

# Tourism, Inequality and Segregation in The North Lombok Regency

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| Article History   | Abstract  |
|---|---|
| Accepted: 23 October 2023<br>Revised: 30 November 2023<br>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 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.</i></p> <p><b>Keywords:</b> Tourism, welfare, correlation, regression, segregation</p> |



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## 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, shapefile data obtained from the Geospatial Information Agency.

### Data collection techniques

The technique used to collect data in this research is 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 techniquesoftware 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           | elementary school equivalent                     | Percentage      | W3.6   |
|                   | Middle school equivalent                         | Percentage      | W3.7   |
|                   |  |                 |        |
| Culture           | Village etiquette council                        | Percentage      | W4.1   |
|                   | Preservation of noble values and cultural riches | Percentage      | W4.2   |
| Work achievements | TPAK   | Percentage      | W5.1   |

|                       |                                |                         |      |
|-----------------------|--------------------------------|-------------------------|------|
|                       | Unemployment rate              | Percentage              | W5.2 |
| Workforce             | Work                           | Number of Kindergartens | W6.1 |
|                       | Unemployment                   | Amount                  | W6.2 |
| Housing               | 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 Gutierrez (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<br>T  | Coefficient<br>G   | Coefficient<br>AND | constant             | R-sq  |
|----------------------------------|--------|-------------------|--------------------|--------------------|----------------------|-------|
| Life expectancy                  | W1.1   | -1.569<br>(7.862) | 7.724**<br>(1.507) | 0.041<br>(0.111)   | 64.070***<br>(1.166) | 0.932 |
| Maternal death cases             | W1.2   | 2.766<br>(0.706)  | -12.942<br>(0.399) | -0.401<br>(0.900)  | 8.649<br>(0.456)     | 0.515 |
| Infant mortality (in 1000 lives) | W1.3   | 3.946<br>(3.897)  | -20.074<br>(7.472) | -0.064<br>(0.551)  | 22.188<br>(5.782)    | 0.911 |
| Malnourished toddlers            | W1.4   | 1.834<br>(1.405)  | -8.780*<br>(2.694) | -0.119<br>(0.198)  | 3.939<br>(2.085)     | 0.926 |

|  |      |                     |                        |                        |                        |       |
|--|------|---------------------|------------------------|------------------------|------------------------|-------|
| Distance from hospital to residential areas      | W2.1 | -2.165<br>(2.129)   | 9.930<br>(4.082)       | 0.201<br>(0.301)       | -0.151<br>(3.159)      | 0.864 |
| BPJS rates                                       | W2.2 | -1.111<br>(2.409)   | 10.642<br>(4.618)      | -0.020<br>(0.340)      | 2.091<br>(3.573)       | 0.845 |
| Practice doctor fees                             | W2.3 | -7.143<br>(2.176)   | 6.969<br>(4.173)       | 0.317<br>(0.307)       | -3.196<br>(3.229)      | 0.773 |
| elementary school equivalent                     | W3.1 | -4.809<br>(3.280)   | 18.041<br>(6.288)      | 0.453<br>(0.463)       | 89.122***<br>(4.865)   | 0.909 |
| Middle school equivalent                         | W3.2 | -6.469<br>(3.918)   | 33.489**<br>(7.511)    | 0.424<br>(0.554)       | 85.561***<br>(5.812)   | 0.956 |
| elementary school equivalent                     | W3.3 | -3.307*<br>(1.048)  | 18.558**<br>(2.010)    | 0.269<br>(0.148)       | 91.455***<br>(1.555)   | 0.988 |
| Middle school equivalent                         | W3.4 | -1.669<br>(8.893)   | 9.160**<br>(1.704)     | -0.030<br>(0.125)      | 97.912***<br>(1.319)   | 0.978 |
| Average length of school                         | W3.5 | -5.058<br>(2.590)   | 3.071**<br>(0.496)     | 0.004<br>(0.036)       | 4.660***<br>(0.384)    | 0.979 |
| elementary school equivalent                     | W3.6 | 3.839***<br>(3.417) | -9.344***<br>(0.655)   | -0.237**<br>(0.048)    | 5.113***<br>(0.507)    | 0.997 |
| Middle school equivalent                         | W3.7 | 4.254*<br>(1.166)   | -11.286**<br>(2.237)   | -0.297<br>(0.165)      | 6.410*<br>(1.730)      | 0.979 |
| Village etiquette council                        | W4.1 | -0.001*<br>(5.069)  | 917.748**<br>(97.179)  | 11.244<br>(7.169)      | -300.647*<br>(75.192)  | 0.988 |
| Preservation of noble values and cultural riches | W4.2 | -0.001<br>(0.001)   | 591.340<br>(240.938)   | 14.074<br>(17.772)     | -235.815<br>(186.426)  | 0.859 |
| TPAK   | W5.1 | 1.275<br>(1.374)    | 16.195<br>(26.353)     | -1.082<br>(1.944)      | 81.826<br>(20.391)     | 0.530 |
| Unemployment rate                                | W5.2 | 6.338**<br>(1.374)  | 10.197*<br>(2.635)     | -0.978**<br>(0.194)    | 9.600**<br>(2.039)     | 0.939 |
| Work   | W6.1 | -0.023<br>(0.017)   | 66516.3<br>(33659.3)   | -952.186<br>(2483.44)  | 116808**<br>(26044.1)  | 0.942 |
| Unemployment                                     | W6.2 | 0.007**<br>(0.001)  | 13635.6**<br>(2983.38) | -1195.3**<br>(220.116) | 11579.5**<br>(2308.38) | 0.955 |
| One's own  | W7.1 | -8.808<br>(5.042)   | -1.495<br>(9.666)      | 0.275<br>(0.713)       | 86.741<br>(7.479)      | 0.172 |
| Rent free  | W7.2 | -8.212<br>(2.326)   | 12.948<br>(44.601)     | 1.269<br>(3.290)       | -15.478<br>(34.510)    | 0.157 |
| Service  | W7.3 | -2.652<br>(2.514)   | -2.498<br>(4.820)      | 0.108<br>(0.355)       | -0.244<br>(3.729)      | 0.256 |
| Family owned                                     | W7.4 | 3.939<br>(3.999)    | 20.236<br>(76.682)     | -1.904<br>(5.657)      | 24.727<br>(59.332)     | 0.216 |
| Rent/contract                                    | W7.5 | -5.057              | -0.729                 | 0.148                  | -1.390                 | 0.164 |

