

Analysis of Factors Affecting the Number of Foreign Tourists to Indonesia

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ABSTRACT

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Indonesia's tourism potential can be used as the main driver of the Indonesian economy. This study aims to analyze the performance of the Indonesian tourism sector and analyze the factors that influence the number of foreign tourist visits to Indonesia. The method used in this research is a descriptive qualitative analysis method and static panel model analysis. The type of data used in this study is secondary data, including annual time series data for five years, from 2010 to 2014. It also includes cross-section data from nine countries that are the main visitors to the Indonesian tourism sector, namely Singapore, Malaysia, Australia, China, Japan, South Korea, Philippines, UK, and the USA. The development and growth of the performance of the Indonesian tourism sector increased in the period 2010 to 2014. The number of foreign tourist arrivals to Indonesia is influenced by the variables of Gross Domestic Product (GDP) per capita of the country of origin, economic distance, relative prices, and security dummy which have a significant effect on the number of foreign tourist visits to Indonesia, while the exchange rate and dummy travel warning variables have no significant effect. Therefore, the government needs to maintain the stability of the exchange rate and inflation rate as well as the coordination of related parties and institutions in maintaining political, economic, social stability and increasing the promotion of Indonesian tourism to foreign countries.

Keywords : Tourism Sector, Panel Data Static

I. INTRODUCTION

Tourism is one of the sectors that contributes the most to the global economy in the world. Tourism represents 9% of world economic growth (UNWTO 2014). Tourism is one of the most important sectors of the economic growth and development of a country.

Tourism activities have greatly affected the country's income, especially its impact on the country's currencies. Furthermore, the activities of the tourism sector have also opened up considerable employment opportunities.

Indonesia is a country with many customs and cultures, natural beauty, and abundant natural

resources. In addition, Indonesia has several tourist destinations and several annual events, which can attract domestic and foreign tourists to visit and choose Indonesia as the main tourist destination.

Therefore, in Indonesia, tourism is one of the main pillars of Indonesian economic growth. It plays a very important role and is the main driving force of Indonesian economic growth. The Indonesian tourism industry has made a positive contribution to the economic growth of Indonesia. This is consistent with the fact that the tourism industry is a source of foreign exchange in a third country (Ministry of Tourism 2015). In addition, the contribution of tourism to the country's GDP has also increased, which was 9.6% in 2015, and its contribution to the country's total exports was 6.4% (World Travel and Tourism Council, 2016). The increase in tourism growth can be seen in the number of foreign tourists visiting Indonesia each year, as shown in Figure 1.

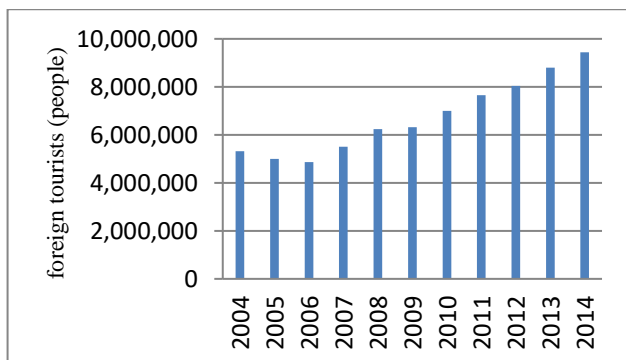


Figure 1: Growth in the number of international tourists in Indonesia from 2004 to 2014

In Figure 1, it can be seen that the growth in the number of foreign tourist arrivals to Indonesia has a positive trend and always increases almost every year. In 2006 the graph showed a downward trend, this was due to the Bali Bombing II tragedy that occurred in 2005. Then in 2009 the graph also appeared to decline, this is indicated due to the global crisis that occurred in 2008.

When determining the destination of a tourist destination, tourists, especially foreign tourists, will need to consider several factors. Some of these factors include distance to the destination country,

convenient transportation, cost, tourist attractions, safety, and social conditions.

Travel expenses, especially trips abroad, one of which is a reference, that is, the exchange rate between the two countries. The Indonesian currency exchange rate, which is relatively cheap relative to the currency exchange rate of the country of origin, is one of the factors that tourists consider when choosing Indonesia as a tourist destination.

