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**THE IMPACT OF DRUG CRIMES ON INTERNATIONAL
TOURIST ARRIVALS IN LANGKAWI ISLAND, MALAYSIA**

Anbalagan Kothandapam (a), Ema Izati binti Zulkepli (b)*

*Corresponding author

(a) School of Management, Universiti Sains Malaysia, Malaysia, hb_anba@yahoo.com

(b) Universiti Sains Malaysia, 11800 USM, Penang, Malaysia, emazull@usm.my

Abstract

Tourism is one of the fastest growing industries globally, and it is a primary contributor to the economies of most countries. The tourism industry directly raises employment and income levels, and is one of the most important industries for fostering growth. The main purpose of this study is to investigate the factors affecting the tourist arrivals to Langkawi Island. Most of the tourist related countries have been experiencing increasing crime, and existing studies have shown that crime impacts negatively on tourist arrivals. Both economic and noneconomic factors will be tested to identify the exact factor which contributes to the tourist arrivals. The economic factors will be uses in this study are GDP and CPI. The noneconomic factors are crimes which divide into three types of crimes (violent, property and drug crime). This research covered the quarterly data from 2006 to 2016. This study mainly focuses on the impact of drug crime, violent crime and property crime on tourist arrivals in Langkawi Island. Our findings indicate that all drug crime, violent crime and property crime have harmful effects on tourism in the Langkawi Island under study.

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Keywords: Crime, drug, GDP, international tourism, Langkawi.



1. Introduction

The international tourism market has been expanding significantly in the last 60 years. International tourist arrivals, which were 25 million in 1950, grew to 277 million in 1980. It almost doubled to 438 million in 1990 and rose to 681 million in 2000. The upward trend has continued to 940 million in 2010 and finally the latest recorded international tourist arrival was 1.332 billion in 2017. According to the World Tourism Organization or UNWTO (2011), the number of international tourists is expected to be 1.6 billion by the year 2020. Malaysia was ranked fifth in the Asia Pacific region in terms of international tourist arrivals (World Tourism Organization, 2016). Currently, the country is gearing to be among the most popular tourism destinations globally. Island tourism has become a growing trend in Malaysia. Tourism Malaysia reported that the country recorded 25.7 million international tourists for the year 2013. According to the World Travel and Tourism Council (WTTC), the tourism sector in Malaysia emerged in second place in terms of industry size, contributing 3.8 per cent to the global GDP (Rosli & Othman, 2007). The islands surrounding the country's coasts have been going through incessant development, which have turned them into tourist attractions that keep the number of tourists increasing (Mohamed et al., 2006). There are some popular islands in the country in both Peninsular Malaysia and East Malaysia's states of Sabah and Sarawak. One of the most popular islands in Malaysia is Langkawi Island, Kedah, which is situated on the west coast of the peninsula. Langkawi is the only island in peninsular Malaysia which has an international airport. This allows tourists to fly there directly from many foreign countries such as Singapore, China, India etc. In addition, it is also known as a duty-free island.

1.1. Threat to tourism

A potentially important factor that could influence tourism demand is the safety of the destination. A place with a high risk of victimization would likely hinder tourists from visiting the destination. The risk of victimization would be from any activity that poses a threat to tourists such as criminal activity. In the Malaysian Crime Index, seven types of crime are considered as violent crimes; namely robbery without firearm, gang robbery using firearm, gang robbery with no firearm, rape, attempted murder, murder, as well as causing hurt voluntarily (Tang, 2011a). Today, criminal activities all over the world are increasing rapidly. Thus, crime has become a new field of study in economics. Ishikawa and Fukushige (2009) believed that crime rates are not only related to economic factors but also to non-economic influences such as culture, backgrounds, and ethics. There is also some research that has proved the existence of a relationship between crime rates and some economic variables.

1.2. Crime in Malaysia

Historically, Malaysia used to be one of the safest countries in Southeast Asia. However, according to ValueWalk's on November 2013 edition by Jacob Wolinsky, crime rates in the country have reached an alarming stage and he claims that Malaysia is among the most dangerous places in Asia. Kuala Lumpur, which is the country's capital, has become a hub for criminal pursuits. Malaysia records an increase in firearm-related crimes even though the country has very strict laws on firearm possession and use. The headquarters of the Malaysian police reported that violent crimes involving the use of firearms such as murder and robbery had increased during the first six months of 2016 compared to the same period in 2015.

