# MEASURING THE RELATIONSHIP BETWEEN INTERNATIONAL TRADE AND INTERNATIONAL TOURIST DEMAND (CASE STUDY OF INDONESIA)

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***ABSTRACT***

*This paper tries to investigate whether there is a relationship between international trade and international tourist arrivals in Indonesia using panel data. For measuring the consistency of the variables, the authors used three models such as Pooled Least Squared (PLS), Fixed Effect, and Random Effect. Using 34 countries of origin from 2006-2016. As the control variables, tourist arrivals in the previous year, GDP, population of origin country, visa-free policy, price ratio, and distance were used in helping to build the model. The results showed that there is a positive correlation between International trade and international tourist arrivals. Tourist arrivals in the previous year, GDP of origin country, population of origin country, and visa-free policy have a positive correlation for international tourist arrivals. While distance, and price ratio have a negative significant correlation. These results can be supportive of government strategies that aim to enhance the country's trade value as well as stimulate Indonesia's international tourism demand.*

***Keywords:*** *International Tourism Demand, International Trade, Panel Data, Indonesia*

## 1. INTRODUCTION

In 1995, the World Trade Organization (WTO) was present as a result of the Uruguay round of the General Agreement on Tariffs and Trade (GATT). In addition, two new international entities were also present, such as the Bilateral Free Trade Agreement (BFTA) and the General Agreement on Trade in Services (GATS). Before BFTA was present, only regional intra free trade entities (for example, EC, NAFTA, EFTA, and AFTA) were limited to geographical boundaries given regional economic integration. However, the emergence of BFTA provides a way for a new type of free trade that transcends regional boundaries, and even across continents. Since BFTA was established between Bolivia and Mexico in January 1995, 49 additional BFTAs have been signed worldwide, since 2006 (SICE, 2007). While a number of new BFTA members are being negotiated or are awaiting final signatures. While BFTA is a voluntary bilateral agreement between countries, GATS consists of a set of multilateral rules governing international transactions in services, such as tourism, under the WTO system.

Global trends such as free trade are based on the argument that transnational interactions without tariffs and other obstacles will lead to more international transactions of goods and services. In fact, total exports of goods and services in the world grew rapidly from US $ 6.4 trillion in 1995 to US $ 12.9 trillion in 2005 (WTO, 2006). As the main sector of international transactions in services, international tourism flows are indifferent to global trends. The impact of GATS on tourism also appears throughout the world. The international tourism industry is one of the largest and most dynamic industries in the world, creating around 2.1 million new jobs and contributing 10.6% of world GDP in 2005 (WTTC, 2005). In 2000, revenues from international tourism reached 500 million dollars, in 2018 it reached 1.340 billion dollars with total tourist arrivals of 1.326 million, and for 2020 they are expected to reach 2 billion dollars (WTO, 2000). This illustrates that the tourism industry contributes greatly to the global economy. However, unlike trade in goods, international tourism flows may not be as interesting as the main economic subjects (Eilat and Einav, 2004).

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In the case of international trade, goods and people are real objects that are exchanged permanently or temporarily across the borders of a country. Such international tangible exchanges are generally accompanied by intangible exchanges, such as perceptions, cognitions, or images of partners. In terms of marketing, these intangible factors play an important role in buying goods and visiting places or countries. From this context, one might think the international flow of goods and people are related to each other directly or indirectly.

As a result, this paper aims to see how much influence the exchange of goods and services between countries leads to an increase in the flow of foreign tourists. Under the assumption that trade and tourism are international flows of merchandise and people, this paper examines whether there is a causal relationship between the exchange of goods and tourism across countries. This paper will adopt a dynamic econometric model to conduct causality analysis using panel data for the period 2006-2016.

### 1.1 Tourism Demand

A simple way to look at tourism and trade relations is to recognize that tourist arrivals can reduce the amount of fixed and variable trade costs. Following Melitz (2003), variable trade costs can be explained by tariffs and transportation costs while fixed trade costs are caused by several factors such as environmental studies of foreign arrangements and foreign standards, regulation of distribution channels in foreign countries, and in accordance with shipping rules set by customs agents foreign excise tax.

Following Deardorff (2014), Tadesse and White (2010) argue that the observed transaction costs do not fully explain variations in cross-border trade flows, cultural differences between countries can also inhibit international trade. Transaction costs associated with cultural differences between trading partners may not be fully represented by geographical distance or by variables representing previous colonial relations. Their results show that cultural distance, as a proxy for differences in norms and values between trading partners, negatively impacts trade flows. In that case, international tourism can help adjust and overcome trade costs. This is because international travel can increase knowledge about foreign cultures, such as business habits and practices in other countries. This makes bilateral trade easier.

