



THE EFFECT OF TOURISM ON ECONOMIC GROWTH: EMPIRICAL STUDY IN EASTERN INDONESIA

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Abstract

Previous empirical studies on the relationship of the tourism sector to economic growth have shown inconclusive results. Besides, the tourism sector has a low contribution to economic growth. This study aims to analyze the effect of local tourists, international tourists, the number of non-productive age residents, education, and health on economic growth in Eastern Indonesia. The research method in this study is using multiple linear regression with a panel data model. The data are annual data of 12 provinces with the period from 2010 to 2019. The results showed that local tourists, foreign tourists, the level of education and health had a significant positive effect on economic growth in Eastern Indonesia. Meanwhile, the non-productive age residents do not affect economic growth in Eastern Indonesia. The implications in this research is 1) the need to develop tourism infrastructure and 2) the need to improve the quality of human resources in education and health in Eastern Indonesia.

Abstrak

Studi empiris sebelumnya tentang hubungan sektor pariwisata dengan pertumbuhan ekonomi telah menunjukkan hasil yang inkonklusif. Selain itu, sektor pariwisata memiliki kontribusi yang rendah terhadap pertumbuhan ekonomi. Penelitian ini bertujuan untuk menganalisis pengaruh wisatawan lokal, wisatawan asing, jumlah penduduk usia non produktif, pendidikan, dan kesehatan terhadap pertumbuhan ekonomi di Kawasan Timur Indonesia. Metode penelitian dalam penelitian ini menggunakan regresi linier berganda dengan model data panel. Data tersebut merupakan data tahunan 12 provinsi dengan periode 2010 hingga 2019. Hasil penelitian menunjukkan bahwa wisatawan lokal, wisatawan mancanegara, tingkat pendidikan dan kesehatan berpengaruh positif signifikan terhadap pertumbuhan ekonomi di Kawasan Timur Indonesia. Sementara itu, penduduk usia non-produktif tidak mempengaruhi pertumbuhan ekonomi di Kawasan Timur Indonesia. Implikasi dari penelitian ini adalah 1) perlunya pengembangan infrastruktur pariwisata dan 2) perlunya peningkatan kualitas sumber daya manusia di bidang pendidikan dan kesehatan di Indonesia Timur.

INTRODUCTION

The tourism sector has a considerable contribution to economic growth in developed countries and some developing countries. Economic growth shows the extent to which economic activity will generate additional income in a certain period. In other words, the economy is said to experiencing growth if the real income of the community in a certain year is greater than the real income of the community in the previous year (Kuncoro, 2010). The tourism sector has an influence on economic growth in several ways 1) the tourism sector is a source of foreign exchange that can be used as capital in the production process, 2) the development of the tourism sector stimulates foreign and local investment in infrastructure, 3) the tourism sector has a direct contribution to providing the new employment and increased income (Brida *et al.* 2010; Sakai, 2006; Lee & Chang, 2018)

