

# **THE IMPACT OF TERRORISM ON TOURISM DEMAND IN MAURITIUS**

**BY  
DARSHANA BOOJHAWON  
BOOPEN SEETANAH**

**University of Mauritius**

## **ABSTRACT**

This study analyses the effects of terrorism on tourism demand in Mauritius for the period of 1983 to 2015. It uses a dynamic time series econometric approach namely an ARDL framework to investigate the hypothesized link. The results reveal that in the short run terrorism incidents has an impact on the tourism demand in Mauritius due to the reactive psychological perception that tourists have about travelling. However in the long run, this is not the case. This is due to the fact that Mauritius is perceived to be a safe destination with no major history of terrorism incidents or political instability.

Keywords: Terrorism, Tourism demand, Mauritius

## **Section 1: Introduction**

Since its existence, tourism has formed an integral part of our lives. According to WTTC, in 2015, the global travel and tourism sector has experienced a growth of 2.8%. Apart from generating foreign exchange earnings and improving balance of payment, international tourism also creates employment. Other benefits include increasing income, savings and economic growth. However, the last few years proved that safety and security are undoubtedly key factors to consider while travelling. The increasing number of terrorist attacks has been posing severe security threats. Many studies in the past have been done to incorporate this risk factor in the tourism demand<sup>1</sup>. However, this has not been done in the Mauritian context.

Tourism has also been one of the main pillars of the Mauritian economy. It is one of the prominent sectors that bring about substantial contribution to our economic growth (MUR104.5bn in 2015). Though our island has not inherited any profitable resources like gold mines in Africa or oil reserves in Saudi Arabia, it has a geographical advantage when it comes to tourism. Surrounded by the cobalt blue seas and sandy beaches, it has the capacity to attract tourists from all over the world. Besides, its multi-cultural background together with its historic sites<sup>2</sup>, are indeed wow-factors. Therefore, it becomes a must to preserve this sector in the light of the terrorism incidences.

The principal aim of this study is to see whether terrorism really harms tourism demand in Mauritius. A main index has been selected in particular. The Government has been actively

---

<sup>1</sup> Studies include Enders et al (1992), Pizam and Smith (2000), Cornwell and Roberts (2010) and Yap and Saha (2013).

<sup>2</sup> Including AapravasiGhat, which is recognized as a World Heritage Site by the UNESCO since 2006.

promoting the island through the MTPA. In light of these initiatives, this study can be useful through the analysis of the relationship that exists between terrorism and tourism. It is noteworthy that existing studies on the terrorism-tourism nexus have overwhelmingly focused on developed country cases with relatively few studies for the case of developing and island economies. Moreover, such studies have often ignored the issues regarding dynamism in tourism modeling. This research employs a dynamic time series econometric framework which takes into account the dynamic issues in tourism modeling. Indeed in the presence of repeat tourism, which remain an important feature in the sustainability of a destination, the hypothesized link should be analysed in a dynamic setting. Moreover, the study also dwells into long and short term analysis of the impact of terrorism on tourism development. The rest of this paper is organized as follows. Section 2 provides an overview of both the theoretical and empirical reviews on the terrorism- tourism nexus. Section 3 dwells into the model specification and also provides a discussion of the results thereby obtained. Finally, section 4 concludes.

## **Section 2: Literature Review**

### **Theoretical Review**

#### **Terrorism and Tourism**

The tourism industry has always been sensitive to terrorism-related incidences. Lennon and O’Leary (2004) claim that terrorism “has more effect on the travel industry than any other industry”. Indeed, in many instances, the tourism industry tends to be the main target of the terrorists. Attention is often drawn on the common features of both terrorism and tourism; both involve citizens of diverse jurisdictions crossing the national borders and making use of travel and communication technologies, (Schlagheck, 1988). Authentically the link between terrorism and tourism came to light for the first time in the course of the Munich Olympic Games in 1972, at which eleven Israeli were killed.

Terrorists view tourists as ambassadors of their nations and hence are entitled as soft targets. It becomes easier for terrorists to attract media attention and to reduce government power since media will definitely dramatise any situation involving international tourists. In this way, terrorists are able to obtain the desirable level of publicity thanks to media reporting and reach to a negotiation point (Richter & Waugh, 1983).

Wahab (1996) and Tarlow (2005) assert that the tourism industry is subject to terrorist attack due to cultural reasons. The culture of the natives and of the tourists diverge in terms of alcohol and pork consumption, dressing styles or gambling practices which are considered as blasphemous in Islamic countries. Thus, tourists are seen as representatives of neo-colonialism threatening their customary practices.

