

C. Reading the CSV file in R

The sample data was present in the comma separated values (CSV) format. Each cell inside data file is separated by a comma, although other characters can be used as well. The first row of the data file should contain the column names than that of the actual data. Now read the data with the function read.csv.

```
TR <- read.csv("../input/globalterrorismdb_0616dist.csv")
```

D. Using the ggplot library for graph generation

ggplot2 is a plotting library in R programming, based on the grammar of graphics, it takes the good parts of base and lattice graphics. It takes care of many of the fiddly details that make plotting a hassle and provide a powerful model of graphics to make it easy to produce complex multimultilayered graphics.

1) Plotting the graphs:

Terrorist attacks globally by attack type

```
ggplot(TR, aes(x = year)) + labs(title = "Terrorist attacks globally between 1970-2015", x = "Years", y = "Number of Attacks", size = 10) + geom_bar(colour = "grey19", fill = "tomato3") + facet_wrap(~attacktype1_txt, scales = "free", ncol = 3) + theme(axis.text.x = element_text(hjust = 1, size = 12)) + theme(strip.text = element_text(size = 16, face = "bold"))
```

III. OBSERVATIONS

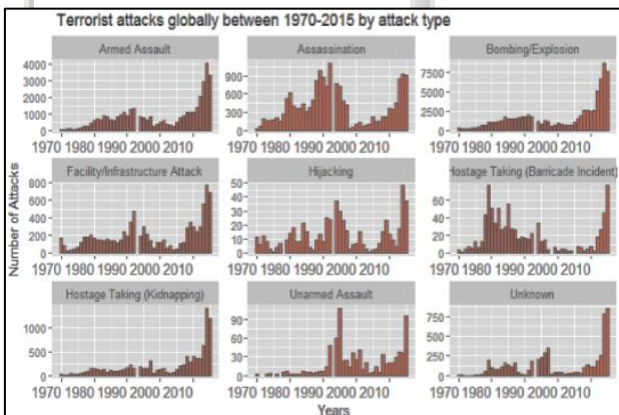


Fig. 2: Different types of terrorist attacks globally

Fig. 2 clearly shows that the terrorist activities have gone up sharply from year 2008. The maximum terrorist attacks were reported in year 2014 till now. Also the most common terrorist attacks are Bombings followed by Armed Assaults.

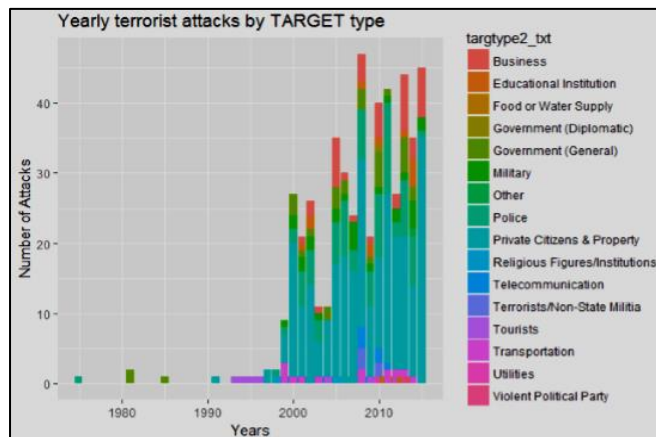


Fig. 3: Yearly terrorist attacks by TARGET type

Fig. 3 shows that the people who are the main target and most vulnerable to terrorist attacks are the Private Citizens or Common People of the country.

Earlier, the second main target used to be the Military officials but from year 2000 the Business persons has taken over to become second most vulnerable target of terrorist attacks.

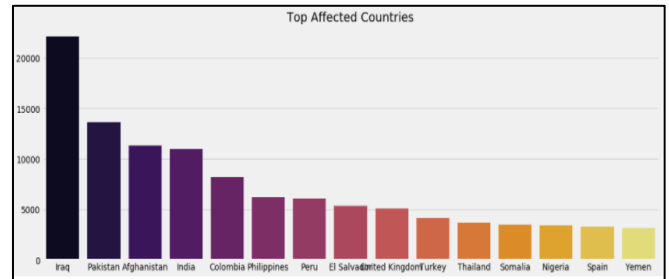


Fig. 4: Yearly terrorist attacks by Weapon type

Fig. 4 shows that the most common weapon used for attacking is Bombings or Explosions followed by Armed Assaults. Since Bombs are used for mass destruction and can kill thousands of people in one go, therefore are mostly used by terrorist groups to kill maximum people in one go. They place bombs in places which are densely populated such as Railway Stations, Malls, Markets etc.

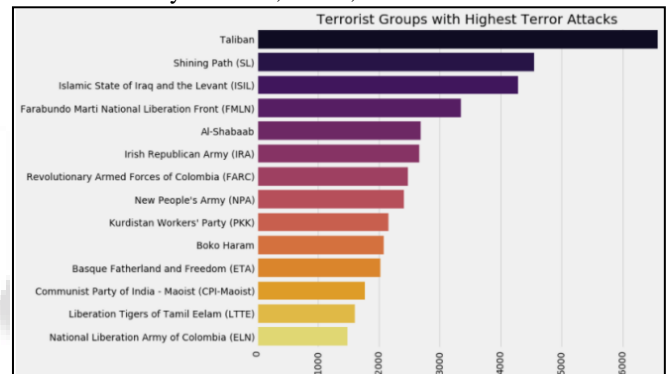


Fig. 5: Top affected Countries

Fig. 5 shows that the Iraq has witnessed a large number of terrorist activities followed by Afghanistan, Syria, Nigeria and Pakistan. Iraq suffered over 2418 terrorist attacks in year 2015. One thing to note is the countries with highest attacks, are mostly densely populated countries, thus it will eventually claim many lives.

