Determinants of Chinese demand for tourism in Malaysia

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Determinants of Chinese demand for tourism in Malaysia

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Abstract: Tourism sector in Malaysia has always been one of its focal service industries not only in the past, but in the future as well in which Malaysian government has been focusing on diverting its economic activities from a resource-based to a service-based economy in its new economic model. China, a strongly emerging economy has been ranked as the third main tourist generating country for Malaysia since 2012. Hence, this study empirically identifies the macroeconomic determinants affecting the tourism demand from China to Malaysia. These determinants include real income, travel cost, exchange rate and trade openness. Particularly, real income and trade openness are evident to positively affect Chinese tourism demand while travel cost and exchange rate are found to adversely influence Chinese tourists' decision to travel to Malaysia.

1. Introduction

The evolution of Malaysian economy since its independence in 1957 has seen its transformation from a resource-based economy towards a service-based economy. Being one of its promising service sectors, tourism sector in Malaysian was further developed under the administration of Ministry of Culture, Arts and Tourism. Ministry of Culture, Arts and Tourism was renamed as Ministry of Tourism in 2004, and was transformed to Ministry of Tourism and Culture in 2013 in its efforts to establish Malaysia as a world-class tourism destination. Among its various efforts, the famous promotion campaigns carried out were Visit Malaysia Year in 1990, 1994, 2000, 2007 and 2014 as well as Malaysia Year of Festivals in 2015.

Malaysian tourism sector has contributed 13.7 percent (RM167.5 billion) to Malaysia's gross domestic product (GDP) and at the same time, it has also generated 1.70 million jobs (12.0 percent of total employment) in 2016 (WTTC, 2017). WTTC further projected that tourism sector's contribution to GDP will increase to 15.9 percent (RM295.6 billion) while creating 2.56 million jobs (14.5 percent of total employment) in 2027. Apart from that, (PEMANDU, 2016) has reported that despite there is a drop in Malaysian tourism sector's earning from RM72.0 billion in 2014 to RM69.1 billion in 2015, tourism sector has leaped to third highest Gross National Income contributor in 2015 from fifth position in 2014, revealing the potential of tourism sector as an important engine of growth for Malaysian economy.

As shown in Figure 1, it is noticeable that total tourist arrivals and tourism receipts have presented an upward trend since 2000 with minor decreases in 2003 and 2015. In 2003,

the incident of SARS outbreak has caused a turbulence in global tourist flow and resulted in less outbound tourist into Asian region in particular. Meanwhile, the decline in 2015 was particularly a consequence of the global economic slowdown and unfavourable domestic events in Malaysia such as the worst flood in the past 30 years that has affected several states in early 2015; the earthquakes in Ranau, Sabah in middle of 2015; regional travel advisory for the coastal areas of Southeastern Coast of Sabah altogether with the lingering effects of the MH370 and M17 incidents (PEMANDU, 2016). Nonetheless, in 2014, Malaysia has achieved the benchmark of welcoming more than 27 million visitors while tourism receipts has recorded a historical high of more than RM 70 million. Moreover, Malaysian tourism sector is visioning to receive a total of 36 million tourists into the country while earning total tourism receipts of RM168 million in 2020 (TM, 2017).

