

COMP 2256 Term Project

CRIME INSIGHTS: LOS ANGELES

Executive Summary:

Crime Insights: Los Angeles is an interactive Tableau project that explores crime patterns in Los Angeles between 2020 and 2024. Using public data from Data.gov. This project visualizes key dimensions such as time of occurrence, victim demographics, location, and weapon type.

The dashboard is divided into five main views that enable users to filter and drill into specific trends. Insights reveal that crimes most frequently occur around noon, with a general pattern of elevated activity between 12 PM and 10 PM. Victims are most commonly between the ages of 18 and 39, showing a consistent trend across all five years. A notable finding is the sharp decline in reported crimes in 2024, with a nearly 50% drop compared to previous years.

This project aims to support public awareness and assist law enforcement, policy analysts, and community organizations by turning raw data into accessible visual insights.

Introduction:

I'm currently studying the applied data analytics certificate at BCIT. This is my first tableau course. My goal for this course is to learn how data visualization work and get experience on analysing dataset through data visualization tool.

This is a data visualization project that explores crime trends and victim demographics in the city of Los Angeles from 2020 to 2024. The dataset is provided by the [U.S. Government's Data Catalog](#). The main objective is to transform raw crime dataset into meaningful insights that can assist law enforcement, policy makers, and provide a visual look to public.

Primary Audience:

- Los Angeles Police/ Management: able to use insights to support the community safety, for example, refine the current staffing across their precincts.
- Local Community Organization: Collaborate with local groups (e.g. community center, neighborhood associations) to host events or activists to increase awareness of crime concerns in the neighbours.

Initial Questions:

- Which age group are most frequently affected?
- What weapon are widely used?
- How do crime rate change from 2020 to 2024?

Project Description:

The reason I decided to analysis the crime dataset from Los Angeles is because crime is a real-world issue that affects people, communities, and decision-makers. I wanted to explore how data visualization could help make sense of large public datasets and uncover patterns that aren't immediately obvious in raw numbers.

Some of the initial curiosities that I wanted to explore included:

- Are certain times of day more dangerous than others?
- Are younger people more likely to be victims?
- Has crime increased or decreased since 2020, especially after the pandemic?

Data Source and Preparation:

Remove/ Hide Columns:

- TIME OCC after TIME OCC 24 HR is created
- Part 1-2
- Crm Cd1, Crm Cd2, Crm Cd3, Crm Cd 4
- Vict Descent, Premis Cd,

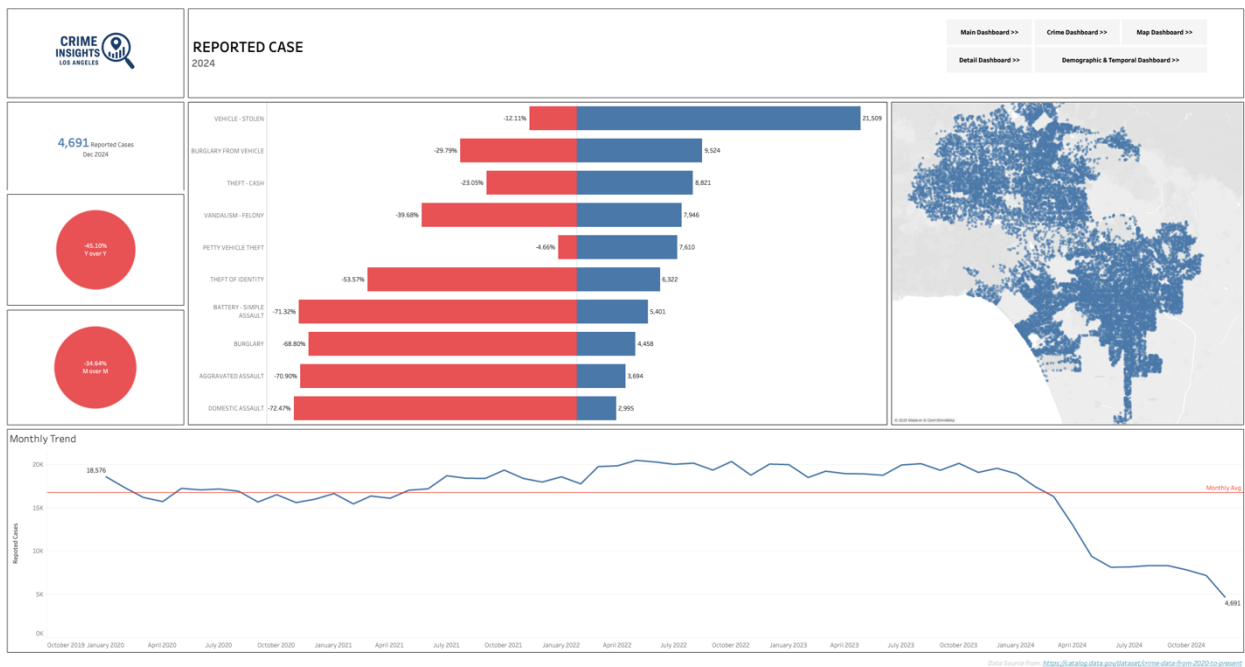
Add Columns:

