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Summary Document for Final Presentation

Intended Audience

The topic of gun violence and civilian weapon ownership has been a sensitive and painful topic in American society. With the frequent, data proven growing trend of mass murder in the US, activists and politicians voice increasing concern for the second amendment right to bear arms and the abuse of weapon ownership. With the copious analytics and data harvested on mass shootings incidents across the nation, lawmakers look for informed, data driven arguments to influence rational policy to mitigate the severity of the issue.

Moreover, our society is constantly flooded with mass media headlines and news stories covering tragedies across the nation on a near daily basis. Making sense of mainstream media agenda and headlines may lead to incorrect assumptions and distortion of the raw image of the present day. Our intended audience is a wide portion of our society, but in particular, people looking to be enlightened by the raw data as educated constituents, as well as individuals in power capable of shaping policy and

initiative as well. Both sides of the table need access to this data and its raw conclusions.

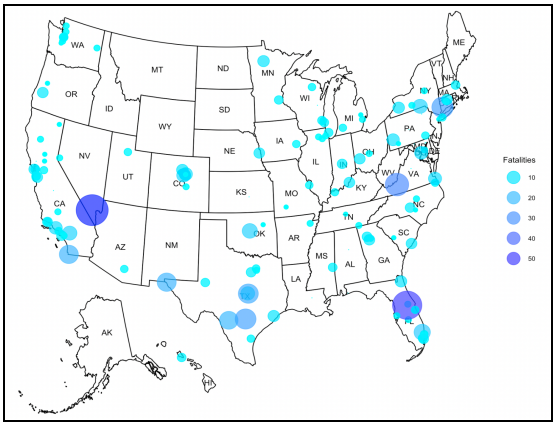
For the most part, the urgency of the situation at hand as well as its severity is unanimous across our society, however the history, statistics, and trends that should influence and manifest legal action are not. Our overarching message to our wide audience of constituents and officials is apt to be interpreted in ideally one fashion: mass shootings are a problem, and our proven weak legislature on weapons and mental health screening needs to change as soon as possible.

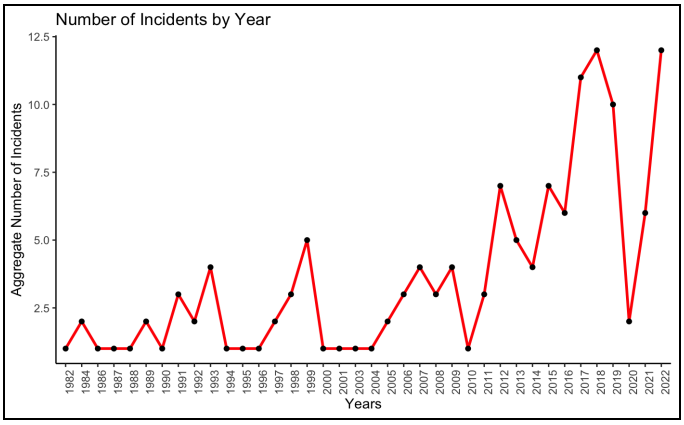
Design Rationale and Decision Making

To answer our study questions, we set out to utilize a wide variety of visuals to fully encompass and immerse our audience in our analysis. Pointing to different directions and ways to visualize and interpret our data was productive to both validating our conclusions as well as appealing to our audience visually.

Within that direction however, we decided to avoid oversophisticating and varying our visuals. We ultimately picked a roster of different visuals following the same foundation structures to maintain some uniformity and consistency in our presentation.

Our key visual categories were visualizing comparisons and parts of a whole, which composed most of our visuals for analysis. Outside of those visuals, we decided to set the stage with some summary visuals before diving deeper into the meatier categorical and numerical variables. We decided to create a map of the US and a line plot to visualize the overall state of mass shootings.