Another factor is the safety factor and the social conditions in which a country will become a tourist destination. A country vulnerable to war and terrorism shows that the country's security situation has not yet stabilized. According to the 2015 Global Terrorism Index report, Indonesia is ranked 33rd out of 124 countries with a terrorism index of 4,755 (Human Vision 2016). The social conditions of a country can be seen in the large proportion of political stability. During the period from 2010 to 2014, Indonesia's percentage of political stability fluctuated between 20% and 30% (World Bank 2016). The tourism sector is an inseparable part of human life, especially regarding social and economic activities (Setyanto 2002). The development and evaluation of the tourism sector must continue to be carried out so that it continues to be better and more prospective. Various policies, regulations and promotions have been launched by the government, in this case the Ministry of Tourism. The development of Indonesia's tourism sector is marked by the increasing number of foreign tourist visits from 2013 2014 from 8,802,129 to 9,435,411 with a large percentage change of 7.19 percent (Kemenpar 2015). ASEAN countries remain the largest contributor to the number of foreign tourist arrivals with a percentage of 39.76 percent. One way to optimize the tourism sector is to maintain the stability of the social, economic and political conditions of the country concerned. With the stability of social, economic and political conditions in Indonesia, it is expected to increase the growth of the Indonesian tourism sector.

Several previous studies related to the development and growth of tourism in different countries and Indonesia can provide an overview of future research. Muñoz and Amaral (2010) use GDP per capita and exchange rates as variables to explain economic conditions. The study found that these two variables have a significant positive impact on the length of stay of tourists. Saha and Yap (2013) used variables such as real GDP per capita, exchange rates, political instability, and terrorism. These four variables can describe and explain the economic, social and political conditions of relevant countries. The results show that real GDP and exchange rates have a positive impact on the number of tourists, while political instability and terrorism have a negative impact on the number of tourists. So far, research conducted in Indonesia has only focused on economic variables, such as the research conducted by Dedi et al. (2013) and Dewi (2014). Therefore, this research focuses on analyzing the impact of economic and non-economic variables on the number of visits by foreign tourists in Indonesia.

The Indonesian tourism industry has potential for development and has become the main driver of the national economy. However, it is necessary to study the social, economic and political stability of Indonesia as a consideration for foreign tourists visiting Indonesia in order to further improve the quality and services of the Indonesian tourism industry. Therefore, for the development of tourism in Indonesia, it is necessary to study the influence of various factors that affect the number of foreign tourists visiting Indonesia.

The subject of this research is the main tourist country of the Indonesian tourism industry. This is also one of the differences from previous studies. This study also uses several variables that are different from the past, including travel advisories and security dummy variables that describe the social and political conditions of the destination country.

Based on the description of the previous background, the objectives of this study are:

1. Analyze the performance of the Indonesian tourism industry.
2. Analyze variables that affect the number of visits by foreign tourists in Indonesia.

II. METHODS AND MATERIAL

A. Data Types and Sources

The type of data used in this research is secondary data. The method used is the static panel method, using time series and cross section data. Time series data includes annual data for five years, from 2010 to 2014. Meanwhile, cross section data includes countries that are the main market share of the Indonesian tourism sector, namely Singapore, Malaysia, Australia, China, Japan, South Korea, Philippines, England. and the United States.

Secondary data in this study were obtained from various institutions, the internet and literature studies through collecting data sourced from books and literature. Secondary data was obtained from several institutions including the Central Statistics Agency (BPS), Bank Indonesia (BI), World Development Indicators (WDI), World Governance (World Bank), Vision of Humanity, and U.S. Energy Information and Administration.

