

## Conference Paper

# Does Tourism Development Matter for the Economic Growth of Southeast Asian Countries?

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**ORCID:**Trisetia Wijjayanti: <http://orcid.org/0000-0001-8631-4892>**Abstract**

Tourism can be a positive trigger to stimulate economic activities and growth. This study examined the relationships between domestic tourism spending, international tourism receipts and the economic growth of eight Southeast Asian countries from 1995-2018 using a Pedroni cointegration test, fully-modified OLS (FMLOS), dynamic OLS (DOLS) and Granger causality tests. The results showed a strong long-term relationship between economic growth, domestic tourism spending and international tourism receipts. Based on the results, Southeast Asian countries should increase tourism development to improve economic growth.

**Keywords:** economic growth, domestic tourism, international tourism, tourism development

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## 1. Introduction

Tourism is one of the sectors that contribute to the rapid and crucial growth of an economy. A well-developed tourism sector has the ability to maximize export revenues and increase economic growth (Giaoutzi & Nijkamp, 2017; Mowforth & Munt, 2015; Tugcu, 2014). This industry is considered a positive contributor to the direct and indirect growth of an economy. Dwyer et al. (2004) stated that tourism also has a significant effect on economic activity; therefore, many countries use it as one of the main factors to boost their economy. According to Modeste (1995), tourism is one of the positive factors that support a country's economic growth due to its ability to: (1) generate state revenue due to currency exchange, (2) facilitate the utilization of resources owned by the state, (3) create employment, (4) stimulate infrastructure development (5) produce knowledge and technology transfer in the economic field, (6) provide positively interrelated sectors in a country.

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Countries located in the Southeast Asian region comprises numerous natural diversities, as well as tangible and intangible cultural tourism resources, which are located in both urban and rural areas. This region consists of 11 natural resources and 17 cultural heritages recognized by UNESCO as a world heritage list. This region continuously experienced a significant increment in the number of foreign tourists from 1995 to 2018 (24 years). According to Worldbank (2018), Thailand had the highest number of foreign tourist arrivals in Southeast Asia in 2018, generating a US \$ 65.24. Malaysia followed this with the US \$ 21.77, Singapore US \$ 20.42, and Indonesia US \$ 15.6, all of the calculations classified in billions.

This study was empirically carried out by countries that have made tourism a major economic sector due to its rapid growth per capita income (Lanza & Pigliaru, 2000). This idea provides the initiation of many studies that needed to verify the tourist-led growth hypothesis. Similarly, various studies have been carried out to determine the relationship between tourism and economic growth with empirical regulations used to interpret four main hypotheses (Chatziantoniou et al., 2013). The first and second hypotheses stated that there is an indirect causality relationship between the tourism-led economic growth – (TLEG) and economic-driven tourism growth– (EDTG). The third and fourth hypotheses support a two-way relationship between tourism and the economy, which shows no-causality (NC). Research conducted by Chou (2013) shows that the growth-hypotheses are found in Cyprus, Latvia, and Slovakia, while the opposite relationship exists in the Czech Republic and Poland, with feedback-hypotheses found in Estonia and Hungary. Furthermore, Bulgaria, Romania, and Slovenia experienced the neutrality-hypothesis of the causality relationship between tourism spending and economic growth. The top ten countries are based on the contribution of tourism activities to the gross domestic product of all small island nations (Schubert et al., 2011). Brau et al. (2007) stated that small-scale economic countries such as the Bahamas Islands, Virginia Islands, Cayman Islands, and Saint Lucia tend to develop by specializing in tourism activities rapidly. In these countries, tourism contributes to more than 60% of their gross domestic products (Vangeas Sr & Croes, 2003).

