

Determinants of Tourism Demand in Malaysia: A Study of Chinese and Indian Tourist from Macroeconomics Perspective

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Abstract

Tourism is one of Malaysia's key sources of income and has a considerable impact on the nation's gross domestic product (GDP). According to the Global Travel and Tourism Council, tourism and travel generated RM240.2 billion (USD 57.5 billion) in year 2019, accounting for 15.9% of Malaysia's overall GDP. Among the six top tourist arrivals in Malaysia, four are from Malaysia's neighbor countries, except China and India. As China and India accounted for 2/3 Asian population, this study aims to determine the factors that attract Chinese and Indian tourist inflows into Malaysia from a macroeconomics perspective. Quantitative survey method has been used for this study and secondary data from Tourism Malaysia, International Monetary Fund (IMF) and World Bank has been collected. The determinants include real income of China and India, crude oil price, as well as currency exchange rate. Quarterly observation has been used for this study. The period covered in this study is from 2000 quarter one to 2019 quarter 4. The result shown there is long run relationship between real incomes, crude oil price and currency exchange rate with Chinese tourist arrival in Malaysia whereas the long run relationship does not exists for Indian tourist arrival in Malaysia.

Introduction

Tourism has long been viewed as the driving force for regional development as plenty of benefits can be brought by tourism industry including economic Belloumi (2010), environmental, and socio-cultural benefits Kuvan & Akan (2005), it also helps in community revitalization and raising the level of living in local communities (Andereck et. al., 2000). Tourism has been confirmed as one of the world's largest and fastest growing service industries (McIntosh et. al., 1995). In Malaysia, the tourist industry first emerged as one of

the new engines for economic development in the 1960s, and it has since grown to be one of Malaysia's main sources of income. Prior to the Covid-19 pandemic, the tourism sector continues to keep the momentum going. Therefore the tourism industry is acknowledged as one of the 12 National Key Economic Areas in the Tenth Malaysia Plan 2011-2015 (Hmedan et al., 2023; Rashid et al., 2020). In reality, Malaysia's Gross Value-Added Tourism Industries (GVATI), which contributed 15.9% of the country's GDP in 2019, totalled RM240.2 billion in 2019. The tourism industry employed 3.6 million people in the same year, making up 23.6% of all employment (Official Statistics of Malaysia).

Table 1

Top tourist arrivals and receipts 2018-2022

Country	2018		2019		2020	2021	2022
	Arrivals (Mil)	Receipt (RM Bil)	Arrivals (Mil)	Receipt (RM Bil)	Arrivals (Mil)	Arrivals (Mil)	Arrivals (Mil)
Singapore	10.62	27.26	10.16	20.55	1,545,255	16,308	1,809,837
Indonesia	3.28	11.07	3.62	12.94	711,723	11,025	435,156
China	2.94	12.3	3.11	15.33	405,149	7,701	59,928
Thailand	1.91	3.82	1.88	3.96	394,413	59,607	199,129
Brunei	1.38	3.44	1.22	2.81	136,020	773	15,423
India	0.6	2.77	0.735	3.62	155,883	3,916	109,377

Source: TheEdge

As depicted in Table 1, among the six top tourist arrivals in Malaysia, four are from South East Asia (Singapore, Indonesia, China, Thailand, Brunei, and India) which is Malaysia's neighbor countries, except China and India. China and India accounted for 2/3 of Asia population. According to United Nations projection, India is expected to surpass China as the world's most populous country. According to World Tourism Organization (UNWTO), China was the world's top spender in international tourism. In the record, Malaysia welcomed over two million Chinese nationality tourists per year since 2016 (Immigration Department Tourism Malaysia) and therefore China has been Malaysia's largest source of tourist revenue before the Covid-19 outbreak, accounting for nearly 1% of GDP Malaysia. The Indians have similar travel behaviour and patterns to the Chinese. Although Indian do not spend as much on expensive or luxury shopping, they do spend more on tours and souvenirs. In 2019, each Chinese tourist spent RM4,921, of which 34.6% went towards shopping. In comparison, each tourist from India spent RM4,922.60, of which 22.9% went towards shopping (Ganesan, 2022).

