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**Analysing the significance of the impact of political unrest and terrorism on  
Kenya's tourism industry:  
An event study approach**

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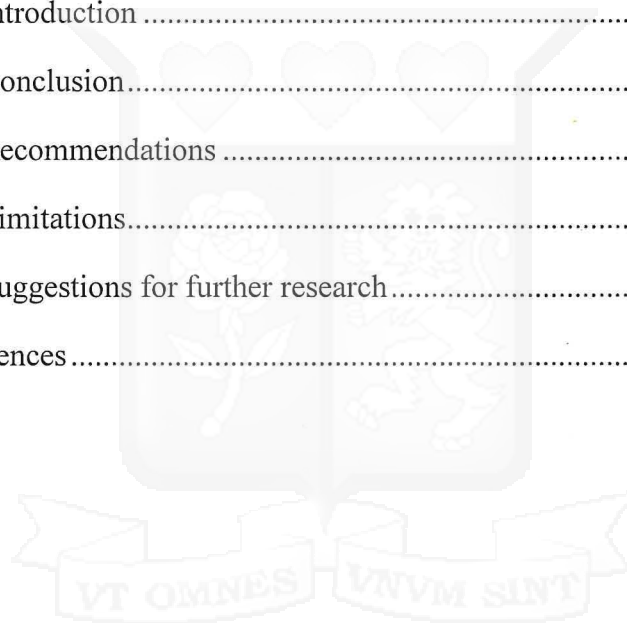
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## **Abstract**

Tourism is one of the key drivers of Kenya's socio-economic development. The total contribution of the tourism industry to Kenya's Gross Domestic Product was 9.8% in the year 2016 while the total employment contributed by the tourism industry in Kenya was 9.2% of total employment in Kenya. The tourism sector is therefore a sensitive area that could cause significant socioeconomic disasters in an economy if negatively affected.

Because tourists are sensitive to the negative image of a tourist destination, events of violence can affect a tourist destination long after the event has passed and stability has, in effect, been restored. Perceptions of political instability and safety are a prerequisite for tourist visitation. Violent protests, social unrest, civil war, terrorist actions, the perceived violations of rights, or even the mere threat of these activities can all serve to cause tourists to alter travel behaviour.

Over the past 20 years, Kenya has experienced notable and painful ordeals of terrorism and political unrest. Some of the events that claimed a great number of casualties are the United States Embassy bombings of 1998, the 2007-2008 post-elections violence, the 2013 Westgate terror attack and the Garissa University massacre.

Therefore, what this paper attempts to solve is to identify how significant the impact of terrorism and political/civil unrest is on tourist arrivals in Kenya through the event study methodology that has been modified to eliminate the seasonal nature of tourist arrivals.

# 1 CHAPTER 1: Introduction

## 1.1 Background to the study

Tourism contributes 10.2% of the world's Gross Domestic Product, and approximately 1 in 10 of all jobs (Travel & Tourism: Global Economic Impact & Issues 2017, 2017). Tourism is majorly linked with the building, aviation, and automobile industries. Its growth has been relative to primary production and manufacturing (Ralf, 2011). A large number of countries depend on the tourism industry to generate a significant fraction of their foreign exchange income and employment (Korstanje & Anthony, 2012).

The main benefits of tourism to a country are foreign exchange earnings, tax revenues, and business opportunities for entrepreneurs, and employment generation for workers, poverty alleviation and sustainable human development in the industry (Amisha, 2011)

As in many other developing countries, tourism is one of the key drivers of Kenya's socio-economic development (Elisabeth & Yobesia, 2009). The major tourist attractions in Kenya are wildlife, the coastal sandy beaches and tropical islands along the Indian Ocean coastline, ancient archaeological sites, beautiful scenic views, rich and diverse cultures and also a host of traditional tasty Kenyan dishes. In addition to tourist attractions, Kenya has been seen as the most favourable for international conferences and meetings among the East African countries and it ranks highly among the all the African countries following the 14<sup>th</sup> United Nations Conference on Trade and Development and Sixth Tokyo International Conference on African Development all being held in Nairobi in 2016, among others.

The total contribution of the tourism industry to Kenya's Gross Domestic Product was 9.8% in the year 2016 while the total employment contributed by the tourism industry in Kenya was 9.2% of total employment in Kenya. This is Ksh. 682.0 billion and 1,072,500 jobs respectively (Travel & Tourism Economic Impact 2017, 2017).

Statistics and figures indicate that domestic tourism generated 60.8% of direct travel and tourism Gross Domestic Product in 2016 compared with 39.2% for visitor exports.

Domestic travel spending is expected to grow by 6.1% in 2017 to Ksh. 284.9 billion, and rise by 5.4% pa to Ksh. 484.1 billion in 2027 while visitor exports are expected to grow by 5.2% in 2017 to Ksh. 182.1 billion, and rise by 6.5% pa to Ksh. 343.5 billion in 2027. (Travel & Tourism Economic Impact 2017, 2017).

The tourism sector is therefore a sensitive area that could cause significant socioeconomic disasters in an economy if negatively affected.

A world in which people can travel, visit each other, and learn other languages and cultures is a world that values liberty, innovation, enterprise and tolerance. A world that rejects these values would be an infinitely bleaker place (Korstanje & Anthony, 2012). Kenya has experienced both sides of this view of tourism. However, the focus of this study is on the second statement: “A world that rejects these values would be an infinitely bleaker place.”

Civil unrest and political instability go hand in hand. In Kenya, political unrest, often characterized by ethnic violence has often been fuelled by political instability. Because tourists are sensitive to the negative image of a tourist destination, events of violence can affect a tourist destination long after the event has passed and stability has, in effect been restored (Neumayer, 2004)

Perceptions of political instability and safety are a prerequisite for tourist visitation. Violent protests, social unrest, civil war, terrorist actions, the perceived violations of rights, or even the mere threat of these activities can all serve to cause tourists to alter travel behaviour (Hall and O'Sullivan, 1996). Over the past 3 decades, Kenya has experienced ethnic violence, political instability and terrorism. The effects of these events have been reflected in the tourism sector. Some of them include: the 1982 coup, ethnic clashes during the 1992 multiparty political drive, the 2007-2008 election violence among others.