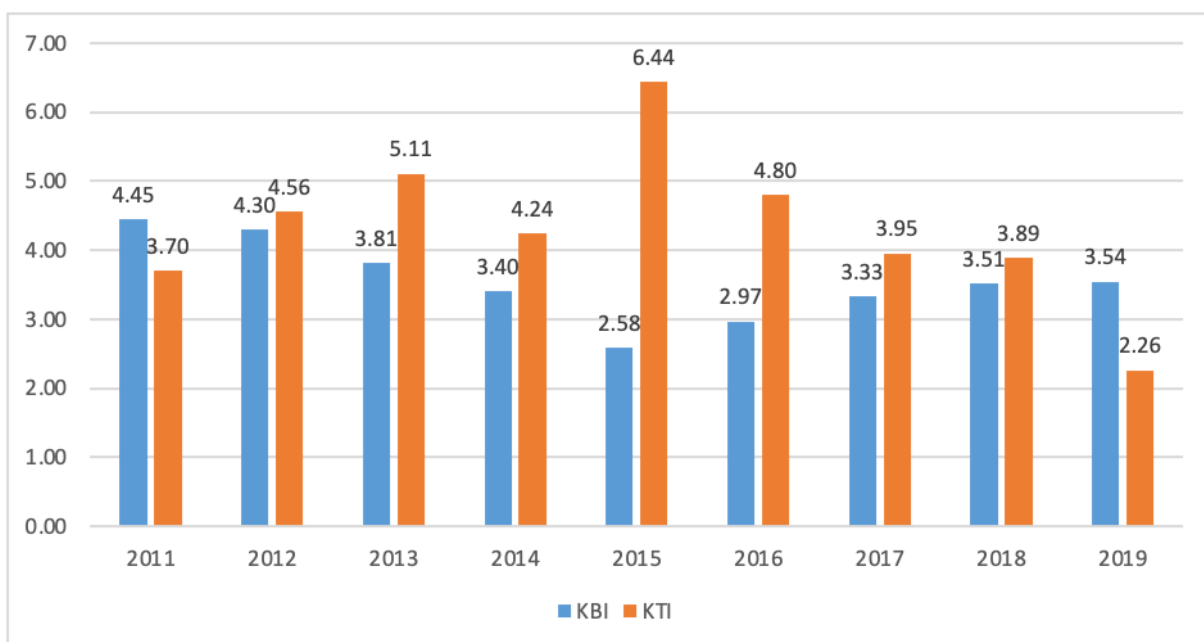
Mudrikah (2014) states that one of the sectors that contribute to the country's economic growth is the tourism sector. This sector has a strategic role because it is able to create tourism facilities that can encourage economic growth such as transportation, accommodation, entertainment, services, and others. Therefore tourism can increase foreign exchange earnings, create jobs, and stimulate the growth of the tourism industry which can trigger economic growth. Several previous studies agree that the tourism sector has a significant positive effect on economic growth such as (Balaguer & Cantavella, 2012; Gökovali & Bahar, 2006; Fayissa *et al.* 2008; Gautam, 2011; Nissan *et al.* 2011; Nizar, 2011; Lee & Brahmaasrene, 2013; Mudrikah, 2014; Amnar *et al.*, 2017; Govdeli & Direkci, 2017; and Paramati *et al.* 2017).

In contrast to the research of Du *et al.* (2014) and Webster & Ivanov (2014), who say that tourism does not influence economic growth. The empirical study of Webster & Ivanov (2014) illustrate that there appears to be no direct positive and statistically significant relationship between the contribution of tourism to economic growth in China, India, America, Japan, France, Spain, Italy, Norway, Iceland, and Qatar. Although some destinations have been effective at attracting local and non-local tourists and have been rated as highly competitive destinations, they have failed to take advantage of their competitiveness to provide economic benefits to local residents. This means that expanding tourism development may increase high tourism income but the benefit for local residents is very low because most of the income only flows to foreign developers and investors Webster & Ivanov (2014). The finding of Oh, (2005) shows the rejection of the theory of growth which is build upon tourism. This is based on an empirical study in South Korea which shows that in the year 1975 - 2001 the value-added revenue from tourism activities is about 3.5 percent of South Korea's GDP, so Oh concluded that there was no long-term relationship between tourism revenue and economic growth of South Korea.

Indonesia is divided into two regions, namely the Kawasan Barat Indonesia (KBI)/Western Region of Indonesia and the Kawasan Timur Indonesia (KTI)/Eastern Region of Indonesia. The western region of Indonesia consists of the islands of Sumatra, Kalimantan, and Java & Bali, while the eastern region of Indonesia consists of the islands of Nusa Tenggara, Sulawesi, Maluku, and Papua. The gap in economic development between KBI and KTI both in terms of economic growth, human resources, education, communication, and infrastructure has been a concern of the Indonesian government for a long time, as shown by the formation of the Dewan Pengembangan Kawasan Timur Indonesia (DP-KTI)/Development Council for Eastern Indonesia Region in 1993 and the establishment of Lembaga Percepatan Pembangunan Kawasan Timur Indonesia (PPKTI)/Institute for

the Acceleration of Development Eastern Indonesia Region in 2000. Furthermore, 2010 which is a medium-term target year for the realization of equitable development, especially in less developed areas such as KTI and remote areas with KBI, gaps still occur (Soseco, 2005).

Figure 1 shows a comparison of the economic growth in the Western Region of Indonesia (KBI) and the Eastern Region of Indonesia (KTI) in 2011-2019. If averaged from 2011-2019, economic growth in the KTI area tends to have a higher economic growth rate than in the KBI region. However, economic growth in Eastern Indonesia is dominated by the mining, quarrying, and agricultural sectors. Also, the contribution of the tourism sector to GDP in Indonesia was classified as very low in 2011, amounting to 4 percent to 4.8 in 2019, during that period there was only an increase of 0.9 percent (BPS, 2020). Therefore, with the existence of inconsistencies regarding the empirical studies in the influence of the tourism sector on economic growth, it is necessary to have further research on the influence of the tourism sector on economic growth.



