

CA682 Data Management and Visualisation

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Name: Lokeshwar Bakthavathsalam

Date: 10/12/2017

Global Terrorism Analysis

Introduction:

The use of violence to attack the people or government for various reasons such as political, religious, etc. Many parts of the world have been terrorized and it has become a worldwide concern due to frequent terror attacks. Wherever they attack they don't care about humans lives which eventually leads to mass deaths and destructions.

Dataset:

The dataset which I have chosen are maintained by the START (Study of Terrorism and Responses to Terrorism) which has the records of all the terror attacks that happened throughout the world over a period from 1970 to 2016, by using this data we will be exploring the dangerous terror group, countries that have faced high attacks, number of death tolls etc. Using open refine I have cleaned the dataset in order to get the relevant columns and information, which eventually brought my dataset to a structured form consisting of 170350 rows and 16 columns.

Process:

The dataset was cleaned and filtered by using open refine and obtained the final dataset. Which also consist of geo-location of the countries, which allowed me to use some interactive Plots in order to make it more easy to understand the terror events that world had come across.

In this visualization, I used Python language, with the help of anaconda and jupyter notebook software. Mainly used the following libraries Matplotlib, Plotly, Seaborn, Basemap, Pandas, and Numpy.

This report visualizes with a highly rich dataset with consist of terror attacks more than 150,000 which is used to explain various questions such as

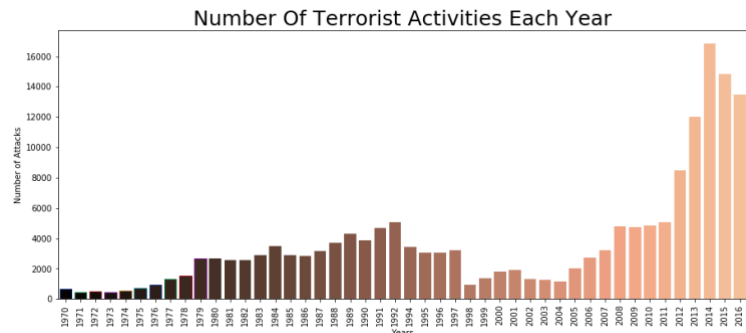
- ♣ Most attacked region and countries during this period 1976-2016?
- ♣ The Number of causalities?
- ♣ The Most dangerous terrorist group?
- ♣ Comparing countries trends?

Terrorist Activities Each Year

The amount of attack by the terrorist during the year 1970 to 2016. We can see that 2014 has the highest number of attacks, but due to the sharpen defence these attacks were decreased in the last couple of years.

Libraries used – Matplotlib and Seaborn

Graph Type: Bar plot

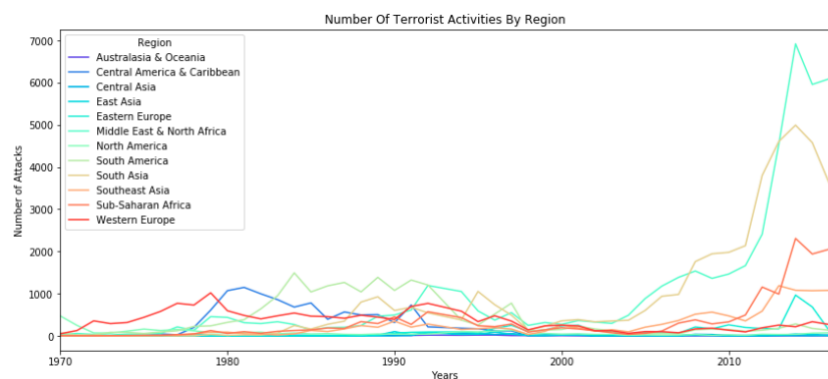


Region based terror attacks

When investigated more closely we see that attacks are shared by all regions, Where the middle east & north Africa have high terror attacks in the recent years and after the 9/11 2001, there is a decrease in the terror attack in the North America

