

Capstone Project - 1

EDA ON GLOBAL TERRORISM

By :- Harsh Jain

Points For Discussion

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- Region-wise Terrorist Activities
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- People Killed by Terrorist Groups
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- Terrorist Groups vs Countries
- Attacks carried out in India
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- Conclusion

Dataset And Problem Statement

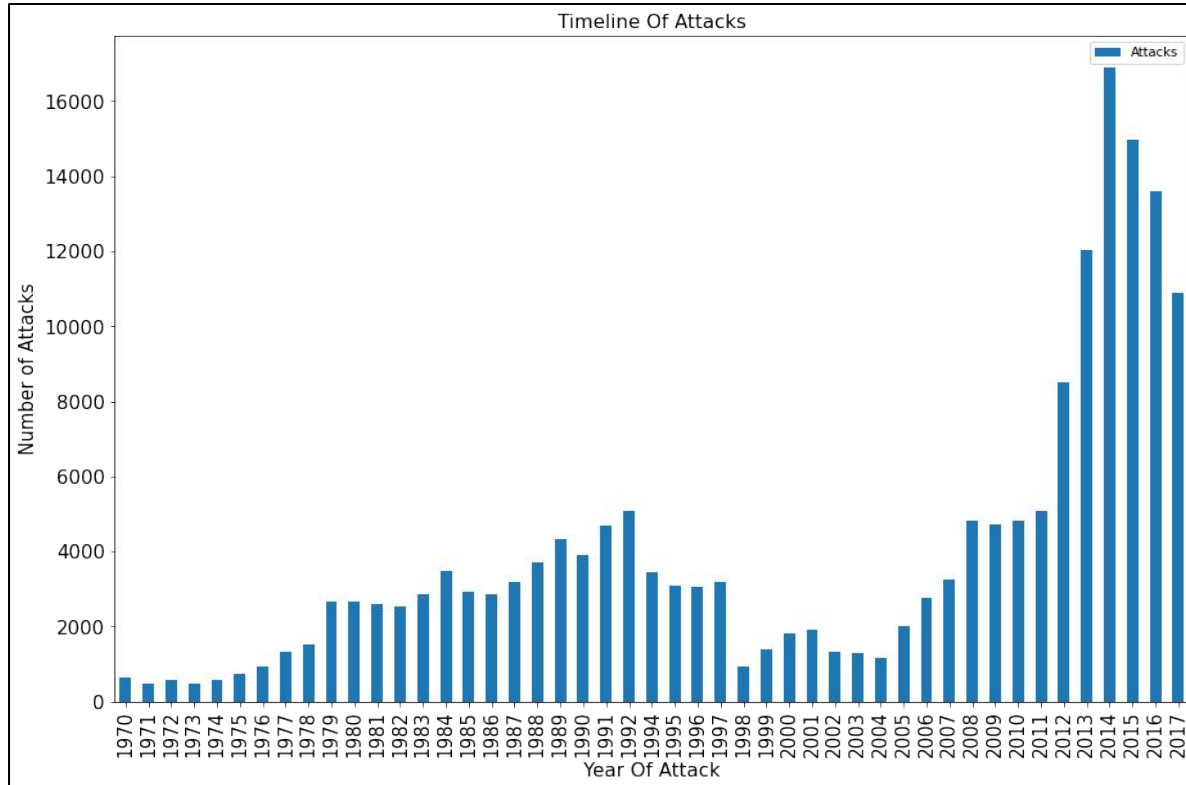
- ❑ For this Project We will be doing Exploratory Data Analysis on Global Terrorism Dataset. This Dataset has been derived from The Global Terrorism Database (GTD) which is an open-source database that includes information on terrorist attacks.
- ❑ This Dataset contains the Terrorist Activities from the year 1970 - 2017.
- ❑ This dataset contains various types of information, such as country names, attacks, weapons used, targeted regions, group name, year in which the attack occurred, state, regions, cities where the attacks occurred, success and failures of the attacks, people killed, wounded, and the motive behind the attacks.
- ❑ The main goal of this project is to gather some conclusions on terrorist activities over the previous 47 years, and to evaluate the data to determine which areas are hot spots for terrorism, which weapons are most commonly utilised, and which nations, regions, and target categories are most frequently attacked. These insights can help to track terrorism throughout the world and learn more about different terrorist organisations and where they are most likely to be discovered.

Cleaning Data And Filtering Columns

- ❑ By First Checking the shape of our dataset, we get to know that there are 135 columns in the dataset.
- ❑ Then we checked the count of null values in all of these columns, and we discovered that many of these columns are useless for analysis, and many of the columns include a large number of null values.
- ❑ As a result, we chose to proceed with certain important columns that are relevant to our end goal of data analysis.
- ❑ We stored these new columns in a new dataframe, and renamed these columns for clarity.
- ❑ Below are the columns used in Exploratory Data Analysis for Global Terrorism Dataset.

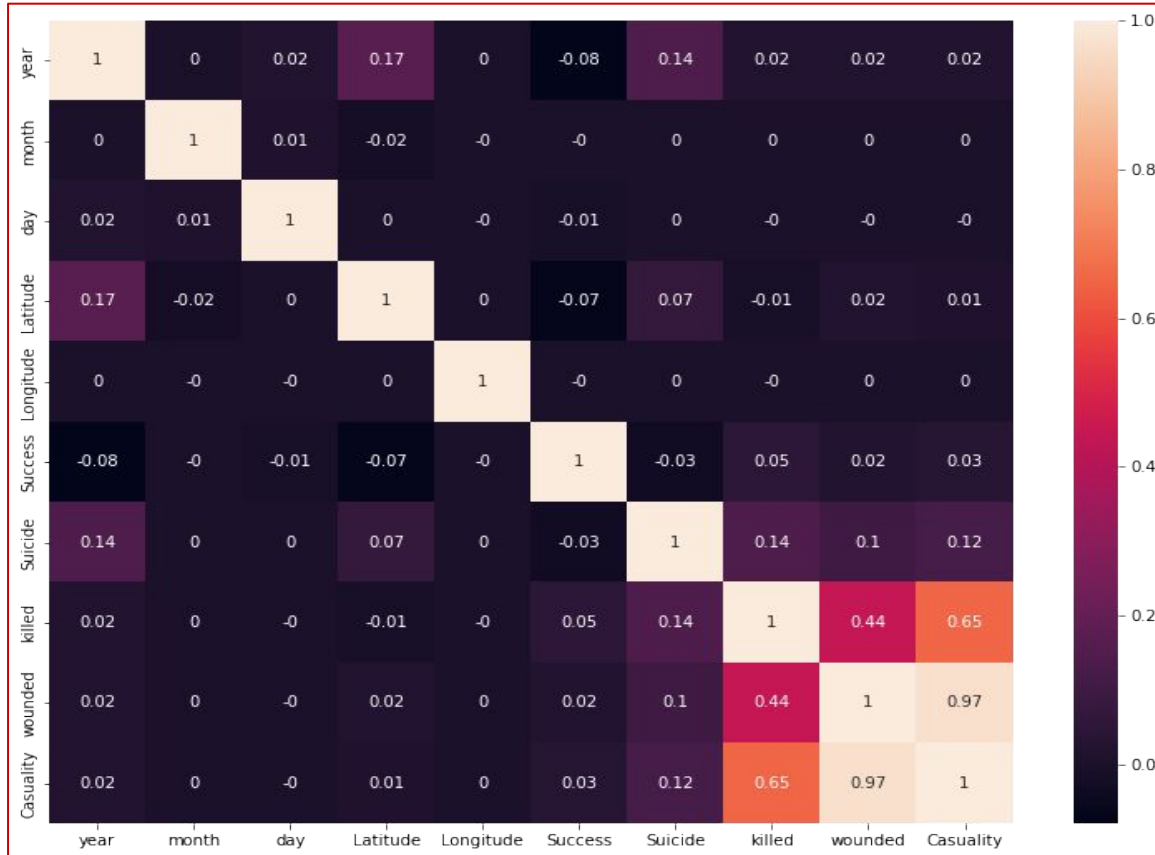
```
#Renaming the Column Names:-  
  
new_df = new_df.rename(columns = {'iyear':'year', 'imonth':'month',  
                                'iday': 'day', 'country_txt':'country', 'region_txt':'region', 'provstate':'state',  
                                'city': 'city', 'latitude':'Latitude', 'longitude':'Longitude',  
                                'location':'location', 'summary':'Summary', 'success':'Success', 'suicide':'Suicide',  
                                'attacktype1_txt':'attack_type', 'targettype1_txt':'target_type',  
                                'gname':'group_name', 'weaptype1_txt':'weapon_type', 'nkill':'killed',  
                                'nwound':'wounded', 'motive':'Motive'})
```

Year-wise Terrorist Activities



- According to this visualisation, the year 2014 saw the highest number of attacks. In 2014, there were 16,903 attacks.
- Additionally, there is a peak increase in the number of attacks after 2011.
- The year 1971 saw the lowest number of attacks. In 1971, there were only 471 attacks.

