

Demand Factors for International Tourism in Malaysia: 1998-2009

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ABSTRACT

This study extend Ismail and Samdin (2010) works on demand factors in Malaysian tourism industry uses the Gravity type approach for the panel data spanning from 2002 – 2010. The dependent variable uses in the model is tourist receipt in Malaysia from twenty nine countries. This study finds that the market size for both destination and source countries, country that sharing border and common language with Malaysia are increases inbound tourist to Malaysia. On the other hand, the shorter the distance, the lower transportation cost, can also attract more tourists. This study also reveal that the role of exchange rate and the cost of living are equally important as a depreciation of Ringgit Malaysia (RM) and lower in the cost of living attract more tourists in Malaysia. Outcome of this research can be used among policy makers to guide future managements of Malaysian tourism industry.

Keywords: Malaysia, Demand Factors, Tourism, Gravity Model

INTRODUCTION

International trade plays an important role in current economic concerns. In today world context, tourism sector is one of economic social activities that important and have good potential in future. In 2010, World Tourism Organization (UNWTO) reported international tourist arrivals worldwide were totaled by almost 7% to 935 million compared to 2009 with positive growth rate reported in all regions. This is because international tourism has recovered faster from the impact of global financial crisis and economic recession in the late 2008 and 2009. UNWTO also has forecast a growth of international tourist arrivals between 4% and 5% in 2011.

Tourism is international trade in services and become an important activity in global market. International tourism, by the fact is the world's largest export earner. According to World Trade Organization, receipts of foreign currency from international tourism reached 870 billion dollars in 2009. Moreover, tourism is a labour intensive industry (Eilat and Einav, 2004). The total contribution of travel and tourism to employment including jobs indirectly supported by industry is forecast to rise by 2.3% from 258, 592, 000 jobs in 2011 to 323, 826, 000 jobs by 2021 (WTTC, 2011). As employment increase, world's GDP also increase. This means that tourism also important in generate world's income.

Tourism sector also has strong influence in stimulating investments in new infrastructure. Thus, it will encourage more foreign exchange. According to WTTC, Travel and Tourism investment is estimated at US\$652.4 billion or 4.5 % of total investment in 2011. It should be rise to reach US\$1,487.9 billion by 2021. As many tourists come to one country, the government of the country gains revenue from tourism sector such as taxes and fees. There are many studies have been focus on demand for travel. Malaysia's government has seen that tourism can contribute more in terms of global tourism receipts and providing jobs to the people. Therefore, the main purpose of this study is to identify factors that attract tourist arrivals to Malaysia from countries all over the world.

This paper consist 6 sections. First section, we already discussed the introduction. In second section, will be briefing about Malaysian tourism industry. Literature review will be in section three while methodology in section 4. Section 5 and 6 are discussion of the results and its conclusions.

MALAYSIAN TOURISM INDUSTRY

The development of tourism industry in Malaysia has achieved a level that can be proud of. Tourism related services are one of the main economic activities in Malaysia. It is the second largest foreign export earner, after manufacturing and has been growing since 2000 with international arrivals increasing by 9% per year. According to research by the World Travel & Tourism Council (WTTC), the global Travel & Tourism industry will grow by 2.8% in 2012, marginally faster than the global rate of economic growth, predicted to be 2.5%. This rate of growth means that Travel & Tourism industry is expected to directly contribute \$2 trillion to the global economy and sustain some 100.3 million jobs. South & Northeast Asia will be the fastest-growing regions in 2012, growing by 6.7%, driven by countries such as India and China where rising incomes will generate an increase in domestic tourism spend and a sharp upturn in capital investment, and recovery in Japan.

According to Tourism Malaysia, in 2010, international tourist arrivals grew to 24.6 million and the number of tourist receipts are RM 56.5 million compared to the number of tourist arrivals and receipts that only 5.5 million and RM 8.6 million in 1998. These can be shown that tourist arrival and receipts has consistently increased from year 1998 to 2002 but in 2003 the number of tourist arrival has fallen to 10.5 million and the receipts drop to RM 21.3 million because of the Severe Acute Respiratory Syndrome (SARS). The number of tourist arrival and receipts increased again from 2004 to 2010. In other words, the growth of Malaysia's tourism industry can be seen through the growth of tourist arrival and receipts in Table 1.

