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Impact of terrorist attacks on tourist arrivals: Evidence from Sri Lanka

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Abstract

Sri Lanka is one of the leading tourist destinations in the world. The successive governments took various policy measures to develop the tourism industry despite the facing a 30-year long civil war. The end of the war in 2009 was seen as an opportunity to unleash the potential of the sector. Nevertheless, the Easter Sunday terrorist attack casts doubt on to what extent Sri Lanka will be able to make use of the sector for her socio-economic development. In the context of the above attack, this study expect to examine the impact of terrorist attacks on the tourism industry. The study make use of secondary data extracted from national statistical agencies. Our findings clearly indicate that tourism industry suffered a lot following terrorist attacks. It was found that tourist arrivals and tourism receipt were lower by around 20 per cent in a year which witnessed terrorist attacks compared to a normal year. Similarly, in the short-run, employment in the industry declined by around 11 per cent following a major terrorist attack on civilian target. The findings suggest that it is high time to enhance the capacities for the security establishments to minimize the risks pose by various terrorist organizations.

Keywords: Terrorism, Tourism, Impact, Developing Countries, Sri Lanka

Introduction

Sri Lanka is one of the most sorts for tourist destinations in the world. It is advantageously situated between West Asia and South East Asia has been a significant stop on the silk route¹. The tourism has been identified as one of the key drivers of growth and development in Sri Lanka by the successive governments (Government of Sri Lanka, 2005; 2010; 2016; and 2017)².^[12] This position has vigorously been re-emphasized during the post-war in which Sri Lanka witnessed a notable surge in tourist arrivals as well as significant increase in private investment in the Tourism Industry. During the post-2000, Sri Lanka has introduced several policy initiatives. Notable among them are the Tourism Mater Plan of 2008, Tourism Development Strategy of 2011, and Tourism Strategic Plan of 2017^[15]. The Tourism Strategic Plan (TSP) of 2017 emphasizes the need for harnessing the untapped potential of the Tourism Industry aiming at attaining sustainable development goals. In particular, it targets to achieve three Sustainable development Goals, namely (SDG) 8: Promote sustained, inclusive, and sustainable economic growth; full and productive employment; and decent work for all, SDG 12: Sustainable consumption and production patterns, and SDG 14: Conserve and use the oceans, seas, and marine resources for sustainable development. By analyzing the current status quo, the TSP identifies a number of failures in the industry³. It proposes six transformation themes and key activities under each one of them. One of such transformation themes is to engage the workforce and communities in developing the industry. In particular, it emphasizes the need for creating employment opportunities for women.

Sri Lanka's tourism industry witnessed some setbacks during post-70s largely due to youth insurrections both in the South and the North. Youth uprising in the North gradually developed into full-pledged terrorist organization carrying out violence both in North and the South.

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¹ To express the richness, beauty and the intensity of affection: the visitors addressed the country as Serendib, Ceylon, Teardrop of India, Resplendent Isle, Island of Dharma, and Pearl of the Indian Ocean. Marco Polo mentioned the Sri Lanka as the finest island in the whole world as a well-known explorer of the 12th century.

² Namely, Mahinda Chinthanaya, 2005; MahinadaChinathanaya Forward Vision, 2010; Powerful Sri Lanka, 2016^[14]; Tourism Strategic Plan, 2017.

³ These include; coordination failures, institution failures, resource failures, and market failures.

In particular, military activities of the LTTE caused tourism industry in the North and the East to witness total collapse. In addition, tourism industry in the rest of the country was also largely affected due to LTTE activities. Nevertheless, limited attention has been paid in understanding the impact of terrorist attack on tourist arrivals in Sri Lanka. The objective of the study is to examine the impact of recent terrorist attack on the tourism industry in Sri Lanka.

2. Literature Survey

In general sense, tourists could be considered as consumers. They want to consume a service, i.e. traveling to another country/territory/location. A number of agents working in the fields of transporting, lodging, food & drinking, and other leisure related services must jointly supply this product. When deciding the place of visit, tourists consider a number of factors almost similar to a consumer who look for various attributes of a product before purchasing. The ultimate objective of tourists/consumers is to maximize the utility derived from the product/service. The utility is directly associate with the various attributes of the products. In the context of tourism these attributes may include factor such as historical, cultural, and exotic value of the place, relative price of products/services, attitude towards foreigners, and general security in and around the places of visits. If one assumes that one of the main purpose of travelling is to have a mental and physical relaxation, tourist may place relatively higher value on security situation. In general, tourists may expect minimum threshold level of security in order to consider as safety. This minimum thresholds level of security may vary across different people depending on their level of risk taking. Some individuals are risk lovers whereas some are risk averse.

