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Determinants of International Tourism in Malaysia: Evidence from Gravity Model

(Penentu Pelancongan Antarabangsa di Malaysia: Bukti daripada Model Graviti)

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ABSTRACT

The present study uses the Gravity type approach for panel data spanning from 1998 to 2009 to identify demand and supply factors in the Malaysian tourism industry. The findings reveal that the market size for both destination and source countries, country that share common border and common language with Malaysia are major factors that increases inbound international tourist and thus increase the tourist receiptin Malaysia. On the other hand, shorter distance and lower transportation costs also attract more tourists. The role of the exchange rate and the cost of living are equally important, as the depreciation of the Ringgit Malaysia (RM) and the lower cost of living attract more tourists to Malaysia. Alongside demand factors, the present study also examines supply factors, such as room availability and various components of infrastructure. The number of hotel rooms; quality in road infrastructure; and air transport infrastructure appear to be an important factor among international tourists.

Keywords: Malaysia;demand factors; tourism; Gravity Model

ABSTRAK

Kajian ini menggunakan pendekatan jenis Graviti bagi data panel meliputi dari 1998-2009 bagi mengenal pasti permintaan dan faktor-faktor bekalan dalam industri pelancongan Malaysia. Dapatan kajian mendapati saiz pasaran bagi kedua-dua destinasi dan negara-negara sumber, negara yang berkongsi sempadan yang sama dan bahasa yang sama dengan Malaysia adalah faktor utama yang meningkatkan pelancong antarabangsa ke negara ini dan seterusnya meningkatkan penerimaan pelancongan di Malaysia. Selain daripada itu, jarak yang dekat serta kos perjalanan yang murah juga menjadi tarikan para pelancong. Peranan kadar pertukaran matawang dankos sara hidupadalah sama penting, kerana kejatuhan nilai Ringgit Malaysia (RM) dan kos kehidupan yang lebih rendah menarik lebih ramai pelancong ke Malaysia. Di samping faktor permintaan, kajian ini juga mengkaji faktor bekalan,seperti ketersediaan tempat penginapan dan pelbagai komponen infrastruktur. Bilangan bilik hotel; kualiti infrastruktur jalanraya dan infrastruktur pengangkutan udara muncul sebagai satu faktor penting bagi pelancong antarabangsa.

Kata kunci: Malaysia; faktor permintaan; pelancongan; model Graviti

INTRODUCTION

International trade plays an important role in economic growth in most countries. Alongside the various goods and services traded between countries in today's globalized world, the tourism sector is regarded as a social economic activity that is becoming important due to good prospects in regards to the generation of future job opportunities and income. According to the World Tourism Organization (UNWTO), international tourist arrivals worldwide increased by almost 7% between 2009 and 2010 to 935 million. The increase is due to the fact that the international tourism industry managed to recover faster from the adverse impact of the 2008-2009 global financial crisis. UNWTO has also forecasted that international tourism will increase by 3% to 4% in 2012.

Tourism is one of the components of services in international trade that is becoming important in the global economy. International tourism is currently the world's largest export earner for most countries, particularly in the case of developing countries. According to the UNWTO, the receipt of foreign currency from international tourism reached 870 billion dollars in 2009. Moreover, the tourism industry also provides employment opportunities for locals, as it is a labor intensive industry (Eilat and Einav 2004). The total contribution of travel and tourism to employment, including jobs indirectly supported by industry, is forecasted to rise by 2.3% from 258,592,000

jobs in 2011 to 323,826,000 jobs by 2021 (WTTC 2011). As employment increases, the world's GDP also increases. This means that the tourism industry is also important in generating global income as a whole. The tourism industry also has a significant influence in stimulating investment in new infrastructure, which eventually encourages more foreign exchange. According to the World Travel and Tourism Council (WTTC), investment in infrastructure was estimated at US$652.4 billion, or 4.5 % of total investment, in 2011 and is expected to increase to US$1,487.9 billion by 2021. Furthermore, the country gains additional revenue from various forms of taxes and fees that are imposed on expenditures made by the tourists.

