The Contribution of Tourism to Economic Growth: The Case of Central Java, Indonesia

by Agus Arifin

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ABSTRACT

Central Java Province has great tourism potential to be developed. It can be seen from the increasing number of tourism visits and objects in Central Java during the last five years. This research aims to analyze the contribution of tourism to economic performance of Central Java. By using panel data regression analysis from time series, 2014 to 2018, and cross secton, 35 regencies/cities, the effect of some tourism variables on economic growth of this province could be analyzed. The results found that there were positive effect of Local Own-Source Revenue, the number of tourist attractions, and the number of hotels, while, negative effect of the number of tourist visits, partially, on economic growth. The implication of this research were the Government of Central Java should continue to advance and improve the tourism sector, besides the roles of entrepreneurs and tourism stakeholders to provide excellent services, such as improvement of infrastructures and easier access to the tourism destinations. Those high performances will increase tourist arrivals and then the Local Own-Source Revenue and finally the economic growth of Central Java. In addition, it will also attract for new investments in the tourism sector.

Keywords: Tourism; local-own-source revenue; economic growth; attractions.

1. Introduction

Economic growth is an indicator of the performance of economic activity in a country or region over a certain period of time, therefore, it means a process of changing economic conditions into better social welfare (Ernita, 2013). Gross Domestic Product (GDP) is the important macroeconomic variable which is used to measure the economic growth (Mankiw, 2016). For Indonesian country, tourism is a part of subsector of GDP which contributes about 4 – 5 percent per year (2018 and 2019), although the share is not large enough but can't be underestimated. In 2019, the investment of the tourism subsector attained US\$ 1.6 billion or 80.43 percent of the government target (CNN Indonesia, 2020).

Ministry of Tourism and Creative Economy (2018) stated the employment of the tourism subsector reached 12.7 million people or about 10 percent of the total population of Indonesia that was employed, therefore, there was great opportunity for developing tourism subsector (CNN Indonesia, 2020). The tourism subsector was essensial for catalyzing the development through increasing income distribution, employment, and GDP (Soebagyo, 2012).

Central Java is one of the provinces in Java Island that pays more attention to tourism. There are many interesting attractions, among which are some ancient buildings. The attractions of ancient buildings include Puri Maerokoco, Museum Ranggawarsita, Temples (Borobudur, Prambanan, Mendut, Pawon, Dieng temples), Gedong Songo, Ambarawa Railway Museum, etc. Besides that, there are also natural tourist attractions such as Baturaden in Banyumas, Tawangmangu in Karanganyar, Ayah Beach and Manganti Beach in Kebumen, Owabong in Purbalingga, Kampung Batik Lawean in Surakarta, Ketep Pass in Magelang, etc. (Central Java Culture and Tourism Office, 2020).

Many of those tourist attractions have proven to be able to attract many visitors/tourists. The number of tourists in Central Java Province can be seen at Table 1.

Table 1. The Number of Tourists in Central Java Province, 2013-2020

Year	Tourists			
	Foreign (person)	%	Domestic (person)	%
2013	388,143	-	29,430,609	-
2014	419,584	8.10	29,852,095	1.43
2015	421,191	0.38	33,030,843	10.65
2016	578,924	37.45	36,899,776	11.71
2017	782,107	35.10	40,118,470	8.72
2018	677,168	-13.42	49,943,607	24.49
2019	691,699	2.15	57,900,863	15.93
2020	78,290	-88.68	22,629,085	-60.92

Source: Regional Youth, Sport, and Tourism Service of Central Java Province, 2021

The number of foreign and domestic tourists in Central Java Province from 2013 to 2019 showed positive trend, decreased slightly in 2017-2018 in foreign visit. Overall, before the COVID-19 pandemic in 2020, conditions werw relatively better from year to year.

Tourism subsector has also proved to contribute large share to Local Own-Source Revenue (PAD) of Central Java Province. The tourism subsector of its PAD consists of 5 sources, i.e. hotel and restaurant taxes, entertainment taxes, tourist object charges and attractions, tourism business permit fees, and other fees assets owned by the Local Government (rent/contract/profit sharing). Here is the data of Local Own-Source Revenue (PAD) of Central Java Province.

Table 2. Tourism Subsector Contributon to Local Own-Source Revenue (PAD) of
Central Java Province 2014-2018

No.	Year	Tourism subsector contribution to PAD (Rupiah)
1.	2014	232,510,898,616
2.	2015	238,373,330,846
3.	2016	262,984,817,326
4.	2017	212,570,844,806
5.	2018	301,622,707,421

Source: Statistics Indonesia, 2019

Based on Table 4, the tourism subsector experienced fluctuations during the period of 5 years. In 2015-2016 it experienced an increase from 238,373,330,846 rupiahs to 262,984,817,326 rupiahs while in 2017 it decreased to 212,570,844,806 rupiahs, then turned back, in 2018 it increased significantly to 301,622,707,421 rupiahs. This subsector was sourced from local taxes or levies on tourism, hotel and restaurant taxes.

