

Replication of Green & Vasudevan

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Overview

- Theory
- Design
- Replication of main results
- Robustness to other coding of vote buying
- Heterogeneous effects

Theory

brief discussion of theory

Design

Intervention description

Does this really test the theory that you've laid out?

Replication process

Matlab + Stata code

No roadmap of order in which code needs to be run to replicate main results

Main results from the paper

put up their table - explain the SEs and why they're using SEs from regression and p-values from RI

Correcting standard errors

Imagine a scenario of 3 clusters with 2 units each.

Table : Constant error variance

	e_{11}	e_{12}	e_{21}	e_{22}	e_{31}	e_{32}
e_{11}	σ^2	0	0	0	0	0
e_{12}	0	σ^2	0	0	0	0
e_{21}	0	0	σ^2	0	0	0
e_{22}	0	0	0	σ^2	0	0
e_{31}	0	0	0	0	σ^2	0
e_{32}	0	0	0	0	0	σ^2

Table : Not-constant error Σ

	e_{11}	e_{12}	e_{21}	e_{22}	e_{31}	e_{32}
e_{11}	σ_{11}^2	0	0	0	0	0
e_{12}	0	σ_{12}^2	0	0	0	0
e_{21}	0	0	σ_{21}^2	0	0	0
e_{22}	0	0	0	σ_{22}^2	0	0
e_{31}	0	0	0	0	σ_{31}^2	0
e_{32}	0	0	0	0	0	σ_{32}^2

$$\text{Var}(\hat{\beta}) = (X'X)^{-1}(X'\Sigma X)(X'X)^{-1}$$

Huber-White “Robust” SEs estimate $\hat{\Sigma}$ where σ_i^2 is \hat{u}_i^2

But, still assumes no clustered or spatial correlation

Correcting standard errors

Imagine a scenario of 3 clusters with 2 units each.
Cluster-robust “block diagonal”

Table : Cluster robust

	e_{11}	e_{12}	e_{21}	e_{22}	e_{31}	e_{32}
e_{11}	σ_{11}^2	$\sigma_{11}\sigma_{12}$	0	0	0	0
e_{12}	$\sigma_{12}\sigma_{11}$	σ_{12}^2	0	0	0	0
e_{21}	0	0	σ_{21}^2	$\sigma_{21}\sigma_{22}$	0	0
e_{22}	0	0	$\sigma_{22}\sigma_{21}$	σ_{22}^2	0	0
e_{31}	0	0	0	0	σ_{31}^2	$\sigma_{31}\sigma_{32}$
e_{32}	0	0	0	0	$\sigma_{32}\sigma_{31}$	σ_{32}^2

Correcting standard errors

Imagine a scenario of 3 clusters with 2 units each,
but Station 1 covers 11, 12, 21; Station 2 covers cluster 2;
Station 3 covers cluster 3.

Table : Barrios Dependency Matrix

	e_{11}	e_{12}	e_{21}	e_{22}	e_{31}	e_{32}
e_{11}	1	1	1	0	0	0
e_{12}	1	1	1	0	0	0
e_{21}	1	1	1	1	0	0
e_{22}	0	0	1	1	0	0
e_{31}	0	0	0	0	1	1
e_{32}	0	0	0	0	1	1

Multiply this matrix element-by-element with $\hat{u}\hat{u}'$

Correcting standard errors

Imagine a scenario of 3 clusters with 2 units each,
but Station 1 covers 11, 12, 21; Station 2 covers cluster 2;
Station 3 covers cluster 3.

Table : Barrios $\hat{\Sigma}$

	e_{11}	e_{12}	e_{21}	e_{22}	e_{31}	e_{32}
e_{11}	σ_{11}^2	$\sigma_{11}\sigma_{12}$	$\sigma_{11}\sigma_{21}$	0	0	0
e_{12}	$\sigma_{12}\sigma_{11}$	σ_{12}^2	$\sigma_{12}\sigma_{21}$	0	0	0
e_{21}	$\sigma_{21}\sigma_{11}$	$\sigma_{21}\sigma_{12}$	σ_{21}^2	$\sigma_{21}\sigma_{22}$	0	0
e_{22}	0	0	$\sigma_{22}\sigma_{21}$	σ_{22}^2	0	0
e_{31}	0	0	0	0	σ_{31}^2	$\sigma_{31}\sigma_{32}$
e_{32}	0	0	0	0	$\sigma_{32}\sigma_{31}$	σ_{32}^2

