

TOURISM CRISES AND STATE LEVEL TOURISM DEMAND IN MALAYSIA

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ABSTRACT

This paper focuses on the impacts of tourism crises (SARS outbreaks, Indonesian tsunami and Bali bombing) on tourism demand in Malaysia during 2001-2009. We group our sample of tourist arrivals in Malaysia from the countries accordingly to ASEAN and NON-ASEAN regions; and we further shed light on their arrivals in the 13 states in Malaysia respectively during the crisis periods. We find that only tourism demand in the top four highest tourists demanding states (Selangor, Penang, Malacca and Pahang), together with Terengganu and Perak have significantly negative relationships with tourism crises, except for tourism demand in Penang showing positive relationship. We find that the positive relationship is significantly driven by ASEAN tourist arrivals, while the negative relationships in the other five states are significantly driven by NON-ASEAN tourism demand.

Keywords: Tourism, Demand; Malaysia; Crisis; ASEAN; NON-ASEAN.

1. INTRODUCTION

International tourism is one of the important sources of revenue in directing Malaysian economy to higher growth (Mazumder & Ahmed, 2009). It has become the second largest foreign exchange earner after manufacturing in Malaysia. Since 1987, Malaysian tourism has started to play an important role to support the country's economic growth, and it would not be surprise for surpassing manufacturing sector in the time of future. Based on the statistics shown, Malaysia has successfully attracted 23.6 million tourists in 2009 compared to merely 12.7 million tourist arrivals in 2001. The income generated from tourism is recorded as much as RM53.4 billion (US\$16.7 billion), equivalent to 10.2% of GDP in year 2009, compared to 6.8% of GDP in year 2001. According to World Tourism Organization (UNWTO) barometer

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in 2009, Malaysia was placed into the top 10 countries with the highest international tourist arrivals. The growth in the numbers of international tourists had raised the tourist receipts from RM7.63 billion in 2001 to RM17.23 billion in 2009, with an annual growth rate of about 10.75% averagely.

Studies like Habibi et al. (2009) and Hanafiah & Harun (2010) find that tourism crises such as natural disasters, disease outbreak and terrorism significantly affect international tourism demand in Malaysia. The study of Lean and Smyth (2009) further suggest that tourism crises have delayed the progress of Malaysian tourism development in long-run. Research on tourism crises is especially critical in the recent years as the number of tourism crises has been increased dramatically compared to the number of crises in 10 years ago¹. Due to this reason, the sustainability of tourism demand in Malaysia has been worried in long-run, and the burden is further extended by the additional competition from the nearby countries. To be able to grab the competitive advantage, Malaysian tourism sector needs to be outstanding in managing tourism crises, including tackling the right markets during the crisis periods. In efficiency in dealing with tourism crises could result in failing to obtain future investment in Malaysian tourism market. Hence, conducting empirical studies on tourism crises is worthy as it may set as a reference for policy makers to prepare for crisis management framework so that to prevent extensive loss during the turbulence.

This study examines the impacts of tourism crises on tourism demand in Malaysia. Asia-based tourism crises are focused in this context, i.e. 2003 SARS outbreaks, 2004 Indonesian tsunami and 2005 Bali bombings. This is because Asia-based crises (referred to the crises occurred in Asia) are more significant to affect Malaysian tourism demand, compared to crises occurred in other regions. Besides, instead of examining Malaysian tourism demand as a whole, we shed light on Malaysian state-level tourism demand which is rarely conducted by the prior studies. The rationale is that in-depth analysis on the impacts of tourism crises towards state-level tourism demand may reveal much more information than studying Malaysian tourism demand as a whole. Since Table 1 shows that tourism demand in the 13 states in Malaysia is varied, for Selangor, Penang, Malacca and Pahang show the highest demand by international tourists (see Table 1), the question hence arises about whether the high tourists demanding states could be sustained over the crisis periods, or the lesser tourists demanding states have worse impacts over tourism crises.

