PLSC 473: American Judicial Behavior

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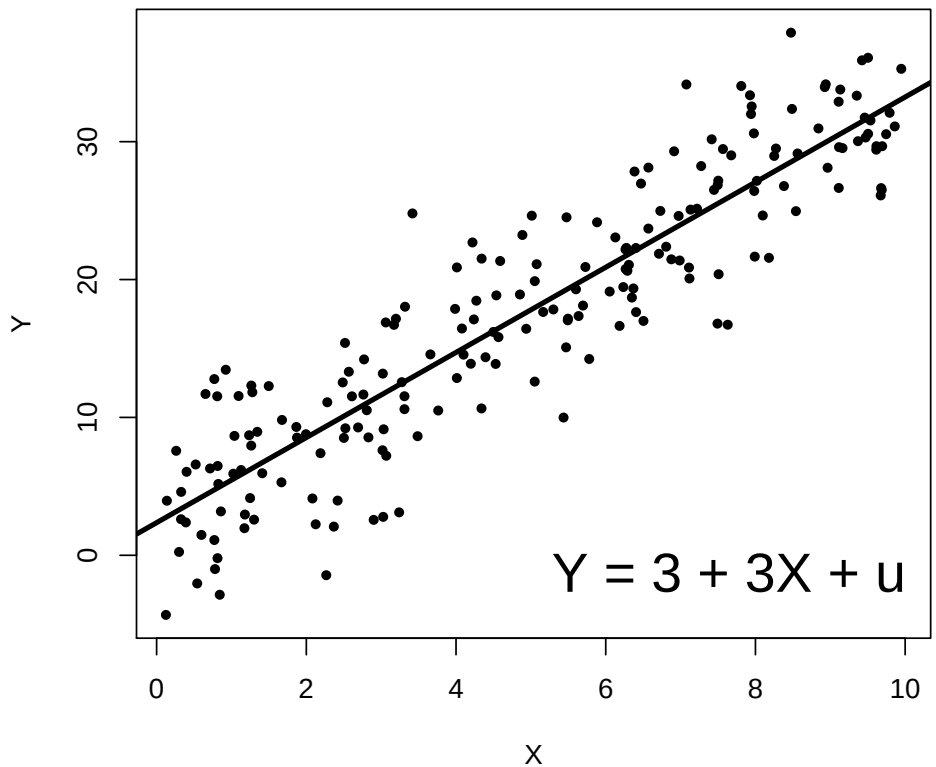
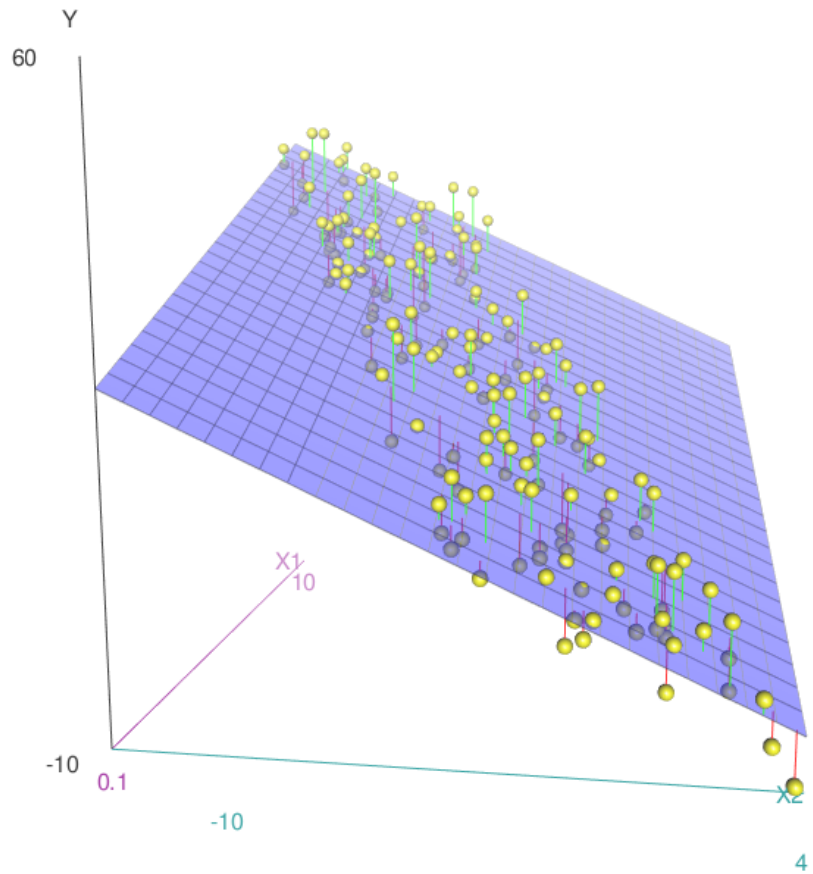
(Bivariate) Regression Redux

