# CAPSTONE PROJECT 1

## GLOBAL TERRORISM ANALYSIS

By
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“Terrorism is the use or threatened use of force designed to bring about political change.”

*- Brian Jenkins*

## Topic of Conversation

- Objective
- Introduction
- Data Summary
- Univariate Analysis
- Correlation heatmap
- Bivariate Analysis
- Insights

# Objective

To analyze the data and to discover key findings pertaining to terrorist activities around the world from 1970 through 2017.

We will be doing the analysis of the given data set in following ways -

- Univariate Analysis
- Bivariate Analysis
- Correlation
- Insights

We will try to find out the global trend in Terrorist incidents in different regions across the globe.

# Introduction

The Global Terrorism Database (GTD) is an open-source database including information on terrorist attacks around the world from 1970 through 2017. The GTD includes systematic data on domestic as well as international terrorist incidents that have occurred during this time period and now includes more than 180,000 attacks. The database is maintained by researchers at the National Consortium for the Study of Terrorism and Responses to Terrorism (START), headquartered at the University of Maryland.

We will perform ‘Exploratory Data Analysis’ on dataset ‘Global Terrorism’ and will try to find out the hot zone of terrorism, most used weapons and type of attacks by terrorists, about terrorist groups etc.

# Data Summary

Data set Name - **Global Terrorism Data.csv**

After Data Cleaning we are left with the important columns which will provide useful insights to our Analysis.

Column Names -

Attack_Success, Attack_Type, Weapon_Used, Region, Country, Terrorist_group, Targeted_group, Month, Day, Year, State, Main_Target, Killed, Wounded, Attack_Summary, Attack_Motive

# Data Description

- success : The record of attack's success or failure.
- attacktype1_txt :  The type of terrorist attack, whether it was Bombing, Explosion, Assassination etc.
- weaptype1_txt : The type of weapons used by terrorist to attack.
- region_txt : The region where attack happened.
- country_txt : The country in that particular region where the attack took place.
- gname : This refers to the terrorist group.
- targtype1_txt : This refers to the group or media on which the attack was targeted.
- imonth : month of attack.

# Data Description (contd…)

- iday : Date of attack.
- iyear : year of attack.
- provstate : Refers to the state.
- target1 : Main target of attack.
- nkill : Number of people killed.
- nwound : Number of people wounded.
- summary : Summary of the attack.
- motive : Motive of the attack.

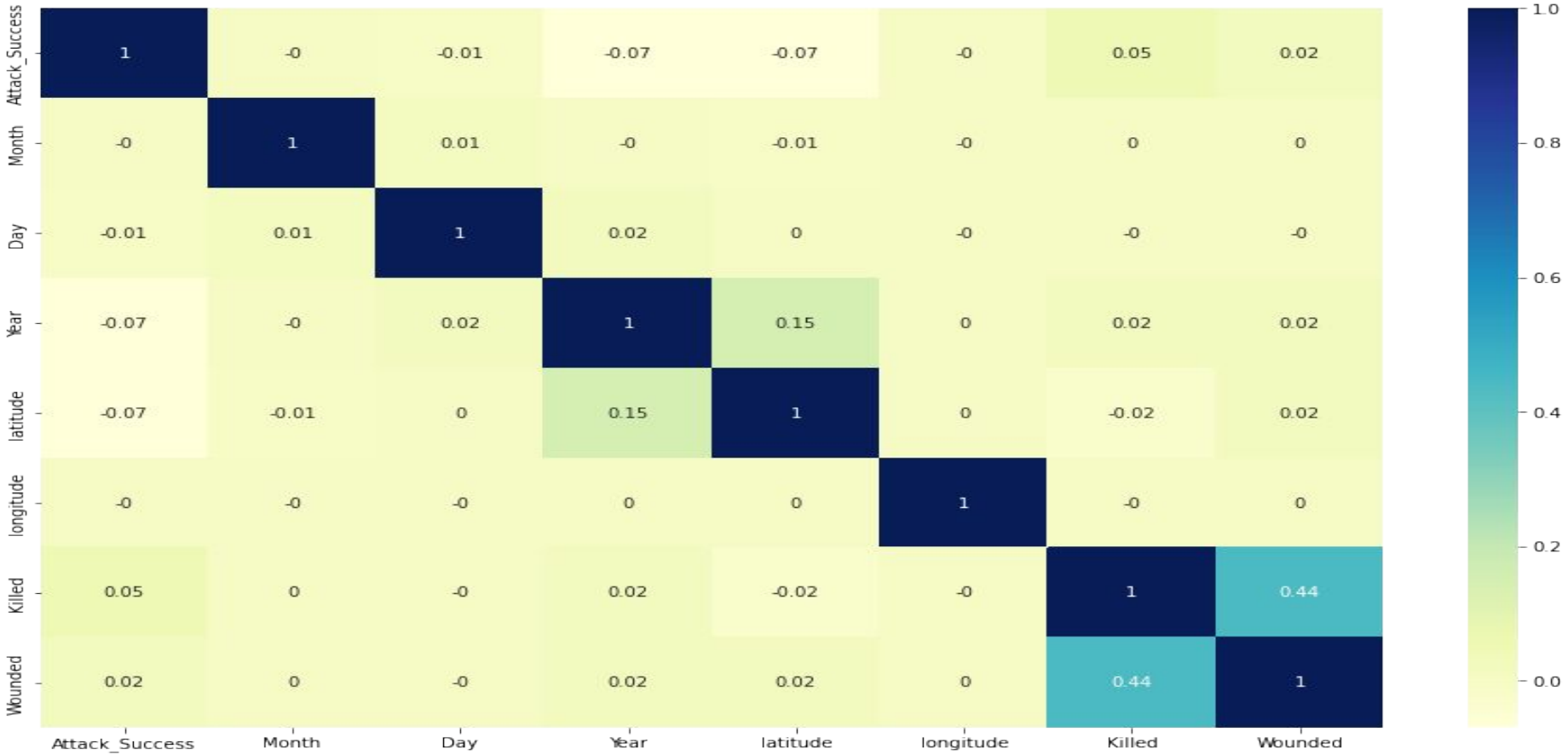
# Univariate Analysis

Univariate Analysis involves the analysis of a single variable.

We have answered the following through Univariate Analysis -

- Explored the types of Terrorist Attacks and the most preferred way of Attack.
- Top 10 Countries which suffer most from terrorism.
- Top 10 Targets of Terrorists.
- Top 10 States affected by Terrorism.
- Weapons used most by Terrorists.
- The year in which the Terrorist Attacks were maximum till now.
- Total number of Successful attacks vs Attacks attempted through the years.
- Top 10 Terrorists Group and the most active one among them.
- Region affected most by Terrorist Activities.

# Correlation Heatmap



# Bivariate Analysis

If we analyse data by taking two variables/columns into consideration from a dataset, it is known as Bivariate Analysis.

