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Research article

Political and Health Influences on Demand for Indonesian Tourism

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Abstract: This study examines the impact of income, exchange rates, political conditions, and health factors on Indonesian tourism demand from 2010 to 2019, using multiple and panel regression analyses with data from Statistics Indonesia (BPS), the World Bank, the Central Bank of Indonesia (BI), and the World Health Organization (WHO). The findings indicate that the income of tourists from China, Australia, Timor Leste, and other analyzed countries positively affects tourism demand, while income from Malaysia and Singapore shows no significant effect. Exchange rates positively influence tourists from Malaysia, Singapore, Australia, Timor Leste, and other analyzed countries, but have no significant effect on Chinese tourists. Political conditions negatively impact Australian tourists, positively influence tourists from other analyzed countries, and have no significant effect on tourists from Malaysia, China, Singapore, and Timor Leste. Health factors negatively affect tourists, while having no significant effect on tourists from Singapore and Australia. The study recommends that the government enhance tourism supply to boost demand, with a focus on improving environmental sustainability, health, tourism service infrastructure, and security and safety. Additionally, there is a need for standardized governance rules to better manage the impacts of outbreaks or disasters on the tourism sector.

Keywords: tourism demand, income, exchange rate, politics, health.

JEL Classification: F31, I15, O11

Abstrak: Penelitian ini mengukur dampak pendapatan, nilai tukar, kondisi politik, dan faktor kesehatan terhadap permintaan pariwisata Indonesia pada tahun 2010 hingga 2019, dengan menggunakan analisis regresi berganda dan panel dengan data dari Badan Pusat Statistik (BPS), Worldbank, Bank Indonesia (BI), dan Organisasi Kesehatan Dunia (WHO). Temuan ini menunjukkan bahwa pendapatan wisatawan dari Tiongkok, Australia, Timor Leste, dan negara-negara lain yang dianalisis berpengaruh positif terhadap permintaan pariwisata, sedangkan pendapatan dari Malaysia dan Singapura tidak menunjukkan pengaruh yang signifikan. Nilai tukar berpengaruh positif terhadap wisatawan asal Malaysia, Singapura, Australia, Timor Leste, dan negara-negara lain yang dianalisis, namun tidak berpengaruh signifikan terhadap wisatawan Tiongkok. Kondisi politik berdampak negatif terhadap wisatawan Australia, berpengaruh positif terhadap wisatawan dari negara lain yang dianalisis, dan tidak berpengaruh signifikan terhadap wisatawan asal Malaysia, Tiongkok, Singapura, dan Timor Leste. Faktor kesehatan berdampak negatif terhadap wisatawan asal, tetapi tidak berpengaruh signifikan terhadap wisatawan asal Singapura dan Australia. Studi ini merekomendasikan agar pemerintah meningkatkan pasokan pariwisata untuk meningkatkan permintaan, dengan fokus pada peningkatan kelestarian lingkungan, kesehatan, infrastruktur layanan pariwisata, serta keamanan dan keselamatan. Selain itu, kita memerlukan peraturan tata kelola yang terstandarisasi untuk mengelola dampak wabah atau bencana pada sektor pariwisata dengan lebih baik.

Kata kunci: permintaan pariwisata, pendapatan, nilai tukar, politik, kesehatan.

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1. INTRODUCTION

Indonesia is endowed with a wealth of diverse tourist destinations. When properly managed, the tourism sector can become a valuable state asset, significantly supporting the national economy. This sector can bolster other industries, such as livestock, agriculture, plantations, and traditional crafts, by creating a demand for their products to support tourism (Mariyono, 2017). The tourism industry plays a crucial role in enhancing a country's economy by increasing productivity and reducing unemployment rates (Liu et al., 2021). As a key sector in national development, the tourism industry should be strategically utilized in tourism development. The ultimate goal of tourism development is to increase people's income, thereby improving their welfare and contributing to economic growth.

In the World Economic Forum (WEF) report entitled "The Travel & Tourism Competitiveness Report 2019," Indonesia's leading tourism indicator is competitive pricing, ranking 6th out of 140 countries. This indicates that tourism prices in Indonesia are competitive and relatively affordable for foreign tourists. Other leading indicators include destination priority, human resources and labor market, and business environment. However, areas needing improvement in Indonesian tourism are environmental sustainability, health, tourism service infrastructure, and security and safety. The purpose of the tourism competitiveness index published by the WEF is to measure various factors and policies related to the development of the tourism sector. Demand in the tourism sector consists of several products or facilities that differ not only in their nature but also in their benefits and needs for tourists. In economics, needs that can be obtained for free, such as fresh air, sunlight, or beautiful scenery, are not considered economic goods because they are easily accessible. However, these free goods can significantly enhance tourist satisfaction (Puah et al., 2018).

