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Analysis of Indonesian Tourism Demand by Foreign Tourist in ASEAN Region

Jasmine Abqoriyyah Haryanto[1], Neli Agustina[2]
[1]BPS Bintan Riau Island, [2]Politeknik Statistika STIS
*Correspondence: neli@stis.ac.id

Abstract

Purpose: This study aims to assess the overall pattern of ASEAN tourist visits to Indonesia and investigate the potential driving tourism demand between 2017 to 2022. The study focuses on variables believed to influence ASEAN travelers' interest in Indonesia, such as per capita income, relative pricing, substitution prices, currency exchange rates, and population size.

Method: This study employs panel data covering 9 ASEAN countries—excluding Indonesia and Timor Leste—namely Malaysia, Singapore, Thailand, the Philippines, Laos, Brunei Darussalam, Vietnam, Cambodia, and Myanmar, as the cross-sectional units over the period from 2017 to 2022. The analysis is based on secondary data sourced from BPS, UNCTAD, and the World Bank. The dependent variable is the number of tourists from ASEAN countries. Panel data regression is utilized to identify the factors influencing the demand for tourism in Indonesia by ASEAN visitors during the 2017–2022

Result: The result of the study indicate that the population and per capita income of ASEAN nations have a significant positive impact on ASEAN travelers' demand for travel to Indonesia. In contrast, the fluctuating cost of substituting Indonesian travel with travel to Malaysia, Singapore, and Thailand has a significantly negative impact on the demand for Indonesian tourism. The relative price variable and the Rupiah exchange rate do not significantly impact the demand for Indonesian tourism by ASEAN travelers.

Contribution: The main contribution of this research is a recommended government policy aimed at maintaining price stability in Indonesia to enhance its competitiveness within the ASEAN region. Additionally, efforts should be made to promote domestic tourism through social media campaigns and to enhance the quality and service standards of the tourism sector to boost Indonesia's appeal. Ensuring currency stability involves implementing a combination of economic and monetary policies, such as balancing currency supply and demand, maintaining macroeconomic stability, managing inflation, and fostering both domestic and foreign investment.

Keywords: ASEAN, Panel Data Regression, Relative Price, Tourism, Substitute Price

Introduction

The tourism sector has become one of the major components of the global economy and contributes significantly to a country's economic growth. In 2022, Indonesia's economy expanded by 5.31 percent. Among the various fields, transportation and storage, accommodation and food services activities, and manufacturing experienced the highest growth rates. These two key sectors serve as primary pillars within the tourism industry. In Indonesia, the tourism sector holds a prominent position in the National Medium-Term Development Plan for the period 2020-2024. The direct contribution of the tourism sector to Indonesia's economy is evident through the Tourism Direct Gross Domestic Product (TDGDP) or the Gross Domestic Product (GDP) directly generated by the tourism sector. The value of TDGDP and its contribution to the economy continued to rise until 2019. However, both indicators experienced a drastic decline in 2020 due to government policies implemented in

response to the Covid-19 pandemic, including widespread lockdown measures that restricted community activities. Although there was some recovery in the subsequent year, it did not reach pre-pandemic levels.

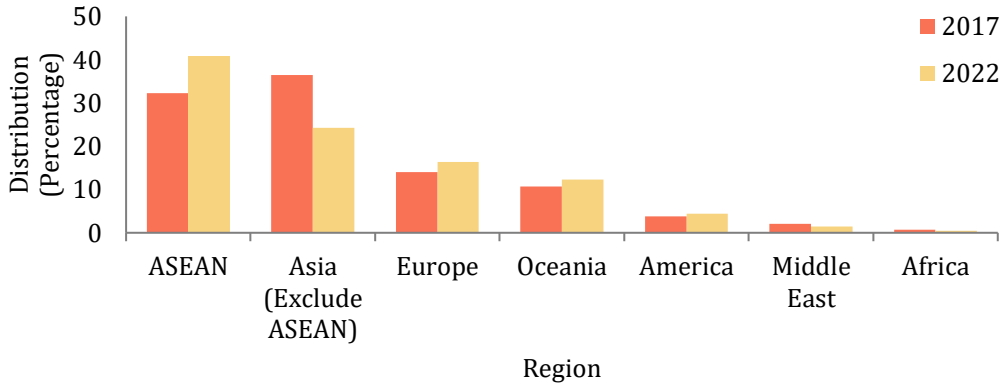

Figure 1. Distribution of International Tourist Arrivals by Region, 2017 and 2022 (%).
Source: *International Visitors Arrivals Statistics,* 2022