TABLE 1: Tourist Arrivals and receipt in Malaysia: 1998 to 2010

Year	Arrivals (million)	Receipts(RM million)
2010	24.6	56.5
2009	23.6	53.4
2008	22.0	49.6
2007	20.9	46.1
2006	17.45	36.3
2005	16.4	32
2004	15.7	29.7
2003	10.5	21.3
2002	13.2	25.8
2001	12.7	24.2
2000	10.2	17.3
1999	7.9	12.3
1998	5.5	8.6

Sources: Tourism Malaysia, 2011.

Survey by Ministry of Culture, Arts and Tourism (MOCAT) and the Malaysian Tourism Promotion Board (MTPB) found that domestic tourism was equally encouraging with revenue of RM25.98 billion, an increase of 23% compared with the RM21.1 billion domestic travelers contributed in 2008. In 2009, 90.5 million visitors travelled all over the country's local tourist destinations compared with 63.3 million in 2008. Services sector is expected to grow at 7.2% annually until 2015, raising its contribution about 61.1% in terms of GDP (Tenth Malaysia Plan).

LITERATURE REVIEW

Factor affecting international tourist can be explained from supply side as well as demand side. Khadaroo and Seetanah (2007), Martin et. al (2008), Aslan et. al (2009) are such studies that have been focus on supply side. However, demand factors are important in explaining international tourist such as Croach (1994a), Lim (1997), Zhang and Jensen (2007), Halicioglu (2004) and Vietze (2008). Lizzi and Flückiger (2003) indicates that tourism is not really an industry, but rather a collection of activities in which foreigner partake, and which are also available for consumption by local residents.

Frechtling (1996) classified that there are pull and push factors in estimating tourism demand. Pull factors is factors in destination that attract tourist to a destination. Push factors is emissive factors, which encourage tourists to travel away. Income and price are the most explanatory variable by researcher. Munóz and Amaral (2000) indicated economic demand theory suggest as country's income increases, more of its residents can afford to visit other countries, and therefore tourist arrivals are a

positive function of income. Vanegas and Croes (2005) found price is negatively related with international demand tourism, that is, the lower living cost in the destination country relative to the source country, the greater the tourism demand.

Tourism demand in destination can be influenced by changes in the exchange rates. Changes in exchange rate will affect the currency value of the origin country. Any change in exchange rate will lead to an appreciation or depreciation of tourist currency. Transportation cost, has been widely review in tourism literature. Researchers often included the distance of travel as a proxy such as Khadaroo and Seetanah (2007); the transportation cost variables is measured by the distance in kilometers between the capital cities of the source and destination country.

Goh and Law (2011) had reviewed 155 studies of tourism demand and classified it into the groups of method and technique adopted. Such as an econometric-based approach, time series techniques, and artificial intelligence (AI)-based methods. It appears that the more advanced methods such as cointegration, error correction model, time varying parameter model, and their combinations with systems of equations produce better results in terms of forecasting accuracy. For instance, Muchapondwa and Pimhidzai (2011) estimate the coefficients of the determinants of international tourism demand for Zimbabwe for the period 1998 to 2005. By employing bound testing cointegration procedure, the results show that taste formation, transport costs, changes in global income and certain specific events have a significant impact on international tourism demand. However, the long-run price elasticity of 0.145 in model 2 is insignificant makes tourism price in Zimbabwe is not luxury tourism.

However, recently in tourism demand studies, Gravity model has attracted researcher's attention for them to employ it into tourism demand model. For example, Hanafiah and Harun (2010) studied tourism demand in Malaysia based on the key economic factors like income, price, exchange rate, consumer price index, distance, population and economic crisis using a modified Gravity model. The result indicates that there is strong relationship between the key economic factors and decision to travel among the tourists. Income is the most important factor that affecting tourism flows. Exchange rate is negatively related with tourism demand as tourist from higher purchasing power prefers to visit Malaysia. Consumer Price Index (CPI) reduce number of tourist to travel. The increasing number of tourist arrivals was influenced by population growth and distance may reduce tourism demand.

