ORIGINAL ARTICLE

# Higher turnout increases incumbency advantages: Evidence from mayoral elections

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**Abstract**

We analyze the effect of electoral turnout on incumbency advantages by exploring mayoral elections in the German state of Bavaria. Mayors are elected by majority rule in two-round (runoff) elections. Between the first and second ballot of the mayoral election in March 2020, the state government announced an official state of emergency. In the second ballot, voting in person was prohibited and only postal voting was possible. To construct an instrument for electoral turnout, we use a difference-in-differences strategy by contrasting turnout in the first and second ballot in 2020 with the first and second ballots from previous elections. We use this instrument to analyze the causal effect of turnout on incumbent vote shares. A 10-percentage point increase in turnout leads to a statistically robust 3.4 percentage point higher vote share for incumbent mayors highlighting the relevance of turnout-related incumbency advantages.

**KEYWORDS**
incumbency effects, mayoral elections, turnout, voting in crises

# 1 | INTRODUCTION

Reelection constraints contribute to making incumbents more accountable. Despite the disciplining function of elections, voters may abstain from voting (e.g., Downs, 1957; Feddersen & Sandroni, 2006; Riker & Ordeshook, 1968). Decreasing the costs of voting is associated with higher turnout (e.g., Hodler et al., 2015; Schelker & Schneiter, 2017). Various studies find that an increasing turnout is associated with changes in electoral outcomes (e.g., Finseraas & Vernby, 2014; Fowler, 2013, 2015; Hansford & Gomez, 2010). Analyzing the effects of higher turnout on the electoral success of incumbents entails relevant endogeneity issues: turnout may increase due to unobservable aspects of electoral competition, or valence of other candidates and these aspects are, at the same time, usually negatively related to the vote share of the incumbent (Grofman et al., 1999). Thus, high turnout is usually associated with a lower vote share of the incumbent, but such an association does not imply that higher turnout causes a decrease in the incumbent's vote share and incumbency advantages (e.g., Godbout, 2013; Hansford & Gomez, 2010; Martins & Veiga, 2014).

We aim to identify a causal effect of turnout on the vote share of incumbents by employing an instrumental variable difference-in-differences approach. We exploit a large, unexpected, and sudden increase in turnout from the first to the second ballot of the mayoral elections in the German state of Bavaria in March 2020. Between these two ballots, the Bavarian state government issued a declaration of a state of emergency which entailed that only postal voting was possible in the second ballot. Municipal turnout in the second ballot in 2020 increased substantially in comparison to the first ballot and previous second ballots. Employing this increase in turnout as identified through the difference-in-differences approach in an instrumental variable setting, our results indicate that incumbent mayors gain substantially from a higher turnout.

Our institutional setting focuses on Bavarian municipalities and leverages an unexpected decrease in the costs of voting. Mayors are elected by majority rule in a two-round (runoff) system. Second ballots always take place 2 weeks after the first ballot if no candidate gained an absolute majority in the first ballot. On Sunday, March 15, 2020, the first ballot of the municipal elections was held at the onset of the spread of the Covid-19 pandemic in Bavaria. The first ballot was conducted as planned and without any restrictions regarding voting in person. On Monday, March 16, a state of emergency was officially declared by the Bavarian state government, along with a centralization of decision-making powers and restrictions to individual mobility. The date for the second ballot of the municipal election remained Sunday, March 29, 2020, but voting in person was prohibited: only postal voting was possible and ballot papers were directly sent to all eligible voters which facilitated postal voting. Employing a difference-in-differences strategy to contrast the difference in turnout between the first and second ballot in 2020 to the difference in turnout in first and second ballots in previous elections, we find that municipal turnout increased by more than 10 percentage points.[1] Lower direct voting costs due to facilitated postal voting as well as decreased opportunity costs of voting explain the increase in turnout. There is no indication of a type of rally around the flag effect and, importantly, the increase in turnout because of the state of emergency is credibly exogenous to local political competition or the valence of local mayoral candidates.

We use the estimated increase in turnout of more than 10 percentage points from the difference-in-differences setting to investigate the effect of turnout on the vote shares of incumbents. Being comparatively large in absolute and relative terms, this unexpected increase in turnout is auspicious to identify causal effects of turnout on electoral outcomes. We find that

a 10-percentage point increase in (instrumented) turnout leads to an increase in the vote shares of incumbents by 3.4 percentage points. By contrast, when not accounting for endogeneity issues through instrumentation, we would observe a substantial negative bias, that is, the association of turnout and the vote shares of incumbents would be negative instead of positive (Grofman et al., 1999; Hansford & Gomez, 2010). Our results are robust for an array of robustness tests. They suggest that increases in turnout that are unrelated to aspects of local political competition and valence of candidates systematically and substantially increase incumbency advantages. Regarding potential mechanisms and extensions, we find that observable aspects of competition can slightly alleviate the effect of turnout on the success of the incumbents. Moreover, incumbents from other parties than the state level governing party tend to profit more from higher turnout.

The remainder of this paper is structured as follows: Section 2 describes related literature. Section 3 presents the institutional setting and the implications of the state of emergency. We present our data and identification strategy in Section 4. Results are presented in Section 5, and Section 6 offers concluding remarks.

## 2 | RELATED LITERATURE

Our paper contributes to two strands of literature: The literature on drivers for turnout and, more importantly, the literature on the electoral consequences of turnout.

A vast literature suggests that voters are sensitive to the costs of voting. Factors that decrease the costs of voting are positively linked to turnout such as longer opening hours and proximity to polling stations (Cantoni, 2020; Garmann, 2017; Gimpel & Schuknecht, 2003; Haspel & Knotts, 2005; Potrafke & Roesel, 2020), early voting (Kaplan & Yuan, 2020), concurrent elections (Fauvelle-Aymar & François, 2015; Garmann, 2016, 2020; Leininger et al., 2018), and—partly for evident reasons—compulsory voting (Bechtel et al., 2016, 2018; Ferwerda, 2014; Fowler, 2013; Gaebler et al., 2020; Hoffman et al., 2017; Jaitman, 2013). The option for postal voting is believed to increase turnout (Hodler et al., 2015; Luechinger et al., 2007), but a heterogeneous effect of postal voting regarding the absence of social pressure may also reduce incentives to go to the polls (Funk, 2010). Simplified and less costly postal voting by providing voters prepaid postage for their postal voting documents (Schelker & Schneiter, 2017) or by generally sending postal voting-related documents to all registered voters (Amlani & Collitt, 2022; Gerber et al., 2013) has a positive effect on turnout. Factors that are negatively related to turnout by increasing voting costs are the relocation of polling stations (Brady & McNulty, 2011) or knowledge of exit poll information (Morton et al., 2015).[2] The effect of voting in the aftermath of disasters and crises on turnout is ambiguous (Bechtel & Hainmueller, 2011; Bodet et al., 2016; Fair et al., 2017; Lasala-Blanco et al., 2017; Rudolph & Kuhn, 2017; Sinclair et al., 2011). The local prevalence of contagious diseases has been shown to rather decrease turnout (Godefroy & Henry, 2016; Noury et al., 2021; Picchio & Santolini, 2022; Urbatsch, 2017) but Blesse et al. (2020) find a slightly higher turnout in counties that reported infections with Covid-19 in the first round of the Bavarian local elections in 2020. Consistent with Amlani and Collitt (2022) for the United States, we show with a difference-in-differences strategy that turnout increased substantially due to lower direct voting costs induced by a state of emergency together with the introduction of exclusive and facilitated postal voting.

While drivers of turnout are a relevant line of investigation in the literature, our paper also systematically contributes to the effects of turnout. In particular, we investigate implications of higher turnout regarding electoral outcomes. Studies frequently employ rainfall (bad weather) or institutional changes that affect voting costs as instruments to estimate the impact of higher turnout on party vote shares. Some evidence suggests that left-wing parties profit from high turnout (Arnold & Freier, 2016; Finseraas & Vernby, 2014; Fowler, 2013, 2015; Hansford & Gomez, 2010), other research indicates that smaller parties profit (Artés, 2014; Ferwerda, 2014), and some do not find any specific effect of higher turnout on parties' vote shares (Amlani & Collitt, 2022; Knack, 1994). Recent evidence suggests that rainfall may not only increase voting costs but also may change the voting behavior of those who cast a ballot, affecting voters through their emotions which raises questions regarding the exogeneity assumption when employing rainfall as an instrument (Meier et al., 2019).

