

TOURISM AND ECONOMIC GROWTH: EVIDENCE FROM ASEAN COUNTRIES

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Abstract

Purpose

The purpose of this paper is to investigate the long-run relationship between tourism and economic growth in ASEAN countries as well as the causal linkages between them.

Design/methodology/approach

This study uses panel Autoregressive Distributed Lag (panel ARDL) and data from the World Tourism Organization and the World Development Indicator.

Findings

The results suggest that tourism has significant and positive impact on economic growth in the long run. Furthermore, the results also indicate that there is bidirectional causality between inbound tourism and economic growth.

Research limitations/implications

As the reference of the ASEAN government to increase the economic growth through improving the policy regarding tourism

Originality/value

Unlike previous research, this paper applied panel ARDL methods in analyzing the short-run and long-run relationship between tourism and economic growth.

Keywords:

Tourism, Economic growth, Panel ARDL, ASEAN.

INTRODUCTION

In recent decades, tourism has not only seen a considerable increase in the number of tourist destinations, but also experienced a significant expansion globally (UNWTO, 2019). According to Mishra et al. (2011), tourism has gone through an accelerated growth from a small size industry to one of the largest industries in the world. Tourism also has made a notable contribution to economic growth by increasing revenue, creating employment opportunities, developing infrastructure, and encouraging the private sector (Agaraj & Murati, 2009).

Tourism also plays an important role in developing local economy, especially through the existence of its indirect multiplier effect (Mazumder, Sultana, & Al-Mamun, 2013). As an economy sector with an extensive coverage of services in both goods and service industries, tourism has a comprehensive linkage with many other industries (ASEAN-Japan Centre, 2018). As a consequence, due to its large influence on the economy, tourism has a considerable multiplier effect. Hence, tourism can be a prominent industry in stimulating economic growth.

Despite tourism's important and increasing role in the economy, few studies on its connection to economic growth exist in literature. A study by Balaguer and Cantavella-Jorda (2002) first proposed the tourism-led growth (TLG) hypothesis. Theoretically, the TLG hypothesis was derived from the export-led growth (ELG) hypothesis which postulates that apart from increasing

labor and capital, economic growth can also be generated by export expansion, besides increasing labor and capital.

According to the TLG hypothesis, tourism is a main factor of overall long-term economic growth. It is important for the governments to identify the empirical validity of the TLG hypothesis in their country or region to enhance the allocation of resources in order to develop tourism industries (Shahzad, Shahbaz, Ferrer, & Kumar, 2017). The empirical analysis of TLG hypothesis' validity in a group of countries, such as ASEAN, is beneficial to achieve a better understanding of the relationship between tourism and economic growth, as well as to identify possible divergences among countries. On the other hand, in cases in which the TLG hypothesis does not hold, it is clear that tourism policies and structure of the involved countries need a comprehensive reassessment.

As tourism has been contributing significantly over the years to the economic development of Southeast Asian countries, it becomes intuitive to examine the impact of tourism industry to the economic growth in this region. Therefore, this study aims to examine whether or not a long-run relationship between tourism and economic growth exists in ASEAN. Furthermore, if a long-run relationship is proved to exist, this study will check the direction of the relationship. Although previous studies have investigated the tourism-economic growth relationship in other countries, only limited research has been conducted for the ASEAN region at the aggregate level. This paper attempts to address this gap in the literature. Moreover, unlike previous research, this paper applied panel ARDL methods in analyzing the short-run and long-run relationship between tourism and economic growth.

LITERATURE REVIEW

In the literature of economic growth, not so many studies focused on the services sector, especially in tourism sector. Among these few studies, most of them estimated that tourism industries have contributed in the economic through multiplier process. In the economic growth literature, the ability of tourism to support growth is called the “tourism-led growth hypothesis” (TLGH), which was proposed by Balaguer and Cantavella Jorda (2002). This hypothesis states that international tourism is a strategic factor that is beneficial for economic growth. Therefore, this hypothesis is offering a theoretical and empirical link between inbound tourism and economic growth. Theoretically, the TLGH was directly derived from the export-led growth hypothesis (ELGH) which state that economic growth can be generated not only by increasing the amount of labor and capital within the economy, but also by expanding exports.