Another popular crime in Malaysia is the usage of illegal drugs. Illegal drugs are not a new phenomenon in our country and the rest of the world. Earlier, in the 19th century, United States of America used drugs for medical purposes. The drugs introduced at the time were opium-type drugs used as pain-resisting drugs, for treating coughs and insect bites, as medication for children and widely used by women for medical purposes. However, the use of drugs has been abused for criminal activities. Drug abuse in Malaysia involves types such as heroin, ganja, morphine and other psychotropic substances (Kamarudin, 2007). The abuse of drugs is to get 'high'. This getting 'high' purpose which causes the individual to be physically dependent on drugs or is called addicted to drugs. Drug abuse is a major social problem in Malaysia. The National Drug Agency (ADK), now known as the National Anti-Drug Agency (AADK), is an agency under the purview of the Ministry of Home Affairs in charge of the entire aspects of the country's anti-drug operations by conducting prevention, treatment and rehabilitation programs, evaluating program effectiveness, and establishing regional cooperation. According to the AADK, a total number of 30,844 cases were recorded in 2016. Out of this number, 22,923 were new cases and 7,921 were repeat cases. The number of cases in 2016 showed an increase from 2015 which recorded 26,668 cases. This shows that the number of cases on average were 84 per day in Malaysia.

1.3. Crime against tourist in Langkawi

According to the statistics of the Langkawi district police, there are five main types of crimes in Langkawi. The five main types of crimes are crimes against persons, property crime, crimes against morality (illegal drugs), white-collar crime, and organized crime. Among the crimes mentioned above, crimes against morality which is illegal drugs contributes to the highest portion of crimes in Langkawi. Most of the tourists are victims of theft, burglary and robbery. In the police statistic most of the tourists are victimized by drug addicts. The drug addicts break and enter the rooms or chalets that are built at the beach side because tourists have a tendency to lower their guards and neglect the usual safety measures when they are on a holiday. They leave valuables unattended and sometimes in unlocked cars by the roadside or beach. Personal items such as watches, cash and mobile phones are left in hotel rooms or apartments that are not secured properly, thus making it easy for the criminals to do their job.

1.4. Drugs in Langkawi

Drug related crimes in Langkawi pose a major threat to the tourism industry. Figure 1 shows the statistic of drug cases in Langkawi from 2006 to 2016. It shows an upward trend. The high number of drug-related crimes in Langkawi could have an impact on tourist arrivals and the level of foreign investment on the island. In selection of news on drug crimes in Langkawi (Figure 01), two worrying occurrences can be seen. First, the criminals involved young adults whose age is around 19-23 years old. Second, the amount or quantity of drugs seized were alarming for a small size island like Langkawi.