As the contribution of tourist from these two countries is significant, this study aims to determine the factors that attract Chinese and Indian tourist inflows into Malaysia from a macroeconomics perspective.

Literature Review

For the dependent variable, tourist arrivals has been used as a measure of tourism demand (Dritsakis, 2004; Thien et. al., 2015; Puah et. al., 2018). There are numerous factors affecting tourism demand. Classical economics theory hypothesizes that income and price-type factors play significant roles in determining the demand for international tourism (Garin-Munoz et. al., 2007). Botti et. al (2007); Kadir et. al (2013) also stated that consumer demand function is

associated with income and price. Therefore, the independent variables consist of both income variable (real GDP) and price variables (crude oil price and exchange rate).

The level of income of visitors is represented by the income variable, which is typically calculated using the GDP of the destination nation. The research from Dritsakis (2004), Thien et. al (2015); Puah et. al (2018) discovered a significant correlation between tourists' income and tourism demand. Therefore, this study is expected to have a positive relationship between tourists' income and tourism demand as when the income increase the tourism demand will be increased as well.

For the price variables, one of the important explanatory factors in the tourism demand is transportation cost or travel cost. As it is difficult to determine the travel cost such as airfare price, there are a number of studies suggested to proxy travel cost using crude oil price such as (Garin-Munoz, 2006; Habibi et. al., 2009). According to studies by Dritsakis (2004), exchange rate is proven to be a key determinant to explain tourism demand. As their purchasing power increases and they are able to buy more products and services in tourist destinations, tourists will be encouraged to travel as a result of the appreciation of the currency of their home country relative to the currency of their destination. Moreover, the increase of global crude oil price is also indirectly effect to the cost of travel. When the crude oil global market increase, Malaysia also gain economical benefit as the oil production country (Rahim and Liwan, 2012). Similar finding that indicates the relationship between the oil price and exchange rate, found there is positive impact for the Malaysia as the price of global market increased (Sun et. al., 2021; Wong and Shamsudin, 2017; Jalil et. al., 2009).

Research Methodology

Following the work of Dritsakis (2004), this study analysed the China and Indian demand for Malaysia tourism using the following function:

$$ARR = F(GDP, COP, EXR)$$

Where ARR represents tourist arrival to Malaysia, GDP proxies the real income of China and India, COP is the crude oil price, and EXR is the exchange rate between China and Malaysia as well as India and Malaysia.

A positive relationship is expected to exist between China and India real GDP and tourism demand in Malaysia, which means an increase in China and India real GDP will lead to increase their tourist arrival in Malaysia. The positive relationship is also expected to exist between exchange rate and tourism demand. This indicates that the appreciation of China Yuan and India Rupee will increase the number of Chinese and Indian tourist visiting Malaysia. The exchange rate variable used in this study is the ratio of currency between china and Malaysia as well as India and Malaysia.

The COP is an importance variable to be include as the Malaysia is one of the countries that exported oil and gas. Moreover, the price of crude oil is one component that impacting the Malaysia currency (Sek, 2023; Shangle and Solaymani, 2020). Thus, the crude oil price is expected to have negative relationship with China and India tourist inflow to Malaysia. The CPO can significantly impact the cost of currency and relatively increase the travel cost which can reduce the tourist intention to travel.

Quantitative survey method has been used for this study and secondary data from Tourism Malaysia, International Monetary Fund (IMF) and World Bank has been collected. Quarterly observation has been used for this study. The period covered in this study is from

2000 quarter one to 2019 quarter 4. In order to conduct estimation, all variables has been transformed into natural logarithm form.

The empirical model to be estimated in this study is expressed as follow:

$$LARR_t = \beta_0 + \beta_1 LGDP_t + \beta_2 LCOP_t + \beta_3 LEXR_t + \epsilon_t$$

Where LARR represents the logarithm of Chinese and India tourist arrival respectively; LGDP is the logarithm of China and India real income respectively, LCOP is the logarithm of crude oil price which represent travel cost, LEXR refers to the logarithm of the exchange rate between China and Malaysia as well as India and Malaysia, and ϵ_t denotes the error term.

