

The Impact of Gang Prevalence on School Shootings: A Comparative Analysis Between California and a Low-Gang Populated State

Raine Brookshire - QSS Honors Thesis

I. CONTEXT AND QUESTION

School shootings have been on the rise; is the chief culprit to blame a black metal tube containing copper bullets or the users who wield such a weapon?

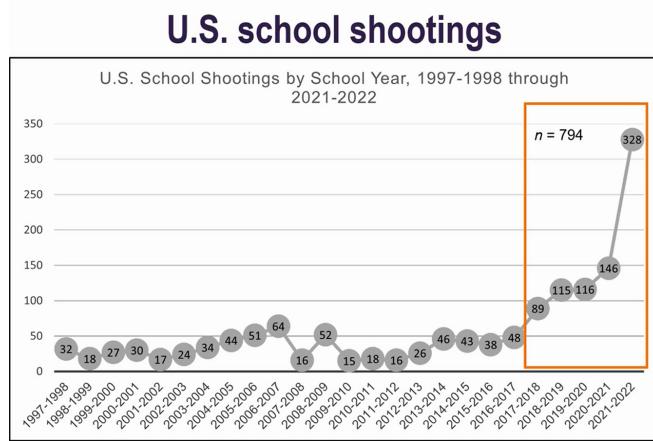


Fig. 1. From the American Academy of Pediatrics documenting the increased number of school shootings. N = 1453 — 794 from 2017-22—135 more than the prior 15 years combined—

California has the highest number of school shootings and despite having stringent gun laws, the state has experienced the most school shootings in the US. Interestingly, the state also has one of the highest gang populations in the country. Many other states with weak gun laws such as Texas and Florida also experience a high number of shootings, but have lower gang populations and weaker gun laws. I am looking to perform a comparative analysis using another state as a synthetic control to compare how a state with a low gang population compares to California (a state with a high gang population) in regard to the total number of school shootings (while other variables are held constant).

What influence do local gangs and their violence have on the number of school shootings at the state level? How do highly populated gang states (California) compare with low-gang populated states in regard to the number of school shootings and is there a positive correlation between the number of local gangs within a state and the number of school shootings that occur?

I would like to express my thanks to Robert Cooper
Professor Cooper is a Political Scientist at Dartmouth College

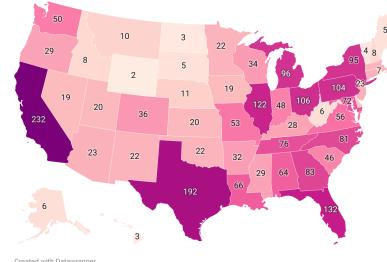


Fig. 2. Total number of shootings per state. Note: Texas, Florida, and California have the highest number of shootings. (Documented in my previous QSS study)

II. INTRODUCTION

California is a highly populated blue state that is very large in size but, despite being a strongly democratic state with stringent gun laws, the state has experienced the most school shootings in the US, according to World Population Review. A nuanced factor that has not been heavily explored is the presence of gangs in relation to the number of school shootings. With the rise of gangs in suburban areas and gang related shootings, I will be interested in understanding the intersection between California local gang presence and the number of school shootings.

My prior research examined the top 3 states with the highest number of shootings - California, Texas, and Florida. (world population review also indicates these as the top 3 states with the most school shootings). I studied the extent to which high gun sales and accessibility to guns had been related to increased school shootings and included graphs that highlighted the types of shootings recorded.

While aspects of pro gun states being more prone to school shootings (due to their weak gun laws) has been a heavily pushed narrative, it is clear that the evidence doesn't support this narrative as California and Minnesota (which have strong gun laws) still have high casualties from school shootings, according to Jenna Ahn in her gun control paper (December 2018). As I supplement components from her study, I should make it clear that I am not proposing a thesis that indicates that increased gun sales and poor mental health aren't great measurable predictors to America's increased school shootings. Based on the framework and premises below, I am arguing for the claim that the increased number of gangs has **also** resulted in a greater number of school shootings – specifically in California (which can be extended to other states and should be explored).