In this study, we categorize Malaysian tourism demand from the countries grouped by ASEAN and NON-ASEAN regions. This is intentionally to understand in detail on how do the crises affect Malaysian tourism demand from the tourists of neighbor countries as well as the countries farther apart from Malaysia. This is significant to understand whether remedies should target on tourists from ASEAN countries or NON-ASEAN countries, so that to recoup the loss from the crisis events immediately. We hypothesize that tourists from NON-ASEAN

¹ Hall (2010) shows a list of tourism crisis events affecting international tourist arrivals for the past 30 years. The list reveals that the frequency of external shocks has been increased since 2000.

countries have more worries to visit to Malaysia due to the limitation in exposing to the latest crisis information, and they are less understanding upon the way Malaysian government tackling the similar crises in the past. Instead, ASEAN tourists may have these advantages, and may grab the chance to travel to Malaysia once the condition is allowed, as cheaper tourism products are likely to be offered during the crisis periods in order to boost the tourism demand.

Our hypothesis is supported from the results obtained. Our results vary from the prior studies saying that tourism crises always negatively affect tourism demand in Malaysia. However, we show that ASEAN tourism demand in Malaysia instead are rarely affected by tourism crises; even, for the case of Penang, our statistical evidences show that Penang tourism demand has gained positive impacts from the tourism crises. In fact, we find that the negative effects of tourism crises on Malaysian tourism demand as found in prior studies are significantly driven by NON-ASEAN tourist arrivals only. Our results further show that the impacts of tourism crises are only statistically significant towards the four highest tourists demanding states, together with Perak and Terengganu, with its' effects are negative, except for Penang showing significantly positive relationship. For tourism demand in the rest of the states, the impacts of tourism crises are neither significant. The results imply that high tourists demanding states are not sustainable over the crisis periods. The exceptional case of Penang however could leave to future investigation.

2. LITERATURE REVIEW

2.1. *Studies on Malaysian Tourism Demand*

Song and Witt (2000) assert that tourism demand is the willingness of tourists to pay for a specific tourism products during a specific period of time under certain conditions which are governed by the explanatory factors. Prior studies tend to examine the relationships between tourism demand and macroeconomic factors (like tourists' income measured by gross domestic product (GDP), relative price measured by consumer price index (CPI), exchange rates etc.) as well as external shocks like tourism crises. There are two studies found showing contradictory results about the effect of tourists' income on tourism demand in Malaysia, with pooled data analysis is applied in both of the studies. On one hand, Habibi et al. (2009) demonstrate that Malaysian tourism demand is only significantly affected by relative price which shows negative relationship, but the effect of income is neither significant. On the other hand, the study of Hanafiah & Harun (2010) show that both income and price factors significantly influence tourism demand in Malaysia, with the effect of income is positive and price is negative. However, both of them share a similarity in their studies, which are using a large data sample of source markets on tourist arrivals, including ASEAN countries, NON-ASEAN countries within Asia region (such as China, Hong Kong, Japan, Taiwan) and the countries outside the Asia region (such as United Kingdom, Australia, Germany, France). Whether using large sample is the key factor constituting to the inconsistent results obtained between both of the studies has not been discussed in the literature. However, Tan, McMahon and Miller (2002) emphasize on the investigation of Indonesian tourism demand in Malaysia, and find that income and price competitiveness are the factors significantly affect Indonesian tourists traveling to Malaysia. The study of Wang (2009) suggests a solution that single strategy will not appeal to all international tourists from the world as the factors to influence

their traveling decisions are not homogeneous to one another. Wang even suggests to conduct in-depth investigation individually based on the characteristics of inbound tourists from each country so that to obtain non-bias results in the analysis.

Prior studies find that tourism crises have negative relationships with tourism demand. However, there are another group of researchers tend to carry out in-depth studies on the nature of the impacts of tourism crises, i.e. whether the impacts of tourism crises are transitory or permanent towards tourism demand. Lean and Smyth (2009) focus on the impacts of Asian financial crisis, Avian flu and terrorism threat towards tourism demand in Malaysia. They apply Lagrange Multiplier (LM) unit root tests with one and two structural breaks and find that the effects of the crises are only transitory. They assert that tourism demand from Malaysia's major source markets will revert to its long-term growing path following the crises. Using autoregressive distributed lag (ADRL) bound test approach, consistently, Salleh et al. (2008) find that Asian financial crisis and the outbreak of SARS have significantly influenced Malaysian tourism demand in short-run with negative effect. Although the effects of tourism crises are found transitory, however, it may delay the pace of development in tourism sector, causing the loss in revenue earned in Malaysian economy (Lean and Smyth, 2009).