The contribution of the tourism sector to the economy is highly dependent on the level of demand in the tourism sector itself. Indonesia's tourism demand can be reflected through the number of foreign tourist visits to Indonesia. Due to its location between two continents and two oceans, Indonesia is a popular travel destination for people from other countries. Indonesia has enormous potential to attract more tourists. As shown in Figure 1, ASEAN tourists dominate foreign tourist visits to Indonesia. There are 40.89 percent or almost 2.5 million ASEAN tourist visits to Indonesia in 2022. The number of foreign tourists to Indonesia from ASEAN shows that ASEAN is the main market for Indonesian tourism. This is due to the proximity of geographical location, easy access to enter and exit between Indonesian regions, and relatively affordable travel costs (Pratomo, 2009). The Visa-Free Visit policy also enhances mobility between ASEAN countries, encouraging ASEAN tourists to visit Indonesia frequently. The high frequency of travel has an impact on the total spending by ASEAN tourists in Indonesia compared to non-Asian tourists (Agustina et al., 2021).

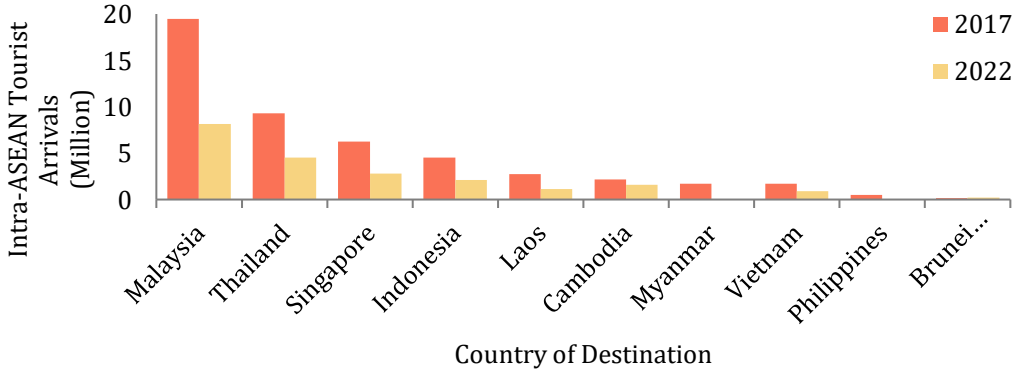

Figure 2. Intra-ASEAN Tourist Arrivals by Country of Destination, 2017 and 2022 (Million).
Source: *ASEAN Statistical Year Book,* 2023

On the other hand, this liberalization decision has led to competition among ASEAN countries. Similar to Indonesia, other ASEAN nations also consider ASEAN as their primary tourism market. As shown in Figure 2, Malaysia has been the main travel destination for ASEAN tourists since 2012. In fact, the number of ASEAN foreign tourists visiting Indonesia ranks fourth after Malaysia, Thailand, and Singapore. However, according to the Travel & Tourism Development Index (TTDI) published by the World Economic Forum (WEF) to measure how competitive a country is in the tourism industry, Indonesia ranks second among ASEAN countries. This indicates that Indonesia has a relatively strong tourism competitiveness within

the ASEAN region. However, a paradox arises where the number of intra-ASEAN tourists visiting Indonesia still ranks fourth.

Several studies related to tourism demand in Indonesia have been conducted previously. Al Qudusi & Gunanto (2022) found that tourism prices, approximated by the Consumer Price Index (CPI), physical investment, and internet usage significantly influence ASEAN tourism visits. Another study by Muryani et al. (2020) suggests that per capita income, relative prices, and the number of vacant rooms have a positive impact, while distance negatively affects tourism demand in Indonesia. On the other hand, Taupikurrahman (2022) discovered that tourism demand is significantly influenced by GDP, lagged visits, tourism prices, competitor prices, seasonal effects, and global crises. Similarly, research conducted by Sugianto et al. (2022) indicates that exchange rates and security variables have a positive impact, while accommodation variables significantly affect tourism demand. Hermawan (2020) states that per capita income, tourism promotion value, inter-country distance, and population size influence inbound foreign tourist visits to Indonesia. Most previous studies incorporate variables beyond demand factors, such as supply-related factors. However, there is a lack of research conducted specifically on the demand for Indonesian tourism by ASEAN tourists.

