Stanford Mass Shooting Data 1966-2016 Analysis

Introduction

Mass shooting has been a hot topic in recent years. According to Wall Street Journal, nearly 200 people were killed in mass shooting for merely past two year period. Comparing to other crimes, it has always gotten the spotlight of social media and caught attention of public’s eyes. While people were shocked by the number of victims from each mass shooting incident, these incidents aroused people’s curiosity as well, like shooter’s motive, choose shooting location, victims injury/kill status.

The goal of this project is to use Python Matplotlib to explore correlations among number of victims, weapon type, shooting locations, fatality rate in mass shooting incidents from 1966-2016. This could provide us some insights of behind the scene story of these mass shootings.

Data Source:

The data that we used was taken from the Stanford Mass Shootings of America (MSA) data project. The Stanford MSA is a data aggregation effort. It is a curated set of spatial and temporal data about mass shootings in America, taken from online media sources. It is an attempt to facilitate research on gun violence in the US by making raw data more accessible. The data contains 335 rows of which each row is a recorded mass shooting incident and 55 columns of information related to incidents, such as state, address, latitude, longitude, etc…Not every incident has information for all 55 columns, so there are numerous cell with n/a value.

Definition of Mass Shooting

The definition of mass shooting used for the Stanford database is 3 or more shooting victims (not necessarily fatalities), not including the shooter. Identifiably gang, drug or organized crime related shootings are not included in the database.

Hypothesis:

1. If mass shootings in the United States are higher in certain geographical areas and location types, then geography and location type play a crucial part in the prevalence of mass shootings.
2. If a firearm type, police department proximity, and number of firearms is tied to higher fatalities, then the total amount of victims can be dependent on these variables.

Analysis Findings

1. Among all type of firearm used in mass shooting from 1966-2016, handgun caused more than 1000 victims, which is the single type of firearm caused the highest number of victims. Also, unsurprisingly, the number of victim from incidents involved with multiple guns was relatively high as well.
2. Among of victims from different type of firearm, 39% of handgun victims were killed and 35% of multiple gun victims were killed. Thousands of families were shattered and psychological scars in thousands of survivors
3. Among all states, California has the highest number of mass shooting incidents in history. Florida, Texas, Georgia are following California among the large number of mass shooting. According to a recent online article, researchers have begun to see a trend that places with fewer gun restrictions consistently have higher rate of mass shootings.
4. When we investigate further on location, surprisingly, most of mass shooting happened at residential places. Fewer happened at schools, recreation places. Media often pay more attention to mass shooting at public places which could cause our misconception of most mass shooting happened at public places or confusing public of the definition of mass shooting.
5. Another factor we investigated using available data is the proximity of police station near mass shooting location. Presumably, the closer of police station, the faster police could arrive at shooting site and lesser victim would be. According to our findings, most police station located within 5miles radius from shooting site. There is no obvious trends that shows any correlation between the proximity of police station and number of victims from mass shooting.
6. Number of gun used by shooter could also have impact on the number of victims. Presumably, the more guns they used, more number of victims should be recorded. Our findings shows majority of shooters use less than 3 guns, and there is no obvious correlation between number of gun used and number of victims. In some incidents, shooter used only one gun, but caused more than 20 victims.

Conclusion:

According to Wall Street Journal, The mass shooting in U.S from 1966-2012 accounted for 31% of global shooting incidents, more than any other country. And since 2017, the number of mass shooting has increased dramatically and more frequently. They occur without warning and terrifying public. Hopefully, our analysis could provide some valuable insights about mass shooting and implement necessary restrictions to control mass shooting incidents.

<https://www.wired.com/story/the-looser-a-states-gun-laws-the-more-mass-shootings-it-has/>