

## Result of Review


**Title:** Analysis on Tourism Policies and Market Institutional Aspects towards the Tourists Visit to Indonesia from ASEAN Countries

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Evaluation	Grade
	Please give a grade of 5, 4, 3, 2, 1(high to low)
<b>Overall evaluation of the paper</b>	<b>3</b>
Contribution to existing knowledge	3
Organization and readability	3
Soundness of methodology	3
Evidence supports conclusion	3
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<b>Comments and Suggestions</b>	
<p>(*) <b>Revise the paper according to <i>Paper Submission Guide</i>: <a href="http://ass-author.ccsenet.org">http://ass-author.ccsenet.org</a></b></p> <p>( ) Picture(s)/figure(s) are not clear; 300 dpi is required.</p> <p>( ) Move the footnotes to endnotes.</p> <p>( ) Resize the table(s)/figure(s), to fit A4 paper size, and make all the pages be vertical.</p> <p>( ) Revise table(s) into three-line table(s).</p> <p>( ) Insert table(s) and figure(s) into the text, not after references.</p> <p>( ) Similarity index (checked by iThenticate) is high, please find the iThenticate report attached, revise to keep the Similarity Index <math>\leq 30\%</math> and single source matches are not <math>&gt;6\%</math>.</p> <p>(*) <b>Add DOI persistent links to those references that have DOIs, please see <i>Paper Submission Guide</i>.</b></p> <p>(*) <b>Others:</b></p> <p><b>Please send the revised paper via the email <a href="mailto:ass@ccsenet.org">ass@ccsenet.org</a> directly.</b></p>	

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## Comments from Reviewer A

❖ <b>Evaluation</b> (Please evaluate the manuscript by grade 1-5)	
5=Excellent    4=Good    3=Average    2=Below Average    1=Poor	
<b>Items</b>	<b>Grade</b>
Contribution to existing knowledge	2
Organization and Readability	3
Soundness of methodology	2
Evidence supports conclusion	2
Adequacy of literature review	2
❖ <b>Strengths</b>	
<p>The authors conducted a panel analysis via regression models to show critical variables influencing tourist arrivals to Indonesia. The application of panel analysis, as authors also indicated, can provide useful and dynamic information for decision makers so that related policies and actions can be conducted.</p>	
❖ <b>Weaknesses</b>	
<p>The content is straightforward to follow; however, there are significant flaws. Please see the following comments for more information. Regarding the issue of tourism policies, there is only one tested policy (Riparnas policy) and its content and necessity of test was not successfully justified in the context.</p>	
❖ <b>Suggestions to Author/s</b>	
Major Comments:	
<ol style="list-style-type: none"> <li>1. One of the weaknesses is the lack of research gap based on the related development in the literature. Although authors tried to introduce considerations from either dependent or independent variables, the relationships between the introduction and the aim of this study is quite weak.</li> <li>2. In p.2, authors mentioned that “The study added the importance of infrastructure...(INET)”. Nevertheless, hasn’t INET or other technological variables considered by other researchers?</li> <li>3. Authors spent quite a few lines introducing the choice of dependent variable. However, the reason to choose arrivals as a dependent variable in this study was not justified in the content. More importantly, citations were not appropriately rendered to support the introduced dependent variables in Sec 2.2.</li> <li>4. In p.4, authors argued that prices in both the native country and the destination country</li> </ol>	

affect travel demand. However, only CPI in the native country is considered in the proposed model without any explanations.

5. Table 1 was not appropriately explained.
6. While formulating the proposed model, authors applied Halicioglu (2004) and Kareem (2007) as the base in this study; however, the reason for such a decision was not explained at all. Was Indonesia the target in the aforementioned two cited studies?
7. The content in Table 3 (p.9) was not well explained. Significance of the coefficients, explanation power, and other insights should be explained. F value for the Fixed model in Table 3 is much higher than the other two models. Is it a reasonable outcome?
8. Authors should also check the statement in p.10 such as “1 percent of ... as many as 39.038 percent” which seems questionable.
9. In Equation (3), Dt (or RIPA) is a dummy variable. How could the variable have a Ln transformation?

Minor comments:

1. Some grammar mistakes can be found and English editing should be helpful.
2. There are missing references.
3. Commas and periods were not consistently used when stating numbers.
4. In p.9, Table 4.2 and Table 4.3 should be Table 3 and Table 4.

# The Effect of Tourism and Market Institutional Policies on Tourist Visits from ASEAN Countries

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## Abstract

Tourism industry has experienced a significant development. This can be seen from several indicators, such as the number of foreign and domestic tourist visits, tourist spending, employment opportunities and the tourism sector's contribution to national income (GDP). Indonesian Tourist Policy has been combined with Law No.10 of 2009 concerning Tourism, and operationalized by Government Regulation No. 50 of 2011 concerning the National Tourism Development Master Plan (RIPPARNAS). It coincides with the ASEAN liberalization policies. Previous economic tourism research has not accommodated the role of economic institutions as a determinant of foreign tourism demand in Indonesia. This study focuses on tourism demand from ASEAN countries. The model is expected to explain the optimization of tourism resources for development. This data panel study revealed that Fixed Effect Model (FEM) is the most appropriate econometrical model used to estimate tourism in Indonesia in ten years (2006-2015). This study revealed some similarities with previous studies, especially in strengthening the theory of demand. The relative cost of tourism which tends to be more efficient will increase the number of tourist visits. Access to communication infrastructure and the proportion of city residents in the country of origin will increase tourism demand to Indonesia. Liberalization of policies need not be feared by many people, because the institutional aspects of the market which include rules, regulations, fiscal strength and market openness will encourage the acceleration of tourism. However, this study found that tourism services in Indonesia are still inferior compare to those of ASEAN countries. This requires international tourism marketing that changes perceptions and develops adequate destinations to facilitate ASEAN community members. In addition, this study considers that modernization in rural areas and the strengthening of related policies are related to the implementation of tourism master plans to improve tourism optimization.

**Keywords:** ASEAN countries, Indonesian tourism demand, policy analysis, tourism

## 1. Introduction

Tourism is one of the most advanced sectors. It has become an industry which can increase the international income growth more than ten percent in the last ten years. The number of international tourism expenditure has reached more than US \$ 525 billion in 2014 (UNWTO, 2015). Potential tourist destinations also create numerous employment opportunities and foreign exchange which contribute to the economy of many countries. Tourism is also a means of increasing facilities and infrastructure of tourist destinations in a country. Tourism has promoted cooperation and understanding among citizens worldwide. Tourism has become a means for many countries, particularly developing countries, to increase their base income and preserve their culture heritage and tradition.

Nowadays, tourism sector plays an important role in running the national, region and local economic cycle. The decision in making tourism sector as the flagship is very reasonable since Indonesia has various natural resources, derivative products, and cultural diversity. Various policies were made for directing the tourism sector. Law No.10/2009 has clear and prudent vision, mission, and principles (Indonesian Government, 2009). Tourism development has to be laid within the sustainable development framework. Sustainability here refers to the balance between three elements, which are environmental, economic and social aspects. The implementation of this policy has shown sufficient signs of progress. First, contributions of tourism sector are strengthened by the national or regional income. Data from the Central Bureau of Statistics-Indonesia (2012) showed that the contribution of tourism sector in gross domestic product and the constant value reached 16.93 percent in 2009, increasing up to 17.30 percent in 2010, 17.74 percent in 2011, and 18.05 percent in 2012. This has made the

tourism sector the second largest national income contributor after manufacturing industry. Second, the labour absorption of tourism sector is also strengthened. National Labour Force Survey 2013 (Central Bureau of Statistics-Indonesia, 2013) showed that this sector could absorb over 20 percent of the national work force every year from August 2009 to 2012. Tourism had been propping workforce of 20.93 percent of the work force in 2009. This capability declined slightly to 20.73 percent in 2010, and then it increased significantly to 21.33 percent in 2011. This capability is ranked the second highest after the primary sector. The third is wages improvement. Tourism sector is capable of providing a multiplier effect in the form of community welfare, either directly or indirectly, especially in developing tourist destination areas.

However, other data also show that tourism sector has not been in line with the expectation of tourism sector development. At the international level, the market segment of Indonesian tourism is only about 1.2 percent with a value of about USD 1.7 billion in 2014. The government has projected foreign exchange from all sectors of about USD 20 billion in 2020, while the tourism market reached USD 5 billion or 25 percent of the national total foreign exchange target in 2014 (Ministry of Tourism-Indonesia, 2016). The role of Indonesian tourism is still low compared to that of some ASEAN countries, especially Malaysia, Singapore, Thailand and the Philippines.

The low progress has drawn criticism and concern from many parties. The criticisms were addressed to government policies deemed ineffective in supporting national tourism competitiveness. Criticisms are aimed at the National Tourism Development Master Plan (RIPPARNAS) and ASEAN liberalization policies. Both policies are considered not effective. Anti-liberalization supporters argued that the ASEAN integration agreement: One Vision, One Identity, One Community is unsettling political jargon (Savira, 2016). Aspects and terms of liberalization, exploitation, and unemployment are the most sensitive economic, social and political issues in the country. Liberalization resulted in imported goods flowing in large quantities, threatening the local industry. Large-scale exploitation of natural resources occurs due to incoming foreign direct investments. The low competitiveness of domestic labor, education and limited productivity resulted in domestic unemployment. Similarly, Adiyati (2017) stated that the ASEAN Economic Community has created the wave of liberalization in ASEAN member states, which is not easy to cope with.

There is a serious need to examine the situation. It is useful to reduce the perspective disparity. Some national studies have examined the issue, but the studies have not been able to explicitly improve the effectiveness of these policies (Mariyono, 2017; Ulfa, 2017; Amalia, 2015). This study focuses on Indonesian tourist visits and the influencing factors. The main objective of the study is to examine to what extent RIPPARNAS and ASEAN liberalization policies affect the achievement of international tourism in Indonesia. This can be considered as the novelty of this research. The conventional factors which have been identified by previous researchers were taken into account. This study was conducted to examine the tourist visits from several ASEAN countries to Indonesia. For this study, data panel was considered relevant to be used.

## 2. Conceptual Framework

### 2.1 The Function of International Tourism Demand

The use of tourism demand theory as an instrument in tourist behaviour analysis usually puts the output measurement or quick result as a dependent variable. Several variables used to measure the results of tourism service are:

- 1 International Tourist Arrivals (Brakke, 2005; Botti et al., 2006, Larson, 2008; Kareem, 2008; Altin & Uysal, 2009; Padhan, 2011; Rochester, 2011; Asemota & Bala, 2012; Webb & Chotithamwattana, 2013; Athanasopoulos et al., 2013; Mamula, 2015; Mei, 2015; Sinaj, 2015; Amalia, 2015; Ulfa, 2016; Mariyono, 2017)
- 2 Average Length of Stay (Teresa & Amaral, 2000).
- 3 Visitor/Tourists Consumption Expenditure (Proença & Soukiazis, 2005; Song et al., 2008)

The number of foreign tourists visits becomes the mostly used dependent variable compared to the length of stay and travel expenses. The study estimates that 70 percent of research on tourism demand function has applied the number of visitors (entrance) as a dependent variable. The main reason for this option is that data on travel costs or travel costs is not easy to access. This case has prompted arguments in tourism studies.

However, the use of the dependent variable with length of stay and tourist expenditure as dependent variable is sometimes also encountered. Teresa and Amaral (2000) used the length of staying in the destination country as a dependent variable to study tourism demand using the data panel approach. Visitor expenditure was also used by Proença and Soukiazis (2005) and Song et al. (2008). The use of these variables provides a more progressive analysis to ensure tourism benefits for the destination country.

Furthermore, tourism research often focuses on the outcome and the generated impact. A sustainable tourism development paradigm encourages tourism sector. It is expected to realize the economic growth, social welfare and environmental improvement. In the study, known as Tourism-Led Growth Hypothesis (TLGH) (Georgantopoulos, 2013), economic growth must be combined with the goals of 21 agenda. In structural model, the paradigm under TLGH and agenda 21 suggests the use of multivariate analysis. It is the integration of sustainable tourism development goals or the use of simultaneous indicators as dependent variables, such as environment, economic and social indicators (Georgantopoulos, 2013).