## 2. Literature Review

The tourism sector generates high revenues for countries; however, this does not directly have a significant impact on their economic growth. The number of foreign tourists in Malaysia has a unidirectional causality relationship with exports, imports, and trade (Kadir & Jusoff, 2010). This shows that an increase in the amount of trade,

exports, and imports has effective growth in the tourism sector due to business needs. Lean & Tang (2010) also stated that the TYDL Granger Causality test results support the existence of a stable tourism-led growth hypothesis in Malaysia. Arellano and Bond's panel data estimator found that the number of tourists per capita contributed to countries with low and middle incomes (Eugenio-Martin et al., 2004). According to Brida et al. (2020), heterogeneity is the relationship between countries' economic growth and the coherent tourism sector with outstanding business cycles. The panel unit root and cointegration approach were used by Lee & Chang (2008) to determine the possible occurrence of a long-term relationship between tourism development and economic growth in OECD and non-OECD countries in Asia, Latin America, and Africa. The empirical analysis results showed a significant effect on the development of tourism to the GDP of non-OECD countries compared to those with OECD. Nunkoo et al. (2020) stated that there is a positive and significant relationship in the TLEG hypothesis. The development of tourism in Jordan also shows a positive long-term economic relationship. Furthermore, the Granger causality test results showed the existence of a one-way causality of tourism income to economic growth (Kreishan, 2011). The above studies show that tourism development encourages economic growth in the listed countries.

However, the research conducted in Aruba using data from 1972-2011 and 1986-2011 with the econometrics methodology consisting of unit root testing, cointegration analysis, VECM, and Granger causality testing, confirmed the existence of a reciprocal relationship between tourism development and economic growth (Ridderstaat et al., 2014). Taiwan also found a long-term reciprocal relationship between tourism and economic growth (Kim et al., 2006). Lee & Chien (2008) study, using the cointegration test, also found that long-term tourism provides positive effects on Taiwan's economic growth. Tang (2011) re-investigated the validity of the tourism-led growth hypothesis for Malaysia and found that only 5 out of the 12 tourist arrivals from Australia, Brunei, China, Germany, Indonesia, Japan, Korea, Singapore, Taiwan, Thailand, Britain, and the United States contribute to economic growth. Due to the differences in the growth hypothesis in the existing literature, this research determines the relationship between tourism development from the domestic and international sides on economic growth in the Southeast Asian Region using the cointegration test and Granger Causality approach.

### 3. Data and Methodology

### 3.1. Data

The data used in this study are domestic tourism spending (DTS), international tourism receipt (ITR) and per capita real GDP (GROWTH) of 8 (eight) countries in Southeast Asia namely Malaysia, Indonesia, Singapore, Thailand, Philippines, Laos, Myanmar, and Cambodia, from 1995-2018. These data were obtained from <https://data.worldbank.org/>, <http://data.un.org/Default.aspx>, and <https://www.e-unwto.org/>

### 3.2. Methodology

A cointegration analysis panel was used to determine the causal relationship between domestic tourism spending (DTS), international tourism receipt (ITR), and economic growth (GROWTH). This research model includes three variables which are expressed in the following equation:

$$\ln\text{GROWTH}_{i,t} = \alpha_i + \beta_1 \ln\text{DTS}_t + \beta_2 \ln\text{ITR}_t + \varepsilon_{i,t}$$

For  $t = 1, \dots, T$ ;  $i = 1, \dots, N$ ;  $T$  and  $N$  denotes the number of observations and members in the panel, respectively. Spurious regression tends to occur between independent and dependent variables to produce mutually correlated variables. This arises from time-series data, where both the independent and dependent variables show an increasing tendency with time. False regression is obtained when the coefficient of determination has a high  $R^2$ , at a highly significant value ( $t$ ), and low DW.

Furthermore, a unit panel root test is performed to determine the stationary data used with a constant variant (Winarno, 2015). Levin et al. (2002) carried out a test to determine an alternative hypothesis where  $\rho_i$  is identical and negative. However, this is one of the most complicated tests due to the combination and use of data from different individuals into a single regression equation. Irrespective of the many complicated procedures and steps, there are two different implementations associated with this study. The first is to add the lag length, with the calculation of short and long-term variations at  $\rho = 0$ . Secondly, the long-term variants are dependent on the choice of the lag window and length. Therefore, the panel unit test conducted in this study uses the Levin, Lin & Chu\* root unit tests.