Terrorism also constitutes an element of risk, which can influence tourism demand. It is seen that travellers adopt a reactive and protective strategy by substituting safer destinations for the risky ones (Enders and Sandler 1991; Gu & Martin, 1992; Mansfeld, 1996). Studies have found that tourists impute terrorism risk to abutting countries, which might not be directly subject to acts of terrorism (Enders et al., 1992).

It is expected that a rationale tourist will compare destination alternatives with respect to costs and benefits. Among those costs are psychological costs, as suggested by Evans and Berman (1992). Sonmez and Graefe (1998) argue that a destination with high rate of terrorism is seen to be more costly than a safer destination for a tourist. Hence, destination image is a crucial factor.

Another way of understanding the link between terrorism and tourism is through the interchangeable mixture of their roles. Consequently, one can claim that terrorists can be tourists and tourists can be terrorists. Terrorists are able to carry out their dangerous activities under the disguise of tourists. The latter, possessing all the typical characteristics of his category, can therefore, effect financial transactions involving large sum of foreign currencies without triggering any suspicion (Richter & Waugh, 1986).

#### **Other Determinants of Tourism demand**

However, there are also some other factors can seriously undermine the level of tourism demand in many countries. A survey by Lim (1997) identifies the existence of a significant literature about the determinants of tourism. The Marshallian theory, traditional neoclassical consumer model, has been the underpinning concept in the field of tourism research (Giacomelli 2006) which advocates for income and tourism prices. Hence, the tourism demand function can comprise of prices, income level and transport costs to further incorporate other significant factors like exchange rates.

Travelling becomes more and more affordable as standard of living rises. Hence, the direct relationship between level of income and travel is clearly identifiable. The more disposable income, the more purchasing power. Increase in purchasing power equates to more expenditure on travelling

purposes. Proxies for income like real Gross Domestic Product (Seetanah, 2006) have also been used in some studies.

Regrouped under the category of tourism price are the transport cost, the exchange rates and relative prices. Crouch (1994) maintains, “economic theory ensures that price must be included in any demand in any demand study, but in the study of tourism, the issue of price is vexatious.” Tourism price encompasses cost of transport and cost of living in host country. Thus, a rise in airfares or marine fares denotes a fall in tourism demand, indicating an inverse relationship.

Finally, dummy variables need to be absorbed in the tourism demand in order to cater for ‘one-off’ or unforeseen events such as terrorist attacks or economic events like recession. Consequently tourism demand is unlikely to remain unchanged following events like the 9/11 terrorist attack in America or the financial crisis of 2009.

### **Empirical Reviews**

The pioneers in the history, Enders and Sandler, studied the Spanish economy in 1991 and found a remarkable adverse effect of terrorism on tourism through the use of a vector autoregressive analysis (VAR) for monthly data from 1970 to 1988.

As for the European context, Enders, Sandler, and Parise (1992) based their observations on some member countries for the period of 1974 to 1988. The autoregressive integrated moving average (ARIMA) method was used. They concluded that terrorism highly impedes tourist activities and tourism revenues in Europe and that tourists are rather risk averse and substitute away from one country to another where the risk of terrorism is lower. Likewise, Robbins’s thesis (2012) leads to the same conclusion for eight European destination countries where a cross-sectional gravity equation is applied. It is deduced that tourism in European countries suffers a battering due to terrorism incidences.

A study by Drakos and Kutan (2003) on the regional effects of terrorism on tourism in Israel, Turkey and Greece, is made by using the seemingly unrelated regression (SURE) method. Geographical aspects of terrorist incidents and the substitutability between countries due to terrorism are considered. They discovered that attacks cause a substitution effect for much safer destinations.

The aftermath of the 9/11 attacks was tested by Lee et al. (2005), who employed a times series intervention model to test the plausibility of any change in the demand for air travel to the United States after the 9/11 attacks. The findings revealed an eloquent fall in the demand level as a whole. In the same way, Blunk et al (2006) came up with an improved and more detailed study, testing the extent to which travel demand post 9/11 recovered by comparing pre 9/11 travel demand figures. However, it was determined that demand for travel was affected by the terrorism act of 9/11 and did not return back to its pre 9/11 records by 2004.