Mobility is one of the dominant factors influencing tourism demand, driven by various motivations such as political, economic, educational, health, and recreational interests (Yazdi & Khanalizadeh, 2017). In addition to mobility, several other factors influence tourism demand. These factors include income (Dogru & Sirakaya-Turk, 2018), relative prices (Croes & Vanegas, 2005), exchange rates (Haq & Ullah, 2019), transport costs (Chen & Haynes, 2015), competitor prices (Durbarry & Sinclair, 2003), outbreaks (Gössling et al., 2021), political events (Demir et al., 2020), sports activities (Liu et al., 2021), foreign exchange restrictions (Liu et al., 2021), and promotions (Fu et al., 2020). Tourism demand is typically used to measure the use of goods or services by tourists (Salleh, 2008). It is a unique form of demand because tourism products include a collection of complementary goods and services. Tourism demand can be divided into two categories: potential demand and actual demand. Potential demand refers to the number of people who have the potential to travel because they have relatively sufficient savings and free time. Actual demand, on the other hand, is the number of people who travel to a particular tourist destination (Tiwari et al., 2019).

Income has a strong relationship with tourism demand. An individual's income level affects their ability to travel, as income reflects the tourist's standard of living. Price is also a critical factor in tourism demand, as changes in prices directly impact tourists' purchasing power. Similarly, fluctuations in the exchange rate affect the number of tourist visits (Martins et al., 2017). Among the factors that strongly influence tourism demand, transport costs are often not included due to the difficulty in measuring them. This challenge arises from the complexity of determining transport costs, such as those from the country of origin to the destination country, within the destination, or when accumulated with travel agents (Song et al., 2010).

The currency exchange rate between two countries represents the price of a currency used by residents of these countries to finance each other (Vanegas et al., 2020). The exchange rate is the price of a currency relative to another country's currency, with the equilibrium point determined by the demand and supply of the two currencies (Khan et al., 2020). Tourism demand increases when the value of a country's currency strengthens against the currency of the country to be visited. This is because a stronger home currency means that the costs incurred in the visited country, where the currency is weaker, will be cheaper, thereby increasing tourism demand. Conversely, a weaker home currency decreases tourism demand (Martins et al., 2017).

Special events are often included in tourism demand models because they can reflect changes in tourists' preferences for a destination. If the destination country is experiencing political turmoil and an unconducive atmosphere, tourists are likely to delay or cancel their trips (Haq & Ullah, 2019). Special events can be accounted for using dummy variables. Political events generally have a negative effect, reducing tourism demand (Lee, 2021). However, other studies have shown that political events can also have a positive influence or no effect on tourism demand. This variation is due to tourists prioritizing their preferences over political events (Balli, 2019).

Apart from political turmoil, health factors are also a significant consideration for tourists when traveling (Bakar & Rosbi, 2020). When the World Health Organization declares a global emergency, tourists may reconsider their travel plans. This cautious behavior persists until the destination country is declared safe (Jong, 2020). For example, in 2003, there was a decrease of 12 million tourist arrivals in Asia and the Pacific due to the SARS (severe acute respiratory syndrome) outbreak, with an estimated global economic impact of US$ 40 billion (Gössling et al., 2021). Following SARS, the H1N1 swine flu outbreak in 2010 resulted in more than 1.4 million infections and 500,000 deaths. Additionally, the 2016 outbreaks of the Zika virus, Ebola, and meningitis led to 4,313 deaths and 78,018 cases, with the highest mortality rates in Asia. These examples illustrate how outbreaks can reduce tourism demand (Rosello, 2017). However, some studies suggest that disease outbreaks do not significantly affect tourism demand. This is because disease outbreaks are often short-lived and can be quickly recovered (Shi & Li, 2017).

From a regional perspective, the Asia-Pacific region is the fastest-growing area in terms of foreign tourist arrivals, employment opportunities, economic activity, and investment. Within Southeast Asia, Indonesia holds an advantageous position as it is at the center of world tourism growth and development. Indonesia is predicted to show the fastest growth rate. Based on data from foreign tourist arrivals released by BPS, countries in the ASEAN region represent a high potential market share for Indonesia. Among these contributors, Malaysia is the largest of tourists to Indonesia, with more than 50% of Malaysian tourists motivated by leisure. The tourist expenditure per visit of Malaysian tourists is significantly higher, and their average length of stay is longer compared to tourists from other countries (Dogru et al., 2017).

