

Predicting violent crimes from socio-economic and law enforcement data

Communities and Crime

By Asad Mahmood and Ihor Markevych

Level 1-3 - Fraud and Crime

Stakeholder

US police departments

Impact on stakeholder:

- Prediction of future crime rate when opening new stations
- Understanding of how efficiency of law enforcement will be affected by increasing or decreasing the following parameters:
 - Police operating budget
 - Number of police cars
 - Number of police officers
 - etc.
- Finding optimal quantity of law enforcement resources for specific population and city conditions

Planned research and goals

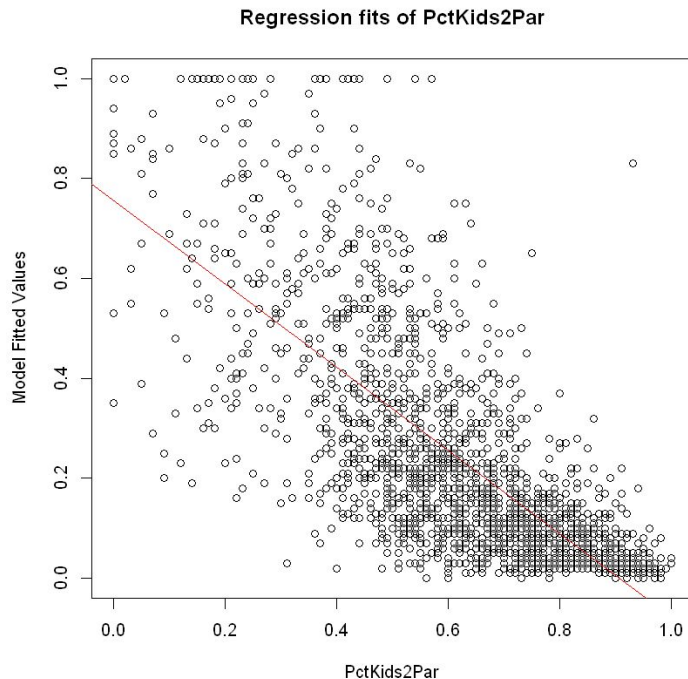
Planned goal variable:
total number of violent crimes per
100K population.

- Analyze data
- Find predictors and strength of their impact
- Create an accurate model that fits data
- Try to answer questions whether crime level is affected by
 - percentage of kids in family housing with two parents;
 - Can percentage of kids born to never married couples;t
 - percentage of families (with kids) that are headed by two parents;
 - percentage of population that is caucasian people;
 - percent of kids 4 and under in two parent households.

Impact of Separate Factors

Factor 1: Children raised with two parents

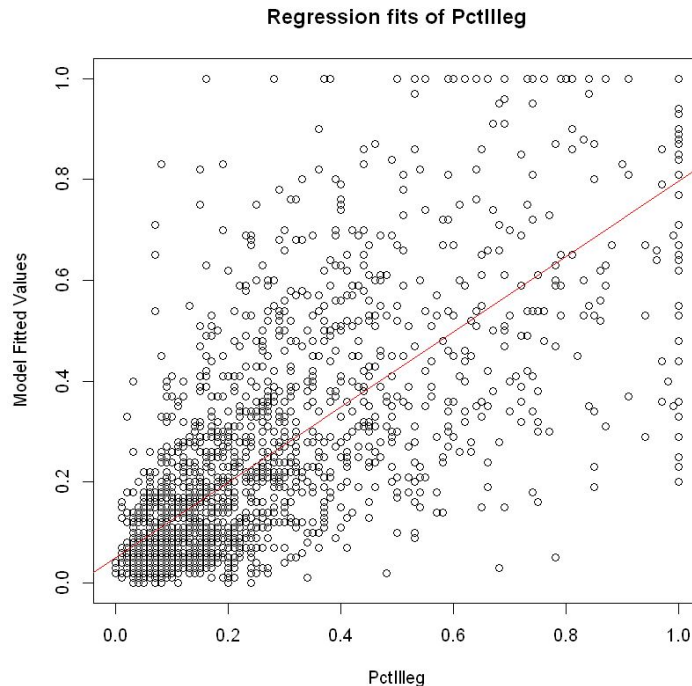
Children being raised with two parents are less likely to commit violent crimes at any stage of their lives.