According to Sinclair (1998), tourism can help with marketing failures related to lack of information related to production and profitable contracts. Likewise, Arandhyula and Tronstad (2003) find evidence that international tourist arrivals can help overcome information gaps about market opportunities that facilitate new business ventures. Marrocu and Paci (2011) argue that tourists sending relevant information to local companies can help local companies to produce new goods for this international market. Brau and Pinna (2013) argue that direct contact between tourists and local markets can represent an inexpensive way to promote the domestic supply of certain goods in international markets rather than conducting international marketing. In addition, tourism can facilitate better consumer knowledge and can change consumer attitudes about foreign cultures, encouraging new demand for foreign products.

Eilat and Einav (2004) examined tourism demand using investigated three-dimensional panel data. The authors applied multinomial logit regression for the period 1985-1998 (Eilat and Einav, 2004). The results show that bilateral trade and common languages have a positive effect on tourist arrivals. Whereas, destination cost variable and geographical distance have a negative impact on tourism demand. In line with Surugiu et al. (2011), they mentioned that tourism demand in Romania is influenced by per capita income, trade openness, and population and relative prices. Nahar et al (2019) also proved that GDPs from origin and destination country, and visa-free entry have positive effect to the inbound tourist in Indonesia. Tourists in the previous year also used as a control variable, we illustrate the impact of international number of tourist arrivals in the previous year had a number of tourists in the current year. This method was adapted from a study by Garin-Munoz (2007) which rationalized an analysis of the number of tourists in the past in line with several reasons, the desire to avoid risks and having knowledge of their destination also helped reduce other risks that might occur.

## 2. RESEARCH METHOD

Using panel data, this paper aims to investigate the total of trade value between Indonesia and tourist country of origin in affecting the tourist arrivals from 2006 to 2016. Tourist arrivals in the previous year, GDP of origin country, visa policy, population of origin country, price ratio of tourist when living in Indonesia, and the distance between Indonesia and origin country were used for control variables. The data has been collected from various sources, such as Indonesia Bureau of Statistic, World Bank, and distancefromto.net.

Based on the tourism literature, we determine the socio-economic variables that affect international tourism demand for Indonesian case studies, here is an empirical model going as follows:

$$\text{Ln } TA_{it} = \beta_0 + \text{Ln } \beta_1 TA_{i-1} + \text{Ln } \beta_2 GDP_{it} + \text{Ln } \beta_3 TRADE_{it} + \beta_4 VISA_{it} + \text{Ln } \beta_5 POP_{it} - \text{Ln } \beta_6 PR_{it} - \text{Ln } \beta_7 DIST_{it} + \mu_{it}$$

Where $TA_{it}$ is the number of tourist arrivals to Indonesia from country I during year t. $TA_{it-1}$ is the number of tourism arrivals to Indonesia from country I during the last year, $GDP_i$ is the gross domestic product in each country of origin, $TRADE_{it}$ is the total value of trade between Indonesia and country of origin, $VISA_{it}$ is dummy variable for origin countries which have visa-free entry to Indonesia, $POP_{it}$ is the total population of country of origin, $PR_{it}$ is price ratio of living of international tourist in Indonesia, $DIST_{it}$ is the distance from Indonesia to the origin country of tourists.

In this study, the authors used three models in measuring the impact of trade value and other explanatory variables to tourist arrivals, Pooled Least Square (PLS), Fixed Effect, and Random Effect. With these approaches, we would like to see the consistency between variables in different models.

## 3. RESULTS AND DISCUSSION

According to the model and data, PLS and Random Effect will be appropriate because Fixed Effect has experienced a time invariant disturbance that cannot be analyzed with the fixed effect model. According to the table, most of the variables are significant at 1 percent significant level. Tourist arrivals in the previous year, GDP of origin country, Trade value, population of origin country, and visa-free policy have positive significant effect on tourist arrivals, while price ratio and distance have negative significant effect on tourist arrivals. Therefore, we can report that all of the above variables can be considered as potential factors in increasing tourist arrivals in Indonesia.

As the main factor, with significant level 1 percent, trade value has a significant effect on tourist arrivals, 1 percent increase in trade value will affect tourist arrivals from 0.137- 0.171 percent on average. In line with Eilat and Einav (2004) and Phakdisoth and Kim (2007), they found that trade partners are an important vehicle to expand tourism. A higher trade value means wider trade openness. Hence, we can conclude that higher trade value will affect tourist arrivals regarding the trade openness.

Tourist arrivals in the previous year greatly affect tourist arrivals in the coming year. With a significant level of 1 percent, tourist arrivals in the future will increase between 0.311-0.640 percent on average if tourist arrivals in the previous year increase by 1 percent. This result is consistent with Chaisumpunsakul (2016) which found that one percent increase in the number of tourist in the previous year was likely to increase the number of tourists in the following year by 0.259-0.962 percent on average.