Terrorism rejects liberty, undermines peace and promotes hostility in pursuit of political, financial and religious gains. Tourism promotes unity and peace. Tourism brings governments together as one. Tourism promotes intercultural and interreligious diversity within a country. It is therefore clear why the tourism industry has been the main target of terrorist activities. It is because tourism brings all people together and forms a target for terrorism perpetrators.

Kenya has been on the receiving end of terrorist attacks and violence which have crippled the tourism industry in the past. Some of the major attacks are: The Garissa University attack, the Westgate Mall attack, and the United States Embassy bombings among others.

If the violence becomes more widespread and prolonged, official authorities in the countries where international tourists originate will start issuing advice against travelling to the destination. Tourist operators will start eliminating tours to the country due to insufficient bookings, fear of liability suits, and the like and promote other destinations instead (Neumayer, 2004).

As a result of the various attacks that have been carried out in Kenya over the years, foreign countries which contribute the larger portion of international tourists in Kenya have issued negative travel advisories to its citizens concerning considering Kenya as a tourist destination over the years. They warn its citizens about considering Kenya, or specific destinations in Kenya, for any business or leisure activities.

## **1.2 Problem Statement**

It has been widely accepted that political/social unrest and terrorism have a negative impact on tourism in the affected area or country. A downturn in the tourism economy indicators will be observed such as: the number of arrivals and departures by purpose means of transport and nationality of origin, the number of overnight stays, visitor expenditures and duration of stay (Dirk, 2003).

In Kenya's case, (Vitisia, 2013) concludes that indeed security threats have impacted negatively on Kenya's tourism industry and that negative effects have trickled in many sectors of economy as all enterprises that offer transportation, accommodation, shopping, entertainment, recreation and other personal services depend heavily on sustained tourist flows. However, a question arises, how significant is this impact?

The paper by (Buigut, 2015) does an excellent analysis of comparing the effect of terrorism on developed emerging country demand for tourism in Kenya. The paper provides a quantitative conclusion of this impact. The conclusion is that a 1% increase in fatality reduces arrivals from developed countries by 0.082%.

This represents a loss of 2,487 visitors and KES. 155.8 million lost annually from an increase in one death in every 3 months. However, the question still remains, is the quantified impact by (Buigut, 2015) significant as highlighted in the background? In addition to this, it is not just terrorism that affects tourism activity in Kenya. (Buigut, 2015) only focuses on terrorism. Political/civil unrest within a country potentially plays a significant role in affecting tourism activity in a country.

(Keitany & Baras, 2012) utilized the event study methodology in determining the effect of terrorism on Kenya's Securities Market. The paper's conclusion was that there are significant short-term negative stock returns around the terrorist event dates. However, this paper does not cover the tourism sector or include political/civil unrest in addition to terrorism. It is worth noting that (Keitany & Baras, 2012) suggests that further research studies be conducted to establish the effect of terrorism on other sectors of the economy.

Therefore, what this paper attempts to solve is identifying how significant is the impact of terrorism and political/civil unrest in tourism activities in Kenya through the event study methodology. This would clearly show a distinction between the impact of terrorism and political and civil unrest on Kenya's tourism industry. This also would provide the avenue of comparing which one between political/civil unrest and terrorism cause the most significant impact, if any. Through this paper, the studies by (Buigut, 2015), (Vitisia, 2013) and (Keitany & Baras, 2012) would potentially be enhanced through the additional factor of political/civil unrest and a significance level being attached to the impact of terrorism and political/civil unrest.

### **1.3 Research Objectives**

1. To determine whether there is a relationship between Kenya's tourism sector, terrorism and political/civil unrest.
2. To assess the impact of terrorism and political/civil unrest on Kenya's tourism sector.

#### **1.4 Research Questions**

1. Is there a relationship between terrorism and political/civil unrest and Kenya's tourism sector?
2. To what extent do terrorism and political/civil unrest impact Kenya's tourism sector?

#### **1.5 Hypotheses**

1. Political/civil unrest does not have a significant impact on tourism in Kenya.
2. Terrorism does not have a significant impact on tourism in Kenya



## **2 CHAPTER 2: Literature Review**

### **2.1 Introduction**

Tourism has emerged as an instrument for generating substantial economic benefits to both host countries and tourists' home countries (Amisha, 2011). As highlighted before, tourism contribution to Kenya's economy is significant. Therefore, the relevance of this study cannot be stressed enough.

According to (Pizam & Mansfeld, 2006), a high frequency of security incidents causes changes in tourists' bookings and cancellation and demand characteristics.

This chapter will breakdown the different forms of literature that cover the relationships between tourism and security incidents such as political/civil unrest and terrorism.

### **2.2 Tourism**

#### **2.2.1 Importance of tourism**

According to (Kamble & Bouchon, 2016), tourism contributes to social cohesion by creating harmonious relationships and has the capacity to break down barriers. Tourism creates an enabling environment for economic development, employment to the local community and to the image of the society as a whole.

Tourism, in part, involves people from diverse cultures coming together to share a destination's beauty and diversity. This involves people from different races, cultures, social, political and environmental backgrounds coming together as one and learning from one another. This kind of exposure fosters appreciation of other people's background and this coming together of people from diverse backgrounds fosters the reduction of stereotypical mindsets and prejudices about various people and cultures.

According to (Adora, Managing Tourism in Nigeria: The Security Option, 2010), tourism contributes significantly to a country's economy in the form of foreign exchange income, employment and it also contributes to a favourable balance of trade. This promotes international goodwill and friendship between nations.

Tourism induces infrastructural developments in a country. In order to attract more tourists, the government usually invests in upgrading infrastructure that would facilitate the smooth operations of tourism. This could involve upgrading of roads to improve access to tourist destinations, upgrading of international airports to increase the capacity of accommodating more travellers and also the expansion improvements of ports to allow for more travellers who travel via ships (Adora, 2010).

To show the impact that tourism plays in Kenya's economy, figure 1 shows that the total contribution of tourism to Kenya's Gross Domestic Product was 9.8% for the year 2016 and figure 2 shows that the tourism sector alone employed 9.2% of Kenya's workforce in the year 2016 according to ( World Travel & Tourism Council,

Figure 1



World Travel & Tourism Council. (2017). *Travel & Tourism: Global Economic Impact & Issues 2017*. Oxford: World Travel & Tourism Council.

