

Capstone Project - 1

Global Terrorism Analysis

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TERRORISM

AI



Points to be Discussed



- Understanding the problem statement
- Data Processing
- Data Cleaning and NaN Value Handling
- Variable explanation
- Coorelation between the data
- Number of terrorists activities in each year
- Number of people died in each year
- Number of people died by region
- Top 10 countries that are most affected
- Least affected Countries
- Most affected regions

Points to be Discussed (Continued)



- Regions affected in the year 2014
- Attacks in India over the years
- Attacks in India by City wise
- Types of terrorists attacks
- Attack types used in each region
- Attacks based on target types
- Types of weapons used by terrorists
- Top terrorists gangs
- How to stop terrorism
- Challenges faced
- Conclusion

Understanding the problem statement

- EDA Topic – Global Terrorism Analysis
- Problem Statement – To explore and analyze the Global Terrorism Database to explore the key findings pertaining to terrorist activities.
- The GTD is an open-source database that contains the information on terrorist attacks around the world from 1970 through 2017.

Terrorism

Terrorism poses a direct threat to the security of the citizens of countries, and to international stability and prosperity. It is a persistent global threat that knows no border, nationality or religion, and is a challenge that the international community must tackle together.

Data Processing

- Data encoding and Dataset loading
- Dataset contain 181691 rows and 135 columns
- There are significant number of missing information also it contains number of duplicate columns that were needed to be processed.
- There were also NaN values that are needed to be dropped.
- There were some columns that were needed to be renamed by proper annotations.
- The further process is done in Data cleaning and NaN values handling.

scite1	scite2	scite3	dbsource
NaN	NaN	NaN	PGIS
NaN	NaN	NaN	PGIS
NaN	NaN	NaN	PGIS
NaN	NaN	NaN	PGIS
NaN	NaN	NaN	PGIS
...

181689	201712310031	2017	12	31
181690	201712310032	2017	12	31
181691 rows × 135 columns				

Data Cleaning and NaN Value Handling

- Here, we have renamed the required columns with appropriate annotations.
- Only required columns and data is kept as per analysis basis remaining were dropped.
- All the NaN values and the duplicate values are dropped
- After all this the dataset has 181691 rows and 16 columns that were required for analysis which was the final data required.
- The variables that are shown below in picture are renamed and kept for final data.

```
# filling null values with zero and unknowns with unknown
gta_df["Killed"] = gta_df["Killed"].fillna(0)
gta_df["Wounded"] = gta_df["Wounded"].fillna(0)
gta_df["City"] = gta_df["City"].fillna('unknown')
gta_df["Summary"] = gta_df["Summary"].fillna(0)
gta_df["latitude"] = gta_df["latitude"].fillna(0)
gta_df["longitude"] = gta_df["longitude"].fillna(0)
gta_df["Gang_name"] = gta_df["Gang_name"].fillna('unknown')
gta_df["Weapon_type"] = gta_df["Weapon_type"].fillna('unknown')
gta_df["Motive"] = gta_df["Motive"].fillna(0)
```

```
[ ] # Dropping all null values in the dataset
gta_df = gta_df.dropna(axis=1)
```

```
[ ] gta_df.isnull().sum()
```

```
Year      0
Month     0
Day       0
Country   0
Region    0
City      0
latitude  0
longitude 0
Attack_type 0
Killed    0
Wounded   0
Summary   0
Target_type 0
Gang_name 0
Weapon_type 0
Motive    0
dtype: int64
```

There are no null values in the dataset

```
#Rename the necessary column names
```

```
gta_df = gta_df.rename(columns={'iyear': 'Year', 'imonth': 'Month', 'iday': 'Day', 'country_txt': 'Country', 'region_txt': 'Region',
                                'provstate': 'State', 'city': 'City', 'attacktype1_txt': 'Attack_type', 'target1': 'Target', 'nkill': 'Killed', 'nwound': 'Wounded',
                                'targsubtype1_txt': 'Target_subtype', 'gname': 'Gang_name', 'weaptype1_txt': 'Weapon_type', 'motive': 'Motive'})
```

Variable Explanation

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Year : Year in which attacks happened.

Month : Months information in which attacks took place.

Day : At which the attacks took place.

Country : Countries in which the attacks took place.

Region : Information about regions in which attacks happened.

State : States which were affected due to terrorism.

City : Cities which were affected by the attacks.

Attack types : It give insights about the types of attacks were performed by the terrorists.

Variable Explanation (Continued)

Target : Targets are on which the attacks are performed.

Killed : Victims that are killed during the terrorists activities.

Wounded : It shows the victims that were wounded by the attacks.

Summary : It gives insights of locations that were targeted.

Target type : It tells about the types of target that were affected.

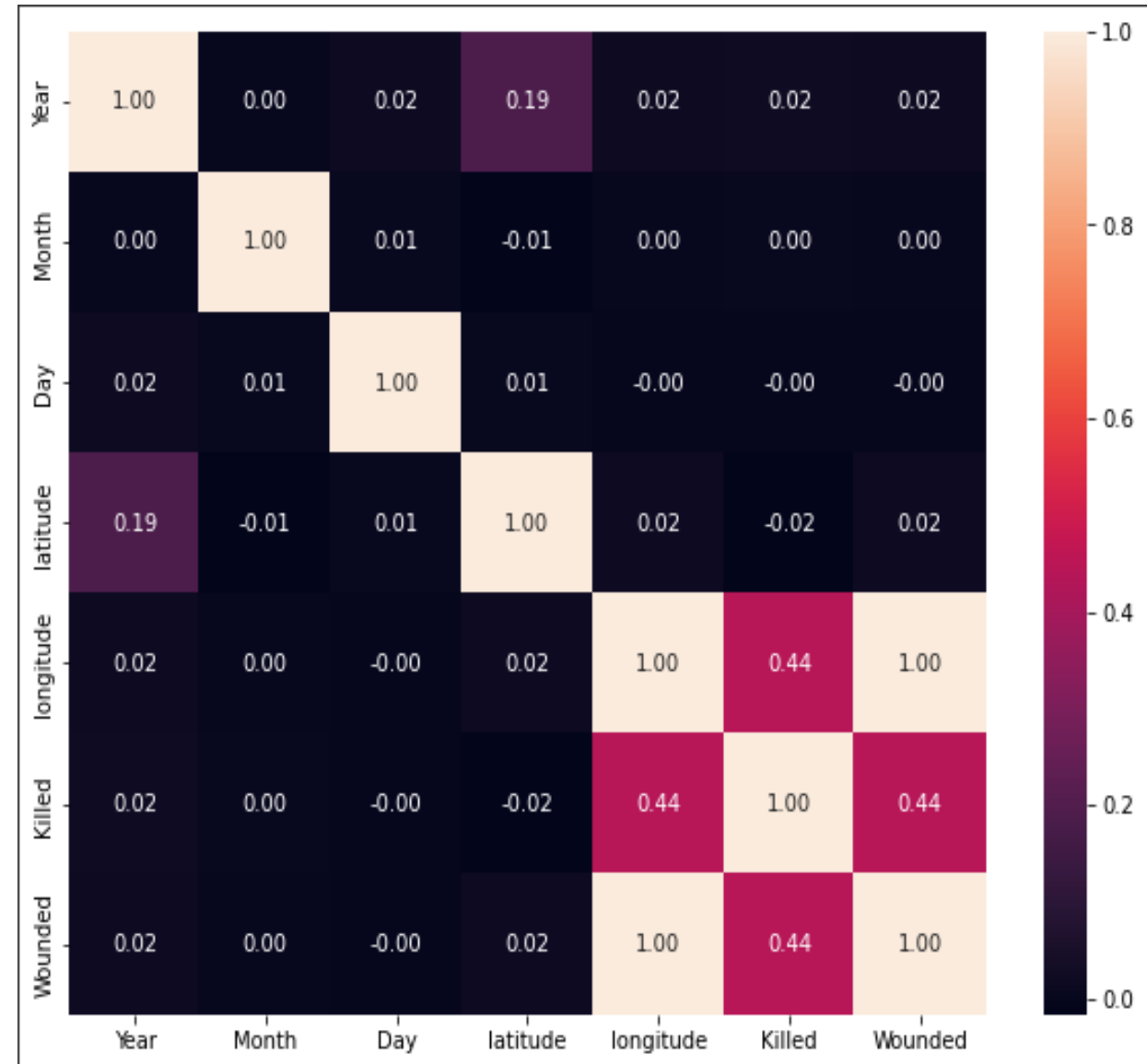
Gang name : It gives insight of gangs that were highly active.

