Model of International Tourism Demand in Indonesia During the Covid-19: Gravity Model Approach

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This study examines the factors influencing tourism demand during the Covid-19 pandemic for foreign tourists in Indonesia by employing a Gravity model. This study used panel data analysis of the random effects model (REM) on Indonesia's top nine source countries of foreign tourists from 2007 to 2021. The study results show that the GDP per capita of origin countries, "Wonderful Indonesia" nation branding, and the policy of developing ten priority tourism destinations (10 new Balis) variables positively and significantly impacted the number of foreign tourists arrivals in Indonesia. On the other hand, the variables of distance, relative price, and Covid-19 negatively and significantly affected the number of foreign tourist visits in Indonesia. Therefore, the government is expected to improve cooperation in expanding international flight routes to increase the number of tourists from various countries, improve tourism facilities, continuously strive to build a positive image of the country through a nation branding strategy, and have a blueprint of policy strategy for Indonesia's tourism to deal with crisis conditions.

Keywords: Tourism demand, Gravity model, Covid-19, Wonderful Indonesia, 10 New Balis

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Introduction

Tourism is one of the world's main economic sectors. Referring to the United Nations World Tourism Organization (UNWTO), tourism is an activity of a person who travels to or lives in a place outside his/her usual environment for no more than one year continuously for pleasure, business, or other purposes. It is the third largest export category (after fuels and chemical substances), which accounted for 7% of global trade in 2019. Tourism, for some countries, can represent more than 20% of their GDP and is the third largest export sector of the global economy (UNWTO, 2021).

Tourism has become a priority sector for Indonesia in its economic development. It is expected to be one of Indonesia's main drivers to accelerate economic growth by creating fields and business opportunities, foreign exchange earnings, and infrastructure development. In addition, tourism can also be used to introduce national identity and culture.

The Covid-19 pandemic that has swept all countries worldwide for more than a year has had a major impact on tourism. The outbreak of Covid-19 limited global mobility as cities and countries began to impose total lockdowns to reduce the spread of the deadly virus. The movement of people and limited transportation worldwide resulted in a metamorphosis from over-tourism to zero tourism in a short time (Kainthola et al., 2021).

Based on the UNWTO, the world tourism sector is predicted to lose up to US$4 trillion. Furthermore, UNWTO reported that nearly a third of tourist destinations worldwide were closed to international tourists due to the serious epidemiological situation. The peak was in May 2020, when 75% of destinations worldwide closed entirely. The Coronavirus pandemic devastated international tourism in 2020, causing a 74% decline in international arrivals in many countries. The 2020 World Tourism Barometer showed a decrease of around one billion international arrivals

worldwide last year than that in 2019 due to travel restrictions imposed by almost every country to control the Coronavirus pandemic. UNWTO recently estimated that the drop in arrivals would result in a loss of US$1.3 trillion in revenue, 11 times the loss caused by the 2009 economic crisis. The pandemic has hit all world regions, including Asia and the Pacific, which experienced an 84% decline in international tourist arrivals. Meanwhile, the decline in the Middle East and Africa reached 75%. Europe recorded a 70% decline in international arrivals despite a slight recovery in the summer, while America showed a 69% decline (UNWTO, 2021).

Many researchers have done studies on tourism and the Covid-19 pandemic, including Polyzos et al. (2021), Zhang et al. (2021), Wu et al. (2020), (Yang et al., 2020), (Qiu et al., 2020), (Esquivias et al., 2021), (Khalid et al., 2021), (Lim & To, 2021) and (Dimitropoulos et al., 2021). However, these studies were still limited in tourism demand for foreign tourists during Covid-19, given the decline in the number of foreign tourist arrivals in almost all countries. Thus, a study focusing on tourism demand in the Covid-19 pandemic era is important as it is essential for establishing marketing strategy and policy development.

The Gravity Model is widely used to investigate tourism demand. The advantage of applying the gravity model is that the empirical estimation is quite simple, allowing the utilization of the panel data model. However, applying the Gravity model bears weaknesses, such as the lack of explanatory variables, incorrect econometric models, and biased parameter estimation researchers. To overcome this potential limitation, the researcher attempted to extend the initial Gravity model by adding more variables or including the time effect in the equation (Park and Jang, 2014).