$$\text{Var}(\hat{\beta}) = (X'X)^{-1}(X'\hat{\Sigma}X)(X'X)^{-1}$$

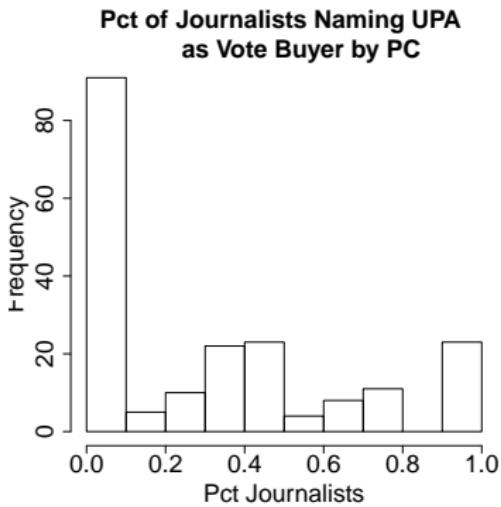
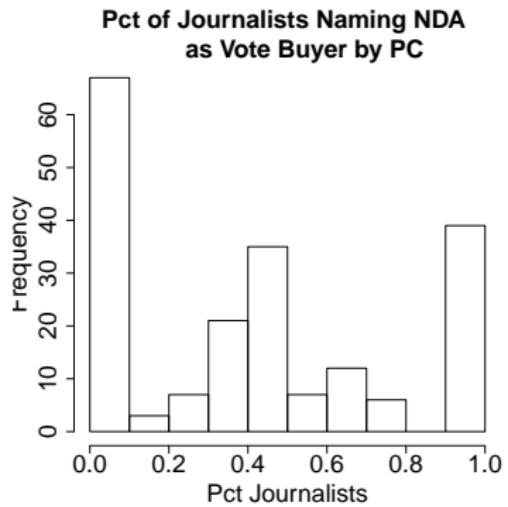
Main results replicate

put up our table

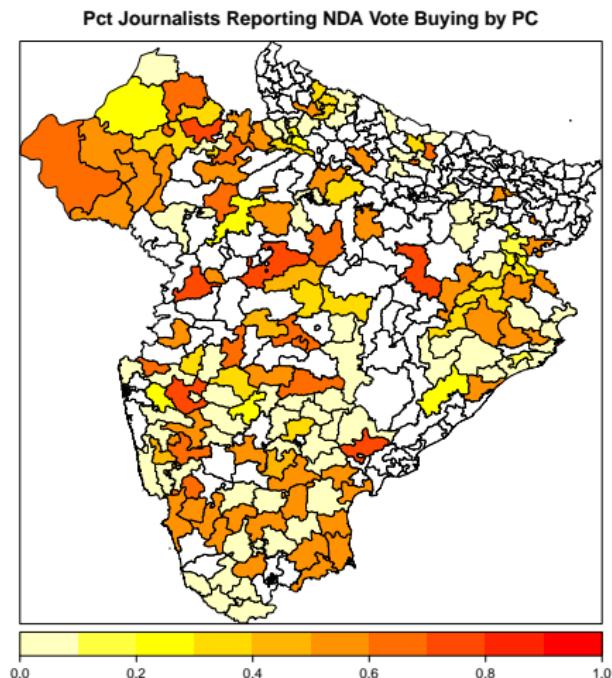
What does it mean to be a vote buying party?

- Very innovative measure of illicit electoral technique
 - Cost-effective
 - Draws on local expertise
 - Covers comprehensive area
- What is the data generating process?
 - Journalistic ethics to tell the truth
 - Journalists have ideological biases?
 - Journalists pay more attention to major parties?
- How to think about uncertainty with journalist data?
 - Levels of informedness
 - Under-identification
 - Over-identification
 - Random noise