Weapon type : It shows types of weapons used for attacks.

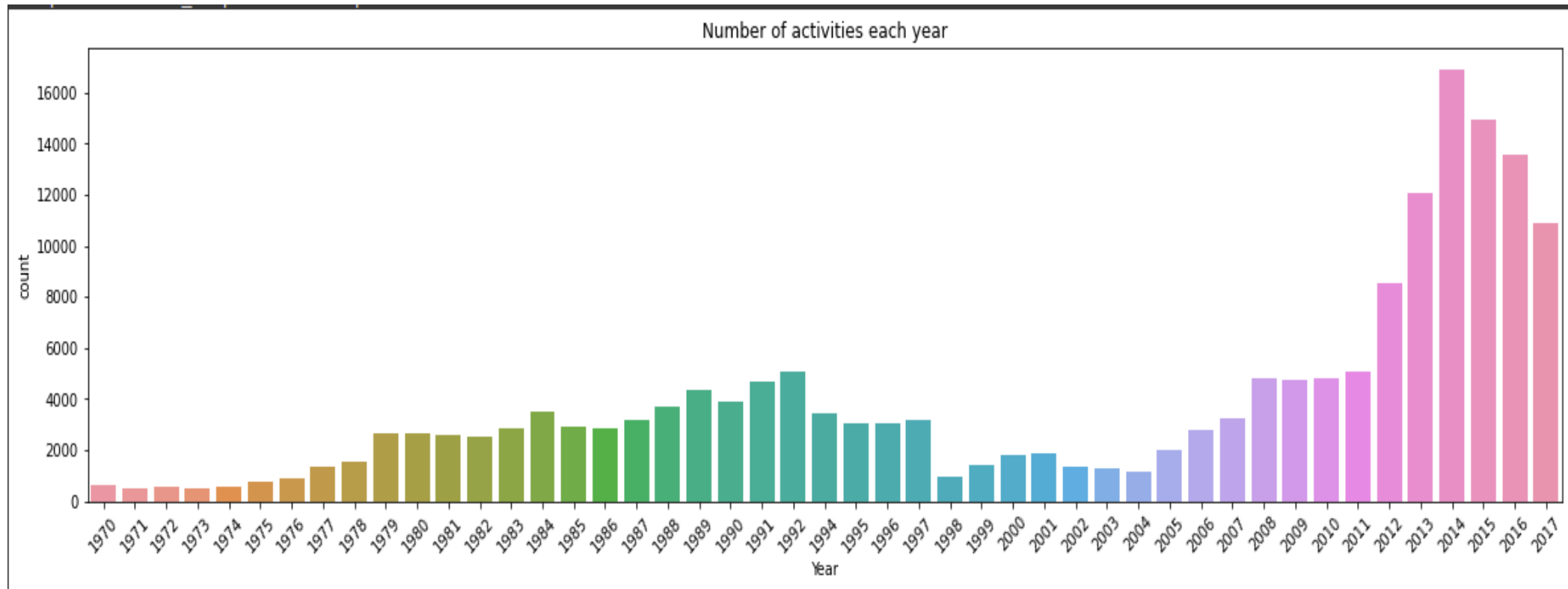
Motive : It gives information about the motives of the gangs that were carrying out the activities.

Correlation between the data

- Here some part of data are having positive correlation and some part are having correlation and only few are having negative correlation.
- In this only killed and wounded are correlated not highly correlated cause it is not the value of 1 and only 0.4.