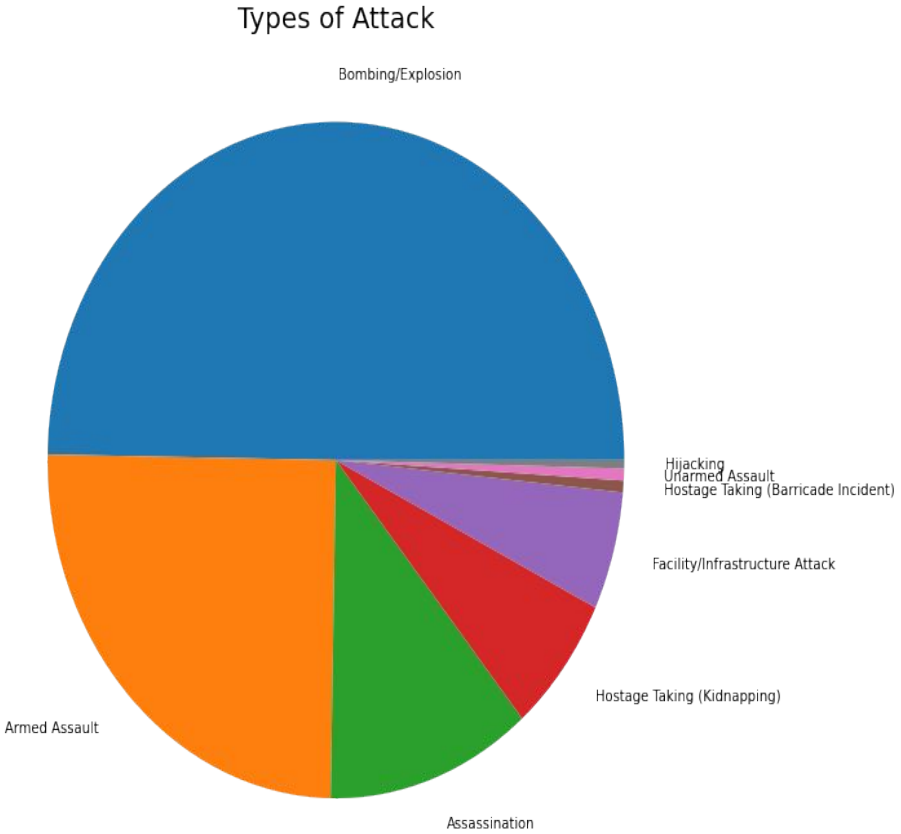
We have answered the following through Bivariate Analysis -

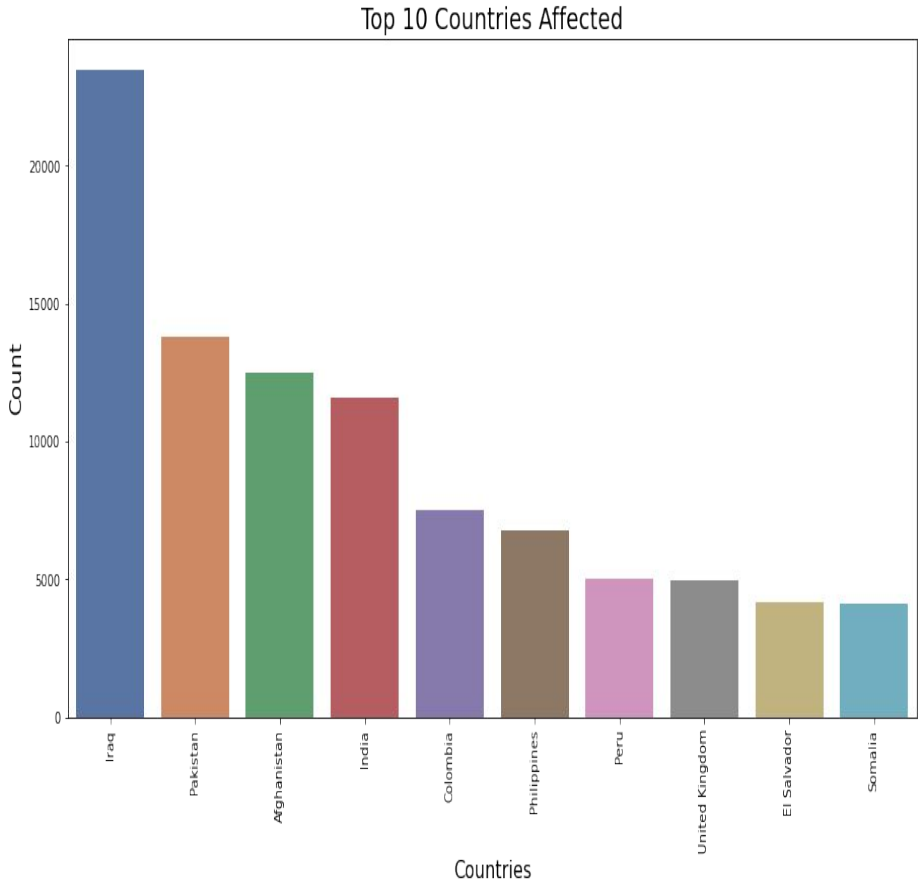
- Number of people Killed vs Wounded Country wise for each year and the group they belonged to.
- Maximum number of attacks by Taliban was in which year.
- Number of people killed by Taliban over the years.
- Successful and Unsuccessful attacks by Taliban.
- The type of Attack preferred by Taliban.

# Bivariate Analysis (Contd…)

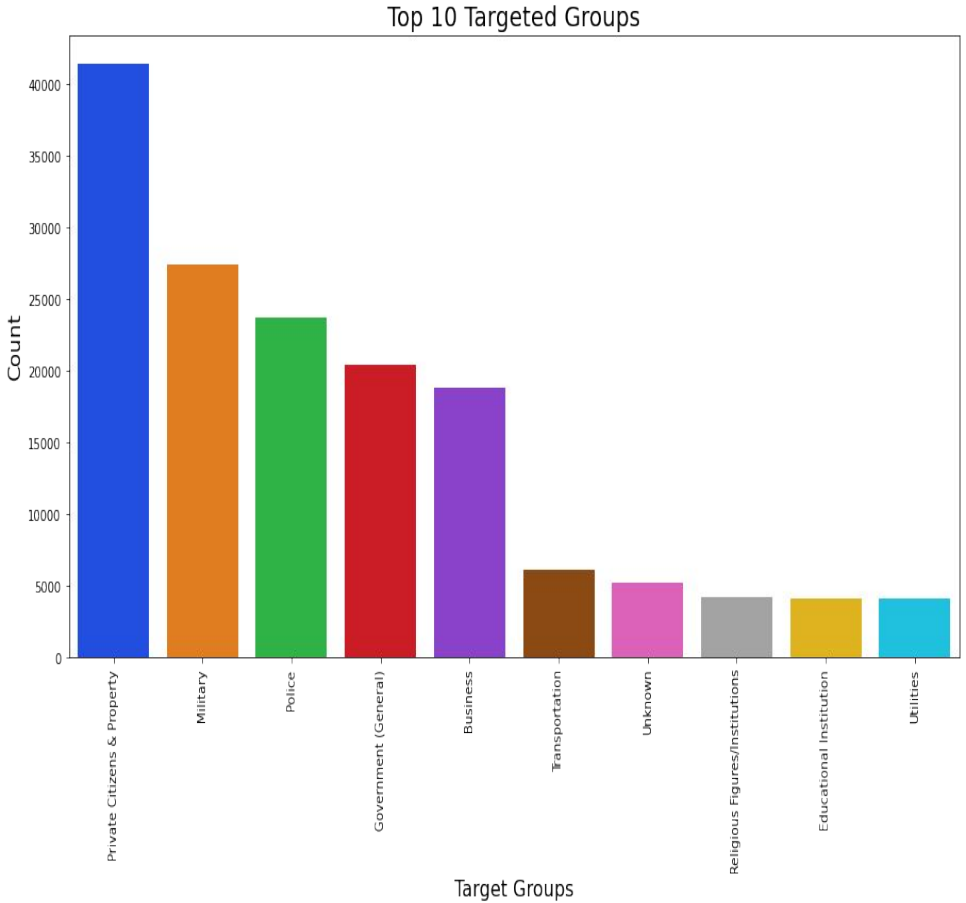
- Most active terrorist group in India.
- Number of people killed and wounded through the years in India.
- The group which is targeted most for terrorist attacks in India.
- The type of attack which happened maximum times in India.
- The Weapon which is used more for the terrorist attacks in India.
- Number of attacks done by CPIM on India year wise.
- Weapon used by CPIM in attack on India.
- The type of attack done by CPIM on India.