Geographical and historical proximity, currency strength, ease of entry, and low transport costs make Malaysia, Singapore, Australia, and Timor Leste major sources of tourists for Indonesia. With growing per capita incomes, it is expected that these countries will continue to be significant markets for Indonesian tourism (Suhel & Bashir, 2018). Most tourists from Malaysia, Singapore, Australia, and Timor Leste visit on weekends or short trips for leisure or business. Therefore, to maximize the potential of this market, various expansive strategies are needed to attract tourists from these countries, and ASEAN tourists in general. Further research is necessary to encourage longer stays and make tourist destinations more evenly attractive. Currently, most tourists from Malaysia, Singapore, Australia, and Timor Leste prefer Sumatra, Batam, and Jakarta as their destinations (Halim, 2020). China is the second-largest contributor of tourists to Indonesia. The number of Chinese tourists visiting Indonesia has increased annually, reaching 2.07 million in 2019. This increase is motivated by several factors, including improved cooperation between the governments of China and Indonesia. Additionally, innovations by Indonesian airline companies, such as PT Garuda Indonesia, which offers China-Indonesia and China-Denpasar, Bali return flight routes, have made air travel more convenient for Chinese tourists, increasing their visits to Indonesia (Cheng, 2016).

The growth of tourists from the five countries with the largest market share in Indonesia, which continues to increase annually at a rate of approximately 10% per year, presents an opportunity that must be maximized. This growth is driven by the economic expansion of these five countries at a macro level, with both the monetary and real sectors strengthening, thereby increasing the economic capacity of their populations (Badan Pusat Statistik, 2022). These five countries have managed to recover from the economic crisis, which has significantly spurred their economic growth. Conversely, Indonesia's slow response to the crisis, resulting in a weak Rupiah exchange rate against the US Dollar, has made Indonesia an affordable tourist destination (Martins et al., 2017).

The tourism sector has been the focus of several recent studies. For example, Durbarry & Sinclair (2003) examined French tourism demand responsiveness and found that effective price competitiveness is the main variable driving market share changes, considering the relative price, exchange rate, travelers' expenditure budget, and external events. Similarly, Vanegas (2005) used econometric estimates to explain tourist arrivals in Aruba, concluding that changes in prices and exchange rates effectively affect tourism demand. In research on tourism demand in Pakistan, Haq & Ullah (2019) found that ethnic conflict and exchange rate fluctuations negatively affect tourism demand, while income has a positive effect.

While many studies have examined the relationship between macroeconomic variables and tourism demand, there is no research specifically discussing Indonesia's tourism demand with a case study on the five countries with the largest market share in Indonesia: Malaysia, China, Singapore, Australia, and Timor Leste. This study uses two macroeconomic variables, income and exchange rate, and special events, such as health and political events, making it a compelling topic for research. This research contributes in three ways: (i) It applies a multiple regression approach to determine the influence of each of the five countries' travelers. (ii) It uses a panel regression approach to analyze the effect of all five countries of origin on tourists simultaneously. (iii) It employs more recent data than previous studies.

2. RESEARCH METHODS

2.1. Data collection

This study utilizes secondary data released by Statistics Indonesia, the World Bank, Indonesian Economic and Financial Statistics from BI, and the World Health Organization (WHO). The elaboration of variables and operational definitions are provided in Table 1.

Table 1. Data and Measurement

Variables	Operational Definition	Unit Measurement	Data Source
Tourist Arrivals (TA)	The number of tourist arrivals from Malaysia, China, Singapore, Australia, and Timor Leste to Indonesia	Visits (people)	Statistics Indonesia
Foreign Tourist Revenue (Y)	Real per capita Gross Domestic Product (GDP) of the tourists' country of origin.	According to each traveler's home currency.	The World Bank
Exchange Rate (ER)	The exchange rate of the tourist's home currency against the rupiah	Currency of the travelers' home country/Rupiah.	Statistics from the Central Bank of Indonesia
Politics (PO)	Politics which is a dummy variable and uses political and security history data	The occurrence of a political event has a value of 1 and the non-occurrence of a political event has a value of 0.	Online media literature
Health (H)	Health is a dummy variable and uses data on the designation of an outbreak as a global emergency by the World Health Organization (WHO).	The occurrence of an outbreak has a value of 1 and the non-occurrence of an outbreak has a value of 0.	World Health Organization (WHO)

Source: Statistics Indonesia (2022); World Bank (2022); Central Bank of Indonesia (2022); and WHO (2022)