International tourism is argued to have a beneficial impact on both long-run and short-run economic growth through various channels (Schubert, Brida, & Risso, 2011). To begin with, in many countries, tourism is a notable source of foreign exchange. Many countries, especially developing countries, use the foreign exchange they earned from international tourism for financing imports as well as managing the level of international reserves.

Furthermore, tourism plays an important role in stimulating investments in new infrastructure, labor and competition. As other economic sector, the tourism sector is also based on four main production factors: labor, physical capital, technology, and environmental resources. The development of tourism industries is believed to be able to generate job opportunity since tourism is a labor-intensive sector. Even though tourism sector is argued as a low-tech sector and the workers in this field are considered as low-skilled labor, an increase in human capital endowments is always beneficial (Liberto, 2013). As tourism contribute in employment opportunities, the rapid

growth of tourism would also lead to a growth of household incomes, both directly and indirectly.

Globalization process might encourage rapid expansion of international tourism. The improvements of globalization process led to an enhancement of trade among countries, and as a consequence, it will increase export facilitation, in which tourism is being included. The study by Kulendran and Wilson (2000) indicates the significance of international trade on tourism. Their study suggested a unidirectional causal relationship running from total trade to total travel in United States of America and United Kingdom. Kadir and Jusoff (2010) also found a unidirectional causality running from total trade to tourism receipts in Malaysia. However, result from Kartircioglu (2009b) showed a one-way causality from international tourist arrivals to international trade in Cyprus.

In recent years, analysis of the relationship between tourism and economic growth has become a subject of interest in the economic studies. The reason is that understanding the causal relationship between them is important in developing tourism and growth policies. Many studies have examined the causal relationship between tourism and economic growth, but the results are inconclusive. The findings can be categorized into four categories: tourism-led growth, growth-led tourism, bi-directional, and neutrality. Tourism-led growth proposes a unidirectional relationship running from tourism to economic growth. Growth-led tourism suggests a unidirectional causality running from economic growth to tourism expansion. Bi-directional causality, referred to as “feedback causality” in several studies, indicates that there is bi-directional causality between inbound tourism and economic growth. Lastly, neutrality shows no causality exists between tourism and economic growth.

Balaguer and Cantavella-Jorda (2002) have analyzed the role of tourism in the long-run

economic development in Spain. Their study found that the increase in international tourism in Spain has produced multiplier effects over time. They subsequently were the first to propose the tourism-led economic growth hypothesis (TLGH), which argues for a unidirectional causality running from tourism to economic growth. This hypothesis then became popular among researchers wanting to observe the relationship between expansion of the tourism industry and economic growth. Brida (2010), using the same methods as Balaguer and Cantavella-Jorda, also found the same result. The results from Brida and Risso (2009), Kreishan (2011), and Li, Mahmood, Abdullah, and Chuan (2013) confirm the tourism-led growth hypothesis by using vector error correction model (VECM) methods. The same results were also confirmed by Akinboade and Braimoh (2010) using the VAR model, Katircioğlu et al. (2010), Kibara, Odhiambo, and Njuguna (2012), Jalil et al. (2013) using ARDL methods, Shih and Do (2016), Narayan et al. (2010), Jimenez (2008), Norsiah Kadir and Mohd Zaini Abd Karim (2012), and Tang and Tan (2013).

Oh (2005) examined causality between tourism and economic growth in Korea using the Engle-Granger two-stage approach and bivariate Vector Autoregression (VAR). His findings indicate the existence of a short-run relationship between tourism and economic growth but not of a long-run relationship. The causality result from this study shows that there is a one-way causal effect running from economic growth to tourism development in Korea. Similar to Oh (2005), studies by Narayan (2004), Lee (2012), and Aratuo et al. (2019) who used ARDL methods, as well as Lee (2012) and Alhowaish (2016) also suggest growth-led tourism.

Dritsakis (2004) analyzed the tourism and economic-growth nexus in Greece. He used the vector error correction model (VECM) and Granger causality to examine the relationship among

tourism earnings, GDP, and exchange rate. The results indicate long-run relationships among variables and the causality test indicates a bidirectional causality, meaning that tourism and economic growth are affecting each other.