Terrorist attacks could affect the security perceptions of tourists and after the attacks, a sizable fraction of tourists may consider the location as unsafe. This is mainly due to the fact that the security level of the location has declined below the threshold level of security expected by many tourists. Hence, a sizable share of tourist may avoid visiting (buying) such places resulting decline in tourist arrivals. The theory of utility maximization clearly demonstrates that tourists, similar to any other consumer, attempt to maximize the utility subject to some constraints. Security is considered by many tourist as an essential product/service component. Insecurity perception keep tourists away from purchasing the products/service similar to a consumer who reject buying low quality product/service. However, when tourists are convinced about the security, through various interventions made by recipient country and other organizations, tourists may consider visiting places which were not considered previously due to security concerns.

From a tourism angle, the main situations for a normal tourism development in the destination, region, or country is peace and the safety of the tourists. Lack of them, destinations are not competitive, even though they gives the greatest attractive and best quality natural and built attractions in their marketing campaigns (Cavlek, 2002; Gupta, 2011) ^[3, 16]. Therefore in the political-social situation is unstable or violent tourists will lack of to travel to the countries. The international tourists' necessities are the stability and balance between the attractiveness of a country and the costs, or risks, of visiting the destination is the basic validation (Goldman and Neubauer-Shani, 2017) ^[11]. The ability to travel around the world for enjoyment and in

relative safety is a fairly recent phenomenon. Tourists visit countries on a variety of factors, such as infrastructure, climate security, and country beauty. World tourism is affected by the events and crises of an external environment, for instance, small conflicts have a considerable effect on a destinations image (Ritchie and Waugh, 2004). Parsons (1996) ^[18] suggest three types of crises; (a) immediate crises: where little or no warning exists, therefore, organizations are unable to research the problem or prepare contingency plans before the crisis hits, (b) emerging crises: these are slower in developing and may be able to be stopped or limited by organizational action, (c) sustained crises. Tourism risk has become an important phenomenon, as evidenced by travelers' increasing attention to travel safety and travel risk. A number of theoretical and empirical studies have highlighted the relationship between terrorist attacks and tourist arrivals (Sönmez, 1998 and 1999; Feichtinger *et al.*, 2001) ^[24, 8]. Most empirical research argue that there is a negative effect of terrorism toward the tourism. More importantly, there is a tendency for the tourists to switch between tourist destinations based on the risk of terrorist attacks. Additionally, tourists' previous experience of also influences their reaction to terrorism.

Terrorism and crime have been acknowledged as negative factors entailing both direct costs such as value of damaged structures, lives lost or damaged, injuries sustained, cleanup, and indirect costs mainly higher insurance premiums, higher security costs and lost commerce (Sandler, 2014) ^[23]. The scope of empirical studies analyzing this topic is quite broad, and employ a wide range of econometric models in their estimation process. In recent years, time series econometric models are frequently used as they can account for the time sensitiveness nature of tourist flows, and are useful for purposes such as forecasting. Country specific studies are also favored in situations where cross-country studies face criticism over ignoring vast differences between countries. Such a study by Enders & Sandler (1991) ^[5] on the impact of terrorism on tourism in Spain, using a vector auto regression (VAR) framework indicated that over the period 1970 to 1988, transnational terrorism had a major negative impact on the number of monthly foreign tourists in Spain. The model established a unidirectional causality of terrorism affecting tourism, and their findings further suggested that an attack directed specifically at tourists would result in significant costs.

It is also useful to consider cross-county analyses. Saha & Yap (2013) conducted such a study examining the way in which political stability and terrorism affected tourism development through a cross-country panel analysis. The findings broadly confirm widespread notions of a negative impact on tourism. In addition, the study also indicated that terrorism may increase tourism at lower levels of political instability up to a threshold level. And in a situation of high political instability the impact of terrorism on tourism is harmful. According to the United Nations World Tourism Organization, tourism entails the movement of people to countries or places outside their usual environment for personal or business/professional purposes. These peoples are called visitors a person who uses unlawful violence and intimidation, especially against civilians, in the pursuit of political aims. The five industries tourism interest are accommodations, food and beverage services, recreation and entertainment, transportation, and travel services.