Morley et al. (2014) reformulated the panel gravity model using individual utility theory for bilateral tourism flows. They used the utility-maximizing constraint of the individual who travels from their origin to the destination country to find the optimal level of consumption of other goods

and the number of visits. This suggests that the panel gravity model can be very similar to the consumer theory-based demand function considered in traditional aggregate tourism demand modelling. GDP, distance, population, voice, accountability, regional trade agreements, religious similarity index, and dummy variables, including common borders, common language, and colonial relations, are other important variables for the model.

Several studies that use the Gravity model to analyze demand tourism give different results (Park & Jang, 2014; Chasapopoulos et al., 2014; Deluna Jr et al., 2014; Lorde et al., 2016; Khoshnevis Yazdi & Khanalizadeh, 2017; Xu et al., 2019; Nahar et al., 2019; Harb & Bassil, 2020; Dropsy et al., 2020; Wardani & Handayani, 2020; Malaj, 2020; Jong et al., 2020; Yerdelen Tatoglu & Gul, 2020; Ghosh, 2020).

Harb & Bassil (2020) found that the GDP of the origin and destination countries had no effect on tourism demand. Meanwhile, Wardani & Handayani (2020) stated that the distance variable has a positive effect on tourism demand in Indonesia, while in theory, the effect of the distance variable on tourist demand is negative.

Another difference is in the use of independent variables. Several studies on tourism demand with the Gravity model approach use GDP and distance variables as explanatory variables for the standard Gravity model and other economic and non-economic determinants. Most studies initially focused on economic demand factors such as income levels, relative prices, and exchange rates. However, non-economic factors can play an important role in attracting international tourists.

The influence of government policies on the tourism sector, which is one of the non-economic determinants of tourism demand, has rarely been studied in previous research. The role of the government in developing the tourism industry is very important in providing infrastructure (not only in physical form), expanding various facilities, coordinating activities between

government and private officials, conducting general arrangements and promotions to other regions and countries, and determining the direction of the tourism industry policy.

Numerous studies relating government policies to tourism have been carried out, such as: (Shi, 2012), (Shone et al., 2016), (Kim et al., 2018), (Nahar et al., 2019), (Muryani et al., 2020), (Wisnumurti et al., 2020) and (Dimitropoulos et al., 2021). Shi (2012) discusses the efficiency of promotions carried out by the government to increase inbound tourism in Australia. Research by Shone et al. (2016) states the importance of the role of local government in tourism development. Kim et al. (2018) used variables of free visa and economic policy to estimate tourism demand in Japan. Nahar et al. (2019) used the free visa variable to analyze international tourist demand in Indonesia. Muryani et al. (2020) used the free entry visa policy applied to several Asian countries in 2013 to analyze tourism demand in Indonesia. Wisnumurti et al. (2020) examine the impact of tourism policies on Indonesian Bali tourism. Research by Dimitropoulos et al. (2021) discusses the impact of travel restriction policies on tourism demand in Greece.

This research provides several contributions. First, this research examines the factors that affect tourism demand in Indonesia during the Covid-19 period. Studies on tourism demand during Covid-19 are important because there is still limited research on this matter. Second, this study uses an extended Gravity model. In addition to using explanatory variables commonly used in the Gravity model, such as GDP, distance, and relative price, this study uses non-economic variables, including Covid-19 and government policies in tourism. Third, broadening studies focus on tourism demand for foreign tourists, especially during the Covid-19 pandemic. This study includes Covid-19 to analyze the health crisis's impact on Indonesia's tourism demand. Fourth, this study uses two tourism policy variables to analyze tourism demand in Indonesia: the nation branding

"Wonderful Indonesia" and the policy of developing ten priority tourism destinations (10 New Balis). These two variables have never been used to analyze tourism demand in Indonesia.