The significance of Indonesia's tourism sector and its substantial potential for increasing tourism demand among ASEAN tourists prompt this research. The purpose of this study is to analyze the general overview of ASEAN tourist visits and the factors that are suspected to influence the demand for Indonesian tourism from 2017 to 2022, as well as to analyze the factors affecting the demand for Indonesian tourism by ASEAN tourists. Suspected variables affecting Indonesia's tourism demand include per capita income, relative prices, substitution prices, exchange rates, and population size. The research outcomes are expected to provide insights for relevant stakeholders in developing more effective marketing strategies and policies to enhance ASEAN tourist visits to Indonesia, while optimizing the economic benefits derived from the tourism sector.

Research Method

This study uses panel data consisting of 9 ASEAN countries except Indonesia and Timor Leste, namely Malaysia, Singapore, Thailand, Philippines, Laos, Brunei Darussalam, Vietnam, Cambodia, and Myanmar as cross-section with a time period of 2017 to 2022. The data used is secondary data obtained from BPS, UNCTAD and World Bank. The dependent variable used is the number of ASEAN tourist. While the independent variables used include per capita income, relative prices, substitute prices, exchange rates and population. A summary of the data sources and description of the variables used in this research is as follows.

Table 1. Description and Data Sources of Variables

Symbol	Variable's Name	Definition	Source
TA	Tourist arrivals	The number of international tourist arrivals from each ASEAN country.	BPS
I	Per capita income	The GDP divided by the population at mid-year (2010 = 100).	*World Bank*
RP	Relative price	A comparison of prices in Indonesia relative to the prices in tourists' home countries (2010 = 100).	UNCTAD
SP	Substitute price	A comparison of prices in Indonesia relative to the average prices in Malaysia, Singapore, and Thailand (2010 = 100).	UNCTAD
ER	Exchange rate	Bilateral exchange rate against the Rupiah	UNCTAD
POP	Population	An estimate of population at mid-year	*World Bank*

Source: Author's Processing Result,2024

Descriptive analysis is used to provide an overview of ASEAN tourist visits and the determinants of Indonesia's tourism demand using graphs. Furthermore, panel data regression analysis is used to determine the variables that influence the demand for

Indonesian tourism by ASEAN tourists during the period 2017-2022. The steps in conducting panel data analysis are as follows (Baltagi, 2005).

1. Model specifications. Panel data regression models include the CEM, FEM and REM. The Common Effect Model (CEM), also known as Pooled OLS Regression, is the simplest panel data regression model and assumes no differences in variance across observations and time. In the Fixed Effect Model (FEM), each observation and time unit are considered to have distinct characteristics, allowing the intercept to vary across observations and time. The Random Effect Model (REM) assumes differences in individual and time effects, which are incorporated into the model's error term. The model used in this study is as follows.

$$lnTA_{it} = \alpha + \beta_1 lnI_{it} + \beta_2 RP_{it} + \beta_3 SP_{it} + \beta_4 lnER_{it} + \beta_5 lnPOP_{it} + u_{it} \quad ...(1)$$