## *2.2 Factors Affecting Tourism Demand*

Many potential factors can influence tourism demand. The estimated function of demand is very diverse, depending on the situation or area used, the research period, time, type of data (time series, cross section or data panel), characteristics of tourism (holidays, business trips), and types of visits (family visits, friends, recreation and others). Proença and Soukiazis (2005), and Song et al. (2008) identified one set of potential determinants that can affect tourists' decision to travel, which include: socioeconomic factors such as income levels, relative price of origin and destination country, demographic, urbanization and the length of recreation time; technical factors associated with the convenient communication and transportation facilities; psychological factors and culture which reflect personal preference and lifestyle of potential travellers; and random factors related to unexpected events such as political instability, weather conditions, natural disasters, plagues, and so on. The variables used as explanatory variables are discussed in more detail

### *2.2.1 National Income Factor (Tourist Origin)*

Average income is assumed to be the most important factor which affects someone's decision to travel. The literature has shown that orders for tourism and length of stay are directly related to income levels (personal wealth) of potential travellers and is inversely related to domestic life costs. Hence, the tourists' purchasing power is the dominant factor in explaining the current tourism and causality is expected to grow stronger (Asemota & Bala, 2012; Webb & Chotithamwattana, 2013).

Several different variables have been used for a proxy of the wealth level of native country's tourists. They are gross national product or gross domestic product in real terms or nominal, but it is very possible to use GDP and GNP average income. Most studies use real average income as the most accurate indicator for measuring the living standard of the origin country.

### *2.2.2 Trading Volume and the Exchange Rate Level*

International trade is the trading of goods or services by the people of a country with other citizens of different countries in the world. Trade does not only include exports and imports of goods but also activities in exports and imports of services as well as also capital trade. Foreign trading has an extensive impact on the economic growth of a country, especially in developing countries. Foreign trading is determined by the work force exchange rate, consumer price index, and international trade policy on imports charge and taxes. Trading volume between native and the destination country will affect the mobility of business, and allow direct interactions between residents. The mobility of citizens due to businesses will increase tourist visits into a country (Kuncoro, 2016). On the other hand, exchange rate levels will affect trading volume. Strengthening exchange rate of the origin country to the destination country will make tourists receive a higher value of surplus consumers.

### *2.2.3 Domestic Price Factor and Other Destinations*

The inclusion of prices in tourism demand functions as a result of some theoretical considerations. Tourism includes consumption of goods which have certain prices. It can also be distinguished from the competitors' destination prices or different purposes. The financial problems in the origin country lead the households to decide which product to consume on the top list, whether it is tourism product or other kinds of consumption goods. After an individual makes a decision to travel, the individual will choose a travel destination by considering other factors such as the total travelling cost and the individual will try to maximize his utilities. However, the tourist's demand does not only depend on the travel cost, but also the price of goods and alternative services as well as the general price of domestic market.

Here we need to differentiate two different situations. The first is the sender's point of view, that the increase of domestic price will lower purchasing power of potential tourists. This definitely lowers their demand to travel. On the other hand, the increase of price in the destination country makes tourists hesitate to travel to that country or allocate their visit to other cheaper destinations. In this case, these two types of prices need to be considered with regard to the tourism demand.

Some proxies which are most frequently used in tourism research are relatively and adjusted consumer price

index (CPI), travel price index, the average level of price hotel, the ticket and travel cost, and the price of tourism package. Thus, the cost of transportation among countries can also be used as a proxy for tourism cost from the origin country to the destination country at a particular period.

### 2.2.4 Infrastructure Variables

Infrastructure becomes one of crucial discussion topics in tourism. Connectivity and accessibility are particularly important for trip and tourism business. Supporting tourism infrastructures such as roads, accommodation, transportation, communication and some other supports have an important role which determines any travelling decision. Other public investment factors in the destination country such as a fixed number of telecommunications services (cellular mobile), the level of internet use, television ownership access also determine tourists' understanding toward travelling destinations and influence any decision of the tourists.

### 2.2.5 The Structure of Capital Market Industry

Dow Jones' stock market index and logarithm index of average stock market industry are used as influential stock market in tourism demand. In a short-term (1 to 5 years), there is no clear relationship between tourism growth and moving average of stock price. Negative relationships between stock price movements and tourism growth often happen. The negative correlation between stocks and tourism growth occurs because of excessive financial market reaction compared to the revolution of real sector actual economic activities in tourism.

### 2.2.6 Non-Economic Variable

#### 1. Political Variable

Politics is a proxy for improving its illegal politics, instability, and economic pressure or otherwise (Brakke, 2005). Political instability in various parts of Africa Continent has a negative effect on tourism (Kareem, 2008). Economic Sentimen Indicators will be shown and its policy implication for tourists developed by Altin and Uysal (2009).

#### 2. Social Variable

Social proxy is also developed in a number of model as a form of turbulence and social phenomena that weaken and strengthen of tourism demand. In this case, some research showed some proxies, as the number of unemployment in US (Rochester, 2011), the crime rate used to measure the criminal cases in Africa continent (Kareem, 2008), and bomb attacks (Mariyono, 2017).

#### 3. Qualitative Variable

Qualitative variable has form variations to be used in the model. The qualitative variables related to taste, convenient, and satisfying services should continuously be included in the development model. Qualitative measure is non-metric and often developed in the form of dummy variables. In the previous literature, for example, dummy variables were used to examine the effects and influence of qualitative variable.

### 2.3 The Findings on Data Panel Analysis of Previous Research

Some selected articles related to the use of panel data can be seen in Table 1. Important notes related to the policy variable as an explanation can be identified in the study. All studies place policies as dummy variables with various meanings. Mariyono (2017) utilized a dummy to explain the importance of providing policies that guarantee security for tourists. Chasapopoulos et al. (2014) stated that Greek policy to become an Olympic event was not favorable for tourism. Kareem (2008) found that democratic political instability impeded tourist visits to Africa. Portugal also faced a very slow process of adjusting European integration, which hampers the incoming tourist flows (Proença & Soukiazis, 2005).

Table 1. Estimation Results of Tourism Demand Based on the Selected Former Studies (Data Panel Analysis)

<p>Mariyono (2017)</p>	<p>This research showed that distance (<math>DIS_t</math>) was one of the important factors that reduced the number of foreign tourists coming to Indonesia during 2002-2011. Richer and larger countries increase the number of tourists traveling to Indonesia. Bomb attacks in Bali (<math>D_t</math>) reduce the number of foreign tourists. The trend of foreign tourists has fallen significantly due to bomb attacks. Tourists from western countries (<math>WEST_{JT}</math>) visit Indonesia more than ASEAN (<math>ASE_{jt}</math>). Indonesian policy must provide safety guarantees for tourists to attract more visitors. The increase in visits will lead to an increase in job creation and a share of <math>GDP_t</math>, and ultimately strengthen Indonesia's economy according to time (<math>T</math>).</p>
<p>Chasapopoulos et al. (2014)</p>	<p>This analysis estimates tourism demand (<math>TA_{ij}</math>) with the gravity model to Greece from 7 neighboring countries. The data used were panel data during the period 2001-2010. This estimation shows that distance (<math>D_{ij}</math>), income (capita GDP) and trade value (<math>TV_{ij}</math>) have explanatory power more</p>



	than the relative price ( $RP_{ij}$ ) and other determinants such as transportation infrastructure ( $GI_{ij}$ ) for travel demand to Greece. Also political stability seems to play an important role in tourism demand. An interesting finding is that the 2004 Olympics ( $D_t$ ) appeared to have a negative impact on international tourist arrivals in Greece that year.
Allen & Yap (2009)	This study used panel data approach with Three-Stage Least Square (3SLS) for domestic tourism in Australia during the 1999-2007. Studies showing income elasticity for domestic are negative. The national income variables are positively correlated with domestic business tourism demand. An increase in the domestic prices of travel can cause the demand for domestic trips to fall in the next one or two quarters ahead. The coefficients for lagged dependent variables are negative, indicating perhaps, that trips are made on periodic base.
Kareem (2008)	This study used a panel data approach to African tourist from 20 countries during 1995-2003. He found from the analysis of this study that political instability, crime rates, exchange rate appreciation and the relative of consumer price index serve as signals for potential tourists to Africa. However, previous tourist arrivals, the number of telephone lines, the size of infrastructure, and world income positively influenced or determined the arrival of tourists to Africa.
Proença & Soukiazis (2005)	They used panel data to estimate the demand function of tourism in Portugal during 1977-2001 by considering four main countries as major tourism suppliers (Spain, Germany, France and the United Kingdom). Dependent variable is an expenditure approach to define the demand for tourism in Portugal. Explanatory variables were per capita income-GDP ( $Y_{ij}$ ), relative price ( $P_{ij}$ ), accommodation capacity in Portugal ( $A_t$ ), public investment ratio ( $IP_t$ ), $D_t$ (Europe Integration). Their empirical analysis shows that per capita income was the most important determinant of demand and accommodation capacity was the most important determinant of supply which explains the tourism movement in Portugal. The estimated dynamic panel data highlights the importance of accommodation capacity as the most important factor in attracting more tourism to Portugal. It was also shown that the adjustment process of Europe integration was slow and given the status quo it was difficult to attract more flows of tourism in the countries mentioned above.

Note: summarized from the above sources, 2017

Data panel analysis also confirms the relationship between the conventional variables and the number of tourism demand. The results show that price and tourist arrival relationship is negative. The elasticity of income is various (positive and negative). This strengthens the understanding that tourism between countries is basically competitive and zero sum games. In addition, tourism still becomes superior goods and services. The strength of data panel is the ability to display each individual or country in explaining destination's tourism demand. It is important to select the focus of the origin country to be included in the policy making.

### 3. Research Method: Model Used in the Study

#### 3.1 Selected Dependent Variable

This study aims to accommodate all ASEAN countries with more ideal measures. Average length of stay, tourists' consumption expenditure and per capita tourist expenditure are ideal proxies and measurements. They can show the income of Indonesian citizens or companies related to tourists (See 2.1). However, the Central Bureau of Statistics-Indonesia only shows data on average tourism expenditure for all countries. The length of stay on Indonesia destination by international tourists is only available for 3 ASEAN countries within the period of 2006 to 2015. This limitation makes this study not ideal for selecting measurements.

This analysis used the arrival of tourists as the variable of major tourism progress. As mentioned earlier, this is not the ideal size, but has an advantage as information and data about the number of tourist arrivals from nine ASEAN countries are available. Although data for the dependent variable are available, the data for the independent variable are incomplete. The data were limited to 4 countries (Vietnam, Laos, Myanmar and Cambodia). Therefore, this study only involved five countries: Malaysia, Singapore, Thailand, the Philippines and Brunei Darussalam.

#### 3.2 Selected Independent Variables

In line with the purpose of this study, to what extent domestic and ASEAN Agreement policies support the achievement of tourism development. This study selects variables that are relevant to the research problem. The first one is the National Tourism Development Master Plan (RIPPARNAS) compiled in 2009, followed by the arrangements of regional tourism master plan (RIPPARDA). This policy was actually implemented in 2011. It increased the Indonesian Ministry of Tourism's budget for the four pillars (tourism marketing, destination development, the capacity building of human and institutional resources in tourism). The average tourism development budget before the policy reached Rp.800.1 billion (2006-2010), increasing to an average of

Rp.160.40 billion (2011-2015) or around 104.92% (Ministry of Finance-Indonesia, 2016). The large increase shows the government's great commitment to develop tourism. However, the effectiveness needs to be examined, especially in contributing to the progress of the international tourism sector. To provide rigorous analysis of policy, the study used the RIPPARNAS policy variable as a dummy variable as there are significant differences between before and after policy.