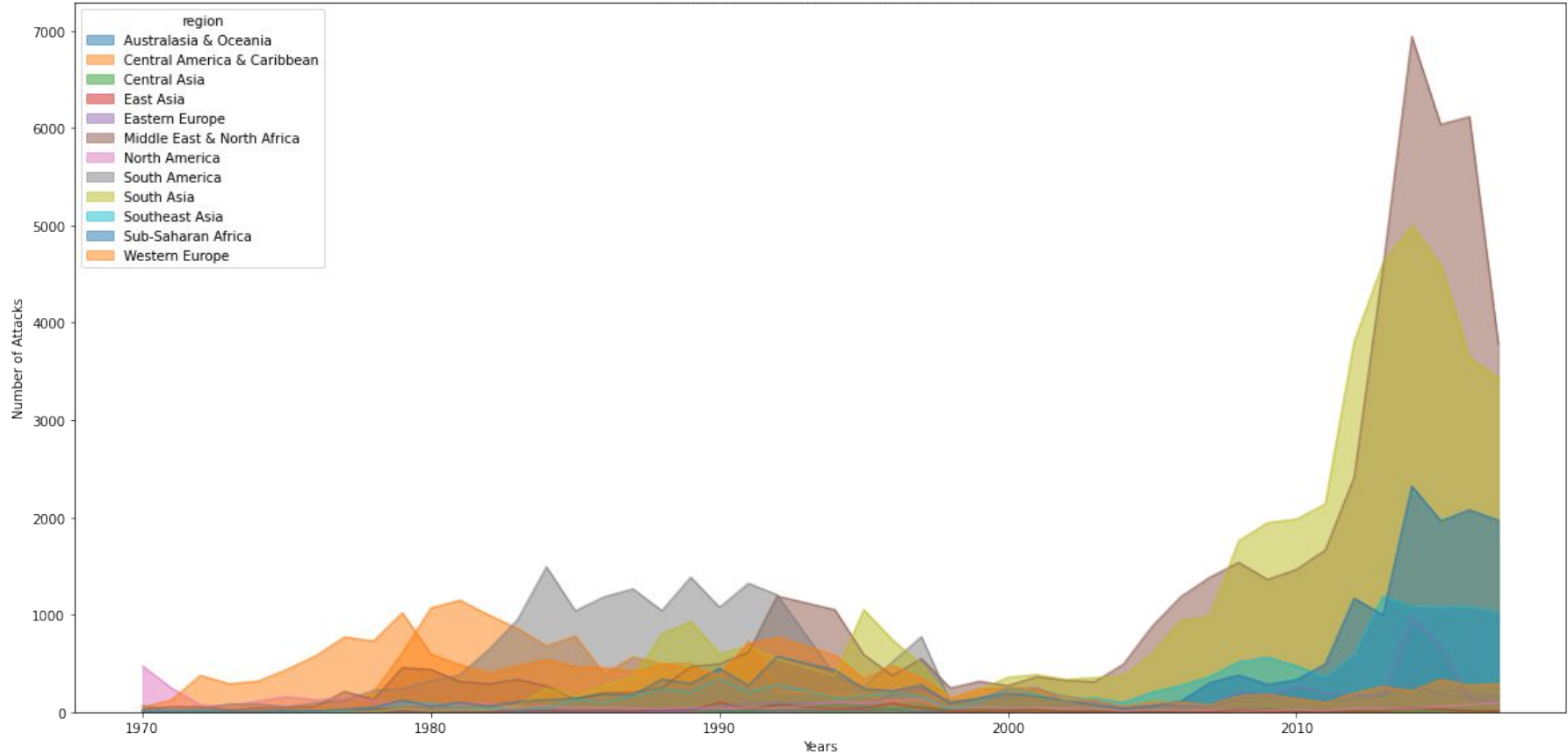
Correlation Analysis

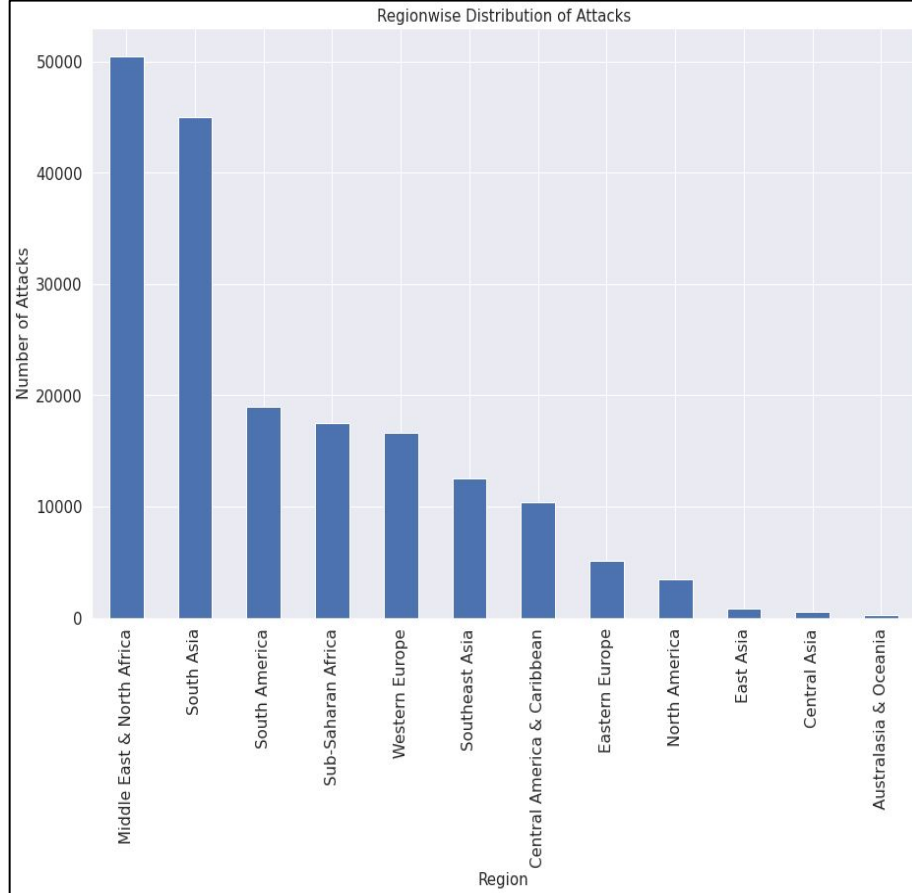


- According to this visualisation, the killed and wounded are highly correlated as compared to others, i.e. 44%
- As new column named Casuality was added earlier, which is result of killed+wounded. These 3 are also highly correlated columns.
- These correlations can be further useful in model building