- 1) School Shootings have been on the rise in recent years

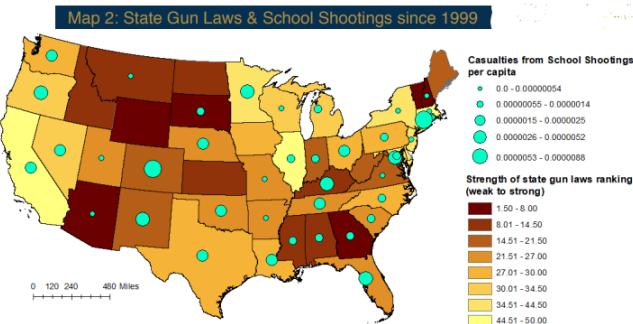


Fig. 3. Graphic provided by Jenna Ahn. Documents gun strictness in relation to the lethality of shootings. (lighter squared colors indicate stricter gun laws)

- 2) Providing stricter gun laws and improving overall mental health have been the major imposed narratives to reducing these shootings
- 3) These gun laws have provided little resistance to the high number of school shootings as documented in previous studies
- 4) It is provided that there is a high number of school shootings in California
- 5) California has the highest gang population and other states with a high number of shootings also tend to have higher than average gang populations
- 6) Gang violence and its presence negatively influences the youth (altering their mental health) and likely provides high school students with access to firearms
- 7) There must be some evidence to support the claim that local gangs influence the number of school shootings

Based on these facts, it should be noted that my motivation for this study is based on the increasing gang populations and the increased number of school shootings. Therefore, I want to determine whether local gangs have influenced the rise in these number of school shootings.

III. BACKGROUND/ PRIOR RESEARCH

I will support my claim by analyzing data within a high gang populated state and compare the number of shootings within a low gang populated state. I can likely test on multiple features in terms of the percentiles of gang population and shooting frequency. While previous research disproportionately focused on analyzing the characteristics of perpetrators of highly publicized, rampage style school shootings (also known as multiple-victim shootings or mass school shootings) (Burns & Crawford, 1999),, I will look at gang violence as a causal mechanism for these school shootings . Based on previous studies, the most prominent findings for rampage school shooters are their gender and race: **school shooters tend to be male and white**

A. Prior Research Theories

Previous studies have argued that stricter gun laws will likely reduce the number of school shootings, but as seen from Jenna's Notre Dame study, gun laws don't significantly impact the number of school shootings as one would expect. Additionally other studies have found that there is no direct causal link between mental illness and school shootings (Metzl MacLeish, 2015). Jenna discusses that "mental illness may just be another factor in a complex puzzle of socioeconomic status, race, **propensity for violence**, gender, and school resources." In my case, I will be discussing how the factor involved in an individual's "propensity for violence" is strongly tied to gang affiliation and the violence it presents in neighborhoods. This violence, I assume, can then be extended to schools which will negatively impact the number of shootings. In addition to the causal mechanisms that influence the number and lethality of school shootings, the Social Learning Theory, as articulated by Albert Bandura (1973), posits that individuals learn behaviors through observation and imitation of others, particularly those in their social environment. This theory is particularly relevant in understanding the relationship between gang violence and the increasing incidence of school shootings. Gang culture often glorifies violence, and individuals exposed to such environments may begin to view aggressive behavior as a normative response to conflict. From this, the Social Learning Theory provides a crucial lens through which to understand the dynamics of gang violence and its role in the rising trend of school shootings.

