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Empirical evidence of the effects of COVID-19 on voter turnout[1]

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This paper studies the effects of COVID-19 on voting turnout using as a case study an election that took place right after the peak of the first wave of the pandemic, the Basque Country regional elections. With the spread of COVID-19 there is a fear that in-person voting will spread the virus, which adds an additional burden to voters that is expected to decrease turnout. We confirm this hypothesis using a difference-in-difference model. We find that COVID-19 caused turnout to decrease by approximately 4.7% in municipalities affected by the virus compared to those that at the time of the election had not been affected by it. This effect on turnout is higher for municipalities affected also by deaths from coronavirus than when affected only by infected cases.

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1 Introduction

No other event in this century has affected the foundations of what most in western democracies consider ‘normality’ as the COVID-19 pandemic. The daily lives of millions have changed due to the unprecedented scale of this pandemic and the severe and unexpected measures that most governments have taken in their efforts to save lives and protect the economy. The economic and health consequences of the pandemic are being studied extensively, but little is still known about its political consequences and how citizens have responded to it when called to the polls in the midst of the pandemic.

Studying the effect of the COVID-19 pandemic into an election turnout is relevant to understand how the citizens are reacting to an uncertain scenario of anxiety, fear and extraordinary measures by the governments, and how this reaction can affect modern democracies [1]. Although voting is not the only way of participating in a democracy, it allows to aggregate the preferences of the citizens and keep political elites accountable to some extent [2]. Voting turnout is also an indicator of the public support for democracy and, thus, it is important to ensure its permanence [3].

In this paper, we offer the first observational study of the effect of the incidence of the COVID-19 pandemic on voter turnout by studying an election held after the first wave of the pandemic. We investigate the effect of the incidence of the pandemic in this outcome by exploiting the data on the regional election of 12 July 2020 in the Basque Country, Spain. These elections took place right after the Spanish national Government lifted the strict confinement measures that were in place since mid-March. The timing of the elections and the fact that its municipalities have been affected unequally by the pandemic provides an ideal setting to study this effect.

The Basque Country region of Spain is comparable in many aspects such as unemployment rates or quality of life to many other European countries and regions [4, 5, 6]. Also, in terms of territorial decentralization, its political system is comparable to many other regional parliaments in western democracies [7]. In this sense, this regional election provides an interesting case to study the incidence of the COVID-19 pandemic in the context of an election and how its political consequences could be extrapolated at greater scale [1]

To study this question, we use a difference-in-difference design in which we exploit the quasi-experimental variation in the incidence of the pandemic to address its effect on the election turnout using data at municipality level. We use three definitions of the treatment in relation with the distribution of infected cases and deaths from COVID-

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[1] Citizens from several countries are still going to be called to the polls in the remainder of 2020: in Chile, on October 25, with the occasion of a national plebiscite, and in the United States, on November 3, with the occasion of the presidential elections.

19 and we compare municipalities affected by the pandemic (treated group) with those municipalities not affected by it (control group). Since the spread of the pandemic is also affected by other factors that could influence turnout too, our estimations include those variables as controls. By providing different measures and definitions of the treatment, we also study if there are different channels by which the pandemic could have influenced the voters' decision of going to the polls.

We find that the incidence of the pandemic has significantly reduced turnout on the municipalities of the treatment group with respect to the control group by an average -3.18 percentage points when all municipalities affected by COVID-19 cases are included in the treatment group, and by an average of -4.54 percentage points if only municipalities affected by COVID-19 cases and deceased are considered as treatment group. Compared to the mean turnout rate in the Basque Country of municipalities in the 2016 election (67.15 percent) the magnitude of the effect reaches -4.7% and -6.6%, respectively, which is a substantial decrease.

2 The effect of pandemics in voter turnout

A precedent of this research is the literature on the political consequences of pandemics and their effect on voter turnout. In the years before the COVID-19 pandemic, other viral diseases have spread globally and impacted western democracies generating research about these effects. Although not getting to spread massively within western democracies, the fear-driven effects of the pandemic of Ebola in the United States elections have been studied showing a negative effect on turnout [8, 9].

There is also evidence on the association between the prevalence of seasonal Influenza and lower turnout rates in Finland and the United States [10], and this same negative effect in turnout has been found for the case of the H1N1 Influenza Virus in Mexico [11]. Finally, and more importantly in terms of both cultural and political impact, Mansour et al. [12] studied the AIDS/HIV Pandemic on the United States Elections and its differential effect on Democrat and Republican turnout.

The political consequences of the COVID-19 pandemic in turnout have only been investigated by a few observational studies and none of them has studied the effects of its incidence on an election posterior to the first wave of the pandemic. For example, while studying vote choice in the Democratic Party Presidential Primaries, a study by Bisbee et al. [13] found a decline in voter turnout for the calls for primary elections after March 10 due to the pandemic. A similar result was found by Morris et al. [14], whose research showed a decrease in the turnout rate of the Wisconsin Primary in April 7.