Literature Review

The gravity model developed by Tinbergen (1962) is derived from Newton's theory of gravity. It describes international trade patterns and examines objects' flow between two destinations. Since tourism can be considered a trade in services and the flow of tourists, this model is very suitable for tourism study.

The gravity model uses the analogy of Newton's law of universal gravitation to describe the patterns of international trade. This model explains that bilateral flows between two countries are directly proportional to the economic mass and inversely proportional to the distance between them. The mathematical formula for the Gravity model is as follows:

$$F_{ij} = G \frac{M_i M_j}{D_{ij}}$$

Where F is the gravitational force between two objects, i and j. M_i and M_j represent the mass of the two objects. D means the distance between the countries, while G refers to the universal gravitational constant.

Furthermore, the distance between the two countries is an important factor for measuring the interaction between two countries. The following equation can be used to identify the economic interactions between areas of Newton's gravity law:

$$X_{ij} = G \frac{Y_i E_j}{D_{ij}^2}$$

Where X_{ij} is the economic interaction of region i with region j, G is the gravity constant, Y_i refers to economic activity in the region of origin, E_j represents the size of the economy in the destination region, and D_{ij}^2 is the distance between country i and country j. From this equation, it

can be concluded that economic activity in each region will positively affect economic interaction in the two regions, while the distance will cause a negative effect.

The basic idea of the gravity model in tourism is that the magnitude of the projected trip from the origin country or place to the tourism destination is understood to be proportionally related to the size of the two places and inversely proportional to some distance functions between both. Although its theoretical basis has been criticized, the Gravity model has been widely applied in tourism due to its equation simplicity and effectiveness in forecasting (Park & Jang, 2014). Moreover, the Gravity model is applicable to clearly calculate the geographical distance and the characteristics of the source country.

Several studies on tourism demand using the Gravity model approach use GDP and distance variables as explanatory variables for the standard Gravity model and employ other economic and non-economic determinants.

Economic determinants used include exchange rate (Deluna Jr et al., 2014; Khoshnevis Yazdi & Khanalizadeh, 2017; Nahar et al., 2019; Wardani & Handayani, 2020; Ghosh, 2020), relative price (Deluna Jr et al., 2014; Lorde et al., 2016; Khoshnevis Yazdi & Khanalizadeh, 2017; Xu et al., 2019; Ghosh, 2020; Jong et al., 2020; Esquivias et al., 2021), substitute price (Lorde et al., 2016; Esquivias et al., 2021), transportation cost (Lorde et al., 2016; Jong et al., 2020), financial crisis (Dogru et al., 2017; Esquivias et al., 2021; FDI (Xu et al. (2019), inflation rate (Tavares & Leitao, 2017).

In addition, non-economic determinants used are: population (Lorde et al., 2016; Wardani & Handayani, 2020; Ghosh, 2020); common language (Deluna Jr et al., 2014; Tavares & Leitao, 2017; Ghosh, 2020; Yerdelen Tatoglu & Gul, 2020; Dropsy et al., 2020), free visa (Nahar et al. (2019), membership of commonwealth (Ghosh, 2020), globalization index (Ghosh, 2020), disease

outbreak (SARS) (Deluna Jr et al., 2014; Habibi, 2017; Xu et al., 2019), political stability (Habibi, 2017; Yerdelen Tatoglu & Gul, 2020), climate (Lorde et al., 2016; Malaj, 2020; Cró et al., 2022), common border (Tavares & Leitao, 2017; Malaj, 2020; Yerdelen Tatoglu & Gul, 2020); tourism infrastructure (Deluna Jr et al., 2014); (Habibi, 2017); (Khoshnevis Yazdi & Khanalizadeh, 2017), (Yerdelen Tatoglu & Gul, 2020), uncertainty index (Ghosh, 2020), degree of foreign opening (Xu et al., 2019), cultural similarity (Xu et al., 2019), colonial relationship (Deluna Jr et al., 2014), common religion (Dropsy et al., 2020), tourism liberalization (Xu et al., 2019), promotion (Shi, 2012), direct flight ((Deluna Jr et al., 2014); (Cró et al., 2022); event (Shafiullah et al., 2019), common colonizer ((Deluna Jr et al., 2014); (Dropsy et al., 2020); conflict (Deluna Jr et al., 2014); (Khoshnevis Yazdi & Khanalizadeh, 2017), similarity index (Lorde et al., 2016), ASEAN member (Mariyono, 2017), Bomb attack (Mariyono, 2017); (Khoshnevis Yazdi & Khanalizadeh, 2017) and promotion expenditure (Cró et al., 2022).

