

# Income Inequality, Social Disorganization, and Urban Crime

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# Research Question

- ◆ How do within-group income inequality and social disorganization help predict crime incidents in Chicago?
- ◆ Unit of analysis: Census tract in Chicago city (US Census 2010)
- ◆ Within-group income inequality: The Gini coefficient of a census tract
- ◆ Social disorganization (Shaw and Mckay, 1942):
  - ◆ Poverty
  - ◆ Heterogeneity
  - ◆ Physical dilapidation
  - ◆ High transient population
  - ◆ Other social illnesses

# What contributes to urban crimes?

- ◊ Individual (Biological) characteristics
- ◊ (Socioeconomic) Unemployment and poverty
- ◊ Cultural factors (Family, peer, community)
- ◊ and more .....

# Some Crime Theories

- ◇ Economic
  - ◇ Income inequality
  - ◇ Opportunity\*
- ◇ Sociological
  - ◇ Social disorganization
  - ◇ Relative Deprivation
  - ◇ Class conflict\*
  - ◇ Strain
  - ◇ Routine activity\*
  - ◇ Collective efficacy
  - ◇ Broken Window

# Data

- ◆ Chicago crime data (2012-2016), point-aggregated
- ◆ Chicago ACS 2012-2016, census tract level
- ◆ Unit of analysis: Chicago 2010 census tracts, excluding partial city census tracts
  - ◆ 787 census tracts in total



# Method

- ◆ Cliff-Ord autoregressive model with spatial autoregressive disturbances (SARAR)

$$\ln Y_i = \lambda W \ln Y_i + \sum_j \alpha_j X_{ij} + u_i$$

$$\text{where } u_i = \rho W u_i + \varepsilon_i \quad \forall \varepsilon_i \text{ i.i.d.}$$

- ◆ Removes autocorrelation in the dependent variable as well as the error term
- ◆ Spatial weight: Queen contiguity

# Variables

Variable	Definition	Description
Crime Rate	The natural log of the annual reported crime incidents per 1000 population per census tract	Dependent
Income	The natural log of aggregated median household income	Control
Unemployment	% of population that are in the civilian labor force but are unemployed	Control
Education	% of population aged over 25 that have a high school degree or higher	Control
Income Inequality	The estimated income Gini coefficient	Inequality
Poverty	% of households that are below the poverty line	Social disorganization
Foreign	% of foreign-born population	Social disorganization
Vacancy	% of housing units that are vacant	Social disorganization
Renter	% of housing units that are occupied by renters	Social disorganization

# Tentative Results

- ◆ Significant: Unemployment, Income, Income Inequality, foreign, vacancy
- ◆ Interestingly,
  - ◆ The impact of income and income inequality reduces after introducing social disorganization variables
  - ◆ Vacancy is very influential
  - ◆ The coefficient of foreign is negative (contrary to Shaw and Mckay's findings)



# Limitations

- ◆ Does not discuss the issue: “Ascription” vs. “Achievement”
- ◆ Does not discuss the effect of the choice of unit of analysis
- ◆ ... and more

# Further Improvements

- ◊ Interactions between units of analysis
- ◊ Try different of analysis
- ◊ Leveraging new datasets to test other theories
  - ◊ E.g. Street disorganization
- ◊ Using PYSAL package