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How Well-Intentioned Measures Have Unintended Consequences for Election Turnout

MOTIVATION

Voting is the backbone of every democracy. In large elections, however, an individual ballot has hardly any influence on the election result, as the probability of a decisive vote converges to zero. Classical voting theory points out the conflict between voting as the basis of the system's legitimacy and the insignificance of single votes as a critical challenge of democracy: If citizens are mainly concerned with the election result, even minor hurdles in the voting process could significantly affect participation.

Our study provides new empirical findings that demonstrate that seemingly small changes to voting costs have measurable consequences for voting behavior. In Munich, the electoral office controls precinct sizes and recruits barrier-free polling places to facilitate voting at the polls. A supposedly harmless by-product of these policies is that some eligible citizens are assigned to vote at a *different* polling location than before. The key question is: Do these policies achieve the desired goal of simplifying electoral participation? Or does changing the polling place create additional voting costs that potentially reverse the intended effect of the policies?

SETTING & DATA

In Munich, polling place reassignments are common and are linked to the aim of simplifying the voting process: For example, the city council mandated in 2014 that the number of barrier-free polling places be doubled between 2014 and 2017. To prevent congestion, precincts were also reconfigured more frequently from 2017 onward to ensure that an average size of 1,500 voters per precinct was maintained. Together, this meant that in the eight elections between 2013 and 2020, 58 percent of all residential addresses were assigned to a new polling place at least once (Figure 1). Figure 2 shows the distribution of walking distances between home addresses and polling places (Panel A). On average, eligible voters have to walk 800 meters to vote at the polling place. Panel B shows that the walking distance increases by a mere five meters on average. 90 percent of reassignments change the walking distance by less than one kilometer.

KEY MESSAGES

- **Reassigning citizens to vote at a different polling place causes a persistent shift from in-person to mail-in voting and a transitory drop in total turnout**

- **The turnout loss is driven by inattentive voters, who miss the deadline for requesting a mail-in ballot**

- **The effects are more driven by the reassignment itself and less by the changes in distance to the polling location**

- **Explicit notification about polling place reassignments could prevent losses in turnout**

To assess the effect of polling place reassignments econometrically, we combine information on turnout, election results, residential addresses of eligible voters, polling place locations, and precinct characteristics, which we obtain from the Munich Electoral Office and the Munich Statistical Office. We geo-reference the approximately 150,000 residential addresses of eligible voters in Munich and identify the assigned polling place in each election as well as the respective distance to this polling place.

One limitation is that the finest resolution available for turnout data is at the precinct level. Thus, we aggregate reassignments and distance from the polling location from the address level to precinct delineations. To obtain a constant unit of observation, we impose time-invariant precinct borders corresponding to the 2018 configuration for aggregation.

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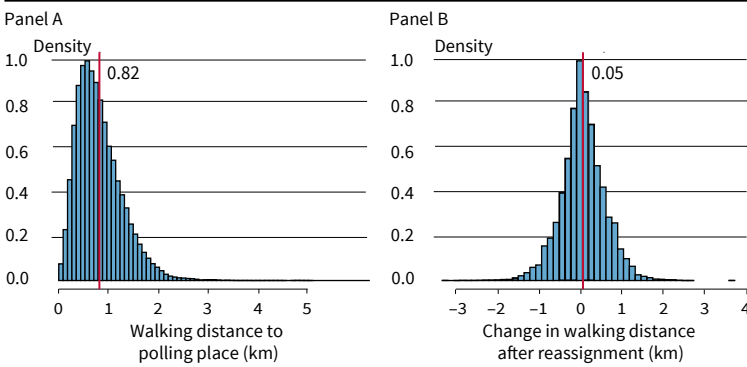
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Figure 1
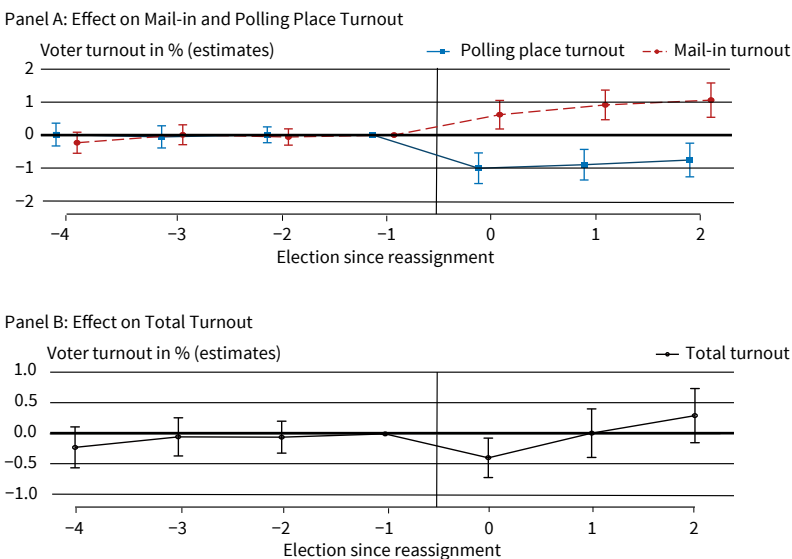**Frequency of New Polling Place Reassignments since 2013**