Previous studies are summarized below according to methodologies, data, and results for different countries of origin and destination.

Park & Jang (2014) investigated tourism demand in 30 countries with panel data from 1995-2009. The proposed model has greater explanatory power than the traditional Gravity model. In addition, together with the Gravity model, the components of destination competitiveness, such as natural and cultural resources, tourism infrastructure, price competitiveness, and openness, significantly influence tourism demand.

Chasapopoulos et al. (2014) examined demand and tourism in Greece using panel data for 2001-2010. Distance and trade variables have more explanatory power than the other determinants. GDP and political stability have an important role in tourism demand.

Deluna Jr et al. (2014) examined international tourism demand in the Philippines from 2001 to 2012 using panel data (REM). Empirical results show that the GDP of the country of origin has a positive and significant effect on tourist demand. Distance and population have a negative effect on tourism demand. Relative prices from competing countries, exchange rates, conflicts, and colonialism have no effect on tourist demand. Direct flights are the most influential factor on tourist demand.

Lorde et al. (2016) examined tourism demand in the Caribbean from 1980-2008 using GMM. The results indicate that the traditional gravity model, such as the GDP of the country of origin and destination, the population of the destination country, and the price of substitution, have an effect on the tourism demand of a country. Habit persistence has the greatest impact on demand, while climate also affects tourism demand.

Research by Khoshnevis Yazdi & Khanalizadeh (2017) examined the determinants of international tourism demand for 1995-2014 in the USA using the ARDL method. The study results indicate that GDP, CPI, and real exchange rate influence international tourist demand.

Xu et al. (2019) investigated modeling international flows to China using panel data analysis from 1995 to 2014. The result suggests that the basic gravity determinants (GDP origin and destination country, population origin country, distance, and relative price) significantly influence tourist arrivals to China. This study also uses other independent variables such as export ratio, import ratio, trade ratio, FDI, culture, SARS, and risk.

Nahar et al. (2019) examined international tourism demand in Indonesia for 2016-2016 using the panel data (FEM) model. The study found that GDP for origin and destination countries and countries with visa-free entry positively and significantly impacts international tourist arrivals. Meanwhile, interest rates and distance have a negative and significant effect.

Dropsy et al. (2020) studied the factors influencing tourist demand on small island destinations using 2SLS and QML with the exponential count from 1995-2015. Variables of distance and GDP have a negative effect on tourism demand, while common language and colonial have a positive effect on tourism demand.

Harb & Bassil (2020) conducted research on 35 OECD countries during the period 1995-2015 regarding tourism flows and the multilateral resistance to tourism using four analytical tools, namely CE-TE, CPE-TE, CTE-CPE, and CCE estimator. The study results show that the CCE estimator was the best. The GDP of the country of origin, the GDP of the destination country, the member countries of the EU, and the Schengen agreement do not affect tourist arrivals.

Ghosh (2020) examined the inbound Australian tourism demand from Asia from 1991-2018 using the CCE (common correlated effects) methodology. The results show that the GDP of the country of origin and destination affects tourism demand. Globalization has a positive effect on tourism demand, while distance and price also affect tourism demand. The drawback of this research is that it cannot analyze the effect of marketing spending on a country due to a lack of data.

Meanwhile, Jong et al. (2020) examined the factors influencing tourism demand in Sabah, Malaysia, from 2010-2016 using panel data. The results show that the GDP of the origin country and Sabah's GDP had a positive effect on tourism demand. Meanwhile, transportation costs and tourism prices have an effect on tourism demand.

