

Capstone Project

Global Terrorism Analysis

Prepared By:-

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Problem Statement

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.

Explore and analyze the data to discover key findings pertaining to terrorist activities.

Content

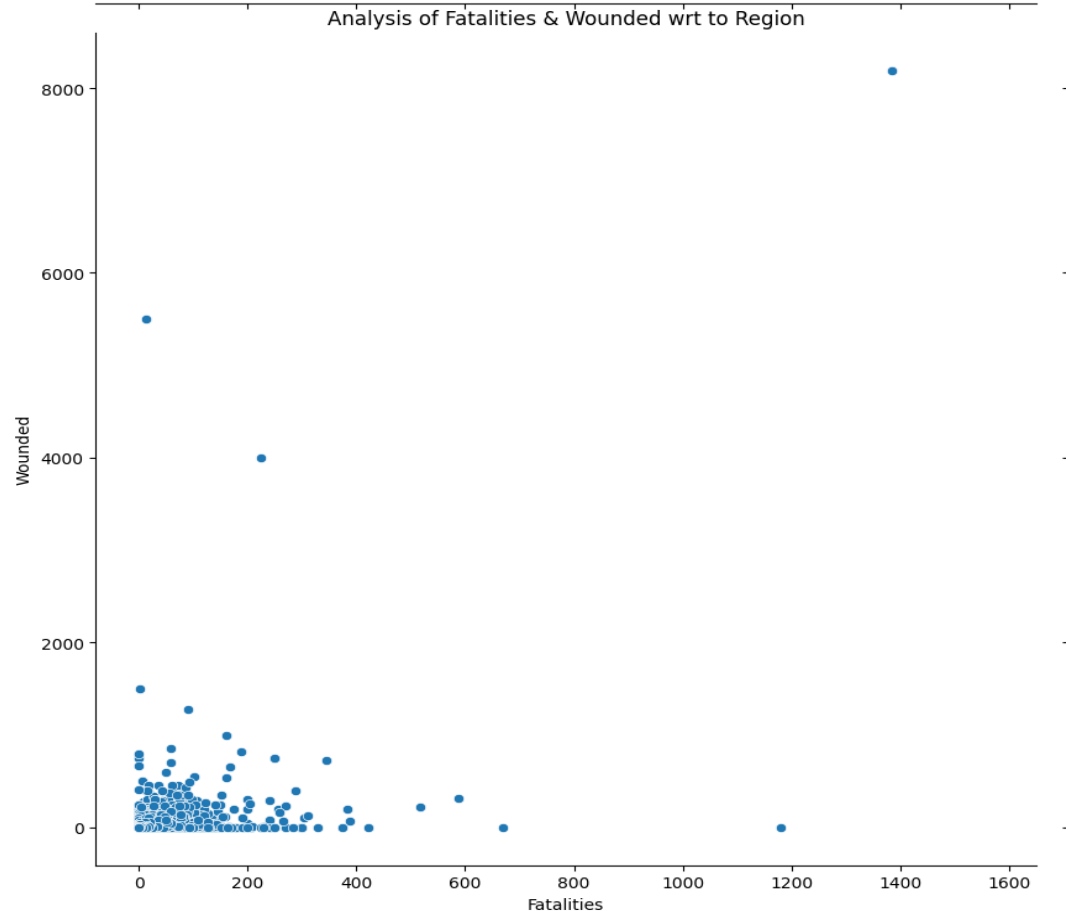
- ☐ Data Summary
- ☐ Visualizing relation between number Fatalities and Wounded victims
- ☐ Analysis of the types of attacks and number of casualties
- ☐ Analysis of types of attacks and weapons that have been used
- ☐ Analysis of the number of fatalities
- ☐ Analysis of Top 10 notorious organization
- ☐ Analysis of Global terrorist attack trend
- ☐ Casualties of Terrorist Attacks in different Regions of the World from 1970 to 2017
- ☐ Analyzing Target Types by Fatalities and Wounded
- ☐ Visualizing the extent of the commonly perpetrated attacks in different regions of the country
- ☐ Common Attacks Perpetrated on different Targets
- ☐ Most Notorious Terrorist Organisations
- ☐ Comparing Global Trends of terrorist attack per year with Regional Trends of terrorist attack per year
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Data Summary

- ❖ attacktype1: Type of the Terror Attack Perpetrated (Categorical)
- ❖ weaptype1: Type of Weapon used to Perpetrate the Terror Attack (Categorical)
- ❖ targtype1: Background of the victim intended to be attacked by perpetrator (Categorical)
- ❖ region_txt: Region the Attack took place in (Categorical)
- ❖ country_txt: Country the Attack took place in (Categorical)
- ❖ city: City the Attack took place in (Categorical)
- ❖ gname: Name of the organisation/group that perpetrated the attack (Categorical)
- ❖ nkill: Number of Fatalities lost after the attack (Numeric)
- ❖ nwound: Number of wounded victims left behind after the attack (Numeric)
- ❖ eventid: Unique ID of each terror attack
- ❖ iyear: The year the terror attack was recorded to have taken place (Categorical)