B. Research Model Formulation

The research model used in this study was applied from the research of Suragiu et al. (2011). The difference between this study and the research conducted by Suragiu et al. (2011) is the addition of a relative price variable, a travel warning dummy, and a security dummy applied from the research of Aslan et al. (2008), and the addition of the applied exchange rate variable from the research of Kiang et al. (2015).

$$\ln\text{TOUR}_{it} = \alpha + \beta_1 \ln\text{GDP}_{it} + \beta_2 \ln\text{ER}_{jit} + \beta_4 \ln\text{JE}_{it} + \beta_3 \text{PR}_{jit} + \beta_5 \text{D}_1 + \beta_6 \text{D}_2 + \varepsilon_{it}$$

Information:

$\ln\text{TOUR}_{it}$ = Number of foreign tourist visits from country *i* to Indonesia in year *t* (persons)

$\ln\text{GDP}_{it}$ = GDP per capita of the country of origin of foreign tourists *i* in year *t* (USD)

- $\ln J_{E_{jit}}$ = The exchange rate between the currency of the country of origin i with the currency of the country of Indonesia in year t (IDR)
- PR_{jit} = Relative price for foreign tourists from country i in year t (IDR)
- D_1 = Dummy travel warning (1=no travel warning; 0=no travel warning)
- D_2 = Dummy security (1=unsafe; 0=safe)
- α = intercept
- β_n = regression coefficient
- ϵ_{it} = Error

III. RESULTS AND DISCUSSION

A. Indonesia's Tourism Sector Performance

The tourism sector is a sector that has the potential to become the main driver for economic growth. The progress and development of the tourism sector in Indonesia every year has a positive impact on income and economic growth in Indonesia.



Figure 2: Comparison between Indonesia's economic growth and the growth of Indonesia's tourism sector

Figure 2 shows that the growth of Indonesia's tourism industry during the period 2010-2014 showed a positive trend, with the percentage growth always higher than 8.5%. During the period from 2010 to 2014, the growth rate of Indonesia's tourism industry soared from 8.8% to 9.43%. The growth rate of Indonesia's tourism industry always exceeds the growth rate of the overall economy. This can enhance

the confidence of Indonesia's tourism industry and become the main engine of Indonesia's economic growth.

Tourism is one of the sectors that generates foreign exchange in the country. As a middle-income country, foreign exchange earnings from tourism are very beneficial to the Indonesian economy. Furthermore, the way the tourism industry earns foreign exchange is different from other economic activities. The foreign exchange generated by the tourism sector does not need to transport goods abroad like ordinary export activities, but the foreign exchange is generated from consumption or tourism consumption. Therefore, tourism is also called invisible export (Karyono 1997).

Table 1: Foreign exchange earnings from ten main countries of origin for the Indonesian tourism sector

COUNT RY	Foreign Exchange Earnings (million USD)				
	2010	2011	2012	2013	2014
Singapore	927.9	1054.	1000.	1049.4	1145.8
Malaysia	864.3	930.8	972.1	1002.5	1053.8
Filiphina	161.9	175.9	195.5	206.31	212.90
Taiwan	184.7	188.1	204.5	231.09	254.66
Tiongko	433.3	520.6	714.5	810.79	981.46
South Korea	251.0	295.8	290.3	381.83	420.89
Australia	1171.	1502.	1452.	1470.8	1802.8
Japan	87	10	31	9	5
United Kingdom	409.8	419.8	477.8	558.85	597.71
United States	277.1	269.6	321.9	349.20	401.48
TOTAL	252.2	317.2	312.5	363.91	406.57
	7603.	8554.	9120.	10054.	11166.

COUNT RY	Foreign Exchange Earnings (million USD)				
	2010	2011	2012	2013	2014
Growth (percent)	45	39	85	15	13
	20.73	12.51	6.62	10.23	11.06

Table 1 shows the foreign exchange earnings of the tourism industry during the period 2010-2014. The total foreign exchange income of all countries visiting Indonesia has experienced a very significant increase, with an increase of up to 50%. Singapore and Australia are among the top ten visiting countries in Indonesia's tourism industry, bringing in the largest foreign exchange. The reason that can be analyzed is that Singapore is close to Indonesia and Australia is close to Indonesia. Therefore, Singaporean tourists regard Indonesia as their main tourist destination. This is consistent with the figure that the number of tourists from Singapore dominates the number of foreign tourists to Indonesia. In addition, the cheap Indonesian currency factor is another consideration for tourists who use Indonesia as a tourist destination.

