

Analysis of Cost of Living Alongside Violent Crime Rates in Major U.S. Cities in The Past Decade

DATA VISUALIZATION PROJECT

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Introduction

I created a multi line time-series chart that analyzes the cost of living and violent crime rates in five major U.S cities.

New York, NY
Houston, TX
Tampa, FL
Phoenix, AZ
San Francisco, CA

The goal of this project is to compare cities, and explore potential relationships between cost of living and crime rates.

Chart Overview

Each city has two lines: one for Cost of Living & one for Violent Crime Rate, over the past decade

The chart uses two Y-axes:

Left Y-Axis: Represents the Cost of Living Index.

Right Y-Axis: Represents the Violent Crime Rate (per 100,000 population).

Interactive Features:

Toggle buttons allow users to select/deselect cities and metrics (Cost of Living and Violent Crime Rate).

Tooltips that display information when hovering over data points.

Key Takeaways

Cost of Living Trends

New York City: Consistently the most expensive city(100 index), and known as the reference city in my chart

San Francisco: Shows significant fluctuations, peaking at 103.4 in 2016 and dropping to 92.5 in 2024.

Houston: Generally has a lower cost of living, with a notable drop from 89.9 in 2015 to 69.9 in 2024.

Tampa: Has a moderate cost of living, ranging from 67.1 to 82.

Phoenix: Is stable and has a relatively low cost of living, ranging from 65.9 to 74.

Violent Crime Rate Trends

New York City: Crime rates have fluctuated but remained relatively stable, with a slight increase from 234.8 in 2014 to 278 in 2024.

Houston: Consistently has high crime rates, peaking at 570.6 in 2020 and slightly decreasing to 566.3 in 2024.

Tampa:Has significant decline in crime rates from 287.5 in 2015 to 203.2 in 2024.

Phoenix: Moderate crime rates, peaking at 419.9 in 2017 and decreasing to 351.5 in 2024.

San Francisco: Sharp increase in crime rates, from 490.9 in 2014 to 495.7 in 2023, but with a slight drop to 357.4 in 2024.

Comparison

A. Cost of Living vs. Crime Rates

High Cost of Living, Moderate Crime: New York City has the highest cost of living but relatively moderate crime rates compared to other cities.

Low Cost of Living, High Crime: Houston has a lower cost of living but the highest crime rates among the cities analyzed.

Moderate Cost of Living, Declining Crime: Tampa and Phoenix show moderate costs of living and declining crime rates over the years.

High Cost of Living, Rising Crime: San Francisco has a high cost of living and a significant increase in crime rates, peaking in 2023.

B. Yearly Trends

2020–2024: Most cities show a stabilization or slight decrease in crime rates, possibly reflecting post-pandemic recovery and policy changes.

2014–2019: Crime rates were more volatile, with some cities showing significant declines and others showing increases.

Conclusion

NYC: Despite having the highest cost of living, NYC maintains a moderate and stable crime rate

Houston: Has a low cost of living but the highest violent crime rate among the cities analyzed.

Tampa: Shows a decreasing crime rate despite a moderate cost of living.

Phoenix: Has a moderate cost of living and a moderate crime rate.

San Francisco: Has a high cost of living and a rising crime rate, though it remains lower than Houston's.