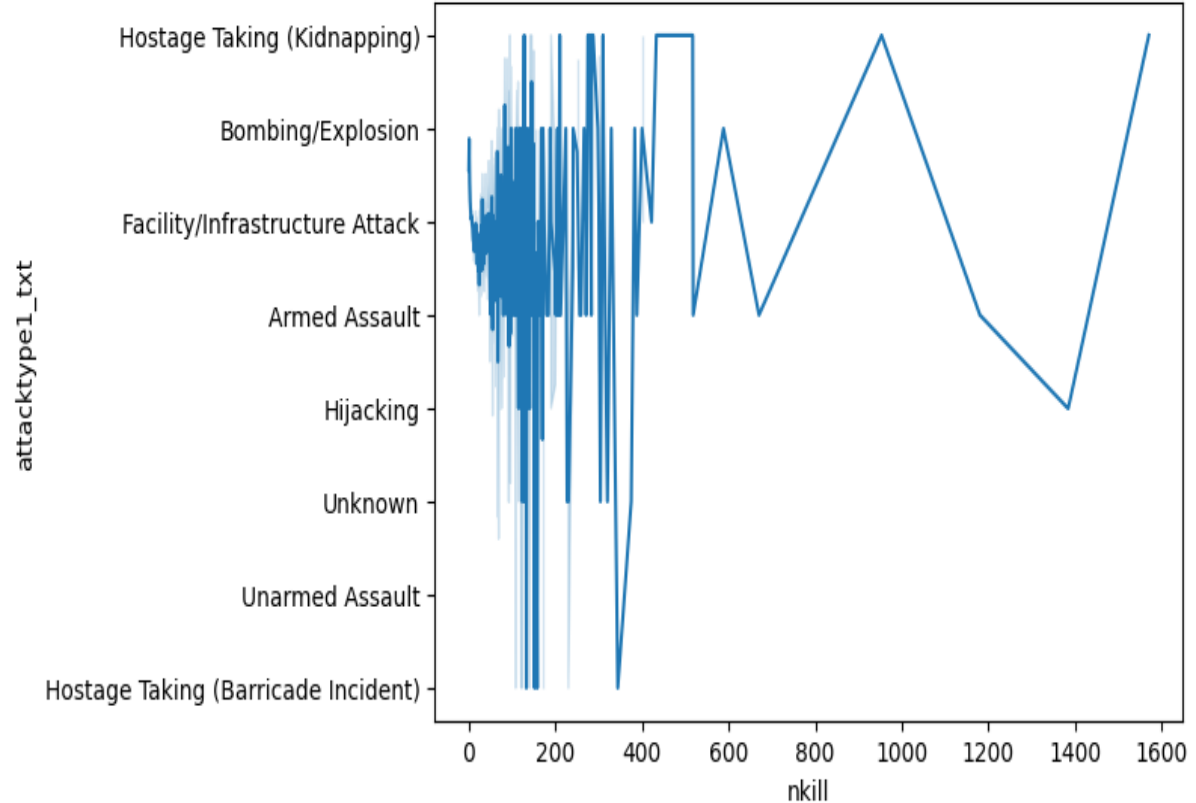
Visualizing relation between number Fatalities and Wounded victims

- The distribution of number of fatalities and number of wounded victims for all attacks is displayed in the plot
- In this we can gather that most of the attacks have less than 200 fatalities and 1000 wounded victims



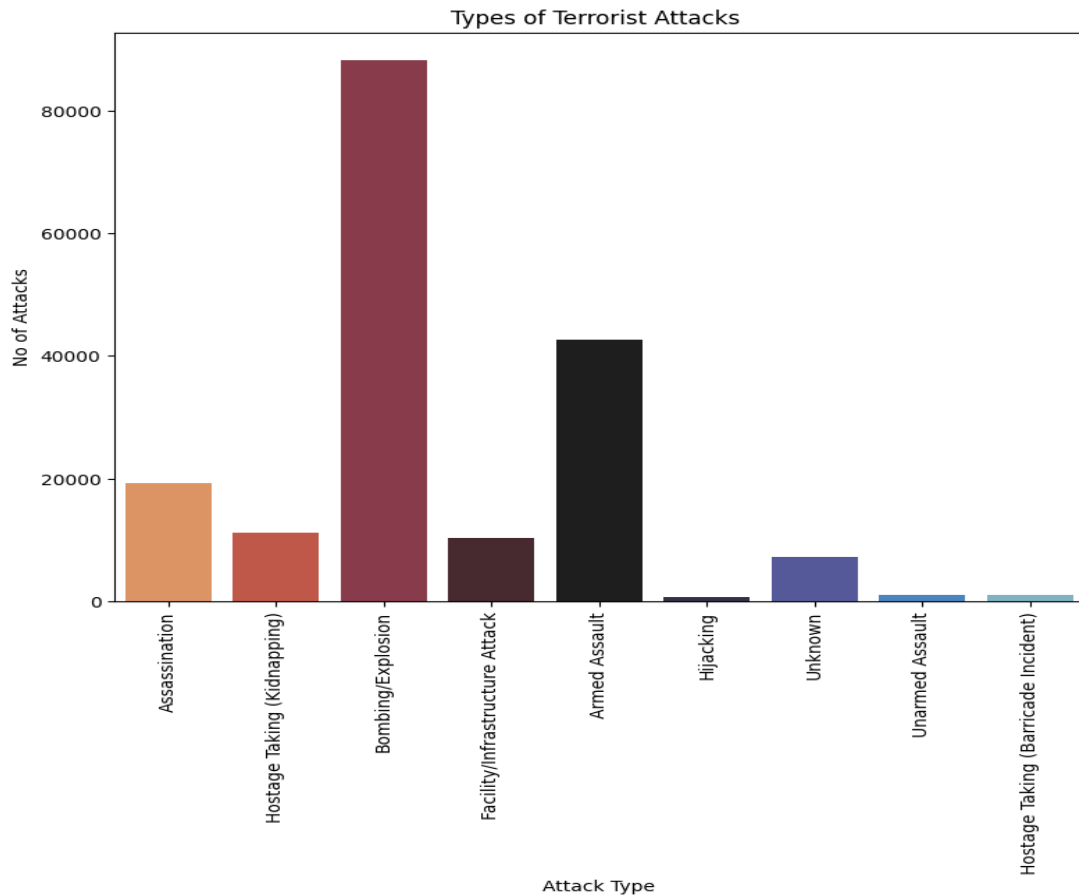
Analysis of the types of attacks and number of casualties

We have observe from the above graph that the maximum number of kills has been due to Bombing/ Explosion, Facility and infrastructure attack, and Armed assault.