Table 2: Tourism foreign exchange ranking against the eleven largest export commodities, 2010 - 2014

Ran k	Commodities				
	2010	2011	2012	2013	2014
1	Oil & gas	Oil & gas	Oil & gas	Oil & gas	Oil & gas
2	Coal	Coal	Coal	Coal	Coal
3	Palm oil	Palm oil	Palm oil	Palm oil	Palm oil
4	Processed rubber	Processed rubber	Processed rubber	Tourist	Tourist
5	Tourist	Tourist	Tourist	Processed rubber	Apparel
6	Apparel	Apparel	Apparel	Apparel	Processed rubber
7	Power tools	Power tools	Power tools	Power tools	Processed food
8	Textile	Textile	Textile	Processed food	Power tools

Ran k	Commodities				
	2010	2011	2012	2013	2014
9	Paper & paper goods	Processed food	Processed food	Textile	Textile
10	Processed food	Chemical material	Paper & goods	Paper & goods	Processed wood
11	Chemical material	Paper & goods	Chemical material	Processed wood	Chemical material
12	Processed wood	Processed wood	Processed wood	Chemical material	Paper & goods

The performance of the Indonesian tourism sector can also be seen from the increasing ranking of foreign exchange earnings in the Indonesian tourism sector compared to other related commodities. In 2010 – 2012, the tourism sector was ranked fourth. Then in 2014 – 2015 it increased to the third sector beating processed rubber and apparel commodities. Although it has not been able to beat oil & gas commodities, coal and palm oil as the main foreign exchange earnings, at least an increase in the foreign exchange earnings ranking of the Indonesian tourism sector can be a good sign for the progress and development of Indonesia's tourism sector performance in the future.

B. Best Model Selection

The estimation of the best model selection is done by using the Hausman test and Chow test to select the random effect model, fixed effect model, or pooled least square. The results of the Hausman test show that the cross section test variance is invalid. This shows that there is a correlation between the error component and the independent variable so that there is not enough evidence to accept H0. The results of the Chow test show the same thing for rejecting H0 (probability 0.000) so that the model used is fixed effect.

The estimation results of the best model selection show that the per capita GDP, economic distance, relative price and safety dummy variables of the country of origin have a significant impact on the number of foreign tourists' visits. At the same time, the exchange rate and virtual tourism warning variables have no significant impact on the number of foreign tourists visiting Indonesia.

Table 3: The results of the model estimation of the number of foreign tourist visits

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNPDB	1.4003	0.3229	4.3358	0.0002*
LNER	0.1550	0.1049	1.4784	0.1497***
LNJE	-0.0338	0.0114	2.9723	0.0058**
PR	-0.6488	0.2516	2.5782	0.0151*
D1	-0.0022	0.0240	0.0935	0.9261***
D2	-0.0070	0.0101	0.6988	0.0490**
C	-2.2828	3.0091	0.7586	0.4540
R-squared	0.9990			
Adjusted R-squared	0.9985			
F-statistic	2241.7			
Prob(F-statistic)	0.0000			

Information:

- * Significant at the 5 percent level
- ** Significant at the 10 percent level
- *** Not significant

1) Classic Assumption Test Results

The normality test can be seen from Jarque Bera's probability value. The result of the normality test in the model shows that the probability value of the number of visits by foreign tourists is 0.39, which

means that the error term is normally distributed in the model because the probability value of Jarque Bera is higher than the actual level of 5%.

Multicollinearity is caused by the high value of R^2 , but the independent variable is only slightly significant. By looking at the significance value of Prob (F-statistic) at the 5% significance level, it can be said that the model has no multicollinearity problem. In the model of the number of visits by foreign tourists, the R^2 value is 0.99, and 4 of the 6 independent variables are significant for the dependent variable. Therefore, it can be said that the research model does not have the problem of multicollinearity.