FIGURE 1. TOURIST ARRIVALS AND TOURISM RECEIPTS IN MALAYSIA, 2000 - 2015
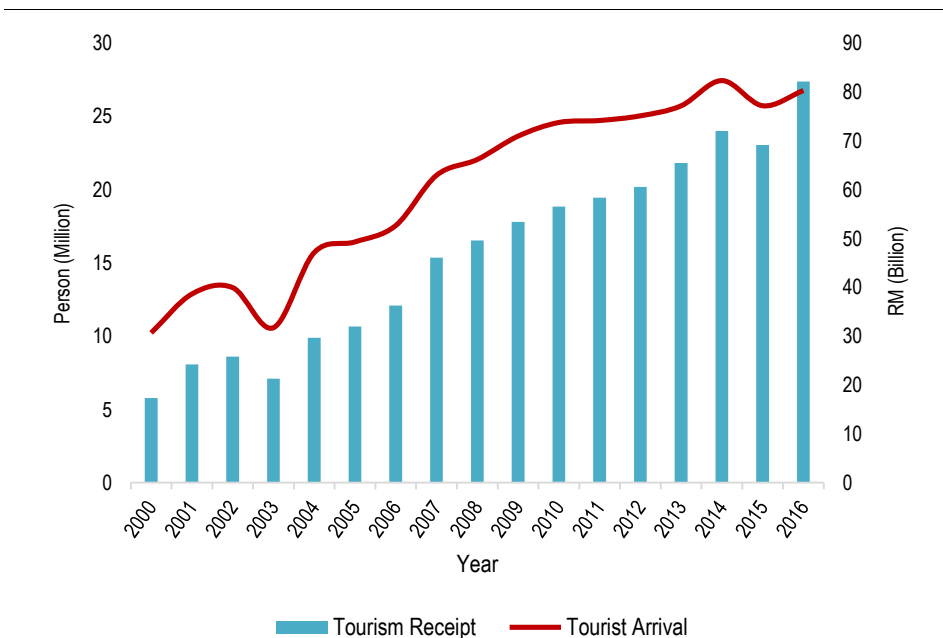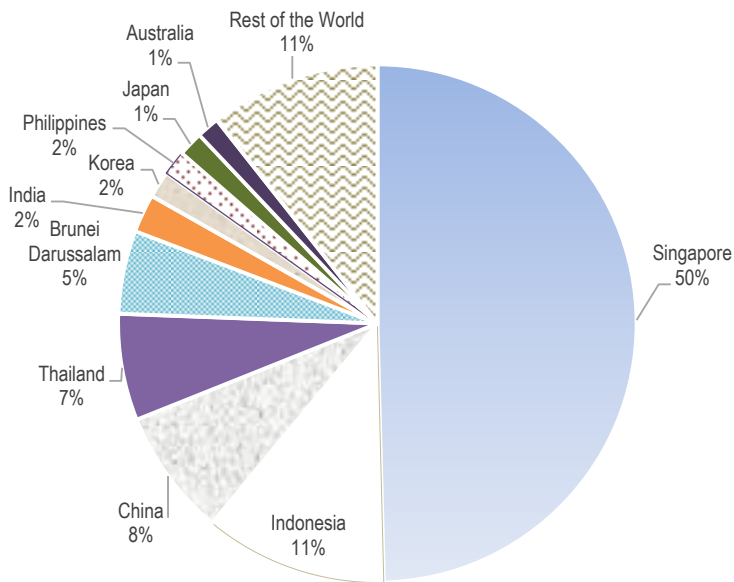

Source: Tourism Malaysia (2017).

Figure 2 illustrates the top tourist generating countries for international tourists in Malaysia for 2016. Singapore is the largest contributor with more than half of the international tourist arrivals in 2016 are Singaporeans (50 percent). This is followed by international tourists from Indonesia (11 percent), China* (8 percent), Thailand (7 percent), Brunei (5 percent), India (2 percent), Philippines (2 percent), Australia (2 percent), Japan (1 percent) and Australia (1 percent). Finally, tourists from the rest of the world have accumulatively contributed 11 percent of total tourist arrivals in 2016.

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* The number of tourists from China are inclusive of visitors from Mainland China, Hong Kong and Macau.

Despite being ranked as the third tourist generating country for Malaysia, China has the potential to contribute to higher market share given that China has a huge population of more than 1.3 billion. This is further encouraged by their strong economy performance in recent years which has strengthened their currency as well as boosting their spending power. Specifically, United Nations World Tourism Organization (UNWTO, 2015) has documented that Chinese travellers are the top world spender since 2012. Moreover, Chinese visitors spent about USD 165 billion in 2014 which contributed 13.2 percent of world tourism spending, an increase of 27 percent over previous year.

In their efforts to counter the adverse effect of MH370 tragedy as well as the kidnapping incident in Sabah towards the Chinese visitors, Malaysian government has announced the removal of visa requirement for Chinese tourists from 1st March to 31st December 2016 for a period of stay not more than 15 days. The efforts by Malaysian government to attract more tourists from China are deemed sensible given that there is a large population of potential Chinese travelers with strong spending power that are able to contribute to the growth of Malaysian tourism receipts. Therefore, the efforts by Malaysian government can be further enhanced with useful information collected from conducting a study that determines the factors affecting Chinese tourists' decision to travel to Malaysia.

FIGURE 2. TOURIST GENERATING COUNTRIES FOR MALAYSIA IN 2016

Source: Tourism Malaysia (2017).