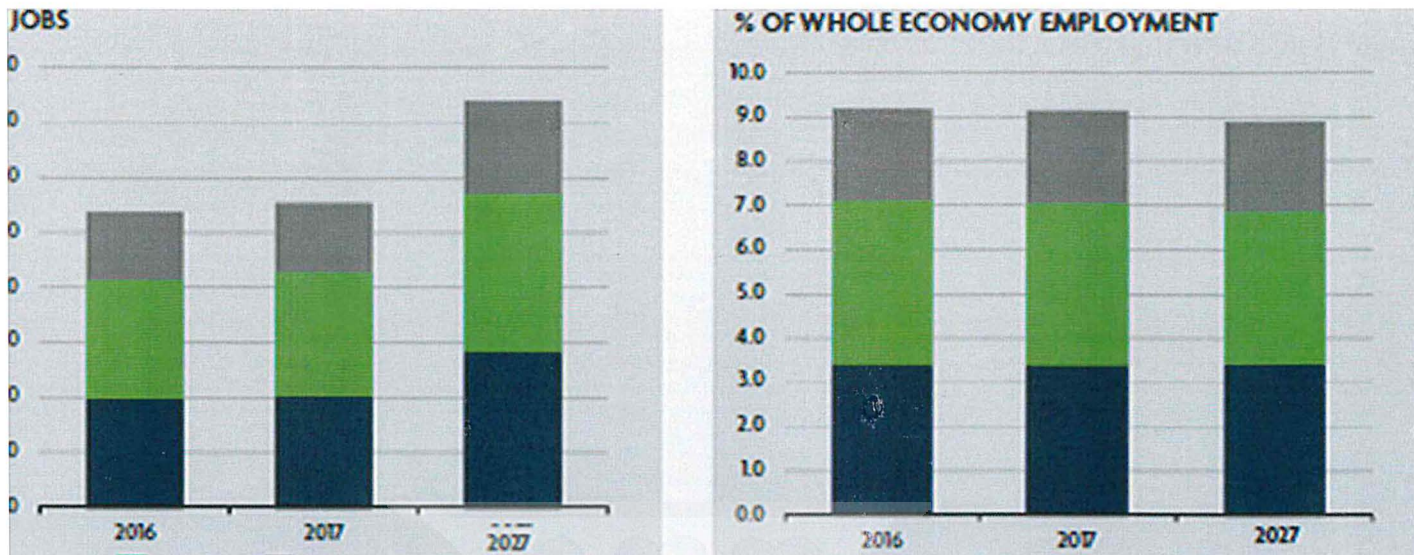


Figure 2: World Travel & Tourism Council (2017). *Travel & Tourism: Global Economic Impact & Issues 2017*. Oxford: World Travel & Tourism Council.

### 2.3 Security Threats and Tourism

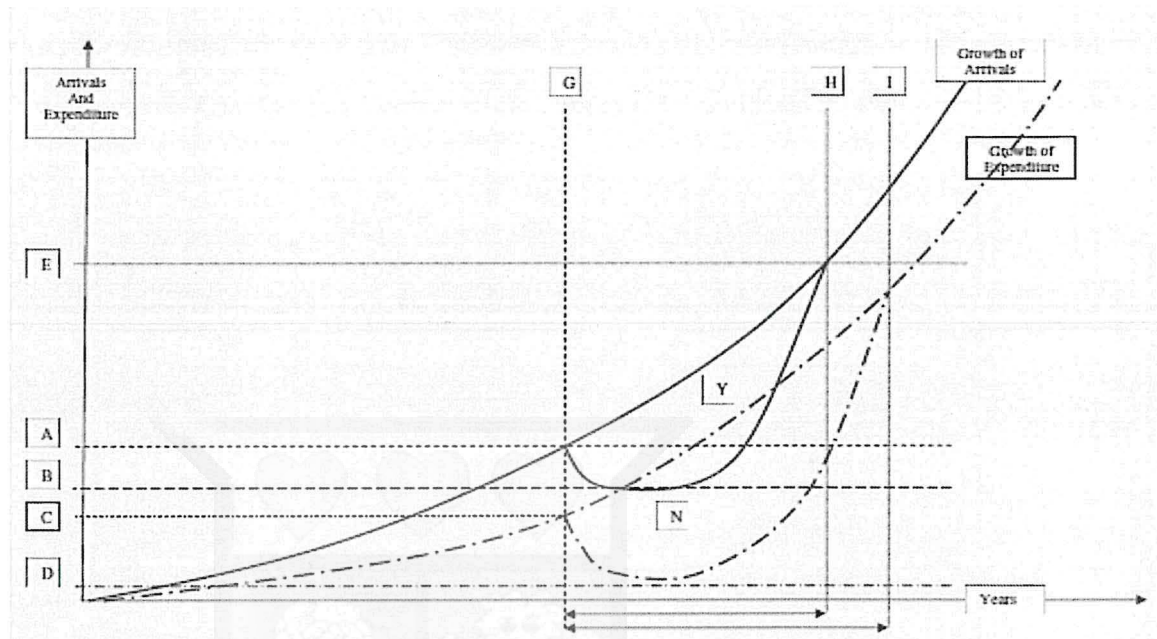
In this section, this paper focuses mainly of terrorism and political/civil unrest as security threats that affect tourism in a country.

According to (Pizam & Mansfeld, 2006), insecurity affects tourism in the following ways:

1. A decline in tourist arrivals into a country.
2. Issuance of travel warnings against a particular country or area by other governments.
3. Investments made by tour companies and hotels become underutilized due to poor traffic.
4. Laying off of employees from hospitality companies due to a decline in demand to their facilities and services.
5. Exclusion of the affected places from the advertisements of tour operators operating in the affected area.
6. Reduced traffic to the affected destination by airlines and cruise lines.

The paper by (Fletcher & Morakabati, 2008) proposes the following relationship between tourism, political unrest and terrorism as shown in the figure below:

Figure 3



Source 3: Fletcher, J., & M. Y. (2008). Tourism activity, terrorism and political instability within the Commonwealth: The cases of Fiji and Kenya. *International Journal of Tourism Research*, 537–556.

