Title: Economic Impact on Crime in Chicago

Team Members:
Brendan McDonnell
Harper Chen
Jeffrey Mason

Topics

Background Information

Working with the Data and Results

Main Takeaways

Background Information

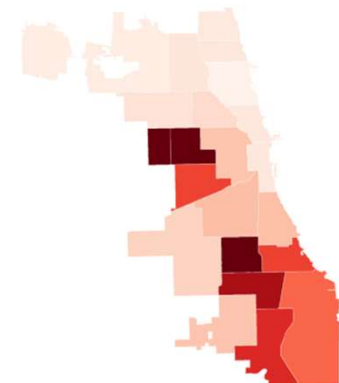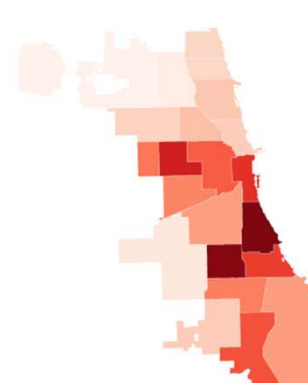"All big cities have a violence problem. Chicago's is different."

Diverging Neighborhoods

Homicides per 100,000 residents

1991   2020

Why?

Research Questions: Relationship between economic indicators and crime rates, neighborhood crime patterns

Importance: Inform policy decisions, contribute to understanding of factors influencing crime rates

Tools Used

Discord, Zoom

Google Drive, GitHub

Python, Jupyter Notebooks

Tableau, PowerBI

Main Techniques Applied

Data Cleaning: Removal of outliers and null values

Preprocessing: Data transformation and integration

Classification: Decision Tree, Random Forest models
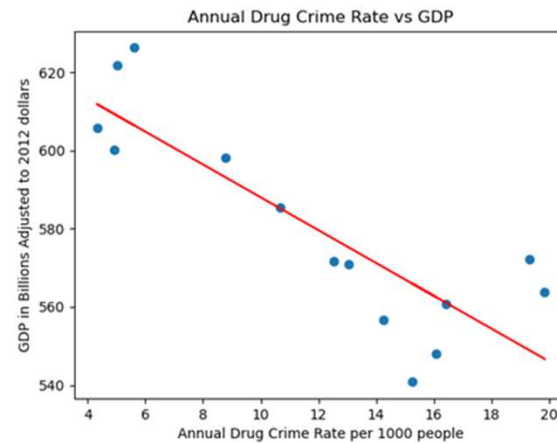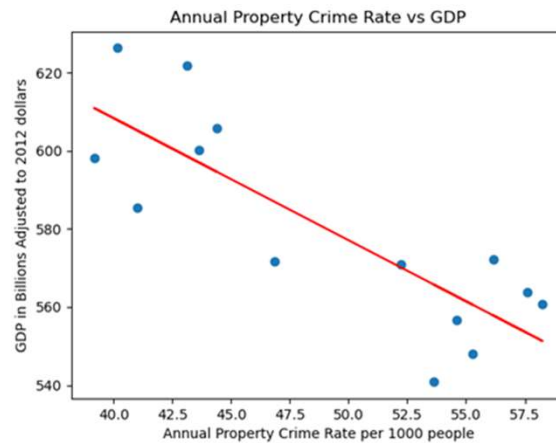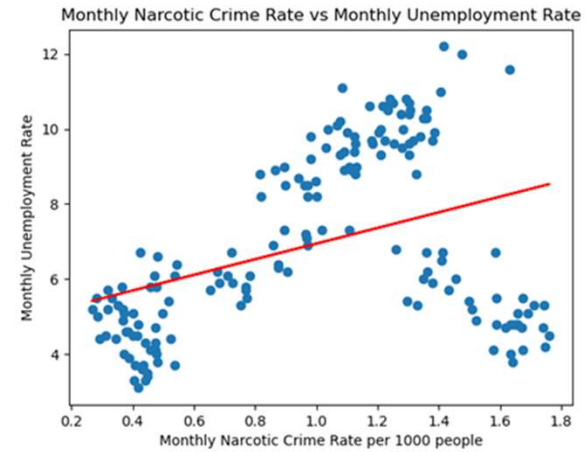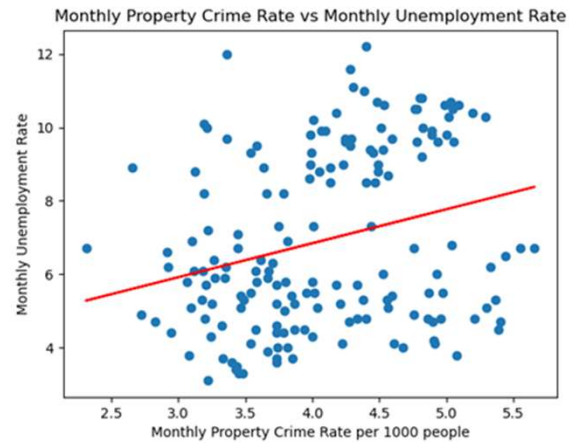
Clustering: K-means

