A Project Proposal on

US Mass Shootings Data: Exploratory Analytics

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Table of Contents

[1. Abstract 3](#_Toc495349961)

[2. Introduction 3](#_Toc495349962)

[**Motivation** 3](#_Toc495349963)

[3. Background & Related Work 4](#_Toc495349964)

[**Related Work** 4](#_Toc495349965)

[**Data Introduction: Last 50 Years US Mass Shootings** 4](#_Toc495349966)

[4. Research Questions & working hypothesis 5](#_Toc495349967)

[REFERENCES 6](#_Toc495349968)

# **Abstract**

The phenomenon of mass shootings has emerged in US over the past 50 years. A high proportion of rampage shootings have occurred in the United States, and secondarily, in European nations with otherwise low firearm homicide rates; yet, paradoxically, shooting massacres are not prominent in the Latin American nations with the highest firearm homicide rates in the world. A review of the scientific literature from 2010 to early 2014 reveals that, at the individual level, mental health effects include psychological distress and clinically significant elevations in posttraumatic stress, depression, and anxiety symptoms in relation to the degree of physical exposure and social proximity to the shooting incident [[3]](#_REFERENCES_3). Given the historical dataset of the 50 years, I am proposing an in-depth exploratory analysis of the mass shootings in US over this period to find correlations with several important factors (example: age, sex, race, calendar date, etc.), analysis of the on the location, impact, killings, motives of the incident. I am also looking forward to finding an unknown pattern based on the dataset visualization which can be used as an informative analysis for future reference in the same work area.

# **Introduction**

## **Motivation**

The US has witnessed 398 mass shootings in last 50 years that resulted in 1996 deaths and 2488 injured [[2]](#_REFERENCES_1). The latest and the worst mass shooting of October 2, 2017 killed 58 and injured 515 so far. As per some researchers in this area, the number of people injured in this attack is more than the number of people injured in all mass shootings of 2015 and 2016 combined! When I saw this news on the TV the other day, it disturbed me so much that I started thinking about why would somebody with no criminal background do that? As of today, police are still investigating the motive of the recent Vegas mass shootings, and have not published even a clue on why the shooter did that! We discussed this with at workplace for days after this and we started guessing mental un-stability, personal life reasons, depression, psycho-path mindset or an influential incident by a terror organization, etc. could cause a normal person to get into such mindset over the period of years. A more detailed analysis on the same topic out of curiosity informed me the mass shootings have been a big challenge / problem the American government is facing and this has been happening in the US from 50+ years.

This is unfortunately the truth of Modern American history. I could not stop myself in digging more on this topic which led me to 50+ years mass shooting dataset. As this is one of the biggest challenge in modern American history which would impact the next generation Americans heavily in near future, it gave me motivation to choose this topic for the exploratory analysis project, to find interesting insights and patterns about the historical shootings happened in the US.

# **Background & Related Work**

## **Related Work**

I found many research papers and literature reviews on the mass shootings area, some of them are present at [Research Papers Link](https://www.ncbi.nlm.nih.gov/pubmed/?term=mass+shootings) . Many of the papers do analysis of mental illness, American firearms policies, the effects of shooting rampages on children and adolescents, the psychological effects for wounded victims and the emergency healthcare personnel who care for them, the disaster behavioral health considerations for preparedness and response, and the media "framing" of mass shooting incidents in relation to the portrayal of mental health themes [[3]](#_REFERENCES_2).

## **Data Introduction: Last 50 Years US Mass Shootings**

I found the dataset containing information on last 50 years of US Mass shootings incidences which I would use for this work:

* Geography: United States of America
* Time: 1966-2017
* Unit of analysis: Mass Shooting Attack
* Dataset: The dataset contains detailed information of 398 mass shootings in the United States of America that killed 1996 and injured 2488 people.
* Variables: The dataset contains Serial No, Title, Location, Date, Summary, Fatalities, Injured, Total Victims, Mental Health Issue, Race, Gender, and Latitude and Longitude information.

This dataset is available at [Dataset Link](https://www.kaggle.com/zusmani/us-mass-shootings-last-50-years). I did quickly glance into the dataset, and it seems good to me.

# **Research Questions & working hypothesis**

I believe the implementation would lead to interesting exploratory analysis and I will get some meaningful insights about the mass shootings in the US modern history based on the dataset I have chosen.

I am planning to get and visualize meaningful insights from the data analysis after implementation. The insights / research questions would be including following but not limited to –

1. Distribution of mass shootings across all US states / areas.
2. Rate of mass shootings over time / #years.
3. How many people got killed and injured per year?
4. Is there any correlation between shooter and his/her Race, Gender?
5. What cities and states are more prone to such attacks?
6. …

# **REFERENCES**

[1]. Mental Illness, Mass Shootings, and the Politics of American Firearms: [Link](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4318286/)

[2]. <https://www.kaggle.com/zusmani/us-mass-shootings-last-50-years>

[3]. <https://www.ncbi.nlm.nih.gov/pubmed/25085235>