
Abhishek Sonu, Manoj Kumar and Samreen M Hassan
University of Tartu, Department of Computer Science, Estonia
abhishek.sonu@ut.ee, kumarman@ut.ee, hassan@ut.ee

Abstract
This paper aims to highlight the most terrorism affected areas, comparison of HDIs (Human Development Index) for countries, the number of killings and the type of weapons used in the terrorist activities. Additionally, we developed a R-shiny interactive application to depict the plane hijacking activities all over the world from the year 1970-2015. We also built a prediction model to predict the success and failure of a terrorist attack for the year 2015.

Introduction
Terrorism is one of the major global concern which today affects almost every nation of the world. The Global Terrorism Database (GTD[1]) is an open-source database comprising of information on domestic and international terrorist attacks around the world from the year 1970 - 2015. The database is maintained by the National Consortium for the Study of Terrorism and Responses to Terrorism (START) with its headquarters at the University of Maryland. The database is vast with 156772 observations of 137 variables.

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The Big Picture
During the process of data cleaning, we discarded few columns which were overlapping other columns and used only relevant columns for visualization.

Terrorism Vs Human Development Index
In this section, we are visualizing the relation between the HDI (Human Development Index) and Number of attacks in a country and we observed the following:

- In Figure 3, we compared the HDI values and number of attacks for all countries by a line graph.

![Figure 3: HDI comparison for top 10 attacked countries(1990 vs 2016), No data for Nigeria since it was not founded back in 1990 From Figure 3 we observe that the HDI values have increased over the time span of 25 years but with a very little percentage increase.](image)

- In Figure 4, we compared the HDI values and number of attacks for all countries by a line graph.

![Figure 4: Terror attack showing Laborus 9/11/2001 attack](image)

Types of weapons used
In this section, we primarily visualize the kind of weapons that were used in the terror attacks. We divided entire dataset into two based on years, 1970 - 1999 and 2000 - 2015.

- In Figure 5, we compared the HDI values and number of attacks for all countries by a line graph.

![Figure 5: HDI vs Number of attacks](image)

We expected to see a dependency between HDI values and the number of attacks but we found that HDI is not a very conclusive measure for comparison with the number of attacks. The countries with higher and lower HDI values have fewer numbers of attacks as we can see from the above graph. However, countries which have a large number of attacks, their HDI values remain in between the range 0.5 - 0.7 which means that terrorist attacks surely affect the HDI but it's not the only factor responsible for lower HDI.

- In Figure 6, we compared the HDI of top 10 countries for the years 1990 and 2016 with respect to the highest number of attacks. From Figure 6 we observe that the HDI values have increased over the time span of 25 years but with a very little percentage increase.

![Figure 6: HDI comparison for top 10 attacked countries(1990 vs 2016), No data for Nigeria since it was not founded back in 1990 From Figure 7 we observe that the HDI values have increased over the time span of 25 years but with a very little percentage increase.](image)

- In Figure 7, we compared the HDI values and number of attacks for all countries by a line graph.

![Figure 7: ROC with Area under the curve: 0.9319](image)

We built a Rshiny application to visualize all plane hijackings from the year 1970 - 2015. After extracting plane hijacking data from the complete terrorism data, we used as, server and shinyApp functions of Rshiny library to build the application. as is responsible for the user interface settings while the server does all computational tasks (subsetting in our case). shinyApp function is responsible to integrate as and server functions. Additionally, we used leaflet library to get the map tiles and plot coordinates positions on the map. Application can be accessed using URL: [https://abhishek.jupyter.org](https://abhishek.jupyter.org).

Plane Hijack Visualization - Rshiny App
Figure 8 shows the parameters we used to rate our model.

![Figure 8: Plane Hijack Visualization](image)

No data for Nigeria since it was not founded back in 1990. This poster aims to highlight the most terrorism affected areas, affecting fields. We took 2014 data as our training set and 2015 data as testing data.

Conclusion
After analyzing the data, we can conclude that there is no significant difference between the weapons used by terrorists for the years 1970 - 2015. The frequency of terrorist attacks has been increased in the last 15 years as compared to the years 1970 - 1999. Our prediction model works well with the data we already have to predict the “success of terror attacks”. However, it is a challenge to get terrorist attacks data for future in order to predict the success of upcoming terrorist attacks. We also analyzed the HDI of the countries with highest number of terrorist attacks. It can be established that terrorism is not the only factor which is affecting HDI as there are countries with very low HDI and no cases of terrorism so far.

Project Source
The Rshiny code and configuration files can be found in Google drive.

References
[3] Samreen M Hassan Abhishek Sonu, Manoj Kumar. Project source files. [https://drive.google.com/open?id=0B1YP3SKQ3c8RbGxGbUY1R0Z2eTQ](https://drive.google.com/open?id=0B1YP3SKQ3c8RbGxGbUY1R0Z2eTQ) 2016.