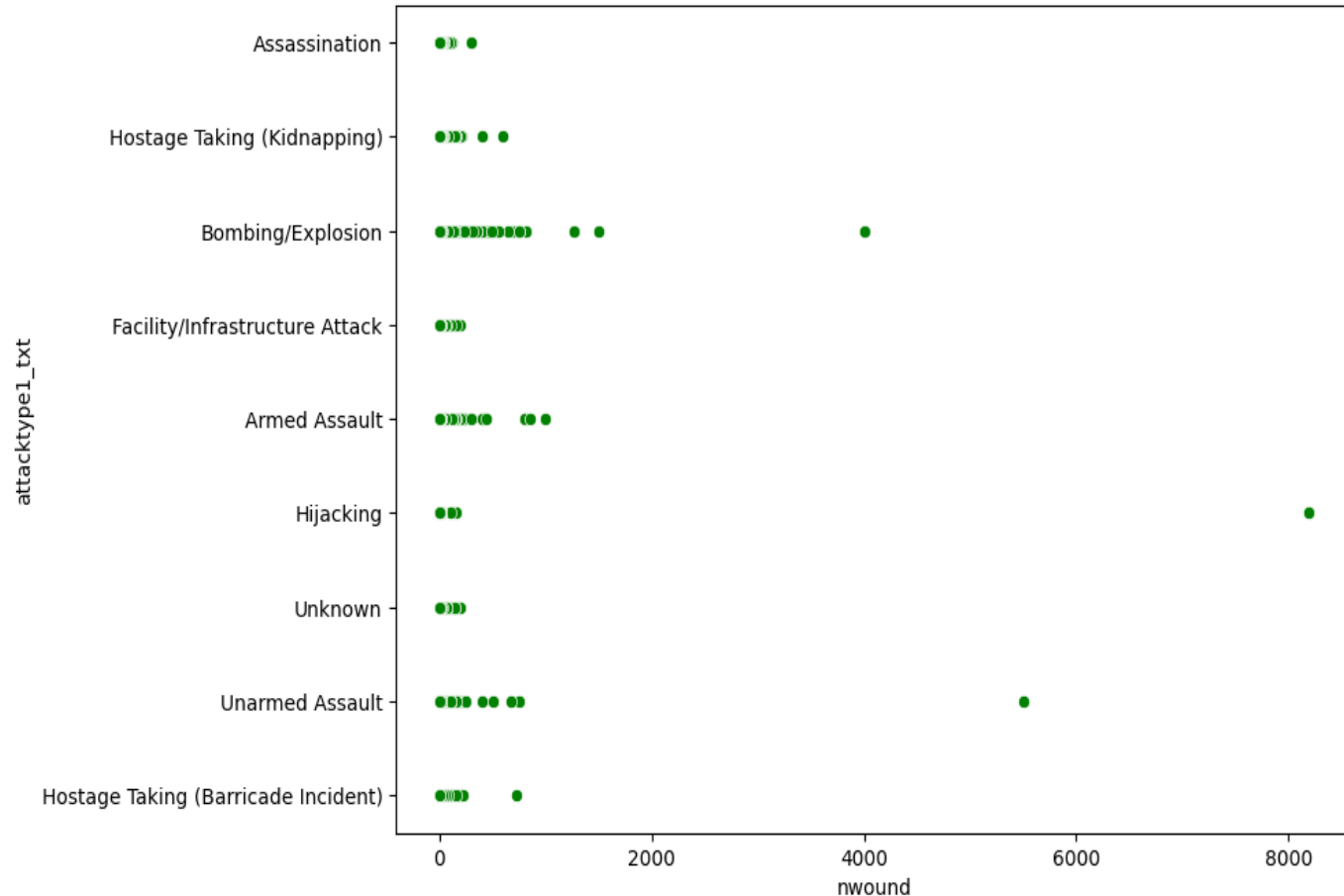
Analysis of types of attacks and weapons that have been used

- The top 3 commonly perpetrated types of attack are
- Bombing/Explosion (more than twice as frequent than Armed Assault)
- Armed Assault (twice as frequent than Assassinations)
- Assassination
- The frequency of the top 3 attacks increase by two folds as we move up the ladder



Analysis of the number of fatalities

From the chart it is clear that more than 8000 fatalities are caused during these attacks. Most of it happens because of Hijacking, unarmed assault and bombing/explosion.

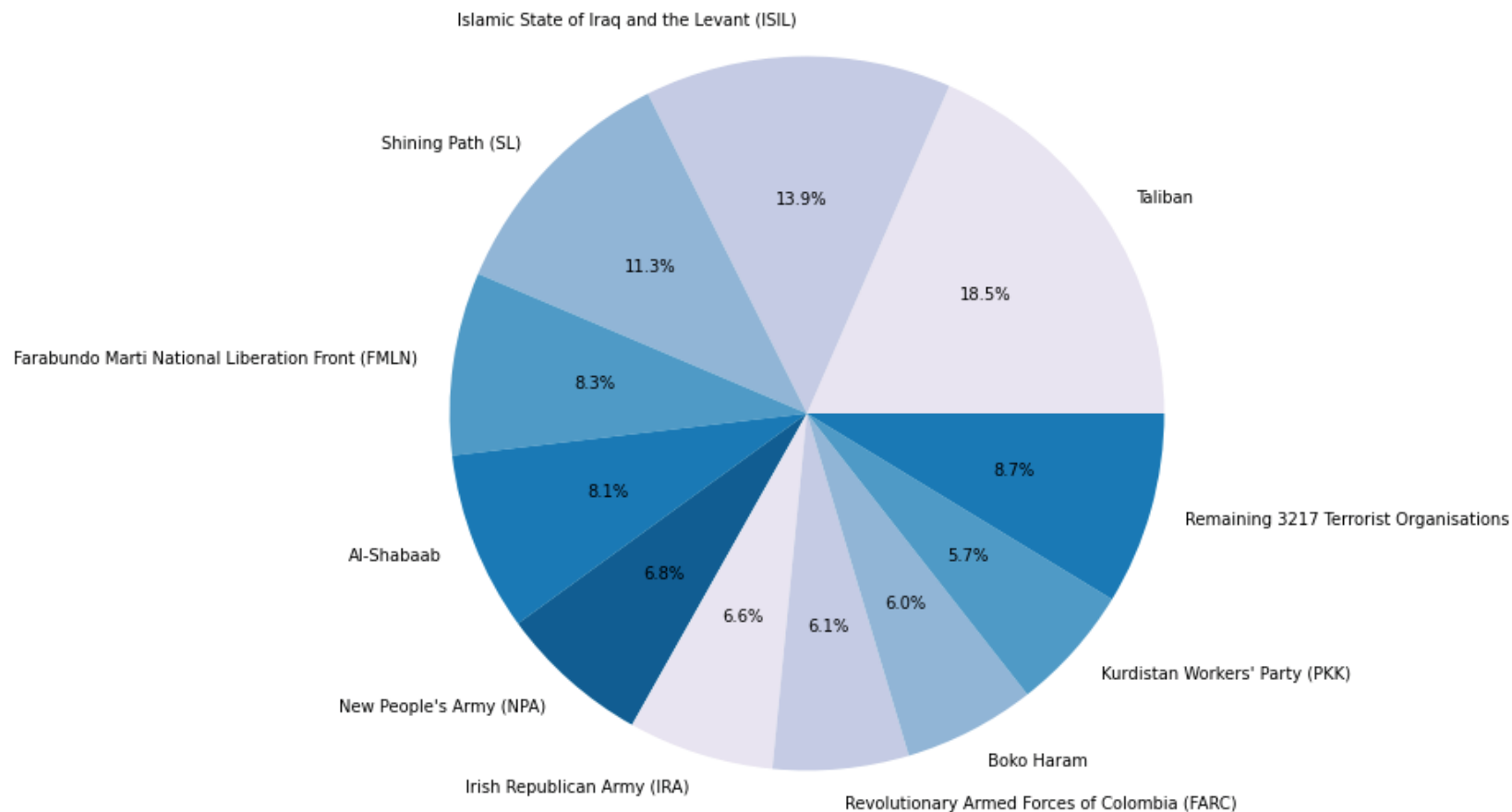


Analysis of Top 10 notorious organization

We got know about "Top 3 Terrorist Organizations with Large Attack Numbers" such as

