

## The Impact of The Tourism Sector and Original Regional Income on Gross Regional Domestic Product in East Java 1993-2022

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### Article History:

Received: 30 April 2024

Revised: 15 Mei 2024

Accepted: 18 Mei 2024

**Keywords:** *Tourism Sector, Original Regional Income, Gross Regional Domestic Product*

**Abstract:** *This journal examines whether there is an influence from the tourism sector and local revenue on gross regional domestic product in East Java. Using data from the Central Statistics Agency from 1993 to 2022, this research evaluates the direct impact of the tourism sector on the level of gross regional domestic product. The analytical method used is the multiple regression analysis method with five variables, namely the number of tourists, the number of tourism accommodation, the number of tourist attractions and income. regional origin and gross regional domestic product. From the research results, the number of tourists, number of tourist attractions and local revenue have an influence on gross regional domestic product, while the number of tourist accommodations has no influence on East Java's gross regional domestic product.*

## INTRODUCTION

Tourism is an economic sector that has an important role in the economic growth of a region or country. Tourism, can also be said to be an industry that has contributed to many economies for decades. In fact, the tourism sector is the only industry that is not affected by the WTO (World Trade Organization) and if handled wisely, has the least environmental problems (Ashoer, 2021). The tourism sector is considered one of the three main economic sectors that is able to encourage people's economic growth, especially because the infrastructure and facilities are ready (Rukini & Nawangsih, 2019).

An increase in the number of tourists, both foreign and domestic, can increase Gross Regional Domestic Income, because tourist consumption tends to increase sales of goods and wages in the sectors that provide goods and services to them. The number of inns and the occupancy rate of inns can also influence a region's GRDP, creating added value to territorial income. The tourism industry is also closely related to the food and beverage sector, which plays an important role in shaping GRDP (Sadeghi, 2011). Therefore, tourism is a sector that needs to be discussed, with a multitude of benefits in the economic sector. Improving the economy of a region can be achieved by promoting tourism potential in the region, as stated by Binns et al. (2002), because the tourism sector has the potential to drive economic growth, further research is needed regarding its influence on the economic sector.

East Java Province, as the second most populous province in Indonesia, also has great potential in the tourism sector (BPS, 2020). East Java Province has 287 islands which makes this province have great potential in the tourism sector (Purwanto, 2020). The potential for natural and

cultural riches in East Java is very diverse, such as mountains, beaches, historical tourist attractions, traditional arts and typical culinary delights. This potential makes this province an attractive tourist destination for both domestic and foreign tourists. As time goes by, the tourism sector in East Java in the three decades has experienced many developments from 1993 to 2022. It has even been recorded that currently, East Java has the highest number of Indonesian tourists.

The tourism sector of East Java Province is one of the leading sectors of the four existing leading sectors. So this province has a lot of potential, one of which is in the regional arts and cultural tourism sector such as the Reog Ponorogo culture which originates from Ponorogo Regency, the Orek-Orek Dance from Ngawi Regency, and Ludruk (Astrini, 2013). Apart from cultural tourism, East Java Province is also rich in historical tourism, one of which is the historical heritage site of the Majapahit Kingdom in Mojokerto. And what is no less interesting is the charm of its natural beauty which has great potential to improve the community's economy (Bachri, 2010).

Economic activity in East Java is very high. It has been recorded that almost 15% of East Java's contribution to national gross domestic product has been recorded. This places East Java Province in 2nd place after DKI Jakarta (Purwanto, 2020). The current conditions in East Java Province indicate that this province has a lot of potential, such as natural resources that can be managed and utilized. The influence of tourism on Gross Domestic Product (GRDP) can be seen from the contribution of the tourism sector to the GRDP of East Java Province. The East Java Central Statistics Agency 2022 shows an increase in this contribution from year to year. The number of tourists visiting East Java Province also has a direct impact on the contribution of the tourism sector to GRDP.

On the other hand, the growth in the number of domestic tourists visiting East Java has experienced a significant percentage increase every year. In the graph, it can be seen that the number of tourist visits from the East Java archipelago continues to grow with the highest increase in 2019, namely 87%. Meanwhile, East Java's GDP growth itself experienced a relatively slow increase. The increase in gross regional domestic product of East Java province every year is only 5% per year. With the highest increase in 2011, namely around 7 percent. The percentage increase in the number of visits by East Java Archipelago tourists, the growth of the tourism sector can be said to be rapid compared to the graph of the percentage increase in East Java's GRDP which tends to be slow. Existing facts prove that the tourism sector has an influence on GRDP. There is a gap where the percentage of the tourism sector is higher and has a quite large difference in average annual growth, namely 17%. The number of domestic tourists in East Java increased by 22% per year, while East Java's GRDP experienced a slowdown with an average increase of only 5% per year.