Ozturk and Ali (2009) conducted similar research in Turkey during the period 1987-2007. They used two econometric methods: a vector error correction model (VECM) and an autoregressive distributed lag model (ARDL). Surprisingly, the results show no unique long-term or equilibrium relationship between the real GDP and international tourism or known as neutrality. Ekanayake and Long (2012), Tugcu (2014), and Chou (2013) also suggest similar findings. The results of these studies imply that the governments of these countries should focus on economic policies to promote tourism as a potential source of economic growth.

Tourism in ASEAN

As a region located in the equatorial area, ASEAN has abundant tourism potential. International tourists have acknowledged that Southeast Asia is rich of the cultural heritage and the natural environment. Mazumder, Sultana, & Al-Mamun (2013) argue that if tourism is developed in an aggregated manner, will contribute to the region's economic growth. However, the importance of tourism in a nation or region is not only about its contribution to general economic growth, but also about the growth of tourism industry which can affect the economic, social, and and improving the welfare of its population in an appropriate condition of its structural basis (Chou, 2013).

Even though tourism has substantial contribution ASEAN economy, only limited studies has investigated the relationship between tourism and economic growth in ASEAN at the aggregate

level. Most studies examined the relationship between tourism and economic growth either in a single country, bilateral analysis, or only several countries within ASEAN. Furthermore, the results of the studies are still inconclusive. Kadir and Karim (2012) studied about tourism and economic growth nexus in 6 ASEAN countries found unidirectional causalities running from tourism to economic growth. Li, Mahmood and Abdullah (2013) and Shin and Do (2016) in their study in Malaysia and Vietnam respectively, has found similar results. In contrast to the mentioned research, Lee (2012) found that tourism the causalities running from economic growth to tourism in Singapore. Furthermore, Trang, Duc, and Dung (2013) suggests that there are bidirectional causalities between tourism and economic growth in Vietnam.

RESEARCH METHOD

This research used panel dataset from 10 ASEAN countries over the period from 1995 to 2019. The data for tourist arrivals were obtained from The World Tourism Organization (UNWTO), and the data for other variables downloaded from the World Development Indicator (WDI) provided by the World Bank. The variable of interest in this study is the number of tourist arrivals, which depicts the number of tourists arriving in a country in a particular period. The dependent variable is real GDP per capita, the variable of interest is number of tourists arrival, and the control variables are gross capital formation, and inflation. GDP per capita is measured at 2010 constant prices and physical capital is the gross fixed capital formation as a percentage of GDP.

This study first conducted a stationary or unit root test to confirm whether the variables were nonstationary or stationary at the level using Im, Pesaran and Shin (IPS) test and Levin, Lin

Chu (LLC) test. In order to evaluate the presence of long-run relationship among variables, panel cointegration tests of Pedroni and Kao were applied. Once the long-run relationship was verified, the long-run relationship was estimated using Panel ARDL methods. Furthermore, to discuss causality between tourism and economic growth, the Granger causality test was applied. The Granger causality test is used to identify whether one time series is useful in forecasting another. This test evaluated the short-run dynamics of the variables used in this analysis.

In estimating a long-run relationship, the ordinary least squares (OLS) estimation may yield an asymptotically biased estimator. In addition, possible correlation between the mean-differenced independent variables and the white noise term may cause standard autoregressive distributive lag (ARDL) models to suffer from biased estimators in panel data models with fixed effects. To mitigate such an issue, this study followed the methods of Jalil et al. (2013), and applied the panel ARDL methods. The ARDL model distinguishes between short- and long-run coefficients and can be reliably used on short sample periods. The panel ARDL model used in this research is as follow:

$$\begin{aligned} \ln y_{it} = & \sum_{j=1}^p \alpha_{1,ij} \ln y_{i,t-j} + \sum_{j=0}^q \alpha_{2,ij} \ln tour_{i,t-j} \\ & + \sum_{j=0}^q \alpha_{3,ij} inflation_{i,t-j} + \sum_{j=0}^q \alpha_{4,ij} \ln capital_{i,t-j} + \mu_i + \varepsilon_{it} \end{aligned} \quad (1)$$

Real GDP per capita, number of tourist arrivals, inflation rate, and gross capital formation in country i and at year t are represented by y_{it} , $lntour_{it}$, $inflation_{it}$, and $lncapital_{it}$ respectively. μ_i depicts group specific effect, and ϵ_{it} is the error term which is assumed to be white noise and varies across countries and time. All variables other than inflation are transformed into natural logarithm form.

