Neshat Jalali Heravi October 2021
Business Fundamentals – Project MVP

Project MVP: Data Analysis of Gun Violence in America

Opportunity and Desired Impact

Gun laws are referred to laws and regulations related to manufacturing, trading, possession, transporting, record keeping, and destruction of firearms, firearms accessories, and ammunition. These laws are enforced by federal Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) and the state agencies. The objective of this project is to perform Exploratory Data Analysis on gun violence related data to provide insights on this subject matter. Hopefully, ATF and state agencies involved in gun laws can use this information to make more data-driven decisions in proposing and enforcing gun regulations. More effective gun laws can impact thousands of lives of the citizens and law enforcements .States such as California and Illinois can use this analysis to jump-start projects to find effective solution in reducing number of gun violence incidents. The desired impact would be to reduce the number of gun violence incidents by 10% in cities such as San Francisco or Chicago by allocating more resources based on this analysis.

Solution Path

Data related to gun violence and mass shootings in the US are obtained from data.world for this analysis. The EDA includes US international ranking in civilian arm ownerships, and gun violence in each state in the US. It will also include data and analysis of US mass shootings and demographics of the offender. The data science solution path is to use Poisson regression modeling to predict the number of casualties in a gun violence incident based on location, offenders' demography, city events, number of law enforcements in the vicinity, type of arms involved etc. Also, we can use the unsupervised clustering to segment state counties and locations that have higher rates of gun violence in more detail for better allocation of resources.

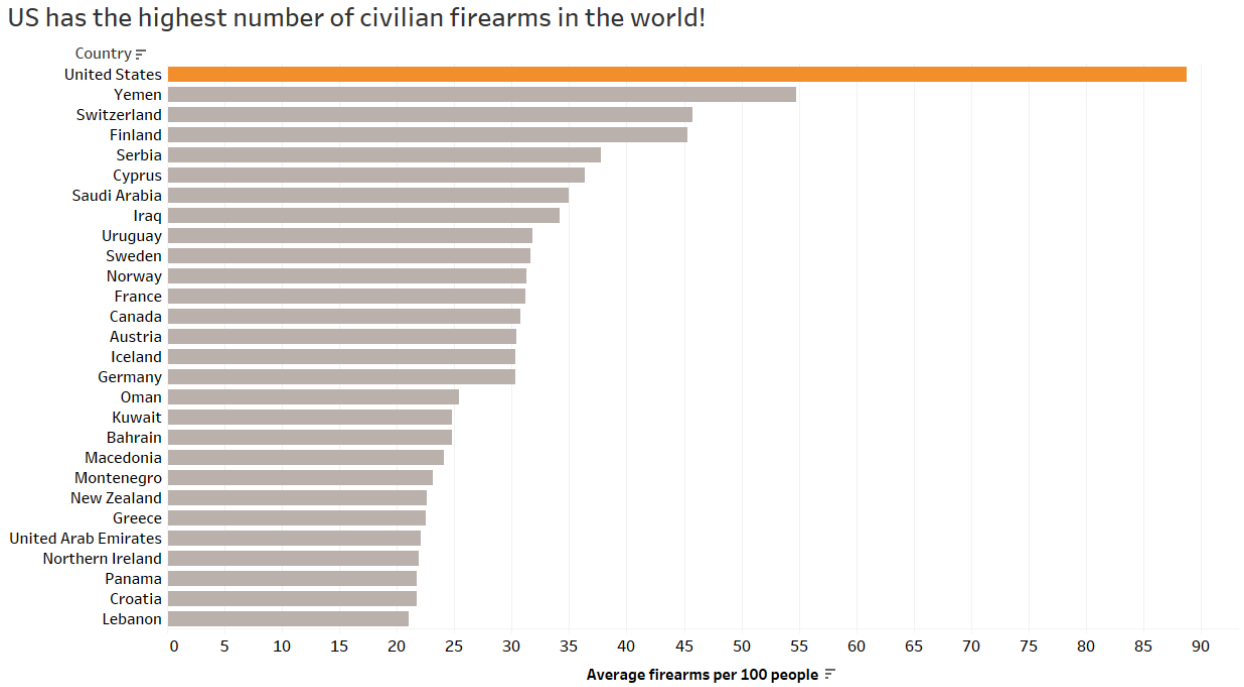

Figure 1. US has the highest number of average firearms ownerships based on data from 2016.

Impact Hypothesis

The impact hypothesis is that by understanding the gun violence data in the US, government agencies can better allocate their resources for enforcing current gun laws, introduce new laws such as imposing a background check on firearms buyers, thus reducing the number of gun violence incidents and casualties.

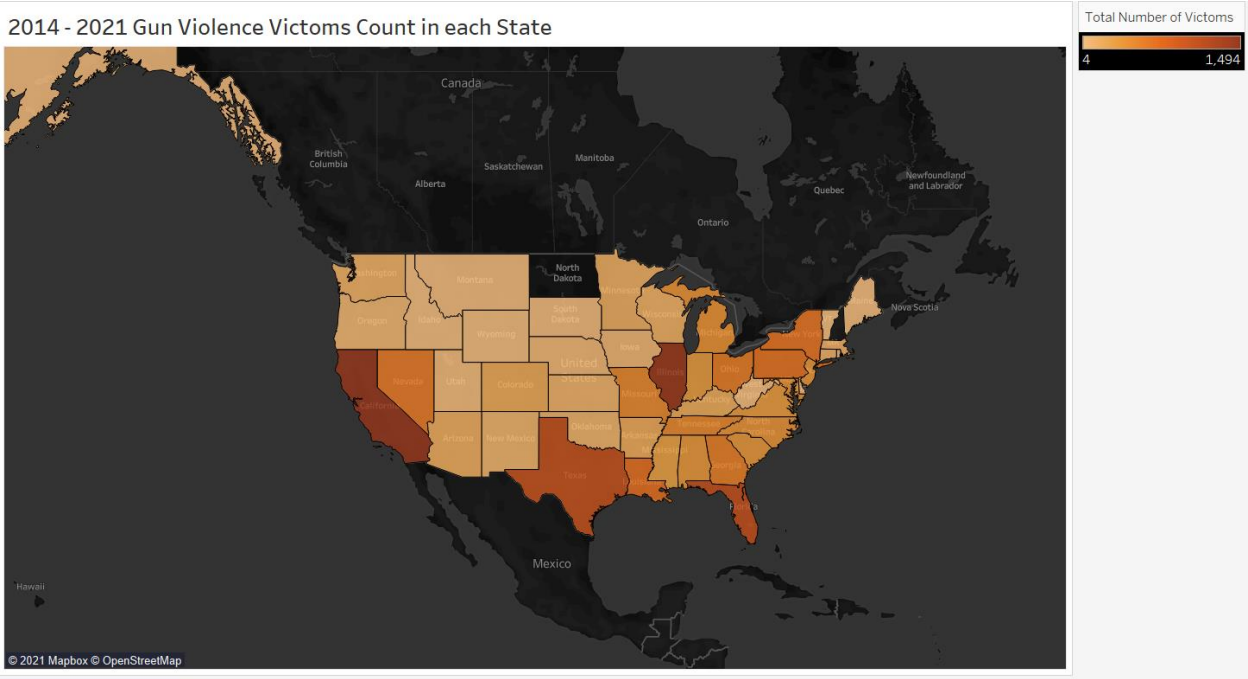

Figure 2. California has the highest number of gun violence casualties between 2014 - 2021