IV. PROPOSED WORK

Objectives The goal of my work is to provide evidence in support of a newly developed model that indicates gang violence and its presence as a useful predictor of school shootings (which could be extended to mass shootings in general). The United States has seen rapid proliferation of youth gangs since 1980, according to James C. Howell in his Youth Gangs Paper. During this period, the number of cities reporting youth gang problems had "increased from an estimated 286 jurisdictions, with more than 2,000 gangs and nearly 100,000 members [existing] in 1980" (Miller, 1982). Based on Howell's work, it is clear that youth gang members often are actively involved in drug use, drug trafficking, and violence. It is then also true, according to Howell, that "drug use is strongly associated with drug trafficking and drug selling is strongly associated with other serious and violent crimes". Based on these claims I will argue that the influence of local gangs influence delinquent behavior and will naturally have some relation to the number of school shootings.

A. Variables

For robustness, at a basic level, I could be looking to quantify and utilize these variables: **number of gang members** or number/type of gun laws (X variables), and **the number of school shootings** (Y variable). In the case for the observations, there will be multiple datasets to pull from but

the rows in the "gun policies adopted" dataset would be the gun policies (filtered by state etc). In the gang related dataset, the number of gangs in each county or state (with long/lat) will be provided as the observation. In the shootings dataset, each unique shooter would be the observation. I could replace the main provided variables with the following metrics to easily compare against other states.

The **Gang Ratio** metric (X variable) would be defined as:

$$\text{Gang Ratio} = \frac{\text{Total gang population within state}}{\text{Number of gang groups}} \quad (1)$$

The **Victimhood Score** metric (Y variable) would be defined as:

$$\text{Victimhood Score} = \frac{\text{Total casualties from school shootings}}{\text{Total number of shootings}} \quad (2)$$

In a sense, I could also create a regression model with the gang ratio as the x axis and the number of shootings on the y axis (per state) and indicate if x positively influences y (based on all 50 states).

Variables that should be similar and held constant:

- State population / population density
- Type and number of gun laws
- Demographic
- Suburban/ rural or urban setting
- Socioeconomic status / GDP
- Political identity*
- Number of schools*
- Class populations*
- Criminal activity*
- School population size*

B. Hypothesis

An increased presence of gangs is likely to lead to a rise in the number of school shootings. While stricter gun laws are usually intended to reduce the incidence of gun violence, California serves as a major exception; despite its stringent regulations, the state experiences a very high number of school shootings. This discrepancy suggests that the significant gang population in California may be more of an influential factor in driving shooting incidents than the strictness of gun laws. This thesis will explore this nuance and will hypothesize that the presence of gangs lead to gang violence which serves as a more critical causal mechanism for school shootings compared to the impact of gun law enforcement.

C. Potential Figures/ Graphs

With so much data available, I am looking to expand on the previous visualization I created for QSS 19 which included shape-files and dot plots of shootings in TX, CA, and FL. I included the number of gun sales which were highest in these 3 states and included motives for the shootings which classified school shootings on whether they were acts of

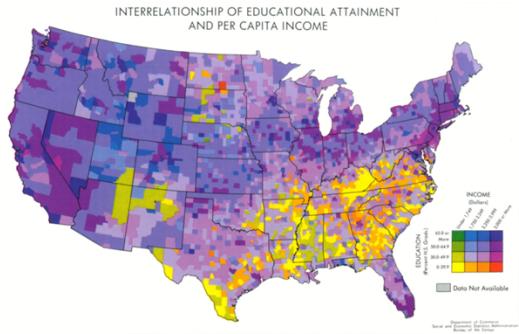


Fig. 4. Potential graphic I would like to use which would show relationship between gang sizes and shooting frequency. Axes will be of gangs vs of shootings

terrorism, based in anger, disputes, or accidental, etc. In this study, I am interested in including a choropleth graph (where the two axes are the number of gangs and the number of shootings- Figure 4), line charts documenting time series data, a linear regression model showing correlation between the variables, and a potential predictive model similarly used in a prior Swedish, Stockholm study (Magnusson, MM. (2023)) to show areas in California (or other states/ counties) that are prone to school shootings.