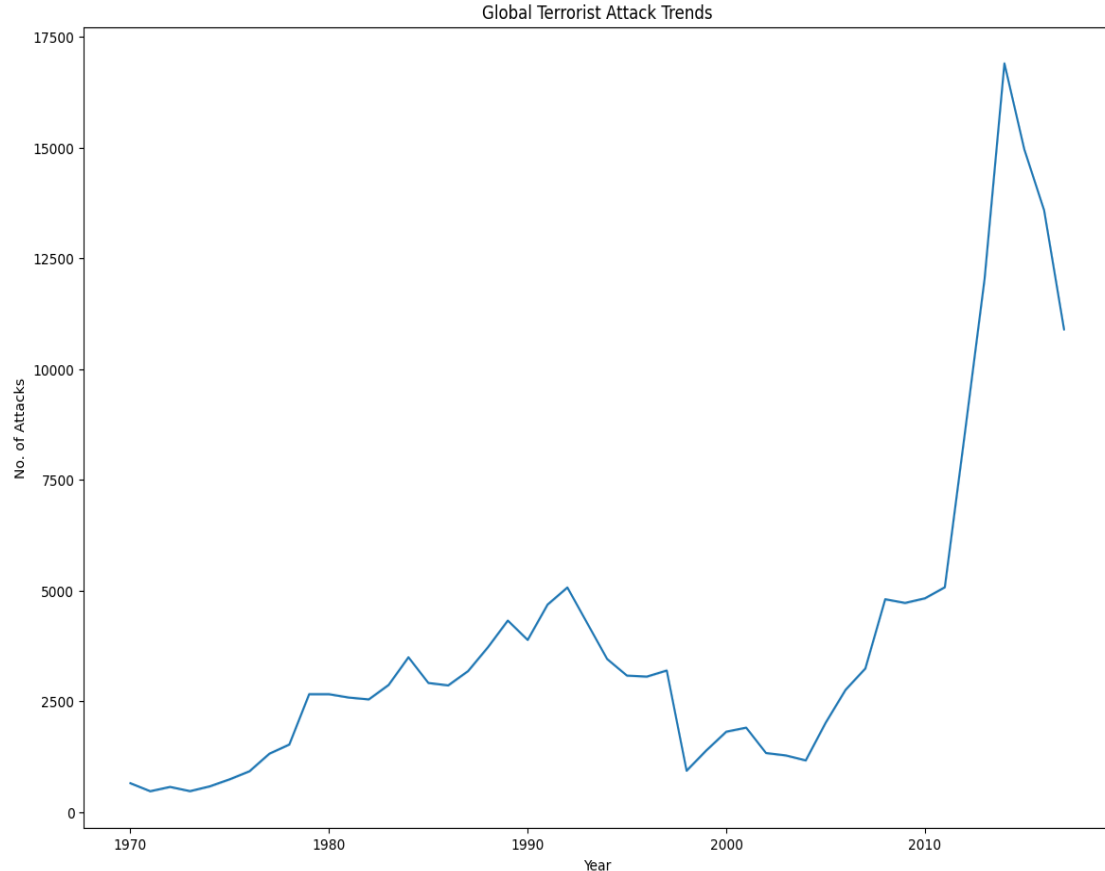
- 1) Taliban
- 2) Islamic state of Iraq and the Levant
- 3) shining Path(SL)

Top 10 Terrorist Organisations with Large Attack Numbers



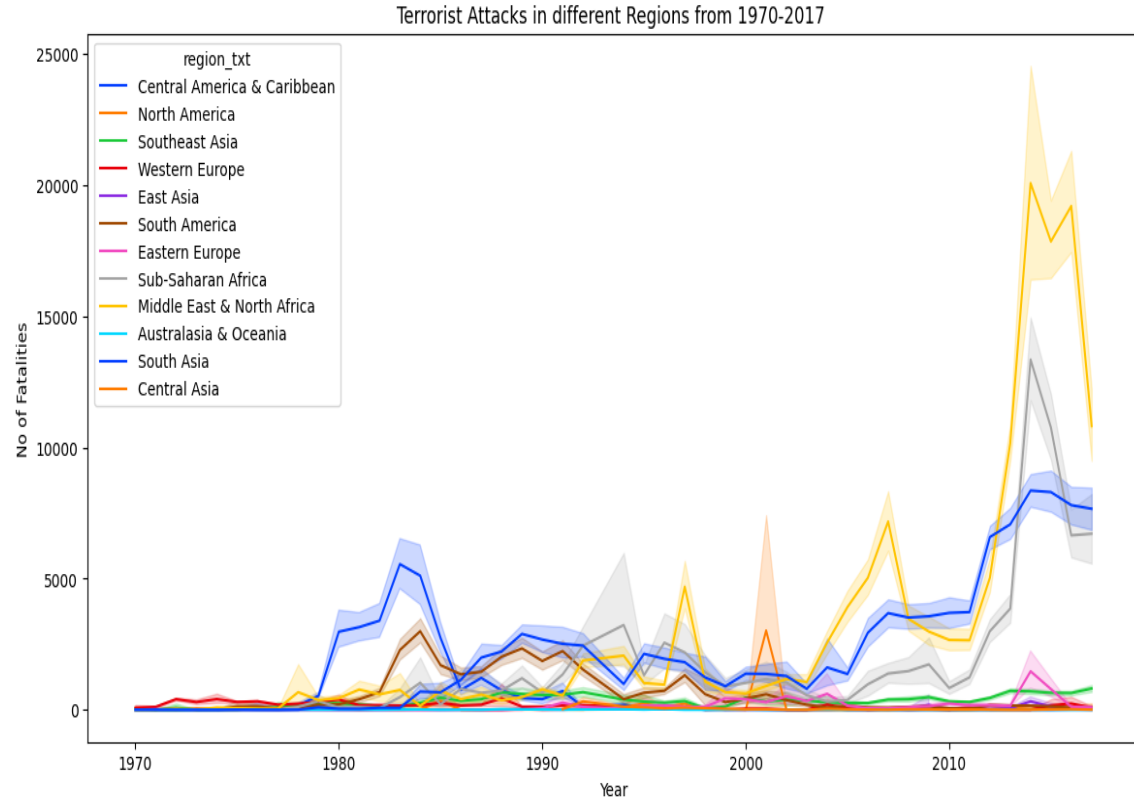
Analysis of Global terrorist attack trend