The second, ASEAN's liberalization policy was also considered as a serious problem. There are two milestones in the liberalization policy. The first is the acceleration of the ASEAN Free Trade Area (AFTA) from 2008 to start gradually since 2003. AFTA is a form of trade cooperation among ASEAN countries to increase trade volume by decreasing tariffs to 0-5% for all sectors. Some of these policies have been effectively implemented. For example, the cooperation between Indonesia and the Philippines has eliminated tariffs in the exports of rubber, health care, textiles, wood-based and automotive goods since 2008 and 2009. The second is facing the ASEAN Economic Community in 2015. This is a form of liberalization in terms of political security, economic, social and culture. In addition to increasing trade, it can also improve the economy and social life of the ASEAN community. With the existence of ASEAN as media for cooperation, all countries in this region have the opportunity to develop. MEA also facilitates cooperation, bringing convenience in investment, infrastructure and many others (ASEAN, 2015). In positive economics term, it become economic freedom which is considered to be the way of providing the wide arena for global welfare.

Miller et al. (2018) define "economic freedom" as the fundamental right of every human to control his or her own labour and property. In an economically free society, individuals are free to work, produce, consume, and invest in any way they please. In economically free societies, governments allow labour, capital, and goods to move freely, and refrain from coercion or constraint of liberty beyond the extent necessary to protect and maintain liberty itself. It is obvious that AFTA and ASEAN Community are "economic freedom paradigm".

Furthermore, they measure economic freedom based on 12 quantitative and qualitative market institutional factors, grouped into four broad categories of economic freedom: rule of law (property rights, government integrity, judicial effectiveness); government size (government spending, tax burden, fiscal health); regulatory efficiency (business freedom, labor freedom, monetary freedom); and open markets (trade freedom, investment freedom, financial freedom). These factors may indicate significant binding constraints on economic growth and prosperity. In other words, this study can also interpret the level of economic freedom possessed by ASEAN countries; to what extent does Indonesia use ASEAN's freedom to advance tourism development? This is important to answer the doubts about ASEAN liberalization for citizen. This study considers that the two variables are the novelty of research, because previous studies have not taken the variables into account.

Mariyono (2017) also estimated international tourism demand in Indonesia using panel data consisting of 34 countries across the globe within the period of 2002-2011. The demand function was estimated based on the distance between the capital city of Indonesia to the visitor's capital city of the origin country, GDP per capita of the country of origin, visitor population, the exchange rate of US \$ to IDR, bomb attacks in Bali in 2003 and 2005, and distinguished ASEAN members and Non ASEAN (Europe and USA). Ulfa (2017) examined the relationship between per capita GDP, relative prices, substitute and accommodation prices experienced by home countries (as many as 20 countries that have the most visits for Indonesia) to demand of international tourism in Indonesia for the period 2008-2014 with data panel analysis. However, this study only considered conventional factors of demand and has not presented the dynamics of changes in the ASEAN market. Amalia (2015) has also estimated tourism demand in Indonesia from Singapore, Malaysia and Australia with the SARIMA (Seasonal Autoregressive Integrated Moving Average) approach for the 2011-1 to 2015-4 period. The research examined the demand for tourism in Indonesia based on the seasons of the three countries and seasons in Indonesia.

The previous studies used the conventional model of demand theory. It means that the conventional factors had very strong effects and researchers have confirmed the theory. This study applied the Consumer Price Index (CPI), Gross Domestic Product and Gross Domestic Product per capita. They have also considered the importance of infrastructure in tourism, especially transportation infrastructure to estimate tourism demand function.

This study also accommodates these conventional measures. However, it is important to isolate the notion of "citizen of origin". Therefore, the absolute indicator approach is used rather than relative indicators. This is to emphasize the economic behaviors of citizens of the origin country and their consequences for Indonesia. The choice of GNI per capita reflects the income generated by citizens of the country of origin, both within and outside their country within one year. This reflects the elasticity of citizens' income from requests for travel to Indonesia. Therefore, a positive sign is expected for this variable. This is also related to infrastructure. This study

is related to communication infrastructure, which is the level of internet use (INET) in the local community. It usually has a positive relationship where the higher the citizens who have internet access, the higher the number of tourist visits to Indonesia.

However, this research also uses relative concept in price tourism,  $CPI_{ijt}$  or relative tourist price ratio in the country of origin to Indonesian price index ( $CPI_{it}/CPI_{jt}$ ). This relative price variable is proxied by the consumer price index to represent costs in the country of origin to destination.  $CPI_{ijt}$  is thought to affect the demand for travel to Indonesia. It can also be seen that the cost of living in the country of origin (5 countries) relative with the cost of living in Indonesia will affect the visit to Indonesia. This considers the price elasticity between tourism in the country of origin and the number of tourist requests to the destination country. Estimation usually produces negative coefficients. Negative price elasticity of tourist demand shows that low cost of living in Indonesia relative to other countries will increase foreign tourist arrivals.

### 3.3 Data Panel Analysis

Data panel is data which collected by cross section and tracked in a certain time-series. Data panel can also be defined as the combination of data cross section and time series. According to Baltagi (2005): (1) data panel is able to control individual heterogeneity. Individual, company, or region are heterogeneous. Data panel is able to control place and time variant while time series data and cross section are not able to control it. Research based on the time series data and cross section cannot control heterogeneity so that the result obtained is bias. (2) Data panel provides more information, variability and degree of freedom; it reduces collinearities between variables. (3) Data panel is more capable of observing the dynamics of adjustment. When cross section estimation is repeated, it can show how this condition changed over time during the observation.

A regression model is used fundamental framework of data panel analysis is as follows (Aisyah, 2012; Yap, 2011; Baltagi, 2005):

$$Y_{it} = \beta_1 + \beta_2 X_{2it} + \beta_3 X_{3it} + \mu_{it} \tag{1}$$

$i = 1, 2, 3, 4, \dots$   
 $t = 1, 2, \dots, 20$

There are k independent variables which are observed in matrix. Those variables can change between time (t) but do not change between individuals (i); change between i but do not change between t, or change between i and t. Meanwhile, individual effects which are not observed (heterogeneity or components which are not observed/latent variable) are described in constant which contains a constant value and a set of individual or group variable which are constant throughout a certain period.  $\mu_{it}$  is called error (idiosyncratic error) which varies between i and t. Hereinafter, there will be some variations of data panel model as follows: Pooled Regression (Common Effects Model or CEM), Fixed Effects Model (FEM), Random Effects Model or REM. In order to choose the best model, Chow Test or F-test is used. Chow test is used to choose CEM and FEM, while Hausman test is used to determine FEM and REM. This step will be used to determine the most suitable model.

### 3.4 Demand Estimation Model

The general model in this study will follow the empirical model of (Proenca & Soukiazis, 2005; Kareem, 2008; Allen & Yap, 2009; Chasapopoulos et al., 2014; Mariyono, 2017) which identified tourism arrivals or tourist expenditures, income effects, relative prices and infrastructure. They have studied travel requests using the data panel. However, the specific model is displayed by modifying the model to accommodate the real situation in Indonesia. This fact shows that there are institutional and tourism policy factors in tourism demand that have not been considered in their models. Therefore, this study sets the estimation model using the following formula.

$$\ln(TUR_{ijt}) = \alpha_{i0} + \alpha_{i1} \ln(CPI_{i,j,t}) + \alpha_{i2} \ln(GNI_{j,t}) + \alpha_{i3} \ln(INET_{j,t}) + \alpha_{i4} \ln(FRE_{j,t}) + \alpha_{i5} \ln(URB_{j,t}) + \alpha_{i6} D_{it} + \epsilon_{it} \tag{2}$$

Explanation:

- $TUR_{i,t}$  = The number of visits/the arrival of tourists from the native country i in years t (in thousand inhabitants)
- $CPI_{i,j,t}$  = The ratio of consumer price indices of destination country (Indonesia) and origin countries ( $CPI_{i,j,t} = CPI_{it}/CPI_{jt}$ )
- $GNI_{j,t}$  = Per capita income or Gross National Income tourists the native country j in years (in thousand US \$)
- $INET_{j,t}$  = the rate of internet usage per 100 people in the native country j in six years t (in %)
- $URB_{j,t}$  = residents who live in cities in the native country j in six years t (in %)
- $FRE_{j,t}$  = economic freedom index in the native country j in years t

$D_{it}$  = domestic factor RIPPARNAS policy in years t (2006-2010= 0 and 2011-2015=1)

$\epsilon_{it}$  = called as error (idiosyncratic error) which varies between i and t

The analysis of data panel confirmed the relationship between price of other destinations, income and the number of tourism demand. This case strengthens the perspective of which tourism between countries are competitive and zero sum games. Moreover, it confirms that tourism still becomes superior goods and service. The excellence of data panel is that it can show each individual/country in explaining the demand on tourism destination. It is important to consider the focus on the native country to be recommendation in decision making.

**4. Empirical Data**

*4.1 Descriptive Analysis*

The international tourist visits to Indonesia, especially from ASEAN countries, are dominated by tourists from Singapore and Malaysia, each reaching 1 466.01 thousand and 1 138.00 thousand visits per year (Table 2). Meanwhile, the number of tourist visits from Brunei is the lowest (22.62 thousand per year), compared to Thailand (103.5 thousand annually) and the Philippines (175.50 thousand annually). The average cost of living in the country of origin can be seen in the value of the  $CPI_{ijt}$  proxy. The highest  $CPI_{ijt}$  is Singapore (1.05) and Brunei (1.05), and followed by Thailand (1.04), Malaysia (1.04) and the Philippines (1.01). CPI indicates the relative high cost of tourism in each country compared to Indonesia. Possibly, the cooperation between Indonesia and the Philippines made prices relatively low for both countries (see point 3.2.2.). Related to the Internet access by citizens, Singapore has the highest score (70.49%). The lowest internet access is the Philippines (19.93%). In terms of population living in urban areas, the country which has the highest number is Singapore (49.52%), followed by the Philippines (42.01%), Thailand (28.97), Malaysia (19.66%) and Brunei (0.29%).

Moreover, the index of economic freedom may determine the number of visits to Indonesia. This index is measured by twelve economic freedom indicators and each category is assessed on a scale of 0 to 100. The rank of economic freedom can be seen as follows: Singapore (87.66), Brunei (67.84), Malaysia (64.90), Thailand (63.69), and Philippines (56.77). It reflects the agreement and the policy of ASEAN countries does not make the same level of openness among countries. The RIPPARNAS policy is expected to encourage foreign tourist arrivals to Indonesia. This policy is proxied by using a dummy variable to determine between before and after policy. This reflects an increase in the state budget before and after the policy. The code of domestic factor, RIPPARNAS policy in years t are 2006-2010= 0 and 2011-2015=1. Data is not displayed in the table.

Table 2. The Number of Tourists (in thousand people), The Tourism Cost, GNI Per Capita (thousand US \$), Internet Access (%) and The Urban Citizen (%) and The Economic Freedom Index

Country		$TUR_{ijt}$	$CPI_{ijt}$	$GNI_{jt}$	$INET_{jt}$	$URB_{jt}$	$FRE_{jt}$
Brunei	Mean	22.62	1.05	33.62	52.09	74.77	67.84
	N	10	10	10	10	10	6
	Std. Deviation	12.77	0.18	5.72	10.32	1.07	2.23
Malaysia	Mean	1138.14	1.04	8.11	58.52	70.30	64.90
	N	10	10	10	10	10	10
	Std. Deviation	296.15	0.12	1.91	6.53	2.36	2.36
Philippine	Mean	175.50	1.01	2.49	19.93	45.63	56.77
	N	10	10	10	10	10	10
	Std. Deviation	64.97	0.06	0.67	14.80	0.24	1.47
Singapore	Mean	1466.01	1.05	42.41	70.49	100.00	87.66
	N	10	10	10	10	10	10
	Std. Deviation	143.27	0.10	9.67	7.25	0.00	0.96
Thailand	Mean	103.50	1.04	4.11	22.69	42.70	63.69
	N	10	10	10	10	10	10
	Std. Deviation	41.85	0.11	1.01	6.02	3.28	0.95
Total	Mean	581.15	1.04	18.15	44.74	66.68	68.21
	N	50	50	50	50	50	45
	Std. Deviation	622.83	0.12	17.43	22.22	21.30	11.19

Source: Central Bureau Statistics-Indonesia, World Bank, Herritage Foundation, proceeded 2017

4.2 Model Test Using Data Panel

The most appropriate model for the research objectives will be chosen from three models which have been estimated. The three estimated model are Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM) (see Table 3). The model election was done with two kinds of test used as a means for choosing data panel regression model (CEM, FEM or REM) based on the characteristics of data owned; they are F Test (Chow Test) and Hausmann Test.