Terrorist attacks have been found to cause sharp reductions in tourist arrivals and expenditure in incident regions (Sönmez, Backman, & Allen, 1994). Terrorism can cause immediate precipitous declines in the numbers of tourists who visit a destination, and these are followed by a very slow process of recovery (Seddighi, Nuttall, & Theocharous, 2001). Wahab (1996) ^[25] found that Egypt experienced a 43% decline in tourist receipts following the terrorist attacks in 1992. Ender and Sandler (1991) ^[5] and Enders, Sandler, and Parise (1992) ^[7] used econometric analyses to show that terrorism has had significant negative effects on tourism revenues in Spain and other European countries. Similar negative effects have been found in tourism destinations in Kenya (Buigut & Amendah, 2016) ^[2]. The strength of the effects of terrorism depends mainly upon the severity and frequency of the attacks (Pizam, 1999) ^[20]. Terrorist acts that cause more casualties and/or damage tend to have more devastating effects on tourism demand. Moreover, multiple terrorist attacks in succession can have much more serious long-term effects. In contrast, the negative effects of infrequent attacks tend to be relatively shorter in duration (Pizam, 1999) ^[20]. Bassil *et al.* (2015) ^[1] and Drakos and Kutan (2003) found that the intensity and location of the incident and the number of casualties determine the level of impact. Fletcher and Morakabati (2008) ^[9] concluded that severe terrorist incidents have more significant effects on tourist demand than low-medium one-off terrorist attacks. Pizam and Fleischer (2002) ^[19] found that more frequent incidents are likely to have long-lasting effects and can even lead to the complete collapse of the tourism market. However, there is a time lag before a terrorist attack affects the local tourism market. Fleischer and Buccola (2002) ^[10] found that on average, it takes about 2 months for tourist numbers to be affected by a terrorist attack. Lee and Sanugi (2010) ^[17] found that the negative effects of the Bali bombings began to be felt after a 6- to 12-month delay. Enders, Sandler, and Parise (1992) ^[7] found that terrorist attacks took around 3 months to affect tourist demand. The above theoretical frame work shows how terrorist attack could affect tourist arrivals. In the normalcy and peaceful environment how change the tourist perception and under the active terrorist how their perception and their behavior. Same as take various things to improve the positive development of tourism industry but nor any effective actions to eradicate the terrorism and still terrorist activities same. In this particular two concept how the effect to the decision making of arrival of the tourist. Any way even in the end up the terrorist activities and unrest situation, same arrival happened in the previously occurred or will it divert to the various continent from to the previous or even if same continent start to arrival are the same income levels peoples reach to the destination. Even though tourism industry, in particular tourist arrivals, may reach or even pass the level that was recorded before the terrorist attack. Before and after comparison, in terms of tourists' nationality, age profiles, per capita expenditure, may uncover how the attack influence the tourist arrivals.

3. Methodology and Data

This study aims at conducting a quantitative analysis, based on secondary data, on impact of terrorist attacks and tourist arrivals. The analysis will start by discussing major terrorist attacks witnessed in Sri Lanka during last three-four

decades. In particular, the size and nature of such terrorist attacks will be discussed by giving more emphasis on the level of impact on civilian set-up. This is because the possibility is high that tourists consider such attacks much seriously and often travel restrictions/warnings are issued by some governments informing their citizens to avoid visiting the country. Sri Lanka mostly started experiencing terrorist attacks since early 1980s. Terrorist attacks were mostly carried out by militant groups in the North and the East who fought demanding a separate state for Tamil speaking people. In addition, youths in the South (Janatha Vimukthi Peramuna) launched two armed struggles to overthrow the government in power, one in 1971 and another in 1987-88⁴. The terrorist attacks vary in terms of their targets, magnitude (physical and human damages), and social attention drawn, in particular attention of international media stations and governments. Hence, this study confines only to 'major terrorist attacks' on civilian targets. Terrorist attacks were classified quite arbitrarily for the study purpose and qualitative judgment on impact to civilian life and level of local and international attention were made based on the documentary evidence. The effect of terrorist attacks on magnitude of tourist arrivals will be investigated by comparing trends in tourist arrivals before, during, and after terrorist attacks. In addition to trend analysis, growth of tourist arrivals will also be estimated and analyzed. This study aims at estimating the following autoregressive model quantifying the impact of terrorist attacks on each selected tourism sector indicator, namely tourist arrivals, tourism receipt, and employment.

$$\ln y_t = \beta_0 + \sum_{i=1}^k \beta_i \ln y_{t-i} + \delta Z_t + \gamma \text{trend}_t + \varepsilon_t$$

In the above equation, y_t is our dependent variable and, one of the tourism sector indicator, named above, will be the dependent variable in respective model. It enters into the model in logarithm form. A number of lags will be introduced into the model to take care of autocorrelation issue. In the model Z_t is a dummy variable that takes 1 if major terrorist attacks on civilian took place in a particular year, and otherwise zero. A time trend variable (*trend*) will also be introduced into the model to take care of any trend presence in the data and ε_t is an iid disturbance term which satisfies all the assumptions expected under the Ordinary Least Square (OLS) estimator. Data for the study are extracted from a number of secondary sources. Information related to terrorist attacks, such as time of the attack, casualties, intended target of the attack, and level of social attention related to the attacks, was extracted largely from published work at the Ministry of Defense. Data on tourist arrivals, tourism receipt, investment on capacity expansion (no of rooms available), and direct employment in the tourism industry were extracted from Tourism Statistical Year Book published by Sri Lanka Tourism Development Authority.

4. Nature and Magnitude of Terrorist Attacks

⁴ Youth insurrection took place during 1987-88 was much impactful compared to one in 1971. In particular, the government imposed some stringent security initiatives to bring the situation under its control.

Broadly speaking, during the post-independent period, Sri Lanka witnessed some form of political violence instigated by youths. One of the main Tamil military organization, Liberation of Tigers of Tamil Elam (LTTE), waged a war demanding a separate state for Tamil speaking people. Broadly speaking, a number of military and civilian targets were pursued by them causing severe impact on the economy. The LTTE was banned and named as a terrorist organization by many developing countries. Some of the major terrorist activities are briefly discussed below.