2. Literature review

Song & Li (2008) and Song et al. (2012) in their survey of literature related to tourism demand studies have concluded that tourist arrival is the leading measurement in measuring tourism demand followed by other measurements such as tourism receipts and

length of stay. Some examples of studies that measured tourism demand in terms of tourist arrivals include those of Dritsakis & Gialitaki (2001), Garin-Munoz (2006), Kuo, Chen, Tseng, Ju, & Huang (2008), Mohd Hanafiah, Mohd Harun, & Jamaluddin (2010), Kusni, Kadir, & Nayan (2013), and Puah, Thien, & Arip (2014).

Meanwhile, the choice of independent variables usually consists of income variable and price variable. Income variable is used to represent the tourists' income level and this variable is usually measured using the GDP of tourist origin country. Among others, tourists' income are included as an explanatory variable in studies of Dritsakis (2004), Aguilo, Riera, & Rosello (2005), Botti, Peypoch, Randriamboarison, & Solonandrasana (2007), Chaiboonsri, Sriboonjit, Sriwichailamphan, Chaitip, & Sriboonchitta (2010), Eita, Jordaan, & Jordaan (2011), Kadir, Nayan, & Abdullah (2013) and Thien, Puah, Hassan, & Arip (2015). All these studies invariably found a significant relationship between tourists' income and tourism demand. Tourists' income level is expected to have a positive relationship with tourism demand where an increase in tourists' income will result in an increase in total tourist arrivals into a nation as increased spending power will enable more tourists to travel.

On the other hand, travel cost is a price variable used to represent the cost of traveling from tourist origin country to tourism destination. Most studies have employed crude oil price as the proxy for travel cost (for example, Garin-Munoz & Montero, 2007; Mohd Salleh, Law, Ramachandran, Shuib, & Mohd Noor, 2008; and Habibi & Abdul Rahim; 2009) despite airfare would be a more accurate measurement such as done in Dritsakis (2004) and Nelson, Dickey, & Smith (2011). Mohd Salleh, Othman, & Ramachandran (2007) explained that crude oil price can be substituted for airfare when there are difficulties in finding out the exact flight taken by the visitors and subsequently the price of airfare. A negative relationship between tourism demand and travel cost is anticipated because increased travel cost implies that cost of travelling is more expensive and hence this condition will discourage tourists to travel.

Furthermore, exchange rate is an explanatory variable that has included in the modelling tourism demand model to capture the relationship between the performances of tourist origin country's currency against the performances of destination country's currency with tourists' intention to travel. Studies done by Mohd Salleh, Law, Ramachandran, Shuib, & Mohd Noor (2008), Ouerfelli (2008), Yang, Lin, & Han (2010), Ekanayake, Halkides, & Ledgerwood (2012) and Puah, Thien, & Arip (2014) have included exchange rate as independent variable and they consistently discovered that exchange rate is an important determinant for estimating tourism demand model. Exchange rate is proven to have a positive relationship with tourism demand in which appreciation or strengthening of tourist origin country's currency would improve tourists' spending power and resulted in more tourists are willing to travel.

In additional, there are also researchers that have associated trade-related variable with tourism demand as well. Generally, there are two types of trade-related variable that are been included in examining tourism demand model, namely bilateral trade and trade openness. On one hand, Leitao (2010) as well as Mohd Hanafiah, Mohd Harun, & Jamaluddin (2010) have examined the role of bilateral trade in affecting tourism demand for the case of Portugal and Malaysia, respectively. On the other hand, Habibi, Abdual Rahim, Ramachandran, & Chin (2009), Wong & Tang (2010) and Mohd Ali Ibrahim (2011) have utilised trade openness in their tourism demand model for the countries of Malaysia, Singapore and Egypt, respectively.

Theoretically, trade openness would stimulate tourist arrivals into a tourist destination for tourists in origin country would receive more information about a tourist destination after travelling there for business purpose. Moreover, those tourists who went for business trip will also share their experience staying in a tourist destination to their friends and families, hence, this would further spread information about the tourist destination and attract more potential visitors.

