

- Replication -

**Judging Prosecutors: Public Support for
Prosecutorial Discretion**

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Outline

[1] Replication of Paper

- Background
- Research Question
- Hypotheses
- Research Design
- Replicated Results (1-3)

[2] My Contribution / “Twist”

- Argument for Addition of Interaction Term in Test of H1
- Run Additive & Interactive Models
- Likelihood Ratio Test
- Interpretation & Conclusion

Background

- In US, prosecutors have
 - (1) **immense discretion** about criminal justice policy &
 - (2) are **elected** in 45 states
- Common Assumption = US public are “tough on crime” → theoretically, the public should prefer prosecutors that are strict over lenient
- Is this true?

Research Question

What are the electoral impacts of lenient sentencing practices for prosecutors?

Hypotheses

- *H1 - The public is more supportive of punitive, rather than lenient, prosecutors.*
- *H2 - The public is more supportive of copartisan, rather than outpartisan, prosecutors.*
- *H3 - The effect of a lenient sentence is mitigated for copartisan prosecutors.*

Research Design

- Tests H1-3 using 2 experiments fielded during the 2020 CES survey
 - H1:
 - N = 1000. presented with vignette
 - Treatment = presented with **harsh** or **lenient** prosecutor
 - Outcome = General Incumbent Support (General support for re-election), measured on a scale
 - H2 & H3:
 - Incorporates Co-partisanship
 - N = 675, presented vignette
 - Treatment = either **harsh** / **lenient** prosecutor who is either **co-partisan** / **outpartisan**
 - Outcome = General Incumbent Support
- Methods:
 - Difference in Means (H1 & H2)
 - Linear Regression Analysis (H1-3)

Replicated Results (1/3):

```
# Study 1  
svytest(elec_sup_pre~lenient_pre, cces_design)$p.value
```

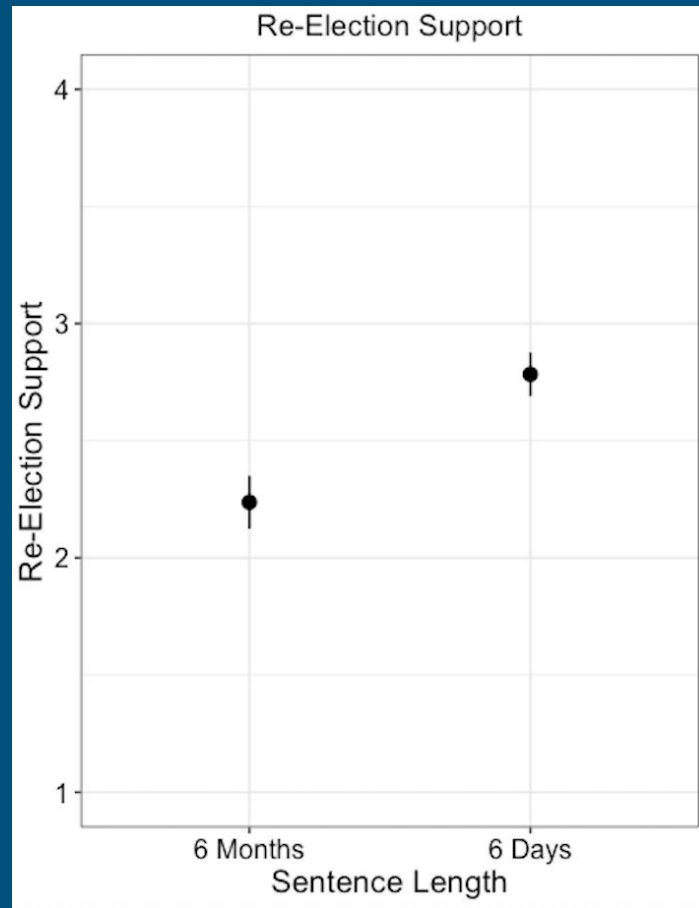
```
= lenient_pre1  
6.106674e-13
```

```
# Effect size  
svytest(elec_sup_pre~lenient_pre, cces_design)$estimate
```

```
= difference in mean  
0.5459462
```