Region-wise Terrorist Activities

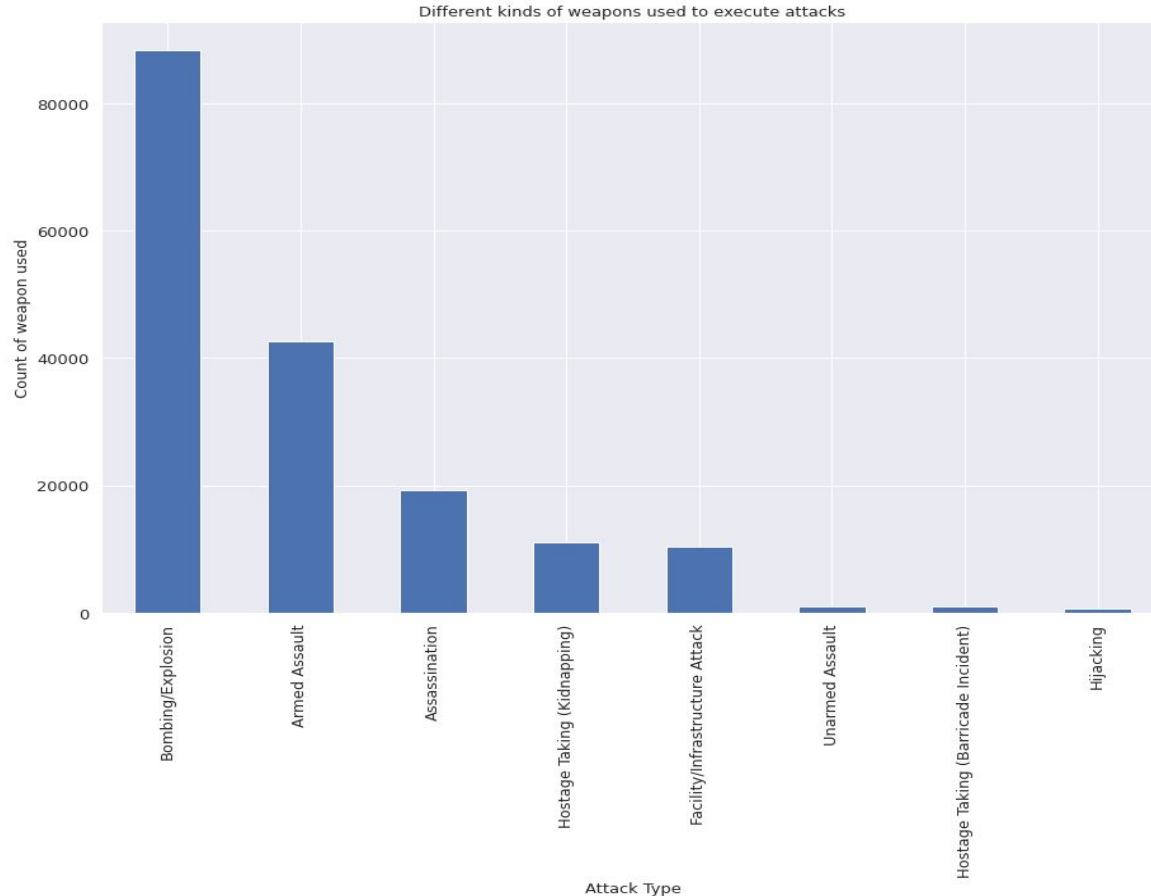
Terrorist Activities By region in each year





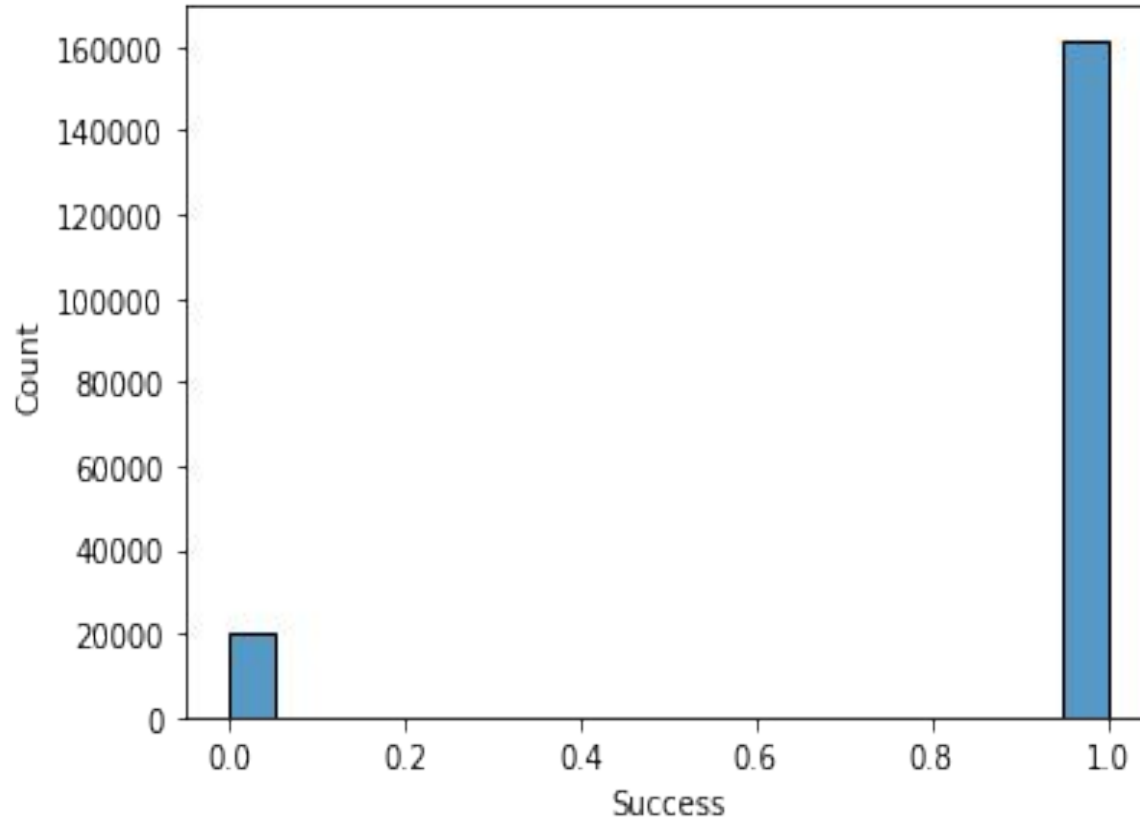
- According to the area plot on the previous slide, there is a peak increase in attacks after 2011 in almost every region, with the Middle East and North African nations topping the list due to the highest number of attacks (from the bar plot on this slide), and then comes South Asian countries at the second position.
- Middle East and North African Countries - Algeria, Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia, United Arab Emirates and Yemen.
- South Asian Countries - Afghanistan, Bangladesh, Bhutan, India, Iran, Maldives, Nepal, Pakistan, and Sri Lanka.

