Discussion of Plea Bargaining in Wisconsin

Greg Ridgeway

Associate Professor, Criminology and Statistics

June 2015

- Perhaps the named prosecutor is not making the decisions
- Regression models with numerous correlated features are risky
- Some remaining questions

- Perhaps the named prosecutor is not making the decisions
- Regression models with numerous correlated features are risky
- Some remaining questions

Named Prosecutor Might Not Be the Decisionmaker

- Public defenders say that the prosecutor is not important…
- but the prosecutor's supervisor is important
  - Signs off on deals, offers, and strategy
  - Wright mentioned an office with a “price book”
- Lack of influence of prosecutor features might be signal of the lack of discretion
- Variance explained by the prosecutor could be due to variance in supervisor

- Perhaps the named prosecutor is not making the decisions
- Regression models with numerous correlated features are risky
- Some remaining questions

Regression Models With Numerous Correlated Features Are Risky

- Standard approach to "adjust" for differences is regression

$$y = \beta_0 + \beta_1 \text{treat} + \beta_2 x_1 + \beta_3 x_2 + \epsilon$$

- Originally intended to be used to adjust for small differences in RCTs
- If x_1, x_2 are correlated with *y* then we get increased precision
- If x_1, x_2 are correlated with *y* and *treat* then the model is very sensitive to assumptions

Simulated Example Shows Problems with Standard Regression Approach

	Public defender	Panel
Outcome (y)	0.89	5.02
Violent history (x_1)	27%	90%
Serious drug use (x_2)	30%	86%

- Simulated public defenders handle less violent cases and fewer clients with serious drug use

Standard Regression Approach Finds an Effect When None Exists

	Estimate	Std. Error	p value
(Intercept)	0.086	0.349	0.807
PD	-0.791	0.293	**0.008**
x1	2.654	0.260	0.000
x2	2.955	0.242	0.000

- However, I generated the outcome so that there is no treatment effect… and a wicked interaction

$$y = 0 + 0 \times \mathrm{PD} + 1x_1 + 1x_2 + 4x_1x_2 + \mathrm{N}(0,1)$$

When Treatment Is Independent of X Conclusions Are Insensitive to Model

	Public defender	Panel
Outcome (y)	2.74	2.73
Violent history (x_1)	60%	62%
Serious drug use (x_2)	61%	57%

	Estimate	Std. Error	p value
(Intercept)	-1.430	0.227	<0.001
PD	-0.051	0.202	**0.801**
x1	3.588	0.208	<0.001
x2	3.386	0.206	<0.001

Even No Adjustment for X Gives a Good Treatment Effect Estimate

	Public defender	Panel
Outcome (y)	2.74	2.73
Violent history (x_1)	60%	62%
Serious drug use (x_2)	61%	57%

	Estimate	Std. Error	p value
(Intercept)	2.725	0.279	<0.001
PD	0.012	0.395	**0.975**

Regression Can Get the Right Answer… but Is Sensitive to Misspecification

- Correct treatment effect depends on including a critical interaction term
- With a large number of features this becomes hard
- Regression diagnostics are inadequate

	Estimate	Std. Error	p value
(Intercept)	0.149	0.264	0.573
PD	-0.103	0.227	**0.651**
x1	0.956	0.264	<0.001
x2	0.908	0.230	<0.001
x1*x2	3.865	0.336	<0.001

Design Analysis Around an Isolated, Specific Question

$$P(\text{guilty plea}) = \beta_0 + \beta_1 \text{prosecutor experience}$$

- Match, weight, uncorrelate other case features from prosecutor experience
- Lack of evidence variables cited as a problem, but only matters if correlated with **both** outcome **and** experience
- McCannon's election paper… election effect was essentially unchanged with various controls
- Visit my poster on benchmarking justice system performance for more on how to do this

- Perhaps the named prosecutor is not making the decisions
- Regression models with numerous correlated features are risky
- Some remaining questions

Lingering Questions for Discussion

- More research on defense counsel?

  "…although variables related to the prosecutor did not significantly affect guilty pleas, those related to defense counsel did."

- Are prosecutor effects only individual effects?
- Do judges have a role?

Discussion of Plea Bargaining in Wisconsin

Greg Ridgeway

Associate Professor, Criminology and Statistics

June 2015