Key Results

Correlations: Identified relationships between economic indicators and crime rates

Economic Impact: Analyzed the cost of crime in Chicago

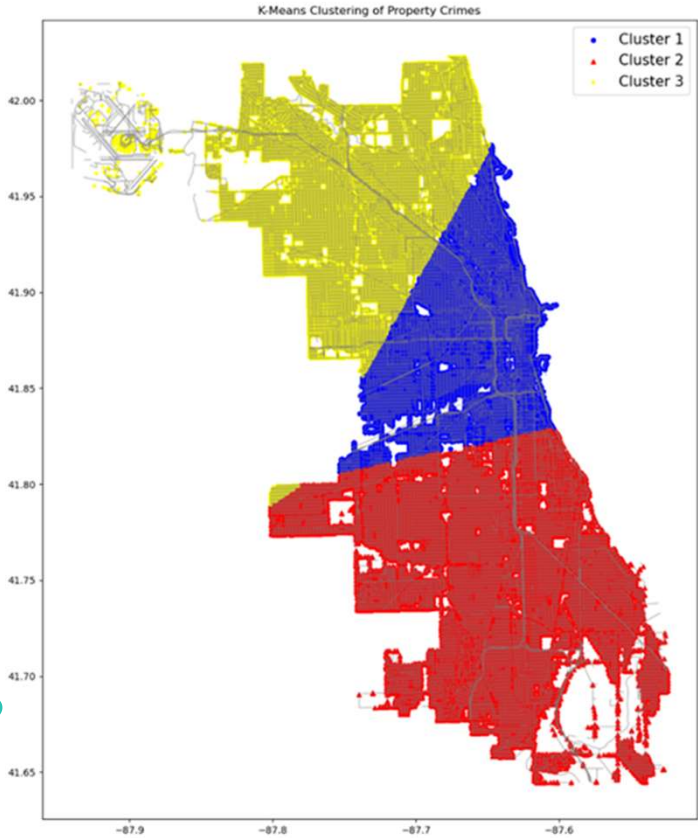Crime Types: Categorized and analyzed different crime types

Neighborhood Analysis: Mapped crime incidents and economic data

Key Visuals

Key Visuals

K-Means Clustering of Property Crimes

North (Yellow)	0.349308
Central (Blue)	-0.013135
South (Red)	0.349308

Northwest (Red)	0.349732
Northeast (Yellow)	0.366465
Central (Blue)	0.37759
South (Green)	0.357462

K-Means Clustering of Narcotics Crimes
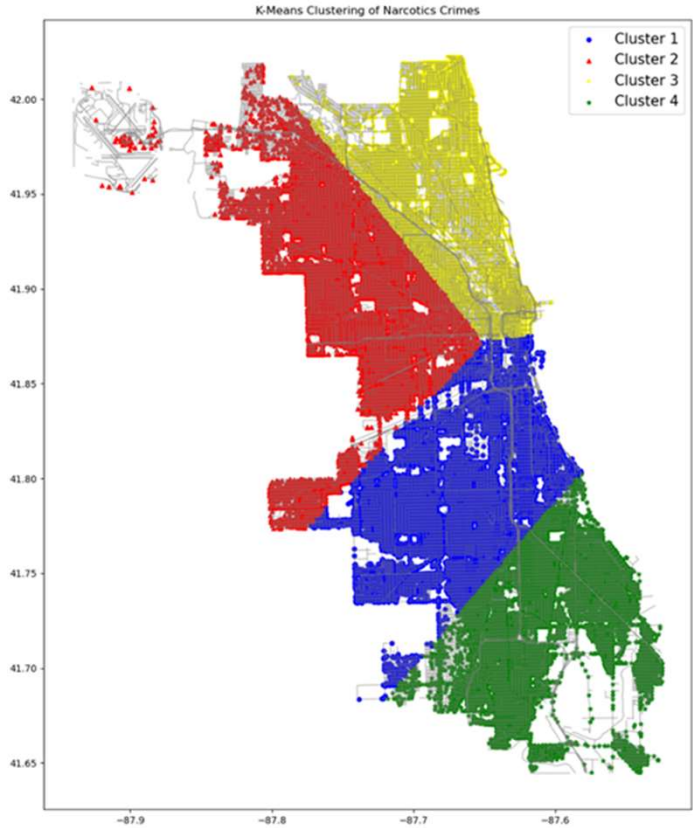
Applications

Policy Recommendations: Provided suggestions for interventions that could reduce crime rates

Real-world Impact: Improved decision-making for policymakers, community members, and law enforcement

Focus Areas: Job creation, education, and community development initiatives

Conclusion

Summary: Comprehensive analysis of the relationship between crime rates and economic indicators in Chicago

Findings: Identified correlations, economic impact, and neighborhood patterns

Contributions: Informed policy development and highlighted areas for future research

Future Research: Further exploration of factors influencing crime rates, additional data sources, advanced analytical methods