Most Used Weapons



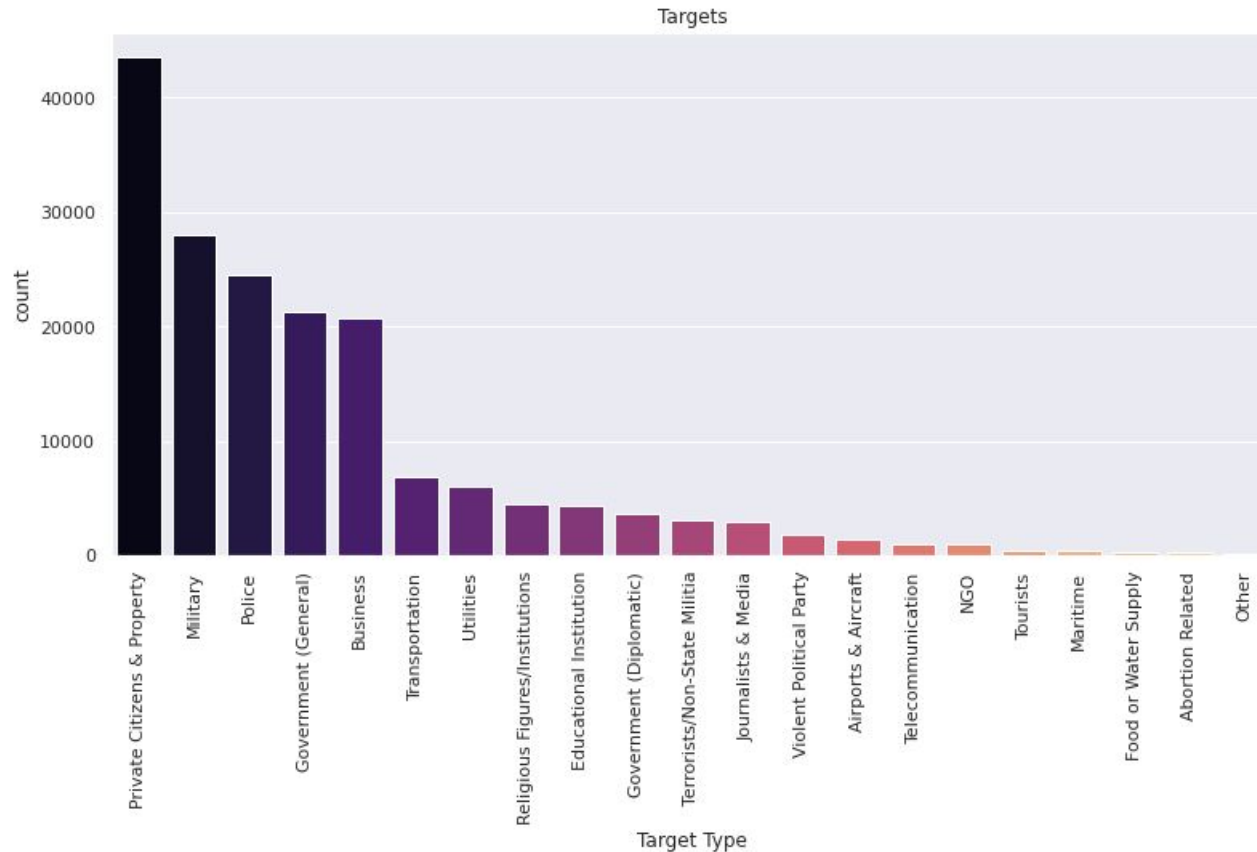
- Bombing Weapons and Explosives were mostly used weapons in attacks followed by Armed Assault. Casualties because of bombing from 1970-2017 were - 5,30,007.
- Hijacking is the least used weapon in executing attacks.

Successes And Failures



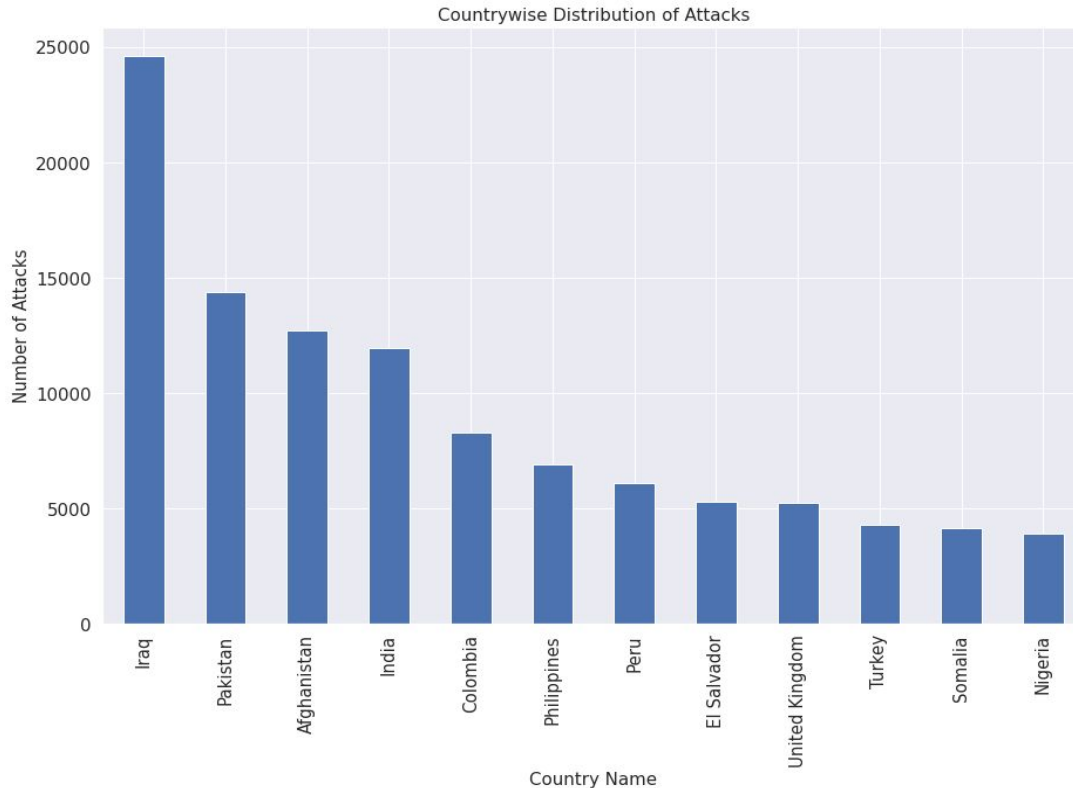
Here In this Visualisation, 1 denotes success and 0 denotes failure. Terrorists were successful in executing 1,61,632 attacks but failed in 20,059 attacks.

Most Targeted Sites



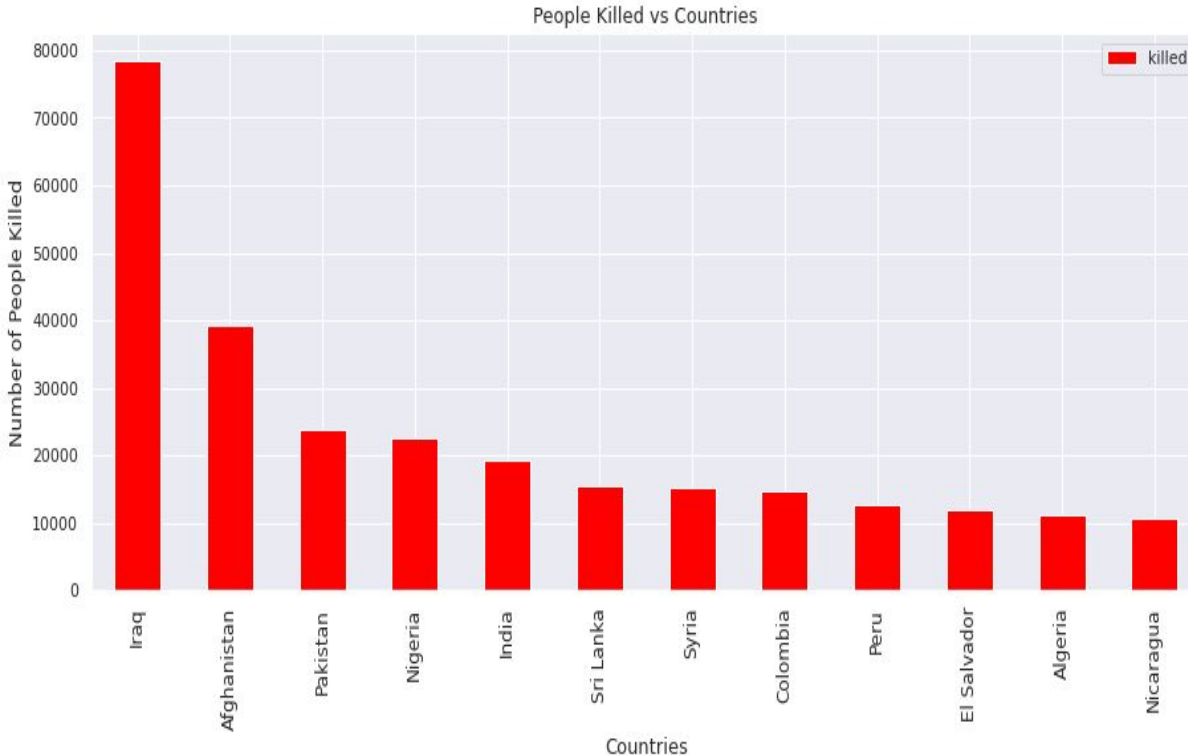
From this Visualisation we can see that the main target of these attacks are Private Citizens, Properties, Military, Police, Government, Businesses.