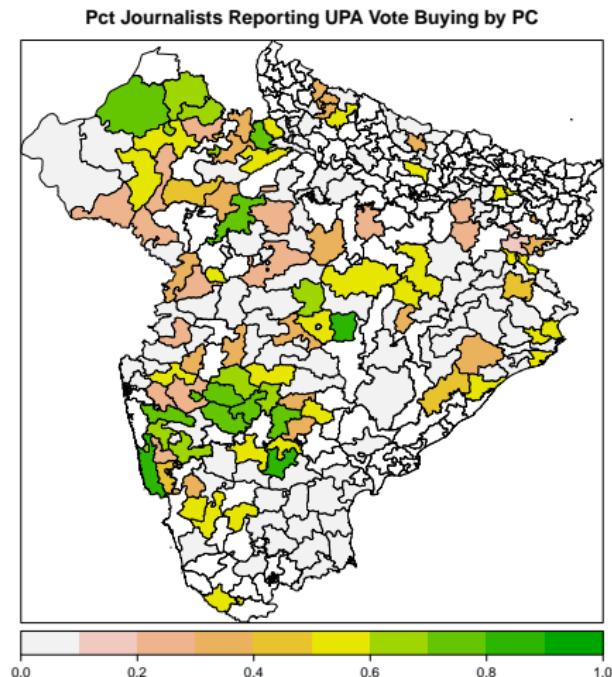
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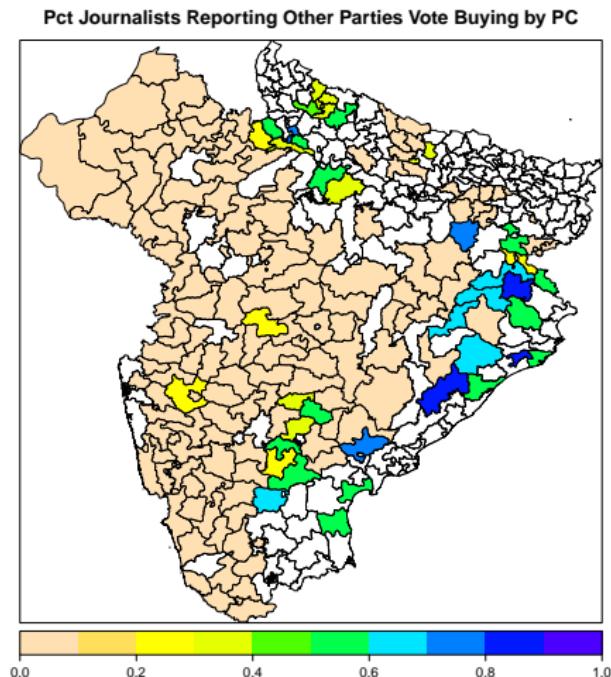
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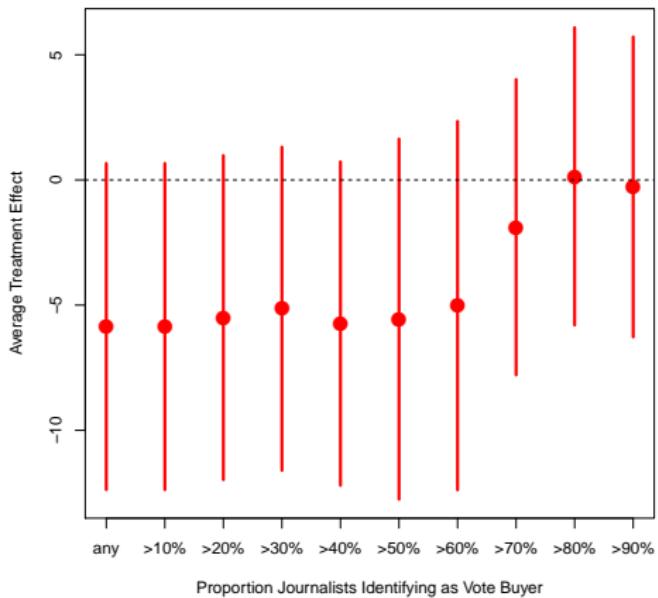
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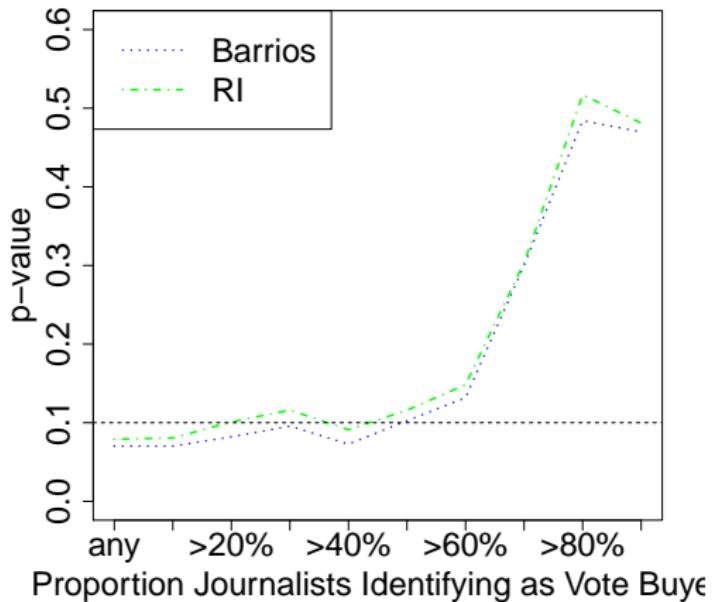
What does it mean to be a vote buying party?

regression of

Are the results sensitive to the defn of vote buying party?



Are the results sensitive to the defn of vote buying party?



Interpretation of the results

are people just fleeing from the major parties and voting for minor parties?

does this change the results?

can het effects tell us more about how this works?

Interpretation: Implications for who wins

In how many PCs do these results change the results? calc het effects by state and then do projections of which party would have won if the intervention hadn't happened

Heterogeneous effects: Urban

Heterogeneous effects: Minority voters

Heterogeneous effects: Competitiveness of election

Heterogeneous effects: State

Map het effects by state