METHODOLOGY

Data Source

Data for tourist receipts in Malaysia from twenty four source countries extracted from Tourism Malaysia. The data is spanning from 1998 to 2009. Therefore, this study consists of unbalanced panel data of 14 pairs with 288 observations. Data for tourist arrival and receipts were taken from Tourism Malaysia. Data for Gross Domestic Product GDP, population and Consumer Price Indices, Official exchange rate are taken from World Development Indicators, World Bank. Common language, common border and distance measures are taken from Centre D'Etudes Prospectives Et D'Informations and Internationales (CEPII).

The Gravity Model

The Gravity model is a most common formulation of the spatial interaction method because it understandable and practical to measure the relationship of one zones to another zone such as trade volume, migration and capital flows. It was originally proposed by Newton's gravitational law. Tinbergen (1962) was first used the gravity model in analyzing flows of international trade. The basic assumption of gravity model state that there are positive relation between bilateral trade and GDP while between bilateral trade and distance it becomes negative relation. The basic formulation model is express as follow:

$$\text{Trade}_{ij} = A \frac{(GDP_i \cdot GDP_j)}{DISTANCE_{ij}} \quad (1)$$

For the econometric purposes, the equation (1) can be change into a linear form equation (2) by employing logarithm:

$$\text{Log (Trade}_{ij}) = A + \beta_1 \log (\text{GDP}_i \cdot \text{GDP}_j) - \beta_2 \log (\text{Distance } ij) + \varepsilon_{ij} \quad (2)$$

In estimating tourism demand, Rodrigue (2004) has used Tinbergen Gravity Model and to suit the tourism and variables, some adjustment has been made with the model. The model proposed by Rodrigue (2004) is as follow:

$$TD_{ij} = K \frac{(m_i \cdot m_j)}{D_{ij}} \quad (3)$$

Where TD_{ij} stands for tourist arrival from country i to destination country j , K is constant, m_i as a factor to generate movement of international tourism, m_j as a factor to attract movement of international tourism and D_{ij} is distance between origin country i and destination country j . For a several decades, several researchers has work on in explaining international trade flows between countries by using Gravity model. However, the early empirical use model has been criticized due to its lack theoretical foundation. As pointed by Serlenga et al. (2004), Anderson (1979) was the first author shown formulation of the Gravity Model can be derived from different theoretical models such as Ricardian models, Hecksher-Olin (HO) models and Increasing Return to Scale (IRS) models of the New Trade Theory. The strength of using Gravity approach compared to others as it can estimate both in time variant as well as time invariant variables. Additionally, the model allows more factors can be taken into account to explain the extent of trade as an aspect of international trade flows.

Recently, in the international tourism empirical literature, Gravity model has been widely used to investigate the role of tourism. To achieve this objective, demand factors of international tourism will be estimate by using Gravity Model. Initially, the sample covering 40 countries for the period 1998 to 2009, however, after screening throughout the data only 24 countries are available. The basic Gravity Model can be specified as follows.

$$TR_{mst} = \beta_0 + \beta_1 \text{INCOME}_{mt} + \beta_2 \text{INCOME}_{st} + \beta_3 \text{PRICE}_{mt} + \beta_4 \text{EX}_{mst} + \beta_5 \text{POP}_{st} + \beta_6 \text{DIST}_{ms} + \square_{mst} \quad (4)$$

For estimation purpose, linear equation form of natural logs is expressed as:

$$\ln TR_{mst} = \beta_1 \ln \text{INCOME}_{mt} + \beta_2 \ln \text{INCOME}_{st} + \beta_3 \ln \text{PRICE}_{mt} + \beta_4 \ln \text{EX}_{mst} + \beta_5 \ln \text{POP}_{st} + \beta_6 \ln \text{DIST}_{ms} + \square_{mst} \quad (5)$$