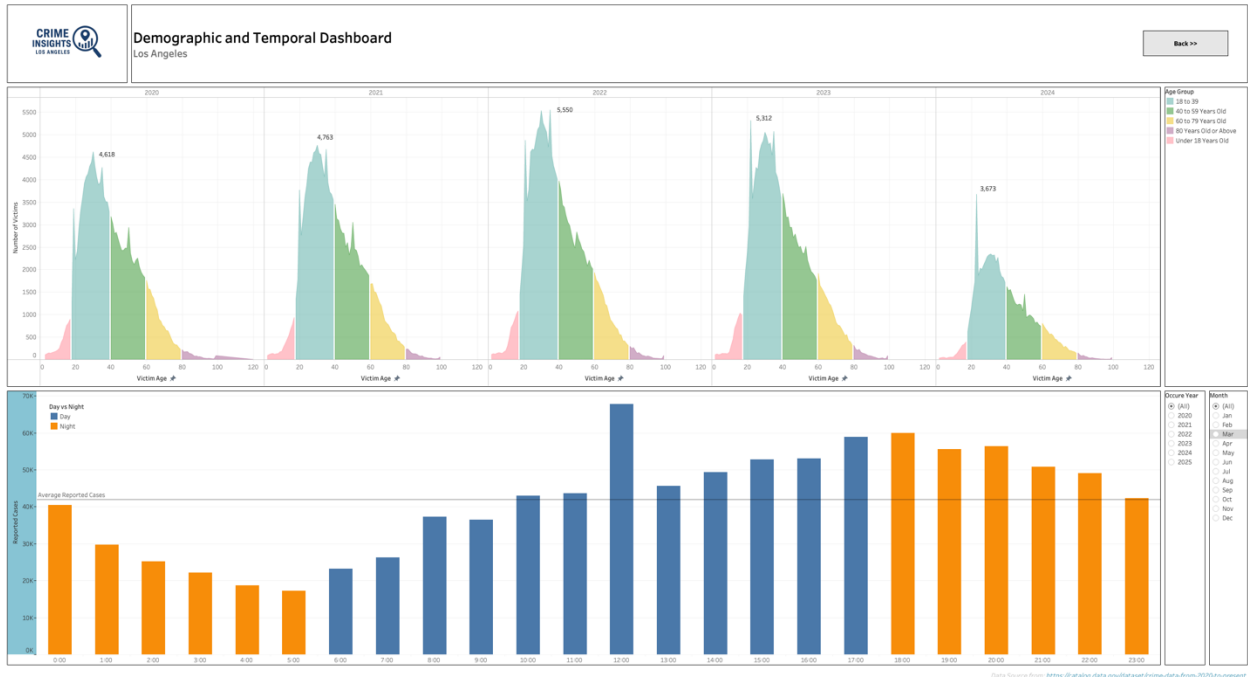
- Day vs Night
- Hourly Group
- Month + Year
- Split TIME OCC into Month, Day, Occur Year
- Age Group: Under 18 years old, 18 – 39 years old, 40 - 59 years old, 60 – 79 years old, 80 years old or above

Challenges:

- **Missing or Incomplete Data:** Some records in the dataset contained null values, particularly in key fields such as weapon type, victim age, or gender. In many cases, there was no way to verify or replace these values with related information. As a result, I had to make decisions on whether to exclude them or group them under categories like “Unknown” to maintain visual and analytical clarity.
- **Geographic Mapping of Crime Areas:** One of the goals was to visualize crimes by area using a boundary map. However, finding a boundary map that directly matched the current dataset was challenging. To work around this, I used the map tools to show crime density and area-level segmentation.

Visualizations and Analysis:





This view shows two key patterns: Most crimes happen between noon and 10 PM. Most victims are between 18 and 39 years old. The chart also splits crimes by day and night, offering a better understanding of when crimes typically occur.

Tableau Components

Calculated Fields: Used to create new dimensions such as age groups, day/night classification, and combined date fields like “Month Year” (e.g., Jan 2023).

Filters and Parameters: Applied interactive filters for year, weapon type, area name, and gender to allow users to drill down into specific segments of the data.

Sets and Top N Ranking: Used sets and calculated rank fields to highlight the top 10 weapons and top crime areas while keeping percentages based on the total dataset.

Maps and Geospatial Elements: Created a density heatmap and color-coded area maps to show geographic crime patterns across Los Angeles.

Line, Bar, and Treemap Visualizations: Used a mix of visual types across dashboards to show trends (line charts), comparisons (bar/treemap), and breakdowns (stacked charts).

Tooltips and Labels: Custom tooltips were used to show counts and percentages. Labels were formatted to include both raw numbers and relative percentages.

Dashboard Actions: Implemented filter and highlight actions between charts to make dashboards more interactive and responsive.

Recommendations/ Conclusions:

Based on the analysis, there are several key trends and observations emerged that can help inform public safety strategies and community awareness.

Key Findings:

- Most crimes occur between noon and 10 PM, with a noticeable spike around 12 PM.
- Victims aged 18 to 39 are the most frequently affected group across all years.
- Unarmed combat and handguns are among the most common weapon types.
- Reported crimes significantly decreased in 2024, nearly 50% lower compared to previous year. This could be a trend that may reflect changes in reporting, enforcement, or actual crime rates.
- Certain areas of Los Angeles consistently report higher crime volumes, including Central and high-density neighborhoods.

Recommendation:

- Increase patrols and community outreach during peak crime hours (noon–10 PM), especially in high-risk areas.
- Focus crime prevention programs on young adult populations, who are most often victimized.
- Investigate the causes behind the sharp drop in reported crimes in 2024, including changes in reporting methods, resource allocation, or policy updates.
- Promote public access to crime data dashboards like this one to support transparency and encourage community engagement

Additional Notes:

There are several areas where the project could be expanded or improved in the future.

- Incorporate official Los Angeles boundary geoJSON file would allow for more accurate geographic mapping and area-based comparisons.
- Income Level & Socioeconomic Data: Adding income-level data could help reveal how economic status may relate to crime patterns in certain neighborhoods.
- Population Change & Density: Integrate population data would allow the dashboards to show crime per capita, which gives better insight than raw totals.
- GDP or Economic Indicators: Tracking economic conditions over time could provide helpful context when interpreting changes in crime levels, such as the drop in reported incidents in 2024.