Raza and Jawaid (2013) tested the impact of terrorism on Pakistan's tourism sector by using annual time series data for the period of 1980 to 2010. Results have been much the same for both the long run and the short run. Tourism was negatively affected by terrorism. This valid long run association of terrorism and tourism is supported by the Johansen and Juselius where an ARDL bound testing cointegration approach is recommended. The Toda and Yamamoto Modified Wald Causality test, the Granger causality test and the Variance decomposition test converged to the same result and depicted the unidirectional causal relationship between terrorism and tourism whereby causality is highlighted from terrorism to tourism.

### **Section 3: Methodology and Analysis**

A 33-year period has been selected starting from 1983 to 2015. Our study is based on previous classical tourism demand functions namely, Naudee and Saayman (2004), Seetanah et al (2009) and Seetanah et al (2010) and has been extended by the addition of a terrorism index. Hence the following function is obtained:

$$TREV_t = f(WGDP_t, CPI, ROOM, TERR_t) \quad (1)$$

Whereby, tourism revenue, TREV is the dependent variable, where t is used to index the year of tourism but at a global level. In the past, tourism revenue has been employed as the dependent variable whereby it was found that countries like France, which experience high tourism arrivals, do not always have high tourism revenues. However, receipts per capita by destination was also used and proved to be a better factor since Aramberri (2015) argues that for UNWTO, a person travelling by car from Manhattan to spend a weekend in Washington is normally not registered for international arrivals or as tourist.

WGDP is a representative of world GDP per capita. Data is on a global level in order to synchronise with global tourist arrivals and the dummy variable,  $\delta$ , which takes into account all terrorist attacks, which took place in all countries of the world. This proxy infact reflects the spending capacity of tourists coming to Mauritius. In other words, it is used as a measure of income, Buigut and Amendah (2016). It can further be used to determine whether the Mauritian tourism product is a normal good in case of a positive coefficient or an inferior good for a negative coefficient.

*CPI* is the consumer price index (yearly average) of Mauritius, the use of which has been made to reflect the price level in the destination country. As such, there is likely to be a negative relationship between demand for tourism product in Mauritius and tourism prices. Therefore, a lower cost of living in Mauritius would attract tourists to the island.

The level of tourism infrastructure and development in Mauritius has been represented by the number of rooms (*ROOM*). The number of rooms has a direct and positive relationship with the competitiveness of the destination country's tourism industry. This is because capacity increases with the number of rooms and thus makes the country more competitive. Consequently prices tend to fall as competition leads to lower prices and better quality of goods and services. Besides, airline companies set the requirement of a minimum number of rooms to allow for the establishment of routes (see Seetanah et al 2009).

To capture the qualitative nature of the terrorism incidences taking place around the world, this terrorism index has been employed through the dummy variable at year  $t$ . This is projected by *TERR*. This dummy variable will specifically take into account all terrorist attacks on tourists on a global scale. Usually countries in which tourists are the main victims of terrorism are Africa, Egypt, India, Israel, and Muslim countries. Therefore it will take a value of 0 in the years in which no tourist has been attacked or a value of 1 if otherwise. Pizam (1999) found that the severity and frequency of terrorist attacks are not positively correlated with tourism demand.

### **3.2 Econometric Modeling**

Following the above function, the econometric model to be used for the study is as follows:

$$trev_t = \beta_0 + \beta_1 wgdpt + \beta_2 cpi + \beta_3 room + \beta_4 terr_t + \varepsilon_t \quad (2)$$

The variables have been expressed in log form apart from the dummy variable. This log model has been adopted to account for the elasticity of the dependent variable with respect to the different explanatory variables over the period 1983-2015 (Ong 1995).  $\varepsilon_t$  is simply a random disturbance term distributed over time. The variables are further explained below. It is also important to note that all data used are secondary data.

## **Variables**

**Table 1: Explanation of Variables**

Variable	Measure	Description	Source
WGDP	Income of tourist	World GDP per capita (Current US\$)	World Bank
CPI	Price level of tourism in Mauritius	Yearly average	Statistics Mauritius
ROOM	Level of infrastructure development in Mauritius	Number of rooms	Statistics Mauritius
$\delta$	Terrorism incidences	All terrorism incidents where tourists are targeted	Global Terrorism Database
TREV	Total tourism revenue	Tourism receipts as a whole (RsMn)	Statistics Mauritius

Source: Computed

## **Findings and Analysis**

Unit root tests, using the ADF and Phillips-Perron Tests, reveal that all the variables are stationary at level, that is  $I(0)$  apart from their respective GDPs. Consistent with literature, GDP is normally stationary at first difference as proposed by Nelson and Plosser (1982). Therefore, the mixture of



I(0) and I(1) obtained for both terrorism indices validates the use of the autoregressive distributed lag (ARDL) method of regression for our model.