Terrorist Attacks during 1980– 1990

Table 1 reports some major terrorist attacks occurred during 1980-90. This period marked the emergence of a number of militant groups in the North and the East of Sri Lanka demanding a separate state for the Tamil speaking community. Towards 1990s, the militant groups engaged in various sporadic attacks at different magnitude largely targeting military establishments. The attack on military convoy that killed 13 military personals sparked country-wide ethnic classes in early 1980s having a significant negative impact on tourism industry. The brutality of the event as well as the wider coverage given by international media adversely affected the industry. During the above period, youths in the South staged a military onslaught to overthrow the government and to form a governing system on principles of socialism. India brokered a number of peace talks between the government of Sri Lanka and militants and finally got Sri Lanka agreed to a peace treaty. The country witnessed somewhat peaceful environment during the period of peace negotiation. Nevertheless, the LTTE rejected the peace deal and went on fighting resulting India to send a peace keeping mission in 1988. India's attempt to bring some stability through a political solution failed to achieve its objectives, instead, people belonging to both communities wanted India to pull out its troops.

Terrorist attacks during 1991 -2000

Table 2 lists down major terrorist attacks during 1991-2000. During this period, the LTTE aimed at assassinating key political leaders⁵. At the same time, intensity as well as destructive nature of militant activities increased rapidly. In addition to the North and the East, militant activities were carried out in and around Colombo, the administrative and commercial heart of the country. In mid 1990s, the government of Sri Lanka entered into a peace agreement, however, it lasted for several months and escalation of fights between the government of Sri Lanka and the LTTE resumed with major attacks. The government of Sri Lanka launched a number of military operations to rescue key strong holds including Jaffna town and surrounding during the latter part of 1990s.

Terrorist Attacks during 2001 – 2010

Table 3 lists down major terrorist attacks during 2001-2010. A series of attacks, including one on the main airport, carried out by the LTTE forced the government of Sri Lanka to consider an international mediation for a lasting political solution for the military conflict. Both parties, under the facilitation of Norway and other co-chairs, agreed to enter

into cessation of hostilities and to initiate political dialogue to find an acceptable solution. Continued hostilities adopted by the LTTE pushed the government to leave the accord and responded militarily. Intense clashes in the battle fields coupled with some terrorist's activities in the South heightened the insecurity during 2006-2009. End of the civil war, lasted around 30 years, in 2009 resulted improving the general sense of security greatly.

On 21 April 2019, explosions killed at least 253 people and wounded more than 500 people. At least 40 foreign nationals and at least 45 children reported to be among the dead. The terrorist attack, which targeted Christian worshippers and tourists, suggests a new front in Sri Lanka's long and complex history of inter-ethnic and inter-religious violence. The involvement of an Islamist cell, reportedly affiliated with the Islamic State, was a surprise to many observers. Previously, Islamist extremism had not been a prominent feature in Sri Lanka as it has been elsewhere in South and Southeast Asia. Although a legacy of the civil war, the marginalization of minority groups, political upheaval and security lapses have cultivated fertile ground for a militant movement to emerge. A network of 150 people belonging to two previously little-known domestic Islamist groups – National Thawheedh Jamaath (NTJ) and Jaamiyathul Millathu Ibrahim (JMI) coordinated and executed the attacks, likely with support from IS, the government said.⁵ Police had also recovered explosives, weapons and other materials during several raids. Investigations also revealed that the suicide bombs used contained ball bearings, iron nails and triacetone triperoxide, commonly known as TATP, which is the explosive of choice for IS-inspired attackers. The explosive was also used by the IS terrorist cell behind the deadly bomb attacks in Paris in November 2015. After the attacks, the government declared a state of emergency to maintain public security and essential services. The Sri Lankan Parliament extended the state of emergency on 25 May for another four weeks. Consequently, these attacks affected the country as a whole. Inter-ethnic anxiety has risen in the affected districts as well as in the country in general. After three weeks of the attack, tense situations developed in several locations of the country, especially in North Western Province and Gampaha district.

Impact of Terrorist Attacks on Tourism Industry Descriptive Analysis

The number of tourist arrivals increased from 40 thousands in 1970 to 1913 thousands in 2019⁶. During the 1970s, tourist arrivals to Sri Lanka gradually increased and by 1980 tourist arrivals reached 321 thousands. With the opening up of the economy, tourism industry started booming and tourist arrivals increase to 407 thousands by 1983. However, ethnic riots in mid-1983 made a huge blow to this expanding industry. Tourist arrivals dropped to 317 thousands by 1984. If not for the ethnic riot in 1983, tourist arrivals would have increased over 500 thousand in year 1984. In other words, within a matter of six months in 1983, around 80 thousands tourists decided to stay back by visiting Sri Lanka. During 1983-86, in which Eelam War I was fought, tourist arrivals contracted at an annual average rate of 13 per cent (see Table 40). Whereas tourism receipt and direct employment contracted by an annual average rate