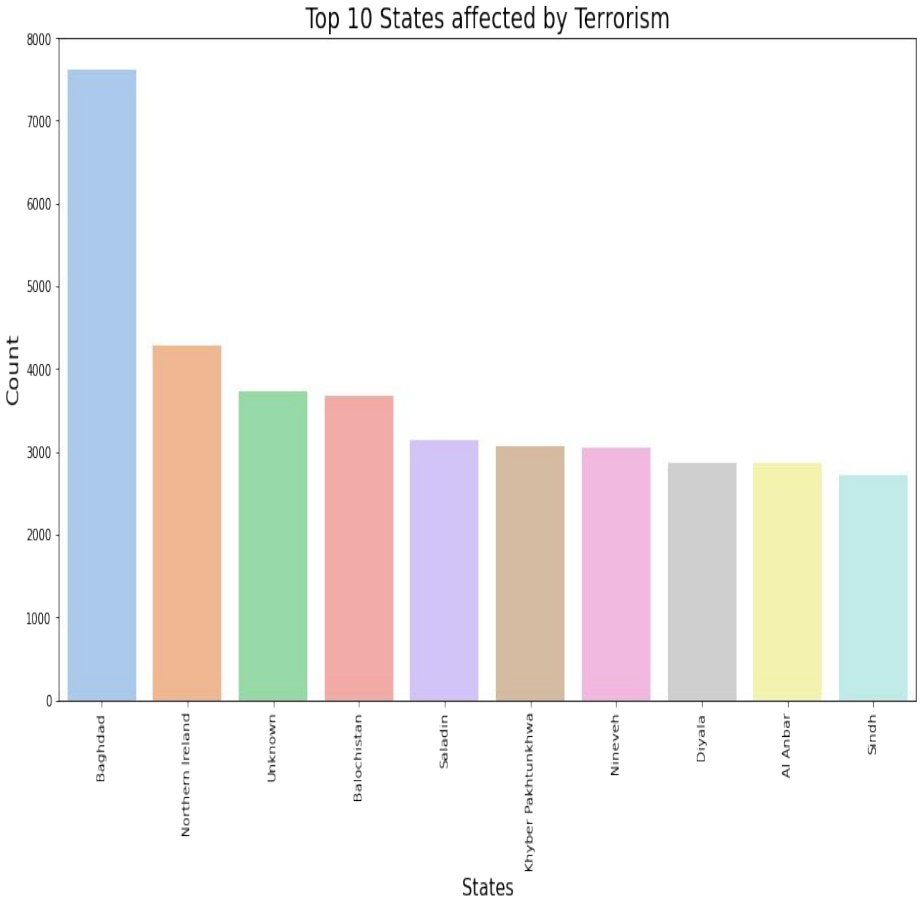
# Exploratory Data Analysis



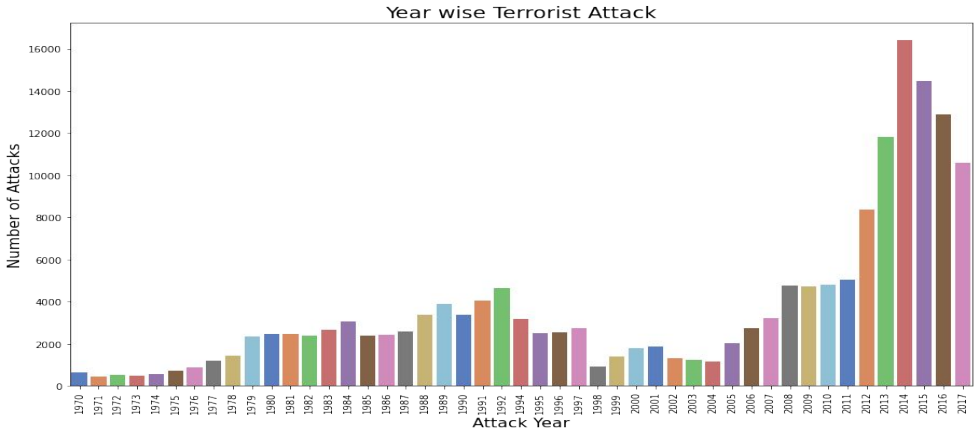



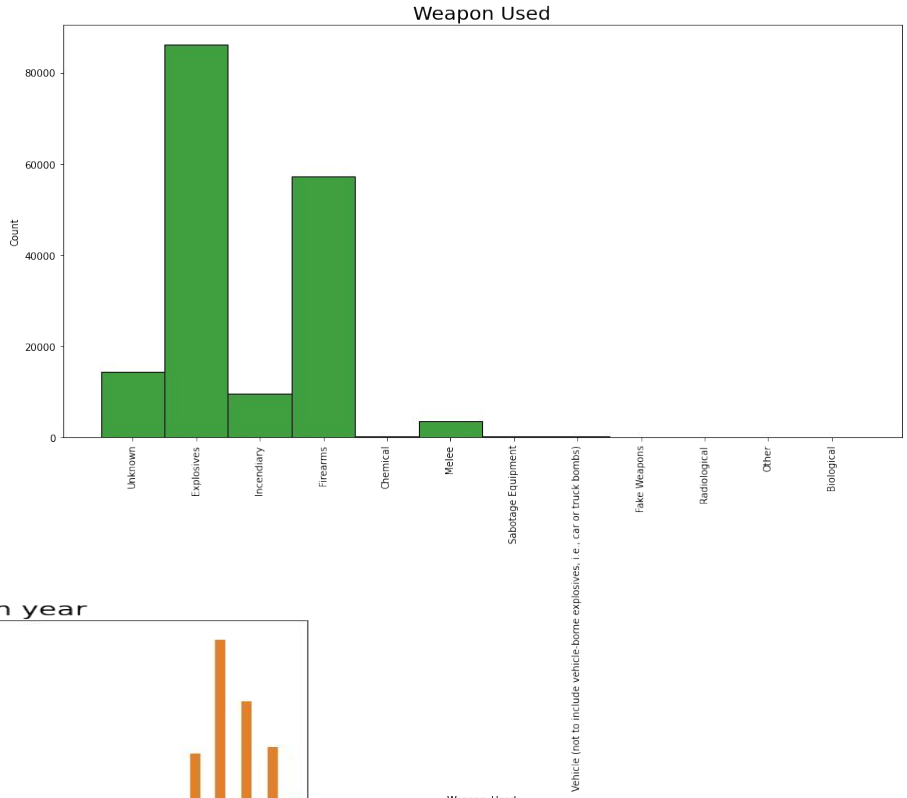
# EDA (Contd…)