Libraries used – Matplotlib

Graph Type: Line plot

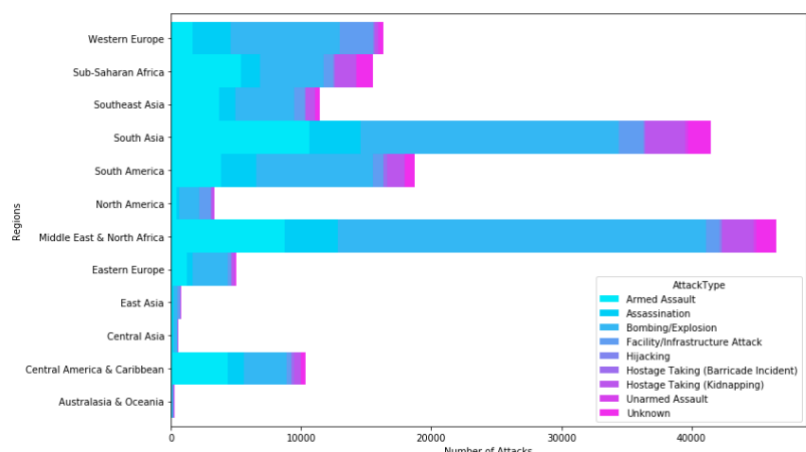


Type of Attacks

In this Sacked Bar chart, it shows that the most popular type of attack is Armed Assault. Which is followed by Assassination, Bombing/Explosion. Using deadly weapons one can easily attack anybody around and can cause a fear of death.

Libraries used – Matplotlib

Graph Type: Sacked Bar plot

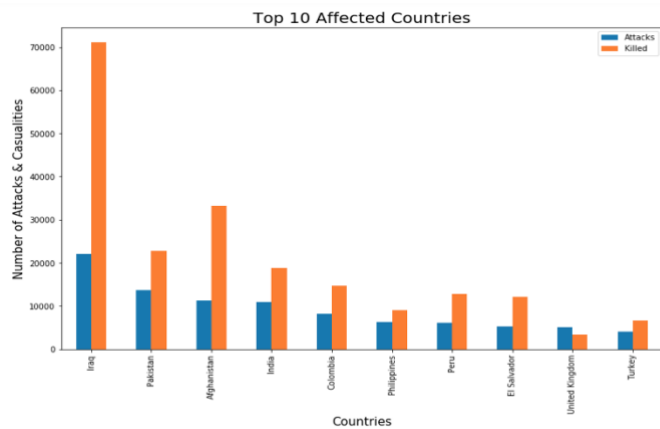


Most Affected Countries

We can see that Iraq is the most affected and have high number of casualties followed by Pakistan, Afghanistan and India.

Libraries used – Matplotlib

Graph Type: Bar plot



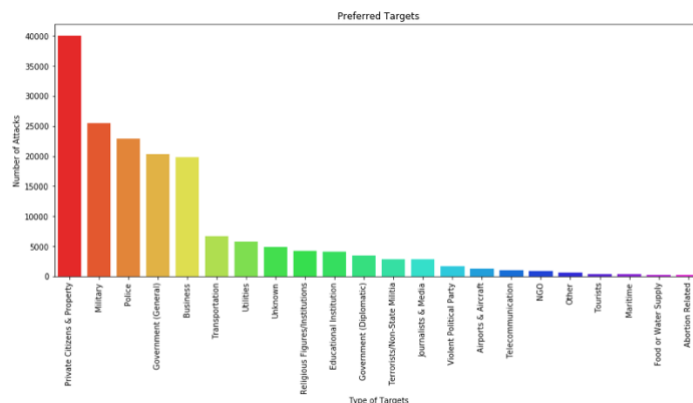
Most Preferred Targets

The most preferred type of targets, where the below targets comes up to 50 percent of the total attacks