2. Literature Review

Economic growth means the development of fiscal production of goods and services prevailing in a country, such as the increase and the amount of production of industrial goods, the development of infrastructure, the increase in the number of schools, the increase in the production of service sectors and the increase in the production of capital goods, the measure that is always used is the growth rate of real national income achieved (Sukirno, 2011).

Harrod-Domar theory of economic growth has an assumption: (a) the economy is in full employment and capital goods that comprise the community are fully utilized, (b) the economy consists of two sectors, namely the household sector and the corporate sector, (c) the amount of savings is proportional to the size of national income, and (d) Marginal Propensity to Save (MPS) is fixed. This theory also stated that to grow the economy, new investments are needed as additional capital stock which said that if you want to grow, the economy must save and invest a certain proportion of total output. The more savings and then invested, the faster the economy will grow (Arsyad, 2004).

The link between tourism and economic growth with a focus on the macroeconomic impact of tourism was conducted by Balaguer & Cantavella-Jorda (2002): tourism has a direct impact on the economy, including employment creation, income redistribution, and strengthening the balance of payments. Tourist spending, as an alternative form of export, contributes in the form of foreign exchange earnings (balance of payments) and income derived from tourism expansion. Foreign exchange earnings from tourism can also be used to import capital goods to produce goods and services, which in turn leads to economic growth.

Sutrisno (2013) concluded that tourist attractions in Central Java Province include natural attractions, recreational parks, and also cultural arts. The number of attractions continues to grow each year and adds many more choices for tourists to enjoy the charm and unique culture and geographic environment. According to Amnar (2017) that the number of foreign tourists, the number of local tourists, the number of tourist attractions and the number of hotel rooms/ occupancy rates have a positive and significant effect on Sabang City regional economic growth.

3. Research Methodology

The purpose of the research is variables determining economic growth where focus on tourist variables. This research uses quantitative approach with panel data of variables, i.e. 5 years times series and 35 regencies and cities in Central Java Province. There are three main independent variables of tourist, i.e. number of visitors, number of tourist destinations, and number of hotels; and two control variables, i.e. capital and labor; and one regional variable, i.e. Local Own-Source

Revenue (PAD). The model is analyzed by multiple regression technique with the following equation:

$$EG_{it} = \beta_0 + \beta_1 LR_{it} + \beta_2 NV + \beta_3 ND_{it} + \beta_4 NH_{it} + e_{it} + \beta_5 K_{it} + \beta_6 L_{it} + e_{it}$$

where:

EG	=	Economic Growth of regency/city
LR	=	Local Own-Source Revenue (PAD)
NV	=	Number of visitors
ND	=	Number of tourist destination
NH	=	Number of hotels
K	=	Capital
L	=	Labor
β_0	=	Constant
$\beta_1 - \beta_4$	=	Coefficient of variables
e_{it}	=	Error term
i	=	regency / city
t	=	time (year)

There are several methods that can be used to estimate the specific model of regression model with panel data, i.e. Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM).

4. Result and Discussion

- *Chow Test*

  The Chow test is a test to determine whether the Common Effect model is better than the Fixed Effect model in estimating the panel data regression model which is then used for classic assumption tests and statistical tests (Widarjono, 2009). The following chow test results can be seen in the following table.

Table 3. The Result of Chow Test

Effects Test	Statistic	d.f.	Prob.
Cross-section F	2.301767	(34,134)	0.0004
Cross-section Chi-square	80.495182	34	0.0000

Source: *Output Eviews 10 (Processed data)*

Based on the results of the probability value for the cross-section of F, the probability value is 0.0004 < 0.05, the better model to use is the Common Effect Model compared to the Fixed Effect Model.

- *Hausman Test (LM)*

  By looking at the different characteristic in each region, there are two possible methods used, namely the fixed effect model and the random effect model. The Hausman test is a

method used to select the best model between the fixed effect model and the command effect model.

The Hausman test value is significant, that is, with the error probability of the Hausman test <0.05, the fixed effect model is better to use. However, if the Hausman test value is not significant, that is, the probability of error from the Hausman test> 0.05 means that the random effect model is better to use. The following results of the Hausman test in this study can be seen in the following table.

Table 4. The Result of Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	12.780247	6	0.0467

Source: *Output Eviews 10 (processed data)*

Based on the results of the Hausman test above, it shows that the probability of error from the Hausman test (0.0467) > 0.05 so that the Hausman test results show that the Fixed Effect Model is better to use than the Random Effect Model, so it can be concluded that in the factor analysis research factors that influence economic growth in regencies/cities in Central Java Province to test classical assumptions and statistical tests using the Fixed Effect Model.