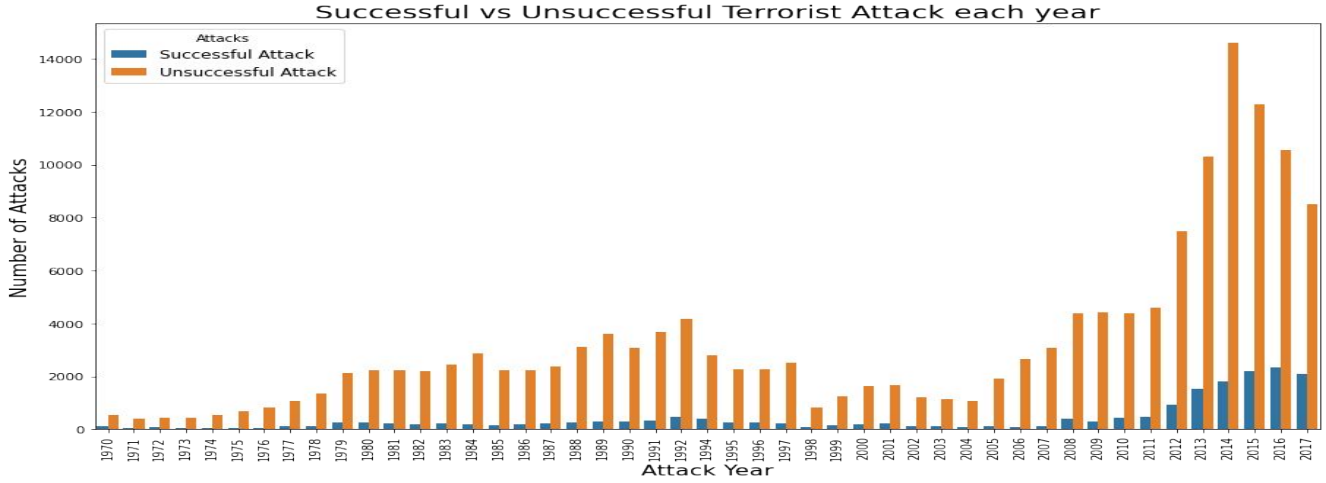

Top 10 Targeted Groups
Count
0
5000
10000
15000
20000
25000
30000
35000
40000
Private Citizens & Property
Military
Police
Government (General)
Business
Transportation
Unknown
Religious Figures/Institutions
Educational Institution
Utilities
Target Groups


Top 10 States affected by Terrorism
Count
0
1000
2000
3000
4000
5000
6000
7000
8000
Baghdad
Northern Ireland
Unknown
Balochistan
Saladin
Khyber Pakhtunkhwa
Nineveh
Diyala
Al Anbar
Sindh
States

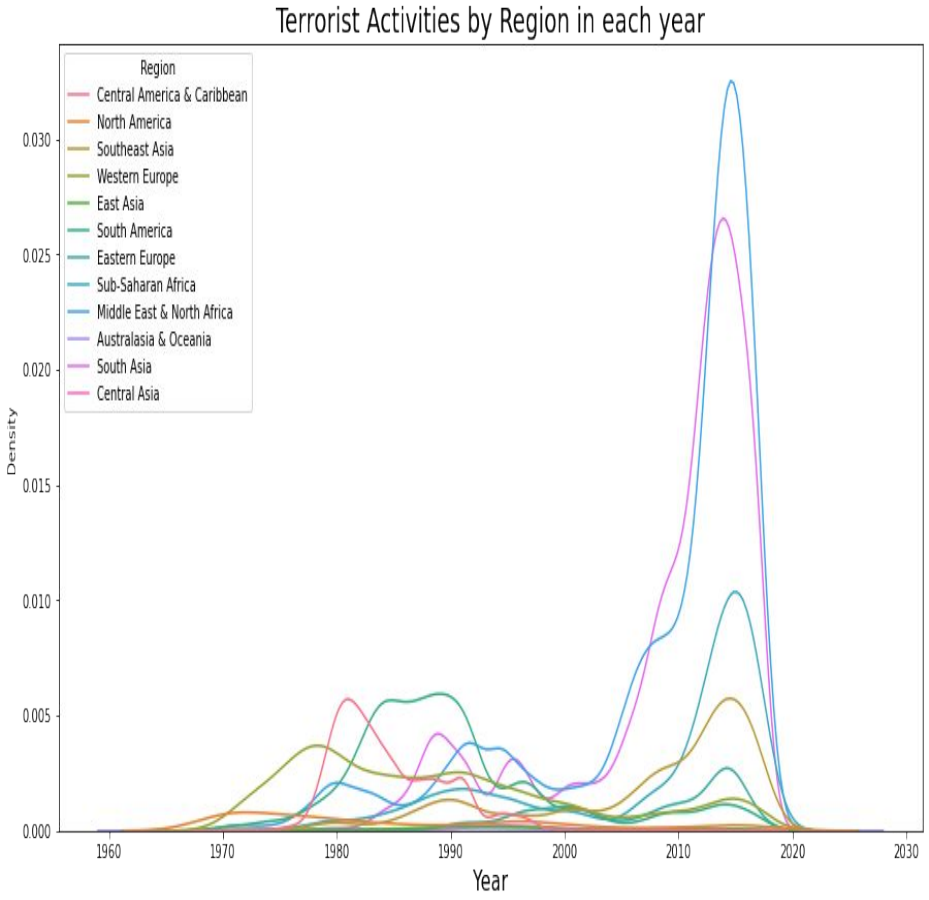
# EDA (Contd…)