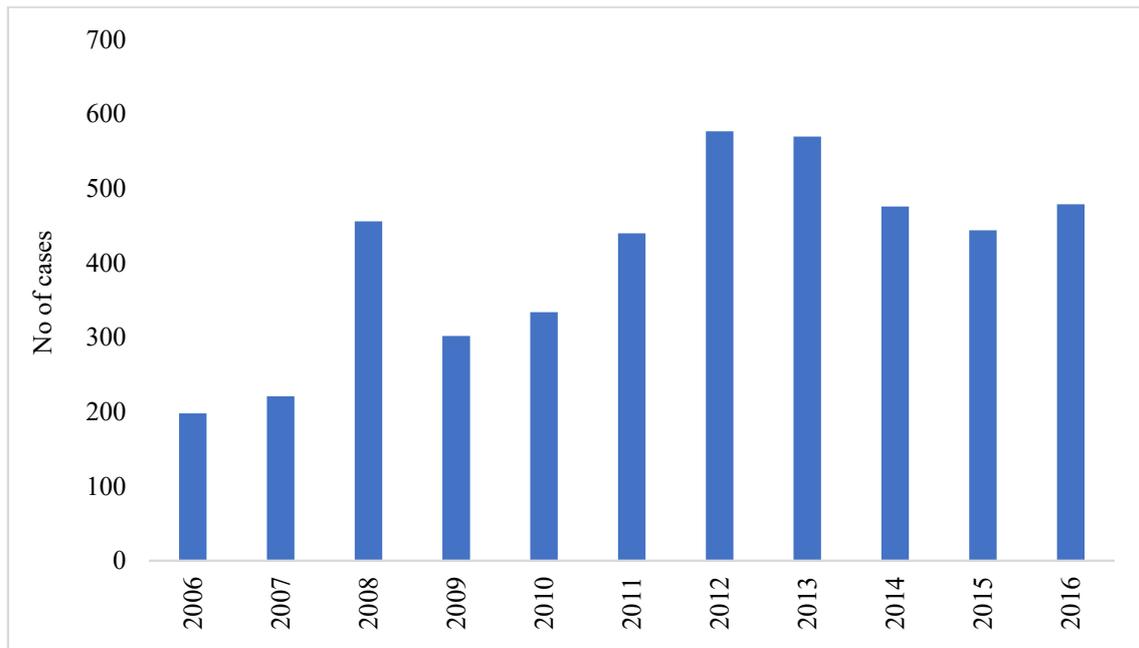


Figure 01. Drug-Related Cases in Langkawi (2006-2016). Source: Narcotics Department of PDRM Langkawi

1.5. Tourism: the measurement and model

There are many indicators used to calculate the level of tourism in a particular destination. Martins, Gan, and Ferreira-Lopes (2017) used the total number of international tourists and the amount spent at the holiday destinations in their study on the association between the macroeconomic factors and the global demand for tourism. They used the econometric analysis in explaining the impact of macroeconomic factors on the demand for tourism. Research on the factors affecting tourism has been studied by many, for example, by Mohammed and Sookram (2015), Ajagunna (2006), Alleyne and Boxill (2003), and Tang (2011b). The studies on the factors considered many spectrums, such as from economic perspective, social perspective, management perspective, and crime perspective. Researchers such as Ismail (2015), Cao (2016), and Ishii (2012) even integrated these perspectives in their models due to the availability and limitation of the data; this will be explained further in Section 2.4. Among these perspectives (e.g., economics, social, management, and others), almost all of them explain about the importance of economic factors in influencing the tourism industry. Nonetheless, research on the effects of crime on tourism has been gaining much importance due to the wider coverage given by both the national and international media on crimes and misdemeanors. Since the security and safety of a tourism destination is of paramount importance to travelers, such news do not bode well for the reputation of a tourism destination.

Factors influencing international tourists may be examined from two opposite perspectives, namely, the supply side and the demand side. Khadaroo and Seetanah (2007), and Martins et al. (2017) are examples of research that examined the matter from the supply side. According to Khadaroo and Seetanah (2007), supply is a major factor in attracting tourists to visiting one's country. They added that the transport infrastructure is crucial in the development of a tourism destination, indicating that it is a part of the standard demand in international tourism functions. Nevertheless, demand factors are also vital for explaining the number of international tourist arrivals. Researchers including Muchapondwa and Pimhidzai (2011), Zhang

and Jensen (2007), and Vietze (2011) have conducted research from this perspective. The demand for tourism is influenced by numerous determinants, such as income, prices of tourist goods and services, transportation costs, as well as exchange rates (Kosnan et al., 2012). Song and Li (2008) provided the empirical evidence regarding the major factors affecting the demand for tourism, which are the tourists' income, prices of tourist goods and services in the destination country relative to those in the home country, prices of tourist goods and services in competing destinations, as well as the exchange rates. For example, high-income earners tend to travel to high-income countries such as Dubai, Europe countries and other high-end countries. Meanwhile, those who earn a much lower income would opt for cheaper packages in countries such as Thailand, Indonesia, Philippine, and other related countries.