From the above chart we can see the growth in global terrorism trend since 1970 it grown in between those years as we observe through the chart . And it is at its peaks after 2010 and Global Terrorism started increasing to an all time high from 2011. This peaked in the year 2014 and started dipping ever since.



Causalities of Terrorist Attacks in different Regions of the World from 1970 to 2017

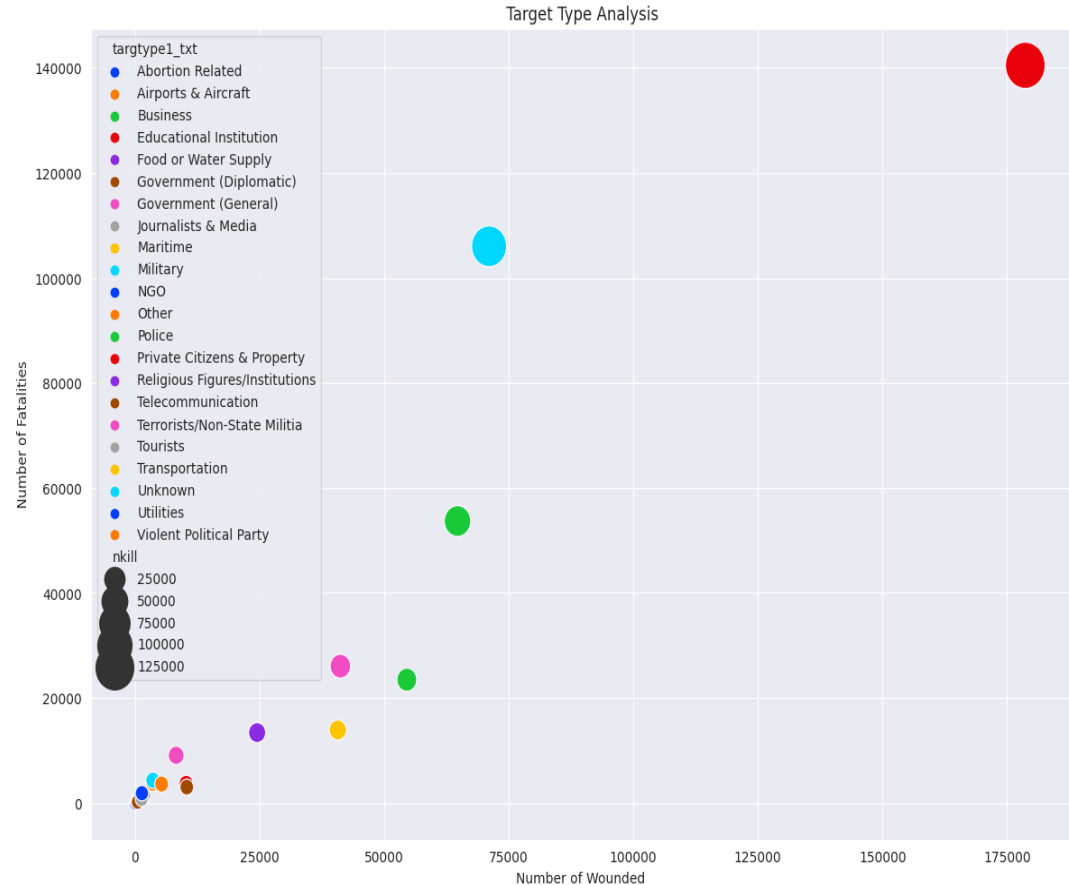
Orange line spike near the 2000 indicates September 11 attacks in USA. Yellow line spike between mid 2000's and 2010 the war tensions refers to the battle of Gaza, Hamas and Fatah. 2009 the Gaza war ended explaining the dip. The Yellow line peaks again in 2010 with Syrian Civil War (2011) and Iraq Civil War (2013-2017). We can also say that even though the number of attacks in South Asia has been higher than the attacks in Sub-Saharan Africa, the attacks in Sub-Saharan Africa has been far more devastating by magnitude.



Analyzing Target Types by Fatalities and Wounded

From above chart we can say that the most targets are

1. Educational institution
2. Private citizen and properties
3. Police



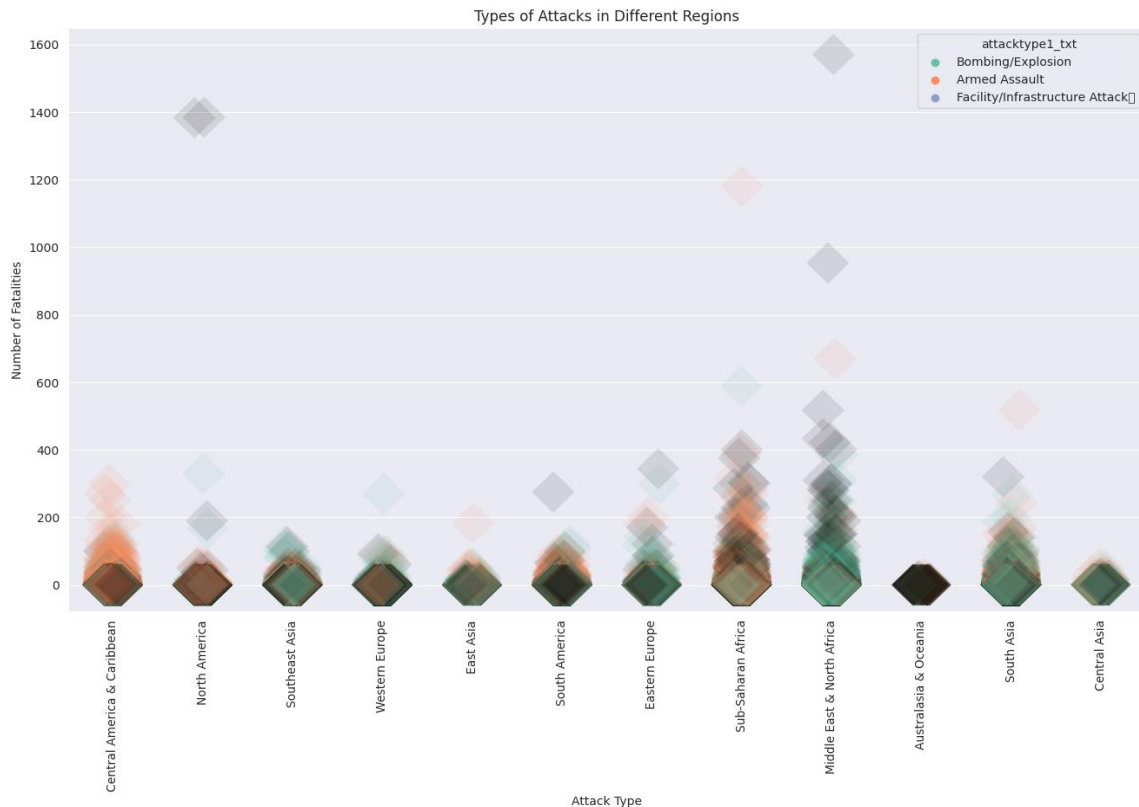
Visualizing the extent of the commonly perpetrated attacks in different regions of the country