At time G, a terrorist attack or political unrest occurs. The arrivals and expenditure drop consequently to levels B and D respectively. The areas Y and N represent the dip in arrivals and tourism expenditures respectively.

### 2.3.1 Terrorism

According to (Korstanje & Anthony, 2012), globalization and technological advancements have fuelled the growth of the tourism industry. This is true because the tourism is a sector that thrives on unity and the integration of different people from diverse backgrounds. According to (Rothenberg, 2003), globalization is the acceleration and intensification of interaction and integration among the people, companies and governments of different nations. On the other hand, (Archibugi & Iammarino, 2002) state that new technologies play a fundamental part in making globalization possible. This is because it would be impossible to allow for the dissemination of information from one area to another at the speed and intensity that globalization demands.

However, this creation of a “global village”, as (Archibugi & Iammarino, 2002) put it, has also made it easier for terrorists to recruit, train, fund-raise, organize, and travel to their targets. Tourism is a sector that plays a significant role in supporting a country’s economy due to its contribution to unity, cultural diversity, employment and its contribution to the Gross Domestic Product as shown in figure 1 and 2 above.

Terrorists know this. They also understand that the tourism industry is an elastic market. It contracts when threatened. Therefore, they know that governments would be put at a loss if tourists travel to other countries (Mark & Harry, 2001).

However, the statement by (Amisha, 2011) that, *terrorists choose to attack tourists as opposed to the citizens of the host countries* and by (Prestholdt, 2011) that acts of terrorism generally target non-Kenyans, does not fully describe how terrorism has developed in Kenya. The following section on “Terror Attacks in Kenya” alludes to this.

#### 2.3.1.1 *Terror Attacks in Kenya*

Kenya has experienced painful ordeals of terror attacks since Kenya gained independence. The first 4 of these attacks were fuelled by political unrest and hatred towards Israeli and United States nationals in Kenya (Mogire & Agade, 2011). The table below highlights these events:

Figure 4

| Date Reported  | Event   |
|--|---|
| 1 <sup>st</sup> January 1980<br>(New York Times, 1981) | The west-wing of the Norfolk Hotel, owned by a prominent member of the local Jewish community was bombed. The attack was believed to have been carried out by pro-Palestinian militants for Kenya’s supporting role in Israel’s “Operation Entebbe” |
| 7 <sup>th</sup> August 1998<br>(BBC News, 1998)        | The United States Embassy in Nairobi was bombed. This attack has been attributed to the Al-Qaeda organization and it targeted American nationals.   |
| 28 <sup>th</sup> November 2002<br>(BBC News, 2002)     | There was a suicide bombing at an Israeli owned hotel in Kikambala that left at least 15  |

|  |  |
|--|--|
|  | <p>dead.</p> <p>There was a failed missile attack on an Israeli passenger airline as it took off from the Moi International airport, Mombasa.</p> <p>The Kikambala Hotel was bombed when it was receiving Israeli tourists</p> |
|--|--|

The most recent attacks directed towards Kenyan citizens have been fuelled by retaliation by the Al-Shabaab Militia towards Kenya. This was due to Kenya's military operation dubbed, "Operation Linda Nchi" by the Kenya Defence Forces in southern Somalia on 16<sup>th</sup> October, 2011. This operation was geared towards dismantling the Alshabaab movement and the capture of the port of Kismayu in the year 2011. The focus on Somalia is due to the belief that Somalia harbours terrorists due to lack of proper governance and proper border control. (Mogire & Agade, 2011)

The following series of attacks took place later on, with the first one taking place barely a week after the operation was launched:

Figure 5

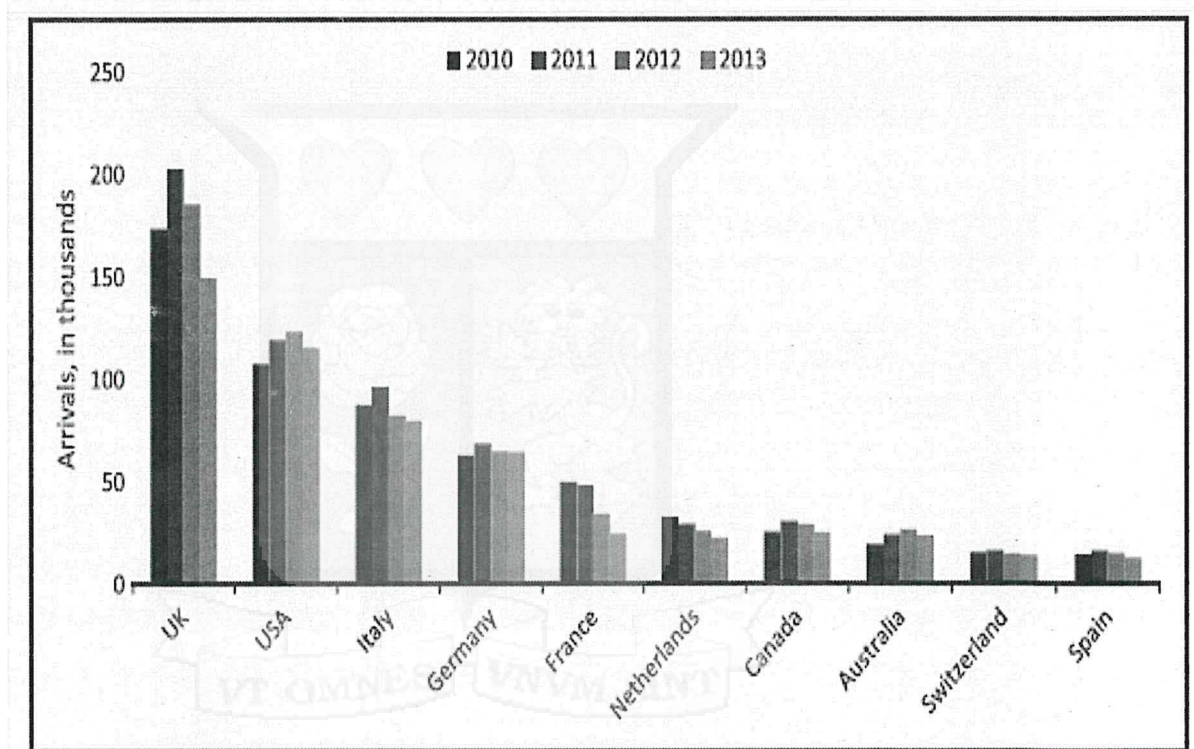
| Date   | Event  |
|--|--|
| 24 <sup>th</sup> October 2011<br>(Reuters, 2011) | A grenade was hurled into a bar known as Mwaura's in Mfangano Street, Nairobi where one person died and more than 20 people were wounded |
| 10 <sup>th</sup> March 2012<br>(BBC News, 2012)  | 4 grenades were thrown into a Machakos bus station in Nairobi.   |
| 29 <sup>th</sup> April 2012<br>(Aljazeera, 2012) | A grenade was hurled at worshippers at God's House of Miracles Church at Ngara.  |
| 15 <sup>th</sup> May 2012<br>(Telegraph, 2012)   | 3 hand grenades were hurled at the Bella Vista nightclub in Mombasa.   |