Heteroscedasticity can be seen by comparing the sum squared resid in the weight statistic with the sum squared resid in the unweight statistic. If the sum squared resid in the weight statistic is less than the sum squared resid in the unweight statistic, then heteroscedasticity occurs. Another assumption test is the autocorrelation test using the Durbin Watson (DW) value to see whether or not there is an autocorrelation problem. Because the model of the number of foreign tourist visits uses a fixed effect model weighted by crosssection weights, the problems of heteroscedasticity and autocorrelation can be ignored.

2) Statistical Criteria Test

The estimated result of the model of the number of visits by foreign tourists shows that the R^2 value is 0.99. This value indicates that 99.90% of the diversity of the dependent variable can be explained by the independent variable, and the rest can be explained by other variables outside the model. These results indicate that the model used is very good because it has a high R^2 value. The statistical value in the model of the number of visits by foreign tourists is 0.00, which is lower than the actual level of 5%. These results indicate that there is at least one independent variable in the model that has a significant impact on

the number of visits by foreign tourists. The estimated results of the

foreign tourist population model show that the independent variables with probability values less than the 5% significance level are per capita GDP and relative prices. The independent variables with probability values less than 10% significance level are economic distance and safety dummy variables. The unimportant variables are exchange rates and fictitious travel warnings.

C. Variables affecting the number of visits by foreign tourists in Indonesia

GDP per capita country of origin (GDP)

In the test results, the estimated GDP per capita of the country of origin of tourists (GDP) has a significant positive effect on the variable number of tourist visits with a coefficient value of 1.40. This shows that when the GDP per capita of the country of origin of tourists increases by one percent, it will increase the number of foreign tourist arrivals by 1.40 percent (*ceteris paribus*). The estimation results are in accordance with the initial hypothesis and in accordance with the research conducted by Suragiu et al. (2011).

The GDP per capita of the country of origin can describe the economic condition and welfare of the country of origin. Based on the results of the estimated GDP per capita, it is significantly positive for the number of foreign tourist visits to Indonesia. The GDP per capita of the country of origin describes the amount of income of each individual in the country of origin. An increase in income will encourage an increase in the consumption of each individual, not least the increase in consumption for traveling on vacation to other countries. So when there is an increase in GDP per capita of the country of origin, it will increase the number of foreign tourist visits to Indonesia. The positive influence between GDP per capita of the country of origin and the number of foreign tourist visits can be proven, one of which is the increase in GDP per capita of

Singapore which is directly proportional to the increase in the number of foreign tourist visits to Indonesia from Singapore each year in the period 2010 to 2014.

3) Exchange rate (ER)

Based on the estimation results, the exchange rate has no significant relationship to the number of foreign tourist visits. This shows that the effect of the exchange rate on the number of foreign tourist visits is zero. However, the sign of the coefficient of the exchange rate variable from the results of this study shows the sign of the coefficient (+) which is in accordance with the hypothesis and economic test with a coefficient value of 0.15. The estimation results are not in accordance with the initial hypothesis and previous research conducted by Munoz and Amaral (2010).

The exchange rate used in this study is the exchange rate between the currency of the country of origin of tourists and the currency of Indonesia as a tourist destination. The depreciation of the rupiah against the exchange rates of other countries' currencies will have a positive impact on the Indonesian tourism sector. When the rupiah depreciates, it shows that the rupiah currency becomes cheap so that tourism in Indonesia for foreign tourists is relatively cheaper than tourism in other countries. The cheap rupiah currency due to depreciation encourages tourists to choose Indonesia compared to other countries as a tourist destination. This can also be an attraction and a distinct advantage for tourists to choose to travel to Indonesia. So the depreciation of the rupiah exchange rate will increase the number of Indonesian tourism visits.

The economic distance (JE)

In the results of the estimation test, the economic distance variable has a significant negative impact on the tourist arrival variable, and the value of the coefficient is 0.03. This shows that when the economic distance increases by 1%, the number of

visits by foreign tourists will decrease by 0.03% (*ceteris paribus*). The estimation results are consistent with the initial hypothesis and with the previous study carried out by Suragiu et al. (2011).