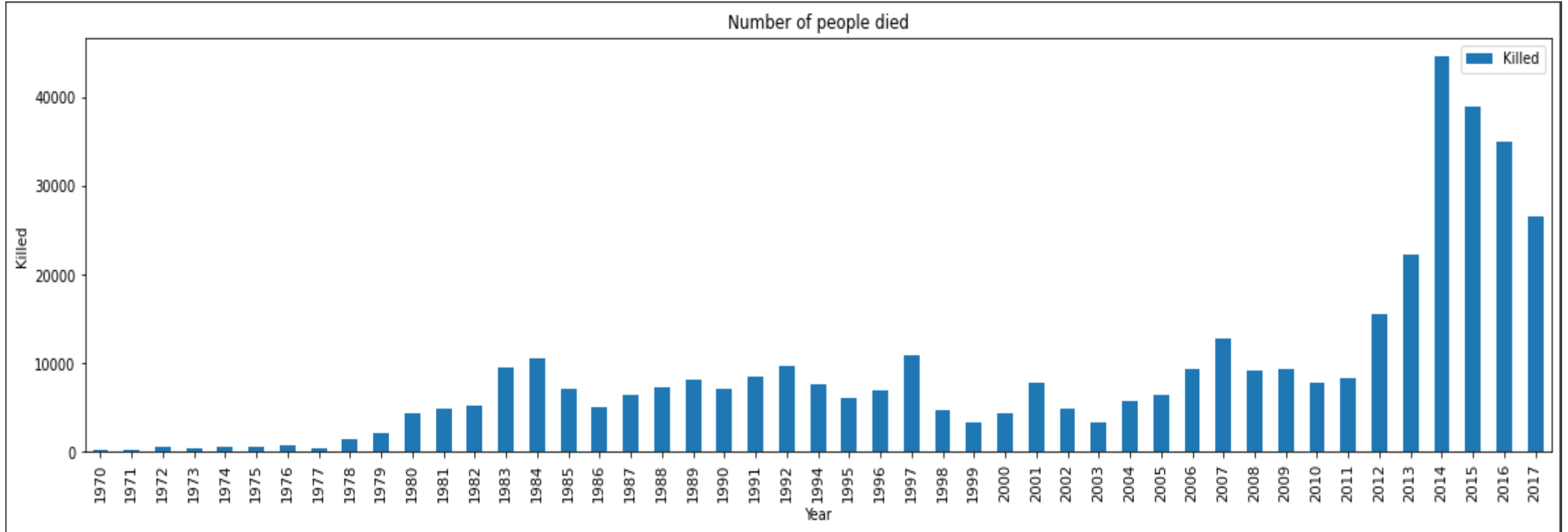


Number of terrorists activities in each year



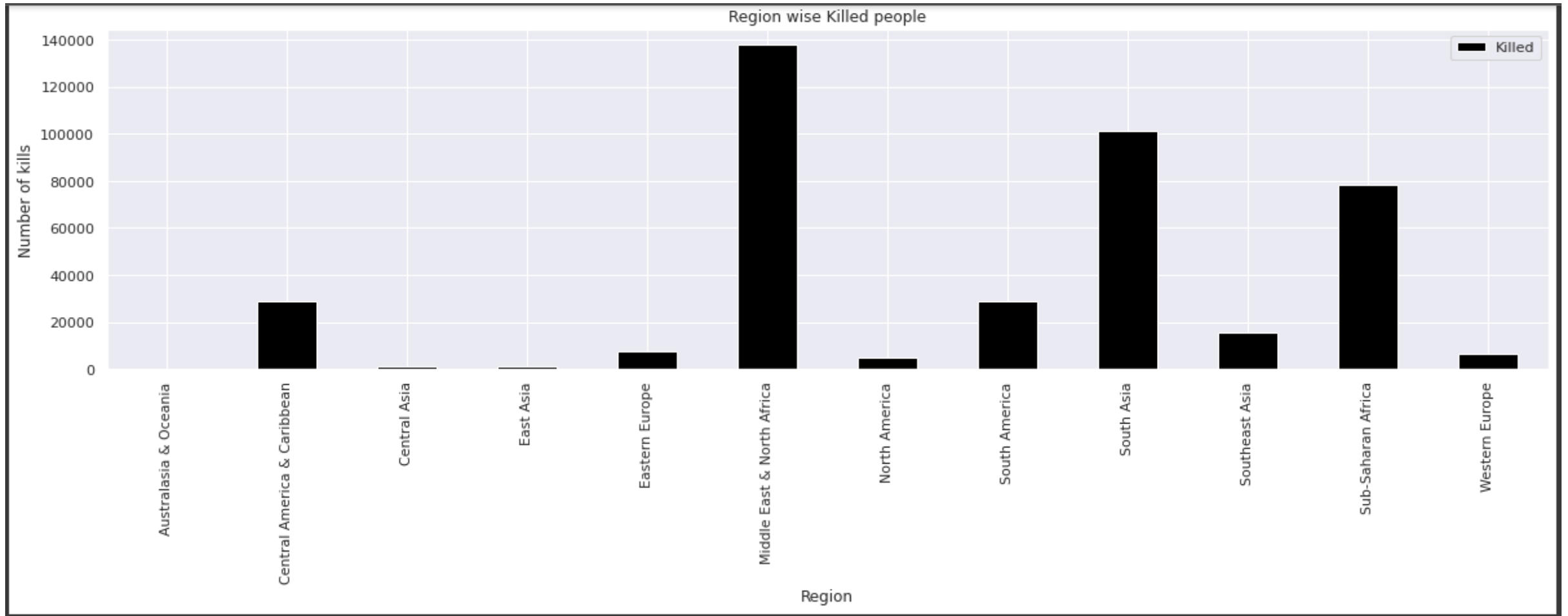
Terrorists activities then had fairly rise in the 1980's and early 1990's after that decline at certain extent then from 2000's it started gaining its peak slowly like never been before. The highest activity was seen in 2014.

Number of people died in each year



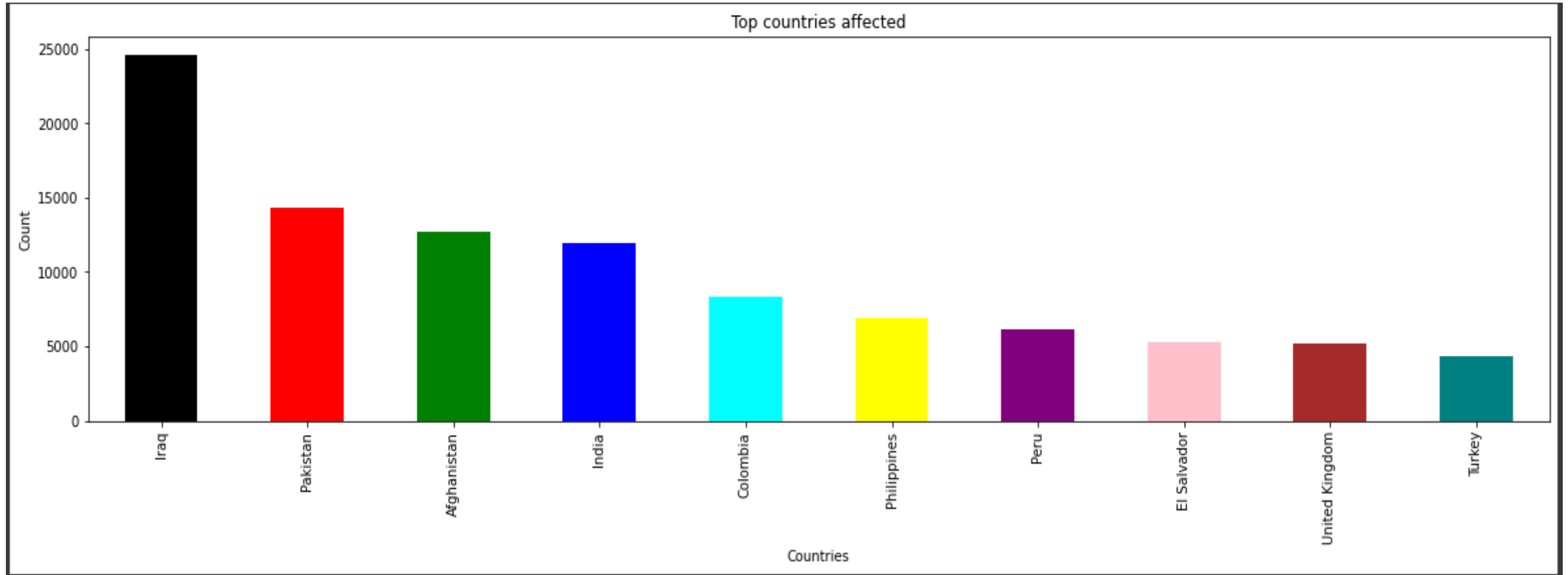
Highest number of deaths were seen from 2010 – 2014 as the activities were more in 2014 followed by 2015-2017.