In the context of multi-party elections, a working paper by Leininger and Schaub [15] studied the municipal Bavarian election in Germany on March 15, when the pandemic still had not dominated the political agenda. They found that the turnout was not affected by its incidence. More recent results by Giommoni and Loumeau [16] studied the effects of the lockdown in the municipal elections in France. In this case, the municipal election had a first round in March 15 before a differential lockdown by department was ruled and a second electoral round in June 28 after this differential lockdown was lifted. They found an increased turnout in the locations where the stricter containment measures took place. Lastly, the inverse causal route, from election turnout to excess deaths, has also been investigated finding a positive relation between both [17, 18].

In summary, the previous literature that has studied the effect of the pandemic on voter turnout is based on evidence from the beginning of the pandemic in March. Consequently, there is no observational evidence about the effects of its incidence on voter turnout for an election in the midst of the pandemic because many calls to vote were postponed in order to prevent the spread of the virus by agglomerations.

We want to contribute to this literature by offering novel causal evidence on the effect of the incidence of the pandemic in voter turnout by studying a multi-party election that is comparable to other elections in European countries in terms of both the type of election and the characteristics of its voters.

To our knowledge, this is the first observational study that does so in the context of an election held after the first wave has transformed both the economy and the lives of the people called to vote.

Furthermore, the characteristics of the spread of the COVID-19 pandemic in the Basque Country (Spain) provide an ideal setting to study this effect due to the unequal incidence of the pandemic in municipalities, thus being a source of quasi-experimental variation that can be exploited to identify the causal effect of the pandemic (see Figures 1 and 2). Since there are municipalities *with no infected cases nor deaths*, this group of municipalities can be used as a control group in our comparisons with other municipalities that *had infected cases* (whether they have deaths or not), municipalities *with COVID-19 cases and deaths*, and municipalities *with COVID-19 but no deaths*.

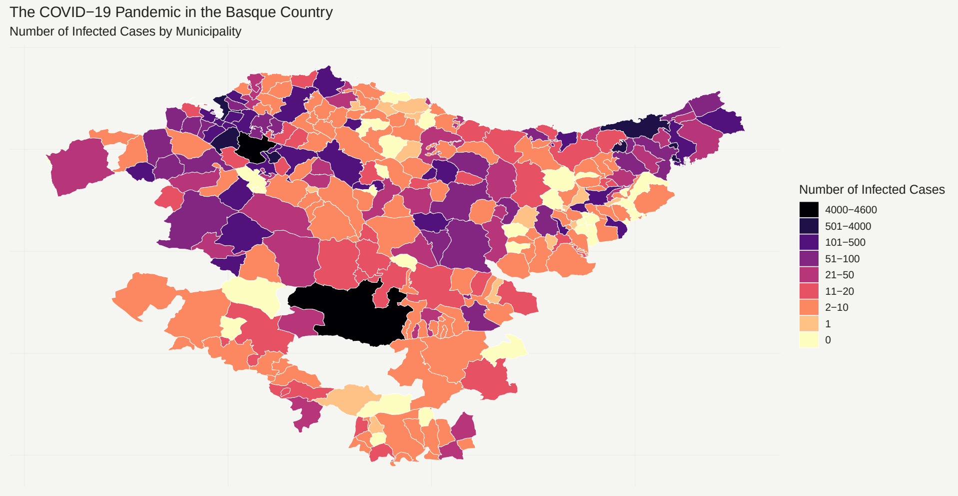

Figure 1: Incidence of the COVID-19 Pandemic by Municipalities. Infected Cases.

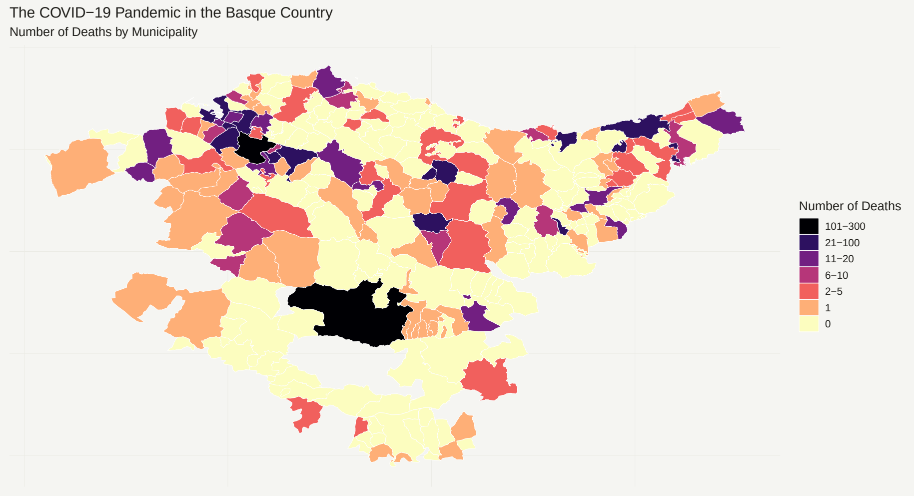

Figure 2: Incidence of the COVID-19 Pandemic by Municipalities. Deaths.

3 The COVID-19 Pandemic in Spain and the Basque Country

Spain has been one of the most affected countries by the COVID-19 pandemic in the European Union [19]. In March 14, the Spanish Government declared a State of Alarm by which power was seized from regional authorities and mandated under a unified rule.