Reassigned home addresses in %

Polling place reassignments …
- due to precinct reconfiguration
- due to polling location recruitment
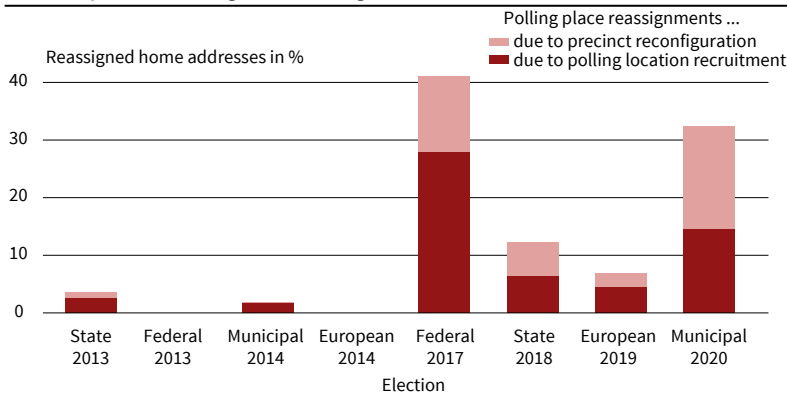
Source: Author's calculations.

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Figure 2
Distribution of Walking Distances and Change in Distance to the Polling Place

Panel A

Density

0.82

Walking distance to polling place (km)

Panel B

Density

0.05

Change in walking distance after reassignment (km)

Note: The figures present density plots of the walking distance between residential addresses of eligible voters and their assigned polling places (Panel A, N = 1,206,232) and the *change* in distance conditional on assignment to a different polling place relative to the previous election (Panel B, N = 147,874). The sample covers the eight elections held between 2013 and 2020. Vertical lines highlight the mean of the distribution.
Source: Author's calculations.

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Figure 3
Effects of Polling Place Reassignments on Turnout

Panel A: Effect on Mail-in and Polling Place Turnout

Voter turnout in % (estimates)

— Polling place turnout   - - Mail-in turnout

Election since reassignment

Panel B: Effect on Total Turnout

Voter turnout in % (estimates)

— Total turnout

Election since reassignment

Note: Panel A shows the estimation results of the difference-in-differences estimator for the average effect of a polling place reassignment on in-person and mail-in turnout. Panel B shows the effects on total turnout. Period 0 corresponds to the election immediately after the polling place reassignment. Data is based on 618 Munich precincts observed over eight elections (2013–2020). Confidence intervals are plotted at the 95 % level and calculated based on standard errors clustered at the precinct level.
Source: Author's calculations.

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Our final panel comprises 618 precincts, which we observe over eight elections (2023–2020). During this period, about half of all precincts are affected by polling place reassignment.

METHOD

The aim of the empirical analysis is to determine the *causal* effect of polling place reassignments on changes in electoral turnout. More specifically, the outcomes are turnout at the polling place, turnout by mail, and total turnout. The empirical approach is based on the *difference-of-differences (DD)* estimator. This method compares *changes* in turnout in the treatment group (precincts with a polling place reassignment) with changes in the control group (precincts without a polling place reassignment). If the change in turnout after reassignment is identical in both groups, the DD estimator is zero (since the difference in change is zero). This case would suggest that, on average, polling place reassignments have *no effect* on turnout. A DD estimator different from zero, on the other hand, indicates a "treatment effect".