- *Lagrange Multiplier Test*

This test is used to determine whether the Common Effect Model or the Random Effect Model is the most appropriate to be used in estimating panel data, the results of the research can be seen in the following table:

$$\text{LM}_{count} = \frac{nT}{2(T-1)}\left[\frac{\sum_{i=1}^{n}\left(\sum_{t-1}^{T}\bar{e}\right)^2}{\sum_{i=1}^{n}\sum_{t=1}^{T}e^2} - 1\right]^2 \text{ atau } \text{LM}_{count} = \frac{nT}{2(T-1)}\left[\frac{T^2\sum\bar{e}^2}{\sum e^2} - 1\right]^2$$

where:

N = number of companies
T = number of periods
$\sum\bar{e}^2$ = the average number of squares of the residuals
$\sum e^2$ = the sum of the residual squared

$$\text{LM}_{count} = \frac{35\times5}{2(5-1)} \times \left[\frac{5^2\times1.409088}{22.8178} - 1\right]^2$$

$$\text{LM}_{count} = \frac{175}{8} \times \left[\frac{35.23}{22.8178} - 1\right]^2$$

$$\text{LM}_{count} = 21.875 \times [1.5357 - 1]^2$$

$$\text{LM}_{count} = 21.875 \times [1.5357]^2$$

$$\text{LM}_{count} = 21.875 \times 0.2870$$

$$\text{LM}_{count} = 6.2783$$

Based on the LM count value is smaller than the Chi Square table (7; 0.05) = 14.0671, the model chosen is the Common Effect model (CEM).

Then, the model chosen (i.e. CEM) was analyzed by multiple regression to estimate the effect of those independent variables on economic growth. Based on the results of panel data regression with the Common Effect Model, the following results are obtained.

Table 5. The Result of Hausman Test

Variable	Coefficient	t-tabel	t-statistic	p-value
LR	0.431352	1.97410	4.902489	0.0000
NV	-0.063111	1.97410	-1.965317	0.0510
ND	0.006482	1.97410	2.115005	0.0359
NH	0.001149	1.97410	2.071672	0.0398
K	-1.59E-14	1.97410	-1.002464	0.3176
L	-0.059307	1.97410	-1.088682	0.2779

Source: *Output Eviews 10 (processed data)*

By using a confidence level of 95 percent ($\alpha = 0.05$) obtained t-table of 1.97410. From the Table 5 it can be seen that the independent variable with significant effect are Local Own-Source Revenue, number of tourist destination, and number of hotels.

The coefficient of Local Own-Source Revenue is 0.431352, meaning that if Local Own-Source Revenue increases by one percent, then economic growth will increase by 0.43 percent. The more tourists who visit tourist destinations, the more money spent in tourist destinations, either through taxes or hotel/residential levies, tourism objects and others, will go to Local Own-Source Revenue. In addition, tourism generates benefits to the regions such as small and medium enterprise development, new job creation, infrastructure improvements.

The coefficient of number of tourist destination is 0.006482, meaning that if the number of tourism objects increases by one percent, then economic growth will increase by 0.006 percent. This is due to the increase in tax levies due to an increase in the number of tourism destination in Central Java. The existence of a Regional Regulation which regulates the imposition of taxes on the tourism sector in a city area is also beneficial for the government. If the number of tourist destination houses increases, it is expected that it can increase income in the tourism sector and contribute significantly to economic growth. The results of this study are also in accordance with research conducted by Amnar et al (2017) which states that the number of tourism objects has a positive effect on economic growth in Sabang City and research conducted by Handayani in Central Java (2012) found that the number of tourism objects has a significant effect on growth. the economy of the Central Java region.

The coefficient of of number of hotels is 0.001149, meaning that if the number of hotels increases by one percent, then economic growth will increase by 0.0011 percent. The existence of lodging/hotels in Central Java Province provides benefits to the Regional Government through hotel tax revenue. With the existence of a Regional Regulation which regulates the imposition of taxes on hotel or lodging service users, the existence of the number of hotels or lodging houses in a city area is also beneficial for the government. If the number of lodging houses increases, it is hoped that it can increase hotel tax revenue which will later increase revenue in the tourism sector which can

significantly increase economic growth. The results of this study are in line with research conducted by Windayani and Budhi (2017) that the number of occupancy or hotels has a positive and significant effect on economic growth in Bali Province.

5. Conclusion

Based on the results of research on the effect of the tourism sector on economic growth in Central Java Province using panel data regression analysis with the Common Effect Model 2014-2018, it can be concluded that the research results are as follows: (1) Local Own-Source Revenue (PAD) in the tourism sector has a significant positive effect on economic growth in Central Java, (2) the number of tourist destination has a significant positive effect on economic growth in Central Java, (3) the number of hotels has a significant positive effect on economic growth in Central Java.

The implication of this research were the Government of Central Java should continue to advance and improve the tourism sector, besides the roles of entrepreneurs and tourism stakeholders to provide excellent services, such as improvement of infrastructures and easier access to the tourism destinations. Those high performances will increase tourist arrivals and then the Local Own-Source Revenue and finally the economic growth of Central Java. In addition, it will also attract for new investments in the tourism sector.

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