   Where $lnTA_{it}$ is the natural logarithm of the number of tourist arrivals from country i and year t; lnI_{it} is the natural logarithm of per capita income of country i and year t; RP_{it} is the relative price of Indonesia against country i and year t; SP_{it} is the substitution price of Indonesia against Malaysia, Singapore and Thailand; $lnER_{it}$ is the natural logarithm of the exchange rate of Indonesia's currency against the currency of the i-th home country and year t; $lnPOP_{it}$ is the natural logarithm of the population of the i-th home country and year t; α is the intercept; $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$are the regression coefficients of each independent variable; u_{it} is the error term; i is the country of origin index in ASEAN; and t is the year index.
2. Selecting the best model. The Chow test, Hausman test, and BP-LM test are the three tests that need to be executed. The best model between CEM and FEM is chosen using the Chow test. The model to be tested is FEM following the Fisher distribution. If FEM is the chosen model, then run the Hausman test to find the optimal model between REM and FEM. The model to be tested is REM which follows the chi square asymptote distribution (χ^2). Based on Gujarati & Porter (2008), REM which consists of two or more error components, does not allow for correlation between individual error components with each other, and there is no autocorrelation in both cross-section and time series units. Furthermore, the error effects of the regression components must also not be correlated with any of the explanatory variables included in the model. To identify the best model between CEM and REM, use the BP-LM test if the CEM model is the one that was chosen. The model that will be tested in the BP-LM test is REM which follows the chi square distribution with one degree of freedom, $\chi^2_{(1)}$.
3. If the selected model is CEM or FEM, test the residual variance-covariance structure with LM test to test heteroscedasticity and λLM test to see whether there is cross-sectional correlation.
4. Conduct classical assumption testing. If the estimation uses OLS, the assumptions that require testing are normality test, homoscedasticity test, non-multicollinearity test and non-autocorrelation test. However, if the estimation method used is other than OLS, the assumption tests performed are normality test and non-multicollinearity test.
5. Goodness of Fit test, assess the model's accuracy in representing the relationship between the independent and dependent variables. Various indicators, including the coefficient of determination (R^2), the partial test (t-test), and the simultaneous test (F-test), are utilized for this evaluation. The simultaneous test is employed to determine if the independent variables collectively have a significant impact on the dependent variable. Assuming all other factors remain constant, the t-test assesses whether any individual independent variable significantly affects the dependent variable. Additionally, the coefficient of determination (R^2) serves as a statistical tool to measure the regression model's ability to explain the variation in the dependent variable based on the independent variables included in the model.
6. Interpreting the model is based on the estimation results obtained.

Result and Discussion

Overview of ASEAN Tourist Arrivals and Their Influencing Factors

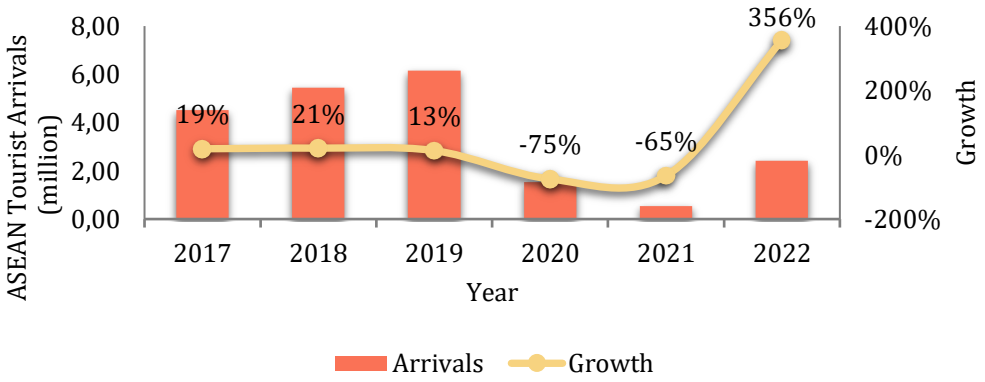

Figure 3. ASEAN Tourist Arrivals to Indonesia, 2017-2022.
Source: *Badan Pusat Statistik*

The number of visits by ASEAN international tourists (foreign tourists) experienced a positive trend until 2019. Alongside the increases, there was a significant decline in the number of foreign tourist visits from 2020 to 2021, as we can see in figure 4. This sharp decline coincided with the spread of the Covid-19 pandemic. Several countries worldwide, including Indonesia, implemented various restrictions for foreigners wishing to enter their territories. Additionally, several cities in Indonesia implemented Large-Scale Social Restrictions (PSBB) limiting community activities and mobility in those areas. However, in 2022, the number of ASEAN international tourist visits increased nearly fourfold from the previous year. The year 2022 marked the beginning of the revival of Indonesia's tourism sector after the pandemic. Various international events also had a positive impact on Indonesia's tourism sector. This positive impact is evident in the significant increase in ASEAN tourist arrivals to Indonesia, reaching 2.41 million visits, marking the success of Indonesia's tourism sector recovery.