2.2. Asia-based Crisis Events on Malaysia Tourism Sector

One may argue that various crisis events are happened almost all the time in every part of the world; the concern is how it would affect global tourism sector. Dealing with tourism crises, the power of media industries should not be neglected (Smith, 2005) as these industries are responsible to provide public awareness and responses towards the crises. The gradual change that does not attract media attention or politicians will not constitute to significant impacts on the tourism sector, although they may be significant academically or scientifically, for instance, the crisis events like food crisis, population crisis or climate crisis. Tourism crisis can merely be considered, with the condition that the cognate term "security" should not be isolated (Hall, 2010). Hall *et al.* (2003) even give the notion to include the issue of security into socio-economic and environmental landscapes when discussing about tourism crises. In other words, tourism crises are the crises that could endanger the safety of tourists when traveling to a destination, as well as the crises which could constitute to the inability of tourists to travel, for instance economic or financial downturn.

Looking into the individual crisis event, for the case of 2003 SARS outbreaks, it has significantly affected tourism in majority of the countries in Asia, including Malaysia. Statistics indicates that Malaysian tourist arrivals have fallen from 13.2 million in 2002 to 10.5 million in 2003, with the loss of 17.44% of total receipt relative to year 2002. Occupancy rates in Malaysian hotels are as low as 30% in April 2003, and the numbers of airline bookings have recorded of 40% lower than usual (Lean and Smyth, 2009). The outbreak of disease can be deemed as the global crisis which is not merely limited to the local region, but the disease is spread uncontrollably to other regions in the world.

Similarly, the 2004 Indonesian tsunami has brought plausible damages to Malaysia. Lean and Smyth (2009) provide the statistics demonstrating that 68 people die in Malaysia due

to the tsunami. The crisis also constitutes to the loss estimated around RM30 million (US\$8 million) in Malaysian states of Penang, Kedah, Perlis and Perak. Although minimal damage on the physical properties in Malaysia, island resorts particularly along the tourism belt of Batu Ferringhi in Penang have been suffered by the decreasing in international tourist arrivals. There was a 20% cancellation rate following the tsunami due to the fear of aftershocks as Malaysia is located vicinity to the epicenter of the Sumatra earthquake (Anonymous, 2005b).

No any information has been found that Malaysia is implicated in the 2005 Bali bombings. However, the vicinity of Indonesia to Malaysia may lead to the worry of tourists about the spreading of terrorism ideology into Malaysia. We quote the sentence in Putra & Hitchcock (2009) showing that the interconnection of the terrorism event with several countries including Malaysia: *“Many analysts moreover link the attacks in Bali to attempts by terrorists to re-organize the modern borders of Southeast Asia to create a substantial Muslim Caliphate, a position steadfastly opposed by the governments of the region, including the country with the world largest Muslim population, Indonesia. Terrorism networks with local agendas that converge with those of al-Qaeda have surfaced with the arrests in Malaysia, Singapore and Indonesia of militants associated with Jemaah Islamiyah (JI) and thus Southeast Asia has emerged as a major battleground in the war on terrorism, which has major implications for the region’s important tourism industry”*.