Once a long-run relationship is established between the dependent variables and the regressors, equation (1) can be expressed as follow:

$$\begin{aligned} \Delta \ln y_{it} = & \sum_{j=1}^p \alpha_{1,ij} \Delta \ln y_{i,t-j} + \sum_{j=0}^q \alpha_{2,ij} \Delta lntour_{i,t-j} + \sum_{j=0}^q \alpha_{3,ij} \Delta inflation_{i,t-j} \\ & + \sum_{j=0}^q \alpha_{4,ij} \Delta lncapital_{i,t-j} + \theta_i ECT_{i,t-1} + \mu_i + \epsilon_{it} \end{aligned} \quad (2)$$

θ_i represents the error-correcting speed of adjustment term, which captures the speed of adjustment for any deviation from the long-term relationship. The value of this parameter is expected to be significantly negative under the prior assumption that the variables show a return to long-term equilibrium.

To estimate the panel ARDL regression, the pooled mean group (PMG) and mean group

(MG) estimators are used. PMG estimator allows the intercepts, short-run coefficients, and error variances to differ freely across groups. The MG approach estimates separate equations for each cross-sectional unit and computes the coefficient means, thereby providing consistent estimates of the average of the coefficients, although neglecting the fact that certain coefficients may be homogeneous across the units. The final step in this empirical analysis is to test the direction of causality between tourism and economic growth. This study will use panel causality test proposed by Dumitrescu and Hurlin (2012).

RESULT AND DISCUSSION

Panel unit root test

The first step in this study was to investigate the stationary of each variable by performing a unit root test. To check the stationarity, this study conducted the Im-Pesaran-Shin (IPS) unit root test. This unit root test is an extension of the augmented Dickey-Fuller and Phillips-Perron tests, which allow for individual unit-root process across cross sections. The null hypothesis of this test is the existence of a unit root. To verify stationarity, this study also run Levin, Lin and Chu (LLC) test for testing panel unit root. The result of LLC test will be presented in table 2.

Table 1. Panel Unit Root Test

IPS	IPS
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GDP	5.455	(1.000)	Δ GDP	-5.892***	(0.000)
Tourist arrival	5.416	(1.000)	Δ Tourist arrival	-6.407***	(0.000)
inflation	-4.819***	(0.000)	Δ inflation	-14.078***	(0.000)
Capital formation	-4.587***	(0.000)	Δ Capital formation	-6.425***	(0.000)

p values are in parenthesis. Individual intercept and individual linear trend are included for all variables.

* 10% significance levels

** 5% significance levels

*** 1% significance levels

Table 1 shows the results of the panel unit root test for each variable at the level and first difference. In testing stationarity, individual intercept and individual linear trend are included for all variables. The results show that inflation and capital formation are statistically significant at the level, which means that this variable is stationary at level. The other variables (GDP and tourist arrival) are statistically insignificant at level. These results confirm that those variables contain a unit root. However, at the first difference, those variables are statistically significant, confirms that those variables are stationary at first-difference. Therefore, the test results confirm that inflation

and capital formation are I(0), and lny and lntour are I(1). Thus, we choose to apply panel ARDL analysis.

Table 2. Panel Unit Root Tests – Levin, Lin and Chu (LLC)

	LLC			LLC	
GDP	-1.613	(0.053)	Δ GDP	-6.053***	(0.000)
Tourist arrival	0.433	(0.667)	Δ Tourist arrival	-5.609***	(0.000)
inflation	-6.816***	(0.000)	Δ inflation	-11.827***	(0.000)
Capital formation	-5.077***	(0.000)	Δ Capital formation	-4.700***	(0.000)

p values are in parenthesis.

*** 1% significance levels

** 5% significance levels

* 10% significance levels

Panel cointegration test

Once we have confirmed the stationary level of each variable, the next step is to check the existence of the long-run relationship among the variables. This study employed Pedroni cointegration test. This Pedroni test evaluates the stationarity of residual e_{it} . If this residual is

stationary, the null hypothesis of no cointegration will be rejected.