This study uses Johansen's methodology to cointegrate one or more non-stationary variables (series). For testing the long-term relationship between all variables, FMOLS and DOLS use in this research. Under the existence of cointegration relationship, the use of standard pooled least squares method may lead to biases estimations due to problems of serial correlation and endogeneity (Akpolat, 2014). Panels DOLS and

FMOLS methods are efficient techniques to eliminate these problems. Panel DOLS is a parametric method which is used to obtain long-run coefficients by taking into account the lead and lagged values of variables. Panel FMOLS is a method eliminating serial correlation effect by applying a nonparametric transformation to residuals which are obtained from cointegration regression.

## 4. Result

### 4.1. Descriptive Analysis

A total of eight countries in Southeast Asia were sampled in this study, namely Malaysia, Indonesia, Thailand, Singapore, the Philippines, Laos, Myanmar, and Cambodia.

The descriptive analysis on table 1 shows that the Philippine had the highest domestic tourism spending means of approximately 16.955 billion dollars/year from 1995 – 2018. This result also indicates that the Philippine citizens have a tremendous interest in domestic tourism. Furthermore, the analysis shows that Thailand is a country in Southeast Asia with the highest average International Tourism Receipt of 24 billion USD per year compared to other countries. This figure is far above the average International Tourism Receipt of other countries. Therefore, it is the most visited country by international tourists in Southeast Asia. The difference between Thailand's International Tourism Receipt and Malaysia as the second country is 10.3 billion.

The different results were achieved with Domestic and International Tourism using the descriptive analysis per capita real GDP shows that although Thailand is the country with the most significant International Tourism Receipt and the Philippines had the largest Domestic Spending. The two countries are not even in the top 2 rankings per capita real GDP. The country with the highest per capita real GDP in Singapore, with an average of 38781,350 billion USD, followed by Malaysia with 7117,200 billion USD.