Most closely associated to our study is a smaller literature that looks specifically at the effect of turnout on incumbents' vote shares. High turnout in elections where the incumbent stands for reelection might be due to an incumbent's lack of popularity and the attempt to vote the incumbent out of office. A high turnout would then coincide with a low vote share of the incumbent, *but* turnout does *not cause* a low vote share in this case. In turn, low electoral competition is associated with low turnout but high vote shares of the incumbent (Grofman et al., 1999). Thus, analyses for the effect of turnout on the success of incumbents that neglect relevant aspects of competition or valence of candidates would report results that are biased downwards. Accounting for such factors, Godbout (2013) suggest that incumbents may not always suffer from high turnout when there are electoral coattails. Other studies suggest that an increasing turnout can still be detrimental to incumbents when analyzing elections for higher levels of government (Hansford & Gomez, 2010; Martins & Veiga, 2014; Trounstine, 2012). We directly contribute to this strand of literature by analyzing the effect of turnout on incumbent vote shares in the context of the Bavarian mayoral elections in 2020.

We contribute to the above literature by leveraging a large and unexpected increase in turnout related to the Bavarian state government's declaration of a state of emergency and subsequent postal voting in the local election. The increase in turnout is credibly unrelated to electoral competition or valence of candidates in local municipalities. If turnout increases on a large scale for reasons unrelated to competition, valence, or past performance, then incumbents may be expected to profit in terms of higher vote shares through more participation of occasional voters. Voters who cast a ballot only occasionally are likely to be less informed than regular voters and may compensate that by relying on salient cues such as voting for the incumbent (Hodler et al., 2015). Being interested in a likely causal effect of turnout, we hypothesize along with Grofman et al. (1999) that a large and unexpected increase in turnout leads to higher vote shares of the incumbents in mayoral elections.

# 3 | INSTITUTIONAL BACKGROUND AND ELECTIONS DURING THE STATE OF EMERGENCY

## 3.1 | Mayoral elections in Bavaria

Bavarian mayors are head of the municipality's council and its administration. Mayors are civil servants for the duration of their term in municipalities with more than 10,000 inhabitants. In smaller municipalities, mayors are either temporary civil servants or honorary mayors (see Art.

34–39 BayGO for further information on the status of mayors in Bavaria and their duties). Municipalities provide local infrastructure, primary education facilities, cultural and sport facilities, and social and housing assistance. Municipalities are also responsible for the organization of local, state, and federal elections.

Mayors are directly elected for a six-year term by majority rule in two-round (runoff) elections. If no candidate wins the majority of votes in the first ballot, the two candidates with the most votes enter a runoff election 2 weeks later. Mayoral elections take place on the same date in all municipalities and are jointly organized with elections for the municipal council and elections at the county level.[3] Election dates only deviate from the electoral cycle if mayors have withdrawn or died in previous terms. Eligible voters obtain a polling card by mail in advance of the election that contains information such as date, time, and polling station, as well as information on how to request postal voting. Voters may request postal voting formally before the election day and receive the ballot paper and an envelope with prepaid postage in response several days after their formal request.

Regarding the political landscape, the center-right party Christian Social Union (CSU) is traditionally the dominating party in Bavaria. Over the whole period of our analysis, the CSU was leading the state government. The CSU's position is less prominent in mayoral elections. Other state-wide parties that frequently have successful candidates in mayoral elections are the Social Democratic Party (SPD), Free Voters (Freie Wähler, FW), the green party Bündis90/Die Grünen (The Greens), and the Free Democratic Party (FDP). Moreover, there are local associations that do not directly affiliate with a state-wide party in numerous municipalities and their candidates regularly win the mayoral elections. The success of unaffiliated candidates illustrates that voters' choices for mayoral candidates are also determined by factors like personal characteristics, candidates' abilities, or their electoral programs rather than affiliation to parties.

## 3.2 | Elections in early 2020, the state of emergency, and facilitated postal voting

The dates for the local elections in Bavaria in March 2020 were scheduled in February 2019. Mayoral candidates could register until January 23, 2020. At this time, it is unlikely that the number and composition of candidates and the incumbent's decision to run for reelection were influenced by the Covid-19 pandemic, as the first infection with Covid-19 in Bavaria (and Germany) was officially registered on January 27, 2020. As in other countries, the number of recorded infections with Covid-19 started rising in March 2020 in Germany. The World Health Organization (WHO) declared the spread of Covid-19 a pandemic 4 days before the first ballot on March 15, 2020. On election day, the cumulated number of recorded infections in Bavaria was 886 (Bavaria has a population of about 13 million).[4] As of that date, four people infected with Covid-19 had died according to the Robert Koch Institute.

Before the first round of the mayoral election on March 15, health authorities at the county level were responsible for deciding on case-related health measures. Local municipalities have no decision power in health matters. The state-wide strategy for dealing with Covid-19 concentrated on complying with basic hygiene standards and isolating infected persons and their contacts. Rulings by the Bavarian state government only prohibited large gatherings with more than 1,000 people. Before the first ballot, the Bavarian state government and local authorities gave assurances that the risk of infection in polling stations was low. Precautionary

measures on the election day included the provision of information material, some hand sanitizers, and the permission to vote using one's own pencil. Anecdotal information suggests a small rise in postal voting in comparison to previous local elections, but demand for ballot-by-mail was relevant even in elections before the pandemic.[5] Increases in postal voting are consistent with a general trend in previous elections in Germany. Overall, the first round of the mayoral elections was held under similar conditions as previous elections.

In the 2 weeks until the second ballot on March 29, 2020, the Bavarian state government carried out a sudden and drastic change in communication and a quick proliferation of restrictive measures with the aim to control the number of infections. One day after the local elections on March 16, the Bavarian state government declared a state of emergency. This led to a centralization of decision-making regarding health-related measures and is a legal reason for declaring such a state of emergency. Availing its rights in a state of emergency, the state government decided to shutdown public life in whole Bavaria by generally prohibiting events and gatherings, and by closing schools, kindergartens, leisure facilities, restaurants, and shops. Election campaigns based on physical contact were no longer possible. On March 20, the state government also prohibited leaving home for any reason except to work, do one's grocery shopping, seek medical care, or take a walk for exercise ("stay at home order").[6]

Importantly for our analysis, the state of emergency and its accompanying measures taken against the spread of Covid-19 affected the state-wide conduct of the second ballot of the mayoral elections: in accordance with the Ministry of Interior, Sports and Integration, the Bavarian Ministry of Health and Care decreed that the second ballot would be conducted *only* by postal vote (exclusive postal voting). The ballot papers were sent directly to all eligible voters including prepaid return envelopes, that is, voters did not have to formally apply for postal voting as in previous elections. The second ballot was held as planned—yet under the state of emergency and by postal voting—on March 29, 2020.

# 4 | DATA AND IDENTIFICATION STRATEGY

## 4.1 | Data

We compile a data set of mayoral elections using reports published after the elections in 2008, 2014, and 2020 by the Bavarian State Agency for Statistics. The official reports include electoral results in the period 2003 to 2020 from all municipalities with more than 10,000 inhabitants at the time of the election. The reports also comprise rescheduled elections, that is, elections needed when a mayor dies or withdraws before the term of office ends. Overall, the data cover 682 mayoral elections in 233 distinct municipalities.[7] Missing data in the statistical reports of the first ballots in the rescheduled elections are retrieved from municipalities' webpages or newspaper articles. We gather data on the number of eligible persons, voters, valid votes, incumbents, candidates, their party affiliation, and election results. From these data, we construct turnout, vote shares, or the candidate's gender based on first names. Data on the number of infections and fatalities due to Covid-19 at the county level are taken from the Bavarian Agency for Health and Food Safety.

We rely on the data provided by the Bavarian State Agency for Statistics covering municipalities with more than 10,000 inhabitants for reasons of consistency. Results from mayoral elections in smaller municipalities are provided, if at all, either by the counties or the municipalities themselves. Data availability, structure, and level of detail vary considerably over

counties/municipalities in former electoral cycles. Besides that, smaller municipalities rarely need second ballots, especially when incumbents run for reelection, as the number of candidates and the extent of electoral competition is usually low.[8] In 2020 for instance, 48.4% of all municipalities with more than 10,000 inhabitants had a second ballot while the share is only 11.9% in smaller municipalities. As shown in the Supporting Information, we receive the same results using our identification strategy to estimate the effect of the state of emergency on turnout in a sample of *all* Bavarian *counties* electing the county commissioners.

We contrast the difference in turnout in the first and second ballots in 2020 with the differences in turnout from first to second ballot in previous years (difference-in-differences approach, see below). Thus, we concentrate on all 263 mayoral elections with a runoff election from the total of 682 mayoral elections. This yields a sample with 526 observations from the respective first and second ballots. From the 233 municipalities contained in the statistical reports, 90 municipalities held a second ballot once between 2003 and 2020, 58 had a second ballot twice, and 19 municipalities 3 times. A total of 66 municipalities did not have a second ballot in the period analyzed.