$$Y_i = \beta_0 + \beta_1 X_i + u_i$$



Multiple Regression

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + u_i$$



Multiple Regression

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + ... \beta_k X_{ki} + u_i$$

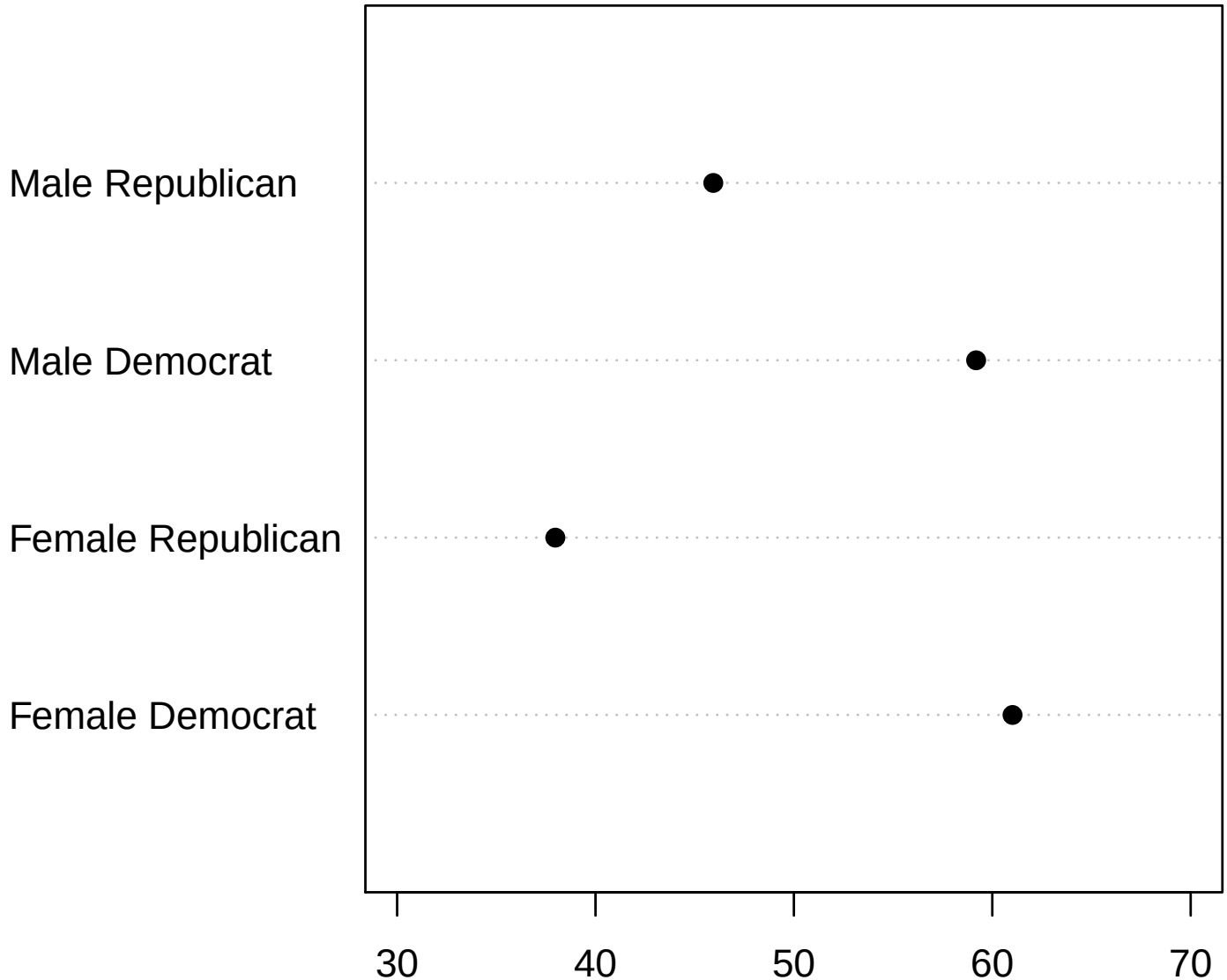
Interpretation

- $\beta_k > 0$: *positive marginal association* between X_k and Y
- $\beta_k < 0$: *negative marginal association* between X_k and Y
- *Value* of β_k: "All else equal, a one-unit change in X_k is associated with an expected β_k-unit difference in Y."
- When X_k is dichotomous (0 or 1): "All else equal, the presence of X_k changes the expected value of Y by β_k units."

Assumptions

- *Linearity*
- *Additivity*
- Other technical assumptions...

Example: SCOTUS Voting, Party, and Gender



Example: SCOTUS Voting, Party, and Gender

```
> mregress <- with(JData, lm(LibPercent~gender+prespart))
>
> summary(mregress)

Call:
lm(formula = LibPercent ~ gender + prespart)

Residuals:
    Min      1Q  Median      3Q     Max
-20.003 -11.074  -2.835  11.408  28.807

Coefficients:
                Estimate Std. Error t value Pr(>|t|)
(Intercept)      58.7808     6.9012   8.517 7.66e-10 ***
gendermale        0.8243     7.3085   0.113  0.91088
prespartrepublic -14.0877     4.6008  -3.062  0.00435 **
---
Signif. codes:  0 ?***? 0.001 ?**? 0.01 ?*? 0.05 ?.? 0.1 ? ? 1

Residual standard error: 13.61 on 33 degrees of freedom
Multiple R-squared:  0.2238,Adjusted R-squared:  0.1768