Impact of Separate Factors

Factor 2: Children born to unmarried parents

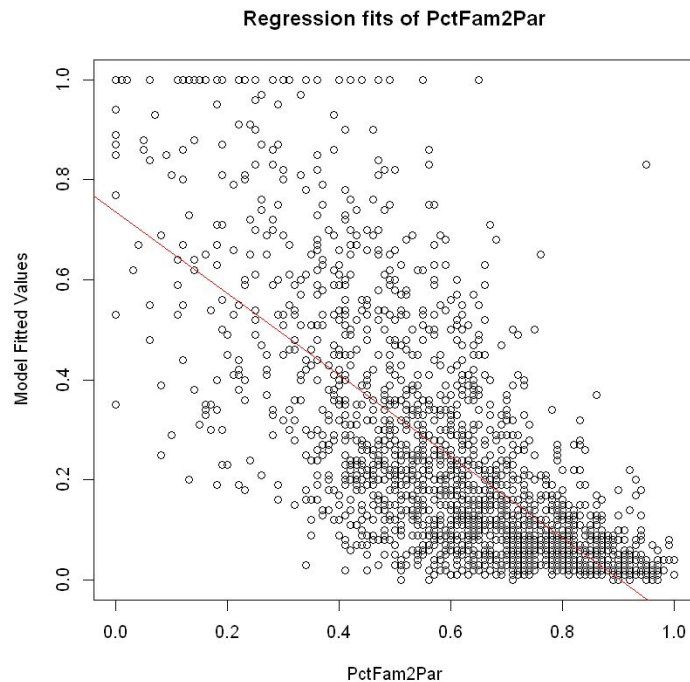
Kids born to people that have never been married tend to commit higher frequency of violent crimes in the span of their lives.



Impact of Separate Factors

Factor 3: Families headed by two parents

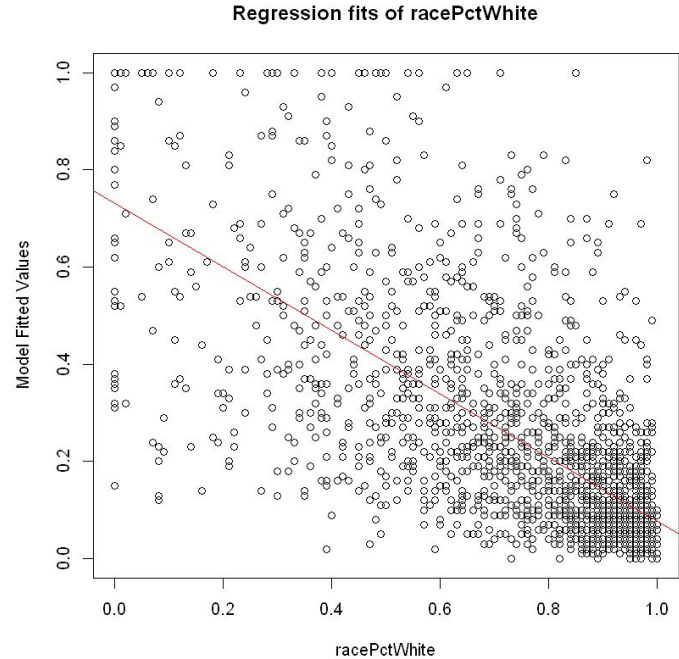
Number of **families that are headed by two parents** reduce the number of violent crimes committed.



Impact of Separate Factors

Factor 4: Caucasian population

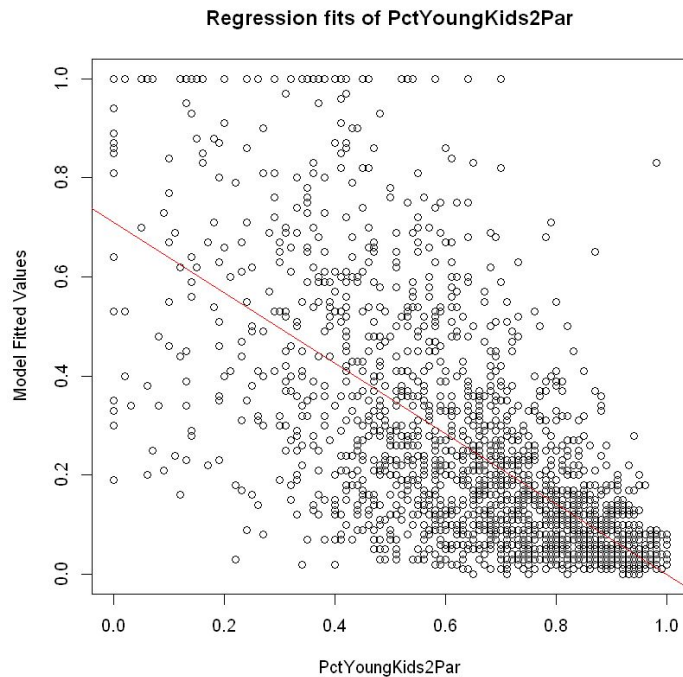
Increase in **population of caucasian people** leads to the decrease in violent crimes.