2.2. Model Spesification

The data analysis technique in this study employs Ordinary Least Squares (OLS), divided into two methods: multiple regression and panel data regression. The combination of multiple regression analysis and panel data regression is effective in estimating the impact of independent variables on the dependent variable. Multiple regression aims to estimate the effect of independent

variables on the dependent variable for each country individually. In contrast, panel data regression is used to estimate the effect of independent variables on the dependent variable across the five countries that are the focus of this study. The multiple regression equation is:

$$lnTA_t = \alpha_0 + \alpha_1 lnY_t + \alpha_2 lnE_t + \alpha_3 lnPO_t + \alpha_4 lnH_t + \mu_t \quad (1)$$

where, TA is the number of foreign tourist visits; Y is the per capita income of the tourist's home country; E is the exchange rate of the tourist's home country; PO is a political event that occurs in the tourist's home and destination countries; H is an outbreak that occurs in the tourist's home and destination countries; μ is the error term; t is a time series; and is α constant.

The use of panel data regression can estimate effects that are not evident in pure time series or cross-sectional data. The combination of time series and cross-sectional observations provides more variety, more information, less collinearity between variables, more degrees of freedom, and greater efficiency. Panel data can complement multiple regression to estimate the dynamics of change (Gujarati et al., 2009). The panel regression equation is:

$$lnTA_{it} = \beta_0 + \beta_1 lnY_{it} + \beta_2 lnE_{it} + \beta_3 lnPO_{it} + \beta_4 lnH_{it} + \mu_{it} \quad (2)$$

where, TA is the number of foreign tourist visits; Y is the per capita income of the tourist's home country; E is the exchange rate of the tourist's home country; PO is a political event that occurs in the tourist's home and destination countries; H is an outbreak that occurs in the tourist's home and destination countries; μ is the error term; t is a time series; i is the cross-section; α is a constant; and β is the regression coefficient of the independent variable.

This study involves conducting several classic assumption tests to ensure the validity of the regression models. These tests include a normality test using the Jarque-Bera statistic, a multicollinearity test using tolerance and Variance Inflation Factor (VIF) values, a heteroscedasticity test using the Breusch-Pagan-Godfrey method, and an autocorrelation test using the Breusch-Godfrey method.

3. RESULTS AND DISCUSSION

3.1. Results

This research examines tourism demand from five countries to Indonesia. As shown in Table 2, the average number of tourist visits to Indonesia is highest among Malaysian tourists, with an average of 12.90 visits. In terms of income, Australian tourists have the highest average income value at 17.88. Timor Leste tourists have the highest average exchange rate at 9.37. The average values for political and health variables are the same across all tourist origins, at 0.32 and 0.35, respectively.

Table 2. Descriptive Statistics of Variables

Country	Variables	Mean	Std. Dev.	Min.	Max.
Malaysia	lnTA	12.90	0.33	12.50	13.57
	lnY	16.18	0.36	15.85	18.39
	lnER	8.07	0.08	7.93	8.21
	lnPO	0.32	0.47	0.00	1.00
	lnH	0.35	0.48	0.00	1.00
China	lnTA	12.48	0.66	9.99	13.37
	lnY	17.51	0.13	17.25	17.70
	lnER	7.32	0.17	7.05	7.52
	lnPO	0.32	0.47	0.00	1.00
	lnH	0.35	0.48	0.00	1.00

Country	Variables	Mean	Std. Dev.	Min.	Max.
Singapore	lnTA	12.76	0.42	10.37	13.19
	lnY	11.05	0.72	10.62	15.46
	lnER	9.08	0.15	8.81	9.26
	lnPO	0.32	0.47	0.00	1.00
	lnH	0.35	0.48	0.00	1.00
Australia	lnTA	12.51	0.19	12.16	12.91
	lnY	17.88	0.11	17.63	18.60
	lnER	9.20	0.05	9.06	9.29
	lnPO	0.32	0.47	0.00	1.00
	lnH	0.35	0.48	0.00	1.00
Timor Leste	lnTA	10.85	1.23	9.79	13.08
	lnY	7.04	0.19	6.56	7.35
	lnER	9.37	0.17	9.10	9.58
	lnPO	0.32	0.47	0.00	1.00
	lnH	0.35	0.48	0.00	1.00
Five Countries	lnTA	12.30	1.00	9.79	13.57
	lnY	16.67	1.51	13.47	18.39
	lnER	8.63	0.88	7.05	9.58
	lnPO	0.32	0.47	0.00	1.00
	lnH	0.35	0.48	0.00	1.00

Source: Author's calculations (2023).

Firstly, we perform a unit root test to determine the stationarity of the variables. The unit root test in this study uses the Augmented Dickey-Fuller (ADF) method. Table 3 presents the results, which generally show that all variables used in this study do not have unit root problems at the first difference level. Additionally, some variables do not have unit root problems at both the level and first difference levels.