In addition, a strong origin country's GDP can explain the ability of its citizens to carry out various economic activities that they want, one of which is visiting interesting places in the destination country. Tourists from high-income regions will have a substantial income compared to other countries that have lower incomes. They can take a business trip or take a vacation to countries that have less currency or go to developing countries. In line with the result, one percent increase in GDP of origin country will affect tourist arrivals in Indonesia by 0.300-0.645 percent on average. Nahar et al (2019) also reported that the higher the GDP of the country of origin, the higher the tourist arrivals to Indonesia

The impact of population changes in a country is important to analyze. Most studies do not consider this variable, because populations tend to be highly correlated with income (Leitão, 2009). Since this research did not use income variables, it is important to involve population variables, so that we can know the impact caused by population changes. Clearly showing that all tourism multipliers are positively correlated with populations (Hanafiah and Harun, 2010), proven by the result of this paper, one percent increase in population will affect 0.289-0.540 percent on average of tourist arrivals.

**Table 1. PLS, Fixed Effect and Random Effect**

| Variables | PLS | Fixed Effect | Random Effect |
|---|---|---|---|
| **$TRADE_{it}$** | 0.137*** | 0.042 | 0.171*** |
| | 0.035 | 0.034 | 0.041 |
| **$TA_{it-1}$** | 0.640*** | 0.078*** | 0.331*** |
| | 0.027 | 0.020 | 0.028 |
| **$GDP_{it}$** | 0.300*** | 1.424*** | 0.645*** |
| | 0.036 | 0.158 | 0.052 |
| **$POP_{it}$** | 0.289*** | 2.402*** | 0.540*** |
| | 0.276 | 0.460 | 0.038 |
| **$VISA_{it}$** | 0.629*** | -0.198** | 0.297** |
| | 0.150 | 0.840 | 0.122 |
| **$PR_{it}$** | -0.072*** | 0.479*** | -0.089*** |
| | 0.013 | 0.074 | 0.022 |
| **$DIST_{it}$** | -0.358*** | Omitted | -0.757*** |
| | 0.078 | Omitted | 0.107 |
| **R-squared** | 0.909 | 0.219 | 0.876 |

Note: *** stands for significant at 1%, ** for 5%, and * for 10% level

Source: Data Proceed

Balli et al (2013) reported that visa-free entry policy has boost the number of tourist arrivals to Turkey, the visa-free entry policy has increased the number of international tourist by about 10.44%. Meanwhile in this case, visa free policy has an impact on tourist arrivals about 0.297-0.629 percent on average.

The other two variables that have negative effects are price ratio and distance. Refers to the comparison between the Consumer Price Index (CPI) of Indonesia and the country of origin, the value has been adjusted according to the currency between countries. Therefore, the PR index can show relative prices that reflect the cost of living of tourists visiting Indonesia. According to the Law of Demand, the coefficient must be has a negative relationship with the number of foreign tourists. Variable distance reflects the distance between Indonesia and the country of origin of tourists, which should have a negative relationship with the number of international tourist arrivals. The results of these two variables in this paper were the same as the theory. One point increase in visa-free policy will affect tourist arrivals approximately 0.297-0.629 on average. On the other hand, distance will decrease tourist interest around 0.358-0.757 on average. These results are consistent with paper by Chainsumpunsakul and Pholphirul (2016).

## 4. CONCLUSIONS

Using data sets of tourist flows between country partners over the years, tourism demand is forecast for this case. The estimation technique between models is used to see the consistency of each variable with different models.

The results showed that international tourism demand in Indonesia has a significant effect in impacting the flows of foreign tourist. Regarding others factors, international tourists who visited Indonesia in a previous year were likely to travel to the country in the following year. The results also suggested that the GDP of origin country, population, and visa-free policy have a positive impact on the number of international tourist arrivals. In addition, the distance between Indonesia to a tourist's country of origin and price ratio tended to cause a negative impact on the number of international tourist arrivals.

Regarding the impact of international trade value between Indonesia and country of origin, this paper found that international trade value has a positive significant impact in increasing the number of tourist arrivals to Indonesia.

Compared to the results obtained in previous studies, the results of this study are quite stable using two regression models such as Pooled Least Squared (PLS) and Random Effect. Therefore, it can be said that this research provides finer evidence for determinants of international tourism.

The results can be used as a basis for policy related discussions. By focusing on international trade agreements and controlling price ratios between countries, Indonesia can be expected to attract more tourists. Further research on this topic is important and may be feasible once more data is available. By following the paths, one can take advantage of the data on the length of the existing stay and the expenditure of tourists while in the destination country.

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