Armed Assault is a dominant type of attack in regions like

- 1) Central America & Caribbean
 - 2) Sub-Saharan Africa and
 - 3) North America
- (presence of dense orange)

Bombings/Explosion is a dominant type of attack in regions like

- 1) Middle East & North Africa
 - 2) South Asia and
 - 3) Eastern Europe
- (presence of dense green)



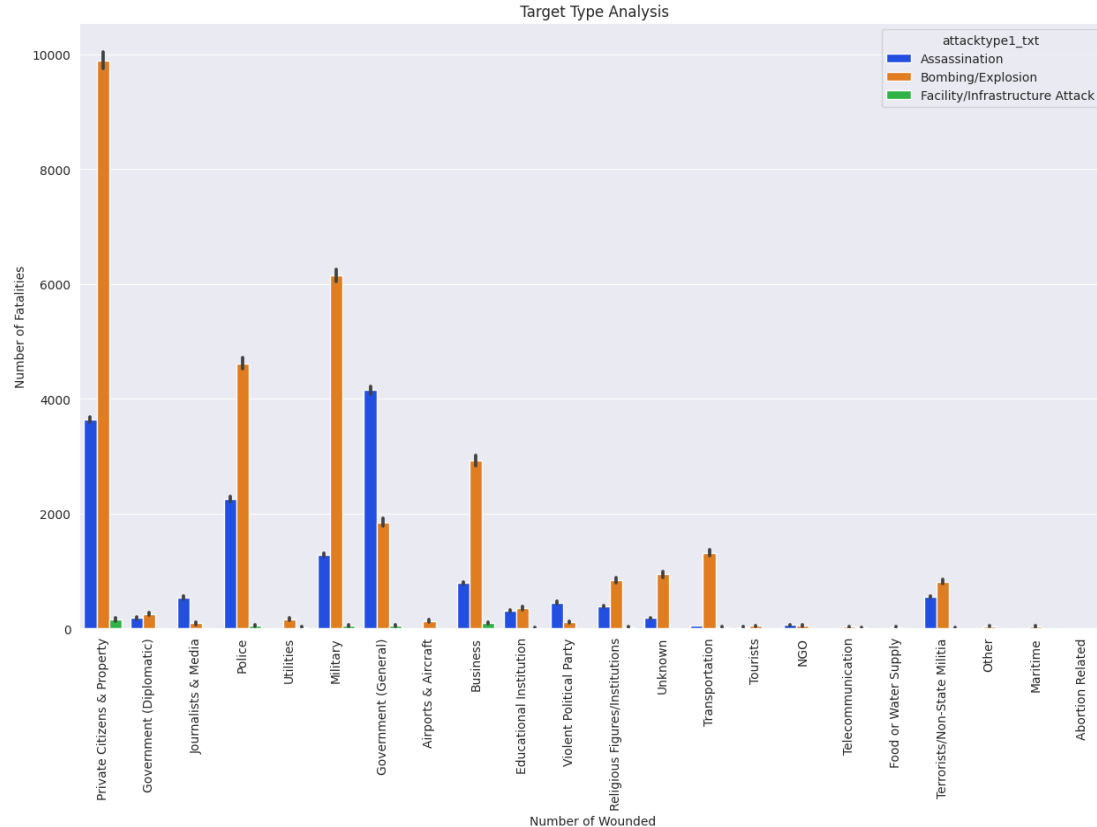
Common Attacks Perpetrated on different Targets

The most common attacks are

1. Assassination
2. Bombing/Explosion
3. Facilities and infrastructure attack

Assassination is the most common type attack perpetrated on Government officials and Media Journalists.

Bombings are frequently used to thwart Businesses and Religious Figures/Institutions.