Over the two past decades, Malaysia has managed to increase its international arrivals from 7.4 million in 1990, contributing RM4.5 billion in tourism receipts, to 10.2 million in 2000, contributing tourism receipts of RM17.3 billion. In 2010, 24.6 million tourists visited Malaysia, contributing tourism receipts worth RM56.5 billion. Tourist arrivals in Malaysia are expected to increase to 36 million in 2020, bringing in receipts worth an estimated RM168 billion. Malaysia is ranked ninth among the most visited country in the world and ranked second after China in terms of tourist arrivals in the Asian market (UNWTO 2010). Despite these achievements, several issues need to be addressed, including the need to develop vibrant and iconic tourism products; improve and maintain existing tourism sites; and adopt more focused tourism promotions. The objectives of the tourism industry in the Tenth Malaysia Plan are to improve Malaysia's position to be within the top 10 in terms of global tourism receipts; increase the tourism sector's contribution by 2.1 times, which would contribute RM115 billion in tourism receipts; and provide 2 million jobs in the industry by 2015. To achieve this target, emphasis is placed upon attracting a larger share of high spending travelers and capturing a higher share of the economic growth.

Against this background, the present study examines both the demand factors and the supply factors that are likely to impact tourist inflows in the Malaysian tourism industry. Although the importance of tourism in Malaysia is widely recognized, little attention has been given to explaining its determinants, especially from the perspective of supply condition. Only a few extant studies exist concerning tourism in Malaysia. For instance, Ismail and Samdin (2010) estimate the determinants of tourism using the demand side approach and panel data. However, the findings are not quite conclusive as the study only focuses on the demand side. On the other hand, Hanafiah and Harun (2010) estimate tourism demand for Malaysia using modified Gravity model to examine key economic factors, such as income, price, exchange rate, consumer price index, distance, population and economic crisis. The study finds that strong relationships exist between the key economic factors and international tourism. Meanwhile Salleh et al. (2008) indicate that tourism price, travelling cost, substitute price and income, in both the short run and the long run, are significant determinants of Malaysia's tourism demand.

Since the tourism industry in Malaysia considerable potential to be developed further and become the primary foreign exchange earner; contribute to economic growth; attract investment; and generate employment, it is crucial to identify the determinants of international tourism from both the demand and supply perspectives. This is highly important to assist policymakers to implement various measures that enhance the country's position as a leading tourist destination and to promote domestic tourism. The present study consists of five sections. The first section provides a brief introduction, while section two provides a review of extant literature. Section three describes the methodology and section four presents the findings. Finally, the last section concludes the study and provides some remarks and policy implications.

LITERATURE REVIEW

The concept of tourism demand refers to a bundle of services that includes, among others, transportation, accommodation and entertainment. Additionally, a large number of indicators exist in relation to tourism, namely: number of visits; tourist flows; the number of tourist arrivals at hotels; and hotel expenditures. Due to the increasing importance of the tourism industry globally, many theoretical and empirical studies explore various issues related to the tourism industry (e.g. Aslan et al. 2008; Dritsakis 2004; Song et al. 2003; Garin-Munoz 2007; Witt et al. 1992). However, few extant studies examine the determinants of tourist arrivals from both the demand and supply side (Proença and Saukiazis 2005; Tsounta 2008).

Generally, no standard measure of tourism exists regarding demand and tourism supply. Lim (1997) classifies tourism demand in terms of tourist arrival/departures; tourist expenditure/receipts; travel export/import; length of stay; and nights spent at tourist accommodation. The variables are broadly utilized as dependent variables in most studies examining tourism demand. For example, Qiu and Zhang (1995) use tourist arrival and tourist expenditure to estimate tourism demand. On the other hand, Song and Witt (2000) define tourism demand as the amount of tourist products that consumers are willing to acquire during a specific period.

Some scholars propose the use of tourism receipts as the dependent variable. Proença and Saukiazis (2005) point out that tourism receipts are the most appropriate variable to be used as dependent variables from the perspective of the destination country. Meanwhile, from the standpoint of the source country, tourism spending is more appropriate. Zhang and Jensen (2005) share this view, arguing that the flows of tourism receipts may be

slightly superior to other variables as they indirectly include the numbers of days spent by tourists in the destination country.

Numerous factors influencing tourism flows are highlighted in the literature. Income is one of the most important explanatory variables. Theoretically, income is a measurement of tourist wealth, which is a person's ability to demand for goods and services. Munóz and Amaral (2000) suggest that as a country's income increases, more of its residents can afford to visit other countries. As a result, tourist arrivals will be a positive function of income. This hypothesis is supported by many empirical studies, including Salleh et al. (2008); Zhang and Jensen (2005); Vanegas and Croes (2005); Lizzi and Flückiger (2003); and Qiu and Zhang (1995). However, some studies focus not only on the income of source countries, but also on the income of the destination country. For instance, using income as the proxy for market size, Ismail and Samdin (2010) find that the market size of the destination country is equally as important as the market size of the source country.

