CHICAGO CITY, ILLINOIS

Violence Reduction Chicago City

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Introduction

In United States (U.S) people who are victimized of guns is more 13 times more than any other high-income countries. According to statistics from 2015 to 2022 around 19 thousand people are victimized by gunshots. Victims are either killed or wounded. According to in U.S 59% adult has said either their relative or someone whom they have experienced gun violence and 41% among them are victim of trauma due to that tragedy. This disease has infected everyone irrespective of everything such as Black, White, Latin and any other (Everytown for Gun Safety Support Fund, 2024).

Gun violence has emerged as global problem in different communities and causing catastrophic damage on well-being of human and costing lives. With the analysis of victim stories here our purpose is to highlight and encounter challenges faced by them. Provide them assistance which they require and possible intervention for reducing the occurrence of gun violence.

These violences can be reduced by identifying the root causes behind these acts. Factor which are contributing in these violences are poverty, unemployment, untreated mental illness, gun culture and easy availability of guns and Police practices.

Dataset

Chicago Police Department (CPD) has gathered this data daily. In this dataset each row represent victimization of individual due to homicide or non-fatal shooting. In this dataset each row does not represent a unique victim in a case one is victimized multiple times there will be multiple rows for each of those districts. Dataset is recorded from 1991 to present and the non-fatal shooting data from 2010 to the present. Here I will take data from 2017 to present. Apart from this data we will get data related to some socioeconomic such as income level from census. In this data we will create two new features one is income level from data collected on income and the day (Morning, Afternoon, Evening and Night) which will be created from hours (*Violence Reduction - Victims of Homicides and Non-Fatal Shootings | City of Chicago | Data Portal*, 2024).

Dataset also has variables related to administrative or political boundaries that are subject to changes. Dataset has variables STREET_OUTREACH_ORGANIZATION, WARD, DISTRICT, BEAT, STATE_HOUSE_DISTRICT, STATE_SENATE_DISTRICT. These variables are referred according to current geographic boundaries of November 1st, 2021. In the last, there are 38 columns and 61000 observations

Variable Description

Variables in Violence Reduction dataset are Geographical data, crime and incident types, victim, criminal information and datetime information. In section of Geographic variables such as geocoordinates (longitude and latitude), location is the crime location such as abandon building, apartment or an alley and other variables where incidents took place are area, ward, district, beat (all these are numerical codes). There are two variables related to state legislative such as State house district and state senate district (numerical). In the category of crime and incident types included are all variables related to VICTIMIZATION and INCIDENT. There are a total of 8 variables in this category giving information related to crime type, incident type, victimization nature and codes for different

reporting standards. Victim and criminal provide details about age, sex, race and victim name. Datetime gives details month, hour and day of week. In organization there is one column Streat outreach column provide detail about any organization involved in incident prevention.

Other data we aim to collect is related to socioeconomic facts such as income level and population. In this dataset new features will be created such as income level and day.

Research questions

1) What does the impact of the day have on the frequency and severity of crimes and how do these disparities have impact on communities?
2) What is the distribution of crime rates and types in different levels of income and what policies are beneficial in addressing these disparities effectively?
3) What are the most common crimes occurring in districts, compare the frequency of the crimes in top five high crime districts?
4) What is the likelihood of fatality in the incident with presence of the Gun?

Tools and Techniques

In this project for the analysis of dataset and answer the research questions various tools, techniques and resources will be used. So, we must have laptop minimum core i6 or i7, stable internet connection, MS Office particularly Word and Excel, PowerPoint proper use of Google Scholar for research, for data collection websites such as data.gov and use of data.census.gov. In this project we go from data cleaning to data reporting. During data cleaning we can use Jupiter notebook with Python programming language using its data analysis libraries. After cleaning we perform exploratory data analysis and statistical analysis in Python. Then we get interactive visualizations using PowerBI/Tableau also use

coordinates for geospatial analysis with Python and apply machine learning algorithms if required.

References

Everytown for Gun Safety Support Fund. (2024, August 5). *Beyond Measure: Gun Violence Trauma*. Everytown Research & Policy. https://everytownresearch.org/report/gun-violence-trauma/#:~:text=The%20impact%20of%20gun%20violence%20extends%20far%20beyond%20those%20killed%20or%20wounded.

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