1.6. The influence of crime on tourism

Development of the tourism industry in a country will always cause crimes committed against tourists. Both of them are correlated and it is not a new phenomenon for the tourists. In an earlier study by Giddens (1990), he stated that crimes against tourists influence numerous individuals, other than the victim and their families. This reality is true; bad experiences by tourist at specific place are secured by the media or announced by tourist themselves to their families and friends, verbally. There are two types of crimes against tourists; the first is the organized crime, where it means a pre-planned crime such as terrorism. The second category is the crime of opportunity, such as robbery, burglary and rape. Safety and security are the main issues faced by all countries in the world, but many countries would face this issue in a more serious manner. Mohammed and Sookram (2015) attempted to test the hypothesis that the rates of crime in Jamaica and Trinidad and Tobago have an impact on the number of tourists visiting those countries by examining the relationship between tourist arrivals and crime rates during a 35-year period. Their results showed violent crimes and property crimes affect tourist arrivals negatively in both cases. The authors pointed out that it is likely that such a result was obtained because the governments of both countries have implemented strategies and policies drafted to curtail crime. At the same time, the author uses some other macroeconomic variables such as GDP, CPI and oil price of the country to find out the relationship between the dependent variable and the independent variables. These independent variables were selected by author based on the literature on tourism demand.

1.7. Drug addicts and tourism

In this study, we are more concerned about the drug addicts than the drug dealers. There is a wide range of perspectives as to why individuals take drugs and no hypothesis made has demonstrated satisfactory work to clarify all types of substance misuse. Recent research by Golub et al. (2006). Golub and Johnson (1995) revealed individuals who take drugs usually face various problems in their family and social groups, while having individual traits with an inclination towards addiction and are exposed to numerous social issues. When drug addicts cannot get access to their drugs, they will most likely do anything to get their fix (this includes breaking the law). This is where the crime will take place. Drug abuse and crime are believed to have a connection between them, making them the main reason behind criminalization. Previous researchers revealed that most criminal offenders have had experience with drug abuse. Therefore, drug abusers will commit crime activities. Various crimes including domestic abuse, homicide and armed robbery are often associated with drug addiction (Siegel, 2005).

1.8. Other tourism determinants

Macroeconomic variables and economic ties have a huge impact on tourist arrivals. The first macroeconomic component is the GDP. The tourism industry affects a country's GDP through its economic activities, mostly by increasing the demand for goods and services. Higher consumptions are associated with more economic activities that will boost the GDP growth. Even though tourists have a positive effect on a country's GDP, some leakages could happen, particularly in smaller destinations.

The second most important macro-economic component is the unemployment rates, which serve as a prime indicator of the local labor market conditions. Unemployment rate is defined as the percentage of people who is prepared for employment at the current wage rate but are unsuccessful in securing a job. Tang (2010) covered the yearly data in the period of 1970–2006 to examine the crime rates in Malaysia by using price levels and unemployment rates as the determinants. He applied the Johansen's co-integration test and proved co-integration between the price level and unemployment, while both determinants have a positive relationship with crime rates in the country. Inflation is the third major macroeconomic component; consumer price index (CPI) measures the changes in the overall price level. This index demonstrates fluctuations in the value of cash over time. Policymakers and economists have huge interest in inflation, as it entails various costs on a country's economy.

2. Problem Statement

Promotional efforts expanded by the Langkawi authority has successfully attracted domestic and international tourists to the island. However, it is found that in terms of percentage, the dispersion and pattern between the two groups of tourists are not stable. The instability issue raises the concern over the future sustainability of domestic and international arrivals for Langkawi. To further illustrate the concern, Figure 2 shows the growth rate of domestic and international tourist arrivals in Langkawi from 2006 to 2016. Over the ten years from 2006 to 2016, there has been an inconsistent growth rate and no upward trend in domestic and international travellers to Langkawi. The most interesting issue observed from the graph is when the domestic growth rate declined, the international growth rate in contrast showed an incline. In 2010 the domestic growth rate declined by 0.4% and the international growth rate increased 0.4%. An observation of the data from the decade tabulated showed a similar trend of divergent growth rates happening three times in 2009, 2010 and recently in 2015.