V. TIMELINE

The contents of my thesis and research question has developed gradually over the span of five weeks. I have been in discussion with my advisor weekly to provide weekly updates and adjustments to my question. There were initially doubts about finding data at the state level for gang related data and spacial data in relation to the school shootings, but based on prior visualizations, I was able to access data within the National Gang Intelligence Center. After already downloading data relating to school shootings throughout the USA, the next steps towards this project will include my objective towards developing a synthetic control state. By keeping the confounding variables constant, I will be able to compare 2 states (or more) to find whether there is a significant different between the means, given that one state has a high gang population and the other doesn't. By October 21st I will have downloaded a majority of the data and by October 28th, I will have done some ad hoc analysis after finalizing my thesis. Based on the QSS 81 timeline, I will be submitting the updated prospectus on October 21st, the Thesis proposal on November 11th, the Thesis Plan on November 25th and the CITI training on November 25th.

A. Data accessibility

There is currently data on the total number of gangs and gang sizes in California. There is data on the number of gun laws per state and an in depth data set documenting the type of gun laws passed per state. There have been studies documenting the strictness of a state's gun law provided by a state's gun strictness score (Jenna Ahn, 2018). There may be doubts in regard to finding a state that meets all the requirements for the constant variables. There may

also be doubts in finding high-level data for specifically school shootings data per county as compared to general mass shootings. However, the data for enforced gun laws is available, data for shootings is available, and data for gang locations and sizes within counties is present.

Databases I am currently working with include data on gang populations from the **National Drug Intelligence Center** and **The K-12 School Shooting Database documents** (which includes when a gun is fired, brandished or a bullet hits school property regardless of the number of victims, time, day or reason.) Note: The K-12 database has over 2,380 school shootings from 1966 to the present.

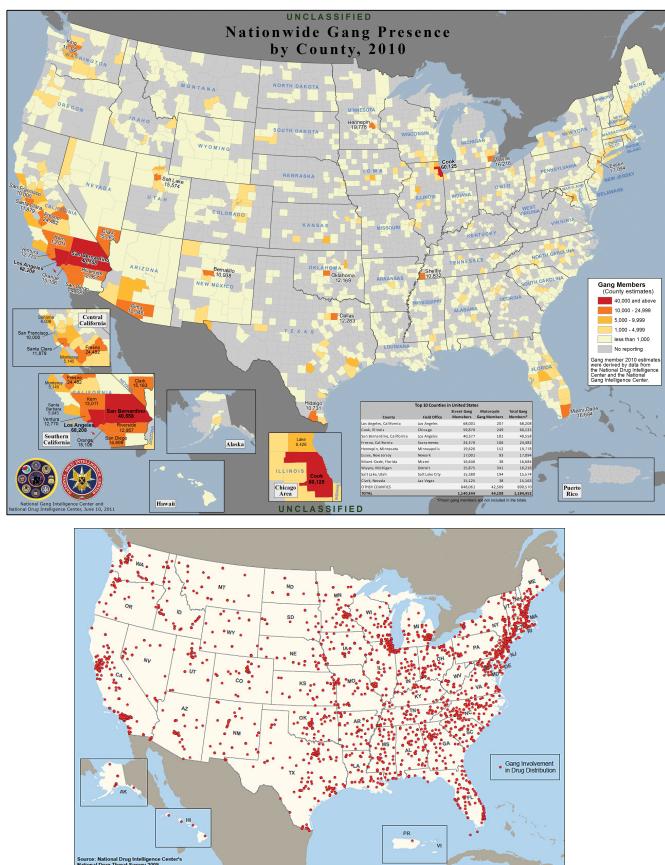


Fig. 5. The top graph is a choropleth indicating gang prevalence in US counties. The bottom provides a dotted plot highlighting specific location of gangs.

(POTENTIAL) REFERENCES

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FINAL CLARIFICATIONS

It should be understood that correlation does not mean causation and I am in no way attempting to prove that local gangs directly cause more school shootings. This is a comparative study and I will be assessing whether gang presence has any influence on the number of shootings in a state. This is also an observational study so I will be utilizing already present data and will not implement Qualtrics into my study.