Table 3. Results of Unit Root test

Country	Variables	ADF-test		Stationer
		Level *I*(0)	1St Difference *I*(1)	
Malaysia	lnTA	0,45	-3.28**	I(1)
	lnY	0,30	-6.62*	I(1)
	lnER	-1,75	-5,55*	I(1)
	lnPO	-2,30	-6,92*	I(1)
	lnH	-1,73	-7,06*	I(1)
China	lnTA	-2,95**	-3,77*	I(0), I(1)
	lnY	-2,01	-34,90*	I(1)
	lnER	1,50	-5,39*	I(1)
	lnPO	-2,30	-6,92*	I(1)
	lnH	-1,73	-7,06*	I(1)
Singapore	lnTA	0,11	-3,17**	I(1)
	lnY	-0,43	-7,52*	I(1)
	lnER	-1,20	-5,95*	I(1)
	lnPO	-2,30	-6,92*	I(1)
	lnH	-1,73	-7,06*	I(1)
Australia	lnTA	0,38	-3,66*	I(1)
	lnY	-1,31	-6,20*	I(1)
	lnER	-1,70	-5,42*	I(1)
	lnPO	-2,30	-6,92*	I(1)
	lnH	-1,73	-7,06*	I(1)

Country	Variables	ADF-test		Stationer
		Level *I*(0)	1St Difference *I*(1)	
Timor-Leste	lnTA	0,50	-3,70*	I(1)
	lnY	0,32	-7,55*	I(1)
	lnER	-1,35	-6,10*	I(1)
	lnPO	-2,30	-6,92*	I(1)
	lnH	-1,73	-7,06*	I(1)

Note: * and ** represent significance at 1% and 5% levels respectively
Source: Secondary data processed by author

Secondly, the Chow test or fixed effect significance test is conducted to choose between the PLS or fixed effect model which is better to use. The test criteria used to see which model is better to use. The significance test results show that the PLS/common effect model is selected if the chi-square probability value is greater than 0.05 while the fixed effect model is selected if the chi-square probability value is smaller than 0.05. After that, the Hausman test is conducted to choose between fixed effect or random effect models that are better to use. The significance test results show that the random effect model is selected if the chi-square probability value is greater than 0.05 while the fixed effect model is selected if the chi-square probability value is smaller than 0.05. The estimation results are shown in Table 4.

Table 4. Estimation Result of FEM, CEM, and REM Comparison

Model	Variables				Model selection
	Y	ER	PO	H	
CEM	0,60*	0,22**	0,19***	-0,14*	
	(0,12)	(0,10)	(0,08)	(0,09)	
FEM	0,66**	0,28**	0,22**	-0,14**	Chow test
	(0,13)	(0,11)	(0,09)	(0,09)	83.147***
REM	0,68***	0,31**	0,25***	-0,14*	Hausman test
	(0,15)	(0,14)	(0,09)	(0,09)	21.509**

Note: ***, **, and * indicate significance level at 1%, 5%, and 10%
Source: Author's Calculation (2023).

Based on the estimation of Chow test results above, it is known that the chi-square probability is 0.000. Then the fixed model is the model that should be used. Furthemore, based on the estimation Hausman test results above, it is known that the chi-square probability is 0.0387 so it can be concluded that the model should use fixed effects. Based on the Chow and Hausman Tests, the selected model to be used in this study is the Fixed Effect Model (FEM). But we also attach the results of the Common Effect Model (CEM) and Random Effect Model (REM) as a comparison. The estimation results are in Table 4.

Table 5. Residual Diagnostic tests

Country	Diagnostic test	F-Statistic	p-value
Malaysia	Jarque-Bera	2,00	0,36
	Breusch-Pagan-Godfrey	2,63	0,05
	Serial LM	0,08	0,06
China	Jarque-Bera	5,52	0,06
	Breusch-Pagan-Godfrey	2,08	0,10
	Serial LM	0,08	0,07
Singapore	Jarque-Bera	2,64	0,07
	Breusch-Pagan-Godfrey	0,19	0,93
	Serial LM	0,09	0,12
Australia	Jarque-Bera	2,05	0,35
	Breusch-Pagan-Godfrey	3,74	0,05
	Serial LM	0,08	0,07

Country	Diagnostic test	F-Statistic	p-value
Timor Leste	Jarque-Bera	5,56	0,06
	Breusch-Pagan-Godfrey	2,70	0,05
	Serial LM	0,08	0,06
Five Countries	Jarque-Bera	2,53	0,28
	Cross LR	2,63	0,06
	Pesaran CD	0,09	0,07

Source: Author's Calculation (2023).