Most Affected Countries



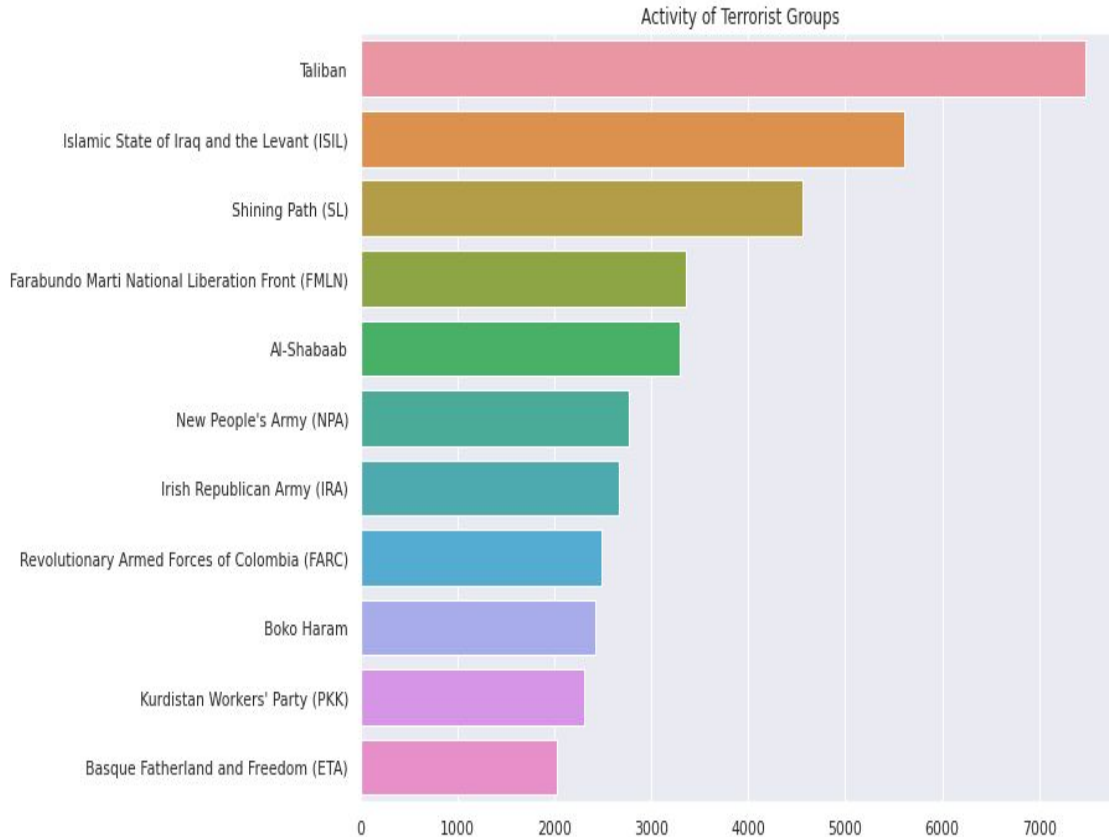
- Here we can see that Iraq is the most suffered country with 24,636 attacks followed by Pakistan with 14,368. India's position is 4th with 11,960 attacks. And Afghanistan with 12,731 attacks.
- The primary motivation for these attacks might be a perception of hardship and inequality among various cultural groups, a lack of governmental legitimacy, unemployment.

People Killed in Countries



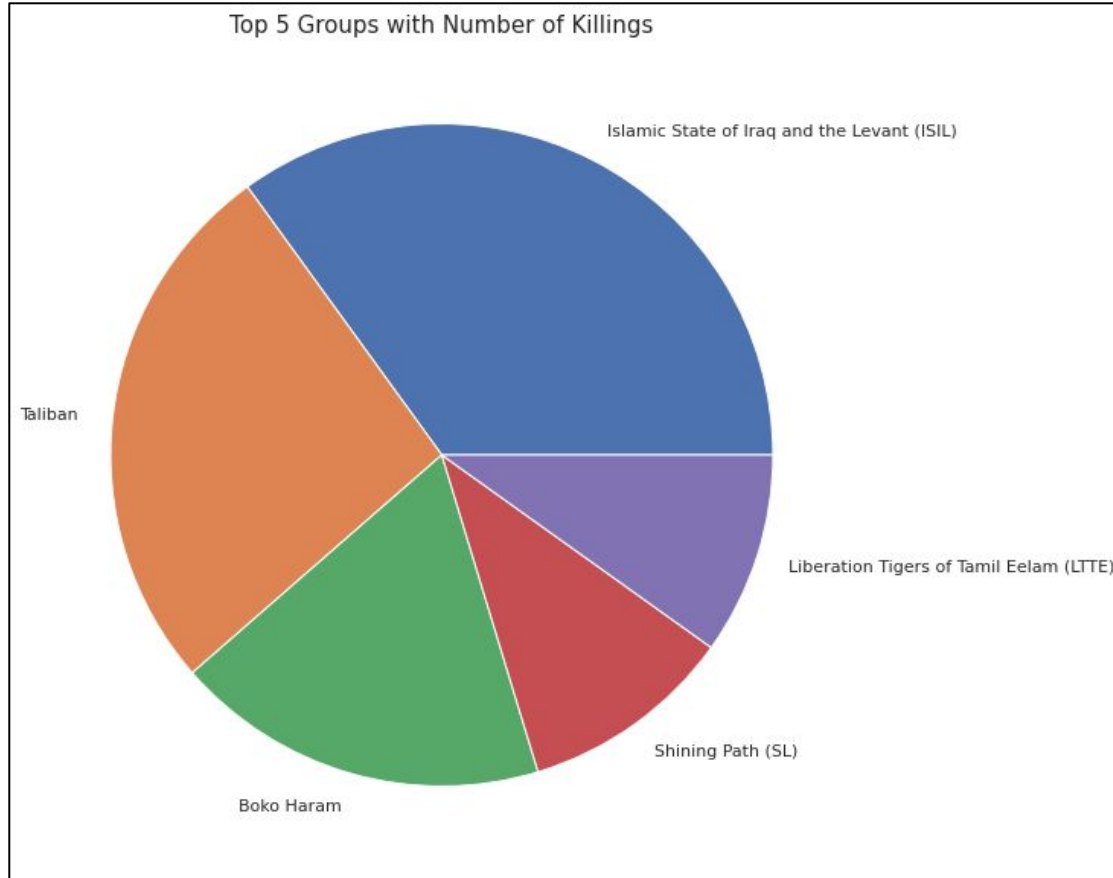
- In Iraq from 1970 to 2017, number of people killed due to terrorism were - 78,589
- In Afghanistan and Pakistan people killed due to terrorist activities were - 39,384 and 23,822.
- In Nigeria People killed due to terrorism were - 22,682
- In India from 1970 to 2017, number of People Killed due to terrorism were - 19,341