Of course, the phenomenon that occurs has a cause that can influence the level of percentage change from year to year. Thus, the influence of the tourism sector on Gross Regional Domestic Product in East Java during the period 1993 to 2022 is important for further research. This research can help the government and stakeholders identify opportunities and challenges that may be faced in developing the tourism sector in the future. Apart from that, empirical data analysis can also provide concrete evidence about the contribution of the tourism sector to gross regional domestic product which determines the level of economic growth and social welfare in East Java.

## LITERATURE REVIEW

### Yoeti's Economic Theory of Tourism

Tourism is considered a very strategic field in the development process, it is hoped that it can become the main locomotive that drives economic growth,

### Theory of the Influence of PAD on GRDP according to Abdurrahman

Original Regional Income (PAD) influences Gross Regional Domestic Income (GRDP). The higher the PAD elasticity value, the GRDP will increase. Regional income will increase the budget and influence the greater amount of output.

### Spillane's Theory of Tourism

The tourism sector developed as an industrial concept, where this industry is defined in economics as a group of similar companies that produce or produce certain products.

### Tourism according to Law no. 9 of 1990

Tourism, which aims to increase national income, improve people's welfare, develop business opportunities and create jobs.

### The hypothesis of the researcher is

There is an influence between Regional Original Income (PAD), Tourist Attractions, Domestic Tourists, Tourism Accommodation on Gross Regional Domestic Product in East Java

## RESEARCH METHODS

### Type of Research and Data Collection Technique

The research was conducted using Quantitative Research Methods with an associative approach. Data collection techniques were carried out indirectly through non-participant observation. The type of data in this research is secondary time series data. Sourced from data from the Central Statistics Agency, Ministry of Communication, Department of Culture and Tourism. Research variables include Regional Original Income, Tourist Attractions, Tourists, Tourism Accommodation. The Multiple Linear Regression Analysis Technique can be formulated as follows:

$$PDRB = \beta_0 + \beta_1 PAD + \beta_2 OW + \beta_3 WN + \beta_4 AP + e$$

Where GRDP is Gross Regional Domestic Product, PAD is Original Regional Income; OW is a Tourist Attraction;  $\beta_1$ ,  $\beta_2$  and  $\beta_3$  are estimated parameters;  $e$  is a confounding variable.

### Variable and Operasional Definition

**Table 1. Operasional Definition**

| Variable                            | Definition  | Operational  |
|-------------------------------------|---|--|
| Gross Regional Domestic Product (Y) | Various sources, including regional taxes, regional levies, results of separated regional wealth management, and other income (Marini., 2017).                        | Total Regional Gross Domestic Product in East Java 1993-2022, as measured in billions of rupiah.               |
| Regional Original Income (X1)       | The total amount of added value (product) generated by various business activities in a region without considering the owner of the production factors Arsyad (1997). | The amount or total of regional original income in East Java for 1993-2022, as measured in billions of rupiah. |
| Tourist Attractions (X2)            | A tourist destination needs to have a unique attraction, so that the tourist attraction can act as a magnet to attract tourist visits, Muljadi (2012).                | Number of tourist attractions in East Java in 1993-2022, as measured in units                                  |
| Archipelago Tourists (X3)           | Indonesian residents who travel within Indonesian territory outside their place of residence Irmah (2017).  | Number of domestic tourists in East Java in 1993-2022, as measured in units of people                          |
| Tourism Accommodation (X4)          | The amount of tourism infrastructure including hotels, restaurants and transportation can attract more tourists and increase income from the tourism sector.          | Tourism Accommodation in East Java 1993-2022, as measured in units.  |

## Data Analysis Technique

In this research, the data collection method used is quantitative. Apart from that, this data is data obtained indirectly, or data which is usually called secondary data. Data was collected from official websites, namely, the Central Statistics Agency, the East Java Province Culture and Tourism Service, and the Communications and Informatics Service. The data that has been collected is processed using the Stata analysis tool.

## RESULT AND DISCUSSION

### Classic assumption test

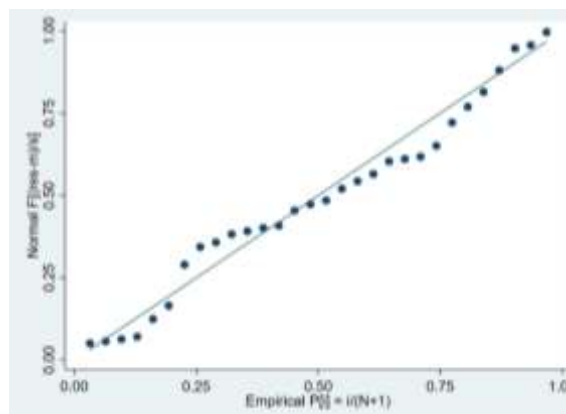
#### 1. Normality test

Kolmogorov-Smirnov: The results of the data normality test show that the results of the Kolmogorov-Smirnov significant value test are 0.2344 and 0.3208, which is greater than 0.05, thus it can be concluded that the data used in this study are spread out or distributed in an orderly manner. normal.