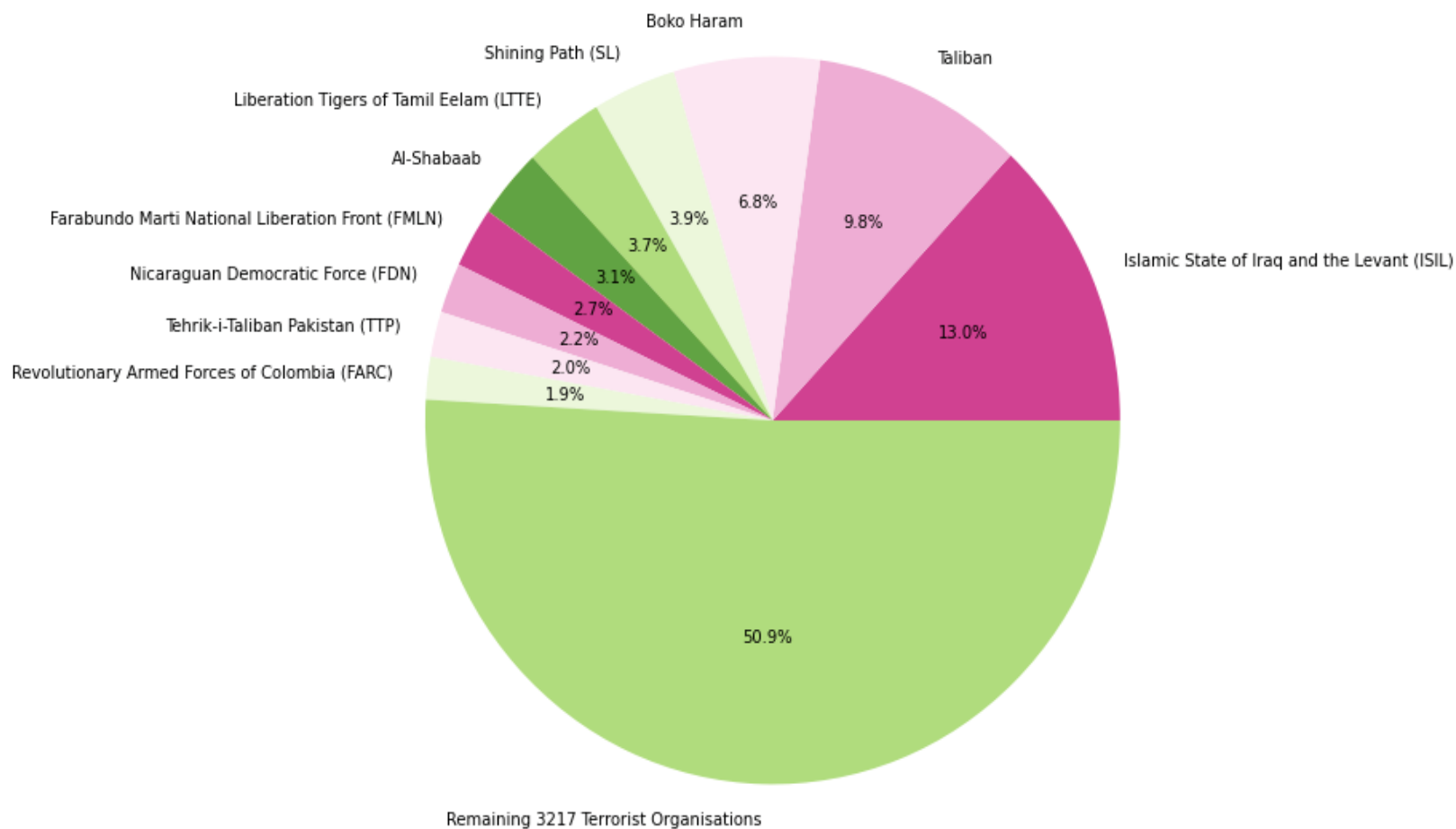


Most Notorious Terrorist Organisations

- ❖ The most notorious terrorist organisations are
 - Islamic State of Iraq and the Levant (ISIL)
 - Taliban
 - Boko Haram
 - Shining Path(SL)

- ❖ These organisations alone have contributed to more than one third of the total fatalities and almost 50% of the total terror attacks in the world.

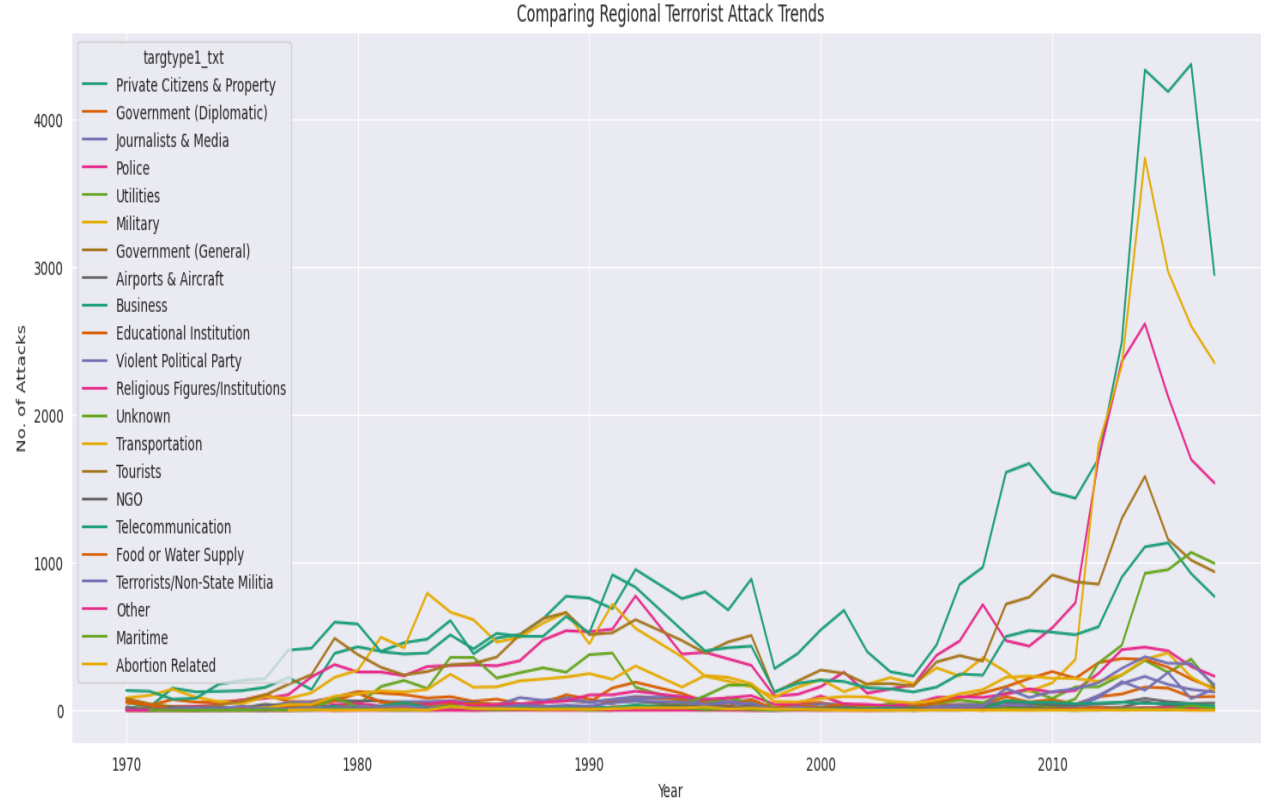
Top 10 Terrorist Organisations with highest Fatalities



Comparing Global Trends of terrorist attack per year with Regional Trends of terrorist attack per year