⁵ Key political leaders such as Ranasinghe premadasa (president), Ranjan Wijerathne (Minister of Defense), and Gamini Dissanayake (opposition presidential candidate)

⁶ Figure 1 depicts tourist arrivals in log.

of 8.7 and -0.1 respectively. In subsequent years, sporadic incidents related to ethnic riot and youth insurrection created an increasingly insecure environment for tourists. During 1987-88, the period in which the country faced twin wars, tourist arrivals contracted by an average annual rate of 10 per cent⁷. By 1989, tourist arrivals dropped to its lowest (185 thousands) during post-1977 era. According to rough estimate, if the pre-1983 trend continued, the number of tourist arrivals would have reached over 750 thousands by 1989. Hence, terrorist attacks and youth insurrections in 1980s forced around 1 million tourists stay out from visiting the country.

Some marginal improvements took place due to the truce reached between the government of Sri Lanka and the LTTE in early 1990s. As a result, tourist arrivals increased by 31 per cent during 1989-90 (see Table 4). Though the Eelam War II initiated following the killing of unarmed policemen, it was largely confined to the North and the East during 1991-93, hence, tourist arrivals recorded a positive growth. Assassination of the president and subsequent bombing of several civilian targets led to deterioration of the security environment during 1994-96. As a result, tourist arrivals, tourism receipt, and the direct employments declined during the aforementioned period. Newly elected government in 1994, expressed its willingness to seek a political solution acceptable to all parties. Nevertheless, the LTTE revenged its previous position and started attacking a number of military and civilian locations, including the Central Bank of Sri Lanka in 1996. As a result, tourist arrivals declined sharply in 1996, tourist arrivals declined by around 100 thousands during 1996. During, 2000-2001, as discussed previously, a number of terrorist attacks took place causing severe insecurity in the society. Terrorist attack on the one and only airport, Bandaranayake International Airport, sent out waves of negative sentiments and tourism industry was badly affected resulting fewer tourist arrivals. International community led peace effort, mediated by Norway, made a fresh hope and tourist arrivals gradually picked up due to improved security sentiment. During 2000-2001, tourist arrivals declined by an annual average rate of 12 per cent. Newly elected government in 2002, sought international mediation for a peaceful settlement with the militant groups, and accordingly the government of Sri Lanka and the LTTE signed a peace pact in 2002. This peace agreement greatly enhanced positive sentiment on security and safety among both locals and foreigners. As a result tourist arrivals increased by 19 per cent per annum. However, the escalation of full-blown war and multi-front onslaught against LTTE affected negatively on tourist arrivals during 2006-2009. The end of war effectively dismantle the possibility of terrorist attack thereby proving a greater sense of security. As a result, tourist arrivals shot up in a remarkable manner. For instance, tourist arrivals increased from 447 thousands in 2009 to 2,300 thousands by 2018. During 2010-2018, tourist arrivals increased, on average, by 21 per cent per annum. More importantly tourism receipt increased, on average, by 73 per cent per annum indicating visits of high-end tourists. Similarly, tourism industry investment (in terms of hotel room expansion) and direct employment increased significantly

during 2010-2018. Workers indirectly involved in the tourism industry expanded much faster rate than that of the direct employment (see Table 4). Rough estimates suggest that Sri Lanka lost around 20 million tourist arrivals during 1994-2014⁸.

According to Sri Lanka Tourism Development Authority (2019), tourist arrivals to Sri Lanka during the year 2019 amounted to 1,913,702 registering a decline of 18 per cent since 2018. Reported number of nights spent in 2019 by international tourists was 19,902,501, showing a decline of 21 per cent with an average duration of 10.4 nights. The decline in tourist arrivals was somewhat larger than any previous year in which major terrorist attacks took place. For instance, following the airport attack in 2001, the tourist arrivals declined by 15 per cent. In 2009, the year in which a number of terrorist's attacks on civilian targets took place, the decline was recorded as 11 per cent. In terms of absolute numbers, compared to 2018, tourist arrivals declined by 420 thousands in 2019. However, *with* and *without* comparison suggests that around 620 thousands tourist stayed back due to the Easter Sunday attack. Table 5 summarizes the immediate impact of terror attack on Sri Lanka tourism industry. The estimates were done by comparing *with the attack* and *without the attack* scenarios (*with the attack* – *without the attack*). Accordingly, Sri Lanka lost around US \$ 1.2 billion tourist receipt and around 25 thousands employment opportunities within the year of 2019 due to the Easter Sunday attack (see Table 5).