Table 1: Tourism demand in 13 states from ASEAN and NON-ASEAN countries, 2001-2009

	Non-ASEAN											Total	Brunei	Singapore
	ASEAN	Philippines	Indonesia	Thailand	Australia	Canada	France	Japan	New Zealand	South Korea	US			
Saudi	736338.4	4021633	324398.2	1314216	1888136	189812.609	661358.36	853994.22	13403808.7	2077961	30033962			
PO	415911.0	3781106	5509739	501086	1154421	108204.274	331405	815331.1	13479615.2	102017	16770516			
Poland	110252.5	682294.3	933692	304100	500721.125	141741	403470	574970.76	221631.29	264075.92	3314713.32	426654	13042767	
Malaysia	63099.95	1230195	436384	401252	74432594	124357	506926	53811.178	157779.07	205322.78	3277819.26	297831	18269710	
Korea	34259.85	424074.5	1706392	223681	21283.705	23209.9	142638	324378.96	4791824	877848.32	2740688.26	131372	4678812	
Sumatra	96472.85	1560091	206836	279940	35684347	35106.7	202609	39173.433	42422.05	176240.56	2674195.78	3157777	13296009	
Jawa	125145.6	1446382	423431	141580	24832157	27622.5	274045	19667.991	101601.86	74843.469	2660151.23	183664	53330405	
Sulawesi	854037	204027.2	220752	275599	30134758	37645.6	403439	63043.899	166710.35	209622.94	2575205.06	1909257	5947955	
Kalimantan	23665.03	309137.1	1556700	75795.1	19004792	35176.2	123037	9525.197	149302.5	470948.98	2114703.24	57500.1	7330964.4	
Perak	34930.86	390797.9	221528	99305.3	13309756	10407.2	107988	12787.622	29195.57	81100.617	1000550.54	134798	8202199	
Terengganu	31799.21	135572.3	274754	116015	30077889	59914.6	80915	14619.969	202584.9	70153.020	862079.310	86471.5	1476011	
Norohim	38466.46	317961.5	147766	269834	5911.044	491.6	52029.7	5962.328	20239.1	18206.634	697917.954	246981	11275352	

Note: The top 10 items arrangement of the Malaysia states are made according to the total number of tourist arrivals from the 10 countries in the descending order. Brunei and Singapore are excluded from ASEAN group in the calculation of total tourist arrivals in local related state, as the two countries are located extremely near to Malaysia, which may contribute for interpreting the actual demand in the individual states. S&B S.L. refers to the state of Sabah and Kuala Lumpur.

3. METHODOLOGY

As noted by Querfelli (2008), tourism demand could be represented by the number of tourist arrivals. In this study, our studied sample consists of ASEAN countries namely Singapore, Indonesia, Thailand, Philippines and Brunei; NON-ASEAN countries namely Australia, Canada, France, Japan, New Zealand, South Korea and the United States. The data for tourist arrivals is collected from Malaysia Tourist Profile for 2001-2009. However, tourist arrivals data for year 2006 is missing, becoming a limitation in this study. Macroeconomic data is obtained from World Bank database.

Tourism crisis is said to occur within a specific duration in an identifiable time and space (Ren, 2000). This statement reminds us that time series and cross-sectional information embedded in the data are important to reflect the behavior of tourism demand in Malaysia. Hence, data is pooled in two dimensions to capture the time series and cross-sectional effect simultaneously. The advantage of using pooled data is to enhance the quality and quantity of data in ways that would be impossible using only one of these two dimensions (Gujarati, 2003). Pooled regression permits us to study the dynamics of changes in tourist arrivals in Malaysia within a specific time of duration. Moreover, it controls over for the omitted variable bias, given more data information and reduces multicollinearity effects which lead to the accuracy coefficient estimations (Hsiao, 2003). Fixed effect specification in pooled regression is applied to the following models.

Based on the previous literature established, tourism demand is likely to be determined by macroeconomic factors such as income, relative price as well as exchange rate. Hence, these factors are included in our model (1) to set as the control variables. Tourism crises are represented by dummy variables. Preliminary analysis model thus is expressed as shown in the following:

$$\begin{aligned} Ln(ARRIVAL_{it}) = & \alpha + \beta_0 Ln(EXCHANCE_RATE_{it}) + \\ & \beta_1 Ln(INCOME_{it}) + \beta_2 Ln(PRICE_{it}) + \beta_3 Ln(ARRIVAL_{it-1}) \\ & + \beta_4 CRISIS + \varepsilon_{it} \end{aligned} \quad (1)$$