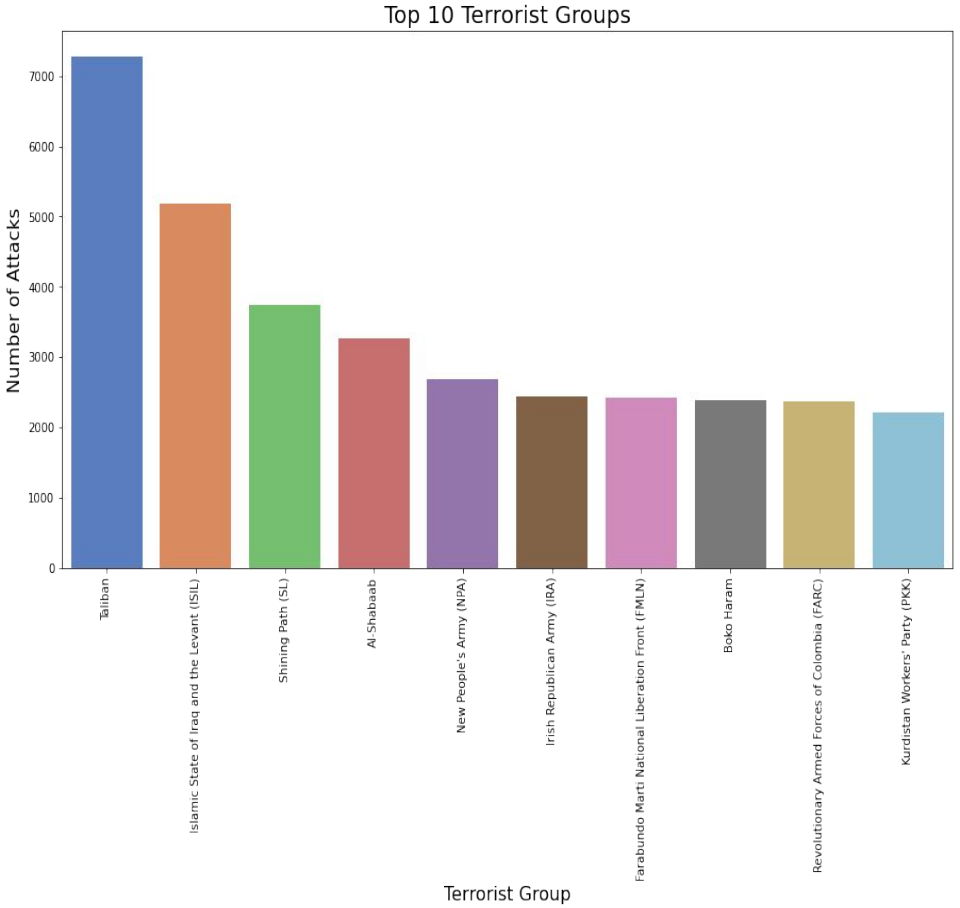

Year wise Terrorist Attack
Number of Attacks
Attack Year


Weapon Used
Count
Unknown
Explosives
Incendiary
Firearms
Chemical
Melee
Sabotage Equipment
Vehicle (not to include vehicle-borne explosives, i.e., car or truck bombs)
Fake Weapons
Radiological
Other
Biological
Weapon_Used

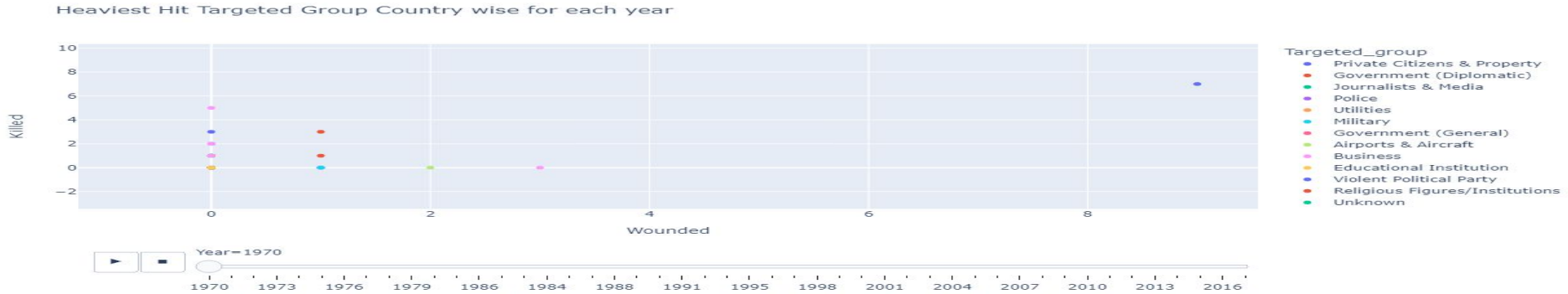

Successful vs Unsuccessful Terrorist Attack each year
Attacks
Successful Attack
Unsuccessful Attack
Number of Attacks
Attack Year

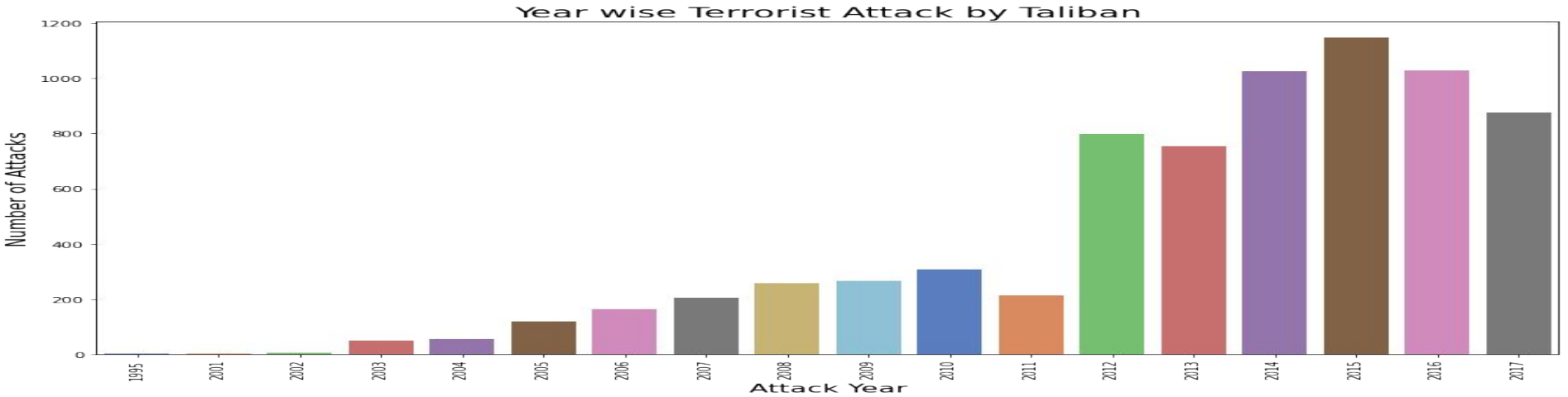
# EDA (Contd…)


Terrorist Activities by Region in each year
Region
Central America & Caribbean
North America
Southeast Asia
Western Europe
East Asia
South America
Eastern Europe
Sub-Saharan Africa
Middle East & North Africa
Australasia & Oceania
South Asia
Central Asia
Density
0.030
0.025
0.020
0.015
0.010
0.005
0.000
1960
1970
1980
1990
2000
2010
2020
2030
Year