Regression Analysis

Impact of terrorist attacks on tourism industry was examined by employing few autoregressive models. In Table 6-8, related to each outcome variable (i.e. tourist arrivals in Table 6, tourism receipt in Table 7, and employment in Table 8), model construction is illustrated by estimating Model (1) through Model (4). The model performance could be examined against some of the indicators such as R^2 , F-test, and Durbin-Watson (DW) statistic. If the DW statistic deviates substantially from the value of 2 (i.e. no serial correlation value), it suggests that the model suffers from the issue of autocorrelation. Inclusion of appropriated number of lags of respective dependent variable is one of the ways through which the issue could be resolved. Hence, in each table, Model (4) is the appropriate model which satisfy all the OLS assumptions. Table 6 reports the estimated results on the impact of terrorist attacks on tourist arrivals. In this model, tourist arrival (dependent variable) and its lags (as explanatory variables) are expressed in logarithm. Our variable of interest, terrorist attacks, is entered into the model as a dummy variable. The estimated coefficient of terrorist attack dummy is negative and statistically significant at 1 per cent level of significance [-0.211 (s.e. 0.0390)]. According to Model (4), the estimated coefficient of terrorist attack indicates that tourist arrivals are lower by 21 per cent in a year which witnessed terrorist attack compared to a normal year where there are not terrorist attacks. This implies that around one-fifth of tourists decides to stay back due to the negative sentiments on security

⁷ Twin wars refers to the armed struggles carried out by Tamil militant in the North and the East and by Sinhala youths led by Janatha Vimukthi Peramuna in the South and the rest of the parts in Sri Lanka.

⁸ This number is calculated by comparing *without* and *with* scenarios. It could simply be calculated by taking the area between actual tourist arrivals (*with terrorist attacks*) and the potentials (*without terrorist attacks*).

created by major terrorist attacks targeting civilians. As reported in Table 4, tourist arrivals declined by 18 per cent in 2019 following the Easter Sunday attacks on several leading churches and hotels. According to the estimated coefficients of the lag variable (first and the second lags of the dependent variables), there is a strong persistency in tourist arrivals. It suggests that one per cent increase in tourist arrivals in the immediately the past period leads to over 1 per cent increase in tourist arrivals in the current period. This indicates that tourists tend to repeat visiting the country and to encourage other potential tourists to visit the country. The regression results on the impact of terrorist attacks on tourism receipt are reported in Table 7 below. Following the same estimation procedures, four models were separately estimated. According to Model (4), the estimated result of terrorist attack dummy is negative and statistically significant at 1 per cent level of significance [0.218 (s.e. 0.052)]. As in the case of tourist arrivals, the result indicates that the tourism receipt is lower by around 20 per cent in a year which witnessed terrorist attacks compared to a normal year. Tourism receipt also strongly and positively correlated in consecutive years as indicated by the estimated coefficients of lag variables. Table 8 reports the estimated results of the impact of terrorist attacks on employment in the tourism industry. The estimated

coefficient of terrorist attack dummy is negative and statistically significant in Model (4). The estimated coefficient implies that employment in the industry declined by around 11 per cent in a year of terrorist attack compared to a normal year. Following the Easter Sunday Attack, around 12 thousands workers lost their jobs and this number was around 25 thousands when considered the loss of indirect employments. Impact on employment is somewhat moderate compared to the impact of terrorist attacks on tourist arrivals and tourism receipt. This is partly because that businesses expect industry to recover within a shorter period. Table 9 reports some data on recovery time after various external shocks that may face by the tourism industry. Accordingly, on average, it takes around 13 months for the tourism industry to recover (or reach to its pre-terrorist attack levels) following terrorism related incident. Interestingly, compared to the recovery time taken by various other incidents, the industry recovery is faster following a terrorism related incident. This may be due to the fact that various actions taken by the government may quickly enhance the security situation. Knowing this fact, businesses in the tourism industry may not consider laying off workers in a significant way and in most cases such lay-offs may occur related to unskilled labour which could easily be recruited when the industry returns back.

Table 1: Major Terrorist attacks Civilian Targets: 1980-90

Name of Attack	Date occurred	Location	Size of the impact	Level of social impact
Kent and Dollar Farm massacres	30 Nov. 1984	Mullaitivu District	Large (D= 62, W= 100)	High
Kokilai massacre	1 Dec. 1984	Kokilai, Mullaitivu District	Medium (D=11)	Medium
Anuradhapura massacre	14 May 1985	Anuradhapura, Anuradhapura District	Large (D=146, W=85)	High
Air Lanka Flight 512	3 May 1986	Bandaranaike International Airport	(D=21)	Medium
A bus massacre	17 April 1987	Habarana, Anuradhapura	(D=127, W= 70)	High
Central Bus Station Bombing	21 April 1987	Pettah, Colombo	(D=113, W= 500)	High
Aranthalawa Massacre	2 July 1987	Aranthalawa	(D=35)	High
Youth insurrection in the South	1987-89	Most parts of the country	(D=60,000-80,000)	Very high
Kattankudy mosque massacre	3 August 1990	Kattankudy, Batticaloa District	(D=147)	High