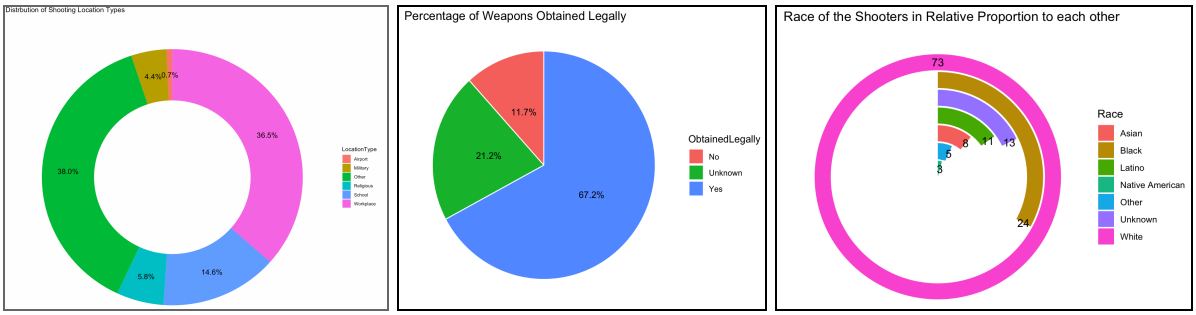


US Map displaying shooting locations

Time Series showing yearly Number of Incidents

Visible above, our decision to open with these visualizations is centered around the macroscopic overview of the data. The US Map and Time Series Line Plot complement each other in showing the reader a geographic interpretation of the shooting distribution as well as the severity of the incidents and its gradual rise over the years. The pre-attentive attributes of size, scaled color and intensity ***(Knaflic, Ch 4: Storytelling With Data)*** on the US map help in showcasing the intensity of the shootings based on the fatalities counts. The time series representation ***(Cairo, Ch 8: Revealing Change)*** and its pre-attentive attributes of line width and added marks ***(Knaflic, Ch 4: Storytelling With Data)*** show the increasing shooting frequency trend over the years.

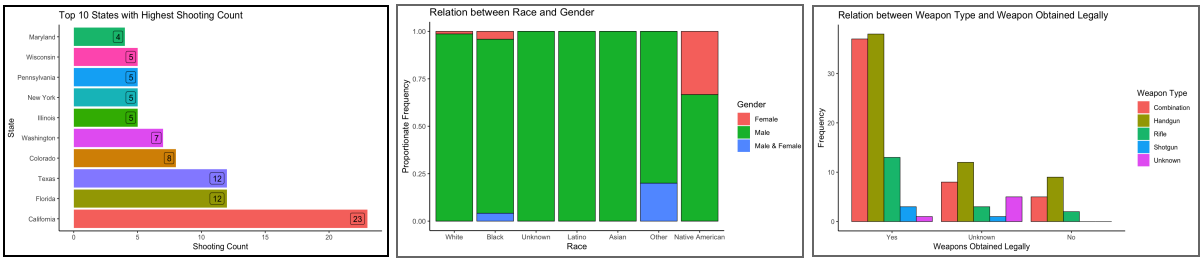
For our deeper analytics, we chose a wide variety of bar chart styles and pie charts. Our comparisons of proportion and magnitude with different sets of categorical groupings were best represented using those charts.



Various Parts of a Whole Charts: Donut, Pie, and Ring

The three charts above pertaining to visualizing parts of a whole each ***(Evergreen, Ch 6: Parts of a Whole)*** represent proportions of categorical dominance in a group of variables (exception for the ring chart using raw magnitudes of frequency). For the purpose of our study questions and analysis, we used these charts to try to identify dominant trends amongst categorical groupings, ultimately identifying an overwhelming focus for action. For the purposes of our data, the proportional distribution of many of these categories tends to be dominated by a single or very few categories, which makes them very suitable for charts like pie charts, ring charts, or donut charts ***(Evergreen, Ch 6: Parts of a Whole)***. The key pre-attentive attributes of color and size (represented by visible areas of confined regions), do particularly well at representing the trends described above ***(Knaflic, Ch 4: Storytelling With Data)***. Speaking to our strategy mentioned previously, the different types of representations of parts of a whole follow a similar theme yet add variation to the overall portfolio of visuals used.

Looking at our bar charts, we applied a similar principle; these 3 examples of our bar charts highlight the different strategies we used to group and organize the data according to our intended effect.



Various Types of Bar Graphs: Flipped, Fully Stacked, and Grouped

The different categorical groupings, stacked proportions, and orientations used across these visuals all have their respective utility in the story telling of the data ***(Healy, Ch 4: Visualizing Proportions)***. For example, the stacked bar chart visualizing the gender distribution within races clearly illustrates the trend of male dominance throughout all the races. The horizontal bar chart on the other hand utilizes a blatant size imbalance between the leading categories and their smaller counterparts.

Dataset Used

Links:

- https://www.motherjones.com/politics/2012/12/mass-shootings-mother-jones-full-data/
- https://docs.google.com/spreadsheets/d/1A4hCRNqDDI_Ve5pURsBmR4E59Zr91fBxlU1zADTmAsQ/edit#gid=1890602812

Works Cited (Reading Assignments)

- Cairo Alberto. The Truthful Art : Data Charts and Maps for Communication. New Riders 2016.

- Evergreen Stephanie. Effective Data Visualization: The Right Chart for the Right Data. SAGE Publications 2019.

- Nussbaumer Knaflic, Cole. Storytelling with Data. Edited by Cole Nussbaumer Knaflic, John Wiley & Sons, 2015.