Table 3. Pedroni Cointegration Test

Within dimension (panel statistics)		Between dimension (individual statistic)	
Test	Statistics	Test	Statistics
Panel v-Statistic	-0.4327	Group rho-Statistic	2.43**
Panel rho-Statistic	1.897*	Group PP-Statistic	2.803**
Panel PP-Statistic	2.177**	Group ADF-Statistic	2.67**
Panel ADF-Statistic	3.658***		

* 10% significance levels

** 5% significance levels

*** 1% significance levels

Table 3 presents the Pedroni cointegration test results. The results suggest all individual statistics and panel PP-statistic are significant at 5% significance level. Panel rho-statistic and panel ADF statistic are significant at 10% and 1% significance level respectively. As six out of seven test statistics in Pedroni cointegration test are significant, it can be concluded that the null hypothesis of no cointegration can be rejected at 10%, 5%, or 1% significance level. Thus, cointegration or

long-term relationship among variables exists.

Table 4. Kao Residual Cointegration Test

	Statistic	<i>P</i> value
ADF	-2.125**	0.017
Residual variance	0.002	
HAC variance	0.010	

* 10% significance levels

** 5% significance levels

*** 1% significance levels

As a robustness check, this research applied the Kao cointegration test to confirm the validity of the Pedroni cointegration test results. The result of this test is presented in the table 4.

Long run and short run estimation

In order to determine the most appropriate estimator for this model, this study conducted Hausman test. The result of Hausman test is presented in table 5. The calculated Hausman test is 5.22 with p-value of 0.156. Here we can conclude that the null hypothesis cannot be rejected and

PMG estimator is preferred.

Table 5. Hausman Test

	Coef.
Chi-Square	5.22
p-value	0.156

The result of PMG estimator is presented in table 6. In the long-run equation, the results revealed that number of tourists arrival having the coefficient of 0.518 which is positive and significant at 1% significance level. This result confirms the tourism-led growth hypothesis, that is the improvements in the tourism sector may lead to higher level of economic growth. The results of our study are in line with the recent empirical studies, such as Aratuo et al. (2019), Shih and Do (2016), Alhowaish (2016), Tugcu (2014), Chou (2013), Tang and Tan (2013), Li, Mahmood, Abdullah, and Chuan (2013), Jalil et al. (2013), Trang, Duc, and Dung (2013), Ridderstaat, Croes, and Nijkamp (2013) and Katircioglu (2009).

Table 6. Panel ARDL Estimation - Pooled Mean Group (2,1,1,1)

Coefficient	Standard error
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Long-run equation

Intour	0.518***	0.043
inflation	-0.050***	0.017
lncapital	-0.201	0.124

Short-run equation

ECT	-0.032*	0.018
Δ Intour	0.054**	0.024
Δ inflation	0.001	0.001
Δ lncapital	0.064	0.029
constant	0.083	0.034

* 10% significance levels

** 5% significance levels

*** 1% significance levels

To capture the short-run dynamics of the system and its coefficient, an error correction term (ECT) is required. It measures the speed of adjustment to obtain equilibrium in the event of shocks to the system. The error correction term value is -0.032, and significantly negative under 10%

significance level. This result confirms the existence of a stable long-run relationship, implying that disequilibria of the previous year's shock adjusting back to the long-run equilibrium in the current year. The results also show that in the short-run, international tourist arrival have positive coefficients 0.054 and significant at 5% significance level. It implies that international tourist arrival also has positive and significant impact in the short-run.

From the previous estimation process, we have found that a long-run relationship between tourism development and economic growth is exist in ASEAN. However, the direction of causality is not clear from the panel ARDL cointegration test. Therefore, we run panel causality test for a better understanding of the direction of causality.

Panel causality test

After we got the results that international tourist's arrival has positive and significant impact to economic growth, we would like to observe the direction of the relationship. To observed the direction of causality between tourism and economic growth, this paper performed Dumitrescu and Hurlin panel causality test.

The null hypothesis of the Dumitrescu–Hurlin panel causality test is that there is no causal relationship for any cross section of the panel. This is called the homogeneous noncausality hypothesis ($H_0: \beta_i = 0$ for any $i = 1, 2, \dots, N$), and the alternative hypothesis is that a causal relationship exists in at least one cross-sectional unit.

To investigate the Granger causality, all variables must be stationary. Since $Intour$ and lny are not stationary at the level but stationary at the first difference, we use the first differences to conduct the Granger causality tests. The lag selection is based on Schwarz information criterion

(SIC), which maximum lag length is 1. The results of this test are reported in table 7.