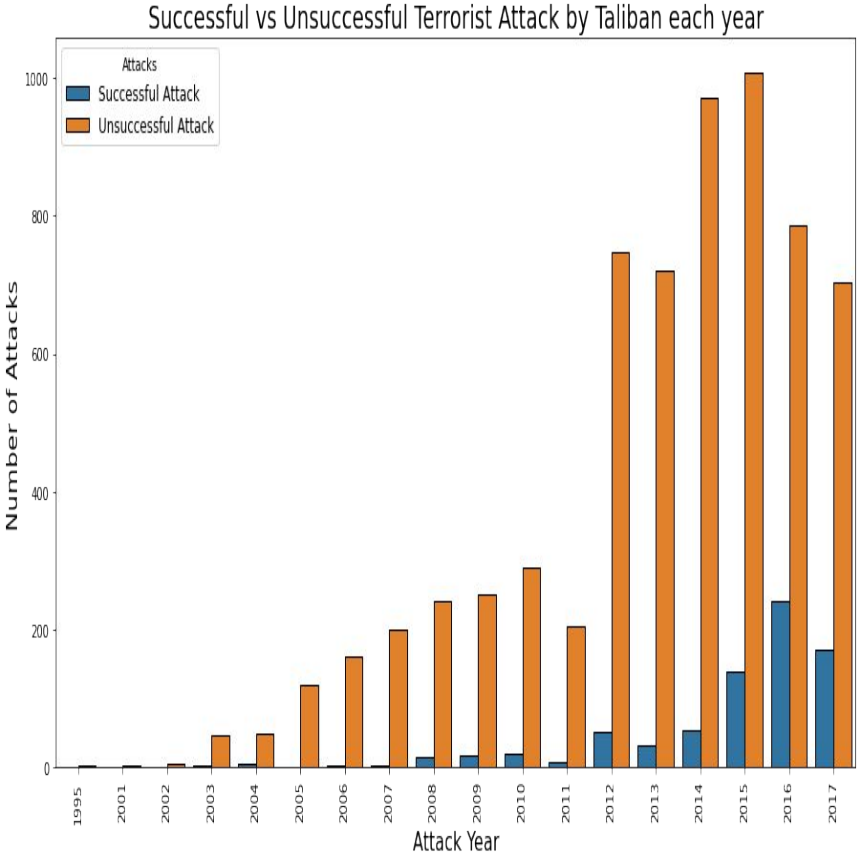

Top 10 Terrorist Groups
Number of Attacks
7000
6000
5000
4000
3000
2000
1000
0
Taliban
Islamic State of Iraq and the Levant (ISIL)
Shining Path (SL)
Al-Shabaab
New People's Army (NPA)
Irish Republican Army (IRA)
Farabundo Marti National Liberation Front (FMLN)
Boko Haram
Revolutionary Armed Forces of Colombia (FARC)
Kurdistan Workers' Party (PKK)
Terrorist Group

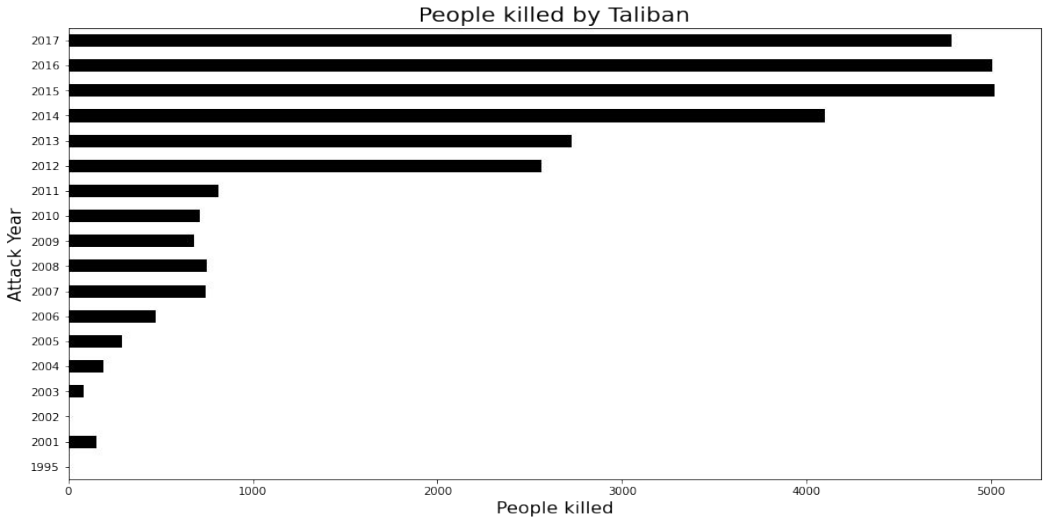
# EDA (Contd…)

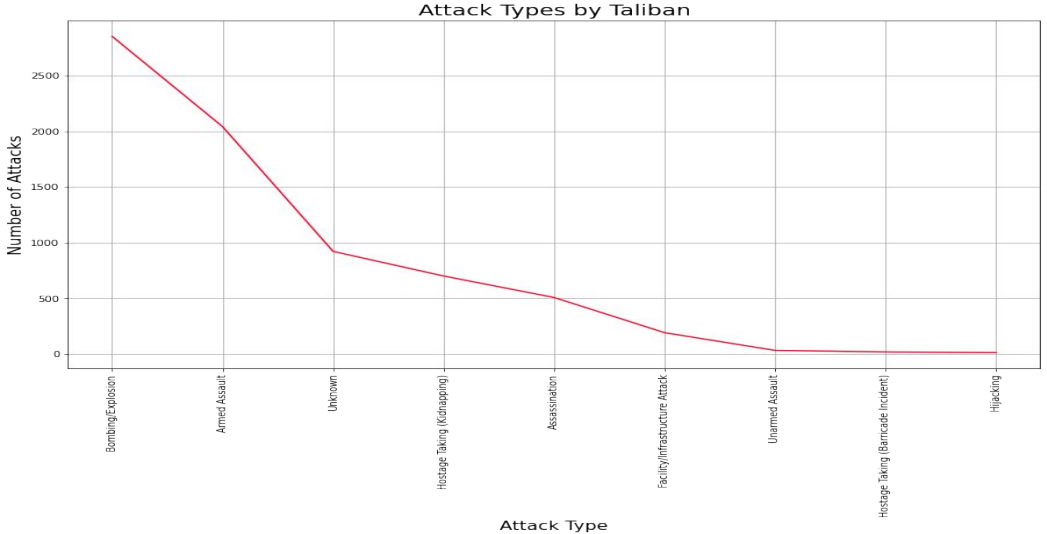

Heaviest Hit Targeted Group Country wise for each year
Killed
Wounded
Year=1970
Targeted_group
Private Citizens & Property
Government (Diplomatic)
Journalists & Media
Police
Utilities
Military
Government (General)
Airports & Aircraft
Business
Educational Institution
Violent Political Party
Religious Figures/Institutions
Unknown


Year wise Terrorist Attack by Taliban
Number of Attacks
Attack Year

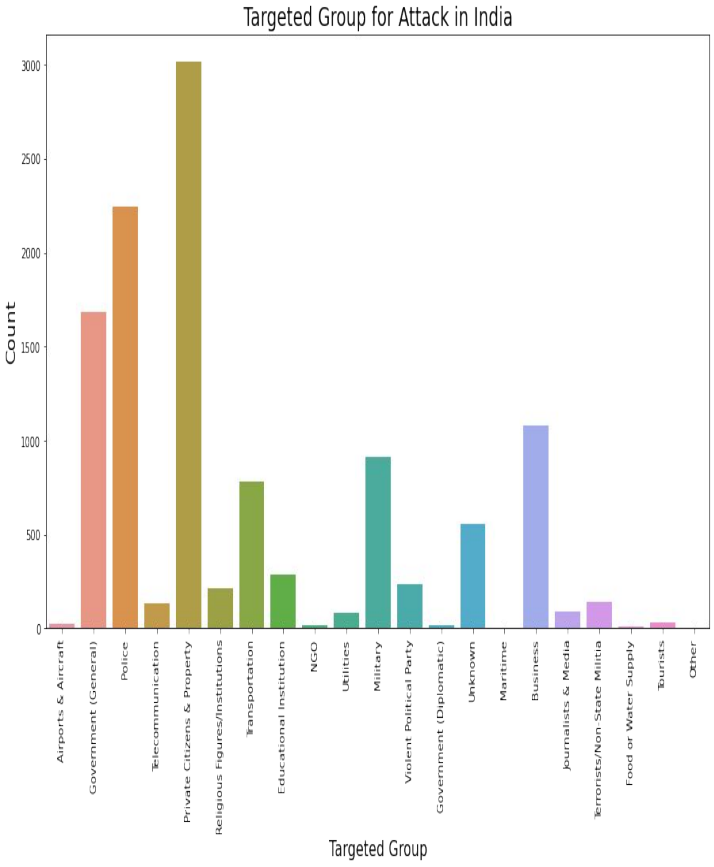
# EDA (Contd…)