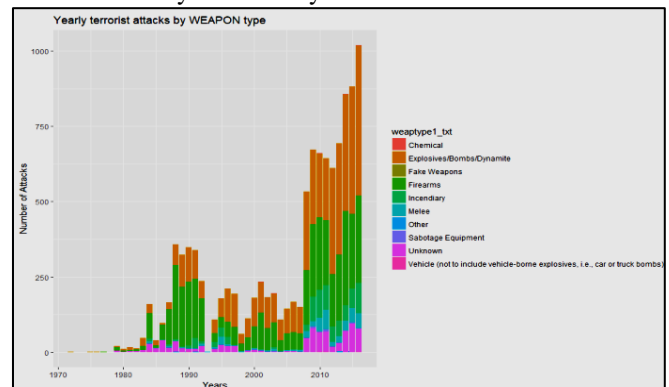


Fig. 6: Terrorist groups with highest terror activities

Fig. 6 shows that the group that tops the list is Taliban. It's not possible to count the number of deaths and amount of destruction caused by the Taliban. Other groups are Boko Haram, ISIL, Al-Qaeda, Al-Shabaab.

The Irish Republican Army (IRA), is the oldest terrorist group started back in the 1960-1970, maybe after the World War 2 due to the mass killing. However, it has probably stopped its activities in the late 90's. Some of the groups that have started lately in 2000's like the ISIL and Taliban, have shown a shoot in the number of attacks in the past years.

IV. MOTIVE OF TERRORIST ATTACKS

Motive basically means the purpose of doing some activity. There can be many reasons behind these attacks such as religious sentiments, personal grudges, revolt against government or to gain the power. According to a survey religious sentiments are the main cause of terrorist attacks. The main motive of these terrorist attacks is to spread terror among people.

V. FINDINGS

- The attacks were maximum in year 2015 & 2014 globally.
- The countries which are most prone to terrorist attacks are Iraq followed by Afghanistan, Syria, Nigeria and Pakistan.^[4]
- The most common type of attacks were Armed Assault followed by Bombings.
- Most vulnerable people to terrorist attacks are Private citizens or Common people.
- The group which has done maximum terrorist attacks is the Taliban. Other groups are Boko Haram, ISIL, Al-Qaeda, Al- Shabaab.^[5]
- More than half of the terrorist attacks in India took place in 4 states: 19% in Jammu & Kashmir, 18% in Chattisgarh, Manipur at 12% and Jharkhand at 10%.
- The most active terrorist groups in India are Lakshar-e-taiba(the Pakistani militant group India blames for some of the most severe terror attacks it has suffered in recent years, including the Mumbai assault of November 2008.), Naxalites (Naxalites are the member of Communist party of India i.e., Maoist, they are responsible to spread terrorism in rural areas of India, such as Chattisgarh, Odisha, Andhra Pradesh and Telangana.), Hizbul Mujahideen (One of the key terrorist group that functions in the state of Jammu & Kashmir), Babbar Khalsa International(The main aim of the BKI is the creation of an independent sikh state as Khalistan).^[6]

VI. CONCLUSION & FUTURE SCOPE

The project finally gives an implication of how the terrorism all over the world is effecting the world and it is causing a major threat to the world. We need measures to eradicate terrorism and it will be a beneficial analysis for any country.

The planning could be done accordingly and hence finally terrorism will come to an end. Every country has a role to be played in this war against terrorism. We should start from ourselves and then hope to see the world change. The security agencies are playing a great role in the eradication of terrorism. It is an attempt from our side to help the various security agencies in helping analyze the entire terrorism scenario.

The scope of the work is quite vast. The world needs measure to fight against terrorism, we aim to provide an analysis on how prone a country is to terrorism. This will help armed forces and country government to take steps against terrorism. This in a long run can help in predicting the future attacks and the type of attacks that can take place.

“Terrorism is a threat to humanity and it should be stopped as soon as possible.”

ACKNOWLEDGEMENTS

A.C., A.B. and A.D. thank the Department of Computer Science at MAIT, for providing the computational facilities required to complete the project and their continuous support.

REFERENCES

- [1] Terrorism –Wikipedia. 2018. *Terrorism –Wikipedia*. [ONLINE] Available at: <https://en.m.wikipedia.org/wiki/Terrorism>. [Accessed March 2018].
- [2] Global Terrorism Database. 2018. *Global Terrorism Database*. [ONLINE] Available at: <https://www.start.umd.edu/gtd/>. [Accessed March 2018].
- [3] Statista. 2018. • Global Terrorism Index 2017 | Statista. [ONLINE] Available at: <https://www.statista.com/statistics/271514/global-terrorism-index/>. [Accessed March 2018].
- [4] Global Terrorism Index Presentation, Parliament House, Canberra | Institute for Economics and Peace. 2018. Global Terrorism Index Presentation, Parliament House, Canberra | Institute for Economics and Peace. [ONLINE] Available at: <http://economicsandpeace.org/wp-content/uploads/2016/11/Global-Terrorism-Index-2016..> [Accessed March 2018].
- [5] Guide. 2018. A closer look at 5 of the most dangerous terrorist groups on the planet | Guide. [ONLINE] Available at: <https://www.sbs.com.au/guide/article/2017/06/13/closer-look-5-most-dangerous-terrorist-groups-planet>. [Accessed March 2018].
- [6] Council on Foreign Relations. 2018. Counterterrorism in India | Council on Foreign Relations. [ONLINE] Available at: <https://www.cfr.org/background/counterterrorism-india>. [Accessed March 2018].
- [7] R. I. Kabacoff, "Quick R - ggplot2 graphics," Quick -R, [Online]. Available at: <http://www.statmethods.net/advgraphs/ggplot2.html>. [Accessed March 2018].