- **H1 \neq Supported:**

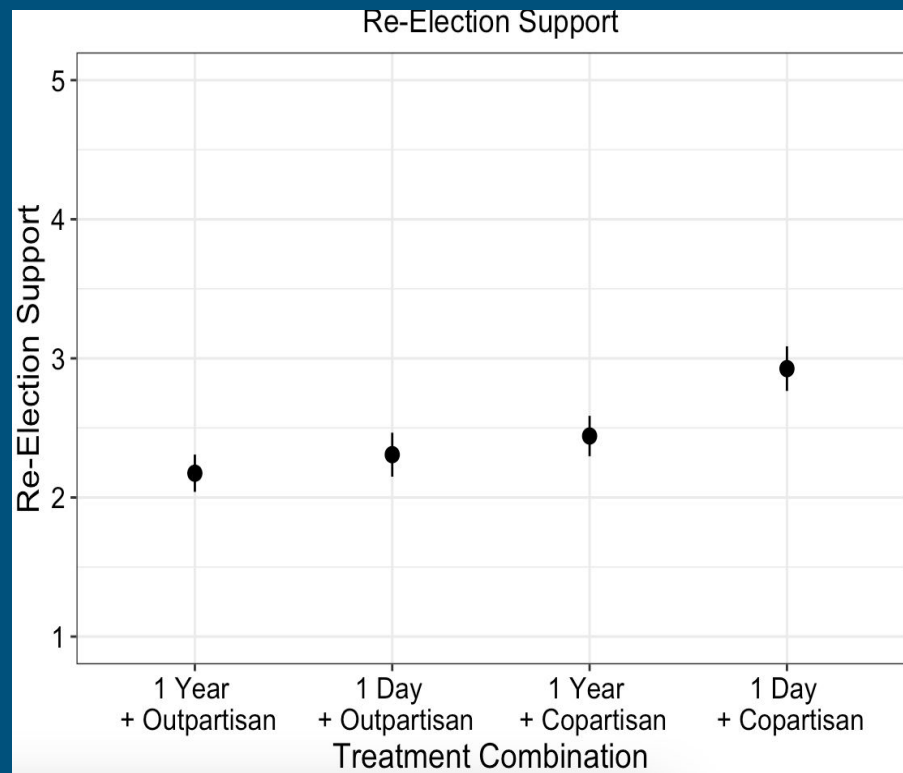
- Did **t-test**; finds the difference in means between treatments = .56 (over ½ of a standard deviation)
- Respondents had on average, significantly ($p < .01$) higher support for re-election for “lenient” prosecutor (than “harsh” prosecutor)



Replication of Fig 1:: Average Re-election support across treatments

Replicated Results (2/3):

- **H2 = supported:**
 - On average, more support for co-partisan vs outpartisan prosecutors
 - **T-tests** run, diff in means between lenient/harsh outpartisans and lenient/harsh co-partisans
 - **Significant ($p < .01$) difference in average support for lenient co-partisan vs harsh co-partisan**, but no significant difference between support for harsh/lenient outpartisans
- Additional Bivariate Regression Models Run, also support H2



Replication of Fig. 2: Average Support by treatment, strongest support for lenient co-partisan

Replicated Results (3/3):

```
post_m1s <- glm(elec_sup_post ~ lenient_post, family = "gaussian", cces %>% filter(copartisan %in% c(0,1)))
post_m2s <- glm(elec_sup_post ~ copartisan, family = "gaussian", cces %>% filter(copartisan %in% c(0,1)))
post_m3s <- glm(elec_sup_post ~ lenient_post*copartisan, family = "gaussian", cces %>% filter(copartisan %in% c(0,1)))
```

- **H3 \neq supported:**
 - Respondents do not treat copartisans and outpartisans significantly differently according to their leniency
- **Methods: Linear Regression Model with Interaction; ("post_m3s")**
 - **Interaction: Copartisan x Leniency**
 - Table shows: No significant difference in effect based on copartisanship

Table 3: Regression Models, Study 2

	Re-election Support		
	(1)	(2)	(3)
Lenient Sentence (1 Day)	0.35*** (0.07)		0.24* (0.10)
Copartisan Pros.		0.39*** (0.07)	0.29** (0.09)
Copartisan \times Lenient Sentence			0.17 (0.14)
Constant	2.29*** (0.05)	2.26*** (0.05)	2.15*** (0.06)
N	675	675	675
Log Likelihood	-886.82	-883.36	-871.23
AIC	1,777.64	1,770.73	1,750.46
*p < .05; **p < .01; ***p < .001			

Replication of Table 1 (Table 3 total, but Table 1 in paper): Regression Models, Model 3 = Interaction Effect (Copartisan x Leniency)

Contribution: Add an **Interaction Term**?