F-statistic: 4.758 on 2 and 33 DF,  p-value: 0.01529
```

"Legal" Influences on Judicial Behavior

- Normative ideal
- *Constraint* on ideology
- Include the Constitution, laws, legal / Court rules, & precedent
- *Operationalize*?

Segal (1984): Case Facts

- Search and seizure cases, 1962-1981 ($N = 123$)
- Outcome: Whether the search was found to be reasonable (=1) or not (=0)
- Predictors:
  - Nature of the intrusion (Home vs. Business vs. Car vs. Person)
  - Extend of the intrusion (Full search vs. "Stop and frisk")
  - Prior justification (Warrant, Probable cause)
  - Arrest (Incident / After Lawful or Unlawful)
  - Exceptions (additive index)
  - "Change" (personnel changes on the Court)

Table 1. Probit Estimates for Search and Seizure Decisions

Variable	MLE	S.E.	MLE/S.E.
Home	−2.31	.61	−3.78***
Business	−2.19	.64	−3.41***
Car	−2.02	.63	−3.21***
Person	−1.28	.54	−2.37**
Search	− .77	.44	−1.76*
Warrant	.95	.45	2.14*
Probable cause	− .32	.38	− .84
Incident lawful arrest	2.30	.81	2.84**
After lawful arrest	1.22	.50	2.47**
After unlawful arrest	− .57	.63	− .91
Exceptions	1.36	.35	3.91***
Change	.16	.07	2.26*
Constant	1.34		
Est R^2	.57		
$-2 \times$ LLR (X^2_{12})	56.68**		
Mean of dependent variable	.55		
% categorized correctly	76		
$n = 123$			

Issues with Segal (1984)

- *Aggregate* (case-level) analysis
- Single issue area: Generalizable? Extensible?
- *Retrospective* case facts...
- What about ideology?