Number of people died by region



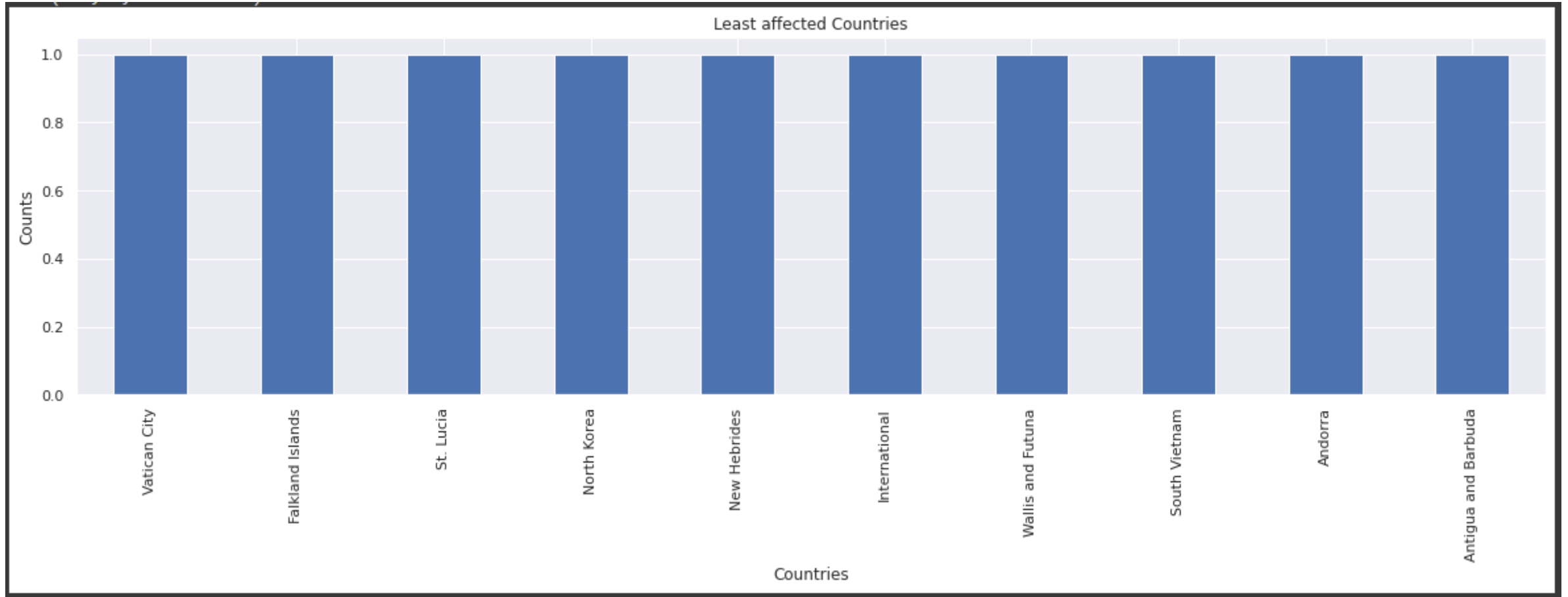
From the above data we can conclude that most of the people from Middle East & North Africa got killed compared to other regions.

Top 10 countries that are most affected

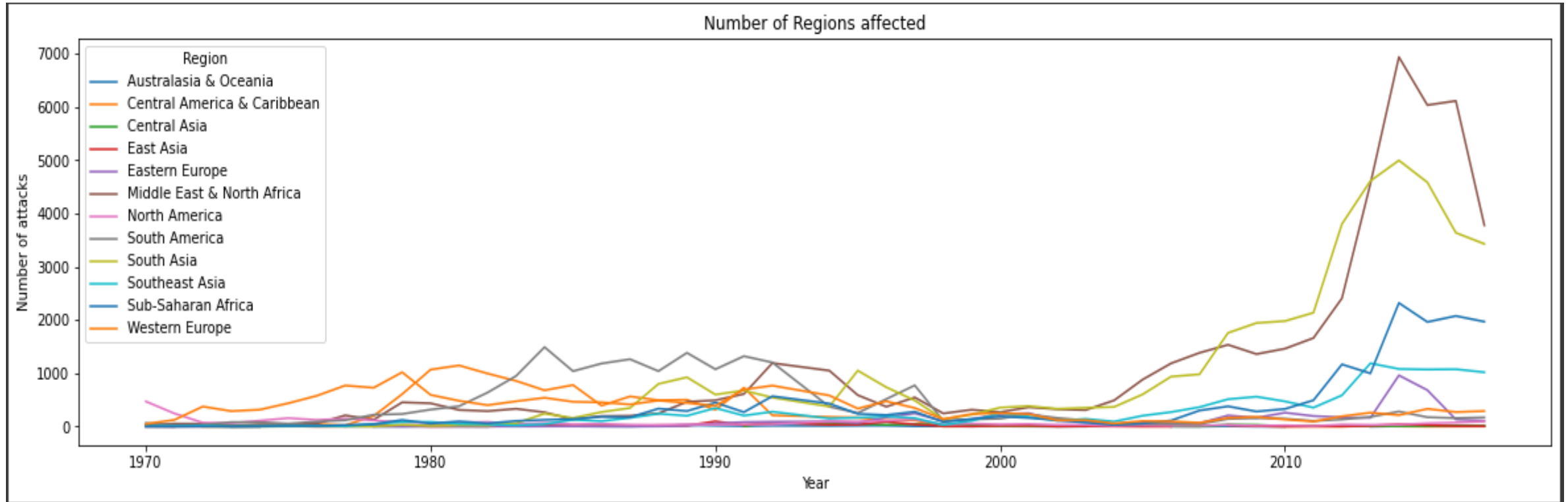


From the above we can conclude that the Iraq is highly affected by the killing/wounded of 24636 followed by Pakistan, Afghanistan and India. Where as, Turkey has least affected of 4292 killings/wounded.