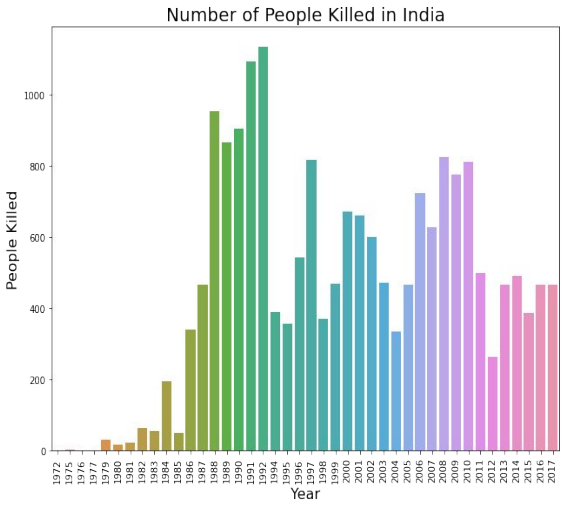

Successful vs Unsuccessful Terrorist Attack by Taliban each year
Attacks
Successful Attack
Unsuccessful Attack
Number of Attacks
Attack Year

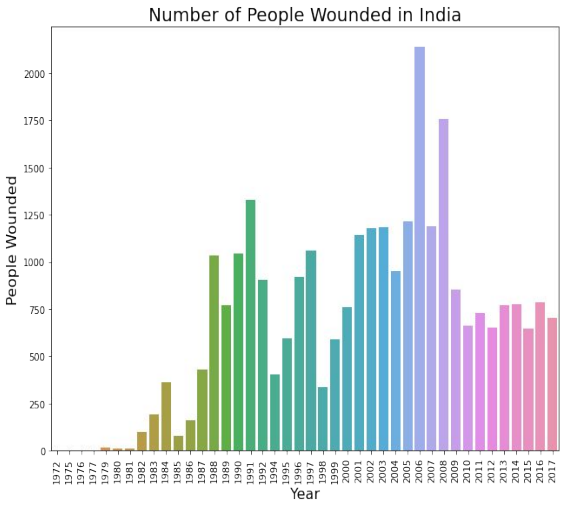

People killed by Taliban
Attack Year
People killed

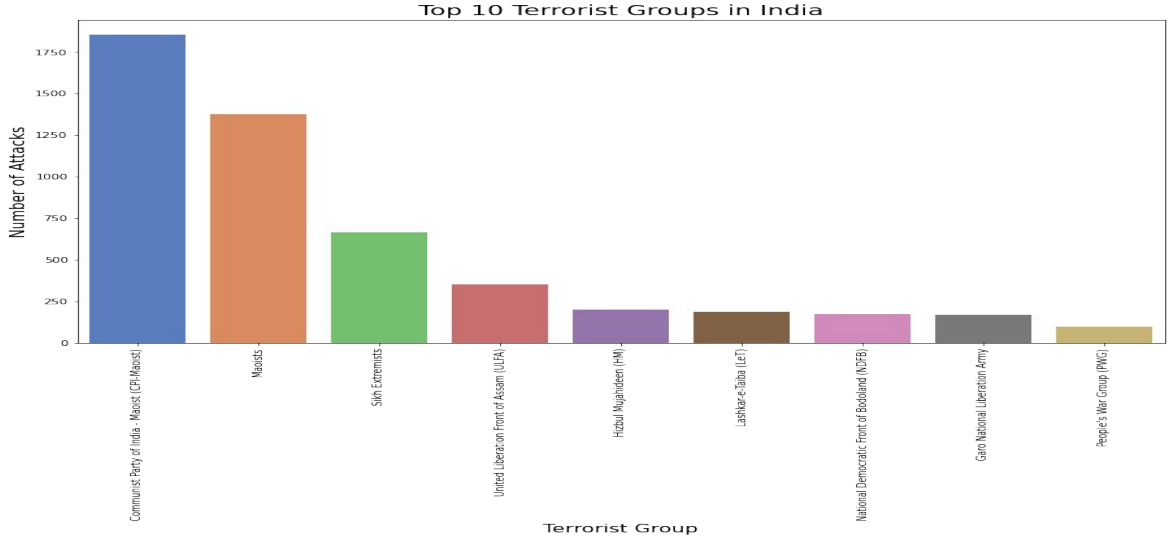

Attack Types by Taliban
Number of Attacks
Bombing/Explosion
Armed Assault
Unknown
Hostage Taking (Kidnapping)
Assassination
Facility/Infrastructure Attack
Unarmed Assault
Hostage Taking (Barricade Incident)
Hijacking
Attack Type

# EDA (Contd…)

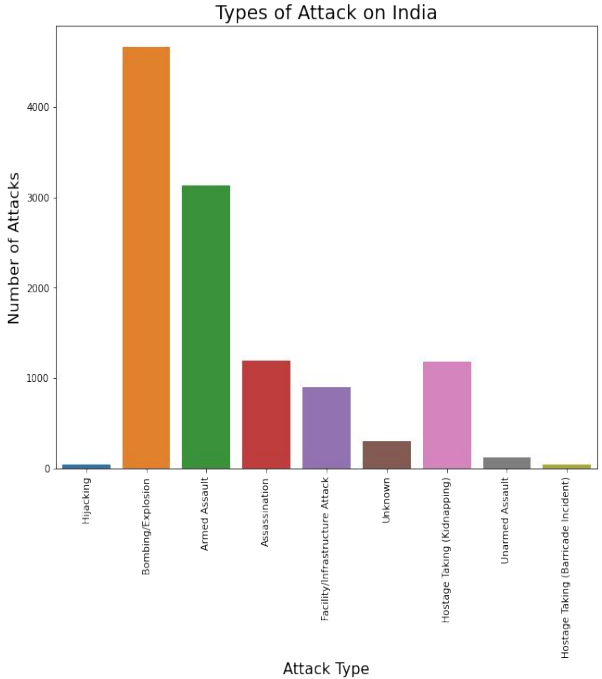

Targeted Group for Attack in India
Count
Targeted Group
Airports & Aircraft
Government (General)
Police
Telecommunication
Private Citizens & Property
Religious Figures/Institutions
Transportation
Educational Institution
NGO
Utilities
Military
Violent Political Party
Government (Diplomatic)
Unknown
Maritime
Business
Journalists & Media
Terrorists/Non-State Militia
Food or Water Supply
Tourists
Other