|  |  |
|--|--|
| 28 <sup>th</sup> May 2012<br>(BBC News, 2012)              | There was a bombing inside the Sasa Boutique along Moi Avenue in Nairobi.  |
| 24 <sup>th</sup> June 2012<br>(The Daily Mail, 2012)       | There was a grenade attack at Jericho Beer Garden in Mombasa.  |
| 1 <sup>st</sup> July 2012<br>(BBC News, 2012)              | There was an attack by masked gunmen in two churches in Garissa, killing 17 people and leaving 55 wounded.                           |
| 21 <sup>st</sup> September 2013<br>(Washington Post, 2013) | At least 69 people were killed and 175 wounded when armed gunmen attacked the Westgate Shopping Mall.                                |
| 4 <sup>th</sup> May 2014<br>(The Guardian, 2014)           | Two commuter buses along the Thika Highway were bombed, killing at least 3 people and injuring 62 others.                            |
| 16 <sup>th</sup> May 2014<br>(BBC News, 2014)              | More than 10 people were killed in the Gikomba Market due to two explosions.   |
| 16 <sup>th</sup> June 2014<br>(BBC News, 2014)             | An assault in the town of Mpeketoni, which is close to Mombasa City, by 50 heavily armed men led to the death of at least 48 people. |
| 22 <sup>nd</sup> November 2014<br>(BBC News, 2014)         | 28 people lost their lives following an attack on a bus that was travelling from Mandera.  |
| 2 <sup>nd</sup> December 2014<br>(The Daily mail, 2014)    | 36 quarry workers near Mandera town lost their lives following an attack by Al-Shabaab militants.                                    |
| 2 <sup>nd</sup> April 2015<br>(BBC News, 2015)             | Almost 150 people were killed at Garissa University, the majority being students. The Al-Shabaab took responsibility for the attack. |

It is therefore clear that the magnitude of attacks targeted towards Kenyan citizens overshadows those targeted towards foreign nationals based on the comparison of the frequency between the two.

Figure 3 below highlights the rate of arrivals of international tourists into Kenya during the period 2010 – 2013. This is the period that was heavily affected by terror attacks in Kenyan soil.

Figure 6



Source 4: Buigut, S. (2015). *Effect of terrorism on demand for tourism in Kenya: A comparative analysis. Tourism and Hospitality Research, 1-10.*

The downward trend in the level of tourist arrivals clearly shows the impact of terror attacks on Kenya’s tourism exports. This supports the conclusion by (Pizam & Mansfeld, 2006) that indeed insecurity causes a decline in tourism indicators such as arrivals by international tourists. Clear declines of tourist arrivals can be observed from the point where the Kenyan troops invaded Southern Somalia in 2011. The declines were attributed to increase in terrorism activities in Kenya. (Hall, 1994)

### 2.3.2 Political unrest

Political unrest in a country is a state where there is social tension among its citizens that is fuelled by people's political standing. This standing can be attributed to ethnic or religious inclinations. One side of the political divide could feel more entitled than the other leading to violence. This describes a situation whereby basic factors for social order and maintenance are unstable.

According to (Sonmez, 1998), political unrest impedes travel to the affected area and creates an enduring barrier to international tourism. This true because tourism thrives in peace and is undermined by the lack of it. Tourism is founded on the principles of freedom and unity, factors which cannot exist where there is unrest within a country.

According to (Nassar, 2012), a great example of a country that can attest to this is Egypt. Egypt underwent political instability between the years 1992 to 1995 when the Al-Gama'at al-Islamiyya wanted to overthrow President Hosni Mubarek's government. There was direct impact on Egypt's tourism sector where it experienced a 22% drop in visitors and a 43% drop in tourism receipts.

Another example is Fiji. Fiji's 1987 political coup resulted in its hotel occupancies to drop to only 10% of the normal occupancy levels. In that year alone, Fiji experienced a drop of \$36.6 million in tourism receipts (Fletcher & Morakabati, 2008).

The table below highlights the various political events that caused unrest in Kenya:

