Stat 139 Project

Group Members

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Project Title

Drugs and Death: Legalization and Overdose

Hypotheses of Interest

Determine whether the legalization of an illicit substance reduces prevalence of overdoses.

Determine whether this association holds up when other factors such as poverty level, unemployment, and crime are taken into account.

Build a robust model for predicting drug overdoses in a given country.

Variables of Interest

Response: Some metric for overdose: incidents per period time or rate per 100000 individuals.

Predictors:

- Legality of various substances
- Unemployment
- GDP per capita
- Crime
- Percent Female
- Wealth breakdown
- Proximity to common sources of Drugs (Columbia, Afghanistan, Mexico...)

Note: Data will be collected from the European Monitoring Centre for Drugs and Drug addiction.

Analysis Plan

Analysis will begin with EDA. We will generate characteristic plots of the data and preliminary models. We will use these to explore relationships between predictors and the response which will guide our further analysis. The general plan for further analysis will be to generate multiple models including various combinations of the given predictor variables, polynomial terms, and interactions terms. The best model will be selected using cross validation. We intend to use some form of regularization (Ridge or LASSO regression) to combat over-fitting.