Summary statistics for our final sample are provided in Table A1 in the Supporting Information. Turnout ranges between a minimum value of 34.3% and a maximum of 77.6%. Mean turnout is 57.3% with a standard deviation of 7.6%. Table A2 in the Supporting Information shows the distribution of mayoral elections with a second ballot over time and regions. The absolute number of observations in 2020 is higher than in 2008 and 2014 for two reasons: First, many rescheduled mayoral elections were adjusted in 2020 to take place on the normal election date again.[9] Second, in 2020, more candidates competed in the first ballot than in previous years, making a runoff election more likely.

## 4.2 | Identification with an instrumental variable difference-in-differences approach

### 4.2.1 | Turnout is endogenous to the vote share of incumbents

Analyzing the effect of turnout on the vote share of incumbents is usually prone to endogeneity issues induced by omitted variable bias (see e.g., Grofman et al., 1999; Hansford & Gomez, 2010). Commonly unobservable variables that may jointly affect turnout and vote shares are various aspects of competition or the valence of candidates. Thus, high turnout often coincides empirically with a low vote share of the incumbent, and vice versa. For example, incumbents who performed badly or were involved in a scandal may be subjected to more able candidates in the next election and a higher level of competition. In local elections, one relevant aspect of valence is the capacity to motivate voters to cast a ballot at all. Turnout is expected to be high in such elections and the vote share of the incumbent tends to be lower. By contrast, a good track record or the popularity of the incumbent can discourage challengers to enter the election, leading to reduced competition and potentially less electoral participation. Overall, the valence of candidates and competition are likely to correlate positively with turnout. Voting results of the incumbent negatively correlate with these (often unobservable) factors. Omitting the valence of candidates or aspects of political competition therefore leads to a downward bias when estimating the effect of turnout on the vote share of the incumbent (Grofman et al., 1999).

To account for endogeneity issues, we exploit variation in turnout that is credibly exogenous to valence and competition in local elections. Specifically, we exploit the variation in turnout

due to the state of emergency declared between the first and second ballot municipal elections in 2020 as an instrument stemming from a difference-in-differences approach.

## 4.2.2 | First-stage regression equation

Empirically, we contrast differences between first and second ballots in 2020 to differences in first and second ballots in previous years. We implement the following first-stage regression equation:

$$Turnout_{itb} = \beta_1 2nd\ ballot_b + \beta_2(Election\ 2020_t \times 2nd\ ballot_b) + X_{itb}\delta + \theta_i + \mu_t + \varepsilon_{itb}. \tag{1}$$

The state of emergency and exclusive postal voting were introduced by the Bavarian state government after the first and before the second ballot of the mayoral elections in 2020 which allows us to exploit this fact with the above difference-in-differences approach. We explain *Turnout* in mayoral elections in municipality $i$, year $t$ and ballot $b$. We include the variable *2nd ballot* on the right-hand side, which is a dummy variable that takes a value of one for second ballots. The coefficient $\beta_2$ for the interaction term *(Election 2020 × 2nd ballot)* yields the difference (a–b) between (a) the difference between the first and the second ballot in 2020 when the second ballot was held during the state of emergency and (b) the difference between the first and the second ballot in normal times. A vector of control variables $X_{itb}$ captures ballot characteristics and controls for the local exposure to Covid-19 at the county level to account for potential links between the local risk of infection and turnout. We include municipality fixed effects $\theta_i$, and we account for the pandemic and other common time trends by using election year fixed effects $\mu_t$. The error term is denoted by $\varepsilon_{itb}$ and standard error estimates are clustered at the municipal level.

After having declared a state of emergency between the first and second ballot of the mayoral elections in 2020, the Bavarian state government introduced a shutdown of public life in the whole state such that the second ballot was held by postal voting only. The presence and intensity of state-wide mandatory measures is independent to municipal politics or the valence of local candidates. There is also no indication of a type of rally around the flag effect (see discussion in Chapter 5 after the presentation of the results).

We expect the respective sign of our main variable of interest of $\hat{\beta}_2$ to be positive for two reasons. First, the direct costs of casting a ballot were reduced substantially by facilitated postal voting.[10] Second, the opportunity costs of voting were reduced by the lockdown measures, that is, the prohibition of leisure activities outside one's home and the reduction of working hours created spare time for voters to cast a ballot.

## 4.2.3 | Second-stage regression equation

Given our first-stage regression equation, we implement the following second-stage regression:

$$Incumbent's\ vote\ share_{itb} = \alpha_1 \hat{Turnout}_{itb} + \alpha_2 2nd\ ballot_b + X_{itb}\lambda + \varphi_i + \tau_t + \upsilon_{itb}. \tag{2}$$

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The dependent variable measures the *Incumbent's vote share* in municipality $i$, year $t$, and ballot $b$. On the right-hand side of the equation, $\hat{Turnout}$ is the predicted turnout from the difference-in-differences approach of Equation (1). As before, we include an indicator variable for second ballots, a vector of municipality and ballot specific covariates $X_{itb}$, municipality fixed effects $\varphi_i$ and year fixed effects $\tau_t$. Thus, in fact, we implement a standard two-stage least-squares (2SLS) approach with Equations (1) and (2). Our instrument for the second stage is the interaction term (*Election 2020 × 2nd ballot*).

## 4.3 | Identification assumptions

To serve as a valid instrument, the interaction term (*Election 2020 × 2nd ballot*) in the first-stage Equation (1) needs to be correlated with *Turnout*, which we show in the next chapter. The instrument further needs to be orthogonal to the second-stage error term $v_{itb}$, conditional on other covariates, that is, it may influence the *Incumbent's vote share* only via *Turnout*. This is an assumption which may require further justification.

The introduction of the state of emergency between first and second ballot was decided by the Bavarian state government and can reasonably be assumed to be independent of local politics. The Bavarian state government centralized all decision-making with respect to the pandemic. From that moment on, mayors and therefore incumbents who stand for reelection were bound to the general instructions and decrees related to the pandemic. Lockdown measures, exclusive and facilitated postal voting were binding in all municipalities. Also, candidates had to register for the election until about 2 months before the state of emergency has been introduced. The instrument therefore identifies variation in turnout that is unrelated to municipal politics and other common sources of endogeneity such as competition or the valence of candidates (e.g., Grofman et al., 1999; Hansford & Gomez, 2010).

We are able to empirically separate the state of emergency and subsequent measures from other possibly confounding direct effects of the pandemic. First, the WHO officially declared the outbreak of Covid-19 a pandemic 4 days before the first ballot in 2020. Therefore, time fixed effects capture any impact of voting during a pandemic on incumbents' vote shares. Second, we control for the time-variant local number of cases or fatalities to account for potential effects of being locally exposed to Covid-19.

Finally, there is a theoretical econometric justification for our instrument (see Aggeborn, 2016; Nizalova & Murtazashvili, 2016; Nunn & Qian, 2014): The coefficient of an interaction term between an exogenous treatment variable and a potentially endogenous regressor is estimated consistently with ordinary least squares (OLS), if the exogenous treatment variable and an endogenous regressor are independent. This would hold for the interaction term in Equation (1) such that from a theoretical econometric view our instrument should allow a consistent estimation of the causal effect of turnout.

All these arguments lend support to our assumption that the interaction term of Equation (1) serves as a valid instrument to identify the effect of turnout on the vote share of incumbents in Equation (2).

## 5 | RESULTS

### 5.1 | Establishing the instrumental variable

#### 5.1.1 | Difference-in-differences approach for an instrument for turnout

Figure 1 serves as an illustration of our approach to establish an instrument for turnout. In 2020, turnout in the first ballot was 57.6% on average and it increased by 5.9 percentage points to 63.5% in the second ballot. Average turnout in previous first ballots was 57.5%, which is statistically identical to first ballots in 2020. However, average turnout in *previous* second ballots decreased by 4.4 percentage points compared to the first ballots to 53.1%, that is, voters usually abstained more in the second ballot.[11] The difference-in-differences suggests a staggering 5.9 − (−4.4) = 10.3 percentage points increase in turnout due to the state of emergency.

Figure 2 provides further evidence for the large, sudden, and unanticipated differential increase in turnout in the second ballot linked to the state of emergency and facilitated postal voting. Figure 2a–c shows histograms for the change in turnout within municipalities from the first to the second ballot in the regular election years 2008, 2014, and 2020, respectively. In 2008 and 2014, turnout generally decreased from the first to second ballot. In contrast, turnout in 2020 is systematically higher in second ballots in all but a handful of municipalities as shown in Figure 2c. We consider it reasonable to assume that turnout in second ballots would have evolved similarly in 2020 as in previous elections had it not been for the state of emergency and facilitated postal voting.

In a sample of municipalities with less than 10,000 inhabitants in Figure 2d, we receive a similar picture for the changes in turnout in 2020.[12] These figures suggest that there is a large and general effect of the unexpected declaration of the state of emergency and subsequent facilitated postal voting on turnout.