This study utilised EViews 12SV to examine the measurement and structural model. Augmented Dickey-Fuller (ADF) unit root test has been conducted to examine the time series properties of the variables. For the relationship among the variables, Johansen and Juselius multivariate cointegration test has been conducted to identify the long-run relationship among the variables; follow by Error-Correction Model (ECM) to determine the interaction among the variables if there is long-run relationship. Granger Causality VAR will be conducted if no long-run relationship detected.

Empirical Results

Table 2 shows the ADF and KPSS unit root tests results for real GDP, crude oil price, exchange rate and tourist arrival from China and India in Malaysia. Four variables were included in this estimation namely natural logarithms of real gross domestic product (LGDP), crude oil price (LCOP), exchange rate (LEXR), and tourist arrival (LARR).

For the ADF unit root test, the null hypothesis in level and first difference is "unit root exist" meanwhile the alternative hypothesis is "unit root does not exist". The null hypothesis for ADF unit root test is rejected if the t-statistics value greater than the critical values in magnitude. From the Table 2, it can be seen that the t-statistic of all the four variables in level form is fails to reject the null hypothesis because t-statistics value is smaller than the critical values. With that, the estimation continued to first difference form. As shown in table 2, ADF unit root test shows that all the variables are stationary in their first difference.

On the other hand, the alternative hypothesis is "not stationary," while the null hypothesis for the KPSS unit root test in level and first difference is "stationary." When the t-statistics value is greater than the critical magnitude values, the null hypothesis for the KPSS unit root test is rejected. In Table 2, KPSS unit root test shows that the variables are non-stationary at level form. While in first difference form, the t-statistics is smaller than the critical value in magnitude thus it does not reject the null hypothesis in first difference form. It means that there has stationary at $I(1)$ for all the four variables. Therefore, all the four variables, namely LARR, LGDP, LCOP and LEXR are stationary at $I(1)$ that tested by ADF and KPSS unit root tests.

Table 2

Unit Root Tests Results for Tourist Arrival from China and India

	ADF		KPSS	
	Intercept	Trend and Intercept	Intercept	Trend and Intercept
China	Level			
LARR	-1.230923[1]	0.344231[1]	1.177558[6] **	0.145943[3] **
LGDP	-2.631887[5]	-0.267925[5]	1.236283[6]*	0.301423[6]**
LCOP	-2.095893[0]	-2.046740[0]	0.523312[6]*	0.258092[6] **
LEXR	-0.926847[0]	-2.190418[0]	1.006537[6]*	0.185800[6]**
China	First Differences			
LARR	6.299086[4]* *	-6.318867[4]**	0.206536[20]]	0.152331[20]
LGDP	-9.829701[1] **	-9.926325[1] **	0.251194[12]]	0.070584[12]
LCOP	7.786871[1]* *	-7.788027[1]**	0.152737[8]	0.0946[3]
LEXR	7.646646[0]* *	-7.598720[0]**	0.083641[0]	0.073104[0]
India	Level			
LARR	-1.856135[8]	-1.617800[8]	1.037825[6] **	0.266546[6] **
LGDP	-0.119799[0]	-2.057533[0]	1.242126[6]*	0.137218[6]**
LCOP	-2.095893[0]	-2.046740[0]	0.523312[6]*	0.258092[6] **
LEXR	-1.074925[0]	-1.771098[0]	1.005290[6]*	0.125153[6]**
India	First Differences			
LARR	-10.84312[2] **	-11.01460[2] **	0.136373[12]]	0.117664[12]
LGDP	-7.961952[0] **	-7.904277[0] **	0.119110[4]	0.118872[4]
LCOP	7.786871[1]* *	-7.788027[1]**	0.152737[8]	0.070843[9]

	-			
	7.811159[0]*			
LEXR	*	-7.755723[0]**	0.069939[2]	0.068584[2]

Notes: Asterisks (**) indicates statistically significant at 5 percent level. Figures in parentheses are the lag lengths. The asymptotic and finite sample critical value for ADF is obtained from MacKinnon (1996). The ADF test examines the null hypothesis of a unit root against the stationary alternative. The KPSS test critical values are obtained from Kwiatkowski *et al.* (1992, Table 1, p.166). KPSS tests the null hypothesis that the series is stationary against the alternative hypothesis of a unit root. Δ denotes first difference operator.