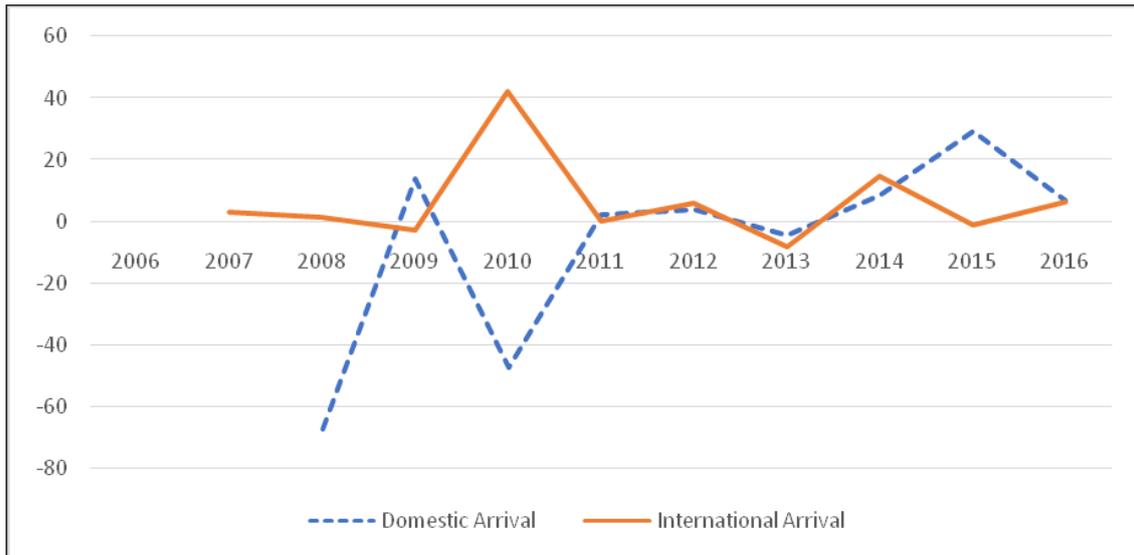


Figure 02. Domestic & international tourist arrivals growth rates from 2006-2016. Source: Tourism Malaysia, 2018

The unstable growth rates of and the absence of steady upward trend in the domestic and/or international tourist arrivals indicate the possibility of not achieving sustainable and predictable future tourist arrivals. They also indicate that Langkawi might not always be an ultimate favourite destination. Interestingly, the decline in the international growth rate looks more glaring than the decline in the domestic growth rate. First, the inconsistency might be attributed to the high rates of drug, violent crimes and consistent criminal reports published in media. Secondly, the inconsistency of growth rates might have caused by crime related to criminal activities which stem from the unethical pursuits of Thai workers. Many Thai itinerant workers have been staying in Langkawi; working at Thai food outlets, night clubs and also being involved in immoral activities. Finally, the inconsistency of growth rates might also be caused by the development of nearby island destinations. Fewer international tourists are opting for Langkawi because there are some other selections nearby which are more attractive, comfortable and cheaper for vacations.

3. Research Questions

1. What is the relationship between international tourist arrivals and the crime in Langkawi?
2. What is the relationship between international tourist arrivals and drug crimes in Langkawi?
3. What is the relationship between international tourist arrivals and the macroeconomic variables of Malaysia?

4. Purpose of the Study

1. Literature on factors affecting international tourism demand makes the purpose of this study is to identify the key factors affecting international tourist arrivals to Langkawi and provides the latest empirical evidence.
2. Secondly, the study seeks to find out the factors affecting international tourist arrivals to Langkawi, mainly that includes crimes and macroeconomic variables such as the GDP and

consumer price index. The inclusion of these factors will broaden the understanding of international tourism demand.

3. Thirdly to the best of the author's knowledge, this study is the first to determine the impact of drug-related crimes on international tourist arrivals to Langkawi. Moreover, it will shed light on the role of drug-related crimes in reducing or increasing the number of international tourist arrivals.

5. Research Methods

5.1. Model specification

This section specifies the tourism model which is adapted from the study by Mohammed and Sookram (2015). This model illustrates the relationship between crime and the number of tourist arrivals in Jamaica and Trinidad and Tobago. The tourism demand equation was adjusted for this study to address the tourism issues in Langkawi. The original model by Mohammed and Sookram (2015) is demonstrated as follows:

$$ta = f(cpi, usgdp, op, vcr, pcr)$$

where *ta* is tourist arrival, *cpi* is consumer price index, *usgdp* is the market size of US economy, *op* is oil price, *vcr* is violent crime rate and *pcr* is property crime rate.

Referring to Mohammed and Sookram (2015) study, although they successfully depicted the influence of crime on tourist in the country, their study did not take drug crime into account. Therefore to address the gap in this study, we extend their model by including the impact of drug crime, violent crime and property crime on the number of tourist arrivals in Langkawi. Justifications for including drug crime have been elaborated in Chapters 1 and 2. Drug crime is included because:

1. Drugs dealing can make easy money.
2. Drugs-related crime can spoil the morality of a destination such as prostitution activities, theft, and etc.