Table 1 provides estimation results for the interaction term (*Election 2020 × 2nd ballot*) of our first-stage equation. Column (1) reports results from a parsimonious model of Equation (1)
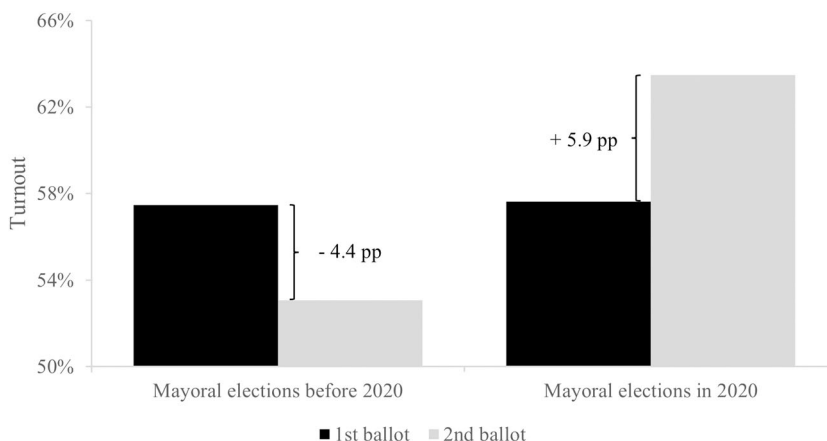


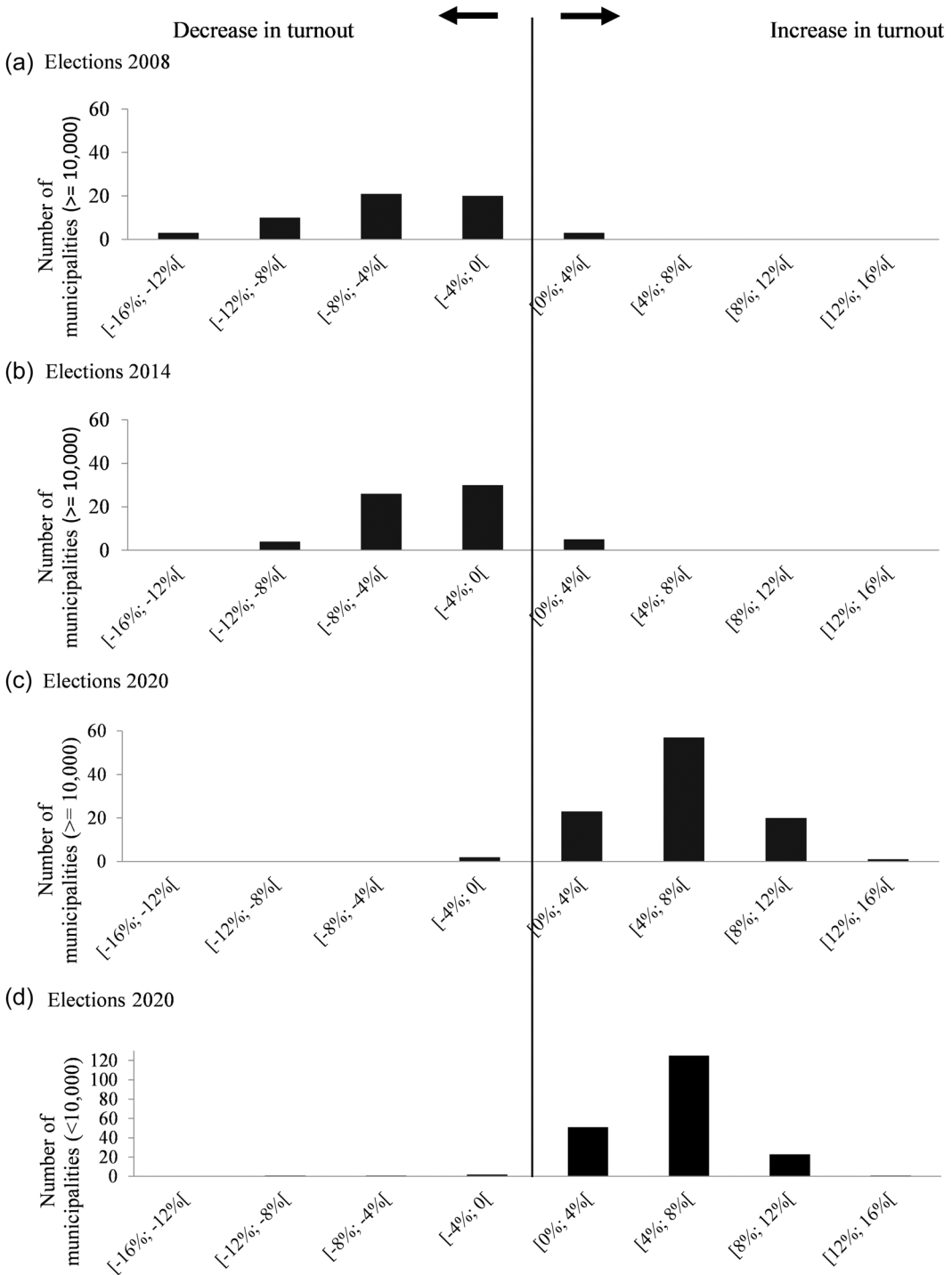**FIGURE 1** Average turnout in first and second ballots in mayoral elections in 2020 and before

**FIGURE 2** Change in turnout within municipalities between first and second ballot. Panel (a): Elections 2008. Panel (b): Elections 2014. Panel (c): Elections 2020. Panel (d): Elections 2020.

**TABLE 1** The relevance of the state of emergency for municipal turnout—difference-in-differences evidence

| | Dependent variable: Turnout | | | |
|---|---|---|---|---|
| | **(1)** | **(2)** | **(3)** | **(4)** |
| Election 2020 | 0.0017 | | | |
| | (0.0065) | | | |
| 2nd ballot | −0.0438*** | −0.0438*** | −0.0438*** | −0.0290*** |
| | (0.0028) | (0.0029) | (0.0029) | (0.0061) |
| (Election 2020) × (2nd ballot) | 0.1024*** | 0.0995*** | 0.1049*** | 0.1066*** |
| | (0.0037) | (0.0042) | (0.0039) | (0.0039) |
| Cumulated Covid-19 infections | | 0.0000 | 0.0006*** | 0.0005*** |
| | | (0.0000) | (0.0002) | (0.0002) |
| (Cumulated Covid-19 infections) × (2nd ballot) | | | −0.0006*** | −0.0005*** |
| | | | (0.0002) | (0.0002) |
| Incumbent running | | | | 0.0052 |
| | | | | (0.0052) |
| Effective candidates | | | | 0.0092*** |
| | | | | (0.0029) |
| Female candidates | | | | −0.0050 |
| | | | | (0.0049) |
| Year fixed effects | No | Yes | Yes | Yes |
| Municipality fixed effects | No | Yes | Yes | Yes |
| Party controls | No | No | No | Yes |
| Observations | 526 | 526 | 526 | 526 |
| Adj. $R^2$ | 0.218 | 0.636 | 0.646 | 0.659 |

*Note*: Year fixed effects include controls for the main elections 2008, 2014, and 2020. Rescheduled elections form the control group. Party controls include controls for candidates from the major parties CSU, SPD, The Greens, FW, and FDP. Standard error estimates are clustered at the municipality level.

\*\*\**p* < .01; \*\**p*< .05; \**p* < .1.

that only includes dummy variables for the elections in 2020 and second ballots as well as the interaction term (*Election 2020 × 2nd ballot*). The results correspond fully to Figure 1.

The effect of the state of emergency on turnout remains large and statistically significant when accounting for aspects of the pandemic in column (2). First, time fixed effects capture a general effect of voting during a pandemic on turnout. Second, we control for local exposure to Covid-19 by adding a control for infections at the county level (the variable is zero for the ballots before 2020). The respective coefficient is small and statistically insignificant. In addition, we employ municipality fixed effects in column (2). In column (3), we allow *Cumulated Covid-19 infections* to have a differential impact on turnout in the first and second ballots in 2020 by introducing an additional interaction. We include further controls for parties,

the number of *Effective candidates*, and indicators for incumbents and female candidates in column (4). In the complete model in column (4), the coefficient for the interaction term corresponds to a 10.7 percentage points increase in turnout and is statistically highly significant. A 10.7 percentage points increase corresponds to 18.7% of the mean value of turnout (57.3%). Increases in turnout of this amount are rare—if ever seen before on a large scale—in German local politics.