The dependent variable is the value of inbound tourist receipts ($\ln TR$) in Malaysia, m , from source countries, s , at t year. Ismail and Samdin (2010) use tourist arrivals as dependent variable. However, this study differentiates by using tourist receipt to measure tourism demand since this variable may be important to attract revenues for a country. As regards independent variables, this study focuses on income, tourism price, exchange rate and population. Basic component of Gravity model include $\ln \text{INCOME}_{mt}$ as a proxy to GDP per capita of the destination country, Malaysia, m , and $\ln \text{INCOME}_{st}$ as a proxy to GDP per capita of the source country, s , at t time. GDP per capita is known as an indicator of the level of economic development which could promote tourism receipts. Therefore, an increase in tourist income will increase the number of tourist recipients. The result is expected greater than zero as tourist receipts increase when income increases. Tourism price ($\ln \text{PRICE}_{mt}$) factor ensures by most researches as important factor in determining tourism demand. Tourism price is a proxy to costs of living in destination by the tourists from the source countries. In other word it refers to the price of all goods and services consumed by tourists at the destination country. 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, s . It is expected that tourism price and receipts will have a negative relationship.

Nominal exchange rate ($\ln EX_{mst}$) is ratio of currency between the source country, s , and Malaysia, m at t time. The change of exchange rate will affect the currency value of the source country. Any change in exchange rate will lead to the appreciation or depreciation of tourist currency. Any appreciation in tourist currency may encourage more people to travel. Population ($\ln POP_{st}$) is a proxy for country size of source countries, s at t time. It is expected a positive sign as the larger the population, the more tourists from source country will demand to visit Malaysia and thus will increase tourist recipients.

There always have cost in tourism demand. Distance ($\ln DIST_{ms}$) is a proxy for transportation cost to Malaysia, m , from source countries, s . In this study, we will use weighted distance. For measuring the distance between the countries, usually we will use city-level data to assess the geographic distribution of population inside each nation. If the traveling cost rises, the cost of traveling becomes more expensive, and this will reduce the recipients. Dummy variables also included to explain tourism. In this study, $LANG_{ms}$ is used to control for countries which use the same language. While BOR_{ms} is used to control for countries that share a border which allows them frequent and easier to visit destination countries compared to other countries.

After all variables have been identified, here is the demand equation of tourism demand:

$$\ln TR_{mst} = \beta_1 \ln INCOME_{mt} + \beta_2 \ln INCOME_{st} + \beta_3 \ln PRICE_{mt} + \beta_4 \ln EX_{mst} + \beta_5 \ln POP_{st} + \beta_6 \ln DIST_{ms} + \beta_7 LANG_{ms} + \beta_8 BOR_{ms} + \epsilon_{mst} \quad (6)$$

EMPIRICAL RESULTS

Table 2 presents the regression results of different specifications based on the gravity equations, panel over the 1998 to 2009 period. The reports for pooled ordinary least square (POLS) and Random Effect Model (REM) are based on gravity equation which includes the proxy for market size of Malaysia and source country; and distance as a proxy for transaction cost. As expected, estimated coefficient for source country and destination countries are found implied that the bigger the market size, the more tourist attracted to visit another country and thus increase tourist receipt. The coefficient of distance implies that the shorter the distance, the lower transaction cost. For instance in column 5 (REM), a reduction by 1% of bilateral distance between Malaysian and source countries will increase tourist receipt by 1.2 %.

The coefficient population of the source countries is positive and significant implied that the greater the number of source country population, the larger the target market and the more is expected to be received from tourist expenditure in Malaysia. The following estimation reveals that both estimated coefficient of border and language are positively and highly significant. If a country is sharing border with Malaysia, the expected tourist arrive in Malaysia is about 3.6¹ times. The ASEAN dummy has shown insignificant result in all estimation. The result is also consistent with the findings from Ismail and Samdin (2010) albeit the dependent variable is tourist arrival. It means that Malaysian is destination of many countries from all over places, not limit to country that signs free trade agreement.