Table 7. Dumitrescu and Hurlin panel causality test

Null hypothesis	W-Stat.	Zbar-Stat.
LNTOUR does not Granger-cause LNY	2.751	3.916***
LNY does not Granger-cause LNTOUR	3.183	4.882***

* 10% significance levels

** 5% significance levels

*** 1% significance levels

Table 7 showed that null hypothesis of tourism does not Granger cause GDP and GDP does not Granger cause tourism are rejected at 1% significance level. Different from previous study by Jalil et al. (2013) which found a unidirectional causality running from tourism to economic growth, this research confirms that there is bidirectional causality between inbound tourism and economic growth in ASEAN.

There are limited number of empirical research that tests for a two-way causality between tourism and economic growth and found bidirectional causality. In fact, the results vary across countries and time periods considered in these studies. However, the result of this study is in line with the studies by Dritsakis (2004), Durbarry (2004), Sarmidi and Salleh (2011), Trang, Duc, and Dung (2013), Khalil, Mehmood, and Waliullah (2007), Kim, Chen, and Jang (2006) and Tugcu

(2014).

CONCLUSION

Tourism has experienced massive expansion in both developed and developing countries, including ASEAN. Even though the contribution of tourism to ASEAN's GDP is not as great as the contribution of the primary sector, tourism significant impact on employment. According to WTTC (2021), the total contribution to ASEAN GDP was only around 12.63% in 2018. However, tourism is a labor-intensive industry responsible for 38 million jobs opportunities, and this is predicted to increase. In addition, the number of international visitor arrivals in ASEAN reached 143.5 million in 2019, an increase of 266.6% from 2005. Therefore, as a sector covering a wide range of interrelated industry, tourism has the capacity to stimulate trade and economic growth, and could be considered an additional source of investment, jobs, and economic growth for ASEAN members.

The main objective of this paper was to examine the relationship between tourism and economic growth in Southeast Asia countries, using annual data from 1995 – 2019. The long-run and short-run dynamics were estimated using panel autoregressive distributed lag model (Panel ARDL). Therefore, to observe the causality between tourism and economic growth, this study used the Dumitrescu–Hurlin panel causality test.

The regression results show positive and significant coefficients of international tourist arrivals both in the short run and in the long run. The error correction term (ECT) shows significantly negative results, confirming the existence of a stable long-run relationship between tourism and economic growth. Therefore, it can be concluded that the results of this research support the tourism-led growth hypothesis.

In order to analyze the causality between tourism and economic growth, the Dumitrescu–Hurlin panel causality test was applied. The test results show a bidirectional causality between tourism receipts and economic growth. We can reject the Dumitrescu–Hurlin panel causality tests null hypothesis based on Zbar-stat (3.916) for causality from tourism to economic growth, and Zbar-stat (4.882) for causality from economic growth to tourism, which are significant at 1% significance level. This result is slightly different from a study by Jalil et. al (2013) which only identified unidirectional causality running from tourism to economic growth, but is in line with other studies, such as those by Dritsakis (2004), Durbarry (2004), Ridderstaat, Croes, and Nijkamp (2013), Trang, Duc, and Dung (2013), Khalil, Mehmood, and Waliullah (2007), Kim, Chen, and Jang (2006) and Tugcu (2014) who also found a bidirectional relationship between tourism and economic growth.

Based on the empirical results, the tourism industry in ASEAN can be regarded as an essential channel to promote economic growth. Hence, it will be beneficial for governments to implement economic policies to stimulate economic growth through the tourism sector. All governments in ASEAN countries should commit to help expand their tourism industry besides focusing their attention on long-run policies. Given suitable investment and development policies, tourism may be expected to continue to expand in the future.

As causality is bidirectional, improving economic growth and increasing real GDP could have beneficial impact on tourism. Given a better higher economic growth, the government could promote the quality of tourism-related infrastructure and contribute to sustainable growth of the tourism sector. The provision of these infrastructure will increase the attractiveness of a tourist destination. Moreover, a better economic lead to a better business environment supporting the

development of tourism-related industries which then attracting international tourists into the country.

This study has some limitations. This study only examines international tourism as the main factor of economic growth, without considering the domestic tourism factor. This might be a reason why this study obtained a different result from previous research. However, future research can investigate the impact of tourism development on economic growth by considering domestic tourism as well as international tourism.

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