Economic distance can describe the cost of transporting tourists from the country of origin to the country of destination. The greater the distance between the country of origin and the country of destination, the higher the transportation cost. The increase in economic distance indicates that transportation costs are increasing, because the greater the distance traveled, the greater the impact on the decrease in the number of visits by foreign tourists in Indonesia.

Relative prices (PR)

Relative prices have a significant negative effect on the number of foreign tourist visits with a coefficient of 0.65. A relative price increase of one percent will reduce the number of foreign tourist arrivals by 0.65 percent (*ceteris paribus*). These results are in accordance with the initial hypothesis and in accordance with previous studies conducted by Munoz and Amaral (2010) and Surugiu et al. (2011).

The relative price using the consumer price index (CPI) of the country of origin and destination of tourists shows that the CPI of the country of origin and destination of tourists has an effect on the number of tourist visits. Relative prices describe the difference in the price level of goods and services between the destination country and the country of origin of tourists. The price of goods and services in tourist destination countries is the most common consideration for foreign tourists to determine their destination country. Tourists tend to choose countries with low or low prices for goods and services. Then the lower the price level or the relative price of goods and services will further increase the number of foreign tourist visits. Prices of goods and services in Indonesia are low and cheap for foreign tourists from Indonesia's main tourism market. This is one of the

main attractions and advantages for foreign tourists to travel to Indonesia.

Variabel dummy travel warning

The results of the estimation test of the dummy travel warning variable have no significant effect on the number of foreign tourist visits to Indonesia. This shows that the effect of the dummy travel warning variable on the number of foreign tourist visits is zero. The negative sign on the regression coefficient indicates that the effect of a travel warning when the dummy value = 1 (there is a travel warning) is negative with a coefficient value of 0.002. This shows that when there is a travel warning issued from the country of origin of tourists to the country of destination (Indonesia) it will reduce the number of visits by foreign tourists to Indonesia.

A travel warning statement issued by a tourist's country of origin against a tourist destination can be triggered by several events, such as acts of terrorism, crises, disease outbreaks, natural disasters, and others. During the five-year period from 2010 to 2014, Australia was the country that most frequently issued travel warning statements to its citizens who would visit Indonesia. But this is not too influential for foreign tourists from Australia. It is proven that Australia is still the main market for Indonesian tourism from 2010 to 2014 with the number of tourist visits and the amount of foreign exchange from Australia increasing every year.

Variabel Dummy Keamanan

The estimated results of the security dummy tests have a significant impact on the number of visits by foreign tourists in Indonesia. This shows that security dummy variables have an impact on the number of foreign tourists. The negative sign in the regression coefficient indicates that the influence of the safety factor is negative when the virtual value = 1 (unsafe condition) and the value of the coefficient is 0.007. This shows that when conditions in the destination

country are not safe, it will reduce the number of foreign tourists to Indonesia.

Security factors are affected by many factors, including economic stability, political stability, social stability, and other national issues that can attract international attention. Safety factor is a very consideration factor, it will affect the decision to determine the tourist destination. Various news and issues related to unstable security conditions, such as the occurrence of terrorist acts and economic crises, will create negative perceptions and impressions that Indonesia is not safe, thereby reducing the motivation and trust of tourists. Therefore, there will be a tendency to postpone and cancel visits, which will reduce the number of visits by foreign tourists from Indonesia.

IV. CONCLUSION

Based on the research that has been carried out, the following conclusions can be drawn:

1. The results of the study using descriptive analysis showed that the performance of the Indonesian tourism sector in the period 2010 to 2014 experienced a significant increase. This is indicated by the growth value of Indonesia's tourism sector which always exceeds the value of Indonesia's economic growth, foreign exchange earnings from the tourism sector increased by 50 percent, increased foreign exchange earnings in the tourism sector compared to foreign exchange earnings for other exportrelated commodities, increased tax revenues from the tourism sector, and the increasing number of employment in the tourism sector.
2. The results of the study using a static panel model analysis show that the number of foreign tourist visits to Indonesia is influenced by the GDP per capita of the country of origin, economic distance, relative prices, and the security dummy, while the exchange rate and travel warning variables have

no significant effect on the number of foreign tourist visits. Indonesia.

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