Skewness and kurtosis tests for normality

| Variable | Obs | Pr(skewness) | Pr(kurtosis) | Joint test  |           |
|----------|-----|--------------|--------------|-------------|-----------|
|          |     |              |              | Adj chi2(2) | Prob>chi2 |
| res      | 30  | 0.2344       | 0.3208       | 2.62        | 0.2699    |

Normal Distribution Graph Method: below is a scatter diagram of the distribution of the residues. Scatter plot diagram for normality test Data is said to be normal if the points spread around the line and follow the diagonal line. Based on the scatter diagram above, the results obtained are that the points spread out and follow the flow of the diagonal line. The graph test results show that the data is close to a straight line so that it can be read normally.



#### 2. Multicollinearity Test

Method: Variance Inflation Factor (VIF): Measures the extent to which the variance of a variable is explained by other independent variables. A high VIF (usually above 10) indicates multicollinearity. Test Conditions: Multicollinearity evaluation using correlation matrix condition values. The following is a table of multicollinearity test results. Based on the table below, the tolerance value for each independent variable has a value greater than 0.1 and the VIF value is smaller than 10. Therefore, it can be concluded that there is no multicollinearity between the independent variables in this study.

```
. estat vif
```

| Variable | VIF  | 1/VIF    |
|----------|------|----------|
| Wisnus   | 7.96 | 0.125623 |
| OW       | 7.39 | 0.135274 |
| PAD      | 4.60 | 0.217512 |
| AP       | 1.40 | 0.716434 |
| Mean VIF | 5.34 |          |

### 3. Heteroscedasticity Test

Evaluate whether the residual variance is constant. Method: Breusch-Pagan Test: Tests whether the residual variance depends on the value of the independent variable. Goldfeld-Quandt Test: Tests equality of variances by dividing data into two groups and comparing the variances between groups. If the significance value is  $> 0.05$ , then heteroscedasticity does not occur. If the significance value is  $< 0.05$ , then heteroscedasticity occurs. In the table it can be seen that the Chi2 probability of 0.4629 exceeds 0.05, which means that there is no heteroscedasticity in the data.

H0: Constant variance

chi2(1) = 0.54  
Prob > chi2 = 0.4629

### 4. Autocorrelation Test

Evaluate whether there is a correlation between residuals within a certain time interval. The autocorrelation test is a test to determine the existence of a correlation between confounding errors in the previous period in the linear regression model. Autocorrelation problems arise because the residuals are not independent from one observation to another, especially in time series data because successive observations over time are related to each other. The autocorrelation test can be carried out using the Breusch-Godfrey Test or the Lagrange Multiplier (LM) Test. The LM test is recommended for large samples, for example more than 100, to provide more accurate results. To make a decision whether there is autocorrelation or not, the Durbin Watson Test criteria can be used with a D-W value below (-2) meaning there is positive autocorrelation, a D-W value between (-2) to (+2) meaning there is no autocorrelation, and a D-W value below above (+2) means there is negative autocorrelation. Through the DW test, it can be seen that the data has a value of 0.899, which means there is no autocorrelation.

```
. estat dwatson
```

Durbin-Watson d-statistic( 5, 30) = .8997401

### 5. Multiple Linear Regression Analysis

In this analysis, associative and quantitative analysis methods are used to understand the relationship between two or more variables. The data used in this research is numerical data, and analysis is carried out to analyze the problem being researched based on the data collected. According to Priyatno (2012), multiple linear regression analysis is a useful analytical tool for evaluating the influence of independent variables, namely local income

(PAD), number of tourist attractions (OW), number of domestic tourists (WN), number of tourism accommodation (AP), on the dependent variable, namely regional gross domestic product (GRDP)

```
. regress PDRB PAD OW Wisnus AP, beta
```

| Source   | SS         | df | MS         | Number of obs | = | 30     |
|----------|------------|----|------------|---------------|---|--------|
| Model    | 11475024.2 | 4  | 2868756.05 | F(4, 25)      | = | 159.79 |
| Residual | 448842.512 | 25 | 17953.7005 | Prob > F      | = | 0.0000 |
| Total    | 11923866.7 | 29 | 411167.817 | R-squared     | = | 0.9624 |
|          |            |    |            | Adj R-squared | = | 0.9563 |
|          |            |    |            | Root MSE      | = | 133.99 |

| PDRB     | Coefficient | Std. err. | t     | P> t  | Beta      |
|----------|-------------|-----------|-------|-------|-----------|
| PAD      | .0522854    | .0044253  | 11.82 | 0.000 | .9830281  |
| OW       | .6638326    | .2889906  | 2.30  | 0.030 | .2423463  |
| Wisnisus | -.0030543   | .0014439  | -2.12 | 0.045 | -.2315914 |
| AP       | -.001502    | .0013506  | -1.11 | 0.277 | -.0509792 |
| _cons    | -192.9996   | 152.9035  | -1.26 | 0.219 | .         |