Econometrically, we control for other potential factors that could influence voting behavior, among others, the election year and the type of election (e. g., federal versus state election), as well as precinct characteristics. For a causal interpretation of the DD estimator, two assumptions must be fulfilled: first, the time at which a precinct is assigned a new polling place must not be systematically correlated with other *changes* in the precinct that influence turnout. Second, turnout would have evolved in the same way in the treatment and the control group without reassignments. These assumptions cannot be tested directly. However, we present indirect evidence that supports the validity of these assumptions. For example, we show that, on average, a reassignment does not coincide with observable changes in precincts, such as the local size of the (voting) population, the local age structure, local rents, or the proportion of households with children. We also show that trends in turnout in elections prior to reassignments evolve in parallel.

RESULTS

The Average Effect of a Polling Place Reassignment

Figure 3 shows the results of the DD estimator graphically. Shown are estimation coefficients and confidence intervals of the trend *differences* in turnout between the treatment and the control group before and after a polling place reassignment. Blue coefficients refer to in-person turnout, while red coefficients refer to mail-in turnout (Panel A). The black coefficients in Panel B refer to total turnout. Since reassignments occur in different elections, the time axis is normal-

ized. Period 0 is the first election immediately after a reassignment; Periods 1 and 2 are the subsequent elections. Periods −4 to −1 refer to the elections before the "treatment".

The plot shows no trend differences in the elections preceding the reassignment (the coefficients are close to zero and statistically insignificant). Immediately after reassignment, in-person turnout *falls* significantly, while mail-in turnout increases significantly (Panel A). The shift from in-person voting to mail-in voting is *persistent*, suggesting a lasting shock to in-person voting costs. Hence, on average, changing polling places makes mail-in voting more attractive than in-person voting in the long term. This leads some of the affected eligible voters to switch to mail-in voting. However, the coefficients in Panel B show that the initial shift to mail-in voting is not large enough to offset votes lost at the polls, generating a decline in total turnout of 0.4 percentage points (or around 0.6 percent, measured by the average total turnout). Given the policy's good intentions and the minor changes in proximity to the polling place, a declining total turnout is notable. At the same time, our results highlight the importance of the availability of mail-in voting in Germany: the loss of votes at the polling place by just under 1 percentage point is completely compensated for in periods 1 and 2 by a higher mail-in turnout. Without this low-threshold alternative to in-person voting, the loss of voting participation would probably have been greater.

It is notable that while polling place reassignments cause a persistent shift from in-person to mail-in voting, the drop in total turnout is only transitory and total turnout recovers in subsequent elections. By contrast, the decline in total turnout completely recovers in the subsequent election. We test two alternative hypotheses that could explain this recovery. Hypothesis 1: voters familiarize themselves with their new polling place and return to vote there after one election. Hypothesis 2: the reduction and recovery in turnout are driven by *inattentive* voters, who miss the deadline for requesting mail-in ballots. Since affected eligible voters are *not explicitly* notified

of changes to their polling place (but must refer to their election notification), some eligible voters might not realize the change until it is too late to vote by mail. Inattentive voters who would have switched to mail-in voting can now turn to mail-in voting only in the *subsequent* election. Consequently, some abstain in the election immediately after the polling place change and only vote by mail in the subsequent election. In fact, the evidence supports the inattention hypothesis, while hypothesis 1 is not supported. This is because the recovery in total turnout is fully explained by an increase in mail-in voting between period 0 and period 1, while there is no measurable recovery in in-person turnout.

The Role of the Change in Walking Distance to the Polling Place

To better understand the underlying the mechanisms, we next analyze to what extent the change in walking distance or the change of the polling place *itself* are decisive for the change in voting behavior. To this end, we estimate the effects separately for cases in which the polling place is moved *further away* or *closer* to the eligible voters because of a reassignment. The results are shown in Figure 4. The red coefficients show turnout changes in precincts in which the distance to the polling place has increased, on average, relative to precincts without a polling place reassignment. Similarly, black coefficients show the change in turnout in precincts in which the reassignment has reduced the distance to the polling place, on average. Turnout effects are strikingly asymmetric: reassignments that increase distance cause a sharp and persistent decline in in-person turnout (around 2 percentage points). By contrast, when reassignments reduce the distance to the polling place, in-person turnout tends to rise slightly, albeit not to a statistically significant extent. The results show that both the change of polling place itself and the change in walking distance play a role. Coupled with an increase in distance, a polling place change makes in-person voting slightly less attractive compared to mail-in voting and abstention. However,