Therefore, the basic tourism model is as follows:

$$ta = f(crime, gdp, cpi)$$

where *ta* is the number of tourist arrival in Langkawi (dependent variable), and other independent variables are crime which will be segregated into property, violent, and drug crimes, GDP, representing the market size of Malaysia, and CPI representing the consumer price rate in Malaysia.

Econometrically, the basic equation will be as follows:

$$lta = f(lcrime, lgdp, lcpi)$$

where all variables are in a logarithm form. Witt and Witt (1995) indicate that 75 per cent of the models used to analyze tourism demand employed the double log functional form of the model. In terms of measurement, *ta* will be measured using the number of tourists from China, India, Indonesia, Singaporean and Thailand between the year 2006 and 2016. These countries are chosen because they are identified as the largest and consistent contributors to the percentage of tourists to Malaysia. Other reasons for their inclusion are geographical proximity and cultural and heritage factors.

Our policy independent variable that is crime encompasses crimes such as drug, violent, and property crimes. Although there are other types of crime such as commercial crime and cybercrime, these

crimes are not chosen due to data unavailability. Drug, violent, and property crimes' definition and seriousness toward the island have been explained in Chapter 1.

Property, violent, and drug crimes were measured by the number of cases reported in Langkawi. For macroeconomic variables, the measurement for market size is Real GDP and the price of goods will be taken from the CPI measurement. Both macroeconomic variables data are taken from the BNM statistic website.

5.2. Hypotheses

Based on previous literature, the subsequent hypotheses are postulated for this study:

H1. The relationship between crime and number of tourist arrivals is expected to be negative. This is because a higher crime rate in the island will discourage tourist arrivals. The main concern for tourists when choosing a travel is safety and crime rate. Tourists usually opt to travel to secured destinations as they feel safer when travelling

H2. The relationship between drug crime and number of tourist arrivals is expected to be negative. Drugs related tourist destination considered not a healthy tourism destination. This is because a higher drug crime rate in the island will discourage tourist arrivals.

5.3. Estimation method

The data analysis utilized static and dynamic estimators. Four modern econometric models were used in the tourism demand to examine the relationship between tourist arrivals in its determinants. The four econometric models were time series properties, tests of non-stationarity, Vector Error Correction Model (VECM), and Johansen Co-integration test. Time-series methods were deployed and are found to be quite accurate, particularly over a short-term period. The Johansen Co-integration Test and VECM were used to determine the existence of long-term and short-term equilibrium relationships.

6. Findings

Table 01 shows the correlation between variables in this study. Firstly, the results show that correlation values between independent variables do not exceed 0.8; thus it provides a comfortable indicator that our variables do not have multicollinearity issues. Secondly, the correlation between tourist arrival from countries in this research and types of crime produced mixed results. The relationship between tourist from Indonesia, Thailand, Singapore, China and India do not follow the 'conventional wisdom' results when we link them with different types of crime. While we hypothesized that tourist arrival would decline as property violence increases, the relationship between arrival from Thailand and property violent recorded positive value ($\rho_{lThai|lprop} = 0.151$). Violent crime also did not deter tourist from Thailand and Singapore from coming to Malaysia as their correlation are recorded positive ($\rho_{lThai|lvio} = 0.108$, $\rho_{lSpore|lvio} = 0.064$). This early diagnostic also shows opposite results in the correlation between tourist arrival and drug crime ($\rho_{lIndonesia|ldrug} = 0.612$, $\rho_{lSpore|ldrug} = 0.359$, $\rho_{lChina|ldrug} = 0.696$ and $\rho_{lIndia|ldrug} = 0.502$). These interesting results warrant further analysis to examine in detail the relationship between tourist arrivals and crimes. Thirdly, our results show that drug crime is highly correlated with the market size and moderately correlated with the price level.