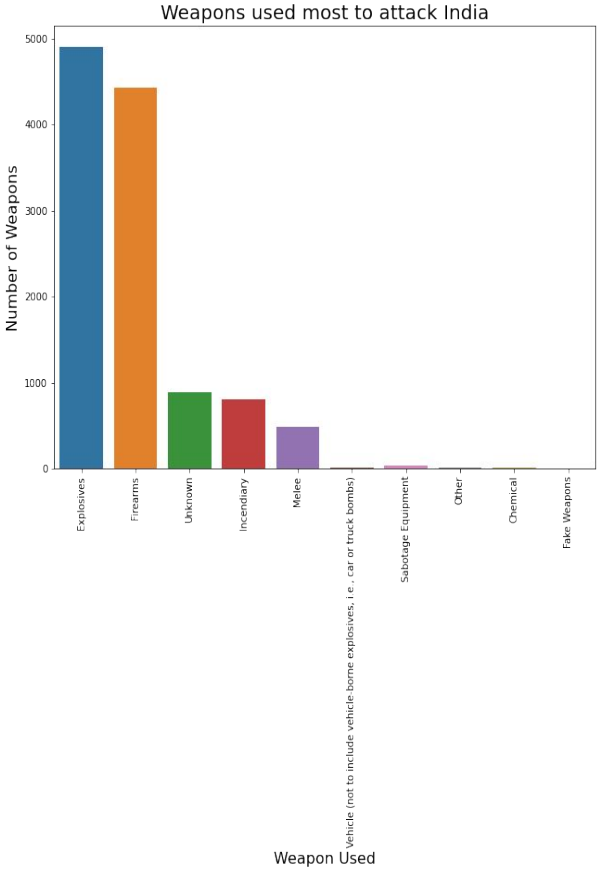

Number of People Killed in India
People Killed
Year

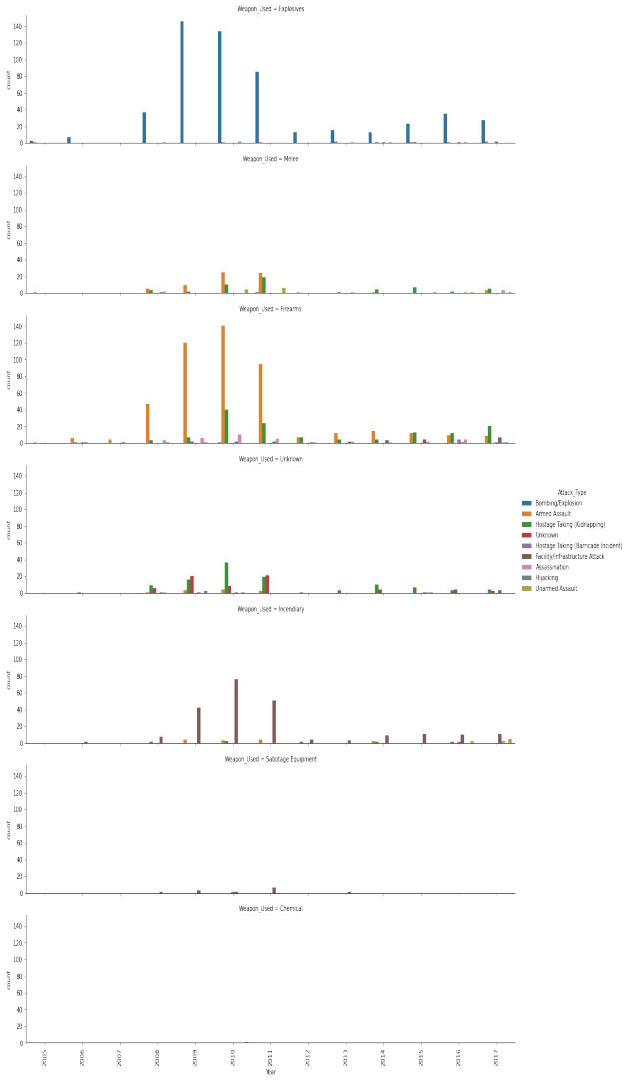

Number of People Wounded in India
People Wounded
Year


Top 10 Terrorist Groups in India
Number of Attacks
Terrorist Group
Communist Party of India - Maoist (CPI-Maoist)
Maoists
Sikh Extremists
United Liberation Front of Assam (ULFA)
Hizbul Mujahideen (HM)
Lashkar-e-Taiba (LeT)
National Democratic Front of Bodoland (NDFB)
Garo National Liberation Army
People's War Group (PWG)

# EDA (Contd…)


Types of Attack on India
Number of Attacks
0
1000
2000
3000
4000
Hijacking
Bombing/Explosion
Armed Assault
Assassination
Facility/Infrastructure Attack
Unknown
Hostage Taking (Kidnapping)
Unarmed Assault
Hostage Taking (Barricade Incident)
Attack Type


Weapons used most to attack India
Number of Weapons
0
1000
2000
3000
4000
5000
Explosives
Firearms
Unknown
Incendiary
Melee
Vehicle (not to include vehicle borne explosives, i.e., car or truck bombs)
Sabotage Equipment
Other
Chemical
Fake Weapons
Weapon Used


Weapon_Used = Explosives
Weapon_Used = Melee
Weapon_Used = Firearms
Weapon_Used = Unknown
Weapon_Used = Incendiary
Weapon_Used = Sabotage Equipment
Weapon_Used = Chemical
count
Year
Attack_Type
Bombing/Explosion
Armed Assault
Hostage Taking (Kidnapping)
Unknown
Hostage Taking (Barricade Incident)
Facility/Infrastructure Attack
Assassination
Hijacking
Unarmed Assault

# Insights

Here, we have analysed the Terrorist Attacks a bit more in detail for India. In the same way, we can also analyse for other country or group of countries.

- The maximum number of Terrorist attacks worldwide are from Bombing/ Explosion followed by Armed Assault then Assassination and so on.
- The most affected country by terrorism is Iraq followed by Pakistan, then Afghanistan and then India.
- The most Targeted group which is attacked is Private Citizens and Property.
- Baghdad is the most affected state by Terrorism.
- The most used Weapon in terrorism is Explosives which are used 50% of the times. 33% of the times Firearms are used.
- In the year 2014, there were highest number of Terrorist attacks in the world.

# Insights (Contd…)

- Although the maximum number of attacks were in 2014, but the maximum successful attacks were in the year 2016.
- The most active terrorist group is Taliban followed by ISIL.
- Maximum number of attacks happened in Middle East and North Africa Region year wise.
- There is no strong correlation between any parameters in the dataset. Number of killed and wounded person are slightly related.

# Insights (Contd…)

**Summary about the Top Terrorist Group Taliban**

- Taliban did maximum attacks in the year 2015.
- People killed by Taliban were maximum in the year 2015 and 2016.
- Maximum number of attacks by Taliban were in the year 2015, but the maximum successful attacks were in the year 2016.
- The most used method of attacking by Taliban is Bombing/Explosion.

# Insights (Contd…)

**Summary about Terrorist attacks in India**

- The most active Terrorist group in India is Communist Party of India.
- Maximum number of people killed in India was in the year 1992 and maximum wounded were in the year 2006.
- The targeted group which is attacked most by the terrorist group in India is Private Citizens and Property.
- The Attack type which mostly happens in India is Bombing/Explosion. The most used weapon to attack is Explosives and firearms.
- The maximum number of attacks by CPIM on India were in the year 2010 and the weapon used in the attack were explosives and the attack type were Bombing/Explosion.

THANK
YOU
STOP TERRORISM