Table 3. The Estimation Result of Demand with Pooled, Fixed Effect and Random Effect

Variable	Pooled OLS	Fixed Effect	Random Effect
Constant (C)	-2.535728	-1.759836	-2.530.294
LNCPI	-0.500792	-2.995458	-0.322308
LNGNI	-1.976953	-1.890694	-1.977.358
LNINET	0.756115	0.083634	0.762235
LNFRE	0.517990	0.207919	0.521559
LNURB	7.284808	4.354707	7.275.035
LNRIP	2.498508	-1.194500	2.195.571
Adj R <sup>2</sup>	0.772574	0.988152	0.834824
F-Stat	26.47771	376.3180	42.27544

Source: Preceded with Eviews, 2017

Table 3 shows that the constant of all models are negative. This is not theoretically meaningful, because demand equation usually has a positive constant. Negative constants generally occur if there is a considerable range between independent and dependent variables. For example, tourist visits from Singapore and Malaysia to Indonesia are very high, and some independent variables have very low values. Negative constants can be ignored as long as the regression model tested has met the assumptions (e.g. normality for simple regression) or other classic assumptions for multiple regressions (Dougherty, 2002). In addition, as long as the slope value is not zero, there is no need to pay attention to this negative constant.

4.2.1 F-Test (Chow-Test)

Since the probability value of F Test is less than the 5% for significance level (< 0.05), the elected model is FEM. From Table 4, the probability value of Cross-section F is 0.0000. This value is < 0.05. Thus, we can conclude that Fixed Effect Model (FEM) is more precise compared to Common Effect Model (CEM). However, the large value of F in FEM does not ensure the good estimation. The study needs to conduct Hausman test to select FEM or REM (Aisyah, 2012). We will continue to calculate Hausman test (Table 5).

Table 4. F-Test: Redundant Fixed Effects Tests

Redundant Fixed Effects Tests			
Equation: Antonius			
Test cross-section fixed effects			
Effects Test	Statistic	d.f.	Prob.
Cross-section F	178.408021	(4,35)	0.0000
Cross-section Chi-square	140.893381	4	0.0000

Source: Preceded with Eviews, 2017

4.2.2 Hausman Test

Table 5 show the probability value of period random. If the value is > 0.05, the elected model will be RE. In contrast, if the score is < 0.05, the elected model will be FE.

Table 5. Hausman Test; Correlated Random Effects- Hausman Test

Correlated Random Effects - Hausman Test			
Equation: Antonius			
Test period random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Period random	64.091898	5	0.0000

\*\* WARNING: estimated period random effects variance is zero.

Source: Preceded with Eviews, 2017

In the table, the probability value of period random is 0.000. This value is  $> 0.05$ . It can be concluded that FEM is more suitable compared to REM. From those two kinds of models, it can be concluded that FE model is better than CEM and REM, even without any further tests. Hence, the following equation model is obtained:

$$\ln(\text{TUR}_{ijt}) = -1.75 - 2.53\ln(\text{CPI}_{ijt}) - 1.89\ln(\text{GNI}_{jt}) + 0.08\ln(\text{INET}_{jt}) + 0.20\ln(\text{FRE}_{jt}) + 4.35\ln(\text{URB}_{jt}) - 1.94D_{it} + \epsilon_{it} \quad (3)$$

The modeling shows the relationship between the price relative tourism of Indonesia and origin countries ( $\text{CPI}_{ijt}$ ) to tourist arrivals in Indonesia, where 1 percent of relative price changing in the native country will decrease Indonesia's tourism demand as many as 2.53 percent. There is sensitive response to the prices of the two countries where the cost of tourism rises in their country against the cost of tourism in Indonesia will reduce tourism to Indonesia.

This study found symptoms different from those in previous research. The rise in per capita income of the native country will increase the tourism demand. However, this study found that 1 percent of per capita income increase will decrease 1.89 percent of tourism demand. Differences among ASEAN countries have this potential deterioration. It is confirmed that Indonesia as a tourism destination in ASEAN face a service condition which is considered inferior for the high income society.

Market institution is represented by the economic freedom index. This shows that ASEAN economic freedom can be utilized by Indonesia to increase income through the number of tourist visits. Thus, worries and doubts of experts and residents were not reasonable. In term of RIPPARNAS policy, the dummy variable is enough to explain the difference in affect between before and after policy. There is strong influence on RIPPARNAS to increase tourist visits to Indonesia. The overall development of tourism in Indonesia, connected to the policy formulation and implementation of national tourism development master plan was support tourism progress.

In infrastructure, ASEAN society's ability in surfing the internet will be one of important sources and promotions for Indonesian tourism. Thus, the increase of 1 percent of citizens who access the internet will potentially increase the tourism demand as many as 0.08 percent. The citizen proportion which grows and develops in the native countries will also determine the number of tourists who come to Indonesia. Modernization of ASEAN rural areas needs to be done continuously to build travel and tourism friendly society.

## 5. Conclusion and Recommendation

This study aimed to create a model of international tourism demand in Indonesia. This data panel research found that Fixed Effect Model (FEM) was the correct econometrical model used to estimate tourism in Indonesia. This study found some similarities with the former study, especially in the strengthening of demand theory. The tourism cost which tends to be more efficient would increase the number of tourist visits. Communication infrastructure access and the citizen proportion of town/urban in the native country would increase tourism demand to Indonesia. This study considered that modernization in rural areas of ASEAN countries will increase ASEAN tourist visits to Indonesia. Market institutional aspect of policies covering the rules, regulations, fiscal power and market openness would encourage the acceleration of tourism in Indonesia. However, this study discovered that Indonesia tourism is still inferior. Strengthening policies related to the implementation of tourism master plans to improve the quality of infrastructure development of destinations and promotion in Indonesia is much needed. It will improve the good perception of ASEAN tourists for Indonesian tourism.

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Analysis ~~on~~ ~~of~~ Tourism and Market Institutional Policies towards ~~the~~ Tourists Visits to Indonesia  
from ASEAN Countries

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ABSTRACT

Tourism ~~development industry~~ has ~~experienced shown~~ a very significant development. This can  
be seen from several indicators, ~~such as -of the growth in~~ the number of foreign ~~and domestic~~  
tourist arrivals ~~and the archipelago~~ tourist spending, employment opportunities and the tourism  
sector's contribution to national income (GDP). Indonesian Tourist Policy has been combined  
with Law No.10 of 2009 concerning Tourism, and operationalized by Government Regulation  
No. 50 of 2011 concerning the National Tourism Development Master Plan (RIPPARNAS).

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Previous economic tourism research has not accommodated the ~~role importance~~ of economic institutions as a determinant of foreign tourism demand in Indonesia. This study focuses on tourism demand from ASEAN countries. The model is expected to explain the optimization of tourism resources for development ~~progress~~. This data panel study found that Random Effect Model (REM) is the ~~correct~~ ~~econometric~~ ~~statistical~~ ~~analysis~~ ~~model~~ used to estimate tourism in Indonesia in ten years (2006-2015). This study ~~revealed~~ ~~found~~ some similarities with previous studies, especially in strengthening the theory of demand. The relative cost of tourism which tends to be more efficient will increase the number of tourist visits. Access to communication infrastructure and the proportion of city residents in the country of origin will increase tourism demand to Indonesia. Liberalization ~~of~~ policies need not be feared by many people, because the institutional aspects of the market which include rules, regulations, fiscal strength and market openness will encourage the acceleration of tourism. However, this study found that tourism services in Indonesia ~~are is~~ still inferior. This requires international tourism marketing that changes perceptions and develops adequate destinations to facilitate ASEAN community members. In addition, this study considers that modernization in rural areas and strengthening of related policies are related to the implementation of tourism master plans to improve tourism optimization.

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## 1. Introduction

Tourism is one of the most advanced sectors. ~~It has and~~ becomes an ~~industry~~ ~~industrial~~ which ~~can is able to~~ ~~raise~~ ~~increase~~ the international ~~of income~~ growth ~~higher~~ ~~more~~ than ten percent ~~in the along~~ last ten years. The number of international tourism expenditure has reached ~~at~~ more than ~~US\$~~ \$ 525 billion in 2014 (UNWTO, 2015). Potential tourist destinations also

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create numerous employment opportunities and foreign exchange which contribute to the economy~~ie~~ of many countries. Tourism is also a means of increasing facilities and infrastructure of to each tourist destinations in a country. Tourism has promoted cooperation and understanding among ~~the~~ citizens ~~in the~~ worldwide. Tourism has become a means for many countries, particularly ~~the~~ developing countries, to increase their base income and preserve their culture heritage and tradition.

Nowadays, tourism sector plays an important role in running to run our the national, region and local economic wheelcycle. The decision in making tourism sector as the flagship is very reasonable since Indonesia ~~is a country which~~ has various varied natural resources, various derivative products, and also cultural diversity ~~wealth~~. Various policies were made for directing to be the implementation steps and direction to the tourism sector. Law No.10/2009 has clear and prudent vision, mission, and principles (Indonesian Government, 2009). ~~Since, t~~ Tourism development has to be laid within the sustainable development framework, ~~of sustainable development~~. Sustainability here referring refers to the balance between three elements, which are the environmental, economic and social aspects. This policy has achieved its sufficient signs of progress. First, contributions of tourism sector are strengthened by the on national or regional income. Data from the Central Bureau of Statistics-Indonesia (2012) showed that the contributions of tourism sector in gross domestic product and the constant value reached of up to 16.93 percent in 2009, increasing up to 17.30 percent in 2010, getting higher to 17.74 percent in 2011, and even higher to the level of 18.05 percent in 2012. This has made the given tourism sector the as second largest national income contributor after manufacturing industry. Second, the labour absorption of tourism sector is also strengthened. National Labour Force Survey, 2013 (Central Bureau of Statistics-Indonesia, 2013) showed that this sector could absorb over 20

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percent of the ~~national~~ work forces every year from August 2009 to 2012. Tourism had been propping workforce of 20.93 percent of the work force in 2009. This capability declined slightly ~~to became~~ 20.73 percent in 2010, ~~and then it but~~ increased significantly to ~~be~~ 21.33 percent in 2011. This capability ~~is~~ ranked ~~as~~ the second highest after the primary sector. ~~The t~~Third ~~is~~ wages ~~repair and~~ improvement. ~~In fact, t~~Tourism sector is ~~also~~ capable of providing ~~a the~~ multiplier effect in the ~~form of increase of~~ community welfare, either directly or indirectly, especially in developing tourist destination areas. This sector rapid growth ~~contributes to the is~~ economic development ~~which is valuable for the economic~~.

However, other data also shows that tourism sector has not been ~~in accordance and~~ in line with the expectation of tourism sector development. ~~At~~In the international level, the market segment of Indonesian tourism ~~is has~~ only about 1.2 percent with ~~athe~~ value of about USD 1.7 billion in 2014. The government has projected foreign exchange from all ~~of the~~ sectors of about USD 20 billion in 2020, ~~mean~~while the tourism market ~~just~~ reached USD 5 billion or 25 percent of ~~the national~~ total foreign exchange ~~national~~ target in 2014 (Ministry of Tourism-Indonesia, 2016). The ~~existence and the~~ role of Indonesian tourism ~~is are~~ still low compared ~~d~~ to ~~that of~~ some ASEAN countries, ~~especially~~ ~~specifically~~ Malaysia, Singapore, Thailand and ~~the~~ Philippines. The roles and contributions of international tourism sector ~~which~~ are still low and slow.