Table 01. Correlation results

	/Indonesia	/Thai	/Spore	/China	/India	/prop	/vio	/drug	/rgdp	/cpi
/Indonesia	1.000	-0.316	0.677	0.748	0.834	-0.233	-0.077	0.612	0.829	0.467
/Thai		1.000	-0.223	-0.663	-0.384	0.151	0.108	-0.422	-0.535	-0.082
/Spore			1.000	0.501	0.797	-0.037	0.064	0.359	0.549	0.393
/China				1.000	0.713	-0.282	-0.321	0.696	0.853	0.330
/India					1.000	-0.311	-0.161	0.502	0.787	0.380
/prop						1.000	0.614	-0.163	-0.353	-0.167
/vio							1.000	-0.054	-0.229	-0.051
/drug								1.000	0.740	0.329
/rgdp									1.000	0.373
/cpi										1.000

Nonstationary time-series data has the potential to give spurious results for our analysis. Therefore, to ensure of our data, we ran ADF Unit Root Test. Our results confirm that all data in the research is stationary at first difference $I(1)$. We proceed with estimating long-run economic relationship for our tourism demand model using Johansen cointegration method (Johansen, 1991). Our Johansen Cointegrating Test results are shown in Table 02. Dividing the test into five different countries, we compare of trace and max eigenvalue values with 5% critical values. The results in all countries show that there are possibilities of all variables in our model cointegrate in the long run as their respective trace and max eigenvalues are higher than 5% critical values (at different number of cointegrating equations).

Table 02. Johansen Cointegration Test results

Indonesia		Variables: LINDON, LVIO, LPROP, LDRUG, LRGDP, LCPI			
Hypothesized no of CE	Trace	5% CV	Max. Eigenvalue	5% CV	
None	131.9587	95.75366	53.54168	40.07757	
At most 1	78.41702	69.81889	29.43458	33.87687	
At most 2	48.98244	47.85613	23.27646	27.58434	
At most 3	25.70598	29.79707	15.37903	21.13162	
At most 4	10.32695	15.49471	10.06623	14.26460	
Singapore		Variables: LSPORE, LVIO, LPROP, LDRUG, LRGDP, LCPI			
Hypothesized no of CE	Trace	5% CV	Max. Eigenvalue	5% CV	
None	106.9743	95.75366	45.21645	40.07757	
At most 1	61.75789	69.81889	25.03454	33.87687	
At most 2	36.72335	47.85613	22.05994	27.58434	
At most 3	14.66341	29.79707	11.00957	21.13162	
At most 4	3.653846	15.49471	3.652674	14.26460	
Thailand		Variables: LTHAI, LVIO, LPROP, LDRUG, LRGDP, LCPI			
Hypothesized no of CE	Trace	5% CV	Max. Eigenvalue	5% CV	
None	124.0787	95.75366	42.66910	40.07757	
At most 1	81.40960	69.81889	35.02803	33.87687	
At most 2	46.38158	47.85613	22.28483	27.58434	

At most 3	24.09675	29.79707	16.87315	21.13162
At most 4	7.223594	15.49471	6.200523	14.26460
China		Variables: LCHINA, LVIO, LPROP, LDRUG, LRGDP, LCPI		
Hypothesized no of CE	Trace	5% CV	Max. Eigenvalue	5% CV
None	126.1001	95.75366	45.48137	40.07757
At most 1	80.61872	69.81889	37.91424	33.87687
At most 2	42.70448	47.85613	23.93595	27.58434
At most 3	18.76853	29.79707	13.78850	21.13162
At most 4	4.980032	15.49471	4.893081	14.26460
India		Variables: LINDIA, LVIO, LPROP, LDRUG, LRGDP, LCPI		
Hypothesized no of CE	Trace	5% CV	Max. Eigenvalue	5% CV
None	142.5645	95.75366	63.52645	40.07757
At most 1	79.03807	69.81889	33.41670	33.87687
At most 2	45.62137	47.85613	25.47596	27.58434
At most 3	20.14541	29.79707	14.38771	21.13162
At most 4	5.757697	15.49471	5.357936	14.26460

After confirming the existence of cointegration relationship between these variables, we proceed by measuring the any movement away from the long-run equilibrium using VECM. The interest would be on the sign, magnitude and significance of the coefficient of error correction term. Table 03 shows the result of the error correction terms for our research model. All ECMs have negative sign, indicating the movement back to equilibrium when deviation happens. The speed of adjustments in China and India models are about the same, indicating partial adjustment quarterly. Singapore model adjusted the quickest (-1.113), followed by Indonesia (-1.016) and Thailand (-0.891).