where α is a constant, $ARRIVAL_{it}$ is the nature logarithm of the number of tourist arrivals from country i visiting to Malaysia during the year t while $ARRIVAL_{it-1}$ is referred to the natural logarithm of the number of tourist arrivals from country i visiting to Malaysia during the year $t-1$. EX_{it} is the nature logarithm of the exchange rate for the currency of country i against USD divided by Malaysian currency against USD in year t ; $INCOME_{it}$ is the nature logarithm of GDP per capita of country i during the year t ; $PRICE_{it}$ is the nature logarithm of the ratio of CPI of Malaysia and CPI of the country i in year t ; dummy variables $CRISIS$ is the dummy variable for tourism crises with a value of 1 during the years of crises, and is 0 otherwise. ε_{it} is the random error term.

$$\begin{aligned} Ln(ST_ARRIVAL_{ijt}) = & \alpha + \beta_0 Ln(EXCHANCE_RATE_{ijt}) + \\ & \beta_1 Ln(INCOME_{ijt}) + \beta_2 Ln(PRICE_{ijt}) + \beta_3 Ln(ST_ \\ & ARRIVAL_{ijt-1}) + \beta_4 SARS + \beta_5 TSU + \beta_6 BOMB + \varepsilon_{ijt} \end{aligned} \quad (2)$$

Model (2) is the extension from model (1) where our dependent variable of $ST_ARRIVAL_{ijt}$ and $ST_ARRIVAL_{ijt-1}$ are the natural logarithm of the number of tourist arrivals from country i visiting to the state j during the year t and $t-1$ respectively. Here, 12 states have been analyzed instead of 13 states in Malaysia because Kedah and Perlis are grouped into one in the data we obtained. Furthermore, from model (2), we further incorporate three individual dummy variables for tourism crises, i.e. *SARS*, *TSU* and *BOMB*, taking the value of 1 for the years of crises, and is 0 otherwise.

4. RESULTS

Table 2 presents the impacts of tourism crises on tourism demand in Malaysia. The results show that exchange rate significantly and positively influences tourism demand in Malaysia. However, we find that the effect of exchange rate is only driven by NON-ASEAN tourism demand, but neither significant effect is found for ASEAN tourism demand in Malaysia and exchange rate. Interestingly, we find that the positive effect of income factor is only significantly related to ASEAN tourism demand in Malaysia, but neither significant relationship is found for NON-ASEAN tourism demand. However, for the price factor, negative relationships are found related to both ASEAN and NON-ASEAN tourism demand significantly. These findings may be able to explain the inconsistency found by Habibi et al. (2009) and Hanafiah & Harun (2010) on the effect of income towards Malaysian tourism demand as discussed in literature

Table 2: The Impacts of Crises on Tourism Demand in Malaysia

Variables	All countries	ASEAN	NON-ASEAN
Constant	-18.0040 (0.3718)	-37.7766 (0.1689)	47.4520 (0.1982)
Ln(EXCHANGE_RATE)	1.7279*** (0.0000)	1.1307 (0.3525)	2.2751*** (0.0000)
Ln(INCOME)	1.3790 (0.1300)	2.6224** (0.0416)	-1.5039 (0.3347)
Ln(PRICE)	-3.8214*** (0.0000)	-5.0038*** (0.0002)	-4.3304** (0.0233)
Ln(ARRIVAL(-1))	0.2968** (0.0494)	0.0848 (0.7556)	0.1386 (0.3865)
CRISIS	-0.3977*** (0.0001)	-0.2402* (0.0999)	-0.6047*** (0.0000)

Notes: The second column shows the relationships between explanatory variables and tourism demand in Malaysia (aggregated data on the 12 countries' tourist arrivals). The third and fourth columns show the relationships between explanatory variables and tourism demand in Malaysian from ASEAN and NON-ASEAN markets respectively, for ASEAN group consists of Singapore, Indonesia, Thailand, Philippines and Brunei while the NON-ASEAN group is Australia, Canada, France, Japan, New Zealand, South Korea and the United States. Fixed effect is applied in pooled regression. *, ** and *** denote the level of significance at 10%, 5% and 1% respectively.