Furthermore, a residual diagnostic test is conducted to determine whether the regression model used can provide accurate predictions. Table 5 presents the results of the residual diagnostic tests for all countries of origin of the tourists studied. The data normality using the Jarque-Bera test, heteroscedasticity using the Breusch-Pagan-Godfrey for estimation times-series data and the Cross-section LR test for estimation panel data, and autocorrelation using the Serial LM test for estimation times-series data and Pesaran CD test for estimation panel data, evidence from all diagnostic tests shows that exceed the 5% significance level. These findings indicate that there are no issues with normality, autocorrelation, and heteroscedasticity.

Table 6. Results of Correlation Matrix

Country	Variables	lnY	lnER	lnPO	lnH
Malaysia	lnY	1.00	0.12	-0.15	0.17
	lnER	0.12	1.00	0.15	-0.19
	lnPO	-0.15	0.15	1.00	0.16
	lnH	0.17	-0.19	0.16	1.00
China	lnY	1.00	0.93	0.18	-0.14
	lnER	0.93	1.00	0.17	0.16
	lnPO	0.18	0.17	1.00	0.16
	lnH	-0.14	0.16	0.16	1.00
Singapore	lnY	1.00	0.87	0.14	-0.28
	lnER	0.87	1.00	0.18	0.12
	lnPO	0.14	0.18	1.00	0.16
	lnH	-0.28	0.12	0.16	1.00
Australia	lnY	1.00	0.51	-0.28	-0.37
	lnER	0.51	1.00	-0.21	-0.22
	lnPO	-0.28	-0.21	1.00	0.16
	lnH	-0.37	-0.22	0.16	1.00
Timor Leste	lnY	1.00	0.92	-0.60	0.12
	lnER	0.92	1.00	0.80	0.15
	lnPO	-0.60	0.80	1.00	0.16
	lnH	0.12	0.15	0.16	1.00
Five Countries	lnY	1.00	0.12	-0.11	-0.13
	lnER	0.12	1.00	0.13	0.11
	lnPO	-0.11	0.13	1.00	0.16
	lnH	-0.13	0.11	0.16	1.00

Source: Author's Calculation (2023).

The results obtained from the correlation matrix test show that the correlation value between independent variables (income, exchange rate, politics, and health) is less than 0.80. This is under the test criteria that in the correlation matrix results there is no correlation coefficient value between variables that is more than 0.80 (Shrestha, 2020). Thus, it can be concluded that there is no multicollinearity problem between the independent variables in the regression model.

Table 7. Regression Estimation Results

Country	Variables				Adj.-R^2	F-stat
	Y	ER	PO	H		
Malaysia	-0.02	1.54**	0.14	-0.13*	0.20	3.07**
	(0.13)	(0.60)	(0.10)	(0.10)		
China	6.49***	-2.14	-0.23	-0.32*	0.62	16.94***
	(0.75)	(0.36)	(0.14)	(0.17)		
Singapore	0.06	0.93**	0.15	0.09	0.17	1.77**
	(0.09)	(0.42)	(0.14)	(0.13)		
Australia	0.77***	2.68***	-0.06**	0.01	0.38	7.17***
	(0.28)	(0.51)	(0.05)	(0.05)		
Timor Leste	3.24**	8.79***	0.36	-1.13***	0.74	29.34***
	(0.50)	(0.67)	(0.23)	(0.21)		
Five Countries	0.66**	0.28**	0.22**	-0.14**	0.82	9.10***
	(0.13)	(0.11)	(0.09)	(0.09)		

Note: ***, **, and * indicate significance level at 1%, 5%, and 10%
Source: Author's Calculation (2023).

Table 7 reports regression results and shows that the exchange rate has a significant positive effect on tourism demand from Malaysia, increasing visits to Indonesia by 1.54% with a significance level of 5%. Conversely, health has a significant negative impact, reducing visits by 0.13% with a significance level of 10%. Income and politics show no significant effects on tourism demand from Malaysia. For tourists from China, income significantly increases tourism demand in Indonesia by 6.49% at a significance level of 1%, while health significantly decreases demand by 0.32% at a significance level of 10%. Exchange rate and politics do not show significant effects on tourism demand from China. Among Singaporean tourists, the exchange rate significantly increases tourism demand in Indonesia by 0.93% at a significance level of 5%. Income, politics, and health do not significantly influence tourism demand in Singapore.