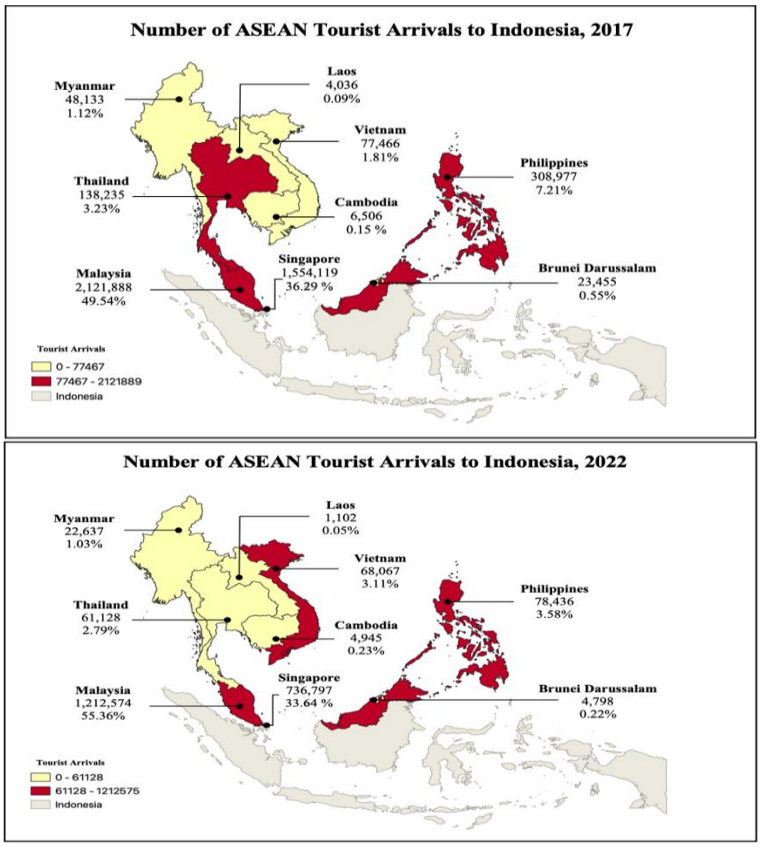

Figure 4. Distribution of ASEAN Tourist Arrivals to Indonesia by Origin Country, 2017-2022.
Source: *Badan Pusat Statistik*

Figure 5 presents the distribution of ASEAN tourists visiting Indonesia in the years 2017 and 2022. The majority of tourist arrivals, both in 2017 and 2022, originated from Malaysia, accounting for approximately 50% of the total visits. Following Malaysia, Singapore and the Philippines were the next significant sources of tourists. Meanwhile, the lowest number of ASEAN tourists visiting Indonesia came from Laos, Brunei Darussalam, and Cambodia. This disparity can be attributed to the smaller population sizes of these countries compared to others. Notably, the proportion of tourists from Thailand and Vietnam increased from previously low levels to moderate levels in 2022.