### 5.1.2 | The instrument robustly predicts turnout

The effect of the state of emergency as shown in Table 1 is statistically and quantitatively robust to the inclusion of further control variables (see Table A3 in the Supporting Information). Employing controls for concurrent elections, vote margins, fatalities from Covid-19 or municipality-year fixed effects does not change our main finding. We can also exclude that the result is driven by a changing composition of municipalities with second ballots over years by restricting the sample to municipalities that had second ballots in all subsequent regular elections.

Moreover, there is no evidence that the sample of municipalities holding a second ballot is affected by the pandemic (Table A4 in the Supporting Information): infections until the first ballot in 2020 did *not* systematically affect turnout of the first ballot, the winning vote margin in the first ballot, nor the probability of requiring a second ballot.

To further underline the large and unexpected increase in turnout, we show that it is not exclusive to the sample of municipalities. We leverage that Bavarian counties have concurrent elections for their commissioners on the same days as the mayoral elections, that is, second ballots for county commissioners in 2020 were also affected by the state of emergency and facilitated postal voting. As shown in Table A5 in the Supporting Information, turnout increased by 11.5 percentage points in the 18 Bavarian counties that held second ballots during the state of emergency. Thus, the effect of the state of emergency on turnout in the sample of Bavarian counties is comparable to the effect in the sample of municipalities. Finally, there is no effect of the state of emergency on the share of invalid votes (Table A5 in the Supporting Information, columns (3) and (4)).

The results from Table 1 and the robustness checks in the Supporting Information show that the state of emergency is linked to an increase in turnout of about 10 percentage points in the second ballot in 2020. The exclusive and facilitated postal voting and low opportunity costs owing to the lockdown measures made it easier and less costly for voters to cast a ballot. Our findings are consistent with recent evidence by Amlani and Collitt (2022) who show that simplified postal voting conditions due to Covid-19 also increased turnout in the presidential elections in the United States in 2020. The effect is large and highly statistically significant highlighting the relevance of the interaction term (*Election 2020 × 2nd ballot*) as an instrument for turnout.

### 5.1.3 | There is no heterogeneity of the instrument with respect to political competition

To provide indirect evidence for the suitability (*Election 2020 × 2nd ballot*) as an instrument, we show in Table 2 that its effect on turnout is *not* heterogeneous with respect to observable aspects associated with competition and the valence of candidates.

In row (1), we split the full sample into two subsamples according to the vote margins in the first ballot. A close margin of the winner over the runner-up in the first ballot can be

**TABLE 2**  Summary of subsample regressions: There is no evidence of any heterogeneity of the state of emergency with respect to turnout

| | Sample split by | Sample | #Obs | (1) Interaction term (Election 2020) × (2nd ballot) | (2) 90% confidence intervals |
|---|---|---|---|---|---|
| (1) | Vote margin in first ballot | (a) Vote margin in first ballot is smaller than median | 262 | 0.1062*** (0.0063) | [0.0957; 0.1166] |
| | | (b) Vote margin in first ballot is larger than median | 264 | 0.1140*** (0.0058) | [0.1045; 0.1236] |
| (2) | Effective candidates | (a) Three or less effective candidates in first ballot | 318 | 0.1060*** (0.0047) | [0.0983; 0.1137] |
| | | (b) Four or more effective candidates in first ballot | 208 | 0.1113*** (0.0078) | [0.0984; 0.1243] |
| (3) | Candidate from CSU | (a) No CSU candidate competes in second ballot | 84 | 0.1114*** (0.0069) | [0.0998; 0.1230] |
| | | (b) CSU candidate competes in second ballot | 442 | 0.1065*** (0.0046) | [0.0989; 0.1141] |
| (4) | Female candidates | (a) No female candidate in second ballot | 348 | 0.1087*** (0.0059) | [0.0990; 0.1184] |
| | | (b) At least one female candidate in second ballot | 178 | 0.1122*** (0.0074) | [0.0998; 0.1246] |
| (5) | Candidate with PhD | (a) No candidate with PhD in second ballot | 432 | 0.1037*** (0.0041) | [0.0969; 0.1105] |
| | | (b) At least one candidate with PhD in second ballot | 94 | 0.1209*** (0.0156) | [0.0946; 0.1473] |
| (6) | Incumbent running | (a) Incumbent not competing in second ballot | 298 | 0.1007*** (0.0063) | [0.0902; 0.1111] |
| | | (b) Incumbent competing in second ballot | 228 | 0.1118*** (0.0057) | [0.1023; 0.1213] |
| (7) | Experience of incumbent | (a) No incumbent or incumbent with one tenure in second ballot | 424 | 0.1060*** (0.0040) | [0.0994; 0.1127] |
| | | (b) Incumbent with at least two tenures in second ballot | 102 | 0.1086*** (0.0142) | [0.0848; 0.1323] |

*Note:* Every row shows regression results for two subsamples of the divided main sample. Column (1) reports the respective point estimates and standard error estimates for the main explanatory variable (*Election 2020*) × (*2nd ballot*) using the most stringent model as in Table (1), column (4). Column (2) presents the 90% confidence intervals. We drop the variable *Effective candidates* from the model in row (2), the dummy variable *Candidate from CSU* in row (3), the variable *Female candidates* in row (4), and the variable *Incumbent running* in rows (6) and (7).

***$p$ < .01; ** $p$ < .05; * $p$ < .1.

interpreted as an indicator for a high level of competition in the mayoral election. In both subsamples, the coefficients for our instrument (*Election 2020 × 2nd ballot*) are of similar size as the main results. The respective 90% confidence intervals clearly overlap and comprise the point estimate of the opposite subsample.[13] The relevance of the state of emergency for turnout is *not* conditioned on the closeness of election outcomes in the first ballot.

The same applies in row (2) in which we use the number of effective candidates in the first ballot as another potential measure for competition to divide the main sample. Again, there is *no* indication that the relevance of the state of emergency and facilitated postal voting for turnout is somehow moderated by this indicator for political competition.

Referring to potential aspects related to the valence of candidates, we concentrate on party membership, gender, and education. The state government has been led by the CSU over decades and during the whole period of our analysis. The main actors involved in declaring the state of emergency and introducing further strict health measures were politicians from the CSU. Therefore, candidates from the CSU in the mayoral elections might be considered by voters to be the candidates most directly associated to the health measures. As shown in row (3), we do *not* find that the effect of the state of emergency is different in municipalities with a candidate from the CSU in the second ballot to municipalities without a candidate from that party. Another characteristic of candidates that voters might use as an indicator for valence could be gender. For instance, women could be associated with having more preferences for public health and more expertise in related issues. Also, formal education could be an important aspect of valence. Academic titles of candidates are given on the ballot papers, such that this information is directly accessible to voters. Again, there is *no* sign for any statistically significant heterogeneity with respect to the gender (row 4) or the formal education (row 5) of candidates. The interaction term (*Election 2020 × 2nd ballot*) is always statistically significant and always similar in size as in Table 1.

Finally, the possibly most salient signal for voters related to the qualification of mayoral candidates is being an incumbent. Once again, accounting for this characteristic does *not* affect the interaction term: We predict a statistically similar increase in turnout in municipalities where the incumbent is not competing in the second round as in municipalities where the incumbent is competing in row (6). Additionally accounting for the term of office of incumbents in row (7) does *not* yield a heterogeneity of the state of emergency's effect on turnout either.

Overall, Table 2 shows that our proposed instrument is always a statistically significant predictor for turnout. The point estimates in all subsamples have 90% confidence intervals that always clearly overlap and the coefficient for (*Election 2020 × 2nd ballot*) is statistically indistinguishable to the results in Table 1.[14] Thus, the increase in turnout does not vary in magnitude and statistical significance across various settings characterized by observable aspects of competition and the valence of candidates, qualification, the pandemic, the political environment, or municipalities. The remarkable *homogeneity* of the effect of the interaction term across subsamples illustrates that the declaration of the state of emergency came unexpectedly and affected all municipalities similarly by decreasing the costs of voting everywhere potentially due to facilitated postal voting. While we cannot account for all dimensions commonly identified as source of omitted variable bias when analyzing turnout and election outcomes, the state of emergency induced increase in turnout is statistically unrelated to observable aspects of competition or valence. We interpret this as reassuring (indirect) evidence for the validity of our instrumental variable strategy to estimate the effect of turnout on the success of incumbents in the next subsection.

## 5.2 | The effect of turnout on vote shares: Evidence from instrumental variable estimates

To analyze whether incumbents benefit in terms of their vote share from (an exogenous) increase in turnout, we use observations from first and second ballots of mayoral elections in municipalities where the incumbent is running in the second ballot.