Besides income level, transportation costs are also identified as one of the important factors that determine tourism demand (Ismail and Samdin 2010; Salleh et al. 2007; Muňoz and Amaral 2000). Theoretically, a decrease in transportation costs would encourage more tourist arrivals. A number of proxies for transportation costs exist, namely: real economy airfare; real air travel cost; real average airfare; excursion airfare; travel airfare; price of crude oil; distance; and real revenue per passenger-kilometer/ mile of scheduled airfares (Habibi and Rahim 2009; Salleh et al. 2008; Dritsakis 2004 and Lim 1997). Some researchers measure travel distance as the distance in kilometers between the capital cities of the source and destination countries and utilize this as a proxy for transportation costs. Other studies also include language and geographical borders as the determinants of tourist arrivals (e.g. Ismail and Samdin 2010; Khadaroo and Seetanah 2007; Eilat and Einav 2004). Common language and border sharing would allow frequent tourist visits to certain destination countries, as traveling to such destinations would be relatively easier, cheaper, and convenient. This would eventually lead to an increase in tourist arrivals from such source countries.

Supply conditions from the perspective of the destination country are equally important in determining tourist inflows. However, both theoretical and empirical studies on tourism supply are still lacking (Tsounta 2008; Smith 1994 and Crouch 1994). The components of tourism supply include transportation; travel agents and tour operators; and accommodation (Sinclair 1998). Among the components, accommodation is highlighted as an important factor in attracting tourist inflows (Zhang and Jensen 2005). Many proxies exist for accommodation capacity, such as the number of beds (Proença and Saukiazis 2005) and the total number of hotel rooms (Zhang and Jensen 2005 and Naude´ and Saayman 2005). Hotel rooms in a country are an indicator of the capacity of the tourism sector. The existence of a large number of hotel rooms implies a higher capacity and greater competitiveness in a country's tourism industry. High volumes of hotel rooms are also necessary to convince airlines to establish more routes or to justify government investment in complementary infrastructure, such as roads.

Alongside accommodation, infrastructure is also regarded as an important determinant of tourism supply. Many countries realize that an efficient tourism infrastructure is crucial in attracting more tourists (Zhang and Jensen 2005). To achieve the substantial development of the tourism industry, it is necessary for countries to ensure that tourism products – such as hotel services, restaurants, telecommunication facilities, basic amenities, roads and airports – are sufficient and in excellent condition. Among the components of infrastructure, transportation is highly imperative as it is the first facility tourists' utilize to travel into and within a destination country (Seetanah 2005). However, transportation is the least tested determinant in most empirical works.

As pointed out by Prideaux (2000), tourists are usually attentive to the nature and efficiency of infrastructure in a destination country, especially in regards to the transportation services available. An efficient transportation system rests largely on the quality and availability of a transportation infrastructure comprised of air services and airports; land transport systems and routes; and water transportation. Moreover, transportation costs can be substantially reduced if transportation infrastructures are highly efficient and accessible in a destination country. An inefficient transport service in the destination country might discourage future visits, thus, it is essential to increase investment in the hard transportation infrastructure to improve the costs and the quality of the tourism experience.

METHODOLOGY

DATA SOURCE

The data for tourist arrivals and tourist receipts in Malaysia from twenty-four source countries are extracted from Tourism Malaysia. The data spans from 1998 until 2009. Therefore, the present study consists of 25 pairs of unbalanced panel data with 288 observations. Data for gross domestic product (GDP), paved roads, total networks, rail lines, and air transport are compiled from the World Bank's World Development Indicators (WDI). Meanwhile the data for variables such as common language, common border and distance are extracted from the *Centre D'EtudesProspectivesEtD'InformationsInternationales* (CEPII). Data for the availability of rooms (number of rooms) is collected from Tourism Malaysia.

THE GRAVITY MODEL

The gravity model, which originates from Newton's law of gravity, has been widely used in migration, capital flows, regional science, economic geography as well as international trade. In estimating tourism demand, Rodrigue (2004) uses the Tinbergen gravity model and, to suit the tourism model, some adjustments are made. The model Rodrigue (2004) proposes is as follows:

$$TD_{ij} = K\frac{(m_i, m_j)}{D_{ij}} \quad (1)$$

Where TD_{ij} represents tourist arrivals from country i to destination country j, K is constant, m_i are factors that generate the movement of international tourism, m_j is a factor that attracts the movement of international tourism and D_{ij} is the distance between origin country i and destination country j.