Least affected Countries

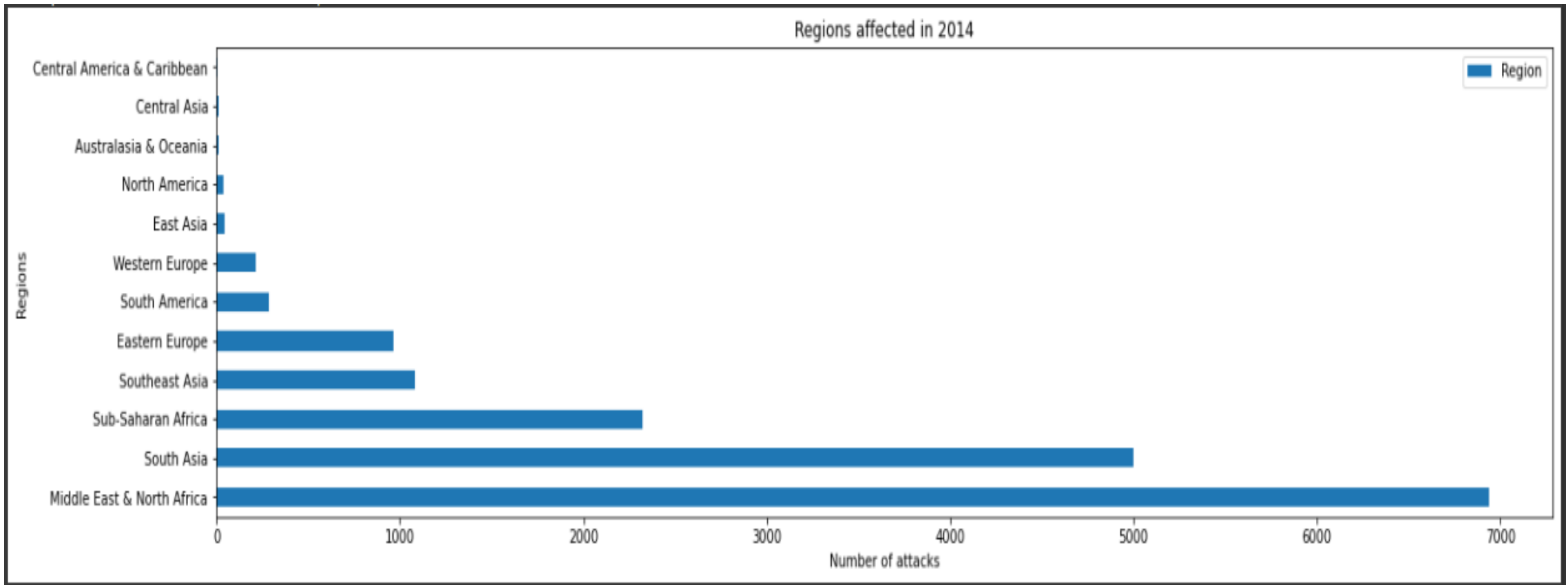


Most affected regions



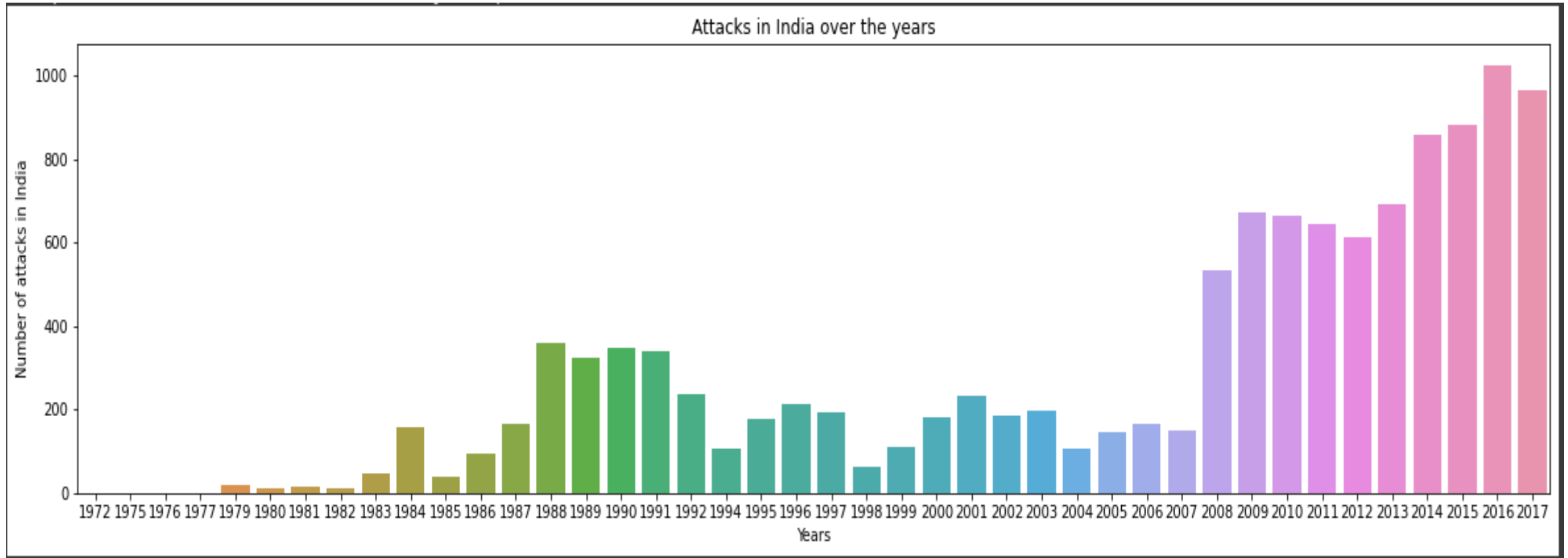
From above we can say that the regions Middle East and South asia are highly affected as compared to the other regions.