Using panel data, research by Yerdelen Tatoglu & Gul (2020) estimated the determinants of international tourist flows from 30 countries to the 14 most visited countries between 2008-2016. The income of the destination country and distance has a negative effect, while the income of the origin country has a positive effect on tourist demand.

Methodology

This study applies a Gravity model to panel data from 2007 to 2021. The panel data referred to in this study is a combination of the research period (2007-2021) involving data on all variables with the nine largest origin countries of foreign tourists in Indonesia from 2007-2021, including Australia, Malaysia, Singapore, Japan, South, India, USA, UK, and China. The data used is annual data retrieved from the Central Statistics Agency, the World Bank, and the IMF.

The dependent variable used is international tourist arrival (ITA). In addition, international tourist arrival is the number of foreign tourists from the top 9 countries of origin with the most foreign tourists in Indonesia. The data sources were obtained from the Central Statistics Agency with units of people.

The independent variables used in this study include GDP per capita of origin country (GDPO), distance (DIST), Relative Price (RP), Covid-19 (DCOV), Nation Branding "Wonderful Indonesia" (DWIND), and policy of developing ten priority tourism destinations (10 new Balis) (DNEWB).

GDP per capita of origin country (GDPO) is defined as the average income of each person in one year in the origin country, including Australia, Malaysia, Singapore, Japan, South Korea, India, USA, UK, China, and Taiwan. Moreover, the data were obtained from the World Bank.

Meanwhile, distance is referred to the geographical distance between the capital city of the destination country and the capital city of the tourists' origin country. In addition, the data were collected from https://www.distancefromto.net/.

The relative price (RP) can be defined as the consumer price index of the destination country (i) in relation to the consumer price index of the country of origin (j). Furthermore, the relative price can be calculated by using the following formula (Song and Li, 2008):

$$RP_{ijt} = (CPI_{it}/EXR_{it})/(CPI_{jt}/EXR_{jt})$$

Where:

RP_{ijt} = Relative Price

CPI_{it} = Consumer Price Index of Indonesia

EXR_{it} = Exchange Rate of Indonesia

CPI_{jt} = Consumer Price Index of Origin Country

EXR_{jt} = Exchange Rate of Origin Country

The Covid-19 (DCOV) serves as a dummy variable containing the number 0 if it is not during the Covid-19 pandemic and 1 if it is during the Covid-19 pandemic. The period of the Covid-19 pandemic is 2020; thus, the number 1 is given for that year. This variable is used to see changes in international tourist arrivals during and after the pandemic.

The nation branding "Wonderful Indonesia" (DWIND) also serves as a dummy variable containing the number 0 representing the year before using the nation branding "Wonderful Indonesia" and number 1 representing the year after using the nation branding "Wonderful Indonesia." The nation branding "Wonderful Indonesia" started in 2011, so the number 1 is given in that year.

The policy for the development of 10 priority tourism destinations (10 new Balis) (DNEWB) serves as a dummy variable containing the number 0 for the year before the implementation of the policy for the development of 10 priority tourism destinations and the number 1 for the year after the implementation of the policy. The year after implementing the policy of developing ten priority tourism destinations was 2016; therefore, number 1 was given in that year.

This study used the panel data regression analysis method. In panel data analysis, three methods, including Common Effect Model, Fixed Effect Model, and Random Effect Model, are

used to estimate the model. To determine the method to be used, we must first conduct a test through the Chow and Hausman tests (Gujarati, 2004). Moreover, the general equation to estimate the panel data is as follows:

$$LnITA_{ijt} = \beta_0 + \beta_1 LnGDPO_{jt} + \beta_2 LnDIST_{ijt} + \beta_3 LnRP_{ijt} + \beta_6 DCOV + \beta_6 DWIND + \beta_6 DNEWB + \mu_{ijt}$$

Where:

ITA_{ijt} = International tourist arrival

$GDPO_{jt}$ = GDP per capita of origin country

$DIST_{ijt}$ = Distance

RP_{ijt} = Relative Price

$DCOV$ = Covid-19

DWIND = Nation branding "Wonderful Indonesia"

DNEWB = Policy of developing 10 priority tourism destinations (10 New Balis)

t = time

i = destination country (Indonesia)

j = origin country (Australia, Malaysia, Singapore, Japan, South Korea, India, USA, UK, China)

μ_{ijt} = error term

Analysis and Findings

Based on descriptive statistics (Table1), the results show the standard deviation values for the international tourist arrival (ITA) variables, GDP per capita of origin country (GDPO), distance (DIST), relative prices (RP), Covid-19 (COV), Wonderful Indonesia (WIND), and The New Balis

(NEWB) are smaller than the average value (mean), which means that the data distribution is evenly distributed.