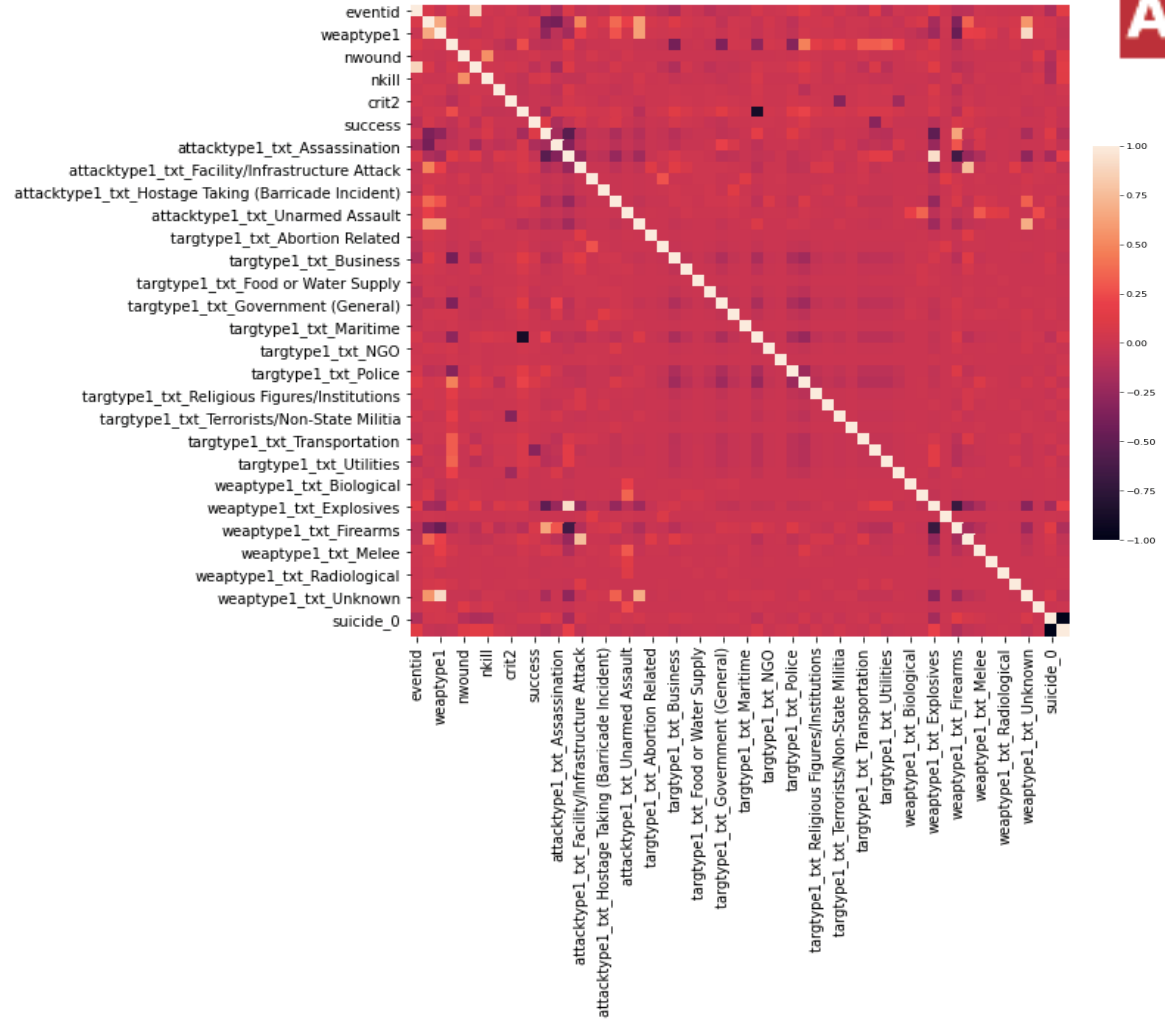
By comparing regional terrorist attack we got to know that the most targettypes are

- 1) Private citizen and Property
- 2) Military
- 3) Police



Correlation

- The Pearson's correlation function couldn't be applied directly because of the presence of categorical variables
- This obstacle is overcome by one-hot encoding the categorical columns.
- We observe positive correlation between weapons and types of attacks
- We observed mild correlation between numerical columns Wounded and Fatalities.



Conclusion

We got to know about most affected target types are

- Private Citizens and property
- Police
- Military

Analysis of the types of attacks and number of casualties

- Bombing/Explosion (more than twice as frequent than Armed Assault)
- Armed Assault (twice as frequent than Assassinations)
- Assassination
- *More than 80000 casualties has been happened due to these attacks*

Analysis of Top organization with large attacks

- Taliban
- Islamic state of Iraq and the Levant
- Shining Path(SL)
- *The Civil War between Iraq and Islamic State of Iraq and the Levant (ISIL) has claimed 1570 fatalities, the largest taken in any terror attack*

Most Notorious Terror Organizations

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Conclusion Contd.

Common Attacks Perpetrated on different Targets

- Assassination
- Bombing/Explosion
- Facilities and infrastructure attack
- Assassination is the most common type attack perpetrated on Government officials and Media Journalists.
- Bombings are frequently used to thwart Businesses and Religious Figures/Institutions.

Visualizing the extent of the commonly perpetrated attacks in different regions of the country

- *Armed Assault is a dominant type of attack in regions like*
- Central America & Caribbean
- Sub-Saharan Africa and
- North America

Bombings/Explosion is a dominant type of attack in regions like

- Middle East & North Africa
- South Asia and
- Eastern Europe

Conclusion Contd.

Analysis of Global terrorist attack trend

From the above chart we can see the growth in global terrorism trend since 1970 it grown in between those years as we observe through the chart . And it is at its peaks after 2010 and Global Terrorism started increasing to an all time high from 2011. This peaked in the year 2014 and started dipping ever since.

Analysis of the number of fatalities

From the chart it is clear that more than 8000 people were wounded during these attacks .Most of it happens because of "Bombing/Explosion".

Correlation/Heatmap

We observe positive correlation between weapons and types of attacks

Use of Explosives and Bombings/Explosions (0.91)

Use of Firearms and Armed Assault (0.68)

Use of Incendiary and Facility/Infrastructure Attack(0.71)

References

1. GTD (Global Terrorism Database) - Codebook: Inclusion Criteria and Variables, October 2019

**THANK
YOU**