Different Terrorist Groups Between 1970-2017



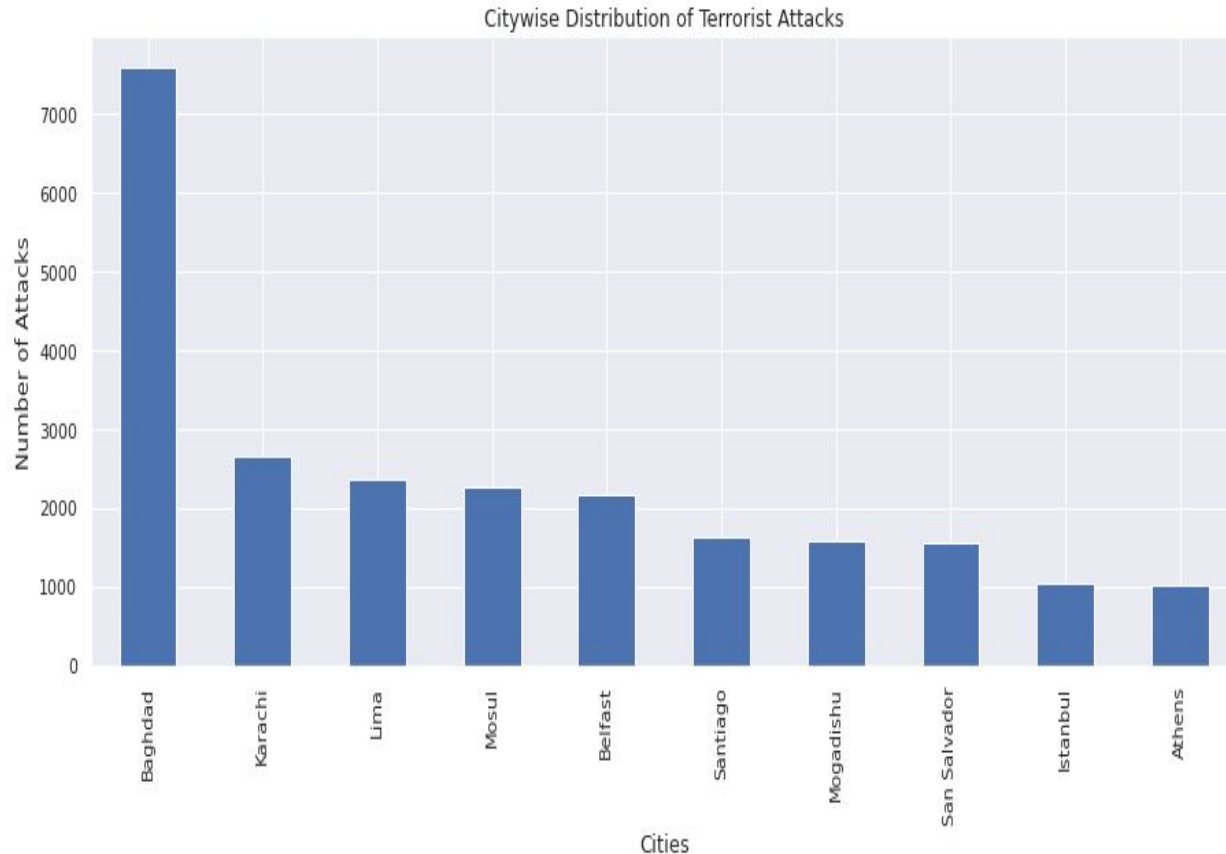
- Taliban is the most active terrorist organization with 7478 attacks followed by Islamic State of Iraq and the Levant (ISIL).
- Top 5 Terrorist organizations in terms of activeness are - Taliban, ISIL, Shining Path (SL), Farabundo Marti National Liberation Front (FMLN), Al-Shabaab.

People Killed By Terrorist Groups



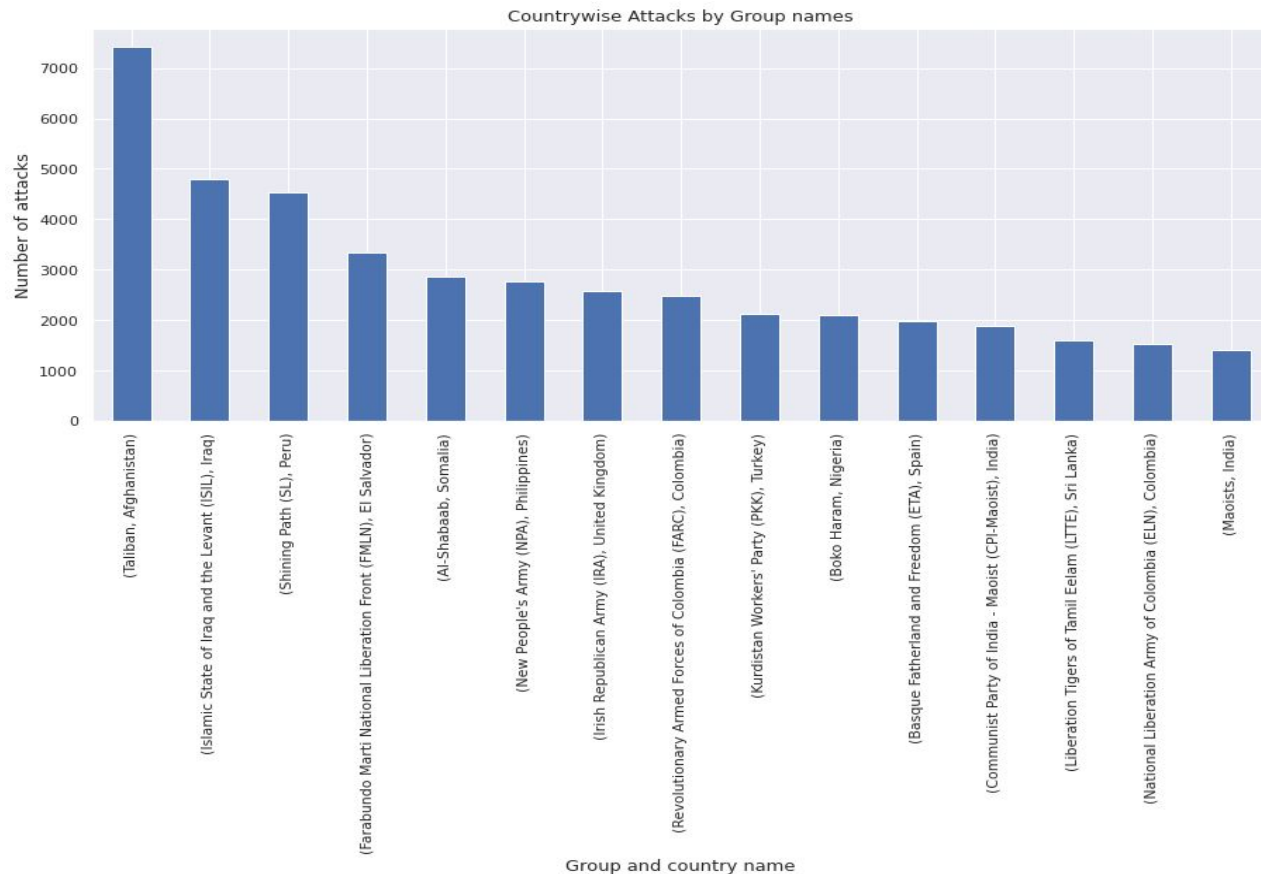
- Taliban has executed most number of attacks but ISIL Killed the maximum number of people, i.e. 38,923
- Taliban has murdered 29,410 persons in their attacks.
- Between 1970 and 2017, both ISIL and the Taliban killed more than half of all persons killed by terrorism.

City-wise Stats on Terrorist Attacks



- Baghdad has the highest amount of attacks and killings. Baghdad is the capital of Iraq, hence it has the highest amount of attacks and persons killed. People Killed in baghdad = 21,151
- Top 5 cities which suffered most terrorism are Baghdad, Karachi, Lima, Mosul, and Belfast.