Source: Central Bureau of Statistics, 2020 (processed)

Figure 1.
Economic Growth of KBI and KTI in 2011-2019

Besides, economic growth is inseparable from the influence of the quality of human capital as the driving force of the economy (Todaro & Smith, 2011). Theoretically, human capital is believed to be positively related to economic growth. Human capital is identified as one of the main determinants of economic growth and plays an important role in a country's technological progress (Teixeira & Queirós, 2016). Ali *et al.* (2018) show that human capital plays a positive role in GDP per capita growth only in the presence of better economic opportunities and high-quality legal institutions. The better the human capital that is built, the easier it will be to do business and trade domestically or internationally, thereby increasing economic growth. Human capital considers two measures, i.e. health and education. Nowak & Dahal (2016) say that keeping education as the top priority in public policy and preventing dropout rates at all levels of education can achieve sustainable economic

growth. The education sector also benefits the non-education sector on economic growth if the spatial effects of economic shocks are considered (Lv *et al.* 2017). Boachie (2017) in his research shows that good health significantly promotes economic growth, both in the short and long term. Researchers who state that human capital has a positive and significant effect on economic growth (Teixeira & Queirós 2016; Su & Liu, 2016; Wang & Liu, 2016; Zhu & Li, 2017; Lv *et al.* 2017; and Ali *et al.* 2018). According to (Purnomo *et al.* 2010 and Purnomo *et al.* 2021) high life expectancy can encourage residents to innovate, work longer, and can increase output and income, so that it will affect economic growth.

Economic growth is not only influenced by economic factors. Several studies show the influence of non-economic factors, one of which is the demographic factor. According to Syamsuddin (2013), one of the reasons for the development prospects to be further away is the rapid population growth, the concentration of the population in urban areas, and the higher dependency burden on the population of productive age. Maestas (2016) found that a 10 percent increase in a fraction of the population aged 60+, lowered the GDP per capita growth rate by 5.5 percent. Two-thirds of the decline was due to slower growth in the productivity of the labor force across the age distribution, while one-third was due to slower growth in the workforce.

Based on the description in above, the background of this research is that there are still many studies that have not discussed the conditions in Eastern Indonesia, especially the relationship between tourism on economic growth. In addition, several studies also stated different results, so this research needs to be done. Thus, the purpose of this study is to analyze local tourism, international tourism, non-productive population, education, and health on economic growth in Eastern Indonesia.

RESEARCH METHODS

This type of research is quantitative because the data used in the study are numeric (Supranto, 2000). This research is an empirical study conducted to analyze the influence of local tourists, foreign tourists, the number of non-productive age residents, education, and health on economic growth in Eastern Indonesia. The data used in this study is secondary data for the 2010-2019 period, in which the eastern region of Indonesia includes North Sulawesi, South Sulawesi, Central Sulawesi, Southeast Sulawesi, Gorontalo, West Sulawesi, Maluku, North Maluku, Papua, West Papua, East Nusa Tenggara and West Nusa Tenggara. Research observations are limited to 2019-2020. This is due to limited data sources, especially data on local tourism and international tourism. Sources of the data were obtained from institutions related to research problems such as the Central Bureau of Statistics.

This study uses panel data analysis. Panel data is a combination of time-series data and cross-section data. Cross-section data is data that is collected from time to time against many individuals, while time-series data is collected from time to time on an individual. Panel data regression analysis is a regression analysis tool in which data is collected individually (cross-section) and followed at a certain time (time-series) (Gujarati & Porter, 2013). The data consist of cross-section data (N) of 12 provinces (North Sulawesi, South Sulawesi, Central Sulawesi, Southeast Sulawesi, Gorontalo, West Sulawesi, Maluku, North Maluku, Papua, West Papua, East Nusa Tenggara, and West Nusa Tenggara) and time-series data (T) from 2010-2019, so the number of observation used is 120. The following equations are used in this study.

$$EG_{it} = \beta_0 + \beta_1 LT_{it} + \beta_2 FT_{it} + \beta_3 NPAR_{it} + \beta_4 E_{it} + \beta_5 H_{it} + e_{it} \dots \dots \dots (1)$$

where:

PE	= economic growth (PDRB)
B _{0,1,2,3,4,5}	= regression coefficient
LT	= local tourist (number of local tourists)
FT	= foreign tourist (number of foreign tourists)
NPAR	= non-productive age residents
E	= education (Average Length of Schooling)
H	= health (Life Expectancy)
e	= error
i	= cross-section component
t	= time-series component

This study will compare the three types of panel data regression outputs, i.e. the common-effects model, the fixed-effects model, and the random-effects model. To determine the best model, it can be done using the Chow test, Hausman test, and Lagrange Multiplier test (Gujarati & Porter, 2013). Besides, a good regression model must pass the classical assumptions test consisting of a test for normality, multicollinearity, heteroscedasticity, and autocorrelation, so that the regression model can be said as Best Linear Unbiased Estimator (Gujarati & Porter, 2013).

RESULTS AND DISCUSSION

Static panel data regression has three models, namely the common-effect model, the random-effects model, and the fixed-effects model. In determining the best model, it can be done by using the Chow test, Hausman test, and Lagrange Multiplier test (Gujarati & Porter, 2013). The first stage is conducting the chow test which is used to select the best model between the common-effect model and the fixed-effects model. Based on the Chow test, the result shows that the cross-section p-value of the chi-square is 0.0000. This value is smaller than the 0.05 percent level of significance, so based on the Chow test the regression model should use the fixed-effects model rather than the common-effect. Meanwhile, the Hausman test shows that the random cross-section value is 0.0012. This value is smaller when compared to the 0.05 percent level of significance, so the model used in this study is the fixed-effects model. Thus the Lagrange Multiplier test does not need to be done because based on the Chow and Hausman test the best model is the fixed-effects model.

Furthermore, a good regression model must pass the classical assumption test which includes normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test. The normality test is used to determine whether the residuals follow the normal distribution. Based on the skewness and kurtosis test, the probability value is 0.1082 or greater than the level of significance ($\alpha = 5\%$), so it can be stated that the residuals in the model are normally distributed. So that the assumption of normality is fulfilled.

Multicollinearity testing is intended to determine whether there is a relationship between independent variables. Multicollinearity testing is carried out by looking at the Variance Inflation

Factors value for each independent variable. The test criterion states that if the Variance Inflation Factors value is less than 10, it is stated that there is no multicollinearity indication. Table 1 shows the results of the Variance Inflation Factors value for each independent variable.

Table 1.
Multicollinearity Test

Number	Variable	VIF
1	Education (Average Length of Schooling)	1.87489
2	Health (Life Expectancy)	1.56246
3	Non-productive age residents	1.29273
4	International tourists	1.12327
5	Local tourists	1.21634

Source: Regression Output, 2022

Table 1 shows that all independent variables have a VIF value less than 10. Thus it can be stated that the model is declared to have no multicollinearity symptoms. So that the assumption of no-multicollinearity is fulfilled (Gujarati & Porter, 2013).

The heteroscedasticity assumption test is used to determine whether the residuals have a homogeneous variance or not. The assumption testing in this study is seen through the Glejser test. Based on the output of the Glejser test, it shows that the probability value of 0.1012 is greater than the level of significance ($\alpha = 5$ percent or 0.05). Thus the assumption of the absence of heteroscedasticity in the model is fulfilled. The last test is the autocorrelation test. We can use the Breusch-Godfrey test to find out if there is autocorrelation. The Breusch-Godfrey test value of 0.0876 is greater than the alpha significant of 5% or 0.05. Thus, the residuals generated from the estimated models are stated to have no autocorrelation (Gujarati & Porter, 2013).

The fixed-effects model in this study has passed the classical assumption test which consists of the autocorrelation test, multicollinearity test, heteroscedasticity test, and normality test. Thus the results of this study can be used and carried out a further discussion. The following is Table 2 which shows a summary of the regression result of the fixed-effects model used in this study.