3. Model, data and methodology

This study employs the Auto Regressive Distributed Lag (ARDL) test of cointegration developed by Pesaran, Shin, & Smith (2001) to investigate the dynamic relationship between tourism demand and its determinants. As ARDL method has the advantage of being able to be conducted regardless of whether the variables under study are purely stationary in *I(0), I(1)* or a fractionally integrated, this enable us to proceed to the estimation of tourism demand model without pre-testing of unit root. Furthermore, ARDL is known to produce more robust results compared in small sample study compared to Engle & Granger (1987) or Johansen & Juselius (1990) cointegration methods. In addition, the residual serial correlation and endogeneity problems are rectified when ARDL is properly specified.

The Unrestricted Error Correction Model (UECM) that is established for estimation is written as follow:

$$
\Delta LTA_t = \beta_0 + \beta_1 \sum_{i=1}^{p} \Delta LTA_{t-i} + \beta_2 \sum_{i=0}^{p} \Delta LY_{t-i} + \beta_3 \sum_{i=0}^{p} \Delta LTC_{t-i} + \beta_4 \sum_{i=0}^{p} \Delta LEX_{t-i} + \beta_5 \sum_{i=0}^{p} \Delta LTO_{t-i} \tag{1}
$$
$$
+ \beta_6 LTA_{t-1} + \beta_7 LY_{t-1} + \beta_8 LTC_{t-1} + \beta_9 LEX_{t-1} + \beta_{10} TO_{t-1} \varepsilon_t
$$

where TA, Y, TC, EX and TO are number of Chinese tourist arrivals into Malaysia, Chinese tourists' income level, travel cost, exchange rate between China and Malaysia, and trade openness between China and Malaysia, respectively; Δ denotes a first difference operator, β_0 is an intercept and lastly, ε_t is the white noise error term. As depicted in Equation 1, the error correction dynamics which capture the short-run relationship is denoted by a summation sign while the long-run relationship is obtained from the second part of the equation.

In ARDL estimation procedure, the existence of long-run relationship between the variables is determined through applying the bound test. Using the appropriate ARDL model, the *F*-statistic is calculated and is then compared with the upper and lower critical bound values. In the case of calculated *F*-statistic is larger than the upper bound critical value, a long-run relationship is concluded while in the case of calculated *F*-statistic is less than lower bound critical value, it is concluded that there is no long-run relationship. The third scenario where in the case of calculated *F*-statistic lies within the upper and lower bound values, the existence of a long-run relationship is inconclusive. Upon detecting a long-run cointegration relationship, the long-run parameters are then estimated. After estimating the long-run parameters among the variables under study, the next step is to

estimate short-run causality relationship as well as the speed of adjustment for the tourism demand model.

4. Data description

The total tourist arrivals from China are collected from Tourism Malaysia while tourists' income level and exchange rate are computed using data compiled from International Financial Statistics and at the same time, trade openness data are obtained from Direction of Trade published under International Monetary Fund. The travel cost is measured by crude oil price collected from Global Economic Monitor published by World Bank. The period of study covers from 2000 to 2015, employing quarterly observation.

Specifically, tourists' real income level is obtained from deflating Chinese GDP by its consumer price index (CPI) while travel cost is calculated by deflating crude oil with United States' CPI. Exchange rate used in this study is the ratio of currency between Malaysia and China and lastly, trade openness is computed by taking the difference of export and import (bilateral trade between Malaysia and China) over Chinese GDP. All variables with the exception of trade openness are transformed into natural logarithm form before any estimation is carried out.

5. Empirical results and discussion

Prior to conducting bound test of ARDL, the Augmented Dickey-Fuller (ADF) unit root test developed by Dickey & Fuller (1979; 1981) is carried out to check the time series properties of variables under study. Despite ARDL is able to estimate the long-run cointegration relationship with a mixture of *I(0)* and *I(1)* variables, there must be no *I(2)* variable in the empirical model (Jalil, Mahmood, & Idrees, 2013). Table 1 shows the results of ADF unit root test. The results clearly indicate that the variables utilised in tourism demand model are a mixture of *I(0)* and *I(1)* variables, justifying the use of ARDL estimator.

