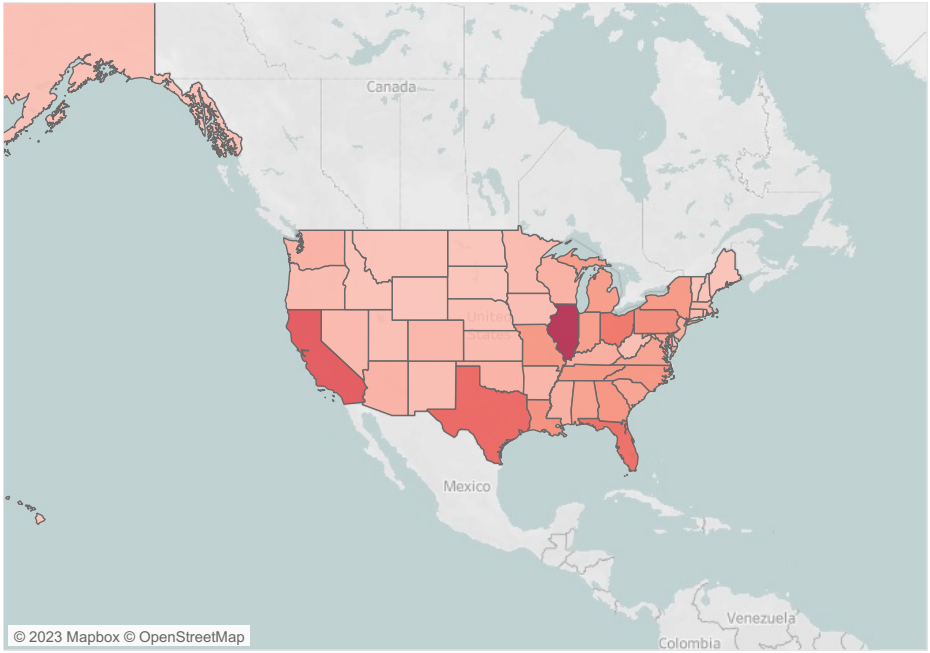
US Gun Violence Cluster Analysis 2013-2018

Total number of Killed and Injured in the U.S. due to Gun Violence Incidents 2013-2018



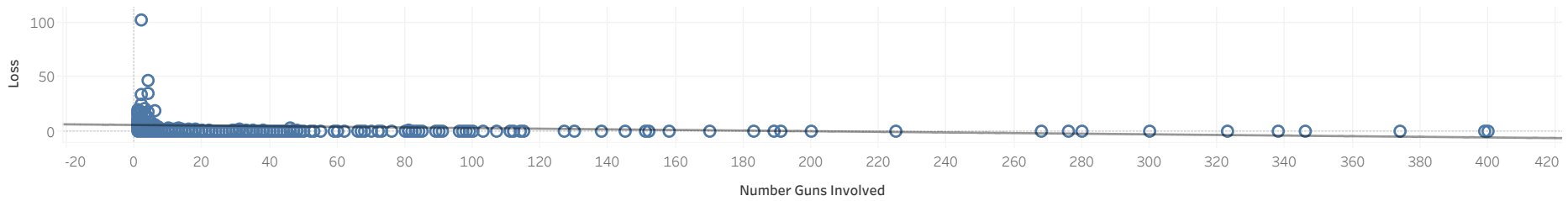
Gun Violence has been an ongoing issue in the US for a long time now. In this analysis we will explore a number of data that relates to the number of guns related incidents in the U.S. The variables we will be using for this analysis will include: Number of guns involved, number of deaths, number of injured, total number of losses (deaths and injured), state the incidents occur, and months the incidents occur.

Our analysis will be focused on answering the following questions:
1. Where are gun-related incidents more common?
2. How often do these gun-related incidents occur?
3. Does does the number of guns involved affect the total loss?

To set the stage in this interactive map you are able to visualize which states are being affected the most.

Now lets walk through a deeper exploratory analysis!