Impact of Separate Factors

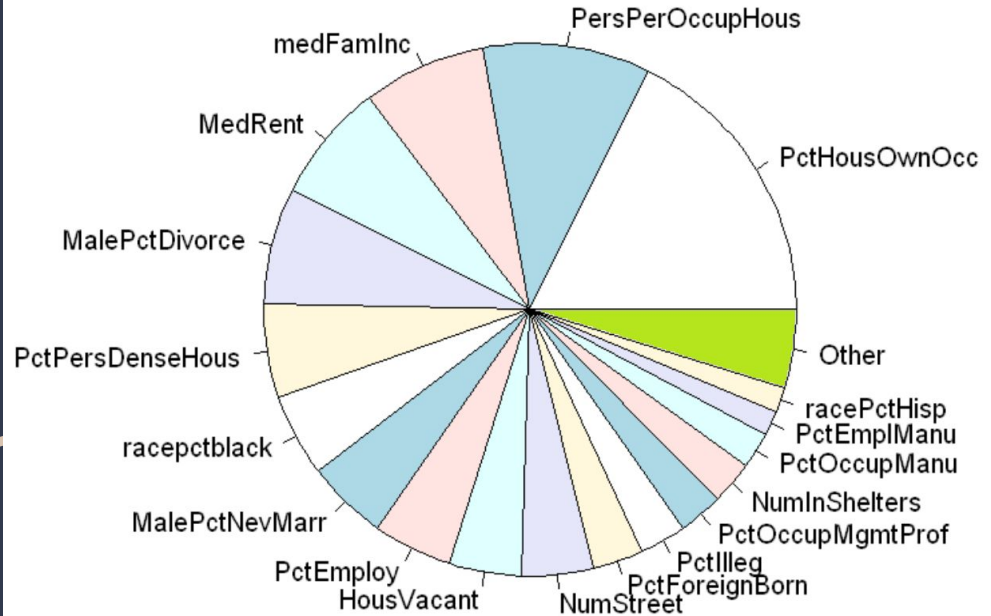
Factor 5: Kids aged four or under that have two parents

Kids of 4 and under that have two parents in their household to educate them and take care of them then it reduces the number violent crimes committed



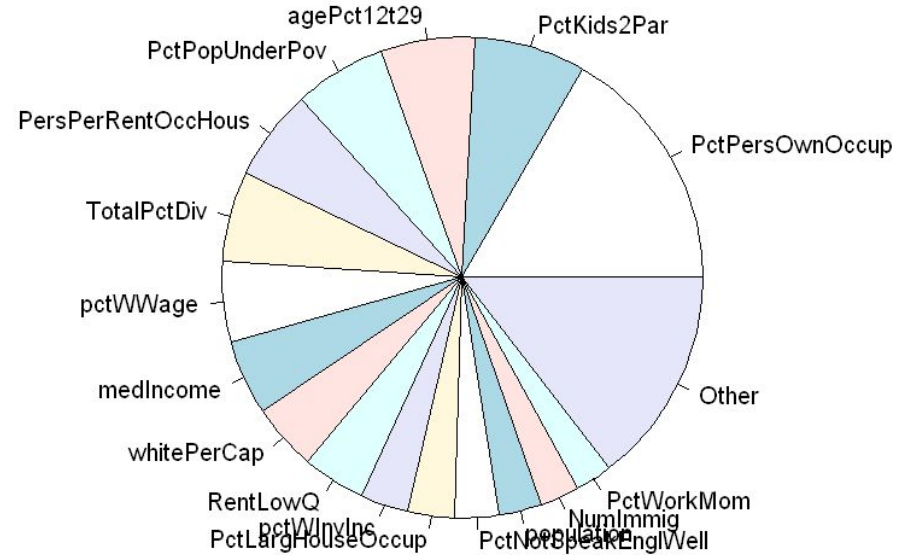
Increasing Crime Level

- Bad housing conditions
 - e.g. too dense housing
 - Rent cost
- Homeless people
- Youth that
 - Has not got good education
 - Was not raised by two parents
- Divorced or never married citizens



Decreasing Crime Level

- Good Income
- Propriete Housing Conditions
- Low Rent Cost
- Lack of Language Barriers
 - Fluent English
 - Bilingual
- Complete Families with Kids



Summary

- Predictors together with their strength were found;
- Answered questions about impact of isolated factors;
- Socio-economic factors that impact crime levels were inspected;
- Predictive model was created.

**Thank you for your
attention!**

Questions?