All the unit roots is stationary at $I(1)$, which are suitable for conducting the cointegration test. Since all of the variables are of order 1, the empirical test will go on to the cointegration test by Johansen and Juselius (1990), which will determine whether there is a long-run relationship between the variables. According to table 3, the results suggested that there is one cointegrating vector between GDP, COP and EXR with tourist arrival in Malaysia which mean GDP, COP and EXR has long-run relationship with China tourist arrival in Malaysia. However, there is no cointegrating vector between GDP, COP and EXR with Indian tourist arrival in Malaysia. Therefore, the long run relationship does not exists between GDP, COP and EXR with Indian tourist arrival in Malaysia as shown in table 3.

Table 3

Johansen and Juselius Cointegration Test Results for Tourist Arrival

Null	Alternative	λ_{max}		Trace	
		Unadjusted	95% C.V	Unadjusted	95% C.V
China					
k = 1 r = 1					
r = 0	r = 1	31.8544**	24.1592	51.4709**	40.1749
r ≤ 1	r = 2	11.9783	17.7973	19.6165	24.2759
r ≤ 2	r = 3	6.7840	11.2248	7.6382	12.3209
r ≤ 3	r = 4	0.8541	4.1299	0.854166	4.1299
India					
k = 1 r = 0					
r = 0	r = 1	17.44508	27.58434	33.81914	47.85613
r ≤ 1	r = 2	10.00452	21.13162	16.37407	29.79707
r ≤ 2	r = 3	6.278032	14.26460	6.369545	15.49471
r ≤ 3	r = 4	0.091514	3.841465	0.091514	3.841465

Notes: k is the lag length and r is the cointegrating vector and r is number of cointegrating vectors that are significant under both tests. Asterisks (**) denotes significant at 5 percent significance level.

Results for VECM were portrays in Table 4. As shown in the table, there has short run causality exists in tourist arrival from China by GDP in China; while there also has short run causality exists in GDP by crude oil price. The estimated coefficient of error-correction term (ECT) has the correct negative sign and is statistically significant, and thus reemphasizes that

the variables in the system (GDP, COP, EXR and ARR) are cointegrated in the long term (Schwert, 1987).

The speed of adjustment stands at 63 percent per quarter due to the short run adjustments. So, this implies that Malaysia will need around 4.76 months for GDP, COP and EXR to adjust back to equilibrium whenever disequilibrium happens.

Table 4

Vector Error Correction Model Granger Causality Tests for China Tourist Arrival

China						
Dependent Variables	χ^2 -statistic (p-value)				ECT	
	Δ LARR	Δ LGDP	Δ LCOP	Δ LEXR	Coefficient	T-Statistic
						-
Δ LARR	-	6.6389 (0.01) **	0.0546(0.8 1)	0.6662(0.4 1)	-	5.89616*
Δ LGDP	0.0025 (0.95)	-	7.1093(0.0 0) **	1.6862(0.1 9)	0.630518	1.38544
Δ LCOP	1.3133(0.2 5)	0.2192(0.6 3)	-	3.0306(0.0 8)	-	-1.18036
Δ LEXR	0.1626(0.6 8)	0.0012(0.9 7)	0.0051(0.9 4)	-	0.100067	-0.51378

Notes: " Δ " is the first different operator. Asterisks (**) indicates statistically significant at 5 percent level.

The results of Johansen and Juselius cointegration test review that GDP, crude oil price and exchange rate does not have long run relationship with Indian tourist arrival in Malaysia. Therefore, vector autoregression (VAR) Granger causality test will be conducted to determine the short run causality relationships.