The ARDL method, first developed by Perasan and Shin (1999) was further improved by Perasan et al. (2001). The short-run effects need to be specified in ECM format so as to determine if there is any longrun relationship between the variables. We follow the procedures of Pesaran et al.(2001).

$$\begin{aligned} \Delta \text{trev}_t = & \alpha_0 + \lambda_1 \text{trev}_{t-1} + \lambda_2 \text{wgdp}_{t-1} + \lambda_3 \text{cpi}_{mt-1} + \lambda_4 \text{room}_{mt-1} + \lambda_5 \text{terr}_{t-1} \\ & + \sum_{k=1}^p \theta_k \Delta \text{trev}_{t-k} + \sum_{i=1}^{q_2} \theta_2 \Delta \text{wgdp}_{t-i} + \sum_{i=1}^{q_3} \theta_3 \Delta \text{cpi}_{mt-i} + \sum_{i=1}^{q_4} \theta_4 \Delta \text{room}_{mt-i} + \\ & \sum_{i=1}^{q_5} \theta_5 \Delta \text{terr}_{t-i} + \varepsilon_t \end{aligned} \quad (3)$$

Where,  $\alpha_0$  denotes the drift parameter,  $\Delta$  is the first difference operator,  $t$  represents time period while  $\lambda_i$  and  $\theta_i$  are the long- and short-run multipliers and  $\varepsilon_t$  is the error term. Cointegration is said to exist if the long-run coefficients of all the lagged level variables are significant collectively (Perasan et al.2001). In other words,  $\lambda_i > 0$ , for  $i = 1- 4$ . Consequently, the bounds testing method, based on the F-statistics is carried out whereby the null hypothesis that no cointegration exists, is tested.

$$H_0 : \lambda_1 = \lambda_2 = \lambda_3 = \lambda_4 = \lambda_5 = 0 \text{ (No Cointegration)}$$

$$H_1 : \lambda_1 \neq \lambda_2 \neq \lambda_3 \neq \lambda_4 \neq \lambda_5 \neq 0 \text{ (Cointegration)}$$

It is confirmed that the null hypothesis is rejected since the computed F-statistics (6.684) is greater than the upper bound critical value at all significance levels.

### Long run coefficients

In the presence of cointegration, another model is estimated to establish the longrun and shortrun relationships. The long run effects can be theorised in the ARDL model ( $p, q_2, q_3, q_4, q_5$ ) below:

$$\text{trev}_t = \alpha_1 + \sum_{k=1}^p \gamma_k \text{trev}_{t-k} + \sum_{i=0}^{q_2} \theta_{1i} \text{wgdp}_{t-i} + \sum_{i=0}^{q_3} \theta_2 \text{cpi}_{t-i} + \sum_{i=0}^{q_4} \theta_3 \text{room}_{t-i} + \sum_{i=0}^{q_5} \theta_4 \text{terr}_{t-i} + \varepsilon_t \quad (4)$$

**Table 2: Long Run Coefficients**

Variable	Coefficient	Standard Error	T-Ratio	Probability
wgdp	1.035930*	0.129664	7.989332	0.0005
cpi	-0.941082***	0.408811	-2.301997	0.0696
room	1.632923**	0.150130	10.876707	0.0001
terr	0.252890**	0.107187	2.359341	0.0648
c	-9.870923**	2.556241	-3.861499	0.0119

Note: \*, \*\* and \*\*\* denotes 1%, 5% and 10% level of significance respectively.

ARDL (4,3,4,4,4) selected based on Akaike Information Criterion

Source: Computed

The results show coherence with the literature in chapter 2. The coefficient of world GDP is significant at 1% level of significance. A 1% increase in world GDP will result to 1.04% increase in tourism revenue in the long-run. In fact it can be deduced that world GDP is one of the most important determinant of tourism demand in Mauritius hence validating the results of Chi (2015) and Martins et al., (2017).

The elasticity of the relative prices is essentially unitary (negative) and significant at 10%. It leads to the conclusion that consumers from all around the world do care about price comparison when they purchase goods or services in Mauritius. This maybe because of their depreciating currencies due to economic downfalls such as the Asian currency crisis in 1997-1998, the 1998 Russian financial crisis or even the recession in the US and other countries in late 2008, 2009. Also, Martins et al., (2017) found that relative prices become the most important determinant when receipts are used as a proxy for tourism demand.