Table 03. Error correction terms

	Indonesia	Singapore	Thailand	China	India
<i>ECT (-1)</i>	-1.016** (-2.44)	-1.112** (-3.84)	-0.890** (-2.75)	-0.301** (-2.88)	-0.441** (-2.73)
<i>R</i> ²	0.682	0.838	0.887	0.707	0.467
Adj. <i>R</i> ²	0.420	0.767	0.679	0.660	0.383
s.e	0.325	0.286	0.282	0.336	0.368

**Note: significant at 1% level

Table 04 shows the long-run estimation results for our study. The inclusion of property did not produce optimum results in Thailand, China and India tourist arrival model. Only through Indonesia model, the increase property crime reduced the number of tourist arrival. Results also suggested that increase in violent crime deterred the number of tourist arrival from Indonesia, Thailand and India. Drug crime was found to be affecting tourist from all countries, however in mixed effect. Interestingly, a higher drug crime has attracted more tourist arrival from Indonesia, Thailand and India. The highest effect is on Thailand tourist arrival, where for a given amount of property and violent crime case, an additional case of drug crime leads to an increase in tourist arrival from Thailand by 1.4 percent, followed by India. Drug case also deterred tourist from China and Singapore. For a given amount of property and violent crime case, an additional case in drug crime would hinder about 1.4% number of traveller from China and 0.26 percent of traveller in Singapore.

Table 04. Long run relationship estimation results

	Indonesia	Singapore	Thailand	China	India
<i>lprop</i>	-0.730** (-3.06)	-0.341 (-1.25)	-	-	
<i>lvio</i>	-0.247** (-1.96)	-0.059 (-0.38)	-0.400* (-1.69)	-0.428 (-1.42)	-0.680** (-3.27)
<i>ldrug</i>	0.535** (3.98)	-0.261* (-1.80)	1.369** (4.73)	-1.402** (-3.52)	0.888** (3.27)
<i>lrgdp</i>	-2.392** (-13.93)	-0.558** (-2.97)	-0.791** (-2.09)	-1.275** (-2.29)	-2.766** (-7.22)
<i>lcpi</i>	-2.419** (-4.20)	-2.560** (-3.51)	0.881* (0.665)	-0.026 (-0.01)	1.196 (0.71)
<i>C</i>	34.717	12.559	-8.707	13.779	16.795

Notes: **Significant at 1% level *significant at 5% level

7. Conclusion

This study has provided many unique results concerning the relationship between all three crimes and number of tourist arrivals. Few studies have surveyed property crime and violent crime affects the tourism industry and none have specifically focused on drug crime and its effects on tourism industry. In addition, this research looks at the effects of crime against tourism and particularly drug crime against tourism industry at the particular destination which is Langkawi Island. Therefore, this study presents important information for tourism industry regarding the effects that incidences of crimes have on tourists' travel decisions.

In short, the results of this study indicate mixed findings for the hypothesis H₁ and H₂ (The relationship between crime and number of tourist arrivals is expected to be negative; The relationship between drug crime and number of tourist arrivals is expected to be negative). Where, number of tourist from Singapore and China are having negative relationship with crime but Thailand, India and Indonesia are having positive relationship with crime. More the crime less the number of tourist arrivals was the prime objective for this study. When, the results show more the crime more the number of tourist arrivals of Thailand, India and Indonesia is said to be bizarre and look more interesting for the study. The above statement supported by the studies of Biagi et al. (2012). The Effect of Tourism on Crime in Italy, where they found the results that tourism positively affects criminal activity; in the short run, a one-per-cent increase in arrivals leads to a 0.018% rise in total crime, while, in the long run, the impact is about 0.11%. In the case of Thailand, we can conclude those Thailand tourists are the drug suppliers to Langkawi because more the tourist arrivals more the police drug cases have been recorded involving Thai people. Since our study revealed that drug, violent and property crime discourage tourist arrivals, there must be some short to medium term plans in place to reduce these figures. In conclusion crime does affect tourism negatively and can dent the image of a destination. It is vital that safety and security be tightened to ensure growth and sustainability of the tourism industry. All the interested stakeholders in tourism will hopefully join forces in combating crime within Langkawi Island.

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