Figure 4

Changes in Turnout Depending on the Change in Distance to the Polling Place
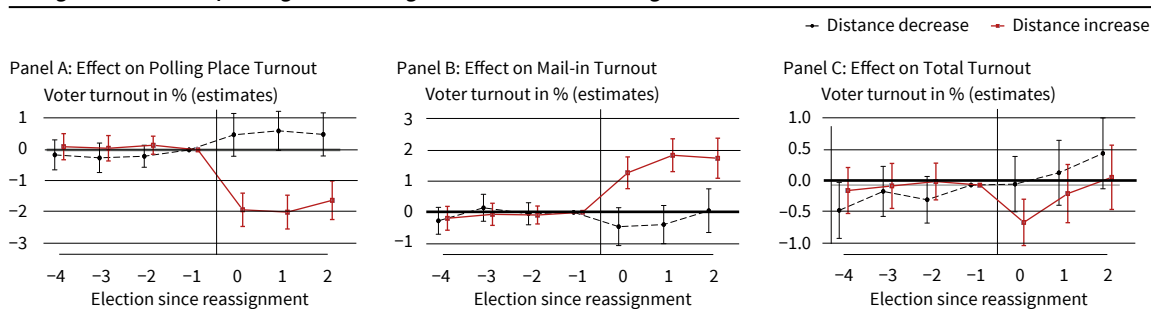
Note: Shown are estimation results of the difference-in-differences estimator for the average effect of a polling place reassignment separately for polling place reassignments that decrease (in black) or increase (in red) the distance to the polling place. Panel A shows the effects on in-person turnout, Panel B for mail-in turnout, Panel C for total turnout. Data is based on 618 Munich precincts observed over 8 elections (2013–2020). Confidence intervals are plotted at the 95 % level and calculated based on standard errors clustered at the precinct level.
Source: Author's calculations.

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a polling place reassignment can also make in-person voting more attractive, but only if the distance decreases *sufficiently*. On average, a polling place must move about 20 percent (or about 130 meters) *closer* to eligible voters to compensate for the disutility of the reassignment itself and to offset the turnout drop at the polling place. We calculate that more than 60 percent of the overall effect can be explained by the reassignment itself and less by the change in distance. This is a relevant finding, from both a scientific and a practical point of view. While correlational studies have often identified the distance to the polling place as a possible explanation for regional differences in turnout, our results show that the mere change of location – keeping distance constant – is more relevant for voting behavior.

Impact on Election Results and Voting Behavior of Different Groups

Effect differences by voter group. In the study, we also explore whether different voter groups react differently to polling place reassignments. A key finding of this analysis is that precincts with a higher share of elderly eligible voters show a greater decline in in-person turnout and a weaker shift to mail-in voting when reassigned. Given that recruiting barrier-free venues to improve access for voters is a main driver of polling place changes, this result is important. It suggests that the burden of reassignments outweighs the potential benefits of better access to the buildings.

Effects on election results. Do certain parties benefit from this practice? Our results show: no. The temporary decline in turnout is evenly distributed across the six parties we examined. We also find no evidence that the reassignment of polling places significantly changes vote shares. The null effects on the electoral outcomes are reassuring from an administrator's perspective. The obvious reasons for this are that polling place boundaries in Munich are not concentrated within a particular voter group and that supporters of different parties are not as geographically segregated as in the US, for example.

POLICY IMPLICATIONS

Our study shows that even small and seemingly harmless changes to voting costs have a strong impact on voting behavior and participation. If not considered, even well-intentioned policies can have unintended consequences. This is illustrated by the case of polling place reassignments in Munich. A new polling place leads to a shift from in-person to mail-in turnout and a transitory decline in total turnout. Informing affected voters explicitly and separately from the usual election notification about such changes could prevent losses in turnout. In the US, this is already required by law in many states. Access to mail-in voting could cushion most vote losses at the polling place. However, only 15 percent of EU member states offer mail-in voting to all eligible voters. Especially in these countries, it is important to closely monitor and minimize changes to polling places or to create alternatives.