- Private Citizens and property
- Military
- Police

Libraries used – Matplotlib and Seaborn

Graph Type: Bar plot

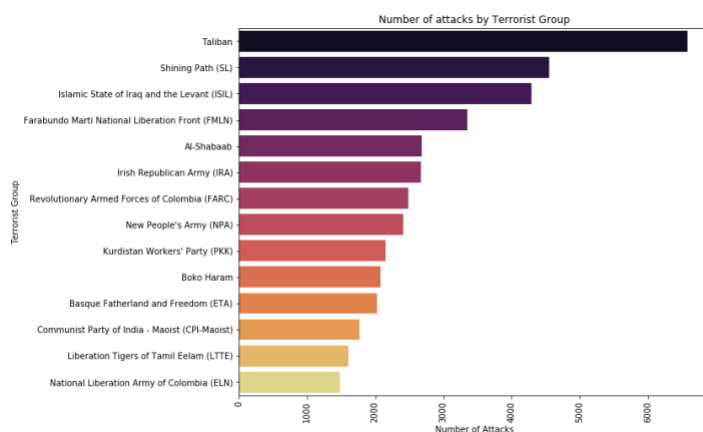


Most Dangerous Terrorist Group

We could see that the most wanted terrorist group is Taliban, which highest number of attacks followed by the Shining Path, and the Islamic State of Iraq and the Levant (ISIL).

Libraries used – Matplotlib and Seaborn

Graph Type: Subplot



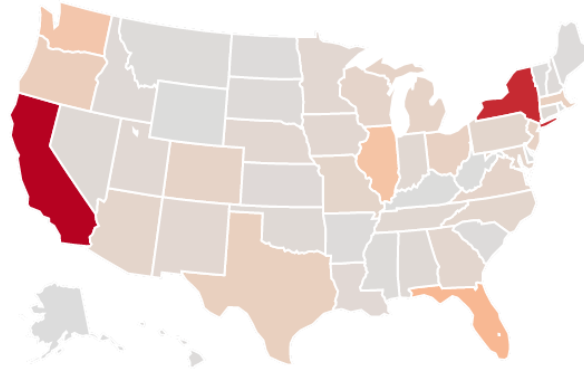
Attacks happened in United states of America (State-Wise)

We can see the attacks that have taken place in each state of the country, which is displayed as with the difference in the colour denoting the number of attacks each state has faced.

Terrorism in United States (1970-2016)

Libraries used – Plotly

Graph Type: Choropleth Map



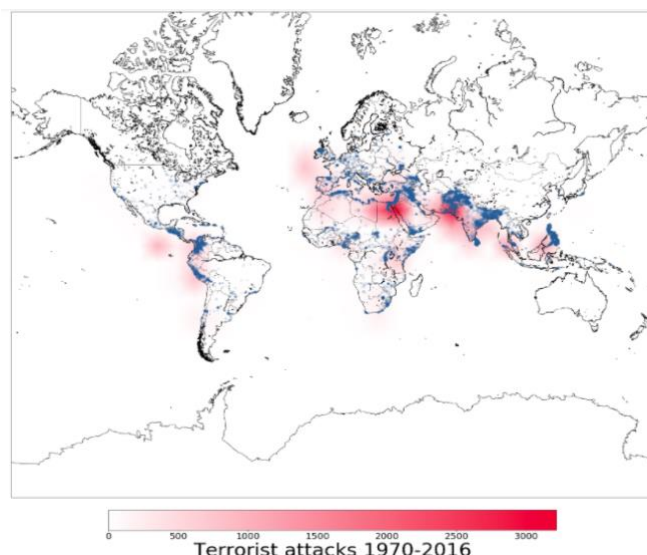
Attacks during the 1970 to 2016 represented in a heap map

The map below shows the concentrated attacks which were recorded over a period of 1970 to 2016. It also shows us briefly on where the attacks have been taken place during those years.

We can come to a conclusion that the Middle East such as Iraq, Iran, and Syria are the most terror attacked countries in that region. But there are some other countries like India, Pakistan, and Ireland which have also faced many attacks over the years.

Libraries used – Basemap

Graph Type: Heat Map



Result:

As a result of this data analysis, we can see the following have been studied the number of countries been affected, the various types of attacks, different type of targets and the most targeted regions which will help us to sharpen our strategies against the future terror attacks