

# **Crime and Victim Risk Modeling in Cook County, Illinois**

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In this project, the researchers examine the Chicago Police Department's (CPD) Crime and Victimization Risk Model (CVRM) using data provided by the City of Chicago's open data initiative. A random sample of 1000 observations was taken from the larger dataset ( $n = 313,469$ ), and the data has been subset to include 9 out of 40+ original variables. The CVRM calculates a risk score that is used to estimate the likelihood of an individual being arrested for or becoming the victim of a shooting or assault and battery in the next 18 months. The model uses non-demographic factors to predict an individual's risk level based on prior arrest records data spanning 2006 to 2016. The authors of this project take an interest in variables within the CVRM dataset that are not used by the model to predict risk score but that do have sociological significance to topics of policing, crime, technology, and incarceration (e.g., race and sex). New variables such as current age and binary distinctions regarding whether a potential victim lives in an urban or rural area will be created. The researchers also consider geographical markers such as the police district in which an individual lives and/or where they were last arrested. Thus, the proposed final project is to create a Shiny dashboard with an interactive map using data provided by the City of Chicago and generated by the authors. By visually displaying the map, the researchers plan to highlight how certain districts in Cook County, Illinois may be over policed in relation to the population size.