The low progress has drawn criticism and concern from many parties. The ~~number of~~ criticisms were addressed ~~to in~~ government policies ~~that were~~ deemed ineffective in supporting national tourism competitiveness. Criticism ~~s~~ and ~~worries~~ are aimed at ~~the~~ National Tourism Development Master Plan (RIPPARNAS) ~~policies~~ and ASEAN liberalization policies. Both ~~of~~ policies are ~~seen as policies that are~~ considered not effective ~~towards success yet~~. Anti-liberalization supporters ~~argued said that~~ the ASEAN integration agreement: One Vision, One

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Identity, One Community is unsettling political jargon (Savira, 2016). Aspects and terms of liberalization, exploitation, and unemployment are the most sensitive economic, social and political issues in the country. Liberalization resulted in imported goods flowing in large quantities, ~~and~~ threatening the local industry. Large-scale exploitation of ~~the availability of~~ natural resources ~~occurs was~~ due to incoming ~~of~~ foreign direct investments. The ~~low~~ competitiveness of domestic labor, education and limited productivity resulted in domestic unemployment. ~~Similarly, In similar,~~ Adiyati (2017) stated ~~that the cooperation of~~ ASEAN Economic Community ~~has~~ created ~~the s-~~ wave of liberalization ~~in among~~ ASEAN member states, which is not easy to cope with, for example, Indonesia which is still included in the ~~list of~~ third world countries ~~list~~.

There ~~is are~~ serious need to examine the situation. ~~It, it~~ is useful to reduce the ~~view~~ disparity ~~in opinion~~. Some national studies have examined ~~the issueit~~, but the ~~studiesy have has~~ not been able to ~~answer~~ explicitly ~~improve~~ the effectiveness of these policies (see Mariyono, 2017; Ulfa, 2017; Amalia, 2015). This study focuses~~d~~ on Indonesian tourist visits and the ~~the~~ ~~influencing~~ factors ~~that were considered to influence it~~. This ~~main objective of the~~ study is ~~mainly~~ to examine to what extent ~~de~~ RIPPARNAS and ASEAN liberalization policies affects the achievement of International tourism in Indonesia<sup>2</sup>. ~~This It~~ can be considered as ~~the~~ novelty of ~~it~~ this research. The conventional factors ~~had very strong affects which~~ that have been ~~identified~~ ~~carried out~~ by previous researchers were ~~taken into account, taken to confirm the theory. The~~ ~~study also considers It is reviewing the enactment of the~~ demand theory, such as tourism costs measured by the Consumer Price Index (CPI), ~~that~~ previously known as Gross National Product per capita. The importance of infrastructure in tourism ~~has have~~ been accounted in some previous ~~studies~~, especially transportation infrastructure. ~~Research on The study of~~

communication technology related to the level of internet use (INET) in ~~local native~~ communities ~~has have~~ not received adequate attention ~~yet~~. This study was conducted to ~~find out~~ ~~to investigate~~ ~~examine the tourist visits from several~~ ~~the current tour of selected~~ ASEAN countries (Brunei, Malaysia, Philippines, Singapore and Thailand) to Indonesia. ~~For the benefits~~ of this study, ~~the use of~~ data panel was considered ~~highly~~ relevant to be used.

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## 2. Conceptual Framework

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### 2.1. The Function of International Tourism Demand

The use of tourism demand theory as an ~~instrument of tourist service behaviour analysis~~ ~~system~~ ~~puts usually~~ the output measurement or quick result as a dependent variable. This case was mostly ~~reported by done on the~~ previous researches. Several variables used to measure the results of tourism service are:

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1. International Tourist Arrivals (Brakke, 2005; Botti, et.al. 2006, Larson, 2008; Kareem, 2008; Altin\_ & Uysal.2009; Padhan, 2011; Rochester, 2011; Asemota & Bala, 2012; Webb & Chotithamwattana, 2013; Athanasopoulos,et.al.,2013; Mamula, 2015; Mei, 2015; Sinaj, 2015; ~~Some Indonesian studies are~~ Amalia, 2015; Ulfa, 2016; Mariyono, 2017)
2. Average Length of Stay (Teresa & Amaral, 2000).

3. Visitor/Tourists Consumption Expenditure (Proença & Soukiazis, 2005; Song, et.al, 2008)

According to the literature review, the most suitable variable to be used as a dependent variable in demand equation is tourism income, either from the perspective of receiver country or tourism expenditure from the perspective of supplier country. However, the number of foreign tourists visits becomes the mostly used dependent variable if it is compared to the length of stay and travel expenses. The study estimates that 70 percent of research on tourism demand function has applied the number of visitors (entrance) as a dependent variable. The main reason for this option is that the data of about travel expenses or travel costs have already been accessible. This case has prompted arguments in tourism studies.

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Tourism research often expanded at the outcome level and the generated impact. A sustainable tourism development paradigm encourages tourism sector. It is expected to realize the economic growth, social welfare and environmental improvement. The study research, known as Tourism-Led Growth Hypothesis (TLGH) (Georgantopoulos, 2013), economic growth must be combined with the goals of 21 agenda. The TLGH study and Agenda 21 encourage the use of utilization of a number of variables and indicators. Some dependent variables under this study are First, economic growth (Georgantopoulos, 2013), human development, Gini index and absolute poverty rate (Vanegas, 2014). According to identification from those the references, the foreign tourism, either by economic micro or and macro approach, had the chance to rejuvenate dependent variable, which is dominant are majoring such as those the disparity indicators (Gini Ratio or GR); living quality; and environmental quality. The role of Gini Ratio's role is to measure the rate of distribution result in tourism sector. In terms of On environmental aspects, variable which displays the level of environmental quality or biodiversity that serves as

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an alternative of the major discussion. ~~In statistical model~~ Moreover, the paradigm under TLGH and agenda 21 suggests the using multivariate analysis. It is the integration of ~~suggesting to integrate~~ sustainable tourism development ~~goals~~ goals or in the terms of the using of simultaneous ~~indicators for dependent variables, such as environment, as well as~~ economic environment, economic and social aspects (Georgantopoulos, 2013).

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Teresa ~~and~~ Amaral (2000) use the number of visitors ~~staying~~ ~~spending~~ ~~spent the a~~ ~~night in on the~~ destination country as a dependent variable to study tourism demand using ~~in the~~ data panel approach. The ~~selection choice~~ of this variable to ~~reveal express~~ tourism demand (compared to the arrival of tourists) ~~provides have~~ the advantage ~~of~~ considering the length of stay and ~~to~~ ~~exclud~~ing tourists who live in their family's or friends' homes. The debate on the measurement of tourism performance ~~was not satisfied the researchers~~ was inadequate. For that reason, ~~an the~~ effort to find an ~~in finding~~ alternative way ~~for on~~ measuring tourism performance must be conducted.

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## 2.2. ~~The~~ Factors ~~Which Affect~~ Affecting Tourism Demand

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~~Many potential factors can influence tourism demand. The estimated function of demand is very diverse, depending on the situation or area used, the research period, time, type of data (time series, cross section or data panel), characteristics of tourism (holidays, business trips), types of visits (family visits, friends, recreation and others). A large number of potential factors explain tourism demand and varied function specification demand according to the state or the area that is used, research a period of time research, types of data (time series or data panel and the tourism traits (vacation, business trip, family or friend visits, and others). Explanatory variable selection to be included in sensitive model also need to consider basic statistics, towards~~

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difficulties such as; degree of freedom, the reliability of data, collinearities problems, variable bias or endogeneity inconsistency (Mamula, 2015).

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Proença and Soukiazis (2005), and Song, et.al (2008) identified one set of potential determinants that can affect the tourists' decision to travel, which include: into the following categories: socioeconomic factors such as income levels, relative price of origin and destination country, demographic, urbanization and the length of recreation time; the technical factors associated with the convenient communication and transportation facilities; psychological factors and culture which reflect personal preference and lifestyle of potential travellers; and the random factors related to dealing with an unexpected events occurrence such as political instability, weather conditions, natural disasters, plagues, and so on. In more details, the variable which is used as an explanatory are discussed in more detail on the foreign tourists visit.

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The variables used as explanatory variables are discussed in more detail  
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### 2.2.1. National Income Factor (Tourist Origin)

Average income is assumed to be the most important factor which affects someone's decision to travel. It has been proven in empirical. The literature has shown that orders for tourism and length of stay are directly related to deal with income levels (the personal wealth) of potential travellers and is inversely related to with domestic life costs. Hence, the position of potential tourists' purchasing power is the dominant factor in explaining the current tourism and causality is expected to grow stronger (Asemota & Bala, 2012); (Webb & Chotithamwattana, 2013).

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Several different variables have been used for a proxy of the wealth level of native country's tourists. They are; Gross national product or gross domestic product in real terms or nominal, but above all it is very possible to use GDP and GNP average income. Other studies use Industrial Index Production or family income as economic wealth measurement. Most studies

use real average income as the most accurate indicator for measuring the living standard of the ~~state sender~~ (origin country).

According to ~~the~~ literature, ~~tourism is luxury goods/services in developing countries. It was showed by value of~~ income elasticity ~~to of~~ tourism demand is higher than one. ~~But, it does not always occur in some studies. If income elasticity is less than 0, tourism will be categorized inferior goods/services. and this is what happens in most studies.~~ On the other hand, ~~if income elasticity is between 0 and 1, tourism will be categorised as normal or basic need for tourists. In the some effort to review the~~ empirical findings, ~~about it is concluded that the~~ elasticity of income of ~~a specific~~ tourism demand ~~has specific characteristics~~ for each state. ~~The findings of research and cannot be~~ generalized. ~~It depend on how the model can be made, about~~ the value of which is going to be used and its coefficient. ▲

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#### 2.2.2. ▲ Trading Volume and the Exchange Rate Level

International trade is the trading ~~of~~ goods or services ~~output performed~~ by the people of a country with other citizens of different countries in the world. Trade does not only include exports and imports of goods but also activities in exports and imports of services ~~as well as~~ and also capital trade. Foreign trading has an extensive impact on ~~the~~ economic growth ~~of~~ a country, especially in developing countries. Foreign trading is determined by the work force exchange rate, consumer price index, and international trade policy on imports charge and taxes. Trading volume between native and the destination country will affect ~~the~~ mobility ~~of~~ business, and allow ~~the presence of~~ direct interactions between residents. ~~The mobility of~~ citizens ~~mobility~~ due to businesses will increase tourist visits into a country (Kuncoro, 2016).

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On the other hand, exchange rate levels will affect trading volume. Strengthening exchange rate of the ~~native origin~~ country to the destination country will make tourists receive a higher value of surplus consumers, ~~as the tourism costs down or cheaper tourism costs.~~

### 2.2.3. Domestic Price Factor and Other Destinations

The inclusion of prices in tourism demand functions as a result of some theoretical considerations. Tourism ~~includes is~~ consumption of goods which ~~have certain has its~~ prices. It ~~can~~ also ~~can~~ be distinguished ~~from along with the~~ competitors' destination prices or different purposes. ~~The For the~~ financial problems in the ~~origin native~~ country lead the households to decide which product to consume on the top list, ~~Whether~~ it is tourism product or other kinds of consumption goods, ~~especially things~~. After ~~he an individual~~ makes a decision to travel, ~~the individual he~~ will choose a travel destination by considering other factors such as the total travelling cost and ~~the individual he~~ will try to maximize his utilities. However, the tourist's demand does not ~~only~~ depend on the travel cost, ~~only~~ but also ~~the at a~~ price of goods and alternative services ~~as well as and~~ the ~~level of the~~ general price of domestic market.