Note: D=no of death, W=no of wounded people

Source: Ministry of Defense, 2011

Table 2: Major Terrorist attacks and their Impact: 1990-2000

Name of Attack	Date occurred	Location	Size of the impact	Level of social impact
Assassination of Defense minister	2 March 1991	Havelock Road, Colombo	(D=19)	High
Palliyagodella massacre	15 October 1991	Palliyagodella, Polonnaruwa District	(D=109)	High
Assassination of the president	1 May 1993	Armour Street, Colombo	(D=11)	High
Assassination of opposition presidential candidate.	24 October 1994	Thotalanga, Colombo	(D=52)	High
Kallarawa massacre	25 May 1995	Kallarawa, Trincomalee District	(D=42)	Medium
Eastern Sri Lanka massacres	16 October 1995	Eastern Province	(D=120)	High
Central Bank bombing	31 January 1996	Colombo, Colombo District	(D= 91 W=1500)	High
Dehiwala train bombing	24 July 1996	Dehiwala, Colombo District	(D=64)	High
Temple of the Tooth attack	25 January 1998	Temple of the Tooth, Kandy	(D=17)	High
Assassination of a minister	8 June 2000	Ratmalana, Colombo District	(D=22)	Medium

Note: D=no of death, W=no of wounded people

Source: Source: Ministry of Defense, 2011

Table 3: Major Terrorist attacks and their Impact: 2001-2009

Name of Attack	Date occurred	Location	Size of the impact	Level of social impact
Bandaranaike Airport attack	24 July 2001	Katunayaka Western province	(D=21)	High
Gomarankadawala massacre	23 April 2006	Gomarankadawala, Trincomalee District	(D=6)	Low
Kebithigollewa massacre	15 June 2006	Kebithigollewa, Anuradhapura District	(D= 66 W=70)	High
Digampathana bombing	16 October 2006	Digampathaha, Matale District	(D=92w=103)	High
Suicide air raid on Colombo	20 February 2009	Colombo, Colombo District	(D=2)	High

Note: D=no of death, W=no of wounded people

Source: Source: Ministry of Defense, 2011

Table 4: Impact of Terrorist Attacks on Tourism Industry

	Average Annual Growth Rate					
	Arrivals	Receipt	Rooms	Beds	Direct Employment	Indirect Employment
Eelam war I (1983-86)	-13.0	-8.7	2.7	2.4	-0.1	0.0
Period of twin wars (1987-88)	-10.0	-3.3	0.3	0.3	-0.9	-0.9
Peace talks I (1989-90)	31.0	36.8	0.5	0.6	6.8	6.8
Eelam war II (1991-93)	10.0	10.9	2.4	2.3	4.8	4.8
Peace talks III & Eelam war III (1994-96)	-7.0	-8.3	2.7	1.8	-2.0	-2.0
Searching for a negotiated solution (1997-99)	13.0	9.0	1.5	1.8	2.5	2.5
LTTE attack nerve centers in Colombo (2000-01)	-12.0	-8.2	1.2	1.3	-5.6	-5.6
Cease-fire agreement and Peace talks IV (2002-04)	19.0	21.6	1.2	1.2	12.8	12.8
Eelam war IV and end of war (2005-09)	-4.0	-0.7	2.0	2.9	0.0	0.0
Post-civil war period (2010-18)	21.0	73.4	7.6	8.9	23.0	20.5
Easter Sunday attacks (2019)	-18.0	-17.7	0.3	0.3	2.7	4.3

Source: Ministry of Defense, 2011

Table 5: Immediate Impact of Easter Bomb Attack on selected Tourism Industry Indicators

No of tourist arrivals	- 653,474
No of tourist nights	-7,824
Tourist receipt (US\$ Mn)	-1,212
Occupancy capacity rooms	-2,402
Occupancy capacity beds	-5,068
No of direct employment	-12,311
No of indirect employment	-12,417

Table 6: Effect of Terrorist Attacks on Tourist Arrivals

Dependent variable: tourist arrivals (in log)				
	Model 1	Model 2	Model 3	Model 4
Constant	12.840 (0.165)***	11.234 (0.119)***	1.277 (0.550)**	1.878 (0.511)**
Terrorist attack (dummy)(a)	-0.123 0.291	-0.145 0.120	-0.225 (0.041)***	-0.211 (0.039)***
Time trend		0.560 (0.003)**	0.005 (0.003)**	0.007 (0.003)**
Tourist arrivals (in log) - Lag 1			0.902 (0.049)**	1.028 (0.110)***
Tourist arrivals (in log) - Lag 2				-0.178 (0.110)
No of observations	50	50	49	48
F-test value	0.18	118.81	731.25	618.89
R ²	0.670	0.835	0.979	0.982
Durbin-Watson	0.036	0.180	1.468	1.871

Note: (a) terrorist attack dummy take 1 for years in which major terrorist attacks took place, and otherwise 0.

In the table, **, and *** indicate that the estimated coefficients are statistically significant at 5 per cent and 1 per cent respectively.