Table 1 Descriptive Statistics

Variable	N	Minimum	Maximum	Mean	Std. Deviation
LnITA	135	8.069655	14.90769	12.88739	1.252616
LnGDPO	135	6.906254	11.57150	9.975948	1.188634
LnDIST	135	6.794990	9.702395	8.427839	0.893647
LnRP	135	2.048753	9.381222	6.608639	2.366251
COV	135	0.000000	1.000000	0.341201	0.133333
WIND	135	0.000000	1.000000	0.733333	0.443864
NEWB	135	0.000000	1.000000	0.443864	0.266667

After performing descriptive statistical analysis, it is essentially necessary to do the Chow test before conducting the regression model. The probability of the F test is 0.0000, which is smaller than the 0.05 significance level. This means that the Fixed Effect Model (FEM) is a better model for this research than the Common Effect Model (CEM). Furthermore, the Hausman test was performed to choose the right model for the study, either a Fixed Effect or Random Effect model. It can be concluded that the Random Effect Model (REM) can be used for this study because the probability of a random cross-section is greater than 0.05 (0.5317>0.05). Therefore, panel data using the Random Effect Model is the best method for this research, showing no relationship between individual effects and independent variables.

Table 2 elaborates on the results of the regression estimation based on the Random Effect Model (REM).

Table 2 Result of Regression Estimation (Random Effect Model)

Variable	Coefficient	Std. Error	Prob
C	16.78022	1.646258	0.0000***
LnGDPO	0.041498	0.109156	0.0644*
LnDIST	-0.601537	0.158260	0.0002**
LnRP	-0.108284	0.059997	0.0735*
DCOV	-2.842548	0.203630	0.0000***
DWIND	0.438324	0.130134	0.0010**
DNEWB	0.392989	0.163096	0.0174**
F-test	46.55793		
(p-value)	(0.00000)		
Wald test	505.8669		
	(0.28011)		
Wooldridge test	15.851		
	(0.1056)		
R^2	0.721500		

Notes: *,**,*** indicate 10%, 5% and 1% significance, respectively

The next step is to test the classical assumption to provide certainty that the regression equation obtained has estimation accuracy, is unbiased, and is consistent. Based on the Wald test, the probability value is 0.28011 < 0.05. Thus, there is no heteroscedasticity problem in the panel data model used. The Waldridge test shows that the calculated F has a p-value of 0.1056, which is greater than the significance level (α) of 0.05. Thus, it is concluded that no autocorrelation symptom exists in the model used.

Table 3 shows that all independent variables have a VIF value of less than 10 (VIF < 10). Thus, it can be concluded that there are no symptoms of multicollinearity.

Table 3 Variance Inflation Factor (VIF)

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	7.19E+09	6.786145	NA
LnGDPO	2.611253	3.936357	1.177173
LnDIST	56.97408	3.284106	1.139589
LnRP	9.58E+11	1.209286	1.007937
COV	1.59E+10	2.003797	1.736624
WIND	6.32E+09	4.375564	1.166817
NEWB	1.02E+10	2.575216	1.888492

After performing the classical assumption test, the next step is to analyze the results of the REM estimation.