Researchers have continually utilized the gravity model to explain international trade flows between countries for several decades, despite the fact that the model lacks a theoretical foundation. As pointed by Serlenga et al. (2004), Anderson (1979) is the first scholar to demonstrate that the formulation of the gravity model can be derived from different theoretical models, such as the Ricardian model, the Hecksher-Olin (HO) model and the increasing return to scale (IRS) model of the new trade theory. The strength of using the gravity model, in comparison with other models, is that the gravity model can estimate both time variant and time invariant variables. Additionally, the model allows more factors to be included to explain the international trade flows. Thus, to achieve the objective of the present study, the international factors of international tourism will be estimated using the Gravity model. Initially, the sample covers 40 countries for the period between 1998 and 2009. However, after preliminary analysis, only 24 countries are applicable. The basic gravity model is specified as follows,

$$lnTR_{mst} = \beta_0 + \beta_1 lnGDP_{mt} + \beta_2 lnGDP_{st} + \beta_3 lnPRICE_{st} + \beta_4 lnDIST_{ms} + \beta_5 BOR_{ms} + \beta_6 LANG_{ms} + \epsilon_{mst} \quad (2)$$

Based on the standard gravity model, lnTR$_{mst}$ represents the dependent variable, tourist receipt in Malaysia, m from source, s, at t year, in the form of direct or indirect currency payment made by tourist from abroad to cover the cost of the goods and services excluding expenses of international transportation. lnGDP$_{mt}$ and lnGDP$_{st}$ are the proxies for market size of the destination country and the source countries, respectively. lnPRICE is the proxy for costs of living in the destination country for the tourists from the source countries. The calculation of tourism price is based on the consumer price index (CPI) of the destination country, m, divided by the CPI of the source country (Dritsakis 2004; Muňoz and Amaral 2000). Tourism price expected to have a negative relationship with tourism. Basically, when the cost of living in a destination country is lower than the source country, international tourism will increase. Distance, border and language are used as proxies for tourism costs. Thus, the coefficient for lnDIST is expected to be negative because more tourists would likely visit countries within a shorter distance to reduce costs, especially transportation costs. BOR is dummy variable that assumes the value of one when the countries have a common border. LANG is also a dummy that assumes the value of one when the countries have a common language.

In order to attract more tourist inflows, supply conditions from the perspective of the destination country are equally important. To proxy accommodation capacity, the number of hotel rooms available (ln ROOM$_{mt}$) in Malaysia, m at t time is used. It is expected that the more rooms available to tourists who come to Malaysia will result in more receipts being received. Infrastructure (INFRA$_{mt}$) is also included in the model. Proença and Saukiazis (2005) believe that infrastructure may have a welfare effect on the daily life of tourists that visits a country. Therefore, lnROAD$_m$ (total network-km of roads), PAVED$_m$ (paved roads, taken from percentage of total roads), lnRAIL$_m$ (total route-km of rail lines), lnAIRWW$_m$ (air transport, registered carrier departures worldwide), and lnAIRPC$_m$ (air transport, passengers carried) are used as a measure of welfare for tourists in Malaysia. All infrastructure variables are regressed separately in order to avoid endogeneity problems. Each of these indicators is added one point at a time in the regression. This enables the identification of infrastructure components that might play an important role in attracting tourists to Malaysia. Furthermore, infrastructure is expected to have a positive relationship with tourism where an improved infrastructure is able to attract more tourists and, thus, increase tourist receipts. Therefore, the estimated equations are as follows:

$$lnTR_{mst} = \beta_1 ln\ GDP_{mt} + \beta_2 lnGDP_{st} + \beta_3 ln\ PRICE_{st} + \beta_4 lnDIST_{ms} + \beta_5 BOR_{ms} + \beta_6 LANG_{ms} + \beta_7 ln\ ROOM_{mt} + \beta_8 ln\ INFRA_{mt} + \epsilon_{mst}$$