Furthermore, the number of rooms in Mauritian hotels, representative of the level of infrastructure

in Mauritius, indeed has a long run relationship with tourism revenue (tourism demand). The number of rooms is the determinant having the greatest impact on tourism demand followed by world GDP. Basically this is thanks to the good quality service and luxurious hotels in Mauritius such as the Four Seasons Resort Anahita. Also, as long as the level of infrastructure keeps on increasing along with an increase in hotels' room capacity, tourists from all around the world will continue to come to Mauritius. Thus, in accordance to Seetanah et al. (2009), the level of infrastructure has a positive effect on tourism demand.

For years, the Government of Mauritius has had an active role in promoting tourism infrastructure through the lease of State lands to potential promoters to increase the number of hotels in our island, hence increasing the total number of rooms available to the tourists. It is also to be noted that grants given for tourism infrastructure increased from Rs 1,011,390 to Rs 7,318,290 from the years 1997 to 2000.

Terrorism though has a positive coefficient, is concluded to be insignificant in explaining the global tourism demand in Mauritius at 5% level of significance. Global terrorism is not related to tourism demand in the longrun. This is perhaps due to the realistic attitude of travellers who believe that terrorism is likely to continue to feature in everyone's life no matter in which country they are. This maybe is the result of a positive marketing strategy by the Mauritius Tourism Promotion Authority, which projected Mauritius as being a safe country. Therefore tourists may opt for Mauritius as a safer destination. In fact, Mauritius has never had any act of terrorism as such involving the death of people or endangering their lives. Mauritius is also a country whereby political instability, which has been seen as a cause of terrorism, has never been a problem. Neumayer (2004) and Reisenger and Mavondo (2005) claim that tourists are in search of tranquility and hence prefer peaceful social environments.

As regards the  $R^2$ , it is more or less the same as that of terrorism index 1. It is 0.999589 to be 0.997699 when adjusted. In this case also the sample regression line fits our data really well.

#### **4.5 Short Term ARDL-ECM Dynamics**

The short-run dynamics are obtained through the estimation of an error correction model associated with the longrun estimates as shown by the equation below:

$$\Delta \text{trev}_t = \alpha_2 + \sum_{k=1}^p \phi_k \Delta \text{trev}_{t-k} + \sum_{i=1}^{q1} \varphi_i \Delta \text{gdp}_{t-i} + \sum_{i=1}^{q2} \varphi_i \Delta \text{cpi}_{t-i} + \sum_{i=1}^{q3} \varphi_i \Delta \text{room}_{t-i} + \sum_{i=1}^{q4} \varphi_i \Delta \text{terr}_{t-i} + \omega \text{ECM}_{t-1} + u_t \quad (5)$$

Where,  $\varphi_i$  is the short-run effect and  $\varpi$  is an indication of the speed of convergence to long run equilibrium. If  $\varpi$  negative and significant, the variables are said to converge to their long run equilibrium, Bahmani-Oskooee and Baek (2016)<sup>3</sup>.

**Table 3: Short Run Dynamics**

**(ARDL MODEL: Dependent Variable: Dtrev)**

Variable	Coefficient	Standard Error	T-Ratio	Probability
Dwgdg	1.662288**	0.270806	6.138301	0.0017
Dcpi	0.246306**	0.081926	3.006462	0.0299
Droom	0.799541**	0.208960	3.826276	0.0123
Dterr	-0.055102***	0.024116	-2.284889	0.0711
C	-16.48863***	7.623634	-2.162830	0.0829
ECM(-1)	-1.670424*	0.186522	-8.955644	0.0003

Note: \*, \*\* and \*\*\* denotes 1%, 5% and 10% level of significance respectively.

ARDL (4,3,4,4,4) selected based on Akaike Information Criterion

Source: Computed

The impact of the change in world gdp is significant on global tourism receipts. This is due to the aggregation of all countries data. However, Seetanah et al (2010) are of the view that disaggregation of the originating countries can give better comparative insights of tourist sensitivity to the various determinants.

It should be noted that a change in CPI has a positive and significant impact on global tourism receipts. This means that initially there is a direct relationship between CPI and global tourism receipts. However, this effect is only in the short-run. As reported earlier, in the longrun, our findings reveal that a 1% increase in CPI will eventually cause the value of global tourism receipts to fall by 94%.