Panel A of Table 3 shows the conditional correlation of *Incumbent's vote share* and *Turnout* from OLS regressions. Panel B reports the second-stage results of our instrumental variable

**TABLE 3** The effect of Turnout on Incumbent's vote share—2SLS estimates.

| | Dependent variable (panels A and B): Incumbent's vote share | | | | | |
|---|---|---|---|---|---|---|
| | **(1)** | **(2)** | **(3)** | **(4)** | **(5)** | **(6)** |
| *Panel A: OLS estimates* | | | | | | |
| Turnout | −0.157 | −0.275* | −0.238* | −0.147 | −0.238* | −0.147 |
| | (0.106) | (0.142) | (0.129) | (0.137) | (0.129) | (0.137) |
| Adj. $R^2$ | 0.480 | 0.518 | 0.543 | 0.569 | 0.543 | 0.569 |
| *Panel B: 2SLS estimates* | | | | | | |
| Turnout (instrumented) | 0.337*** | 0.340** | 0.338** | 0.343** | 0.318* | 0.332** |
| | (0.118) | (0.171) | (0.171) | (0.161) | (0.171) | (0.161) |
| | Dependent variable (panel C): Turnout | | | | | |
| *Panel C: First-stage estimates* | | | | | | |
| (Election 2020) × (2nd ballot) | 0.107*** | 0.109*** | 0.110*** | 0.111*** | 0.110*** | 0.111*** |
| | (0.006) | (0.007) | (0.007) | (0.008) | (0.007) | (0.007) |
| (Cumulated Covid-19 infections) × (2nd ballot) | | | | | 0.000 | 0.000 |
| | | | | | (0.001) | (0.000) |
| *F*-statistic | 331.6 | 218.9 | 221.6 | 216.4 | 114.0 | 111.4 |
| Hansen *J*-statistic (*p* value) | | | | | 0.151 | 0.156 |
| Controls (for all panels): | | | | | | |
| 2nd ballot | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Municipality fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Covid-19 related controls | No | Yes | Yes | Yes | Yes | Yes |
| Personal controls | No | No | Yes | Yes | Yes | Yes |
| Election related controls | No | No | No | Yes | No | Yes |
| Observations | 228 | 228 | 228 | 228 | 228 | 228 |

*Note*: Year fixed effects include controls for the main elections 2014 and 2020. Elections from other years form the control group. Covid-19-related controls include the variables *Cumulated Covid-19 infections* and *Fatalities from Covid-19*. Personal controls include controls for the incumbent's *Gender* and *Tenure*. Election related controls include *Effective candidates*, *Election county commissioner* and *Incumbent is from CSU*. Standard error estimates are clustered at the municipality level.

***$p < .01$; **$p < .05$; *$p < .1$.

difference-in-differences strategy. We present Panels A and B to contrast the OLS from the 2SLS setting and highlight the bias of the OLS estimates. Panel C shows the respective first-stage regression result for the instrument.[15]

Turning to the results, in column (1), the OLS results would indicate a negative but statistically insignificant link, that is, the incumbent's vote share tends to be low when turnout is high. However, OLS results suffer from omitted variable bias that most likely induces a negative bias between turnout and an incumbent's vote share as discussed above (Grofman et al., 1999). Thus, instrumental variable results are necessary to obtain consistent estimates.

Results from our instrumental variable approach in panel B show that the sign for the effect of an (exogenous) increase in turnout is *positive* and statistically significant in specification (1). In terms of magnitude, an increase in *Turnout* of 10 percentage points leads to an increase in *Incumbent's vote share* by 3.4 percentage points which is quantitatively sizable for mayoral second ballots.

We add the cumulated number of infections and an indicator for fatalities related to Covid-19 at the county level in column (2). In column (3), we include controls for the incumbent's gender and tenure. The instrumental variable results in panel B remain *positive* and statistically significant. Moreover, the magnitude of the effect of turnout on the incumbents vote share from the 2SLS evidence in panel B is highly similar to column (1).[16] Thus, incumbents benefit from an exogenous increase in turnout.

In column (4), we control for concurrent elections at the county level and the incumbent's party. As soon as we add the number of effective candidates as an observable measure for competition, the point estimate from OLS regressions decreases in absolute terms and becomes statistically insignificant as to be expected by theory. The decline of the coefficient in absolute terms indicates that competition is relevant as a potential omitted variable when estimating the link between turnout and the incumbents' vote share. However, the number of effective candidates does not seem to capture all aspects of competition or the valence of candidates as there is still a substantial downward bias of OLS estimates. By contrast, the 2SLS results remain highly stable, that is, instrumented turnout has a statistically significant and positive effect on the vote share of the incumbent.

In columns (5) and (6), we introduce *Cumulated Covid-19 infections* interacted with the variable *2nd ballot* as an additional instrument for *Turnout*. First-stage results suggest that the effect of a rising cumulated number of infections on turnout is slightly larger in the 2nd ballot in 2020, but the estimate for this interaction is statistically insignificant.[17] The second instrument allows us to conduct a Sargan-Hansen test of overidentifying restrictions as an econometric test for the validity of the instruments. We do not reject the null hypothesis that the instruments are uncorrelated with the error term. Thereby, the Sargan-Hansen test provides further econometric reassurance for our theoretical arguments regarding our identification strategy. Put differently, standard econometric tests are suggestive that our instrumental variable setting gives a causal estimate for the effect of *Turnout* on *Incumbent's vote share*. Second-stage results closely resemble those in columns (3) and (4), that is, they suggest a positive and statistically significant effect of *Turnout* on *Incumbent's vote share*.

Overall, columns (1)–(6) in Table 3 point to a substantial downward bias of OLS regression results, potentially due to omitted variables such as competition or valence as expected by theory (Grofman et al., 1999).[18]

Figure 3 provides a graphical illustration of this downward bias: OLS estimates and respective confidence intervals are always smaller than results from 2SLS estimations. The results are remarkably similar across all specifications. Our results suggest that incumbent
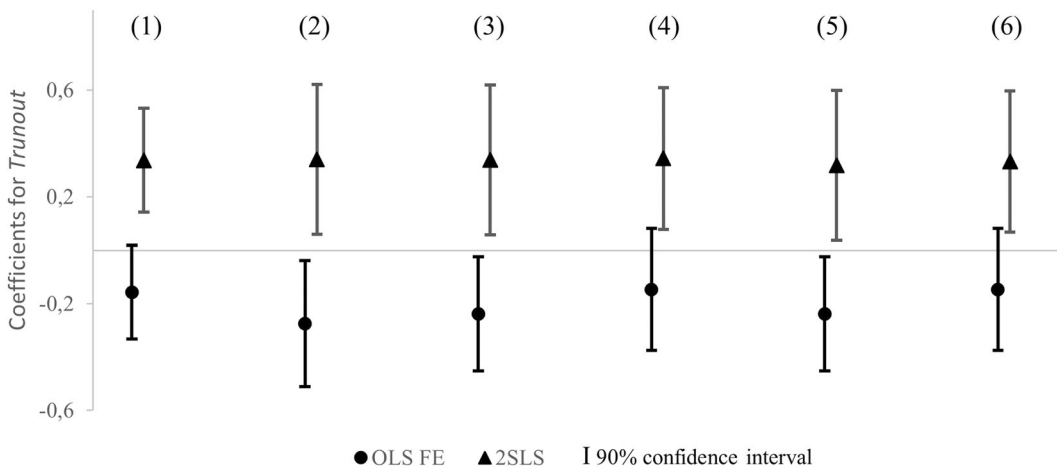
**FIGURE 3**   Graphical illustration of omitted variable bias: *OLS FE estimates* and *2SLS estimates* from Table 3 for the effect of *Turnout* on *Incumbent's vote share*

mayors systematically profit from a higher voter participation, if turnout increases for reasons that are unrelated to local politics such as the state of emergency declared by the state government. A 10 percentage points increase in turnout leads to roughly a 3.4 percentage points increase in the vote share of the incumbent.

The declaration of the state of emergency, the lockdown measures, and facilitated postal voting caused a large and unexpected increase in turnout. As turnout increased due to reasons unrelated to valence or political competition, it seems reasonable to expect that incumbents profit. The higher turnout most likely emerged because rather occasional voters participated in the election. In fact, in the second ballot of the mayoral election in 2020, even *more* persons cast a ballot than in the preceding first ballot which has been unseen. Turnout increased substantially within 2 weeks although drawing conclusions from past elections one would have predicted that turnout falls in second ballots compared to first ballots. Occasional voters who decided to vote although they did not do so in the first ballot may be less familiar with the candidates and rather uninformed concerning local politics than voters who have already voted in the first ballot. Therefore, occasional voters may use cues such as voting for the incumbent when they cast their ballot (e.g., Hodler et al., 2015).

## 5.3 | Exploring heterogeneous effects of turnout

We study whether there are heterogeneous effects of an increase in *Turnout* on the *Incumbent's vote share* in Table 4. For all estimations, we continue to implement our identification strategy using our instrument for turnout.