Here we need to differentiate two different situations. ~~The First is, from~~ the sender's point of view, ~~that on which~~ the ~~increase raising~~ of domestic price ~~will level~~ lower purchasing power of potential tourists. This ~~ease~~ definitely lowers their demand to travel. On the other ~~handside~~, the ~~increase of raising~~ price ~~level~~ in the destination country makes tourists hesitate to travel to that country or allocate their ~~visit consumption~~ to other cheaper destinations. In this case, these two types of prices need to be considered ~~with regard to into~~ the tourism demand. Relative prices between the recipient/destination country from the sender country and relative

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prices between different competitive destination places ~~which is are~~ rooted in the substitution price effect theory.

Some ~~proxy-proxies~~ which are most frequently used in tourism research ~~are~~ relatively and adjusted consumer price index (CPI), CPI from favourite destination, travel price index, the average level of price hotel, the ticket and travel cost, ~~and~~ the price of tourism package. ~~So that~~ Thus, the cost of transportation among countries can also be used as a proxy for ~~the~~ tourism cost from ~~the~~ origin country to the destination country at a particular period.

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#### 2.2.4. Infrastructure and Spatial Variables

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Infrastructure becomes one of crucial discussion ~~topics~~ in tourism. Connectivity and accessibility are particularly important for trip and tourism business. ~~The availability of~~ Supporting tourism ~~infrastructures~~ such as roads, accommodation, transportation, communication and some other supports have ~~an important very big~~ role which determines any travelling decision. The accommodation rate, accommodation capacity and public infrastructure investment of a tourism destination country are the ~~determined~~ supporting ~~factors~~ infrastructure. Other public investment ~~ratio factors~~ in ~~the~~ destination country ~~such as for example~~ a fixed number of telecommunications services (cellular mobile), the level of internet use, television ownership access also determines tourists' understanding towards travelling destinations and ~~influence determines~~ any decision ~~of the tourists~~ on it.

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#### 2.2.5. The Structure of Capital Market Industry

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Dow Jones' stock market index and logarithm index of average stock market industry are used as influential stock market in tourism demand. In the short-term (1 to 5 years), there is no clear relationship between tourism growth and ~~Moving a~~ Average of stock price. ~~Even often happens a~~ Negative relationships between stock price movements and tourism growth often happen. The negative correlation between stocks and tourism growth occurs ~~red~~ because of excessive financial market reaction compared to the revolution of real sector actual economic activities in tourism.

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#### 2.2.6. Non-Economic Variable

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##### 2.2.6.1. Political Variable

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Politics is a proxy ~~forto~~ improvinge its illegal ~~politicsat~~, instability, and economic pressure or otherwise (Brakke, 2005). Political instability in various parts of Africa ~~e~~ Continent ~~has having a~~ negative effect on tourism (Kareem, 2008). ~~;-~~ Economic Sentimen Indicators will be shown and its policyies implication for tourists ~~which is~~ developed by Altin ~~and&~~ Uysal (2009).

##### 2.2.6.2. Social Variable

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Social proxy is also developed in a number of model as a form of turbulence and social phenomena ~~-accommodation as a form of the weaken~~ that weaken and strengthen of demand tourism, role. ~~In this ease case, some research showed some -the~~ proxies, as the number of unemployment in US (Rochester, 2011), the crime rate ~~which is~~ used to measure the criminal cases in Africa continent (Kareem, 2008), security in ~~relation to term of~~ bomb attacks (Mariyono, 2017) and Gini Ratio to measure social vulnerability over economic gap.

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### 2.2.6.3. Qualitative Variable

Qualitative variable has ~~form~~ variations ~~in form~~ to ~~be~~ used in ~~the~~ model. The qualitative ~~development variables~~ related ~~ing~~ to taste, convenient, and satisfying services ~~should~~ continuously be included ~~in as~~ the development model. Qualitative measure is non-metric and often developed in the form of dummy variables. In ~~the previous~~ ~~older~~ literature, for example, dummy variables ~~were~~ ~~was~~ used to ~~examine~~ ~~know~~ the effects and influence ~~of~~ the Persian Gulf War that had disrupted tourist visit, ~~and~~ the fluctuation of Sandinista civil society in Nicaragua that affect~~eds~~ tourism in the Central America in 1982 – 1989. Several models also include the impact of the global economic crisis in 2008 – 2010, ~~and so on~~.

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### 2.3. The Findings on Data Panel Analysis of Previous Research

Data panel ~~isis~~ data which ~~is~~ collected by cross section and tracked in a certain time-series. Data panel can also be defined as ~~thea~~ combination of data cross section and time series. According to Baltagi (2005), ~~the excellence of data panel model includes: D~~ data panel is able to control individual heterogeneity. Individual, company, or region are heterogeneous. Data panel is able to control place and time variant while time series data and cross section are not able to control it. ~~Research Study~~ based on the time series data and cross section cannot control heterogeneity so that the result obtained ~~is~~ bias. (2) Data panel provides more information, variability ~~and~~ degree of freedom; ~~it~~ ~~and~~ reduces collinearities between variables. (3) Data panel is more capable ~~of~~ ~~the~~ observ~~ing~~e the dynamics of adjustment. When cross section estimation ~~is~~ repeated, it can show how this conditions changed ~~over all the~~ time during the observation.

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Estimation with the data cross section can estimate the condition variable at a certain point. With the data panel which has a long perspective, those changes can be observed so that the progress the speed of economic adjustment can be followed. Data panel is able to identify and measure the impact which cannot be detected in the time series data and pure cross section. Data panel allows to build and examine the behavioral models more completely than the time series data and pure cross section. We can do fewer restrictions on the model containing lag-variable. Data panel is obtained from the micro unit such as individual firms. There are more variables that can be measured with more accurately at the micro level that the bias caused by aggregation of some companies can be reduced.

Table 1. Estimation Results of Tourism Demand Based on the Selected of Former Studies (Data Panel Analysis)

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Mariyono (2017)	This research showed that distance ( $DIS_t$ ) was one of the important factors that reduced the number of foreign tourists coming to Indonesia during 2002-2011. Richer and larger countries increase the number of tourists traveling to Indonesia. Bomb attacks in Bali ( $D_t$ ) reduce the number of foreign tourists. The trend of foreign tourists has fallen significantly due to bomb attacks. Tourists from western countries ( $WEST_{IT}$ ) visit Indonesia more than ASEAN ( $ASE_{jt}$ ). Indonesian policy must provide safety guarantees for tourists to attract more visitors. The increase in visits will lead to an increase in job creation and a share of GDP, and ultimately strengthen Indonesia's economy according to time ( $T$ ).
Chasapopoulos,	This analysis estimates tourism demand ( $TA_{i,j}$ ) with the gravity model to

et.al. 2014	Greece from 7 neighboring countries. The data used <del>was</del> -were panel data during the period 2001-2010. This estimation shows that distance ( $D_{ij}$ ), income (capita GDP) and trade value ( $TV_{ij}$ ) have explanatory power more than the relative price ( $RP_{ij}$ ) and other determinants such as transportation infrastructure ( $GI_{jt}$ ) for travel demand to Greece. Also political stability seems to play an important role in tourism demand. An interesting finding is that the 2004 Olympics ( $D_i$ ) appeared to have a negative impact on international tourist arrivals in Greece that year.
Allen&Yap (2009)	This study used <del>also</del> -panel data approach with Three-Stage Least Square (3SLS) for domestic tourism in Australia during the 1999-2007. Studies showing income elasticity for domestic are negative. The national income variables are positively correlated with domestic business tourism demand. An increase in the domestic prices of travel can cause the demand for domestic trips to fall in the next one or two quarters ahead. The coefficients for lagged dependent variables are negative, indicating perhaps, that trips are made on periodic base.
Kareem (2008)	This study used a panel data approach to African tourist from 20 countries during 1995-2003. He found from the analysis of this study that political instability, crime rates, exchange rate appreciation and the relative of consumer price index serve as signals for potential tourists to Africa. However, previous tourist arrivals, the number of telephone lines, the size of infrastructure, and world income positively influenced or determined the arrival of tourists to Africa.



Proença & Soukiazis (2005)	They used panel data to estimate the demand function of tourism in Portugal during 1977-2001 by considering four main countries as major tourism suppliers (Spain, Germany, France and the United Kingdom). Explanatory variables were per capita income-GDP <sub>ij</sub> ), relative price (P <sub>ij</sub> ), accommodation capacity in Portugal (A <sub>t</sub> ), public investment ratio (IP <sub>t</sub> ), D <sub>t</sub> (Europe Integration). Their empirical analysis shows that per capita income was the most important determinant of demand and accommodation capacity was the most important determinant of supply which explains the tourism movement in Portugal. The estimated dynamic panel data highlights the importance of accommodation capacity as the most important factor in attracting more tourism to Portugal. It was also shown that the adjustment process was slow and given the status quo it was difficult to attract more flows of tourism in the countries mentioned above.
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Note: summarized from the above sources, 2017

Data panel analysis confirms the relationship between the ~~of price~~ prices of other destinations, income and the number of tourism demand (Table 1). The results show that price and tourist arrival relationship is negative. The elasticity of income ~~is~~ is various (positive and negative). This strengthens the understanding that tourism between ~~the~~ countries is basically competitive and zero sum games. ~~In, in~~ addition, tourism still becomes superior goods and services. The strength of data panel is the ability to display each individual or country in

explaining destination's tourism demand. It is important to select the focus of the origin country to ~~be included input~~ in the policy making.

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### 3. Research Method

#### 3.1. The Secondary Data of Econometric Modelling

Modelling is the most popular technique in the use of secondary data. ~~In the econometric modelling.~~ In modelling, econometric is used to explain economics theory. In economics, model is defined as a theoretical construction or economic analysis framework consisting of a set of concept, definition, assumption, equation, similarity (identity) and dissimilarity from which conclusions would be derived. The steps of economic model formation:

- a. Separatinge between economic and non-economic variable
- b. Differentiatinge the chosen and unchosen variable (based on the theory)
- c. Determininge the endogenous and exogenous variable
- d. Arranginge the academic model based on the suitable theory which becomes the basic model choice.
- e. From the selected economic theory, this will include the concept or theoretical definition of economic variable, assumption or equation or identity which is commonly used, or according to the selected theory.
- f. If the data being examined ~~is are~~ cross section, the next step ~~will be is~~ forming a model which can be estimated.
- g. If the data being examined ~~is are~~ time series and it is assumed that variations of period endogenous variable applies are not only determined by exogenous variable according to the same period. Then, ~~then~~ the researchers must create a dynamic model. (PAM,

ECM,PAM-RE, ECM-RE,ADL). The statistical issue of dynamic model, particularly relating to co-integration approach. It is necessary to do unit root test, integration degree test, and co-integration test in doing this approach.

- h. After the specification of dynamic model can be specified as same as cross section, the next step is choosing a model which is able to estimate, ~~and~~ that is expected to be aligned with statistical models.
- i. The following step is forming equation, identity, assumption and operational definition to support the last mentioned model.
- j. This step is relating to data collection, estimation, hypothesis testing, model election, ~~forecasting forecasting~~ and policy evaluation.

Modeling and forecasting are parts of the important econometrics. In tourism study, modeling and forecasting have grown significantly from traditional econometrics to modern econometrics. Further discussion on ~~this displacement aspects~~ will be ~~presented discussed~~ in the next part.

### 3.2. Model Used in the Study

#### 3.2.1. Selected Dependent Variable

This study ~~aims actually intends~~ to accommodate all ASEAN countries with more ideal measures. Average length of stay, ~~and tourists~~ ~~tourist's~~ consumption expenditure ~~and~~ per capita ~~tourist expenditure data~~ ~~are ideal proxies and measurements. They can is measured that is able to~~ show the income of Indonesian citizens or companies related to tourists (See 2.1). ~~However, the~~ ~~but~~ Central Bureau of Statistics-Indonesia only shows data on average tourism expenditure for all countries. The number of ~~tourist~~ nights spent by international tourists is only available for 3

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ASEAN countries; ~~for samples within the period of from~~ 2006 to 2015. This limitation makes this study not ideal for ~~choosing selecting~~ measurements.

