

Case 35: Modeling Property Crimes with Multiple Predictors

Local government officials and community planners want to evaluate how socioeconomic conditions are associated with property crimes across counties. They have collected data from 30 counties over a single calendar year. For each county, the following variables are recorded: the total number of reported property crimes, total population, the poverty percentage, the unemployment rate, population density (persons per square mile), and median household income (in thousands of dollars). The goal is to understand what factors are associated with the number of property crimes across counties. ([download data](#))

Initial Questions

1. What are the research objectives?
2. What are the statistical questions?
3. What is the response variable, and what is the data type of the response variable?
4. What are the explanatory variables of interest?
5. Are there covariates?
6. What is the population of interest?
7. What is the subject, and what is the number of distinct subjects?
8. Are there subject-level data?
9. Are response variables dependent (repeated measures / clustered subjects)?
10. Are the subjects selected randomly?
11. Are the subjects randomly assigned to different groups?

Initial Thoughts