To study whether the electoral success of incumbents varies depending on the level of competition in the mayoral election, we include an interaction term in our 2SLS setting and interact *Turnout* with a binary *Indicator* variable for a competitive environment. The indicator takes a value of one if the vote margin in the first ballot of a mayoral election is below the median of first ballots' vote margins and zero otherwise.[19] Specification (1) shows that the

**TABLE 4** The heterogeneity of the effect of Turnout on Incumbent's vote share—2SLS estimates.

| | Dependent variable: Incumbent's vote share | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| | Indicator = Vote margins | Indicator = Incumbent from CSU | Indicator = Experience | Indicator = Fatalities | Indicator = Female incumbent |
| Turnout | 0.560** | 0.619*** | 0.359** | 0.279* | 0.402** |
| | (0.244) | (0.205) | (0.175) | (0.147) | (0.165) |
| *Turnout × Indicator* | −0.361 | −0.553** | −0.030 | −0.285 | −0.471** |
| | (0.277) | (0.249) | (0.252) | (0.242) | (0.220) |
| 1st *F*-statistics (first stage) | 116.6 | 116.3 | 107.7 | 187.8 | 106.8 |
| 2nd *F*-statistics (first stage) | 150.4 | 85.79 | 72.47 | 154.5 | 83.42 |
| Controls: | | | | | |
| 2nd ballot | Yes | Yes | Yes | Yes | Yes |
| Year fixed effects | Yes | Yes | Yes | Yes | Yes |
| Municipality fixed effects | Yes | Yes | Yes | Yes | Yes |
| Covid-19 related controls | Yes | Yes | Yes | Yes | Yes |
| Personal controls | Yes | Yes | Yes | Yes | Yes |
| Election-related controls | Yes | Yes | Yes | Yes | Yes |
| Observations | 228 | 228 | 228 | 228 | 228 |
| Indicator: | | | | | |
| Column (1): Vote margins | Indicator = 1 in first ballot and runoff election if vote margin in first ballot is lower than median; = 0 otherwise | | | | |
| Column (2): Incumbent from CSU | Indicator = 1 if incumbent is from CSU; = 0 otherwise | | | | |
| Column (3): Experience | Indicator = 1 if incumbent has experience from at least two tenures; = 0 otherwise | | | | |
| Column (4): Fatalities from Covid-19 | Indicator = 1 for first ballot and runoff election 2020 if there has been at least one fatality from Covid-19 in county until the runoff election in 2020; = 0 otherwise | | | | |
| Column (5): Female incumbent | Indicator = 1 if incumbent is female; = 0 otherwise | | | | |

*Note*: 2SLS estimates are shown for the two endogenous variables *Turnout* and *Turnout × Indicator*. *Indicator* is a placeholder for five dummy variables as defined above to explore the heterogeneity of the effect of (exogenous) *Turnout* on *Incumbent's vote share*. *(Election 2020) × (2nd ballot)* and *(Election 2020) × (2nd ballot) × (Indicator)* are used as instruments. Year fixed effects include controls for the main elections 2014 and 2020. Elections from other years form the control group. Covid-19 related controls include the variables *Cumulated Covid-19 infections* and *Fatalities from Covid-19*. Personal controls include controls for the incumbent's *Gender* and *Tenure*. Election related controls include *Effective candidates*, *Election county commissioner* and *Incumbent is from CSU*. We omit *Tenure* in column (3), *Fatalities from Covid-19* in column (4) and *Gender* from column (5). First-stage *F*-statistics for the excluded instruments are reported. The first *F*-statistic is from the first-stage regression with *Turnout* as the dependent variable and the second *F*-statistic from the first stage with *(Turnout × Indicator)* as the dependent variable. Standard error estimates are clustered at the municipality level.

***$p < .01$; **$p < .05$; *$p < .1$.

coefficient for *Turnout* is positive and statistically significant as before. The coefficient for *Turnout* interacted with the *Indicator* for competition is negative but statistically insignificant. Nevertheless, as the interaction term is comparatively large, this may suggest that the effect of higher turnout on the incumbent's vote share could be partly mitigated in situations with high competition. Calculating the total effect of an increase in turnout when competition is high (coefficient *Turnout* plus coefficient *Turnout × Indicator*), we find that the effect of turnout on the vote share of the incumbent is positive (+0.200) but not statistically different from zero (SE = 0.163). This may suggest that when first round elections were particularly competitive, even occasional voters may be better informed about candidates' characteristics so that they do not only rely on incumbency as a cue. Conversely, in uncompetitive environments, an exogenous increase in turnout by 10 percentage points leads to a 5.6 percentage points higher vote share for the incumbent.

Party dominance in a state may matter for politicians' career paths and thus turnout or electoral success (Ramos Pastrana, 2021). Regarding party affiliation of incumbents to the state-wide dominant, center-right CSU party, we find that incumbents from parties different than the CSU tend to profit from higher turnout (column 2). For incumbents from the CSU, no such relationship exists, and the total effect (coefficient *Turnout* plus coefficient *Turnout × Indicator*) is rather close to zero (+0.066) and statistically insignificant (SE = 0.187). This finding would be consistent with evidence that particularly left-wing and smaller parties tend to gain from high turnout (e.g., Arnold & Freier, 2016; Finseraas & Vernby, 2014; Hansford & Gomez, 2010).

There is no evidence that points to a heterogeneity of the effect of turnout with respect to the experience of the incumbent as shown in column (3). Both more and less experienced incumbents gain from higher turnout. Being longer in office seems to confer no additional advantage when turnout increases due to reasons that are unrelated to electoral competition. This is reassuring and consistent with the view that our identification strategy excludes influences related to electoral competition that may affect the incumbent.[20]

Regarding other potential heterogeneities we note that the interaction between turnout and an indicator for fatalities from Covid-19 at the county level is not statistically significant (column (4)).[21] Interestingly, higher turnout has only an effect for male but not for female incumbents as shown in specification (5): the interaction term for female incumbents is negative and of similar size as the baseline effect of turnout. The total effect of higher turnout for female incumbents is −0.068 and statistically insignificant (se = 0.227). Thus, male incumbents profit particularly from an increase in turnout that is unrelated to valence or political competition.

## 5.4 | Discussion and generalizability of the results

The state of emergency with exclusive and facilitated postal voting is clearly associated with a substantial increase in turnout in the second ballots of the Bavarian mayoral elections in 2020 (e.g. Table 1). Our results regarding the effects of this increase in turnout on the vote share of the incumbent generalize to other contexts, if the state of emergency itself is not related to electoral results. We discuss why this is likely to be the case.

In the wake of a crisis, voters might lean towards institutions that they are familiar with or support politicians who are in office. If this was the case, incumbents might *directly* profit from the crisis potentially due to a *rally around the flag* behavior of voters besides the turnout channel that we try to identify (see e.g., Bol et al., 2021; Leininger & Schaub, 2020;

Mueller, 1970). The support for incumbents in times of crisis may be expressed in various ways. First, voters may adjust their voting behavior in favor of the incumbent conditional on casting a ballot according to a rally around the flag argument. Second, citizens may also demonstrate their preference for stable political conditions and their trust in institutions in times of crisis by participating in the ballot at all. In line with these considerations, we should expect a larger effect of the state of emergency on turnout in municipalities in which voters can vote for the incumbent versus municipalities without an incumbent candidate. To test this, we leverage the fact that not all voters had the choice to elect an incumbent candidate in the second ballots in 2020 in our full sample. According to results from Table 2, the relevance of the state of emergency for turnout is statistically identical in municipalities with and without incumbent candidates. Thus, the option to vote for the incumbent does not seem to have mobilized voters any more than it has mobilized voters who did not have the choice to vote for an incumbent. Instead, jumps in turnout seem to be linked to the state of emergency through facilitated postal voting and smaller opportunity costs of voting. If incumbents are present, they profit from this increase in turnout as occasional voters tend to opt for them rather than for their challengers.

It is important to note that the declaration of a state of emergency and subsequent facilitated postal voting present a different setting than events such as disasters, terrorism, or the pandemic itself: a state of emergency is a policy decision made by politicians, not an external incidence. In Bavaria, the Prime Minister (Markus Söder, CSU) held the perceived position of the main actor in the crisis. He received initial approval for his policies during the first wave in Bavaria.[22] A high popularity in opinion polls in the wake of the crisis for the Prime Minister and the governing party indicates that voters locate the source of pandemic policies at the state level. It might also suggest some rallying around the flag at the state level. If a potential rally around the flag behavior trickled down from the state level to the local mayoral elections, we would find a larger advantage from increases in turnout for incumbent candidates from the state governing party. This is not the case at all according to Table 4, column (2): There is no evidence that the increase in turnout mainly affected the vote share of incumbents from the governing CSU party. Rather the opposite is the case and incumbents from other parties profited from higher turnout. Again, this finding is not compatible with a rally around the flag behavior in the municipal election such that it should also translate to other contexts.