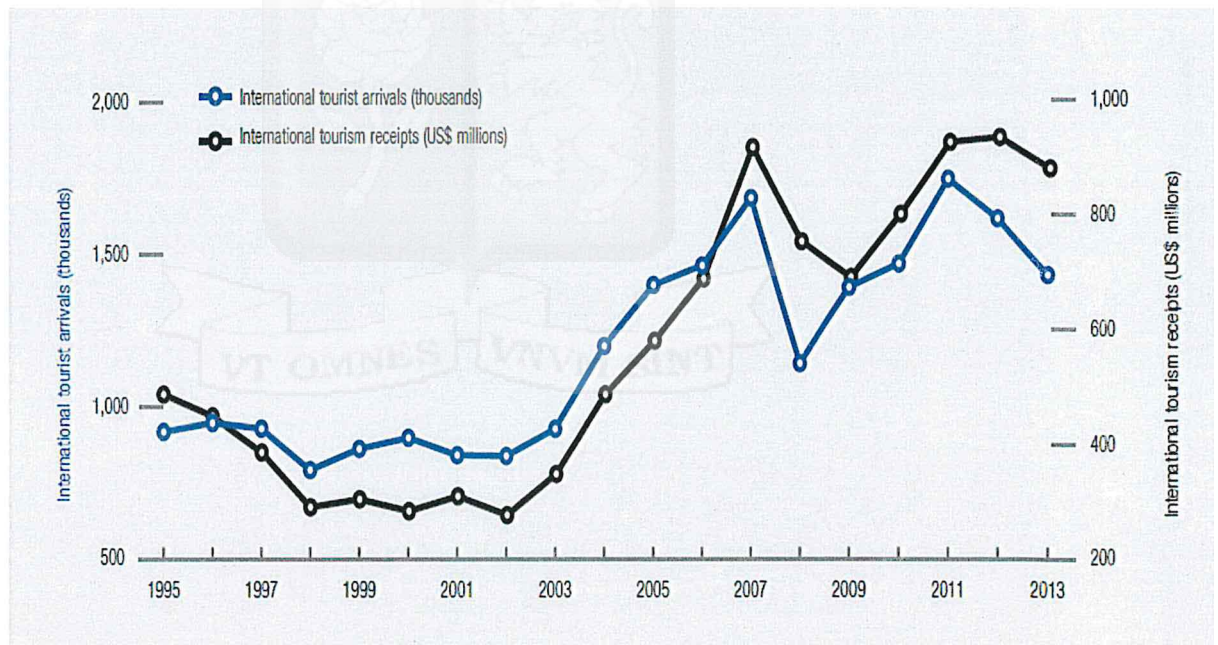
Figure 7

| Date  | Event   |
|---|---|
| 1 <sup>st</sup> August 1982<br>(New York Times, 1982) | A group of soldiers from the Kenya Air force staged a failed attempt to overthrow President Moi's government. The aftermath resulted in approximately 100 and 200 soldiers and civilians dead respectively. |
| 14 <sup>th</sup> August 1997<br>(UNHCR, 2015)         | 200 raiders attack a police station in Likoni, Mombasa. In the following weeks, massacres and ethnic violence ensues rules the coastal area.  |

|  |   |
|--|---|
| <p>27<sup>th</sup> December 2007 – February 2008<br/>(Reuters, 2008)</p> | <p>Post-election violence ensued due to dispute over presidential election results that led to the death of over 1,500 people and the displacement of approximately 6,000 people.</p> |
|  |   |

To highlight the impact of political and civil unrest on tourism in Kenya, figure 4 below clearly shows the dip in international tourist arrivals and international tourism receipts immediately from 2007-2008 where there were ethnic clashes due to the just concluded elections at that time. That was dubbed as the darkest period in Kenya’s history.

Figure 8



Political unrest undoubtedly causes a serious downturn in tourism. Egypt, Fiji and Kenya can attest to this fact based on the evidence provided.

## **3 CHAPTER 3: Methodology**

### **3.1 Introduction**

This section outlines the methodology to be used to conduct this study. The contents of this section include: research design, population of interest, data collection methods as well as data analysis techniques. For this study, the event study methodology will be utilized.

### **3.2 Research Design**

This refers to the way in which the study will be carried out and in this case. Since this study focuses on the impact that political/civil unrest and terrorism has on Kenya's tourism, the event study methodology will be utilized. This involves a test being conducted on the hypothesis regarding the abnormal tourism indicators observed during political/civil unrest and terror attacks.

### **3.3 Population and sample**

The population in this study is Kenya's tourist traffic. They are divided into the following classifications:

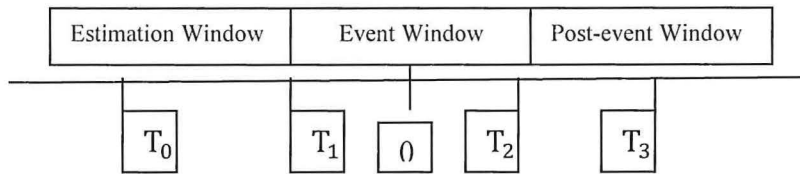
1. Number of reported visitor arrivals and departures by continent of residence and mode of travel per year.
2. Visitor departures by purpose and country of residence.
3. Number of reported visitor arrivals and departures per quarter year.
4. Total length of stay of departing visitors by purpose and country of residence per quarter year.
5. Average length of stay of departing visitors by purpose and country of residence per year.
6. Hotel rooms, beds available and occupied per year.
7. Hotel Beds Occupied by Foreign and E. A. Residents per quarter year.
8. Hotel guest-nights by area and country of residence per year.

### **3.4 Data Collection**

This study uses secondary data from the Kenya National Bureau of Statistics, more specifically the annual statistical abstract that they issue. This data is easily downloadable in their website. It contains comprehensive data pertaining to international tourist traffic.

### 3.5 Data Analysis

An event study approach utilizes the model specified below:



A variety of models have been used in practice to measure the normal rate of return.

They are as follows:

1. Mean-adjusted returns,
2. Market-adjusted returns,
3. Deviations from the market model,
4. Deviations from the one factor Sharpe (1964)–Lintner (1965) Capital Asset Pricing Model or the Black (1972) Capital Asset Pricing Model
5. Deviations from a multifactor model, such as the Arbitrage Pricing Theory

In this case, I employed the mean-adjusted returns models in order to measure the normal rate of return. This is because, the nature of my study is not backed by theories of finance and thus this would rule out models 2-5.

The event window used is 7 years. This is based on (Binder, 1998) who argues that it has become commonplace for studies with monthly observations to use 5 to 7 years following the concerns about the stationary nature of the market model parameters. My data is currently divided into both monthly yearly quarters and so I chose 7 years in order to get the maximum number of data points for my analysis.

This study examines political unrest and terrorism events and their impact on tourism in Kenya using the event study methodology. Here, abnormal returns (ARs) and the cumulative abnormal returns (CARs) are measured and their statistical significance tested accordingly. The abnormal return represents the part of the return that is not predicted. An investigation is then conducted on whether there were abnormal returns around each political unrest or terrorist attack date. A political unrest or terrorism effect exists only if the abnormal returns are significant.