Regions affected in the year 2014



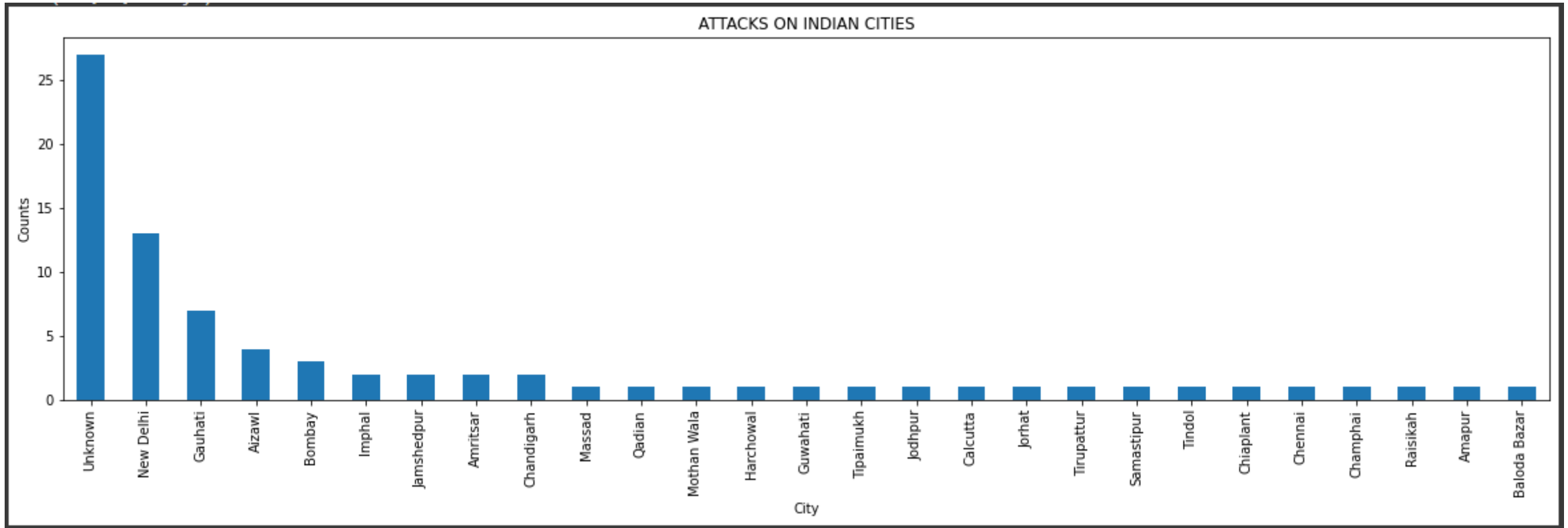
From above we can conclude that region Middle East, North Africa & South Asia are highly affected in the year 2014 where other regions like Central America, Central Asia, North America are least affected.

Attacks in India over the years



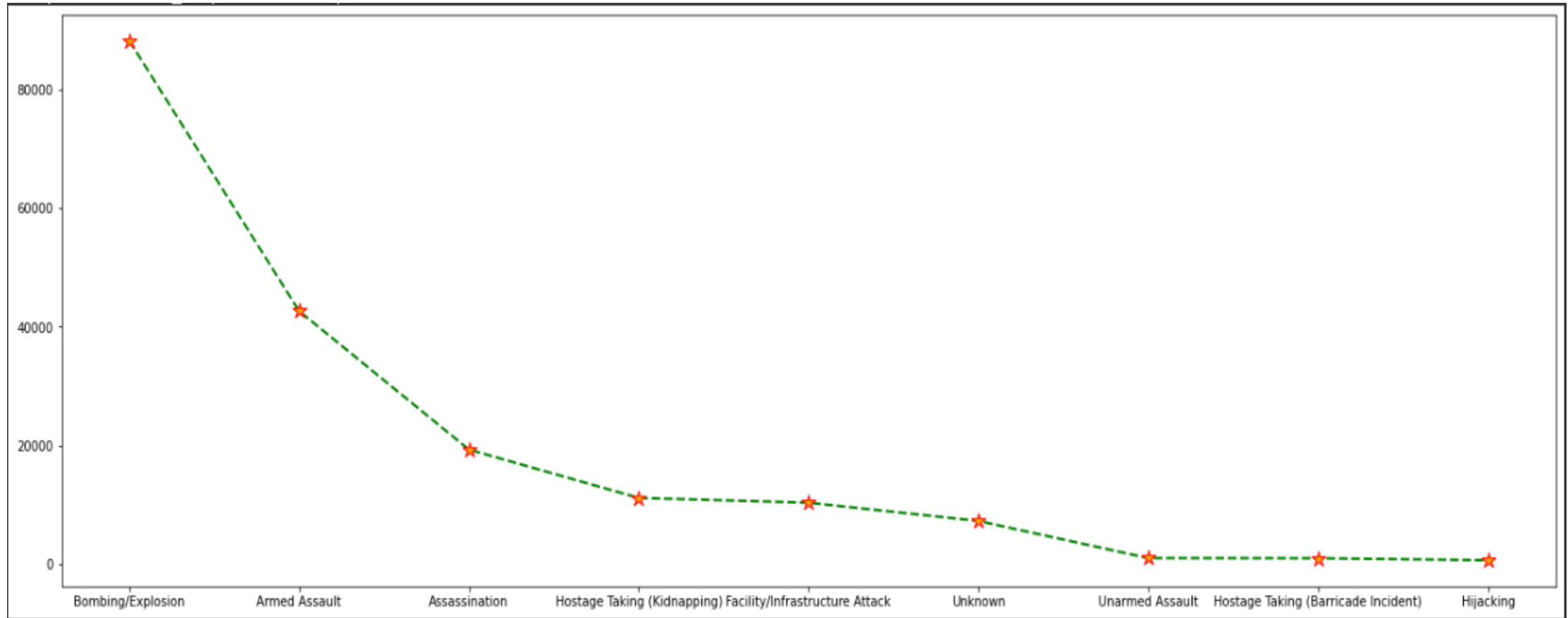
From 2007 to 2008 there is a huge jump in the terrorist activity in India. In 2007 149 incidents were recorded, In 2008 534 incidents were recorded. There is ~258% rise in the incidents just one year. Total 7590 attacks took place in India.