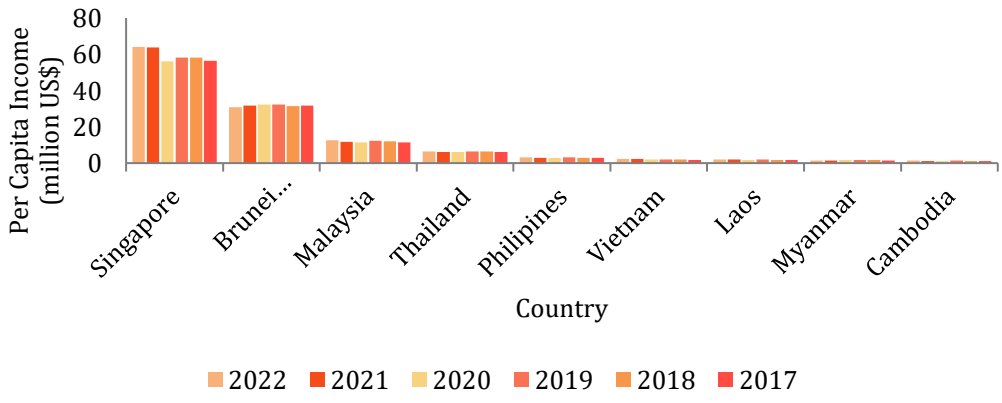

Figure 5. Per Capita Income of ASEAN Country, 2017-2022.
Source: *World Bank*

The per capita income levels among ASEAN nations exhibit notable disparities. However, a common pattern emerges per capita income experiences growth until the year 2019, followed by a decline in 2020, and subsequent recovery in the subsequent year. This decline can be attributed to disruptions in demand and supply, trade, and domestic finance due to the Covid-19 pandemic. Figure 6 illustrates that Singapore is the highest per capita income in

ASEAN, surpassing $63,000 in 2022. Brunei Darussalam follows closely. Besides their status as advanced economies, the low population size of Singapore and Brunei Darussalam contributes to their elevated per capita income. Conversely, Cambodia, Myanmar, and Laos exhibit the lowest per capita income levels in ASEAN, with each country having less than $2,000.

The concept of relative cost of living pertains to the expenses incurred by tourists in their destination country. Among the ASEAN nations, Brunei Darussalam exhibits the highest relative price level. This indicates that the cost of living for Bruneian tourists in Indonesia is higher than their own country. Conversely, when the relative price level is less than one, it signifies that prices in Indonesia are lower than those in the origin country.

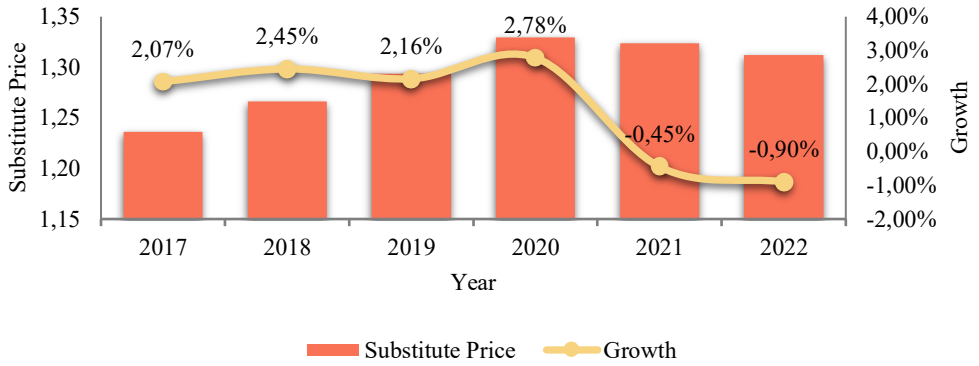

Figure 6. Indonesia's Price Substitution to Malaysia, Singapore and Thailand, 2017-2022
Source: UNCTAD

The notion of substitute prices refers to the comparison of prices between alternative destinations and the chosen destination. For this analysis, we consider alternative countries such as Malaysia, Singapore, and Thailand due to their geographical proximity to Indonesia. As depicted in Figure 7, substitute prices continued to rise until 2020, followed by a subsequent decline. Higher substitute prices indicate that prices in Indonesia are higher compared to the alternative countries. The exchange rates of most ASEAN countries exhibit fluctuations against the Indonesian Rupiah. However, there are select nations with stable exchange rates, including the Philippines, Thailand, and Vietnam. Notably, Singapore and Brunei Darussalam possess the strongest currencies within ASEAN, each valued at approximately 10,000 Rupiah. This strength is attributed to Brunei Darussalam's adherence to a currency board exchange rate regime, aligning its currency value with that of Singapore. Conversely, Vietnam's currency ranks as the weakest among the ASEAN nations. Over the research period, population figures consistently demonstrated an upward trajectory. Furthermore, population sizes varied significantly across individual countries. The Philippines boasted the largest population among the eight nations, exceeding 115 million people in 2022. In contrast, Brunei Darussalam had the smallest population, totaling 450,000 individuals.