As indicated in Table 5, the results clearly show that the existence of short run unidirectional causality relationship from GDP and crude oil price to Indian tourist arrival in Malaysia where the p-value is less than 5 percent significant level. Furthermore, there is no causal relationship between exchange rate and Indian tourist arrival in Malaysia since the results are not statistically significant at 5 percent level.

Table 5

Granger Causality Test in VAR Results for India Tourist Arrival

India				
Dependent Variables	χ^2 -statistic (p-value)			
	Δ LARR	Δ LGDP	Δ LCOP	Δ LEXR
Δ LARR	-	12.6594 (0.00) **	11.2176(0.00) **	0.0307(0.86)
Δ LGDP	0.0026 (0.95)	-	0.3308(0.56)	1.5233(0.21)
Δ LCOP	2.3655(0.12)	0.0098(0.92)	-	2.4907(0.11)
Δ LEXR	0.0253(0.87)	0.9514(0.32)	2.2069(0.13)	-

Notes: " Δ " is the first different operator. Asterisks (**) indicates statistically significant at 5 percent level.

Conclusion and Recommendations

This study attempts to determine the macroeconomic determinants affecting Chinese and Indian tourism demand in Malaysia covering a sample period from 2000 quarter one to 2019 quarter four. The results clearly suggested that the real GDP has impact on Chinese tourism demand in Malaysia both in the long-run and short-run. In other words, the growth in real income will induce more China tourists to travel to Malaysia. In the short-run, the increase of crude oil price will increase China's real income, therefore crude oil price is indirectly affecting China's tourist to travel to Malaysia.

For India, although there is no long-run relationship between GDP, COP and EXR with Indian tourism demand in Malaysia, but in the short-run the real income and crude oil price does have effect on Indian tourist arrival in Malaysia. This means when the economy performance in India increase and the travel cost become cheaper, Indian tourist demand are likely to increase. Therefore, Malaysian tourism authorities should make timely promotion on tourism product and this will attract more Indian tourist inflows into Malaysia.

The study found no short-run relationship between the exchange rate and the tourism demand from both China and India. This can be due to the fact that fluctuation of exchange rate is difficult to predict and travel plan are difficult to change in the short period of time i.e. flight ticket booking and hotel booking in advance therefore it does not influence tourism demand in the short-run.

A strategic pricing policy is required in order to modify the relative price of tourism items in Malaysia in response to changes in real income in China and India since they are sensitive to income and price considerations. It is suggested to conduct a microeconomic survey to determine the type of China and India tourist spending while travel in Malaysia and their spending behaviour prior to establishing pricing strategy. The study could be benefited for the purpose of segmenting Malaysian's tourism offerings for various tourist groups.

Every study must have its limits, and this study is no exception. This study looks at the long-term relationship between the arrival of tourists from China and India from the point of view of tourism costs and the currency strengthening between these countries. Suggestions for future studies are to study non-financial factors but social factors such as culture and languages. In this study, we can also found out the increase in the number of tourists (Table 1) after the transition from the pandemic phase to the endemic of COVID-19. However, this

study does not mention whether the tourists who come to Malaysia are the same tourists or new tourists. If the tourists from China and India are the same tourists, it is possible that these tourists received a good experience and want to travel again in Malaysia. Therefore, the recommendation for future studies is to consider the population of tourists who come to Malaysia when there are the same tourists or new tourists. It is important to know whether our tourism industry is able to attract foreign tourists to this country as one of the sources of the country's economy. The economy of Malaysia has historically benefited greatly from tourism industry, and this trend is anticipated to continue in the future. Therefore it is worth to conduct more research to study the determinants of tourism demand in Malaysia.

In conclusion, the study advances theory by illuminating the varying short- and long-term effects of economic variables on the demand for Chinese and Indian travel to Malaysia. Furthermore, because of its policy implications and contextual relevance, it is a useful tool for stakeholders looking to improve the sustainability and competitiveness of Malaysia's tourist sector.

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