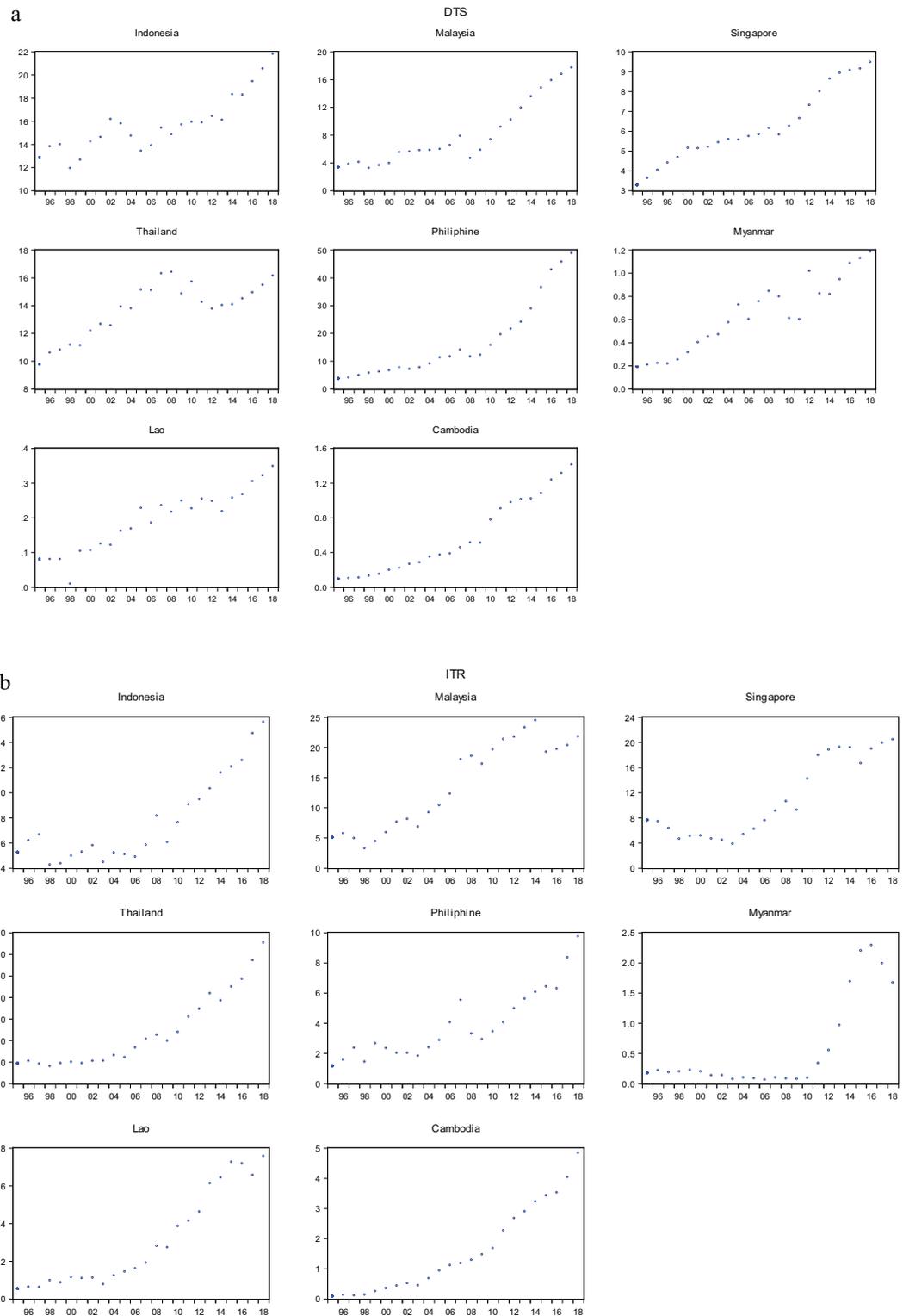
### 4.2. Unit Root Test

A panel unit root test is performed to determine the stationary state of the data to be examined using time series. The range of sigma is easily used to determine the stationarity tests whether the data is constant over the period under study or shows a seasonal positive and negative pattern. Stationary datasets can also be defined as datasets with a stable mean and variance, and much easier to model. The stationarity