Column (4) and (5) in both POLS and REM reports the result when the two important variables namely the exchange rate and the PPP ratio as a proxy for cost of living in destination country. The report reveals that a depreciation of RM² by 1% increase 1.5% of tourist receipt in Malaysia. Meanwhile the result of estimated coefficient for PPP ratio is negative and significant implied that the role of cost of living in destination countries still important even though a slightly change in PPP ratio increases Malaysian tourist. Finally, the last column presents the full model where all variables are included in the equations. The results are still consistent with correctly sign and the level of significant.

¹ (exp (1.27)= 3.56)

² A depreciation of RM is refer to an increase of the exchange rate.

TABLE 2: The Demand factors for Malaysian Tourism

Variable	POLS					REM				
	1	2	3	4	5	1	2	3	4	5
IGDPm	4.39** * (5.38)	4.07*** (9.72)	4.06*** (9.65)	4.48*** (10.95)	4.34*** (10.19)	4.36*** (15.66)	4.07*** (16.64)	4.04** * (15.82)	4.24*** (15.47)	4.10*** (15.57)
IGDPs	- 0.14** (-2.29)	0.55*** (15.34)	0.55*** (14.21)	0.52*** (13.29)	0.51*** (13.74)	0.39** (1.97)	0.67*** (4.50)	0.70** * (4.21)	0.598** * (4.29)	0.495*** (3.71)
IPOPs	0.02 (0.32)	0.52*** (19.49)	0.52*** (16.67)	0.56*** (20.67)	0.56*** (20.62)	0.43** (2.23)	0.63*** (5.42)	0.66** * (5.13)	0.62*** (6.10)	0.58*** (6.06)
IDISTms		- 0.98*** (-12.72)	- 0.98*** (-10.14)	- 1.19*** (-11.52)	- 1.19*** (-11.52)		- 1.02*** (-2.85)	- 0.93** (-2.08)	- 1.14*** (-3.17)	-1.17*** (-3.45)
BORms		1.25*** (6.80)	1.24*** (6.43)	1.08*** (6.70)	1.11*** (6.84)		1.45** (1.92)	1.35 (1.62)	1.15* (1.79)	1.27** (2.09)
LANGms		0.85*** (6.62)	0.85*** (6.20)	0.28* (1.67)	0.26 (1.50)		0.86 (1.53)	0.96 (1.50)	0.47 (0.89)	0.29 (0.59)
ASEAN			0.02 (0.09)	0.01 (0.08)	-0.00 (-0.00)			0.32 (0.35)	0.18 (0.25)	-0.02 (-0.03)
IEXMS				0.15*** (8.00)	0.15*** (8.12)				0.12* (1.95)	0.15*** (2.58)
IPm					-0.70* (-1.68)					-1.38*** (-4.74)
No. of obs	278	278	278	226	225	278	278	278	226	225
R-squared	0.11	0.78	0.78	0.85	0.85	0.029	0.78	0.77	0.85	0.85
F test/ Wald test	12.17	404.57	345.29	303.46	267.23	563.53	651.88	648.86	594.67	675.24
Cons	31.19 (-4.46)	-34.60 (-9.83)	-34.66 (-9.70)	-36.33 (-10.07)	-35.10 (-9.41)	-42.13 (-11.72)	-35.57 (-9.59)	-38.77 (-7.54)	-36.69 (-8.55)	-33.54 (-8.15)

SUMMARY AND CONCLUSIONS

The tourism industry in Malaysia is regarded as one of the second largest foreign exchange after manufacturing sectors. Tourist industry has seen as income and earnings generated in many developing countries. Thus, it is important to identify what are the major demand factors attracting tourists to Malaysia. This study investigates the demand factors international tourism in Malaysia for the period of 1998 to 2010. The dependent variable is tourist receipt in Malaysia from 24 countries. The gravity type model is used to estimate factors that contribute to tourist arrival in Malaysia. The result reveals that the market size of country destination, Malaysia, is equally important with the source country of market size. Population for the source country also exerts positive relation with tourist arrival. Conversely, the shorter the distance, the lower the cost of transaction and transportation cost lead to increase the number of tourist in Malaysia. Another factors that equally important are the country that sharing common border and common language also positively related with demand for tourist in Malaysia. Finally, study finding suggest that an increase of the exchange rate or depreciation of RM and the lower the cost of living also important factor in demand for tourist to Malaysia.