Attacks in India By City wise



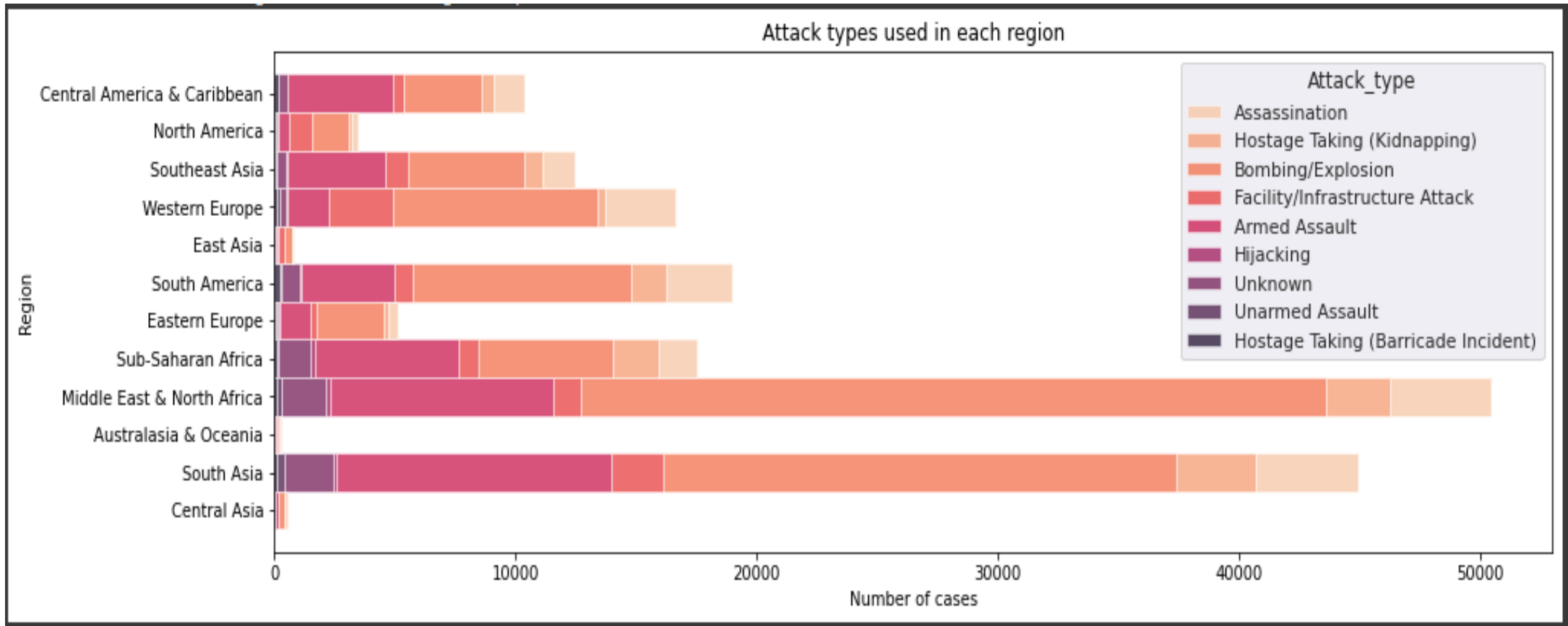
As per above information most of the terrorists attacks happened in the city which we do not have information about but as per information on Google most of terrorist attacks happened in Jammu and Kashmir we cannot say exactly & it is followed by New Delhi and Gauhati.

Types of terrorists attacks



From above we can conclude that Bombing/Explosion types of attack are highly used followed by armed assault, assassination. Hijacking is least used

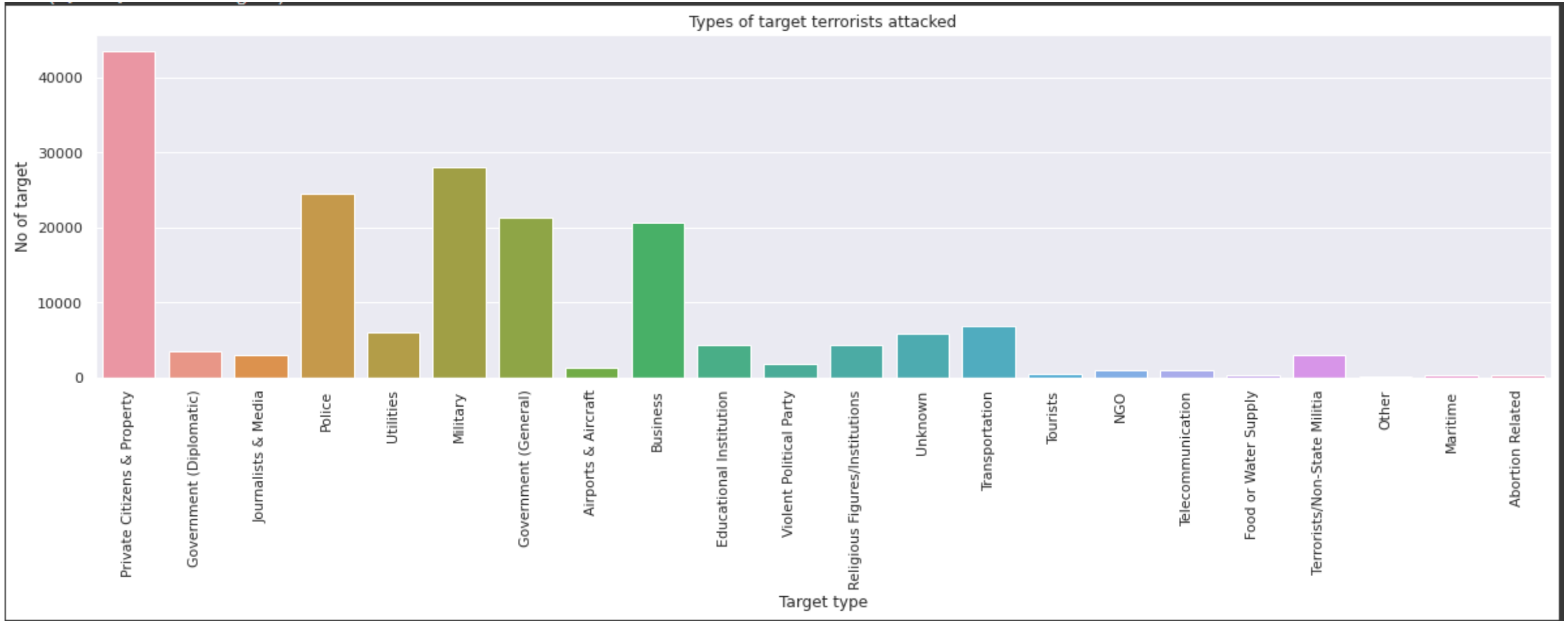
Attack types used in each region



By observing the above plot, we conclude that most attacks were done in Middle East & North Africa and type of attack used most is Bombing/Explosion followed by armed assault.