A glance at the room's significant coefficient shows that as the number of rooms increases, demand from UK and France increases in the short-run. However, terrorism index 2-room coefficient shows that as the number of rooms increases, tourism demand increases by much more than it is the case

<sup>3</sup> "A significantly negative coefficient estimate indicates convergence toward long run equilibrium or cointegration."

for index 1. This is quite logical. It shows that tourists will be attracted to countries, which provide greater comfort to them. The effect of a change in number of rooms in the short-run is more or less the same as in the longrun.

Our main concern being the effect of terrorism is explained here. In the shortrun, terrorism acts taking place in the world have a negative and significant impact on tourism demand in Mauritius. This is because in the shortrun terrorist attacks taking place may instill fear in the minds of the citizens concerned. Hence, they prefer to stay at home to be on the safe side. This highlights the psychological side of decision making by tourists. Consistent with Sonmez and Graefe (1998) who propose that risk perception and attitude are significant predictors of decision making for tourists, the findings show that those who associate various risks like health and terrorism with travelling, feel safer at home.

A 1% rise in terrorism incidents may lead to a fall in tourism demand in Mauritius by 5.5%. This is similar to a study by Enders, Sandler and Parise (1992), which reveals that terrorism has a significant and negative impact on tourism revenues in Spain and the rest of Europe. A factor contributing to this effect is the targeting of tourists. A rise in terrorism incidents targeting tourists will lead to a fall in tourism demand in Mauritius because tourists feel personally targeted though there is a small probability of being targeted by terrorists in even a country experiencing a high rate of terrorism. This is line with the findings of Thompson (2008).

However, as discussed earlier, the terrorism factor is not significant in explaining tourism demand in Mauritius in the longrun. This is because tourists realise that terrorism is likely to continue existing in everyone's lives, O'Connor et al., (2008). Hence, they start to travel again. However, they reduce their chance of getting targeted by substituting to safer destinations like Mauritius. Enders and Sandler (1991) and Enders, Sandler and Parise (1992) highlighted the substitution effect between countries by tourists who want to minimize the risk of experiencing a terrorism act.

The estimated error correction coefficient,  $ecm(-1)$  is negative and significant at 1%. This is clearly an indication that the variables show convergence towards their long-run equilibrium.

## **Section 4: Conclusion and Recommendations**

The main aim of this study is to analyse the impact of terrorism on tourism demand in Mauritius. A time series analysis has been carried out for data on an annual basis over the period 1983 to 2015. A unit root test was carried out and the ARDL-ECM model was consequently used. The ARDL bounds testing validated the presence of cointegration among the variables and the long- and short-run coefficients have been estimated.

Long-run shows that terrorism acts do not have an impact on tourism demand in Mauritius, whilst in the short-run, terrorism adversely affects tourism demand. In fact, terrorism affects the Mauritian tourism demand in the short-run though Mauritius has a clean record of no terrorism incidences. This shows the immediate reactive psychology of tourists to those violent incidents. They care for their safety and hence, are more inclined to stay home and to avoid travelling. As a result, many cases of cancellation of bookings can be observed.

In the long run, the information integration theory can be used to explain the relevance of risk in tourism decisions whereby the tourists seek information about the destination. It is only when they are sure about Mauritius being a safe country that the tourists decide to come. In some cases, it can also happen that they are deterred by threats of terrorist attacks in other countries and hence substitute to safer destinations like Mauritius. Most importantly, the travellers who need to take at least a minimum level of risk, attain a realisation point in the long-run whereby they have the mental capacity to understand that terrorism is going to feature in everybody's life as long as the world will continue to develop.

This study may help marketing agencies in Mauritius to better understand the influence of terrorism on tourism demand so that they can plan for better promotion activities considering terrorism as it does affect tourism in the short run. It is important for destination marketers, such as the MTPA to incorporate touristic perceptions to be able to tailor promotional campaigns. Tourist concerns about safety in Mauritius can be addressed through better communication to clear negative perceptions while boosting the positive ones.