Table 2 shows that the GDP per capita origin country variable has a positive and significant effect on the number of foreign tourists. The variable coefficient of GDP per capita of the origin country (GDPO) is 0.041498, which means that every 1% increase in GDP per capita of the origin country will increase the number of foreign tourists by 0.041%. These results indicate that the market for the tourism sector abroad gets larger due to the increasing foreign countries' GDP per capita, which reflects the purchasing power and demand power. In addition, the better the standard of living, the higher the ability of foreign tourists to travel for vacation purposes. Therefore, this means a great potential for foreigners to travel to Indonesia since Indonesia is well-known as one of the attractive tourist destinations. The results of this study are in line with Park & Jang (2014), Xu et al. (2019), Nahar et al. (2019), Malaj (2020), Jong et al. (2020), and Ghosh (2020).

The regression results show that the distance variable (DIST) has a negative and significant effect on the number of foreign tourist visits, which means that the farther the distance between countries results in fewer foreign tourist visits to Indonesia. Distance plays an important role in tourist visits; the farther the distance is, the more the tourists must pay to visit a destination country. Some foreign tourists cannot afford to pay the fees to cover all expenses. Farther distance means they need to prepare both the expected and unexpected budget. The results of this research are supportively in line with the hypothesis and the results of previous studies conducted by Park & Jang (2014), Chasapopoulos et al. (2014), Deluna Jr et al. (2014), Xu et al. (2019), Nahar et al. (2019), Harb & Bassil (2020), Dropsy et al. (2020), Wardani & Handayani (2020), Malaj (2020), Yerdelen Tatoglu & Gul (2020), and Ghosh (2020).

The regression results show that the relative price (RP) variable has a negative and significant effect on the number of foreign tourist visits. In addition, the coefficient of the relative price (RP) variable was -0.108284, which shows that every 1% increase in relative price will reduce the number of foreign tourists by 0.108%. The increase in the price level in the destination country discourages tourists from traveling to this place or reallocating their demand to other relatively cheaper alternative tourist destinations. Demand for a product in a particular destination is probably negatively related to relative tourism prices because a higher cost of living in that destination will cause the tourists to be less enthusiastic about the product in that destination. Moreover, the results of this study are in accordance with the hypothesis and the results of a previous study by Dogru et al. (2017).

The regression results show that the Covid-19 (DCOV) dummy variable has a negative and significant effect on the number of foreign tourist visits. This represents that the change in the number of foreign tourist visits before the breakout of Covid-19 in 2020 was greater than that after

the occurrence of Covid-19. Moreover, this shows that after the Covid-19 outbreak, the number of foreign tourist visits to Indonesia has significantly decreased. The COVID-19 pandemic has also affected Indonesia's tourism industry and creative economy. Since February 2020, the number of foreign tourists entering Indonesia has decreased drastically, and the peak eventually occurred in April 2020, with only 158,000 tourists coming to Indonesia. The number of foreign tourists entering Indonesia in 2020 was only approximately 4.052 million. This number has decreased by almost 75% compared to the number of foreign tourist visits in 2019. In addition, this has affected Indonesia's revenues in the tourism sector. The enforcement of large-scale social restrictions and the closure of access going in and out of Indonesia have caused a considerable decrease in state revenue in the tourism sector by IDR 20.7 billion. As a result of the decrease in foreign tourists, the occupancy rate of hotels in Indonesia decreased significantly from 56.73% to 28.07% from July 2019-July 2020 or decreased by 28.66 points. The number of tourism destinations in Indonesia has significantly decreased. Moreover, the highest decline was in Bali tourist destinations by 59.15 points, North Sulawesi by 41.13 points, and Yogyakarta Special Region (DIY) by 40.03 points (Kemenparekraf, 2021). This study's results align with the hypothesis and studies by Xu et al. (2019).

According to Kainthola et al. (2021), Covid-19 can cause the phenomenon of zero tourism. After the Covid-19 outbreak, most tourists avoided traveling to crowded places. There are certain factors they will consider when traveling in the near future, such as a preference for hygienic and clean services and maintaining social distancing norms. Travelers also mentioned that they would choose a staycation or postpone their trip until a vaccine was found to combat the virus.