Terrorist Groups vs Countries

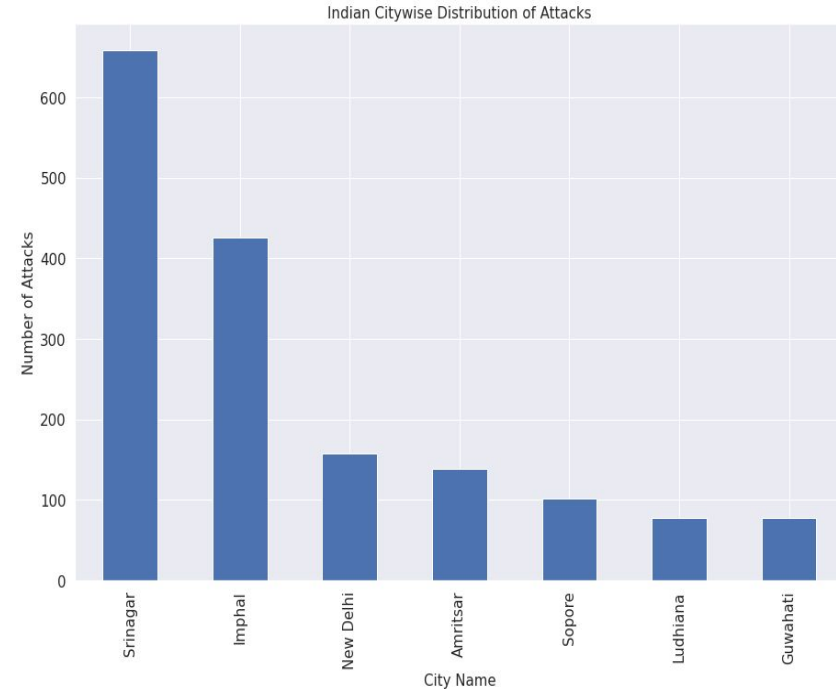
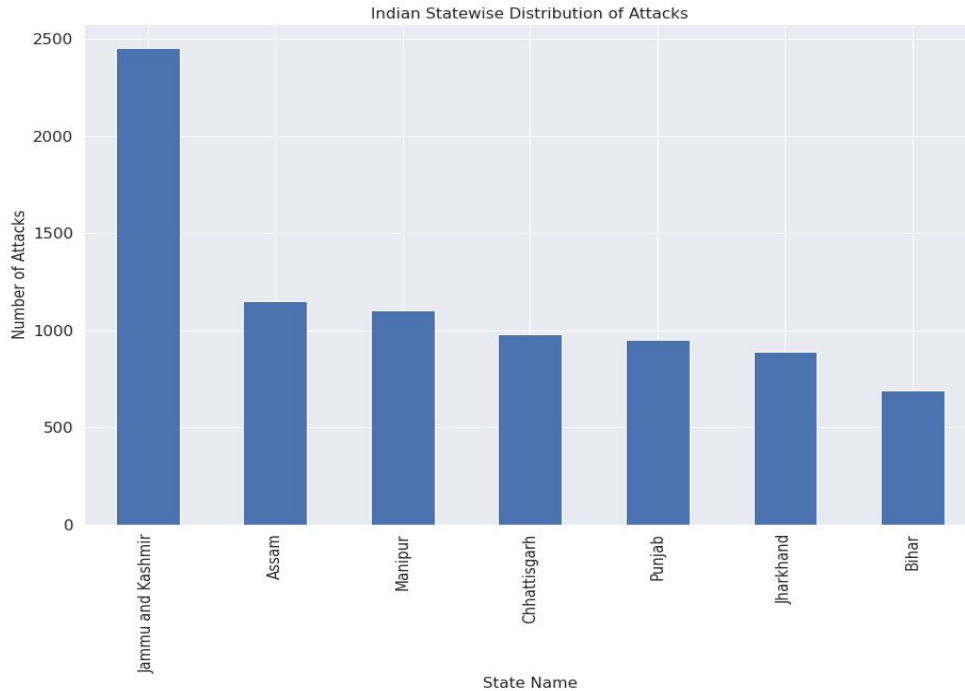


- The Taliban is predominantly active in Afghanistan, where it has carried out 7423 assaults, and ISIL is mostly active in Iraq, where it has carried out 4797 attacks.
- In India Maoists group has executed most number of attacks i.e. 1396.

group_name	country	
Taliban	Afghanistan	7423
Islamic State of Iraq and the Levant (ISIL)	Iraq	4797
Shining Path (SL)	Peru	4541
Farabundo Marti National Liberation Front (FMLN)	El Salvador	3330
Al-Shabaab	Somalia	2867
New People's Army (NPA)	Philippines	2770
Irish Republican Army (IRA)	United Kingdom	2575
Revolutionary Armed Forces of Colombia (FARC)	Colombia	2468
Kurdistan Workers' Party (PKK)	Turkey	2109
Boko Haram	Nigeria	2087
Basque Fatherland and Freedom (ETA)	Spain	1975
Communist Party of India - Maoist (CPI-Maoist)	India	1877
Liberation Tigers of Tamil Eelam (LTTE)	Sri Lanka	1596
National Liberation Army of Colombia (ELN)	Colombia	1529
Maoists	India	1396

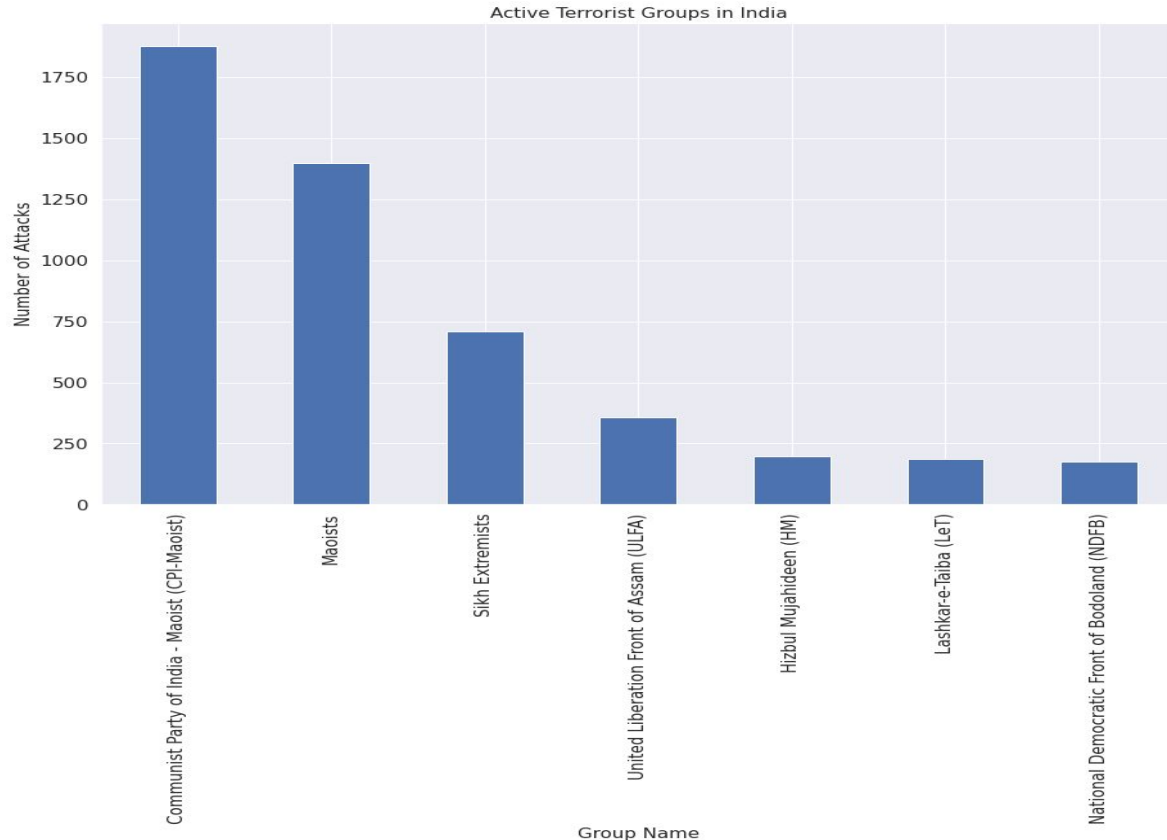
The table above shows which terrorist organisation is most active in which nation and how many attacks it has carried out there. (For eg Taliban is most active in Afghanistan with 7423 attacks.