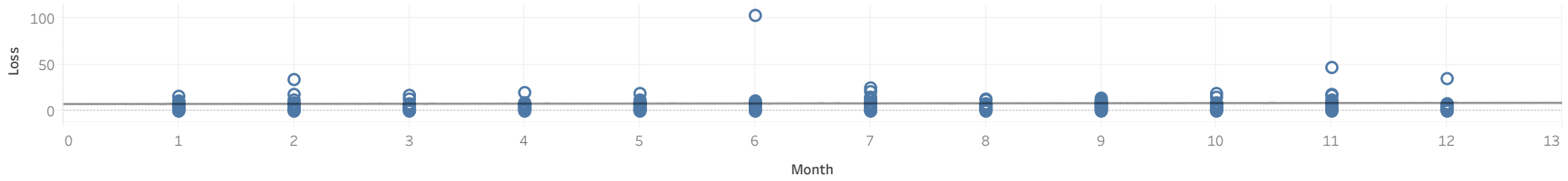
US Gun Violence Cluster Analysis 2013-2018



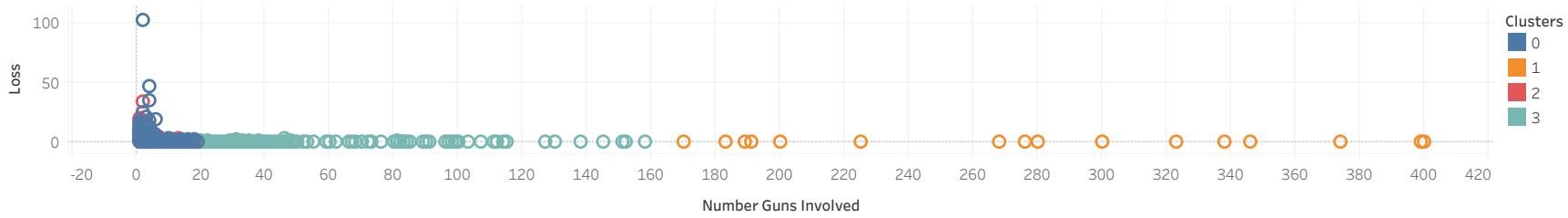
To start exploring the data I decided to start off with the linear relationships between the variables.

Top Linear Analysis:
There seems to be a slight downward relationship between the number of guns involved and the total loss. There might be limitations affecting this result.

Bottom Linear Analysis:
There is not a linear relationship between the months and the total loss.



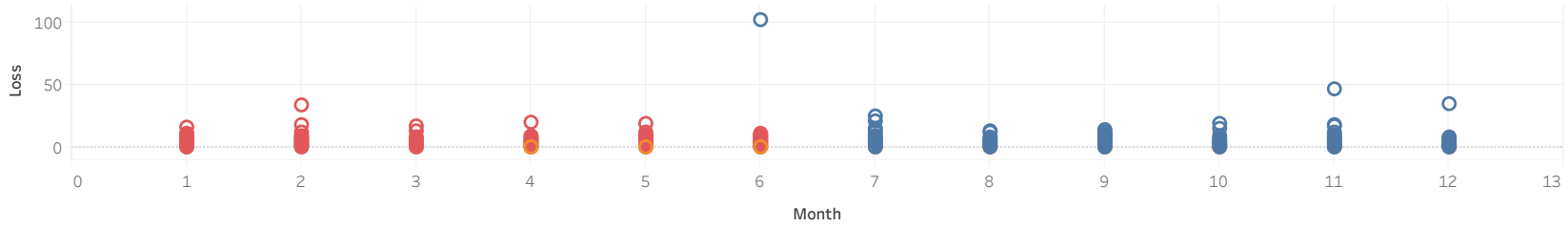
US Gun Violence Cluster Analysis 2013-2018