## **REFERENCES**

- ARAMBERRI, M.J., 2015. Myths of top tourism countries, tourism contribution and competitiveness. *Tourism Review*, 70(4), 276-288.
- Australian Tourism & Transport Forum, 2012. *Tourism Infrastructure Policy & Priorities*. Available from:  
<http://www.ttf.org.au/wp-content/uploads/2016/06/TTF-Tourism-Infrastructure-Priorities-2012.pdf>
- BAHMANI-OSKOOEE, M., & BAEK, J., 2016. Do exchange rate changes have symmetric or asymmetric effects on the trade balance? Evidence from U.S.–Korea commodity trade. *Journal of Asian Economics*, 45, 15–30.
- BLUNK, S.S., CLARK, D.E., & MCGIBANY, J.M. 2006. Evaluating the Long-Run Impacts of the 9/11 Terrorist Attacks on US Domestic Airline Travel. *Applied Economics*, 38(4), 363-370.
- BUIGUT, S., AND AMENDAHI, D., 2016. Effect of terrorism on demand for tourism in Kenya. *Tourism Economics*, 22(5), 928–938.
- CHI, J., 2015. Dynamic impacts of income and the exchange rate on US tourism, 1960-2011. *Tourism Economics*, 21(5), 1047-1060.
- CROUCH, G. I., 1994. The study of international tourism demand: a review of practice. *Journal of Travel Research*, 33, 41-54.
- DRAKOS, K., AND KUTAN, M., 2003. Regional Effects of Terrorism on Tourism in Three Mediterranean Countries. *The Journal of Conflict Resolution*, 47(5), 621-641.
- ENDERS, W., AND SANDLER, T., 1991. Causality between Transnational Terrorism and Tourism: The Case of Spain. *Terrorism*, 14, 49–58.

- ENDERS, W., SANDLER, T., AND PARISE, G, F., 1992. An Econometric Analysis of the Impact of Terrorism on Tourism. *Kyklos*, 45, 531-554.
- EVANS, J. AND BERMAN, B. (1992), *Marketing*, Macmillan Publishing Co, New York, NY.
- The Federal Bureau of Investigation, [www.fbi.gov/investigate/terrorism](http://www.fbi.gov/investigate/terrorism)
- GDP (current US\$). (2015). Retrieved January 13, 2017, from: <http://data.worldbank.org/indicator/NY.GDP.PCAP.CD>
- GIACOMELLI, A., 2006. Modelling International Tourism Demand. Paper Presented at the Second International Conference on Tourism Economics, Palma de Mallorca, 18-20.
- GLOBAL TERRORISM INDEX (GTI), <https://www.start.umd.edu/gtd/>
- GU, Z., MARTIN, T.L., 1992. Terrorism, seasonality, and international air tourist arrivals in Central Florida: an empirical analysis. *Journal of Travel and Tourism Marketing*, 1, 3–15.
- IMF, 2014. Determinants of International Tourism. IMF, WP/14/82.
- Institute of Economics and Peace, Global Terrosim Index 2016. Retrieved from <http://economicsandpeace.org/wp-content/uploads/2016/11/Global-Terrorism-Index-2016.2.pdf>
- JOHANSEN, S., AND JUSELIUS, K., 1990. Maximum Likelihood Estimation and Inference on Cointegration with Applications to the Demand for Money. *Oxford Bulletin of Economics and Statistics*, 52 (2), 169–210.
- LEE, S.K., OH, C., & O’LEARY, J., 2005. Estimating the Impact of the September 11 Terrorist Attacks on the US Air Transport Demand Using Intervention Analysis. *Tourism Analysis*, 9(4), 355-361



- LENNON, R., & O'LEARY, B., 2005. A Comparison of the Effect of International Terror Attacks on German and American Consumers' Perceptions and Future Travel Plans. *Journal Of Accounting & Finance Research*, 13(2), 181-191.
- LIM, C., 1997. Review of international tourism demand models. *Annals of Tourism research*, 24(4), 835-849.
- MANSFELD, Y., 1996. Wars, Tourism and the 'Middle East' Factor. In A. Pizam and Y. Mansfeld, (Eds.), *Tourism, Crime and International Security Issues*, (pp. 265-278). New York: Wiley.
- MARTINS, L., GAN, Y., & FERREIRA-LOPES, A., 2017. An empirical analysis of the influence of macroeconomic determinants on World tourism demand. *Tourism Management*, 61, 248-260.
- NAUDEE, W, A., SAAYMAN, A., 2004. The determinants of tourist arrivals in Africa: A Panel Data Regression Analysis. Paper presented at the International Conference, Centre for the Study of African Economies. University of Oxford
- NELSON, C., PLOSSER, C., 1982. Trends and random walks in macroeconomic time series. *Journal of Monetary Economics*, 10,139-162.
- NEUMAYER, E., 2004. The Impact of Political Violence on Tourism. *Journal of Conflict Resolution*, 48(2), 259–281.
- O'CONNOR, N., STAFFORD M, R., AND GALLAGHER, G.,2008. The impact of global terrorism on Ireland's tourism industry: An industry perspective. *Tourism and Hospitality Research*, 8(4), 351-363.