Attacks Carried out in India



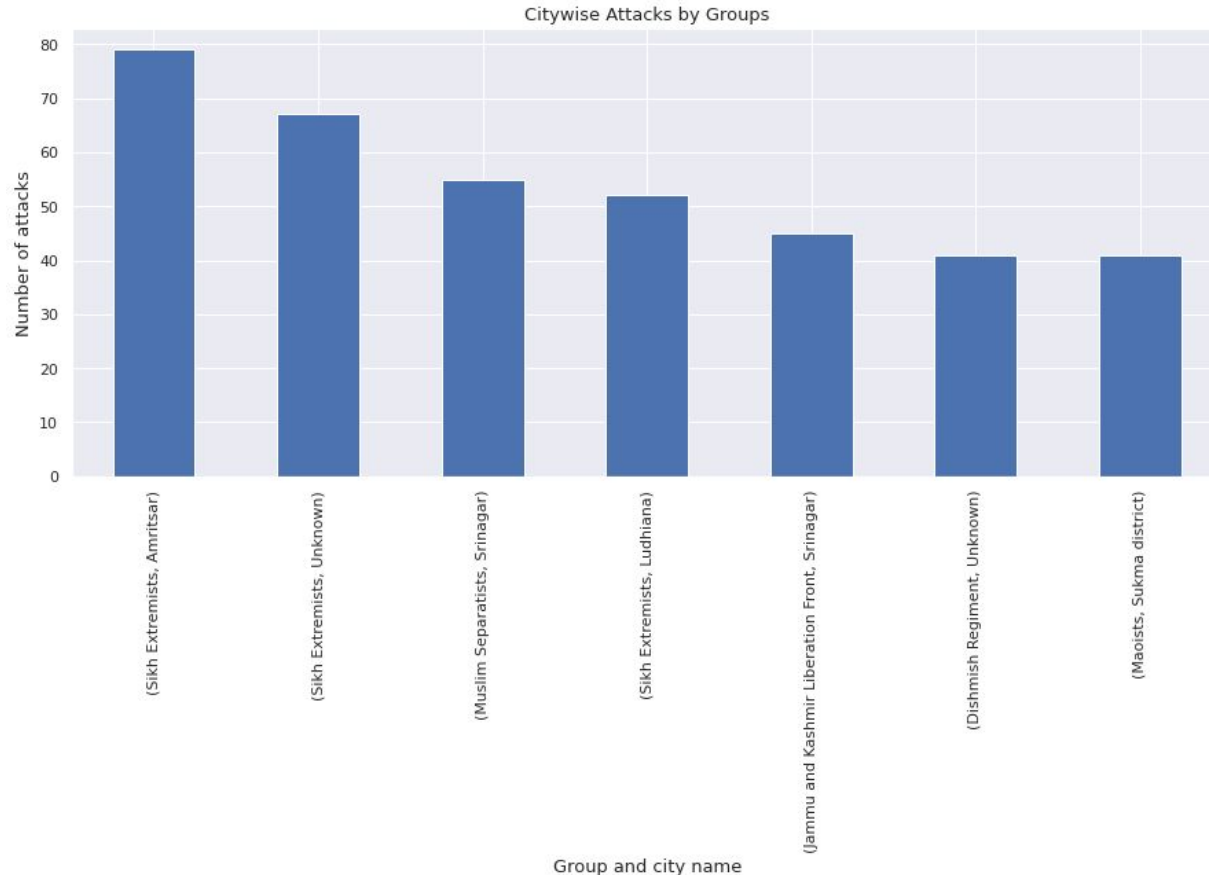
It can be seen that Jammu Kashmir faced the most terrorism that is 2454 attacks followed by Assam and Manipur. Srinagar and Imphal are top 2 cities which suffered most terrorism between 1970-2017

Terrorist Groups in India



- Communist Party of India - Maoist (CPI-Maoist) is the most active group in spreading terrorism across India, it has carried out 1877 attacks.
- Top active groups after Maoist are Maoists, and Sikh Extremists. While Hizbul Mujahideen and Lashkar-e-Taiba are almost equal to each other in carrying out attacks (190 attacks).

Terrorist Groups vs Cities in India



- Sikh Extremists were most active in Amritsar, and Ludhiana from the year 1970-2017. Reason behind this could be the motive to build Khalistan (separate homeland for sikhs).
- And Muslim Separatists were second most active groups in terms of terrorist activities and they are most active in Srinagar.

World-wide Effects of Terrorism

- ❑ Total Number of People killed from the year 1970 to 2017 because of terrorism are: 4,11,868.
- ❑ Total Number of People Wounded from the year 1970 to 2017 because of terrorism are: 5,23,869.
- ❑ Total Number of Casualties (Killed + Wounded) from the year 1970 to 2017 because of terrorism are: 9,35,737.

Conclusions

- Iraq is the most suffered country with 24,636 attacks followed by Pakistan with 14,368. India's position is 4th with 11,960 attacks. And Afghanistan with 12,731 attacks.
- Middle East and North African Countries are the Prime targets for terrorist organizations.
- Maximum Number of Attacks happened in the year of 2014, i.e. 16903, it was also the year with maximum number of casualties. And the minimum Number of Attacks happened in the year of 1971, i.e. 471.
- There is a peak increase in attacks after 2010 in almost every region, with the Middle East and North African nations topping the list due to the highest number of attacks, and then comes South asian countries at the second position.
- The percentage at which the number of attacks have increased from 1970 to 2017 is: 94.03 %
- Bombing Weapons and Explosives were mostly used weapons in attacks followed by Armed Assault. While Hijacking is the least used weapon in executing attacks. Casualties because of bombing were - 5,30,007.

- Terrorists were successful in executing 161632 attacks but failed in 20,059 attacks.
- The main target sites for terrorism are Private Citizens and Properties, Military, Police Government, Businesses.
- In Iraq from 1970 to 2017, number of people killed because of terrorism is equal to - 78,589. In India from 1970 to 2017, number of People Killed because of terrorism were - 19,341.
- With 7478 attacks, the Taliban is the most active terrorist organisation, followed by ISIL (at second position). On the other side, the Islamic State of Iraq and the Levant (ISIL) is the group with the most killings, followed by the Taliban.
- Baghdad (Capital Of Iraq) has been the worst hit by terrorism.
- Taliban is predominantly active in Afghanistan, where it has carried out 7423 assaults, and ISIL is mostly active in Iraq, where it has carried out 4797 attacks. In India Maoists group has executed most number of attacks i.e. 1396.
- In India Jammu Kashmir faced the most terrorism that is 2454 attacks followed by Assam and Manipur. Srinagar and Imphal are top 2 cities which suffered most terrorism between 1970-2017
- Communist Party of India - Maoist (CPI-Maoist) is the most active group in spreading terrorism across India, it has carried out 1877 attacks.
- Top active groups in India after Maoist are Maoists, and Sikh Extremists. While Hizbul Mujahideen and Lashkar-e-Taiba are almost equal to each other in carrying out attacks (190 attacks).

- Sikh Extremists were most active in Amritsar, and Ludhiana from the year 1970-2017. Reason behind this could be the motive to build Khalistan (separate homeland for sikhs). And Muslim Separatists were second most active groups in terms of terrorist activities and they are mostly active in Srinagar.
- Total Number of Casualties from the year 1970 to 2017 because of terrorism are: 9,35,737.0
- Total Number of People killed from the year 1970 to 2017 because of terrorism are: 4,11,868.0
- Total Number of People wounded from the year 1970 to 2017 because of terrorism are: 5,23,869.0
- Thus from the findings of this analysis, National Security Agencies can plan on planting their agents in the most active sites for terrorism in order to get early insights on the plan of terrorist groups and to avoid any future attacks.
- These findings can further help security agencies on where to find the most active terrorist groups, and the weapons they mostly used for carrying out attacks.
- People constantly blame Muslims for spreading terrorism, despite the reality that Muslims have endured the most terrorism. These are the individuals who are most impacted by terrorist operations; according to the visuals and above conclusions from EDA, Iraq, Afghanistan, and Pakistan appear to be the most damaged countries. These are all Muslim-majority countries.

THANK YOU