Tourists from Australia see income significantly increasing tourism demand in Indonesia by 0.77% at a significance level of 1%, while the exchange rate increases demand by 2.68% at a significance level of 1%. Politics significantly decreases demand by 0.06% at a significance level of 5%. Health does not significantly affect tourism demand in Australia. For tourists from Timor Leste, income significantly increases tourism demand in Indonesia by 3.24% at a significance level of 5%, while the exchange rate significantly increases demand by 8.79% at a significance level of 1%. Health significantly decreases demand by 1.13% at a significance level of 1%. Politics shows no significant influence on tourism demand from Timor Leste. Among tourists from all five countries combined, income significantly increases tourism demand in Indonesia by 0.66% at a significance level of 5%, while the exchange rate increases demand by 0.28% at a significance level of 5%. Politics also significantly increases demand by 0.22% at a significance level of 5%. Health significantly decreases demand by 0.14% at a significance level of 1%.

The adjusted R^2 for tourists from Malaysia is 0.20, or 20%. This indicates that 20% of the variation in tourism demand can be explained by the variables of income, exchange rate, politics, and health, while the remaining 80% is influenced by other unexamined variables. For Chinese tourists, the adjusted R Square is 0.62, or 62%, meaning that 62% of the changes in tourism demand can be attributed to the same variables, with the remaining 38% influenced by other factors. In the case of Singaporean tourists, the adjusted R Square is 0.17, or 17%, indicating that 17% of the variation in tourism demand is explained by income, exchange rate, politics, and health, with the remaining 83% influenced by other variables. For Australian tourists, the adjusted R Square is 0.38, or 38%, suggesting that 38% of the changes in tourism demand are explained by the specified variables, with the remaining 62% influenced by other factors.

In terms of tourists from Timor Leste, the adjusted R Square is 0.74, or 74%, indicating that 74% of the variation in tourism demand can be explained by income, exchange rate, politics, and health, with the remaining 26% influenced by other variables. For tourists from the five countries collectively, the adjusted R Square is 0.82, or 82%, implying that 82% of the changes in tourism

demand can be explained by the aforementioned variables, with the remaining 18% influenced by other factors. Overall, the regression test results indicate that income, exchange rates, politics, and health have a significant influence on tourism demand in Indonesia at the 1% and 5% significance levels for tourists from Malaysia, China, Singapore, Australia, Timor Leste, and the five countries collectively.

3.2. Discussion

Income has a positive effect on tourists from China, Australia, Timor Leste, and the five countries collectively. This positive effect means that an increase in income for tourists from these regions leads to an increase in the number of tourists visiting Indonesia. The positive influence of income on Indonesia's tourism demand indicates that tourism is considered a normal good. This means that tourists from China, Australia, Timor Leste, and the five countries have their primary and secondary needs well met, making it easier for them to spend on tourism, which is a tertiary need (Husein, 2020). This finding aligns with the hypothesis that income significantly influences tourism demand. For Malaysian and Singaporean travelers, the results are not significant. Changes in income are not a major factor for these travelers when considering travel. This is because Malaysia and Singapore prioritize geographical proximity to Indonesia. The distance from Malaysia to Indonesia is 1,438 km, and from Singapore to Indonesia is 1,148 km. This geographical proximity motivates tourists from Malaysia and Singapore to take short trips or weekend getaways to Indonesia (Borhan & Arsad, 2016; Vanegas et al., 2020). Singaporean tourists, in particular, often spend weekends on holiday and benefit from the ease of entry through Batam port, making these factors more important than income when traveling (Bazher, 2016). This is supported by data indicating that ease of entry is a key factor considered by tourists.

The exchange rate has a positive effect on tourists from Malaysia, Singapore, Australia, Timor Leste, and the five countries collectively. This positive effect means that an increase in the exchange rates of these countries leads to an increase in the number of tourists visiting Indonesia. A stronger currency in the tourist's home country means they get more rupiah for their money (due to the depreciation of the rupiah). The depreciation of the rupiah makes Indonesia's relative prices cheaper compared to the tourists' home countries, thus boosting tourism demand (Martins et al., 2017). For Chinese travelers, the results are not significant. Changes in exchange rates are not the main factor for Chinese tourists when deciding to travel, as they often prefer alternative destinations like Thailand and Laos. Therefore, the strengthening of China's currency exchange rate does not significantly affect tourist arrivals in Indonesia. This is supported by data showing that alternative destinations are a key consideration for Chinese tourists. However, the increasing cooperation between the governments of China and Indonesia, along with innovations by PT. Garuda Indonesia in providing China-Indonesia and China-Denpasar flight routes, has contributed to the continuous increase in Chinese tourists visiting Indonesia (Cheng, 2016).