review. Due to the aggregated data of tourist arrivals from all source markets used in both of the studies, it may lead to the inconsistent results obtained on the income factor as we find that the significantly relationship between income and Malaysian tourism demand is only driven by ASEAN tourist arrivals. However, the price factor does not show any inconsistency in both of the studies since we find that both ASEAN and NON-ASEAN tourism demand has significant relationship with price. As such, this study may be on the right tract to continue conducting the following regressions. Besides, we find that the magnitude of the elasticity for price factor is among the largest relative to the others macroeconomic variables. This implies that prices of tourism products in Malaysia are the key to influence tourism demand in Malaysia. The word-of-mouth effect shows significantly positive impacts on tourism demand in Malaysia, indicating that tourists still satisfy the quality of tourism products in Malaysia.

To our subject of interest, we find that the impacts of tourism crises negatively affect tourism demand in Malaysia with its effect is statistically significant. We further find that the impact of the crises are weakly driven by ASEAN tourist arrivals, but is significantly affected by NON-ASEAN tourist arrivals. In other words, the negative effect of tourism crises on Malaysian tourism demand is actually driven by the falling in tourist arrivals from NON-ASEAN countries.

Table 3 presents the impacts of tourism crises on tourism demand in the individual state of Malaysia. We find that only the top four of the highest tourists demanding states (Selangor, Penang, Malacca and Pahang), together with Terengganu and Perak are strongly affected by the crises, which are statistically significant at 1% level. The impacts of crises are negative, except for Penang which shows positive relationship. We further find that the positive effect of crises on Penang tourism demand is only driven by tourism demand from ASEAN. However, consistent with the results obtained in Table 2, the significantly negative impacts of crises on the five states (excluding Penang) are driven by the falling in tourism demand from NON-ASEAN, but are less affected by ASEAN tourism demand relatively. Nonetheless, Table 3 shows that tourism demand in Negeri Sembilan has neither been affected by the three crises studied significantly.

Table 4 presents the impacts of individual crisis on tourism demand in the 12 states in Malaysia. Still, we find that ASEAN tourism demand in Malaysia is relatively less significantly to be influenced by the three crisis events, compared to NON-ASEAN tourism demand in Malaysia. The negative impacts of SARS outbreaks significantly influence NON-ASEAN tourism demand in majority of the states in Malaysia, i.e. eight states are significantly affected, while the negative impacts of the other two crises (Indonesian tsunami and Bali bombings) have only significantly affected NON-ASEAN tourism demand in six states only. Although literature does not reveal that Malaysia is implicated to the crisis event of Bali bombings, however, our results show significant relationship between this crisis event and Malaysian tourism demand. This has implied that tourists are very sensitive towards their personal safety when making decision to travel, even though the chance for being affected is small. The findings may suggest to the policy makers of not neglecting the incidents occurring in the surrounding environment of Malaysia as it may indirectly influence tourism development in the country.

Table 3: The Impacts of Crises on State-Level Tourism Demand in Malaysia

<i>Variable: CRISIS</i>	All countries	ASEAN	Non-ASEAN
Selangor	-0.6914*** (0.0000)	-0.3836 (0.1570)	-0.7734*** (0.0000)
Penang	0.4510*** (0.0045)	0.8004*** (0.0007)	-0.0850 (0.7044)
Pahang	-0.4452*** (0.0002)	-0.2074 (0.3371)	-0.8159*** (0.0000)
Malacca	-0.7207*** (0.0001)	-0.3852 (0.1813)	-1.3582*** (0.0000)
Kedah/Perlis	-0.1607 (0.4869)	0.4557 (0.2633)	-0.6745** (0.0275)
Sarawak	0.0843 (0.6669)	0.2536 (0.4495)	-0.9166*** (0.0022)
Johor	-0.2324* (0.0803)	-0.0537 (0.9048)	-0.4608** (0.0281)
Sabah (0.0961)	-0.3724* (0.3096)	-0.3246 (0.5176)	-0.2777
Kelantan	0.1099 (0.6777)	0.9907 (0.1515)	-0.3360 (0.1573)
Perak	-0.6754*** (0.0010)	-0.8774 (0.1198)	-1.0073*** (0.0001)
Terengganu	-0.8925*** (0.0000)	-0.7034** (0.0105)	-0.8769*** (0.0000)
Negeri Sembilan	-0.2877 (0.2703)	-0.7960 (0.1885)	0.0393 (0.9084)