TABLE 1. ADF UNIT ROOT TEST RESULTS

VARIABLE	LEVEL	FIRST DIFFERENCE
LTA	-5.099 (3)***	-11.481 (3)***
LY	-5.419 (3)***	-26.690 (3)***
LTC	-0.712 (3)	-7.168 (3)***
LEX	-0.914 (3)	-7.035 (3)***
TO	-2.173 (3)	-11.715 (3)***

Notes: LTA = natural log of tourist arrival, LY = natural log of real income, LTC = natural log of real travel cost, LEX = natural log of exchange rate, and TO = ratio of bilateral trade between Malaysia and China over China's GDP. Asterisks (*), (**) and (***) indicate significance at 10 percent, 5 percent and 1 percent levels, respectively. The lag selection criterion are based on Schwert (1987) criteria.

Hence, the next empirical testing procedure proceeds to ARDL bound testing procedure to establish the long-run relationship between tourism demand and its specified explanatory variables. The results of ARDL bound tests are presented in Table 2. The critical values for bound test suggested by both Pesaran, Shin, & Smith (2001) and

Narayan (2005) are adopted in this study. The bound test results imply that there is a long-run cointegrating relationship between tourism demand and its specified explanatory variables where the calculated *F*-statistic (9.16) is larger than the upper bound critical values suggested by both Pesaran, Shin, & Smith (2001) and Narayan (2005) at all different levels of significance.

TABLE 2. BOUND TEST RESULTS

Critical values bounds of the F-statistic: Restricted intercept and no trend					
F-STATISTIC	SIGNIFICANCE LEVEL	PESARAN CRITICAL VALUES		NARAYAN CRITICAL VALUES	
		LOWER-BOUND	UPPER-BOUND	LOWER-BOUND	UPPER-BOUND
	10%	2.20	3.09	2.33	3.25
9.16	5%	2.56	3.49	2.75	3.75
	1%	3.29	4.37	3.72	4.94

After verifying the existence of long-run cointegration relationship, this permits the analysis to be carried into the next stage where the long-run parameters are estimated. The results are shown in Table 3. The estimated parameters reveal that real income and trade openness have a positive impact toward Chinese tourism demand while travel cost and exchange rate adversely affect Chinese tourism demand. A positive relationship between real income and Chinese tourism demand implies that increase in Chinese tourists' income will result in more Chinese tourists visiting Malaysia and vice versa. At the same time, as China open up its economy and doing more business with Malaysia, this subsequently introduce Malaysia to Chinese tourists as a tourist destination and attract more Chinese visitors into Malaysia.

TABLE 3. ARDL ESTIMATION RESULTS

REGRESSORS	LTA (2,3,3,3,3)
Constant	-5.444 [0.094]*
LY	1.556*** [0.000]
LTC	-0.769*** [0.002]
LEX	-4.472*** [0.001]
TO	0.863** [0.024]

Notes: Asterisks (*), (**) and (***) denoted the rejection of null hypothesis at 10 percent, 5 percent and 1 percent significant levels, respectively. The figures in (…) refer to the selected lag length for estimated model. The figures in […] refer to the probabilities.

Moreover, the negative relationship between travel cost and Chinese tourism demand disclose that an increase in travel cost will decrease the inflow of Chinese tourists visiting Malaysia. On the contrary, a reduction in travel cost will attract more Chinese tourists to visit Malaysia. Lastly, exchange rate is found to have a negative relationship with Chinese

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tourism demand where appreciation of Renminbi will discourage Chinese tourists to visit Malaysia. This situation is possible as the strengthening of Renminbi would encourage Chinese visitors to travel to tourism destinations that were previously considered not affordable for them.

TABLE 4. GRANGER CAUSALITY TEST BASED ON ECM RESULTS

	LTA
LY	33.429 [0.000]***
LTC	9.211 [0.056]*
LEX	10.786 [0.029]**
TO	5.567 [0.233]
ECT	-0.792 [-7.200]***
Dum2003	-1.559 [-4.516]***
DIAGNOSTIC TESTS:	
JB	1.311 (0.518)
AR[2]	0.793 (0.672)
ARCH [1]	1.151 (0.283)
RESET	0.114 (0.736)
CUSUM	Stable
CUSUM^2	Stable

Notes: JB is the Jarque-Bera statistic for testing normality, AR[2] and ARCH[1] are the Lagrange Multiplier test for 2nd order serial correlation and ARCH effects, respectively. RESET refers to Ramsey RESET specification test while CUSUM and CUSUM^2 are the CUSUM and CUSUM of squares stability tests. Asterisks (*), (**) and (***) denoted the rejection of null hypothesis at 10 percent, 5 percent and 1 percent significant levels, respectively. A dummy variable representing the event of SARS outbreak 2003 was included in the estimation.