While we cannot ultimately exclude that incumbents in municipalities might have directly benefited from the state of emergency, the above evidence is not consistent with this argument. Rather the mechanism is that the state of emergency and facilitated postal voting increased turnout due to a reduction of the costs of voting. The unexpected and large increase in turnout increased the vote shares of incumbents.

The state of emergency and the introduction of mandatory but facilitated postal voting provides an informative setting to identify the effect of turnout on the vote share of incumbents. Characteristic for our setting is the comparatively large increase in turnout of more than 10 percentage points. Our setting also allows us to ensure that the effect identified is unrelated to potential confounders such as electoral competition or valence. Analyzing the mere association between turnout and the success of incumbents without taking account of endogeneity would yield a negative association (as illustrated in Panel A of Table 3 and consistent with Grofman et al., 1999). A voting cost driven increase in turnout is beneficial for incumbents, in particular, if voters are mobilized who rely on simple cues when casting their vote such as uninformed and occasional voters. This insight of our empirical analysis is likely to generalize to other settings in which the voting costs change while political competition remains unaffected. Examples

include, among others, the introduction of postal voting, registration requirements, changes in polling station proximity and opening hours.

## 6 | CONCLUSIONS

We analyze the effect of increasing turnout on the success of incumbents running for reelection, leveraging the two-round system of mayoral elections in Bavaria. Investigating the effect of turnout on incumbency advantages is prone to endogeneity issues from omitted variable bias (e.g., Grofman et al., 1999; Hansford & Gomez, 2010; Martins & Veiga, 2014).

Having declared a state of emergency *after* the first ballot in 2020, Bavarian state authorities centralized all relevant decision-making *prior* to the second ballot and introduced lockdown measures. The second ballot in 2020 was conducted by exclusive and facilitated postal voting which reduced the costs of voting. Employing a difference-in-differences setting to contrast turnout in the first and the second ballots which was held 2 weeks later, we find a statistically significant and positive effect on turnout—amounting to more than 10 percentage points. This increase is independent from local politics and characteristics of local politicians.

We employ the increase in turnout as an instrument to analyze the effect of turnout on voting outcomes. Our empirical results suggest a positive and statistically significant causal effect of turnout on the vote shares of incumbents. A 10 percentage point increase in turnout translates into a 3.4 percentage point increase of the incumbent's vote share. Our results provide evidence that incumbents tend to profit from a sudden, unexpected rise in turnout that is unrelated to political competition or the valence of candidates. Such an effect of turnout on the vote share of incumbents is intuitive and is likely to generalize: If substantially more voters cast a ballot in a second round of an election than in the first round due to reduced costs of voting, such voters are likely to be less familiar with municipal politics. Instead of gathering information on the complexity of local issues, they use shortcuts to come to a decision (Hodler et al., 2015; Stadelmann & Torgler, 2013). Voting for somebody you know, that is, voting for the incumbent, is an obvious shortcut. We expect this result and our insights to hold in other democratic settings as long as turnout increases or decreases due to factors unrelated to electoral competition, for example, changes in turnout due to postal voting, registration requirements, or other changes in voting costs.

Finally, our paper explores voting *during* a state of emergency instead of voting in the aftermath of a disaster. Interestingly, voting in times of crisis is not necessarily detrimental to electoral participation, if appropriate measures are taken that guarantee safe and unbureaucratic voting, for example, through facilitated postal voting.

## CONFLICT OF INTEREST

The authors declare no conflict of interest.

## DATA AVAILABILITY STATEMENT

Data available on request from the authors.

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## ENDNOTES

[1] The effect of the declared state of emergency was state-wide, that is, it was independent from local exposure to the pandemic. Of course, we will account for ballot and time fixed effects in our empirical analysis.

[2] Moreover, physical factors such as the weather have been shown to affect turnout: while most studies find a negative effect of bad weather (Arnold & Freier, 2016; Arnold, 2018; Artés, 2014; Garcia-Rodriguez & Redmond, 2020; Gomez et al., 2007; Hansford & Gomez, 2010; Shachar & Nalebuff, 1999), some studies find there is no effect (Knack, 1994; Meier et al., 2019; Persson et al., 2014), and some even suggest a positive effect of bad weather on turnout (Lind, 2020).

[3] Next to their mayor, municipalities belonging to a county elect their municipal council and the council of the county by proportional rule and the county commissioner by majority rule. In 25 so-called "district-free" cities only the municipal council is elected along with the mayor. Councils of the city districts are additionally elected in the state capital Munich.

[4] Note that the reporting of infections at this very early stage of the pandemic differs from later standards. The responsible health authorities such as the Robert Koch-Institute and consequently political actors, the public and the media mostly concentrated on the total number of so far recorded infections with Covid-19. For an accurate picture of the situation at that time, we report these circulating numbers and use them for our empirical analysis. See https://www.rki.de/DE/Content/InfAZ/N/NeuartigesCoronavirus/Situationsberichte/2020-03-15-de for more information (accessed December 23, 2020).

[5] A reason why voters apply for ballot-by-mail in local elections is the size [literally!] of the ballot papers.

[6] See press statement of the Bavarian State Ministry for Health and Care. https://www.stmgp.bayern.de/presse/ausgangsbeschraenkung-in-bayern-wegen-coronavirus-pandemie-gesundheitsministerin-huml/, (accessed May 26, 2020).

[7] Note that 682 is not a multiple from 233. Some municipalities are below the threshold of 10,000 inhabitants and not contained in the reports in some electoral cycles while others have more than the regular three elections due to rescheduled elections.

[8] Often, voters are presented even only one candidate in the first round of the mayoral election in small municipalities and anecdotal evidence suggests that it is sometimes challenging to find a candidate at all.

[9] In our final sample, this applies to 26 municipalities.

[10] The municipalities directly sent the ballot papers to *all* eligible voters along with envelopes with prepaid postage.

[11] It is common in Bavaria that second ballots have substantially lower turnout than first ballots. A decline in turnout from first to second ballot can also be observed in other contexts with runoff elections, e.g., the French presidential elections in 2022 (also see Indridason, 2008).

[12] We profit from data on turnout in small municipalities in the 2020 elections collected by the Ippen-Digital-Zentralredaktion and provided by the newspaper *Merkur* (https://www.merkur.de/bayern/stichwahl-buergermeister-ergebnisse-kommunalwahl-2020-bayern-buergermeisterwahl-karte-13595420.html, accessed July 17, 2020). Comparing Figure 2c and Figure 2d suggests that voters in smaller

municipalities reacted similarly to the state of emergency regarding turnout as voters in our sample of large municipalities.

[13] We report 90% confidence intervals here because they are smaller and therefore more conservative than, for instance, 95% confidence intervals.

[14] Table A6 in the Supporting Information shows further subsample regressions according to the local prevalence of Covid-19, the political environment, and the status and size of municipalities.

[15] As in Table 1, the point estimates indicate that the state of emergency leads to a statistically significant increase in turnout of about 10.7 percentage points. The first-stage $F$-statistic for the excluded instrument suggests that the interaction term is *not* a weak instrument.

[16] By contrast, the negative coefficients for the association between *Turnout* and *Incumbent's vote share* from OLS regressions in panel A increase in absolute terms and even turn statistically significant at the 10%-level highlighting the bias of OLS.

[17] Note that the second instrument compares to the number of infected persons being interacted with *(Election 2020) × (2nd ballot)* because there were always zero infected persons in years before 2020. If we believe the pandemic and the state of emergency to be exogenous from local politics, the interaction term should be suitable as an additional instrument for turnout, but the relevance criterion is not fully fulfilled.

[18] Note that when estimating a reduced form by our instrument directly instead of instrumented turnout, our main interpretations do not change.

[19] Empirically, we employ the triple interaction of the binary variable for the level of competition interacted with *(Election 2020) × (2nd ballot)* as a second instrument besides the interaction term for the state of emergency itself.

[20] For example, political experience can be associated with higher transfers to the constituency of the incumbent (Pickard, 2021) which may affect turnout and the incumbency advantages.

[21] The total effect of higher turnout in a situation where there are fatalities related to the pandemic (Turnout plus Turnout × Indicator) is close to zero and statistically insignificant.

[22] See, for example, an article in the online magazine of the Spiegel about Markus Söder as the main manager in the crisis in March 2020 (https://www.spiegel.de/politik/deutschland/coronavirus-markus-soeder-als-krisenmanager-a-ab180d76-bf2a-45f5-bcc6-375ddf52b6a5, accessed 01.06.2020) or survey results, according to which Prime Minister Markus Söder has become the most popular politician during the crisis in Germany (https://www.oldenburger-onlinezeitung.de/nachrichten/umfrage-soeder-erstmals-beliebtester-politiker-deutschlands-36787.html, accessed 01.06.2020).

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## SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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