Notes: This table only presents on the coefficient of *CRISIS* variable in relation to tourism demand. The second column shows the relationships between *CRISIS* and tourism demand in Malaysia (aggregated data on the 12 countries' tourist arrivals). The third and fourth columns show the relationships between *CRISIS* and tourism demand in Malaysian from ASEAN and NON-ASEAN markets respectively. Fixed effect is applied in pooled regression. *, ** and *** denote the level of significance at 10%, 5% and 1% respectively.

Table 4: The Impacts of Individual Crisis on State-Level Tourism Demand in Malaysia

Variable	All countries				ASEAN				Non-ASEAN			
	SARS	TSU	BOMB	SARS	TSU	BOMB	SARS	TSU	BOMB	SARS	TSU	BOMB
Selangor	-0.7487*** (0.0000)	-0.5291*** (0.0002)	-0.5172*** (0.0000)	-0.3371 (0.3454)	-0.5631 (0.1026)	-0.5192 (0.1713)	-0.8341*** (0.0000)	-0.4371** (0.0302)	-0.4116*** (0.0074)			
Penang	0.5421** (0.0213)	0.3447* (0.0848)	0.4784** (0.0182)	1.2569*** (0.0012)	0.7701*** (0.0038)	0.6257** (0.0114)	-0.0638 (0.7938)	-0.2709 (0.3325)	-0.0016 (0.9935)			
Perak	-0.4233*** (0.0060)	-0.5310*** (0.0077)	-0.4687** (0.0282)	0.1634 (0.5889)	-0.2324 (0.5514)	-0.5109 (0.1241)	-0.8539*** (0.0000)	-1.1573*** (0.0002)	-0.7813*** (0.0084)			
Malacca	-0.8571*** (0.0004)	-0.7406*** (0.0060)	-0.8224*** (0.0002)	-0.1241 (0.7837)	-0.4509 (0.2798)	-0.6044 (0.1296)	-1.2068*** (0.0001)	-0.8274*** (0.0376)	-1.5432*** (0.0000)			
Kedah/Pahang	-0.0333 (0.8941)	-0.5751* (0.0588)	-0.0600 (0.8542)	0.6160 (0.1877)	0.0300 (0.9763)	-0.3711 (0.7096)	-0.5381* (0.0565)	-1.0812*** (0.0071)	-0.4842 (0.2229)			
Selangor	-0.1854 (0.4695)	0.7386* (0.0659)	0.4160 (0.2311)	-0.8153*** (0.0464)	-0.3816 (0.5427)	-0.2552 (0.6056)	-0.8153*** (0.0464)	-0.3816 (0.5427)	-0.2552 (0.6056)			
Jobor	-0.2439 (0.1165)	0.3945** (0.0659)	-0.6554*** (0.0002)	0.0488 (0.8500)	0.9595*** (0.0012)	-0.7828** (0.0154)	-0.5310** (0.0180)	-0.0894 (0.7739)	-0.8219*** (0.0086)			
Selangor	-0.61 (0.0405)	-0.1992 (0.5017)	-0.1653 (0.5245)	-0.6307 (0.2385)	0.0678 (0.9097)	0.4251 (0.4591)	-0.6307 (0.2385)	0.0678 (0.9097)	0.4251 (0.4591)			
Kedah/Pahang	0.2934 (0.3554)	0.0562 (0.8955)	-0.6013 (0.1798)	0.8869 (0.2920)	2.1652* (0.0854)	-0.1806 (0.8997)	-0.1628 (0.4642)	-0.7869** (0.0315)	-1.3705*** (0.0015)			
Perak	-0.9129*** (0.0002)	0.0662 (0.8521)	-0.6366* (0.0589)	-0.9963 (0.1947)	-0.3110 (0.7585)	-1.3597 (0.2028)	-1.0820*** (0.0009)	-0.0566 (0.9022)	-0.6125 (0.1602)			
Terengganu	-0.8273*** (0.0000)	-0.8863*** (0.0000)	-0.9264*** (0.0000)	-0.6264 (0.1188)	-0.4005 (0.1896)	-1.0475*** (0.0026)	-0.8090*** (0.0003)	-1.0693*** (0.0001)	-1.0599*** (0.0002)			
Negeri Sembilan	-0.4665 (0.1029)	0.1445 (0.7301)	-0.1491 (0.7452)	-0.4683 (0.5757)	-0.6360 (0.5107)	-1.2725 (0.2196)	-0.1328 (0.6877)	0.7711 (0.1449)	0.8267 (0.1609)			