This analysis ~~used~~ the arrival of tourists as the variable of major tourism progress. As mentioned earlier, this is not the ideal size, but has ~~an the~~ advantage ~~as that~~ information and data ~~are available~~ about the number of tourist arrivals ~~from for~~ nine ASEAN countries ~~are available~~. ~~with the aim of Indonesia~~. Although data for the dependent variable ~~are is~~ available, the data for the independent variable ~~are is~~ incomplete. ~~The data were limited and too limited for to~~ 4 countries (Vietnam, Laos, Myanmar and Cambodia). Therefore, this study ~~only involved~~ ~~determined that only~~ five countries: ~~in Indonesia~~, Malaysia, Singapore, Thailand, the Philippines and Brunei Darussalam.

### 3.2.2. Selected Independent Variables

In line with the purpose of this study ~~to answer the problem,~~ to what extent ~~do~~ domestic and ASEAN Agreement policies support the achievement of tourism development? This study selects variables that are relevant to the ~~interests of answering the~~ ~~research~~ problem. The ~~first one is,~~ the National Tourism Development Master Plan (RIPPARNAS) compiled in 2009, ~~and~~ followed by the arrangements of regional tourism master plan (RIPPARDA). It was conducted through the four pillars of the tourism program which have ~~very~~ clear purposes and directions. This policy was actually implemented in 2011. ~~It This policy~~ increased the Indonesian ~~- Ministry of Tourism's tourism ministry's~~ budget for ~~the~~ four pillars (tourism marketing,

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destination development, the capacity building of human and institutional resources in tourism).

The average tourism development budget before the policy reached Rp.800.1 billion (2006-2010), increasing to an average of Rp.160.40 billion (2011-2015) or an increase of 104.92% (Ministry of Finance-Indonesia, 2016). The large increase shows the government's great commitment to develop tourism. However, but the effectiveness it needs to be examined, especially for its effectiveness in contributing to the progress of the international tourism sector. To provide rigorous analysis of policy, the study used the RIPPARNAS policy variable as a dummy variable as, namely there are significant differences between before and after policy.

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The second, ASEAN's liberalization policy was also considered as a serious problem. There are two milestones in the liberalization policy. The first is the acceleration of the ASEAN Free Trade Area (AFTA) from 2008 to start gradually since 2003. AFTA is a form of trade cooperation among ASEAN countries to increase trade volume by through decreasing tariffs to 0-5% for all sectors. Some of these policies have been effectively implemented. For example, the cooperation between Indonesia and the Philippines has eliminated tariffs in the field of exports of rubber, health care, textiles, wood-based and automotive goods since 2008 and 2009. The second is, facing the ASEAN Economic Community in 2015. This is a form of widespread liberalization in terms of political security, economic, social and cultural aspects. This collaboration was conducted in addition to increasing trade, it can also improve the economy and social life of the ASEAN community. With the existence of ASEAN as media for cooperation, all countries in this region have the opportunity to progress and develop. MEA also facilitates cooperation, bringing convenience in the fields of investment, infrastructure and many others (ASEAN, 2015). In

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positive economics term, it ~~become is~~ economic freedom which is considered to be the way of providing the wide arena for global welfare.

Miller, et.al. (2018) define~~d~~ “economic freedom” as the fundamental right of every human to control his or her own labour and property. In an economically free society, individuals are free to work, produce, consume, and invest in any way they please. In economically free societies, governments allow labour, capital, and goods to move freely, and refrain from coercion or constraint of liberty beyond the extent necessary to protect and maintain liberty itself. ~~These are~~It is obvious clear that AFTA and ASEAN Community are “economic freedom paradigm”.

Furthermore, ~~T~~they measure economic freedom based on 12 quantitative and qualitative ~~of~~market institutional factors, grouped into four broad categories, ~~or pillars~~, of economic freedom: rule of law (property rights, government integrity, judicial effectiveness); government size (government spending, tax burden, fiscal health); regulatory efficiency (business freedom, labor freedom, monetary freedom); and open markets (trade freedom, investment freedom, financial freedom). These factors may indicate significant binding constraints on economic growth and prosperity. In other words, this study can also interpret the level of economic freedom possessed by ASEAN countries; ~~;~~ to what extent ~~does~~ Indonesia use ASEAN's freedom to advance tourism development? This is important to answer ~~the excessive~~ doubts about ASEAN liberalization for citizen.

This study considers that the two variables are the novelty of research, because previous studies have not taken ~~the variables~~ into account ~~it yet~~. Mariyono (2017) also estimated international tourism demand in Indonesia ~~function of~~ using panel data, consisting of 34 countries across the globe ~~within the period of during~~ 2002-2011. The demand function was estimated ~~based on from~~ the distance between the capital city of Indonesia to the visitor's capital

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city of the ~~origin~~ country-of-origin, GDP per capita of the country of origin, visitor population, the exchange rate of US \$ to IDR, bomb attacks in Bali in 2003 and 2005, and distinguished ~~ds~~ ASEAN members and Non ASEAN (Europe and USA). Ulfa (2017) examined ~~ds~~ the relationship between per capita GDP, relative prices, substitute and accommodation prices experienced by home countries (as many as 20 countries that have the most visits for Indonesia) to demand of international tourism in Indonesia for the period 2008-2014 with data panel analysis. However, this study only considered ~~eds~~ conventional factors of demand and has not presented the dynamics of changes in the ASEAN market ~~agreement yet~~. Amalia (2015) has also estimated tourism demand in Indonesia from Singapore, Malaysia and Australia with the SARIMA (Seasonal Autoregressive Integrated Moving Average) approach for the 2011-1 to 2015-4 period. ~~The research examined~~ ~~This is to find out~~ the demand for tourism in Indonesia based on the seasons of the three countries and seasons in Indonesia.

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The previous studies tend to use the conventional model of demand theory. It means ~~s~~ that the conventional factors had very strong ~~effects affects which that~~ have been ~~used carried out~~ by previous researchers ~~were taken~~ to confirm the theory. ~~The study applied~~ ~~It is reviewing~~ ~~the enactment of demand theory of use such as~~ tourism costs measured by the Consumer Price Index (CPI), ~~that previously known as~~ Gross Domestic Product, ~~Gross and Gross National Domestic Product per capita has been widely carried out or~~ Gross National Income per capita. ~~They have~~ also ~~considered have been accounted~~ the importance of infrastructure in tourism, especially transportation infrastructure.

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~~The~~ ~~his~~ study also accommodates these conventional measures. However, ~~it is important~~ ~~this research considers it important~~ to isolate the notion of "citizen of origin". Therefore, the absolute indicator approach is used rather than relative indicators. This is to emphasize the

economic behaviors of citizens of the origin country and their consequences for Indonesia. The choice of GNI per capita reflects the income generated by citizens of the country of origin, both within and outside their country within one year. This reflects the elasticity of citizens' income from requests for travel to Indonesia. ~~Therefore, it therefore are expected a positive sign is expected~~ for this variable. ~~This is also related to infrastructure. This study is related to communication infrastructure in which it is the level of internet use (INET) in the local community. It usually has a positive relationship where the higher the citizens who have internet access, the higher the number of tourist visits to Indonesia.~~

But, ~~this research uses also relative concept in price tourism.~~  $CPI_{ijt}$  or relative tourist price ~~index ratio~~ in the country of origin ~~to Indonesian price index ( $CPI_j/CPI_{jt}$ ).~~ This relative price variable is proxied by the consumer price index to represent costs in the country of origin ~~to destination.~~  $CPI_{ijt}$  is thought to affect the demand for travel to Indonesia. It can also be seen that the cost of living in the country of origin (5 countries) ~~relative with the cost of living in Indonesia~~ will affect the visit to Indonesia. This considers the ~~price cross~~ elasticity between tourism in the country of origin and the number of tourist requests to the destination country. Estimation ~~can usually produce positive, negative, or zero~~ coefficients. ~~Positive cross elasticity shows that the relationship of tourism between countries replaces each other.~~ ~~Negative cross price elasticity of tourist relation demand of tourism between complementary (complementary) countries shows low cost of living in Indonesia relative to other countries will increase foreign tourist arrivals.~~ ~~Zero cross elasticity. Tourism prices will not affect the demand of tourists to Indonesia. This is also related to infrastructure. This study is related to infrastructure in communication, that is related to the level of internet use (INET) in the native local community.~~

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~~It usually has a positive relationship where the higher the citizens who have internet access, the higher the number of tourist visits to Indonesia.~~

~~This whole research~~ is intended to show that fundamental state changes to the independent variables in the country of origin will affect their arrival in Indonesia, without having to estimate the relative strength of each indicator. It reflects that the common arena of ASEAN will be open, free to move and influence other countries. Progress of one of ~~the~~ five countries will be progress for another member country (Indonesia). Therefore, the delay in Indonesian tourism will be driven by the progress of other countries in various dimensions. ~~the Indonesian's worry does not need to occur.~~

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### 3.2.3. Data Panel Analysis

~~A regression model is used~~ fundamental framework of data panel analysis is ~~a regression model~~ as follows (Aisyah, 2012; Yap, 2011; Baltagi, 2005):

$$Y_{it} = \beta_1 + \beta_2 X_{2it} + \beta_3 X_{3it} + \mu_{it} \quad (1)$$

$$i = 1, 2, 3, 4, \dots$$

$$t = 1, 2, \dots, 20$$

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There are k independent variables which are observed in matrix. Those variables can change between time (t) but do not change between individuals (i); change between i but do not change between t, or change between i and t. Meanwhile, individual effects which are not observed (heterogeneity or components which are not observed/latent variable) are described in constant which contains a constant value and a set of individual or group variable which are constant throughout a certain period.  $\mu_{it}$  is called error (idiosyncratic error) which varies between

i and t. Hereinafter, there will be some variations of data panel model as follows: Pooled Regression (Common Effects Model or CEM), Fixed Effects Model atau FEM, Random Effects Model ~~atau~~ REM. In order to choose the best model, Chow Test or F-test ~~is~~ ~~are~~ used. Chow test is used to choose CEM and FEM, while Hausman test is used to determine FEM and REM. This step~~s~~ will be used to determine the most suitable model.

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#### 3.2.4. Demand Estimation Model

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The general model in this study will follow the empirical model of Proenca ~~&and&~~ Soukiazis, (2005); Kareem, (2008); Allen ~~&and&~~ Yap, (2009); Chasapopoulos, et.al, (2014); Mariyono, (2017) which identified tourism arrivals or tourist expenditures, income effects, relative prices and infrastructure. They have studied travel requests using the data panel (See also Table 1). ~~However~~ But, the specific model is displayed by modifying the model to accommodate the real situation in Indonesia. This fact shows that there are institutional and tourism policy factors in tourism demand that ~~have not been considered~~ ~~are not well thought out~~ in their models. Therefore, this study sets the estimation model ~~used~~ using ~~asthe~~ the following ~~sing~~ formula.