Politics has a negative influence on Australian tourists. Political events can reduce the number of tourist visits due to security and safety concerns (Demir et al., 2020; Haq & Ullah, 2019). This finding aligns with the initial hypothesis stating that politics negatively affects tourism demand. For travelers from the five countries collectively, politics has a positive influence on tourism demand. Although this finding is unexpected, there is supporting research. Political events can positively influence tourism demand due to adjustments and the main factors considered in tourists' decisions. Political events typically occur in specific regions rather than the entire destination country (Balli, 2019). Political events result in economic uncertainty, but the presidential election process, from the campaign stage to the general election, positively impacts infrastructure development. Infrastructure improvements increase the number of tourist visits (Hidayat, 2019). During the presidential election campaign, tourism is often promoted through collaborations with influencers on social media, which enhances international recognition and increases foreign tourist visits (Puah et al., 2018).

Travelers from Malaysia, Singapore, and Timor Leste showed insignificant results. Indonesia is considered an attractive tourist destination, making political events less of a concern, and travelers prioritize their desire to visit Indonesia (Balli, 2019). Proximity, historical connections, ease of access,

and low transport costs also encourage tourists from Malaysia, Singapore, and Timor Leste (Mariyono, 2017). Additionally, Timor Leste has close kinship ties with Indonesia, with 69.61% of Timor Leste tourists visiting to see family and friends. This kinship relationship is the main motivation for their visits (Tavares, 2016). For Chinese travelers, the results are also insignificant. Political events are not a major factor for Chinese tourists when considering travel. The Chinese Government's Approved Destination Status (ADS) administrative policy reduces barriers to overseas travel, and the spontaneous travel behavior of Chinese tourists motivates them to visit Indonesia (Mariyono, 2017). Chinese tourists are driven by a desire to experience sights, taste different foods, and engage in social interactions within their groups, generating curiosity to explore outside their group.

Health has a negative effect on tourists from Malaysia, China, Timor Leste, and the five countries collectively. This negative effect means that health events in these countries will reduce the number of tourists visiting Indonesia. Health problems can endanger the health and safety of tourists, leading tourists from Timor Leste and the five countries to postpone their trips until the situation is declared safe and conducive by WHO (Gössling et al., 2021). Government policies regarding restrictions on tourists during global health problems also significantly affect the decline in tourist visits (Lee, 2021). For travelers from Singapore and Australia, the results were not significant. Health events are not a major factor for these travelers when considering travel. This aligns with research indicating that health problems in these countries are not protracted and can quickly recover on their own (Shi & Li, 2017).

4. CONCLUSIONS

This study aims to estimate the effect of income, exchange rates, politics, and health on the demand for Indonesian tourism using quarterly data from 2010-2019. The data has fulfilled all the classical assumption tests and has been deemed stable, as proven by the classical assumption test results. Based on the regression test results, the conclusions of this study are as follows. Income has a positive and significant influence on tourists from China, Australia, Timor Leste, and the five countries combined. Income does not significantly affect Malaysian and Singaporean tourists, as they prioritize geographical proximity over income when traveling. Changes in tourists' income create new preferences, allowing the government to maximize tourism supply and increase Indonesia's tourism demand in the future. The exchange rate has a positive and significant effect on tourists from Malaysia, Singapore, Australia, Timor Leste, and the five countries combined. When the currency of the tourists' home country strengthens, the demand for Indonesian tourism increases. For Chinese tourists, the exchange rate does not have a significant effect, as they prefer alternative destinations. Changes in the exchange rate can serve as a guideline for the Indonesian government to boost tourism. Political events have a negative influence on Australian travelers due to concerns about security and safety. Travelers from the five countries showed positive results, as political events typically occur in only one region, not throughout the entire tourist destination country. Tourists from Malaysia, China, Singapore, and Timor Leste showed insignificant results because Indonesia is considered an attractive tourist destination, making political events less of a concern. Proximity to historical sites, ease of entry, and low transport costs also encourage Malaysian, Singaporean, and Timorese tourists to visit Indonesia. Although political events are not the main factor in tourism demand, effective management of such events is essential to continue attracting foreign tourists to Indonesia. Health issues negatively affect tourists from Malaysia, China, Timor Leste, and the five countries combined. Health problems can endanger tourists' safety and lead to government policies that limit tourist visits until the situation is deemed safe by the WHO. However, travelers from Singapore and Australia showed insignificant results, as health problems were not major concerns for them. Health issues significantly impact tourism demand, so it is crucial to raise awareness and implement preventive measures to sustain the tourism industry during health crises.

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