Table 7: Effect of Terrorist Attacks on Tourism Receipt

Dependent variable: Tourism Receipt (in log)				
	Model 1	Model 2	Model 3	Model 4
Terrorist attack (dummy)(a)	-0.117 (0.515)	-0.278*** (0.055)	-0.229*** (0.055)	-0.218*** (0.052)
Tourism receipt (in log) - Lag 1		0.964*** (0.016)	1.263*** (0.128)	1.144*** (0.129)
Tourism receipt (in log) - Lag 2			-0.361* (0.196)	-0.264 (0.189)
Tourism receipt (in log) - Lag 3			0.068 (0.114)	-0.017 (0.113)
Time trend				0.012** (0.004)
Constant	5.265*** (0.291)	0.416*** (0.089)	0.334*** (0.101)	0.562*** (0.133)
Observations	50	49	47	47
R-squared	0.001	0.987	0.989	0.990
F-value	0.05	1797.00	910.00	820.00
Durbin-Watson statistic	0.024	1.483	1.830	1.89

Note: (a) terrorist attack dummy take 1 for years in which major terrorist attacks took place, and otherwise 0.

In the table, **, and *** indicate that the estimated coefficients are statistically significant at 5 per cent and 1 per cent respectively.

Table 8: Effect of Terrorist Attacks on Employment

Dependent variable: Direct Employment in the tourism Industry (in log)				
	Model 1	Model 2	Model 3	Model 4
Terrorist attack (dummy)(a)	-0.0361 (0.265)	-0.130*** (0.0282)	-0.125*** (0.0310)	-0.115*** (0.0311)
Direct employment (in log) - Lag 1		0.984*** (0.0159)	1.026*** (0.133)	0.990*** (0.133)
Direct employment (in log) - Lag 2			-0.0369 (0.132)	-0.0918 (0.135)
Time trend				0.00546 (0.00349)
Constant	10.40*** (0.150)	0.276 (0.165)	0.222 (0.177)	1.015* (0.536)
Observations	50	49	48	48
R-squared	0.000	0.988	0.987	0.988
F-value	0.020	1927	1145	888
Durbin-Watson statistic	0.022	1.936	2.00	2.03

Note: (a) terrorist attack dummy take 1 for years in which major terrorist attacks took place, and otherwise 0.

In the table, **, and *** indicate that the estimated coefficients are statistically significant at 5 per cent and 1 per cent respectively.

Table 9: Average Recovery Time: By Crisis

Crisis Category	No of Months
Political Turmoil	26.7
Terrorism	13.0
Pandemic	21.3
Environmental disaster	23.8

Source: World Economic Forum (cited in DailyFT on 30th, April, 2019)

Conclusion

Sri Lanka is a one of the leading tourist destinations in the world. A number of international media stations as well as tour rating agencies have named Sri Lanka as one of the places in the world to visit. A number of Push and Pull factors have been identified by the literature in influencing tourists to visit Sri Lanka. Sri Lanka has taken many steps in promoting the tourism industry since mid-1960s. Nevertheless, tourism industry has underperformed due to a number of unfavorable factors, of which terrorism and political unrest remained as major stumbling blocks. In particular, it is widely believed that protracted civil war had a severe blow on the sector during 1980-2010. The end of the war in 2009 was seen as an opportunity to unleash the potential of the sector. Nevertheless, the Easter Sunday terrorist attack on churches and leading hotels casts doubt on to what extent Sri Lanka will be able to make use of the sector for her socio-economic development. In the context of the Sunday Easter terrorist attack, this study expect to examine the impact of terrorist attacks on the tourism industry, in particular on tourist arrivals, tourism receipt,

and employment in the tourism industry. This study will be an important addition to the existing literature on the impact of terrorist attacks on tourism industry.

The study made use of secondary data extracted from national statistical agencies and employed both descriptive and regression analyses in examining the impact. A number of major terrorist attacks on civilian targets were discussed by providing details on its intended targets and magnitude. By extracting information from multiple sources, each attack was ranked (low, medium, and high) on the basis of its impact to the tourism industry. Our descriptive data analysis clearly indicated that tourism industry suffered a lot following terrorist attacks. In particular, it was witnessed that tourism industry related indicators (such as no of tourist arrivals, tourism receipt, employment, etc.) contracted during the periods in which most attacks took place. Above findings were reconfirmed by the regression analyses. In particular, it was found that tourist arrivals and tourism receipt were lower by around 20 per cent in a year which witnessed terrorist attacks compared to a normal year. Similarly, in the short-run, employment in the industry declined by around 11 per cent following a major terrorist attack on civilian target. Our findings imply that the policy makers need to pay continuous attention on security matters for a sustainable development of the tourism industry. The end of the 30-year civil war provided the country a great opportunity to uncap the vast potential Sri Lanka has in promotion of tourism for her socio-economic development. However, lapses and poor coordination among national intelligence services resulted terrorists to target some leading churches and hotels on the Easter Sunday in 2019. It is high time for Sri Lanka to enhance the capacities for the security establishments to minimize the risks pose by various terrorist organizations. Similarly, it is also required to further strengthen the cooperation among national and foreign intelligence services. Finally, it is important that the country is equipped with required capacities to act fast in restoring confidence on security and to convey accurate information on timely basis.

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