- PESARAN, M.H., SHIN, Y., 1999. An autoregressive distributed lag modeling approach to cointegration analysis. In: Strom, S. (Ed.), *Econometrics and Economic Theory in the 20th Century: The Ragnar Frisch Centennial Symposium*. Cambridge University Press, Cambridge.
- PESARAN, M.H., SHIN, Y., SMITH, R.J., 2001. Bounds testing approaches to the analysis of level relationships. *Journal of Applied Economics*, 16, 289–326.
- PIZAM, A., AND SMITH, G., 2006. Tourism and terrorism: a quantitative analysis of major terrorist acts and their impact on tourism destinations. *Tourism Economics*, 6 (2), 123–138.
- PREVENTION OF TERRORISM ACT (Amendment Bill) 2016, available from: <http://mauritiusassembly.govmu.org/English/bills/Documents/intro/2016/bill2516.pdf>
- RAZA, S, A., & JAWAID, S, T., 2013. Terrorism and tourism: A conjunction and ramification in Pakistan. *Economic Modelling*, 33, 65–70.
- REISINGER, Y., AND MAVONDO, F., 2005. Travel Anxiety and Intentions to Travel Internationally: Implications of Travel Risk Perception. *Journal of Travel Research*, 43, 212–225.
- RICHTER, L. K., & WAUGH, JR.W. L., 1983. Tourism Politics and Political Science: A Case of Not So Benign Neglect. *Annals of Tourism Research*, 10(2), 313-315.
- RICHTER, L., AND WAUGH, W., 1986. Tourism Politics and Political Science: A Case of Not So Benign Neglect. *Annals of Tourism Research*, 10, 313–315.
- ROBBINS, E, J., 2012. *Econometric Analysis on the effect of Terrorism on Tourist flows*. Thesis (BA). The College of Wooster.
- SCHLAGHECK, D. M., 1988. *International Terrorism*. Lexington MA: Lexington Books.

- SEETANAH, B., DURBARRY, R., & RAGODOO, J. N., 2010. Using the panel cointegration approach to analyse the determinants of tourism demand in South Africa *Tourism Economics*, 16 (3), 715–729.
- SEETANAH, B., JUWAHEER, T. D., LAMPORT, M. J., ROJID, S., SANNASSEE, R. V., & SUBADAR, A. U., 2011. Does Infrastructure Matter In Tourism Development? *University Of Mauritius Research Journal*, 17, 89-108.
- SONMEZ, S., GRAEFE, A., 1998. Influence Of Terrorism Risk On Foreign Tourism Decisions. *Annals of Tourism Research*, 25(1), 112-144.
- Statistics Mauritius, <http://statsmauritius.govmu.org/English/Pages/default.aspx>. And <http://nao.govmu.org/English/Pages/Ministry-of-Tourism-and-Leisure.aspx>
- TARLOW P. E., 2005. Dark Tourism: The appealing ‘dark side’ of tourism and more. In: Novelli M. (Ed) *Niche Tourism – Contemporary Issues, Trends and Cases* (pp. 47-58). Oxford: Butterworth-Heinemann.
- THOMPSON, S., 2008. *Terrorism’s Effect On Tourism: Developed Vs. Developing Countries*. Thesis (MSc). Auburn University.
- US State Department, The global Counterterrorism Forum, [www.state.gov/j/ct/index.htm](http://www.state.gov/j/ct/index.htm)
- WAHAB, S., 1996. Tourism and Terrorism: Synthesis of the Problem with Emphasis on Egypt. In A. Pizam and Y. Mansfeld, (Eds.), *Tourism, Crime and International Security Issues*, (pp. 175-186). New York: Wiley.
- World Bank Group, <http://www.worldbank.org/>
- World Tourism Organization (WTO), [www.world-tourism.org](http://www.world-tourism.org).

- World Travel & Tourism Council. (2016). *Travel & Tourism Economic Impact 2016:Mauritius*. Retrieved from: <https://www.wttc.org//media/files/reports/economic-impact-research/countries-2016/mauritius2016.pdf>
- World Travel and Tourism Council (WTTC), [www.wttc.org](http://www.wttc.org).
- YAP, G., & SAHA, S., 2013. Do political instability, terrorism, and corruption have deterring effects on tourism development even in the presence of UNESCO heritage? A cross-country panel estimate. *Tourism Analysis*, 18(5), 587-599.