|                                |      |         |         |           |           |         |          |          |       |
|--------------------------------|------|---------|---------|-----------|-----------|---------|----------|----------|-------|
|                                |      |         | (2.646) | (5.074)   | (0.374)   | (3.926) |          |          |       |
| Road condition is steady       | W8.1 | -4.020* | (1.217) | 105.749** | (23.337)  | 1.959   | (1.721)  | 25.648   | 0.978 |
| Coverage of clean water piping | W8.2 | -1.112  | (8.863) | 200.191   | (169.924) | -3.213  | (12.537) | 77.750   | 0.626 |
| Waste handling                 | W9.1 | -4.502  | (3.082) | 253.957   | (59.096)  | 0.539   | (4.360)  | -6.431   | 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   | 0.515 |
|                                |      |         |         |           |           |         |          | (23.599) |       |

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%.

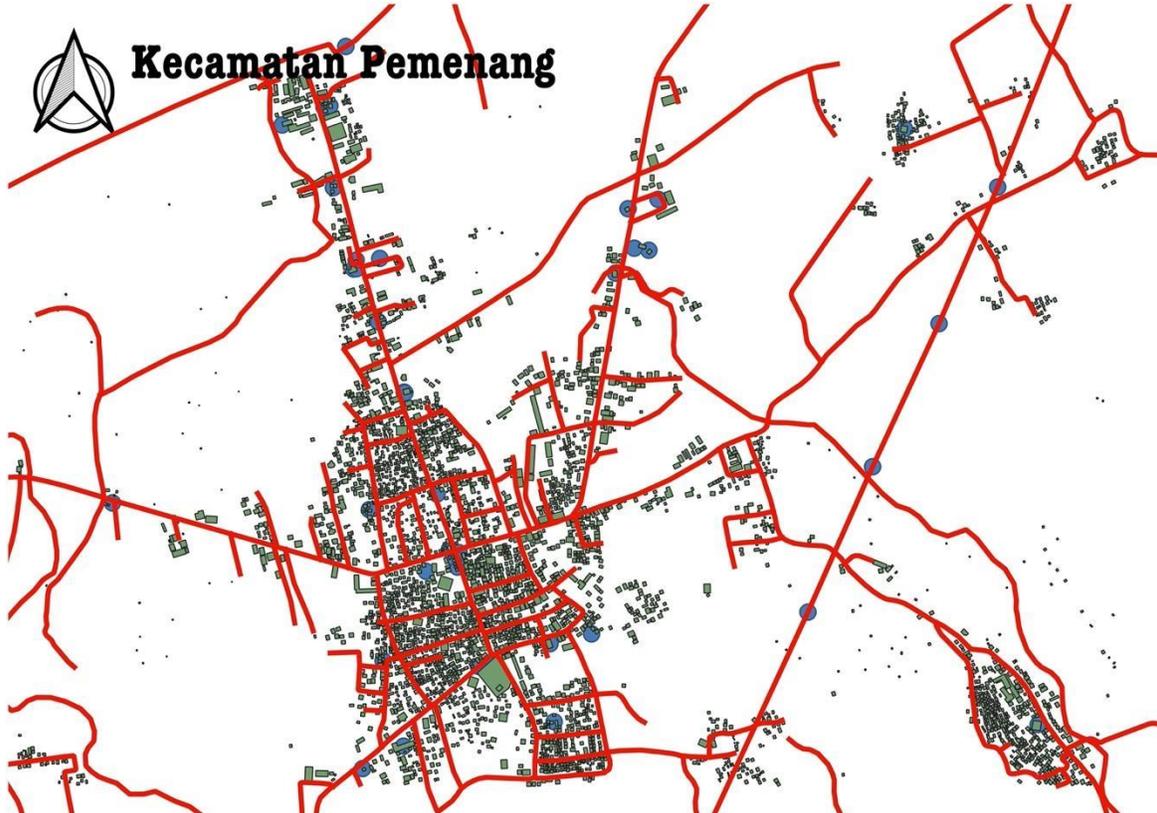
In terms of cultural indicators, only variables T and G have an influence on the krama jaya assembly at the 10% and 5% levels. In the work achievement indicator, all independent variables have an influence on the percentage of unemployment. Also, in the labor force indicator, the variables T, G and E 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. Like wise 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 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.

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