The abnormal returns are calculated using the following equation:

$$AR_t = R_t - R$$

Where:

$AR_t$  - Abnormal return for time t

$R_t$  - Return at time t

$R$  - The average return over the estimation window

Cumulative abnormal returns are also analysed in the same way. The Cumulative Abnormal Returns are calculated using the following equation:

$$CAR_t = \sum AR_t$$

Significant negative CARs would reveal that an event had a strong impact on the tourism sector, and insignificant negative CARs would indicate the tourism sector's response to this event and their ability to recover faster. The statistical significance of abnormal and cumulative abnormal returns was then tested using the t-test statistics as shown:

$$t = \frac{\overline{AR}_t - AR_0}{s/\sqrt{N}}$$

Where:

T – Test Statistic

$AR_t$  - Average Abnormal Returns

$AR_0$  - 0

S – Standard deviation

N – Sample number

## **4 CHAPTER 4: Data Analysis and Interpretation**

### **4.1 Introduction**

In line with the objectives of this study, this chapter presents the results of the analysis and findings of the study. The proceeding sections will provide a brief description of the data analysis method used, the summary of the results after analysis and finally, the interpretation of the data.

### **4.2 Choice of events**

The aim of this study was to study the impact that political unrest and terrorism has on Kenya's tourism. To accomplish this, a specialised event study methodology adjusted for the cyclical nature of tourist arrivals was employed in analysing the arrival numbers of tourists in Kenya around the dates of terrorism and political unrest. The data required was obtained from the Kenya Nation Bureau of Statistics' annual Statistical Reports and from the Trading Economics platform.

The events being studied were:

1. The 1998 United States Embassy Bombings in August
2. The 2007-2008 post-election violence between December 2007 – February 2008
3. The 2013 Westgate Attack in September
4. The 2015 Garissa University Massacre in April

The events above were chosen on the basis of the severity of their impact. These events led to there being more than 150 casualties.

A parametric t-test was utilised to establish the statistical significance of the both the Abnormal Returns and the Cumulative Returns over the event window.

### 4.3 Choice of data

#### 4.3.1 Normal data

In order to carry out a parametric t-test, the data being used has to follow a normal distribution. Since this is tourist arrival data, it may not be obvious that it follows a normal distribution. Therefore, a number of approaches were used to satisfy this condition.

Apart from the tourist arrival figures, the natural logarithms and monthly growth figures for each month were calculated. Each of these forms of data for each event were tested for normality using the **Jarque-Barre test** at the 5% level. The following were the results:

Figure 9

| Jarque-Barre test: 1998 Us Embassy Bombings |       |                       |                            |                |          |
|---|-------|-----------------------|----------------------------|----------------|----------|
|   | n/6   | Skewness <sup>2</sup> | (Kurtosis <sup>2</sup> )/4 | Test Statistic | P-Value  |
| Total Arrivals                              | 14.33 | 1.3075                | 0.2456                     | 22.2610        | 0.000015 |
| Ln Total Arrivals                           | 14.33 | 0.2188                | 0.0003                     | 3.1391         | 0.208136 |
| Arrival Growth                              | 14.33 | 0.0037                | 0.9774                     | 14.0625        | 0.000884 |

| Jarque-Barre test: 2007-2008 Post-election violence |         |                       |                            |                |             |
|---|---------|-----------------------|----------------------------|----------------|-------------|
|   | n/6     | Skewness <sup>2</sup> | (Kurtosis <sup>2</sup> )/4 | Test Statistic | P-Value     |
| Total Arrivals                                      | 13.3333 | 0.1788                | 0.1926                     | 4.9530         | 0.084035777 |
| Ln Total Arrivals                                   | 13.3333 | 0.0038                | 0.2974                     | 4.0168         | 0.134206438 |
| Arrival Growth                                      | 13.3333 | 0.2215                | 0.1252                     | 4.6223         | 0.099144906 |

| Jarque-Barre test: Westgate Attack |         |                       |                            |                |             |
|------------------------------------|---------|-----------------------|----------------------------|----------------|-------------|
|                                    | n/6     | Skewness <sup>2</sup> | (Kurtosis <sup>2</sup> )/4 | Test Statistic | P-Value     |
| Total Arrivals                     | 21.3333 | 0.1216                | 0.0179                     | 2.9745         | 0.225992515 |
| Ln Total Arrivals                  | 21.3333 | 0.0777                | 0.0131                     | 1.9360         | 0.379836402 |
| Arrival Growth                     | 21.3333 | 0.0691                | 0.9454                     | 21.6440        | 0.000019956 |

| Jarque-Barre test: Garissa University Massacre |         |                       |                            |                |             |
|--|---------|-----------------------|----------------------------|----------------|-------------|
|  | n/6     | Skewness <sup>2</sup> | (Kurtosis <sup>2</sup> )/4 | Test Statistic | P-Value     |
| Total Arrivals                                 | 16.8333 | 0.1991                | 0.0470                     | 4.1428         | 0.126011094 |
| Ln Total Arrivals                              | 16.8333 | 0.0002                | 0.1627                     | 2.7429         | 0.253738719 |
| Arrival Growth                                 | 16.8333 | 0.1801                | 0.0213                     | 3.3907         | 0.183533078 |

Therefore, there is not enough data to reject the null hypothesis that all the 3 forms of data follow a normal distribution. The t-test can therefore be used when calculating the significance of the political and terrorism events. For each event, the choice of the form of data was made based on the least p-value.

#### 4.3.2 Eliminating the seasonal effect of tourist arrival data

Tourist arrivals in Kenya follow an annual cycle where tourist arrivals are relatively high in during the first quarter of the year, relatively low mid-year and relatively high during the last quarter of the year. This means that in a way, the abnormal arrivals would not be “abnormal” after all since they would be predictable where they would be expected to be positive early in the year, negative mid-year and positive later in the year.

Therefore, in addition to the effects of the event, the abnormal arrivals would be influenced by this seasonal effect and this would lead to an erroneous result when calculating the significance of an event because in essence, you would be calculating the significance of this seasonal effect coupled up with the significance of the event in question.

In order to eliminate this seasonal effect, for both the normal tourist arrivals and their natural logarithms calculated during the estimation window, a simple average of the whole estimation window was not calculated but every month had its own average. For example, the average for the month of January was a simple average of all the Januaries during the estimation window and so on.

For the monthly tourist arrival growth figures, they were calculated as a function of the previous year's arrivals for the same period and similarly, the abnormal growth figures were calculated from the average growth figures for each month as with the tourist arrival figures and their natural logarithms.