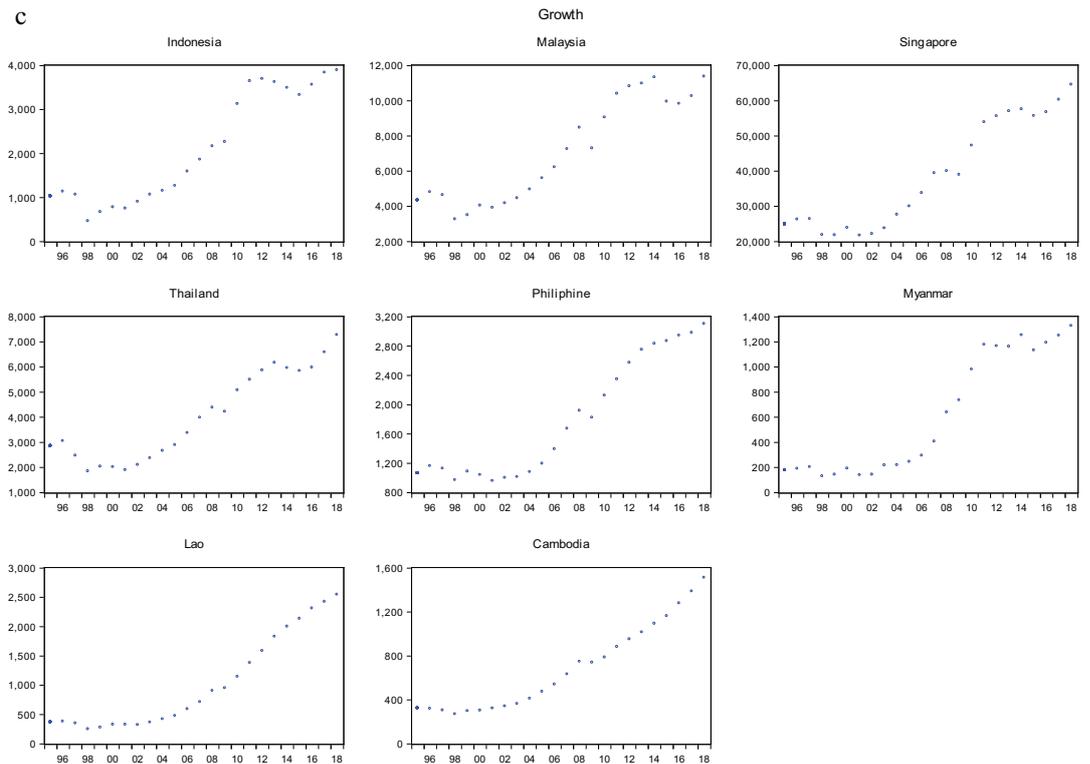
TABLE 1: Descriptive Analysis Result

Country	Mean	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis	Jarque-Bera
<b>domestic tourism spending (DTS)</b>							
Cambodia	0.577	1.409	0.090	0.432	0.541	1.861	2.471
Indonesia	15.691	21.801	11.934	2.473	0.845	3.203	2.898
Laos	0.191	0.348	0.009	0.088	-0.203	2.206	0.796
Malaysia	8.035	17.674	3.248	4.604	0.896	2.424	3.543
Myanmar	0.634	1.184	0.188	0.313	0.101	1.883	1.289
Philippine	16.955	48.799	3.639	13.850	1.162	3.068	5.403
Singapore	6.208	9.464	3.268	1.818	0.424	2.136	1.466
Thailand	13.713	16.404	9.735	1.943	-0.512	2.172	1.734
<b>international tourism receipt (ITR)</b>							
Cambodia	1.563	4.832	0.071	1.434	0.762	2.345	2.754
Indonesia	7.722	15.6	4.255	3.412	0.960	2.711	3.773
Laos	0.304	0.757	0.052	0.252	0.674	1.859	3.119
Malaysia	13.695	24.469	3.237	7.272	-0.043	1.362	2.690
Myanmar	0.574	2.289	0.059	0.764	1.340	3.105	7.194
Philippine	3.885	9.730	1.141	2.276	0.960	3.152	3.708
Singapore	10.927	20.416	3.842	6.188	0.420	1.470	3.045
Thailand	24.002	65.242	7.954	17.112	0.969	2.765	3.812
<b>per capita real GDP</b>							
Cambodia	684.891	1510.325	268.990	392.026	0.635	2.130	2.371
Indonesia	2097.860	3893.596	463.948	1251.406	0.262	1.377	2.908
Laos	1013.649	2542.487	248.839	795.125	0.731	1.997	3.146
Malaysia	7117.200	11373.230	3263.334	2922.660	0.182	1.408	2.668
Myanmar	612.447	1325.953	130.000	476.218	0.346	1.317	3.311
Philippine	1791.580	3102.713	957.190	800.674	0.426	1.531	2.886
Singapore	38781.350	64581.940	21700.020	15217.260	0.306	1.479	2.688
Thailand	4012.631	7273.563	1845.831	1762.507	0.292	1.618	2.251

test is simply conducted using time series data plots that do not show seasonal patterns. The dataset plots in this study are obtained as follows:



The scatterplot shows that the Domestic Tourism Spending (DTS), International Tourism Receipt (ITR), and Per Capita real GDP (GROWTH) increased from 1995 to 2018. The results of this scatterplot show a positive 'trend,' therefore, there is a possibility that the three variables' data are not stationary. To obtain an accurate decision, the



**Figure 1:** Scatterplot for (a) domestics’ tourism spending (DTS); (b) international tourist receipt (ITR); (c) per capita GDP (GROWTH) of eight Southeast Asian countries

results of this analysis are strengthened by stationary testing using the Levin, Lin & Chu common unit root test. The null hypothesis in the common unit root test is not stationary and accepted, assuming the p-value is greater than  $\alpha$  ( $0.05 = 5\%$ ). These are called "panel unit root," and are theoretically simple multiple-series of unit root tests implemented in the data structure. The following are the results of the unit root test panel on levels and first differences.

TABLE 2: Panel Unit Root Test Results

Variables	Level		First Difference	
	Statistic	Probability	Statistic	Probability
Growth	1.83405	0.9667	-5.70012	0.0000**
Domestic Tourism Spending	-1.21840	0.1115	-6.12047	0.0000**
International Tourism Receipt	0.42219	0.6636	-5.11981	0.0000**

Note: Years: 1995-2018

Table 2 shows the result that all variables are non-stationary panel in level, but in first differences all variables are stationary. The stationary for all countries in the first difference leads us to study the existence of a long-term relationship.

