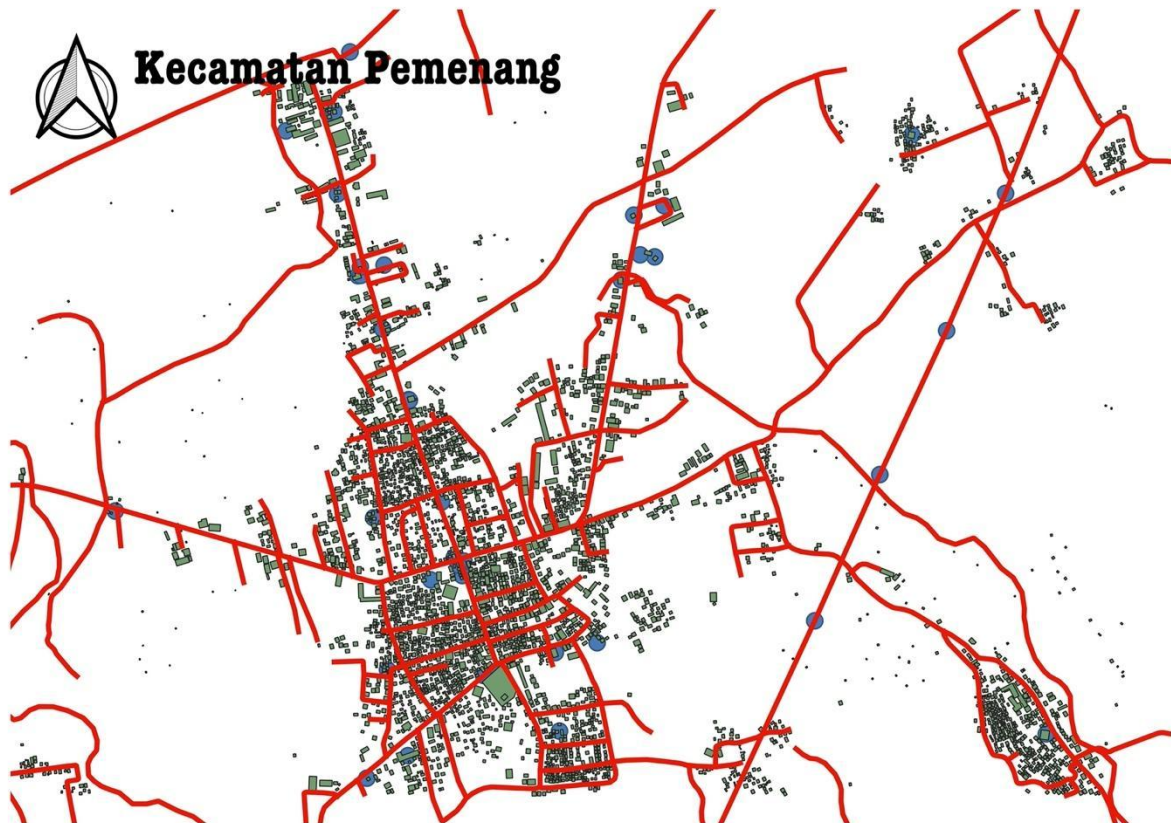


Figure 1. Pemenang Map

Segregation between regions in North Lombok Regency is a phenomenon and a real challenge for all stakeholders in the region. Transformative efforts seem necessary to keep economic activity in other regions growing. Tourism seems to only have a false effect on economic activity in North Lombok Regency. It is proven that since this district was expanded, there have been no significant growth poles in this region. Regional and economic segregation is still clearly visible today.

## CONCLUSION

This research seeks to investigate the influence of per capita income distribution, income inequality, and economic activity on welfare in North Lombok Regency. From the results of statistical testing it can be concluded that the dependent variables tend to have a strong influence on education and employment indicators. This research of course has limitations. These limitations include, among other things, the availability of data at the sub-district level. Due to the limited availability of data at the sub-district level, researchers have limitations in carrying out statistical data tests that can provide more accurate analyses. It is hoped that future research will be able to provide a more meaningful contribution through the availability of appropriate data and models in test estimation.

## ACKNOWLEDGEMENT

The authors acknowledge the University of Mataram for the grant provided to conduct this research. Also, it acknowledges the research assistants, and enumerators for their tireless



support on the field, and the management of the attractions at the study destination for their contribution to this research.

## REFERENCES

- Alam, M. S., & Paramati, S. R. (2016). The impact of tourism on income inequality in developing economies: Does Kuznets curve hypothesis exist? *Annals of Tourism Research*, 61, 111–126. <https://doi.org/10.1016/J.ANNALS.2016.09.008>
- Bahaire, T., & Elliott-White, M. (1999). The Application of Geographical Information Systems (GIS) in Sustainable Tourism Planning: A Review. *Journal of Sustainable Tourism*, 7(2), 159–174. <https://doi.org/10.1080/09669589908667333>
- Brouder, P., & Ioannides, D. (2014). Urban Tourism and Evolutionary Economic Geography: Complexity and Co-evolution in Contested Spaces. *Urban Forum*, 25(4), 419–430. <https://doi.org/10.1007/s12132-014-9239-z>
- Fang, J., Gozgor, G., Paramati, S. R., & Wu, W. (2020). The impact of tourism growth on income inequality: Evidence from developing and developed economies. *Tourism Economics*, 27(8), 1669–1691. <https://doi.org/10.1177/1354816620934908>
- Ibret, B. U., Aydinouzu, D., & Bastemur, C. (2013a). A geographic study on the effects of coastal tourism on sustainable development: coastal tourism in Cide. *International Journal of Sustainable Development & World Ecology*, 20(2), 134–141. <https://doi.org/10.1080/13504509.2012.743195>
- Li, H., Chen, J. L., Li, G., & Goh, C. (2016). Tourism and regional income inequality: Evidence from China. *Annals of Tourism Research*, 58, 81–99. <https://doi.org/10.1016/J.ANNALS.2016.02.001>
- López-López, Á., Cukier, J., & Sánchez-Crispín, Á. (2006a). Segregation of Tourist Space in Los Cabos, Mexico. *Tourism Geographies*, 8(4), 359–379. <https://doi.org/10.1080/14616680600922054>
- Mahadevan, R., & Suardi, S. (2019b). Panel evidence on the impact of tourism growth on poverty, poverty gap and income inequality. *Current Issues in Tourism*, 22(3), 253–264. <https://doi.org/10.1080/13683500.2017.1375901>
- Nguyen, C. P., Schinckus, C., Su, T. D., & Chong, F. H. L. (2020b). The Influence of Tourism on Income Inequality. *Journal of Travel Research*, 60(7), 1426–1444. <https://doi.org/10.1177/0047287520954538>
- Seetanah, B., Gopy-Ramdhany, N., & Bhattu-Babajee, R. (2023). Can tourism curb income inequality?: Tourism Agenda 2030. *Tourism Review*, ahead-of-print(ahead-of-print). <https://doi.org/10.1108/TR-02-2022-0094>
- Uzar, U., & Eyuboglu, K. (2019a). Can tourism be a key sector in reducing income inequality? An empirical investigation for Turkey. *Asia Pacific Journal of Tourism Research*, 24(8), 822–838.