Variables Affecting Indonesian Tourism Demand by ASEAN Tourist

Panel data regression analysis is used to identify variables that have an influence on Indonesian tourism demand from 9 ASEAN countries. The initial stage in panel data regression involves determining the optimal model using the Chow, Hausman, and BP-LM tests. The Chow test is employed to decide between the Fixed Effects Model (FEM) and the Common Effects Model (CEM). According to the results, the Chow test produced a p-value of 0.0434, which is less than $\alpha = 0{,}05$. Consequently, we reject the null hypothesis, supporting the use of FEM over CEM. Subsequently, the Hausman test is utilized to determine whether the Random Effects Model (REM) or FEM is more appropriate. After analyzing the data, the p-value is 0.8155, which exceeds $\alpha = 0{,}05$. Therefore, we fail to reject the null hypothesis, indicating that REM is preferable to FEM.

Before proceeding with model estimation and interpretation, classical assumptions are tested to meet the BLUE (Best, Linear, Unbiased, and Estimation) criteria. The Random Effect

Model (REM) employs Generalized Least Squares (GLS) estimation, accommodating heteroskedasticity and autocorrelation. Consequently, the classical assumption tests focus solely on normality and multicollinearity. The p-value for the Lilliefors test exceeds 0.1, leading to the conclusion that residuals follow a normal distribution

Table 2. Multicollinearity Test Result.

Variable	VIF
ln(I)	7,243
RP	3,180
SP	1,007
ln(ER)	8,097
ln(POP)	2,011

Source: Author's Processing Result,2024

Additionally, multicollinearity is assessed by examining the Variance Inflation Factor (VIF) values. Table 2 demonstrates that the VIF values for all independent variables are below 10. This indicates that the assumption of non-multicollinearity is satisfied, meaning there is no collinearity among the independent variables. The equation for panel data regression using the Random Effects Model (REM), the estimation results can be seen in table 3.

Table 3. Estimation Result.

Variable	Coefficient	P-Value		Adjusted R-Squared
		t-Stat	F-stat	
C	37,140	5,106*	71,6938*	0,5572
Ln(I)	1,463	2,169*		
RP	-2,805	-0,986		
SP	-28,815	-5,632*		
Ln(ER)	0,232	0,897		
Ln(POP)	1,135	4,070*		

Source: Author's Processing Result,2024

The regression model equation based on the estimation results in Table 3 can be written as follows.

$$\widehat{ln(TA_{it})} = 37{,}140^{*} + 1{,}463\ lnI_{it}^{*} - 2{,}805\ RP_{it} - 28{,}815\ SP_{it}^{*} + 0{,}232 lnER_{it} + 1{,}135\ lnPOP_{it}^{*} \quad \ldots(2)$$

Based on Table 3, it can be observed that per capita income, relative prices, substitution prices, exchange rates, and population size in the home countries simultaneously influence the demand for Indonesian tourism by ASEAN tourists from 2017 to 2022. Specifically, the partial effects reveal that per capita income, substitution prices, and population size significantly impact the demand for Indonesian tourism by ASEAN tourists. The model exhibits an adjusted R-squared value of 0.5572, indicating that 55.72% of the variance in Indonesian tourism demand by ASEAN tourists can be explained by the independent variables within the model, while the remaining 44.28% is attributable to other external factors. Next, we proceed to interpret the model for variables that exhibit significant influence on Indonesian tourism demand.

Per capita income has a positive and significant effect on Indonesian tourism demand. The coefficient value of 1.463 indicates that a 1% increase in average per capita income in the home country leads to a corresponding 1.463% increase in Indonesian tourism demand. High-income tourists tend to have more disposable income available for travel, accommodation, dining, and other leisure activities. This finding aligns with demand theory, which states that an increase in income can boost tourism demand. Furthermore, it is supported by the research of Nahar et al. (2019), which declares that income has a positive and significant impact on tourism demand. Stable GDP in the country of origin encourages its citizens to explore international tourist destinations. The highest income usually has access to enough food, clothing, and housing to meet their basic necessities. Consequently, the remaining income can be allocated to secondary needs, including entertainment and recreation. This higher income level drives lifestyle changes, leading to preferences for quality and comfort. Most high-income individuals seek exclusive and upscale tourism experiences, such as staying in five-star hotels, dining at luxurious restaurants, or traveling to exotic destinations. Indonesian tourism can be

categorized as a luxury good due to the coefficient exceeding 1 (Pasaribu & Suhartini, 2021). Therefore, these affluent travelers choose to visit Indonesia.