Notes: This table only focuses on the coefficient of crisis variables (SARS, TSU, BOMB) for the 12 states, but not into the coefficients for the macroeconomic variables. The first panel (in vertical) shows the impacts of crisis on tourism demand from the 12 countries in the 12 states in Malaysia. The second and third panel (in vertical) display the 12 countries into ASEAN and NON-ASEAN, for ASEAN group consists of Singapore, Indonesia, Thailand, Philippines and Brunei while the NON-ASEAN group are Australia, Canada, France, Japan, New Zealand, South Korea and the United States. Fixed effect is applied in our panel regression. *, ** and *** denote the level of significance at 10%, 5% and 1% respectively.

5. CONCLUSION

This study emphasizes on the impacts of tourism crises (2003 SARS outbreak, 2004 Indonesian tsunami and 2005 Bali bombings) on tourism demand in Malaysia. However, before discussing about the core findings, we show that it is important to group the data of tourist arrivals from the countries of ASEAN and NON-ASEAN, as inconsistent results are shown from the previous studies without doing the grouping. The grouping is reasonable as ASEAN and NON-ASEAN tourists' traveling decision may be affected by different factors, either from the perspective of traveling cost (due to the advantages of tourist in the country vicinity to Malaysia) or their judgment on personal safety during the time of tourism crisis (due to the delay information on a crisis event provided to tourists staying farther away from Malaysia, plus the limitation in exposing to the historical experience of Malaysian government in handling the similar crises).

Contradict to the prior studies showing that tourism crises always negatively affect tourism demand in Malaysia, we find that ASEAN tourism demand in Malaysia is less likely to be affected by tourism crises. However, the negative impacts of tourism crises are actually driven by the falling in Malaysian tourism demand from NON-ASEAN countries. Upon the investigation on the state-level tourism demand in Malaysia, the top four of the highest tourists demanding states namely Selangor, Penang, Malacca and Pahang, together with Perak and Terengganu are significantly affected by crises, with its' effects are negative except for tourism demand in Penang showing positive relationship with tourism crises. However, the positive impacts of tourism crises on Penang tourism demand is driven by ASEAN tourism demand only. The falling in NON-ASEAN tourism demand in Malaysia is the key leading to the decline in tourism demand in the rest of the five states. The impacts of tourism crises are found do not significantly influence tourism demand in the other states in Malaysia. However, we also find that SARS outbreaks has widely influenced majority of the states in Malaysia, compared to Indonesian tsunami and the Bali bombings.

In sum, our results may provide a notion to the policy makers to target on tourists from ASEAN countries during the periods of tourism crises, so that to boost Malaysian tourism demand to recoup for the loss from the NON-ASEAN markets during the periods of tourism crises. As it is found that ASEAN tourists are sensitive over pecuniary interest when making decision to travel to Malaysia, promotion upon lower cost of travelling packages are encouraged in the post-crisis periods especially for ASEAN tourists. We further suggest that high tourists demanding states are not sustainable during the periods of tourism crises. Policy makers should not pay fully attention to the high tourists demanding destinations, but in fact, the low tourists demanding destinations should be focused during the crisis periods. However, tourism in Penang is the exceptional case that is the only state benefited following the crises. Future research investigating on Penang tourism is highly encouraged, so that to provide a helpful reference for tourism sustainability concern.

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