### 4.3. Johansen's Cointegration Test Result

The first test was conducted to determine the cointegration among the three variables studied, while the second examines the possibility of more than one cointegration model. The third test is used to determine the presence of more than two cointegration models. Johansen's cointegration tests result is shown in table 3.

TABLE 3: Johansen Fisher's Cointegration Test Result

Unrestricted Cointegration Rank Test (Trace and Maximum Eigenvalue)				
Hypothesized	Fisher Stat.*		Fisher Stat.*	
No. of CE(s)	(from trace test)	Prob.	(from max-eigen test)	Prob.
None	135.0	0.0000	120.1	0.0000
At most 1	38.75	0.0012	39.01	0.0011
At most 2	16.06	0.4491	16.06	0.4491

\* Probabilities are computed using asymptotic Chi-square distribution.

The results of the analysis in table 2 show that the none-level p-value on both trace and maximum eigenvalue is smaller than alpha (5%). Therefore, the null hypothesis is rejected, and there is cointegration relationship between variables.

### 4.4. Panel FMOLS and DOLS estimates

Estimating the long-term relationships pooled and groups using FMOLS and DOLS estimators. FMOLS and DOLS estimators give different results. It is important to note that the DOLS method has the disadvantage of reducing the number of degrees of freedom including leads and lags in the variables studied, which leads to less estimates. As the size of samples is important especially in the temporal dimension, the estimated DOLS can give acceptable results.

TABLE 4: Estimated long-term relationship

	FMOLS		DOLS	
	Pooled estimation	Grouped estimation	Pooled estimation	Grouped estimation
DTS	4.253810 (0.0000)**	3.220480 (0.0015)**	4.504074 (0.0000)**	2.399764 (0.0186)**
ITR	6.666275 (0.0000)**	6.870076 (0.0000)**	6.988235 (0.0000)**	5.078991 (0.0000)**

Table 4 presents the results of Fully-modified OLF (FMOLS) and Dynamic OLS (DOLS). The coefficients of the heterogenous panel in pooled and grouped estimation are positive and statistically significant at the 5% significance and given the variables are

expresses in natural logarithms, the coefficients can be interpreted as elasticity. Overall, the results of this study show that there is a strong long-term relationship between economic growth, domestic tourist spending and international tourist receipt.

#### 4.5. Granger Causality Test Result

This test is done objectively to examine the casual relationship between all of variables, the following table summarize all the results of causality.

TABLE 5: Granger Causality Test Result

Null Hypothesis:	Obs	F-Statistic	Prob.
DTS does not Granger Cause GROWTH	176	0.00265	0.9974
GROWTH does not Granger Cause DTS		0.21071	0.8102
ITR does not Granger Cause GROWTH	176	0.40891	0.6650
GROWTH does not Granger Cause ITR		0.85006	0.4292
ITR does not Granger Cause DTS	176	1.86633	0.1578
DTS does not Granger Cause ITR		0.25173	0.7777

The granger causality test results in table 4 show that the p-value for each hypothesis is greater than  $\alpha$  (5%), therefore the null hypothesis is accepted. Hence, the granger causality test shows that there is no possible causal relationship between domestic tourism spending and international tourism receipt to economic growth, vice versa.

### 5. Conclusion and Economic Implications

The obtained results showed a strong long-term relationship between economic growth, domestic tourism spending, and international tourism receipt. Furthermore, the direction of the relationship between these variables cannot be proven even after conducting a granger causality test. This could be caused by countries such as Malaysia, Thailand, and Indonesia still prioritize the trade sector, manufacturing industry and infrastructure development to attract foreign investors. Other sectors that are targeted and want to be improved are the health, education and human development sectors, which are some of the main challenges faced by developing countries in the world including those in the Southeast Asia Region (The General Assembly of United Nations, 2015).

According to the result of this study, tourism development and economic growth can be mutually reinforcing under certain conditions. This condition could be created by the

government, by making several policies that can make tourism as a major sector in the economy. The existed of long-term relationship justify necessity of public intervention aimed, on the one hand, at promoting and increasing international and domestic tourism. The importance of expenditure in tourist infrastructure, financial support toward the efforts of entrepreneurial initiative and minimizing the significance of protecting natural and sociocultural resources should be made.

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