The Effect of Moving Precincts on Voting

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Agenda

1. Background and research questions
2. Prior work
3. Available data
4. Methodology
5. Results & Implications
Background and research questions
Background

Voting Rights Act (1965) - areas with a history of imposing race-based burdens to voting were subject to federal oversight when changing election rules.

Shelby v. Holder (2013) - local officials can now legally close polls or change voting laws without federal supervision.

Impact: There have been a number of poll closures and reprecincting since.
Does changing polling places affect voter turnout?
Overall, we estimate that a change in polling place location between general elections decreases voter turnout by \(~0.8\%\).
Prior work
Most studies show a negative effect on turnout

“Overall, turnout decreased by a substantial 1.85 percentage points”.

**Brady, et al.**

<table>
<thead>
<tr>
<th>TABLE 4. Outcome Estimates: Unadjusted and Matched</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unadjusted Results</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>Polling place voting</td>
</tr>
<tr>
<td>Absentee voting</td>
</tr>
<tr>
<td>Not voting</td>
</tr>
<tr>
<td>Number of people</td>
</tr>
</tbody>
</table>

“*I find that changing a voter’s polling place location causes a 1 to 2 percentage point decline* in general election turnout likelihood.”

**Yoder**

<table>
<thead>
<tr>
<th>PP Change</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>−0.011</td>
<td>−0.019</td>
<td>−0.008</td>
</tr>
<tr>
<td></td>
<td>(0.002)</td>
<td>(0.009)</td>
<td>(0.007)</td>
</tr>
<tr>
<td>N</td>
<td>13,315,719</td>
<td>2,383,803</td>
<td>1,595,522</td>
</tr>
<tr>
<td># Voters</td>
<td>3,869,787</td>
<td>1,257,927</td>
<td>1,100,761</td>
</tr>
</tbody>
</table>

**“Turning Out to Vote” by Henry E. Brady & John E. McNulty, and “How Polling Place Changes Reduce Turnout” by Jesse Yoder**
What is behind this negative effect?

“The majority of the turnout decline can be attributed to the search costs associated with finding one’s new polling place location rather than the distance costs of traveling to the polling place on Election Day.”

- Jesse Yoder
Available data
North Carolina: A former “preclearance” state

Election data publicly available since 2005, at www.ncsbe.gov

The data is linked to an anonymous NCID, but is otherwise fairly comprehensive
Data sources

**Voter information**

- Snapshots taken every few months for each registered voter
- Includes age, race, home address and voter status

2012 snapshot: **11,352,660** voters
2016 snapshot: **7,449,896** voters

**Voter history**

- Row record for each vote cast across all elections
- Includes NCID of voter, voting method and voting location

Matching NCID across 2012 and 2016: **4,767,975** records
Challenge with another “preclearance” state: Georgia

“You’ll have to get that from each county”  “The Secretary of State’s office should have that data”
Methodology
Causal Experiments: Randomized Control Trial

- Workforce is split into two groups by random lot.
- Group that doesn't receive performance management intervention (the 'control')
- Intervention
- Outcomes for both groups are measured

Source: https://giving-evidence.com/2015/06/02/feedbackrcts/
Causal Experiments: Regression Discontinuity
Our design leverages geographic proximity

- **Illustrative example:** two neighbors across the street where reprecincting occurred
- **Fundamental assumption:** Individuals are similar to their neighbors across observable and unobservable attributes that could affect voter turnout

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**Variable Ratio Matching**

Single “treatment” voter vs *variable* number of “control” voters

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**Caliper Matching**

Leverage geographic location defined by coordinates for *likeness*
Defining Control vs. Treatment Groups

Mini-experiments within neighborhoods:

**Treatment:** A voter who was *assigned to a new polling place* as compared to the 2012 general election

**Control:** All voters *within 0.3 miles of a treatment* member who were *not assigned to a new polling place* as compared to the 2012 general election
Core Analysis

Given our experiment design, our data includes only individuals who were registered in 2012 and did not move home address between 2012 and 2016.
**Model**

\[
Pr(\text{Vote}_i) = \beta_0 + \beta_1 \text{Poll\_Further}_i + \beta_2 \text{Poll\_ Closer}_i + \gamma \text{Block} + \varepsilon
\]

<table>
<thead>
<tr>
<th><strong>Pr(Vote)</strong></th>
<th>Probability of any method of voting in 2016 (our variable of interest)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Poll_Further</strong></td>
<td>Binary variable to identify if the voter’s polling assignment was moved further than in 2012</td>
</tr>
<tr>
<td><strong>Poll_Closer</strong></td>
<td>Binary variable to identify if the voter’s polling assignment was moved closer than in 2012</td>
</tr>
<tr>
<td><strong>Block</strong></td>
<td>Fixed effect for each “block” or cluster each treatment voter with their unique control group</td>
</tr>
<tr>
<td><strong>ε</strong></td>
<td>Random noise/error component</td>
</tr>
</tbody>
</table>
Results & Implications
### Descriptives for final dataset

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Farther Poll</th>
<th>Closer Poll</th>
<th>Changed Poll</th>
<th>Same Poll</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Eligible Voters</td>
<td>88,936</td>
<td>57,673</td>
<td>146,609</td>
<td>2,855,425</td>
</tr>
<tr>
<td>Voter Turnout</td>
<td>85.0%</td>
<td>84.9%</td>
<td>85.0%</td>
<td>85.6%</td>
</tr>
<tr>
<td>Voted as Registered Democrat</td>
<td>34.5%</td>
<td>32.3%</td>
<td>33.7%</td>
<td>35.6%</td>
</tr>
<tr>
<td>Voted as Registered Republican</td>
<td>32.5%</td>
<td>34.0%</td>
<td>33.1%</td>
<td>30.3%</td>
</tr>
<tr>
<td>Mean Age</td>
<td>58.1</td>
<td>58.2</td>
<td>58.2</td>
<td>57.8</td>
</tr>
<tr>
<td>Female</td>
<td>54.3%</td>
<td>54.1%</td>
<td>54.2%</td>
<td>54.1%</td>
</tr>
<tr>
<td>White</td>
<td>74.3%</td>
<td>76.9%</td>
<td>75.3%</td>
<td>73.9%</td>
</tr>
<tr>
<td>Non-White</td>
<td>25.7%</td>
<td>23.1%</td>
<td>24.7%</td>
<td>26.1%</td>
</tr>
</tbody>
</table>
Do polling place changes have a causal impact on voter turnout?

- A change in polling place location decreases voter turnout by just under 0.8% which is directionally consistent with previous studies.
- The effect is consistent across voters whose polling places moved closer and those that moved farther away.
How far is too far?

- For reassignments at least one mile closer - no detectable treatment effect
- For reassignments at least one mile farther - a 1.6% decrease in turnout observed
Implications

- While our study leveraged crow-flies distance rather than travel time, our findings are consistent with prior work.
- It is important to recognize *travel and search efforts as a cost* to individual voters.

“From a policy perspective, the hope is that a voting location assignment could be less arbitrary and more determined in order to avoid undue biases in the future”

S. Christian Wheeler\(^1\)

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\(^1\) Source: [https://www.gsb.stanford.edu/insights/can-polling-location-influence-how-voters-vote](https://www.gsb.stanford.edu/insights/can-polling-location-influence-how-voters-vote)
Changing where voters go to vote may:

- Introduce **additional search costs** and inconvenience to the individual
- Affect **travel time** to the polls
- **Influence decisions** regarding how and who to vote for

**Ties to Electoral Ergonomics**

The optimisation of all relevant electoral procedures and mechanisms to provide the best possible electoral experience for voters
Questions?

Thank You