Several extant studies utilize the panel data approach to estimate tourism equations (e.g. Eilat and Einav 2004; Brida 2009; Ellen and Yap 2009). The panel data approach involves the pooling of cross-sectional data across a time frame. The panel data approach is better to estimate tourism demand models since each of the destination countries are visited by tourists from various countries and regions. This allows the researcher to control for unobservable individual effects. According to Hsiao (2003), the advantage of the approach stems from the fact that annual data avoids seasonality problems, which are dominant in this sector. Another advantage is the utilization of a pooled time-series or cross-sectional data set, which enables more degrees of freedom than with time-series or cross-sectional data. Additionally, the panel data approach provides the ability to control for omitted variable bias and reduces the problem of multicollinearity, hence improving the accuracy of the

parameter estimates. In fact, the variation of data can be decomposed into variation between states of different sizes and characteristics, as well as accounting for variation between states. However, due to heterogeneity among the analytical units (individuals, firms, states, country pairs etc.), panel data models are frequently characterized by potential omitted variables problems.

The present study employs a panel estimation model, namely the random effect model (REM). However, the issue of whether to use a REM or a fixed effect model (FEM) is of particular interest when performing estimation using a gravity model. Implicitly, the FEM assumes that all explanatory variables are correlated with the unobserved effects or the specific error term that eliminates this correlation within the transformation. Matyas (1997) suggests using the Hausman test to decide whether to choose a FEM or a REM. The null hypothesis of the test is that no correlation between the individual effects and the explanatory variables. This implies that both random and fixed effects are consistent, but only the random effect is efficient. Meanwhile, the alternative hypothesis states that the individual effects are correlated with the explanatory variables, implying that only the fixed effect approach is consistent and efficient.

EMPIRICAL RESULTS

Table 1 presents the regression results of random effect estimation with different specifications based on the gravity equations. Prior to the estimation, the Hausman test is performed to determine whether to use the FEM

TABLE 1. The Demand and Supply Factors for International Tourism in Malaysia

Dependent Variable: Tourist receipt							
Variables	1	2	3	4	5	6	7
Const	-27.08*** (-6.35)	0.78* (-7.09)	-87.99*** (-10.30)	-27.02*** (-6.67)	105.79*** (4.89)	-42.68*** (-6.37)	-32.79*** (-7.53)
GDPm	4.48*** (19.18)	3.49*** (5.59)	1.30** (2.09)	2.86*** (4.33)	4.04*** (6.90)	3.43*** (5.58)	2.22*** (2.95)
GDPs	0.18 (1.16)	0.17 (1.15)	1.17 (1.15)	0.17 (1.17)	0.18 (1.22)	1.17 (1.15)	0.18 (1.24)
PRICE	-1.40*** (-4.91)	-1.37*** (-4.80)	-1.35*** (-5.27)	-1.33*** (-4.72)	-1.43*** (-5.38)	-1.35*** (84.78)	-1.34*** (-4.76)
DIST	-0.80* (-1.73)	-0.78* (-1.86)	-0.79* (-1.84)	-0.79* (-1.83)	-0.80* (-1.88)	-0.79* (-1.83)	-0.80* (-1.87)
LANG	0.47 (0.65)	0.50 (0.76)	0.50 (0.74)	0.49 (0.73)	0.48 (0.71)	0.49 (0.73)	0.48 (0.70)
BOR	0.87 (0.89)	0.89 (1.02)	0.87 (0.97)	0.88 (0.98)	0.85 (0.95)	0.88 (0.98)	0.86 (0.95)
ROOM		0.78* (1.73)	0.41 (1.01)	0.53 (1.16)	1.31*** (3.07)	0.68 (1.53)	0.52 (1.16)
PAVED			18.99*** (7.93)				
ROAD				0.64*** (2.56)			
RAIL					-19.52*** (-6.29)		
AIRWW						1.35*** (2.74)	
AIRPC							1.10*** (2.89)
Obs	277	277	277	277	277	277	277
R-sq	0.5892	0.5905	0.6027	0.5913	0.6001	0.5925	0.5917
Fstat/Wild-chi	647.63	649.12	871.29	671.69	788.78	675.11	678.06
Hausman stat				0.9870			

Notes: *** , ** and * denote significance at 1%, 5% and 10% levels, respectively. The numbers in brackets are t-statistics.

or the REM. The results of the Hausman test reveal that the null hypothesis that the FEM is consistent and efficient is rejected. Therefore, the REM is the preferred model and is applied in the present study. The coefficients of GDP_{mt} and GDP_{st} are positive and statistically significant, implying that the larger the market size, the more tourists attracted to visit a country. This finding also suggests that an increase in the income of tourists will increase international tourism in the destination country. The coefficient of LANG (language) is positive and significant for the tourist receipts equation, but not for the tourist arrival equation where the result is positive, but insignificant. This entails that language is not important for tourist attraction. Meanwhile, the coefficient for BOR is also positive and highly significant, implying that tourists from countries that share borders with the destination country tend to increase the frequency of visits to the destination country as the costs of visiting are relatively lower.