The substitution price has a negative and significant effect on the demand for Indonesian tourism. The coefficient value of substitution price, which stands at -28.815, indicates that a 1% increase in tourism prices in Indonesia compared to prices in Malaysia, Singapore, and Thailand will lead to 28.815% decrease in Indonesian tourism demand. The negative coefficient implies that ASEAN tourists consider Malaysia, Singapore, and Thailand as alternative destinations when their prices are lower than those in Indonesia. This finding aligns with the research by Tan & Soon (2023), which also identifies Indonesia as a major competitor in international tourism. Travelers generally evaluate the prices, experiences, and quality of various destinations before scheduling a vacation. Cost comparisons cover a wide range of expenses, including travel, food, accommodation, and activities. Tourists tend to be more attracted to countries that can provide more affordable packages. The price of flights and other types of transportation also affects travelers' choices. Travelers' tastes may be influenced by more accessible travel options or more reasonably priced direct flights to a country than to another. As a result, a country with a more competitive substitute price attracts more tourists than others, which raises demand for that location.

Furthermore, population size has a positive and significant effect on Indonesia's tourism demand. The coefficient for population size is 1.135, indicating that a 1% increase in the population would result in a 1.135% increase in Indonesia's tourism demand. Large population country has a larger potential market for foreign travel. As the population of a country grows, more individuals have the potential interest and financial capacity to travel abroad. With a large population, there is a higher opportunity to attract more tourists to Indonesia. The study by Adeola & Evans (2020), which emphasizes that a rise in the population in the country of origin has a beneficial impact on the demand for travel to the destination country, supports this conclusion. Additionally, varied visitor markets with a range of tastes and financial capacities are common in highly populated countries. This diversity allows Indonesia to attract various types of tourists, ranging from backpackers to high-end travelers. Because Indonesia can provide experiences that are customized to the requirements and preferences of various tourist segments, this diversification increases demand for travel. Indonesia can promote both natural and cultural destinations for adventurous travelers, as well as luxury resorts and conference facilities for business and upper-class tourists. These findings align with the research by Ali soofi et al. (2018), which emphasizes that a high population size leads to increased opportunities for providing diverse and high-quality services, appealing to various ethnic and cultural groups. Thus, a large population in the tourists' home country not only boosts the number of visitors but also ensures that tourism demand remains robust and varied, supporting the growth of Indonesia's tourism industry.

Conclusion

Based on the results and discussion provided, the following conclusions can be drawn: (1) The Covid-19 pandemic caused a significant decline in the number of ASEAN tourist visits to Indonesia. However, in 2022, the tourism sector recovered, with ASEAN tourist visits to Indonesia increasing to 2.41 million. Per capita income and relative prices in the ASEAN region generally followed a similar trend, with an increase until 2019, a decline due to the Covid-19 pandemic, and an increase in the subsequent year. Due to the Covid-19 pandemic, Indonesia's substitute pricing trend against Malaysia, Singapore, and Thailand increased until 2020 and then decreased until 2022. Conversely, the value of the Rupiah fluctuates in relation to the exchange rates of multiple ASEAN nations. Additionally, the population of ASEAN nations is growing. (2) The population and per capita income of ASEAN nations have a significant positive impact on ASEAN travelers' demand for travel to Indonesia. In contrast, the fluctuating cost of substituting Indonesian travel with travel to Malaysia, Singapore, and Thailand has a significantly negative impact on the demand for Indonesian tourism. The relative price variable and the Rupiah exchange rate do not significantly impact the demand for Indonesian tourism by ASEAN travelers.

This study suggests several policy recommendations. The government needs to maintain price stability in Indonesia to be competitive among ASEAN countries. In addition, it is necessary to promote domestic tourism through social media and improve the quality and services in the tourism sector to increase Indonesia's attractiveness. Achieving a stable currency value with a series of economic policies and monetary policies, including maintaining a balance between supply and demand for the currency, maintaining overall economic stability, managing inflation, and encouraging domestic and foreign investment.

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