Multiple Linear Regression Analysis Equation:

$$GRDP = B_0 + B_1PAD + B_2OW + B_3wN + B_4AP + E$$

With description:

|                |                            |
|----------------|----------------------------|
| GRDP           | :Dependent variable        |
| B0             | : Constant                 |
| B1, B2, B3, B4 | :Regression Coefficients   |
| PAD            | : Original Regional Income |
| OW             | : Tourist Attraction       |
| WN             | : Indonesian Tourists      |
| AP             | : Tourism Accommodation    |
| e              | : Error                    |

## Hypothesis Testing

### 1. Partial Test

Partial tests are carried out with the aim of assessing whether each independent variable individually has a significant impact on the dependent variable in the context of this research. The T test is used as a statistical tool to determine whether the hypothesis is proven or not. The statistical t test aims to test the significance level of the independent variable on the dependent variable (Gujarati, 2013). The significance level adopted in this test is 5% or 0.05. The Regional Original Income variable has the highest significance compared to other variables. Meanwhile, the variables Tourist Attractions and Archipelago Tourists have a low significance value, meaning they have a significant effect on variable Y, namely Gross Regional Domestic Product. The results of this research also show that the factors of Regional Original Income, Tourist Attractions and Indonesian Tourists have a partial positive effect on Gross Regional Domestic Product. The T Test results show that the PAD variable has a significance value of 0.00. The tourist attraction variable has a significance value of 0.030. The Archipelago Tourist variable has a significance value of 0.045 in this research which has a partial positive effect on Gross Regional Domestic Product. However, the Tourism Accommodation variable has a significance level of 0.219, exceeding 0.05 compared to other variables. Which means that Tourism Accommodation



has no partial effect on Gross Regional Domestic Product. Thus the hypothesis in this research is accepted.

## 2. Simultaneous Test

According to Gujarati (2013), the statistical F test aims to determine the effect of the independent variable on the dependent variable together (simultaneously). This test uses an F test with a confidence level of 95% and an error rate ( $\alpha$ ) of 5%. To test whether each independent variable has a significant impact on the dependent variable together with a significance level ( $\alpha = 0.05$ ). If the significance value F is less than 0.05, then the null hypothesis ( $H_0$ ) is rejected, indicating that the independent variable simultaneously has a significant influence on the dependent variable. On the other hand, if the significance value of F is greater than 0.05, then ( $H_0$ ) is accepted, indicating that the independent variables together do not have a significant effect on the dependent variable. The results of the simultaneous test in the table are 0.00, indicating that the independent variables (PAD, tourist attractions, domestic tourists, tourism accommodation) have an effect on the dependent variable (GRDP).

## 3. Coefficient of Determination ( $R^2$ )

The  $R^2$  coefficient states the extent to which the independent variable influences the dependent variable, the  $R^2$  value ranges between 0 and 1 ( $0 \leq R^2 \leq 1$ ). The higher the  $R^2$  value, the greater the proportion of variation in the dependent variable that can be explained by variation in the independent variable. According to Gujarati (2003), if in an empirical test the adjusted  $R^2$  value is negative, then the adjusted  $R^2$  value is considered to be 0. Thus, in this study,  $R^2$  is not used but the adjusted  $R^2$  value is used to evaluate the regression model. R-Squared is used to measure the magnitude of the influence of all independent variables on the dependent variable simultaneously. The  $R^2$  value in the table is 0.9974, which means that all independent variables can explain the dependent variable by 96.24%. So the remaining  $100\% - 96.24\% = 3.76\%$  is influenced by other variables outside the regression model.

## CONCLUSION

Based on the results of the problem formulation in the research, the following can be drawn:

1. Number of Indonesian Tourists, Regional Original Income, Number of Tourist Attractions have a positive and significant effect on Gross Regional Domestic Product (GRDP). This means that with the increasing number of Indonesian tourists, regional original income, number of objects, GRDP will increase.
2. The number of accommodations does not have a significant effect on the Gross Regional Domestic Product (GRDP) in East Java, in this case economic development is still very minimal, so it is hoped that the government will pay attention.

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