Table 2.
Summary of the fixed-effects regression model

Number	Variable	Coefficient	t-Statistic	P-Value
1	Local tourists	0.006536	2.618604	0.0111
2	International tourists	0.007462	2.532145	0.0140
3	Education (Mean Year of Schooling)	2.972505	2.377896	0.0200
4	Health (Life Expectancy)	1.567394	2.116982	0.0364
5	Non-productive age residents	0.585465	0.327827	0.7440
<i>Constant</i>		-19.2265		
<i>Adjusted R-Squared</i>		0.8863		
<i>Prob. F-Statistic</i>		0.0000		

Source: Regression Output, 2022

The results of the analysis show that there is conformity with the hypothesis that has been presented with the support of empirical evidence, namely tourism, which is reflected in the number of visits by foreign tourists and domestic tourists, has a positive effect on economic growth in Eastern Indonesia. If the number of tourists (both foreign and domestic tourists) increases, then economic growth will also increase. This finding is in line with research The results of this research are in line with research conducted (Lee & Brahma, 2013; Mudrikah, 2014; Amnar *et al.*, 2017; Govdela & Direkci, 2017; and Paramati *et al.* 2017) shows that visiting tourists are able to increase the demand for goods and services offered by the local area with the assumption of *ceteris paribus*, so that it will have an impact on increasing people's income. With the consumptive activity of tourists, it will increase the income of the tourism industry sector for service payments, so that the amount of local tax revenue will increase. Moreover, Triani & Bandesa, (2018) said that tourism has a multiplier effect that can provide a trigger effect to create productive activities and drive other industries where this provides opportunities to increase foreign exchange and create job opportunities. In the end, public income, regional tax revenue, and the creation of new industries will have an impact on regional revenues which will increase economic growth.

Another thing that we can draw from the above results is that by including the education and health control variables, which are human capital, giving consistent results regarding the positive correlation between tourism and economic growth. Education gives a spatial effect that has a positive influence on other sectors (non-education) to achieve sustainable economic growth (Lv *et al.* 2017). This is confirmed by Nowak & Dahal (2016) which state that keeping education as a top priority in public policy and preventing dropout rates at all levels of education can achieve sustainable economic growth. An educated society not only has good skills, extensive knowledge, and the ability to adapt to technology but can also encourage business creation and foster a business climate (Purnomo, 2012) (Alhumami, 2004). In other words, education makes an active contribution to economic growth by increasing productivity (Subroto 2014). Work productivity is also supported by residents who have a good health level (Atmawikarta, 2009). Atmawikarta (2009) also explains that health quality is one of the basic foundations for society to increase learning capacity in schools. If it is widely accumulated, good health becomes one of the important inputs, one of which is to increase economic growth in the long term. Education and health have a positive effect on economic growth (Teixeira & Queirós 2016; Su & Liu, 2016; Wang & Liu, 2016; Zhu & Li 2017; Lv *et al.* 2017; and Ali *et al.* 2018).

In this study, the non-productive age residents variable that is included as control variables does not affect economic growth. This result is supported by Bloom *et al.* (2010) who prove that the non-productive population does not significantly hinder the rate of economic growth. This is because the growth of adults towards old age is less than the increase in the ratio of the labor force to the population. Also, in the eastern region of Indonesia, the population of non-productive age, especially those above 65 years of age, still work in the agriculture and fisheries sector, so that the non-productive age resident still has a contribution to economic growth, although it is not significant. Nur & Oktara (2020) found that the percentage of elderly people working in Eastern Indonesia was 51.11 percent, while the number of elderly who did not work was 48.89 percent. This indicates that there are still many elderly people in Eastern Indonesia who work because 1 in 2 elderly people in Eastern Indonesia work. Affandi (2009) stated that the elderly who live in rural areas are more likely to work than the elderly who live in urban areas. The cause of a large number of elderly people in rural areas

who are still working is because the opportunities to work for elderly people are greater in rural areas than in urban areas, especially in the agricultural sector.

CONCLUSION AND SUGGESTIONS

The tourism sector has an effect on economic growth. However, the contribution of the tourism sector to economic growth is still low, so it needs to be increased to encourage economic growth. The results showed that local tourists, foreign tourists, education, and health have significant positive effects on economic growth in Eastern Indonesia. Meanwhile, the non-productive age residents do not have a significant effect on economic growth in Eastern Indonesia. The implications of this study are 1) the need for tourism infrastructure development and 2) the need to improve the quality of human resources in the field of education and health in Eastern Indonesia.

The limitation of the research is only to analyze the effect of tourism, demography and human capital on economic growth. Suggestions for further research is take a sample of a wide research location such as country and can develop a research model, by including more than dependent variable like economic infrastructure, government spending, and so on.

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