- Should I include an **INTERACTION TERM** to the model for testing H1?
- An interaction term may be better because: the **effect of the LENIENT treatment** on the **outcome (SUPPORT FOR REELECTION)** might vary **depending on the respondent's RACE**.
- WHY:
 - The CES study used = completed in 2020 (a period of protest against racially motivated police brutality in the US), African Americans = disproportionately negatively affected by the US criminal justice system
 - Therefore: Leniency treatment might have a greater positive effect on respondent's support for re-election if the respondent is black vs not black.
 - This would be the rationale behind adding an interaction term: (Leniency x Black) to the regression model

[1] Run Both Additive and Interactive Models

Additive Model:

```
mod_add <- glm(elec_sup_pre ~ lenient_pre + white + black + birthyr + pknow  
+ as.factor(gender) + ideo + educ, family = "gaussian", cces)
```

Interactive Model:

```
mod_int <- glm(elec_sup_pre ~ lenient_pre*black + lenient_pre + white + black +  
birthyr + pknow + as.factor(gender) + ideo + educ,  
family = "gaussian", cces)
```

- Statistically significant ($p < .05$) differential effect of race on impact of lenient treatment.
- Interpretation of Coefficient: Re-election Support for Lenient Prosecutor increases by .41 units when the Respondent is black vs when the Respondent is not.
- However: Inclusion of interaction term does not seriously change primary finding that respondents generally extend greater support to lenient prosecutors.

Table 2: Regression Models including black*lenient, Study 1

	Re-election Support	
	(1)	(2)
Lenient Sentence (1 Day)	0.57*** (0.06)	0.52*** (0.06)
White	-0.01 (0.08)	-0.01 (0.08)
Black	-0.23* (0.11)	-0.45** (0.15)
Age	-0.002 (0.002)	-0.002 (0.002)
Pros. Knowledge	0.05 (0.03)	0.05 (0.03)
Woman	-0.03 (0.06)	-0.03 (0.06)
Conservatism	0.07* (0.03)	0.07** (0.03)
Education	-0.01 (0.02)	-0.01 (0.02)
lenient_pre1:black		0.41* (0.18)
Constant	6.27 (3.56)	6.31 (3.55)
N	982	982
Log Likelihood	-1,305.65	-1,303.00
AIC	2,629.29	2,626.00

* $p < .05$; ** $p < .01$; *** $p < .001$

[2] Run Likelihood Ratio Test:

- **Why:** to determine if there is a statistically significant difference in goodness of fit between the additive and interactive regression models.
- How I did this:

```
install.packages("lmtest")  
library(lmtest)  
  
lrtest(mod_add, mod_int)
```



```
Likelihood ratio test  
  
Model 1: elec_sup_pre ~ lenient_pre + white + black + birthyr + pknow +  
  as.factor(gender) + ideo + educ  
Model 2: elec_sup_pre ~ lenient_pre * black + lenient_pre + white + black +  
  birthyr + pknow + as.factor(gender) + ideo + educ  
#Df  LogLik Df Chisq Pr(>Chisq)  
1   10 -1304.7  
2   11 -1302.0  1 5.288 0.02147 *  
---  
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Interpretation of LRT & Conclusion

- LRT P-value = 0.02; so at the 0.05 significance level, can reject Null Hypothesis (there is no difference in goodness of fit between interactive and additive model). An argument for using the Interactive Model instead.
- HOWEVER, I would ultimately advise use of Additive Model for this paper:
 - Interactive Model \neq hugely better at predicting support for prosecutors
 - For purposes of original paper, the additive model is less complicated and still sufficiently tests H1
 - Interaction does not drastically change the main finding that leniency does significantly affect support for re-election, and that respondent's support leniency more than harshness
- Future research: would be interesting to test in more detail role that race plays in public opinion of prosecutorial behaviour, as results confirm theoretical assumption that this variable is important / might have differential effects.