Moreover, *ln*$PRICE_{st}$, which is used as a proxy for cost of living, shows a significant result. This suggests that a depreciation of Malaysian currency (RM) by 10% will increase international tourism receipts in Malaysia by 14%. The coefficient of *ln*DIST (distance) is negative and statistically significant. Tourists must incur higher transportation costs if the distances between the source country and destination country are substantial. Greater distance between the two countries will result in the reduction of the number of arrivals and value of receipts from tourists from such destination countries. The coefficient of *ln*ROOM is positive, implying that an increase in the hotel and room capacity will lead to an increase in the tourist arrivals and the value of receipts. As mentioned earlier, the components of transport infrastructure are regressed separately. According to the REM in Table 1, all components of infrastructure variables are positive and significant, except for *RAIL*. As for *ROAD* (total network-km of roads), a 10% increase in the total network-km of roads is likely to generate a 7% increase in international tourism in Malaysia. Road infrastructure enhances the accessibility of tourists to different parts of the destination country, which eventually reduces transportation costs. Paved roads (PAVED), which is another indicator for transportation infrastructure, also exhibits a positive sign implying that a 1% increase in paved roads will increase international tourism by 19%. The findings show that the quality of road is important in encouraging international tourism.

On the other hand, the total route of rail lines (RAIL) is negative, indicating that a 1% increase in the total route of rail lines will reduce international tourism by 19%. This may be the result of the tourist preferences to use other modes of transport which are easier for them to travel to different parts of the destination country. As expected, the number of airlines serving a destination is also found to affect international tourism. According to the UNWTO (2012), air transport is an important tourism indicator as it represents approximately half of all international travel worldwide. On the other hand, as stated by Tsounta (2009), as more airlines flies to a destination country, tourists' arrivals are expected to rise for two reasons. First, the destination becomes more easily accessible and the second, public awareness increases for a destination as more airlines undertake expenditures for advertising campaigns. *ln*AIRWW (air transport, registered carrier departures worldwide) is also positive and highly significant and indicates that a 1% increase in air transport is likely increase international tourism by 1.3%. Finally, *ln*AIRPC (air transport, passengers carried) is also positive, implying that an increase by 1% in the LNAIRPC will increase international tourism by 1.2%.

CONCLUSION

The importance of the tourism industry to Malaysia is widely acknowledged as the industry is the second largest foreign exchange earner after the domestic manufacturing sectors. The tourism industry is regarded as an important industry in many developing countries, as an important source of income and earnings. Thus, the identification of the major factors that attract tourists to a country is important. The present study investigates the international factors for international tourism in Malaysia for the period between 1998 and 2009 using the gravity model. The results from the panel data econometrics analysis denote that the REM was the best model for all samples. The findings indicate that the demand for tourism in Malaysia is influenced by tourist income from source countries and tourism price in Malaysia. In the present study, the estimated elasticity of price of demand for tourism in Malaysia is less than one, suggesting that tourism demand in Malaysia is price inelastic. Distance between countries, common language, border are reported to be important elements relating to international tourism. However, supply factors are also important and cannot be ignored in the present study. The present study finds that certain supply factors contribute positively to international tourism, including the number hotel rooms available; the quality of road infrastructure; and air transport infrastructures.

The findings of the present study may have several policy implications. Since most of the indicators for transportation infrastructure exhibit positive and significant impacts on international tourism, it is proposed that Malaysian government make further investments to improve infrastructure in order to attract more tourists to the country. As noted in the new economic model, the largest contribution to Malaysia's GDP stems from the services sector, of which the largest component is the tourism industry. About 5% of the labor force earns its income from domestic and international tourism. As this can be one of factors that contribute to Malaysian income, Malaysia's image as an attractive tourist destination should be further internationalized through marketing

and promotional activities. In this regard, promotion in the international market should also be intensified to highlight the competitiveness and attractiveness of Malaysian tourism products. Therefore, future research should focus on tourism expenditure since the present study focuses on tourist arrival and receipts.

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