Hence, when calculating the abnormal arrivals and figures for each month, the average arrivals for each month were subtracted from the corresponding arrivals of each month. Thus, the abnormal arrivals would not be predictable anymore.

#### **4.4 Summary of findings**

##### **4.4.1 T-test - Abnormal Returns at the 5% level**

| Event                            | P-value         |
|----------------------------------|-----------------|
| 1998 US Embassy Bombings         | 0.0000000000554 |
| 2007-2008 Post-election violence | 0.0000000000031 |
| 2013 Westgate Terrorist Attack   | 0.0105493801165 |
| 2014 Garissa University Massacre | 0.0000000001278 |

#### 4.4.2 T-test – Cumulative Abnormal Returns at the 5% level

The cumulative abnormal returns were calculated over a one year period after the event window, that is, within the post event window. This is because with tourist arrivals, one year is enough for them to revert to their seasonal nature. Therefore, it would be prudent to study the behavior of abnormal returns within one year after the event window.

| Event                            | P-value         |
|----------------------------------|-----------------|
| 1998 US Embassy Bombings         | 0.0295181014248 |
| 2007-2008 Post-election violence | 0.0141267951600 |
| 2013 Westgate Terrorist Attack   | 0.0001198467174 |
| 2014 Garissa University Massacre | -               |

#### 4.5 Robustness and consistency

The event window range proposed by (Binder, 1998) for monthly data of 5-7 years can be put to the test by calculating the p values using 5, 6 and 7 year event windows. The results for the abnormal returns are as shown below:

| Event                            | P-value         | P-value         | P-value         |
|----------------------------------|-----------------|-----------------|-----------------|
|                                  | 7-year Window   | 6-year Window   | 5-year Window   |
| 1998 US Embassy Bombings         | 0.0000000000554 | 0.0000000026530 | 0.0000000362151 |
| 2007-2008 Post-election violence | 0.0000000000031 | 0.0000000001570 | 0.0000000129430 |
| 2013 Westgate Terrorist Attack   | 0.0105493801165 | 0.0037274397477 | 0.0003229981062 |
| 2014 Garissa University Massacre | -               | -               | 0.0000000001278 |

Due to lack of data for the 2014 Garissa University Massacre, the 7 and 6 year event windows could not be used.

It is therefore clear that with the new p values for the 6 and 5 year event windows, the same conclusion would be set and thus the null hypothesis is rejected with greater confidence.

#### **4.6 Interpretation**

It is important to recall that the seasonal nature of monthly tourist arrival data was eliminated as explained in section 4.3.2. This enabled the results to be more reliable since one cannot conclusively deduce that the results are as a result of the normal cycle of monthly tourist arrivals.

For the abnormal returns, the p values for all the events are less than 0.05. Thus, there is little evidence to accept the null hypotheses. The hypotheses were:

1. Political/civil unrest does not have a significant impact on tourism in Kenya.
2. Terrorism does not have a significant impact on tourism in Kenya

This can be interpreted to mean that indeed, security threats within Kenya have a significant impact on the tourist arrivals.

As for the cumulative abnormal returns, the p values for the events are less than 0.05 as well. They were calculated over a one year period after the event window and this signifies that the effects of security threats were still being felt.

## **5 Conclusion and Recommendations**

### **5.1 Introduction**

This chapter outlines the conclusion of the research study, the recommendations as a result of the results, the limitations encountered while conducting the research and finally the suggestions for further research.

### **5.2 Conclusion**

This study aimed at establishing whether security threats have a **significant** impact on tourist arrival figures in Kenya. The security threats that were used in this study were terrorism and political unrest.

The 1998 US Embassy bombings, 2007-2008 post-election violence, the Westgate terror attack and the Garissa University massacre are moments in Kenya that have split families and scarred many friends and families. In addition to this, they have significantly threatened the Kenyan tourism industry, a sector that contributes to 9.8% of Kenya's Gross Domestic Product and 9.2% of Kenya's total employment as at 2016 (Travel & Tourism Economic Impact 2017, 2017).

Therefore, the impact of security threats to the Kenyan tourism industry cannot be ignored. With the event study carried out, the p values are significantly below 5%. This indicates that the tourist arrival rates greatly dipped when Kenya faced political unrest and terrorism. Even with the variation of the event windows, the results still hold. Thus, according to the data collected, political unrest and terrorism significantly impact tourist arrival in Kenya negatively.

### **5.3 Recommendations**

Since this study has already established that the significance of the impact of political unrest and terrorism on Kenya's tourist arrivals is high, the stakeholders within the tourism industry should not overlook any possibilities of such events.

To thwart future possibilities of political unrest or terrorist attacks, the government is advised to continue working towards the prevention of such events because such events, as concluded by this study, have a significant negative impact on tourist arrivals.

The businesses in the tourism industry are advised to diversify their businesses during the low seasons in order to earn income that would be needed to keep them afloat in the event of political unrest or terrorist attacks.

These businesses should also go out of their way to market Kenya as a safe destination. When they collectively do this, they would be able to help in the erosion of the notion that Kenya is a hotbed of violence. This is in response to the fact that the cumulative abnormal tourist arrivals were statistically significant after one year.

#### **5.4 Limitations**

The main limitation when carrying out this study was the lack of monthly data for tourist arrivals before 2006. This led to the use of quarterly data from the Kenya National Bureau of Statistics.

The results for the 2013 Westgate attack cannot be fully dependable due to the fact that since 2011, the country had experienced a number of terror attacks which have been highlighted in Chapter 2. This period is part of the estimation window and thus, these events would definitely impact on the tourist arrivals in Kenya.

Lastly, due to the lack of weekly data for tourist arrivals, the event window of 5-7 years could be too long to observe the effects of an event.

#### **5.5 Suggestions for further research**

Further research needs to be conducted on the impact on travel advisories that are usually issued by governments to warn its citizens against visiting a particular country. Particular emphasis should be placed on the significance of the impact rather than just the impact.

In addition, further research needs to be conducted on the impact of political unrest and terrorism on both domestic and international tourism in order to find out which section is greatly affected.

Lastly, instead of the parametric t-test used to test the hypotheses, non-parametric methods can also be utilised to calculate test the hypotheses.

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