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$$\ln(\text{TUR}_{ijt}) = \alpha_{i0} + \alpha_{i1} \ln(\text{CPI}_{i,j,t}) + \alpha_{i2} \ln(\text{GNI}_{j,t}) + \alpha_{i3} \ln(\text{INET}_{j,t}) + \alpha_{i4} \ln(\text{FRE}_{j,t}) + \alpha_{i5} \ln(\text{URB}_{j,t}) + \alpha_{i6} D_{it} + \epsilon_{it} \quad (2)$$

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Explanation:

$\text{TUR}_{i,t}$  = The number of visits/the arrival of tourists from the native country i in years t (in thousand inhabitants)

$CPI_{i,j,t}$  = The ratio of consumer price indices of destination country (Indonesia) and origin

countries ( $CPI_{i,j,t} = CPI_{it}/CPI_{jt}$ )

$GNI_{jt}$  = Per capita income or Gross National Income tourists the native country j in years

(in thousand US \$)

$INET_{jt}$  = the rate of internet usage per 100 people in the native country j in six years t (in

%)

$URB_{jt}$  = residents who live in cities in the native country j in six years t (in %)

$FRE_{jt}$  = economic freedom index in the native country j in years t

$D_{it}$  = domestic factor RIPPARNAS policy in years t (2006-2010= 0 and 2011-2015=1)

$\epsilon_{it}$  = called as error (idiosyncratic error) which varies between i and t

The analysis of data panel confirmed the relationship between price of other destinations, income and the number of tourism demand. The results show their positive relationship. This case strengthens the perspective of which tourism between countries are competitive and zero sum games. Moreover, it confirms that tourism still becomes superior goods and service. The excellence of data panel is that it can show each individual/country in explaining the demand on tourism destination. It is important to consider the focus on the native country to be recommendation in decision making.

#### 4. Empirical Data

##### 4.1. Descriptive Analysis

The number of international tourist visits to Indonesia, especially from ASEAN countries, are dominated by tourists from Singapore and Malaysia, each reaching 1,466.01 thousand and 1,138.00 thousand visits per year. Meanwhile, while the number of tourist visits

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from Brunei ~~is are~~ the lowest (22.62 thousand per year), compared to Thailand (103.5 thousand annually) and the Philippines (175.50 thousand annually). The average cost of living in the country of origin can be seen in the value of the  $CPI_{ijt}$  proxy. The highest  $CPI_{ijt}$  is Singapore (1.05) and Brunei (1.05), and ~~the following sequence is~~ followed by Thailand (1.04), Malaysia (1.04) and the Philippines ~~is~~ (1.01) (presented in Table 2). CPI indicates the relative high cost of tourism in each country compared to Indonesia. Possibly, ~~the widespread~~ cooperation between Indonesia and the Philippines made prices relatively low for both countries (see point 3.2.2.). Related to ~~the~~ Internet access by citizens, ~~in the native country also appears to~~ Singapore ~~has the~~ ~~are~~ highest score (70.49%). The lowest internet access is the Philippines (19.93%). The number of residents ~~who reside in the~~ urban areas also tends to increase the tourism demand. ~~In terms of~~ ~~The~~ population living lives in urban areas, ~~the country which has the highest number is most of~~ ~~which are owned by~~ Singapore (49.52%), followed by the Philippines (42.01%), Thailand (28.97), Malaysia (19.66%) and Brunei (0.29%).

Moreover, ~~the~~ index of economic freedom may ~~be~~ determine the number of visits to Indonesia. This index is measured by twelve economic freedom indicators and each category is assessed on a scale of 0 to 100. The rank of economic freedom can be seen as follows: Singapore (85.5), Brunei (71.6), Philippines (69.9), Malaysia (69.8) and Thailand (66.8). It reflects the agreement and ~~the~~ policy of ASEAN countries does not make the same level of openness among countries. The RIPARNAS policy is expected to encourage foreign tourist arrivals to Indonesia. This policy is proxied by using a dummy variable to determine between before and after policy. This reflects an increase in the state budget before and after the policy. The code of domestic factor, RIPARNAS policy in years  $t$  are 2006-2010= 0 and 2011-2015=1. Data is not displayed in the table.

Table 2. The Number of Tourists (in thousand people), The Tourism Cost, GNI Per Capita (thousand US \$), Internet Access (%) and The Urban Citizen (%) and The Economic Freedom Index

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Country		TUR <sub>it</sub>	CPI <sub>jt</sub>	GNI <sub>jt</sub>	INET <sub>jt</sub>	URB <sub>jt</sub>	FRE <sub>jt</sub>
Brunei	Mean	22.62	1.05	33.62	52.09	0.29	71.6
	N	10	10	10	10	10	8
	Std. Deviation	12.77	0.91	5.73	10.33	0.02	0.03
Malaysia	Mean	1,138.14	1.04	8.11	58.52	19.66	69.8
	N	10	10	10	10	10	10
	Std. Deviation	296.16	0.35	1.91	6.53	1.67	0.16
Philippines	Mean	175.50	1.01	2.49	19.93	42.01	69.9
	N	10	10	10	10	10	10
	Std. Deviation	64.97	0.60	0.67	14.79	1.30	0.15
Singapore	Mean	1,466.01	1.05	42.41	70.49	49.52	85.5
	N	10	10	10	10	10	10
	Std. Deviation	143.27	0.70	9.68	7.25	0.42	0.12
Thailand	Mean	103.50	1.04	4.11	22.69	28.97	66.8
	N	10	10	10	10	10	10
	Std. Deviation	41.85	0.27	1.01	6.02	2.88	0.09
Total	Mean	581.15	1.04	18.15	44.74	19.17	72.8
	N	50	50	50	50	50	48
	Std. Deviation	622.83	0.45	17.43	22.22	15.57	0.68

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Source: Central Bureau Statistics-Indonesia, World Bank, Herriage Foundation, proceeded 2017

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#### 4.2. Model Test Using Data Panel

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The most appropriate model for the research objectives will be chosen from three models which have been estimated. The As for those three estimated model are found the models of Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM) (see the following-Table 3.). The model election was can be done with two kinds of test that can be used as a means for choosing data panel regression model (CEM, FEM or REM) based on the characteristics of data owned; they are: F Test (Chow Test), and Hausmann Test.

Table 3. The Estimation Result of Demand with Pooled, Fixed Effect and Random Effect

Variable	Pooled OLS	Fixed Effect	Random Effect
Constant (C)	90.23477	-67.98078	90.23477
LN CPI	-37.65996	+0.252966	-39.03881
LN GNI	-55.50165	+13.23377	-89.84557
LN INET	+77.91529	+4.948169	84.68873
LN URB	+5.460134	+2.529014	6.676972
LN FREE	+68.91244	+48.70083	72.59082
LN RIPA	+87.39990	+13.36691	51.91444
Adj R <sup>2</sup>	0.877253	0.998730	0.878648
F-Stat	57.71693	3696.636	57.71693

Source: Preceded with Eviews, 2017

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#### 4.2.1. F-Test (Chow-Test)

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Since the value is  $< 0.05$ , the elected model is FEM. From Table 4, the value of probability (Prob.) to cross section F is 0.000. Since the value is  $< 0.05$ , then the elected model is Fixed Effects. In the score table probability value of F-Cross-section F Prob., there is 0.0000. This value whose value is  $< 0.05$ . Thus, so that we can conclude that model in Fixed Effect Model (FEM) is more precisely if it is compared to Common Effect Model (CEM). However, the large value of F in FEM model does not ensure the good model estimation. The study needs to proceed conduct Hausman test to select FEM or RE measure (Aisyah, 2012). We will continue to calculate Hausman test (Table 5).

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Table 4. F-Test: Redundant Fixed Effects Tests

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Pool: ANTONIUS

Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	970.049919	(4.37)	0.0000
Cross-section Chi-square	223.786291	4	0.0000

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#### 4.2.2. Hausman Test

From the top Table 5, Table 5 show the probability value of (Prob.) score Cross-section period random. If the score value is  $> 0.05$ , so the elected model will be RE. In contrast, if the score is  $< 0.05$ , so the elected model will be FE.

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Table 5. Hausman Test; Correlated Random Effects- Hausman Test

Pool: ANTONIUS

Test period random effects\*\*)

Test Summary	Chi-Sq.		
	Statistic	Chi-Sq. d.f.	Prob.
Period random	4.752039	6	0.5760

\*\* WARNING: estimated period random effects variance is zero.

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In that table, the prob. cross-section random score, there are 0.5760 which scored > 0.05. ~~for it~~ it can be concluded that RE model is more suitable compared to FE model. From those two kinds of models ~~election tests, it can be concluded we can draw a conclusion~~ that RE model is better than FE and CE models even without any further tests. Hence, [the following](#) equation model is obtained ~~as follows~~:

$$\begin{aligned} \ln(\text{TUR}_{it}) = & 90.2347 - 39.03881 \ln(\text{CPI}_{ijt}) - 89.84557 \ln(\text{GNI}_{jt}) + 84.68873 \\ & \ln(\text{INET}_{jt}) + 72.59082 \ln(\text{FRE}_{jt}) + 6.676972 \ln(\text{URB}_{jt}) \\ & + 51.91444 D_{it} + \epsilon_{it} \end{aligned} \quad (3)$$

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The modeling shows [the](#) relationships between the price relative tourism of Indonesia and origin countries (CPI<sub>ijt</sub>) to tourist arrivals in Indonesia, where 1 percent of relative price changing in [the](#) native country will decrease Indonesia's tourism demand as many as 39.038



percent. It is measured as the percentage change in quantity demanded for the Indonesia tourism that occurs in response to a percentage change in price of the origin countries to Indonesian price of tourism. There is sensitive response to the prices of the two countries where the cost of tourism rises in their country against the cost of tourism in Indonesia will reduce tourism to Indonesia.

~~While~~ This study found ~~different~~ symptoms ~~different from those in to the former~~ ~~previous research~~ study. The rise in per capita income of the native country will increase the tourism demand. ~~However, but~~ this study found that 1 percent of per capita income ~~increase rise~~ ~~in fact~~ will ~~decrease send down of~~ 89.84 percent ~~of~~ tourism demand ~~to Indonesia~~. Differences among ASEAN countries have this potential deterioration. It is confirmed that Indonesia as a tourism destination in Asia face a service condition which is considered inferior for the high income society. Logically, per capita income in Singapore that rises will move the current program in other countries. Model may need to take Singapore out from it to get a description of countries beyond Singapore.

~~Market institutional~~ which is represented by the economic freedom - more free and more open - will determine the rate of resident's mobility from the native country to travel. The ~~economic freedom Index including market institutional framework which consists of Rule of Law (property rights, freedom from corruption); Limited Government (fiscal freedom, government spending); Regulatory Efficiency (business freedom, labor freedom, monetary freedom); and open markets (trade freedom, investment freedom, financial freedom). This shows that ASEAN economic freedom can be utilized by Indonesia to increase income through the number of tourist visits. Thus, worries and doubts of experts and residents were not reasonable. In term of RIPPARNAS, policy, the dummy variable is enough to explain the difference in affect~~

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between before and after policy. There is strong influence on RIPPARNAS to increase tourist visits to Indonesia. The overall development of tourism in Indonesia, connected to the policy formulation and implementation of national tourism development master plan was support tourism progress.

In infrastructure, ASEAN society's ability in surfing the internet will be one of important sources and promotions for Indonesian tourism. Thus, the ~~increase rise~~ of 1 percent of ~~citizens~~ who access the internet will potentially increase the tourism demand as many as 84.69 percent. The citizen proportion which grows and develops in the native countries will also determine the number of tourists who come to Indonesia. Modernization of ASEAN rural areas need to be done continuously to build travel ~~and sightseeing friendly~~ society.

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## 5. Summary

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This study aimed to create a model of international tourism demand in Indonesia. The model was expected to explain the optimized ~~of~~ tourism resources for the progress of development. This data panel research found that Random Effect Model (REM) was the ~~correct~~ static analysis used to estimate tourism in Indonesia. This study found some similarities with the former study, especially in the strengthening of demand theory. The tourism cost which ~~was~~ ~~tends~~ to be more efficient would increase the number of tourist visits. Communication infrastructure access and the citizen proportion of town/urban in the native country would increase tourism demand to Indonesia. This study considered that modernization in rural areas of ASEAN countries will increase ASEAN tourist ~~visits arrival~~ to Indonesia. Market institutional aspect of policies covering the rules, regulations, fiscal power and market openness would encourage the acceleration of tourism in Indonesia. However, this study discovered that

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Indonesia tourism ~~were-is~~ still inferior. Strengthening policies related to the implementation of tourism master plans to improve the quality of infrastructure development of destinations and promotion in Indonesia ~~are-is~~ much needed. It will improve the good perception of ASEAN tourists for Indonesian tourism.

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