The regression results show that the dummy variable of nation branding "Wonderful Indonesia" (DWIND) has a positive and significant effect on the number of foreign tourist arrivals

in Indonesia. This shows that the change in the number of foreign tourist visits after using the "Wonderful Indonesia" nation branding in 2011 was greater than before this nation branding. This shows that using the nation branding "Wonderful Indonesia" in 2011 could increase the number of foreign tourists. In addition, building a good national image is a duty for every country. Therefore, a country needs to establish a positive image to strengthen its national identity at the international level to compete with other countries.

In conclusion, nation branding is the right choice for the country. Many countries build their nation brandings to create a good image of their countries to support the increase of domestic tourism, trade, and investment. Since 2011, Indonesia has used the national branding "Wonderful Indonesia" to replace the previous brand, "Visit Indonesia Year." Furthermore, the slogan "Wonderful Indonesia" is a fast way for the government to shape its national identity to enhance the potential of Indonesia's tourism sector internationally, along with the increasing flow of the world tourism industry. Besides, the slogan "Wonderful Indonesia" contains a promising message that Indonesia is rich with wonders in all aspects, both humans and nature, which may blow the heart and mind and promise new pleasant experiences. This "Wonderful Indonesia" nation branding is used on various occasions to promote domestic and international Indonesian tourism. This study's results align with the hypothesis and study by Shi (2012).

The regression results show that the coefficient of the policy of developing ten priority destinations (DNEWB) variable has a positive and significant effect on the number of foreign tourist arrivals in Indonesia. This shows that the change in the number of foreign tourist arrivals after the policy of 10 priority destinations applied after 2016 was greater than before the policy implementation. Accordingly, this indicates that implementing the policy can increase the number of foreign tourist visits. In addition, in 2016, the government, through the Ministry of Tourism,

released "10 New Balis", Indonesia's priority tourism destination expected to bring in more tourists than those visiting Bali. The ten priority destinations include Mandalika, Morotai Island, Tanjung Kelayang cape, Lake Toba, Wakatobi, Borobudur, Thousand Islands (local term: *Kepulauan Seribu*), Tanjung Lesung cape, Bromo-Tengger-Semeru, and Labuan Bajo. These ten tourist destinations were chosen since these locations are in business and are considered the fastest to attract tourists, eventually impacting the economy. This study's results align with the hypothesis and research by Deluna Jr et al. (2014) and Cró et al. (2022).

Discussions and Conclusions

The study results show that variables of GDP per capita of origin countries, nation branding "Wonderful Indonesia," and the policy of developing 10 priority tourism destinations (10 new Balis) have a positive and significant impact on the number of foreign tourist arrivals in Indonesia. In contrast, distance, relative price, and the Covid-19 variables have a negative and significant effect on the number of foreign tourist visits in Indonesia.

Based on the study results, we proposed some suggestions to increase the number of foreign tourist visits. First, reducing distance constraints. The government is expected to increase cooperation in expanding international flight routes to increase the number of tourists from various countries. Second, developing 10 tourism destinations (10 new Balis). It can be done by increasing tourism infrastructure, increasing accessibility (especially airport facilities, ports, roads, connectivity, seat capacity, and direct flights), increasing promotions to potential investors, tourism marketing, developing destinations, preparing superior human resources in the tourism sector, increasing quality of telecommunications networks, cleanliness and health, applying government policies that support the development of the tourism industry (entry permits for sailing ships/yachts, free visas, and customs), improving tourism supporting facilities (accommodation,

entertainment facilities, and catering services), and developing innovative economic products. Third, building a nation branding. Indonesia continuously strives to build a positive image of the country through a national branding strategy to form a strong state image to attract the international community's interest and compete with other countries. Thus, to build a nation branding "Wonderful Indonesia," the government of Indonesia has done a bunch of promotions in several media such as printed and electronic media, internet, and social media; participated in various international tourism activities; and kept on socializing the nation branding "Wonderful Indonesia" to various relevant stakeholders at both national and international levels. Fourth, making a tourism policy strategy. The government should have a blueprint of policy strategy for Indonesia's tourism to deal with economic and non-economic crises that cause such uncertain conditions for the national tourism industry.

For Further research, it is specifically possible to examine variables that can be directly controlled by the government of the tourist destination countries through various government policies, both economic and non-economic variables.

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