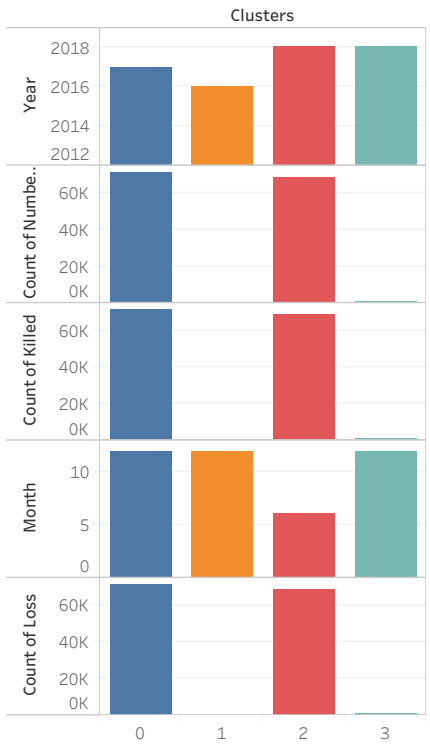
I then conducted a cluster analysis for a non-linear approach since the linear approach was not clear enough.

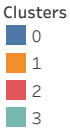
A cluster group data points into "clusters" to compare the data as groups.

There are 4 different cluster groups that represent the different colors. -blue, orange, red, green.



US Gun Violence Cluster Analysis 2013-2018



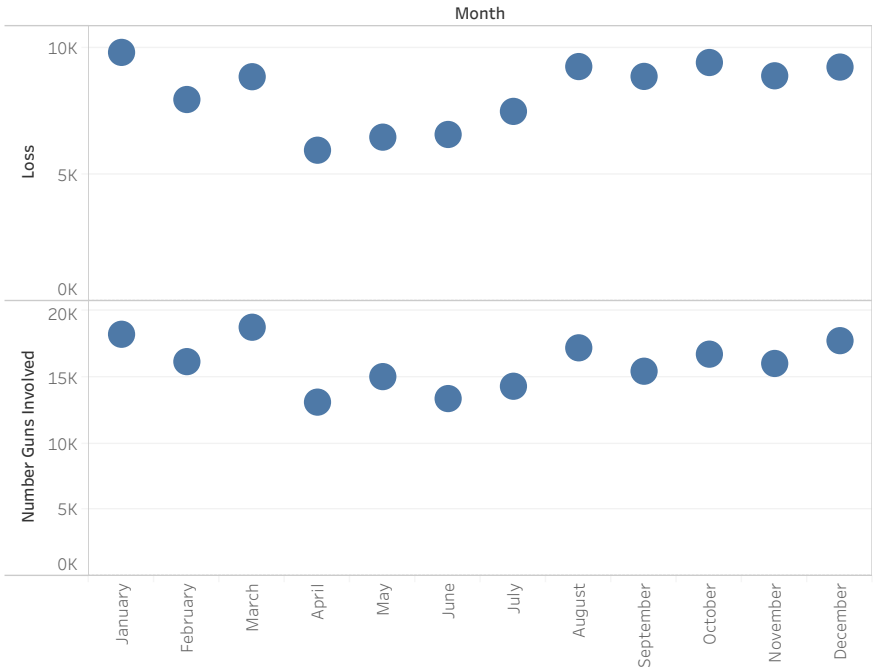


Cluster 0 (Blue) and 2 (Red) are the groups that include the larger counts of killed, injured, number of guns involved, and overall total loss.

Cluster 1 (Orange) and 3 (Green) have a less number of counts of of killed, injured, number of guns involved, and overall total loss.

US Gun Violence Cluster Analysis 2013-2018

Total Killed and Injured by Month



Questions answered:

1.Where are gun-related incidents more common:
Illinois, California, and Texas

2. When do these gun-related incidents occur in the year?
Towards the end and beginning of the year.

3. Does the number of guns involved in the incidents affect the total number of losses?
In the months and satates there are with more killed and injured the number of guns involved are higher than those with less losses.

Next steps for further analysis:

For further analysis I would add more data and combine it with this current data in order to see other variables that may have been the reason to why those states are having a higher number of loss due to gun violence incidents.

Limitations:

The data is from 2013 to 2018 it began almost 10 years ago. The data contains a lot of missing values. The data contained a lot of qualitative descriptions that needed to be broken down and led to less data to work with.

Data Source: Gun Violence Archive (GVA)
https://www.kaggle.com/datasets/jameslko/gun-violence-data?datasetId=21619