The policy maker should take seriously identify which factors attribute to increase number of tourist if Malaysia aims to be as an International tourist attractions. The tourism promotion should also focus more on neighboring countries since these countries can contribute more on tourism growth besides maintaining the stability of the Malaysian currency and controlling the cost of living in Malaysia. Since this study focus more on tourist arrival on the demand factor, the future research should consider tourist expenditure as this can be as a factor contributing to Malaysian income.

REFERENCES

- Aslan et. al. (2009). "International Tourism Demand for Turkey: A Dynamic Panel Data Approach". *MPRA*, Paper No. 10601.
- Carey Goh & Rob Law. (2011). "The Methodological Progress of Tourism Demand Forecasting: A Review of Related Literature", *Journal of Travel & Tourism Marketing*, 28:3, 296-317.
- Centre D'Etudes Prospectives Et D'Informations and Internationales (CEPII).
- Christoph Vietze. (2008). "Cultural Effects on Inbound Tourism into the USA: A Gravity Approach". *Jena Economic Research Papers*, ISSN 1864-7057.
- Edwin Muchapondwa and Obert Pimhidzai. (2011). "Modelling International Tourism Demand for Zimbabwe". *International Journal of Business and Social Science*. Vol. 2 No. 2.
- Geoffrey I. Crouch. (1994). "The Study of International Tourism Demand: A Review of Findings". *Journal of Travel Research*, 33: 12.
- Giovanni ferro Luzzi and Yves Flückiger. (2003). "An Econometric Estimation of The Demand For Tourism: The Case Of Switzerland". *Pacific Economic Review*, pp. 289-303.
- Halicioglu, F. (2004). "An ARDL Model of International Tourist Flows to Turkey". *Global Business and Economics Review Anthology*, pp.614-624.
- Jameel Khadaroo and Boopen Seetanah. (2007). "The role of transport infrastructure in international tourism development: A gravity model approach". *Tourism Management*, Vol. 29, 831-840
- Malaysian Tourism Promotion Board. (2011).
- Mohd Hafiz Mohd Hanafiah and Mohd Fauzi Mohd Harun. (2010). "Tourism Demand in Malaysia: A cross-sectional pool time-series analysis". *International Journal of Trade, Economics and Finance*, Vol. 1, No. 1.
- Munóz, T. and Amaral. T. (2000). "An econometric model for international tourism flows to Spain". *Applied Economics Letters*, 7, 525-529.
- Rodrigue, J.P. (2004). "The geography of transport Heights. World Travel and Tourism Council". London: Routledge.
- Salleh et. al. (2008). "Asian Tourism Demand For Malaysia: A Bound Test Approach" *Contemporary Management Research*, Pages 351-368, Vol. 4, No. 4.
- Tenth Malaysia Plan. (2010).
- Tinbergen, J. (1962). "Shaping the world economy: Suggestions for an international economic policy". *New York: The Twentieth Century Fund*.
- Tourism Malaysia.
- Vanegas, M. and Croes, R. (2004). "An econometric study of tourist arrivals in Aruba and its implications". *Tourism Management*, 26, 879-890.
- World Development Indicators, World Bank.
- World Tourism Organization UNWTO 2012.
- World Travel and Tourism Council. (2011).
- Yair Eilat and Liran Einav. (2004). "Determinants Of International Tourism: A Three-Dimensional Panel Data Analysis". *Applied Economics*, vol. 36, issue 12, pages 1315-1327.
- Zhang, Jie and Jensen, Camilla. (2005). "Comparative Advantage in Tourism: A Supply-Side Analysis of Tourism Flows".