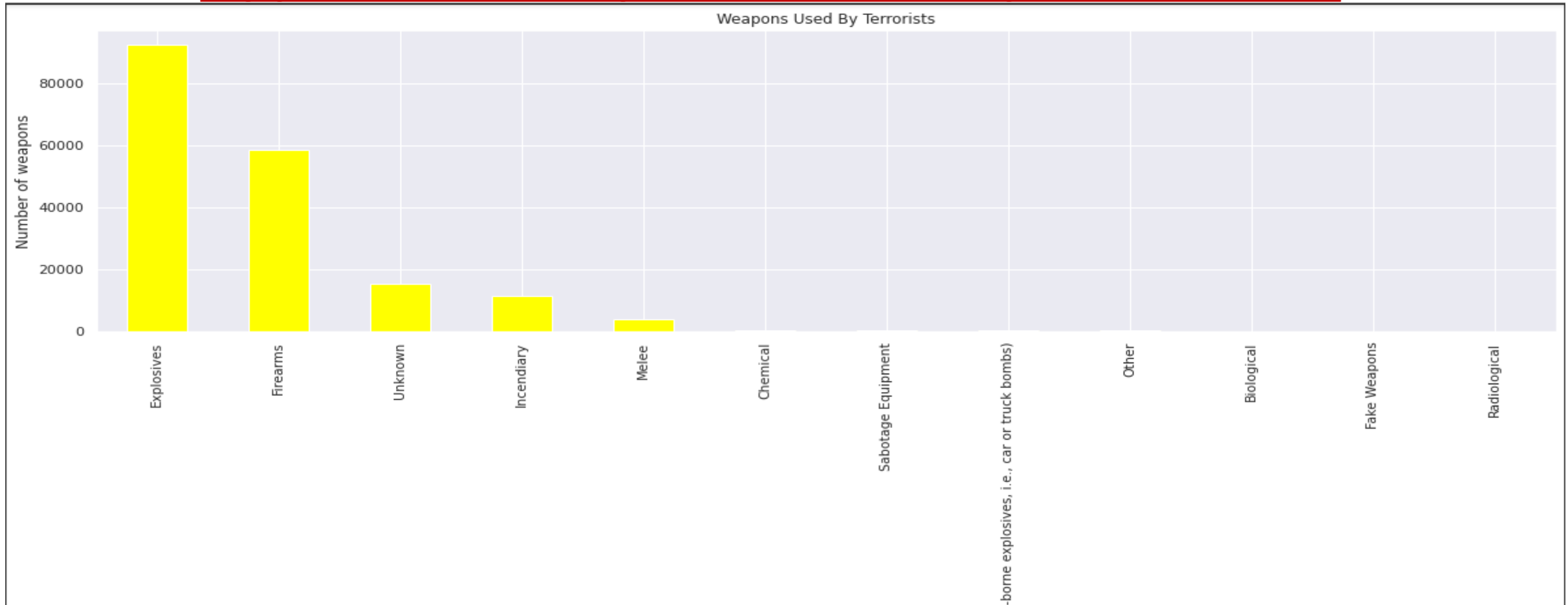
Attacks based on target types

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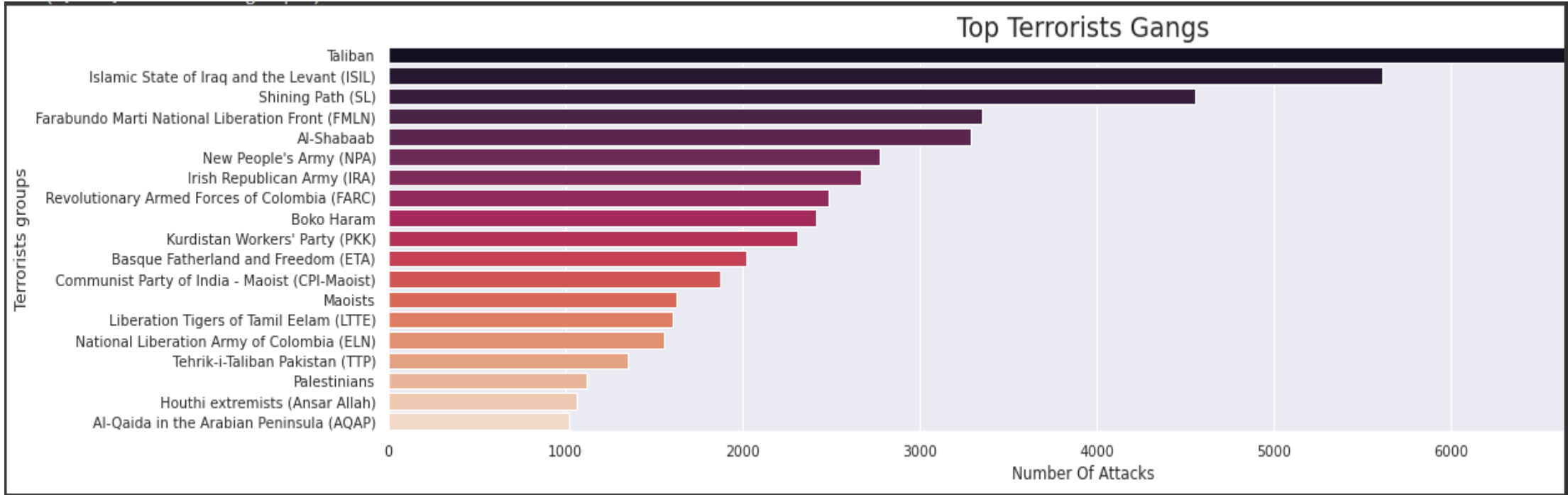
From above plot we can conclude that the private citizens, properties, Military, Police and Government servants are highly targeted by the terrorists.

Types of weapons used by terrorists



From above plot we can say that weapons like explosives are mostly used by the terrorists
Whereas melees and chemical are least used

Top terrorists gangs



From above plot we can conclude that Taliban is the top terrorists gang to carry out their activities followed by ISIL and Shining Path.

How to stop terrorism

- Global Co-operation.
- Making strict laws against terrorism.
- Education about wisdom, Humanity that mankind lacks now a days.
- Good government policies and actions.
- By doing terrorist analysis we can draw insights of where they are active and taking actions against it.

Challenges faced

- Understanding the concept of EDA and to apply proper beginning to it.
- Data cleaning, dropping the unwanted columns and variables.
- Deciding the flow of analysis and logics.
- Building different plots for proper data visualisation.
- Understanding the new concepts that are very much worth now.

Conclusion

From the above study we can conclude the following:

- Maximum activities of terrorists gangs were observed in the year 2014. After 2004 activities started increasing gaining its peak to year 2014 and moderate decline from 2015-2017. In 1970-1972 the activities were least observed.
- As the activities of terrorists gangs were high in 2014, the high number of deaths were also observed in the same year.
- The highest number of deaths were observed in the regions of Middle East & North Africa followed by South Asia and Sub-Saharan Africa and the least Central Asia.
- Iraq is highly affected by the terrorists activities followed by Pakistan, Afghanistan and India.
- Taliban is the most dangerous and top terrorist gang observed from the study.

Conclusion(Continued)



- From 2007 to 2008 there is a huge jump in the terrorist activity in India. In 2007 149 incidents were recorded, In 2008 534 incidents were recorded. There is ~258% rise in the incidents just one year. Total 7590 attacks took place in India.
- Most of terrorist attacks happened in Jammu and Kashmir we cannot say exactly & it is followed by New Delhi and Gauhati.
- Most of Bombing/Explosions types of attacks are used by terrorists.
- Terrorists mostly target public citizen, property, military, police, Governments servants.
- Terrorists mostly use explosives, firearms for attacking purpose.
- Mostly Bombing/Explosives attack method are used in every year that led to higher number of deaths.
- This activities are active from the year 2014 and is continuing.

Thank You!