Next, the short-run causal relationship and error-correction term (ECT) are presented in Table 4. All the specified explanatory variables significantly reject the null hypothesis of no causal relationship at different significance levels, except for the case of trade openness. In other words, real income, travel cost and exchange rate are able to influence Chinese tourism demand in the short-run as well. The speed of adjustment towards disequilibrium as represented by ECT is found to be significant at 1 percent significance level with the correct negative coefficient value of -0.792. As such, ECT coefficient value suggests that about 79.2 percent of short-run deviations of Chinese tourism demand will be adjusted towards the long-run equilibrium in a quarterly basis.

In addition, a battery of diagnostic tests is carried out to attest the robustness of Chinese tourism demand model. The battery of diagnostic tests reveals that the Chinese tourism demand model is free from the problems of normality, serial correlation, heteroscedasticity, misspecification and the model is also stable within the period of study. In summary, the Chinese tourism demand model passes all the diagnostic tests.

6. Conclusion and recommendations

This study has identified the macroeconomic determinants affecting Chinese demand for tourism in Malaysia covering a sample period from 2000Q1 to 2015Q4. Specifically, real income, real travel cost, exchange rate and trade openness between China and Malaysia are selected to estimate the Chinese tourism demand in Malaysia. The empirical testing

procedure starts off with the implementation of ADF unit root test to ensure there are no *I(2)* variables before bound test approach to cointegration is conducted. The results of bound test reveal that there is a long-run relationship among the variables of study.

Once the long-run relationship is verified, the long-run parameters are estimated and the specified determinants are all found to significantly influence Chinese tourism demand. Specifically, real income and trade openness are found to have positively affected Chinese tourism demand while the travel cost and exchange rate have a negative impact towards Chinese tourism demand. Next, the short-run causality is also investigated and three out of four explanatory variables are useful to predict the future movement of Chinese tourists.

Due to the similarity of language and culture between China's citizens and Malaysia's Chinese population, Malaysia has an advantage over other countries for welcoming huge inflow of Chinese visitors. Hence, when the economy performance of China is strong, a timely promotion in China would attract more Chinese visitors to travel to Malaysia. This is especially true as real income of Chinese tourists is evident to be one of the determinants of Chinese tourism demand in Malaysia. Therefore, tourism authorities in Malaysia should closely monitor China's economy performance.

As the empirical results suggest, increasing trade openness between China and Malaysia has contributed to the increasing amount of Chinese tourists visiting Malaysia. On one hand, the established trade relationship between businessmen would increase the number of business trip. On the other hand, as both countries are actively trading with each other, their citizens are more exposed to the information in both countries and when Chinese citizens are familiarized with the situation in Malaysia through the information obtained, they will be attracted to visit Malaysia due to the similarity in language and culture.

Besides that, a negative relationship between travel cost and Chinese tourism demand in Malaysia indicates that Malaysia should monitor the movement of crude oil price (a proxy for travel cost). During the period of decreasing crude oil price, Malaysia will welcome inflows of Chinese visitors even without too much emphasis on promotion efforts. Nonetheless, during the period of increasing crude oil price, efforts on promotion of tourism attractions as well as wide-ranging travel package should be emphasized and conducted with the aim of attracting more Chinese visitors to travel to Malaysia.

Lastly, exchange rate is found to adversely impact Chinese tourism demand in Malaysia where the appreciation of Renminbi will discourage Chinese travelers to visit Malaysia. Such situation is deemed possible when Chinese travelers will have bigger spending power as Renminbi is strengthened, therefore Chinese travelers will travel to other tourism destinations that are previously considered luxury destinations for them. As such, these Chinese tourists substitute Malaysia with other tourism destinations resulting in a decline in Chinese tourists visiting Malaysia.

In conclusion, tourism sector being one of the engines of growth supporting Malaysian economy are playing its important role as Malaysia's main income generating resource – petroleum and natural gas is facing unstable market price. China, being one of the emerging economies and the third tourist generating country for Malaysia, is able to provide a stable source of visitors that generates tourism sector's income. This scenario has rise up the need to study the determinants of Chinese tourism demand in Malaysia in order to provide Malaysian tourism authorities with information to formulate their policy in which these determinants are identified in this study.

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