The Basque Parliamentary system includes a mix of national parties and regional parties that only participate in the Basque regional elections. This election was going to be held on April 4, but the uncontrolled outbreak of the pandemic and the declaration of the State of Alarm led to the postponement of this elections until July 12.

This State of Alarm allowed the government to impose restrictions on civil and economic liberties and, specially, to mandate a strict confinement at home that lasted until late June[2]. These measures had an impact into both the economy [20] and on the political attitudes and perceptions of the Spaniards [21]. Interestingly, Foremny et al. [22] found a substantial increase in the support for more public health expenditures, especially for those with affected relatives or living in the regions with more deaths from COVID-19.

Specifically, the incidence in the Basque Country was severe, with a total of 13,955 infected cases and 1,562 deaths from COVID-19 according the data from Spain Health Authorities on the week of the regional election. Evidence on the mental health effects of the COVID-19 pandemic in the Basque Country [23] and the rest of Spain [24, 25] show that the pandemic had created a situation of uncertainty and economic anxiety for the citizens called to vote.

4 Research Design

4.1 Data

We use datasets from three different sources in order to form an balanced panel data with observations for the municipalities and their information about political participation, incidence of COVID-19 and the sociodemographic factors that are used in our estimation. All the datasets are linked using a municipality identifier. Our sample includes data for all the municipalities in the Basque Country across five elections. The descriptive statistics for these variables are included in the Appendix, Table S1. The three sources of data are, respectively:

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[2] The confinement measures were lifted at (from mid-May onwards) for the regions of Spain according to the evolution of the pandemic in their territories.

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Basque Regional Elections Data. We use data from the Basque Government on the results of the five regional elections that have been held from 2005 to 2020 disaggregated at the level of municipality. These data include variables on turnout and eligible voters, which are used to compute the voter turnout. Since we are using regional election data these variables are the similar for all municipalities.

COVID-19 Data. We use data from the Basque Health Authorities on the evolution of the COVID-19 pandemic in the Basque Country disaggregated at the level of municipality. These data include variables on the number of cases of COVID-19 detected, the number of deaths from coronavirus and the population size of the municipalities, which are used to compute two rates of incidence for the pandemic: cases and deaths per each 100,000 people (*infrate* and *mrate* in our database, respectively).

Sociodemographic Variables Data. We use data from the Basque Institute of Statistics on several sociodemographic controls disaggregated at the level of municipality from 2005 to 2020. These data include data on municipality density, share of male/female population, population over the age of 65 and unemployment.

4.2 Estimation

To estimate the effect of the COVID-19 pandemic on voter turnout, we use a difference-in-difference approach where we exploit the variation in COVID-19 cases and deaths due to the pandemic occurring at different rates within municipalities. Prior to 2020, there were no cases nor deaths from COVID-19 and, consequently, no difference in terms of treatment between municipalities.

Four months after the outbreak in March, these municipalities have had an unequal incidence of the pandemic, with municipalities with no cases of COVID-19, municipalities with only infected cases of COVID-19 and municipalities with both infected cases and deaths from COVID-19. The distribution of municipalities within each category is shown in Appendix, Table S2.

Our empirical model can be summarized with the following equation:

$$turnout_{i,t} = \alpha + \beta DD_{i,t} + \gamma X_{i,t} + \delta_i + \eta_t + \epsilon_{i,t}$$

In the above equation, *turnout* refers to the turnout in municipality i on a election year t; *DD* is the treatment variable interacted with the treatment period; and X is a set of sociodemographic controls. In all the the specifications we account for time fixed effects, η_t, and municipality fixed effects, δ_i. In a standard DD design, the variables for treatment (treated) and time (after) control the common trends among treated and control groups and the interaction between both captures the DD estimate. Our approach is more demanding than a standard DD design since controlling for both municipality fixed effects and time fixed effects takes into account not just average pre-treatment differences between treatment and control municipalities, but also for other time-invariant factors idiosyncratic to each municipality that could be also correlated with the spread of the COVID-19.

Our coefficient of interest is β, which is the difference-in-difference estimate for the effect of the treatment in voter turnout. We use three definitions of the treatment in our approach to study the incidence of the COVID-19 pandemic with a variety of specifications. In the three definitions we assume a similar level of information among the treated and control groups since all the voters were involved in an uncertain scenario where the principal trusted source of information were the Official Authorities.

The first definition of the treatment employs the comparison between municipalities with COVID-19 cases, whether they have resulted in deaths or not (treatment group) and municipalities without COVID-19 cases (control group), not infected nor deaths. This is our benchmark specification.

A second definition selects the municipalities in which the infected cases of COVID-19 have resulted in deaths (treatment group) and compares those with municipalities with no cases of COVID-19 and, thus, not infected nor death (control group).

Our third definition selects those municipalities in which the infected cases of COVID-19 have not resulted in any deaths from coronavirus (treatment group) and compares them with those municipalities with no cases of COVID-19 and no deaths (control group). This allows us to study the differential effect of having infected people in a municipality.

A comparison between the estimates of the first and the second definition for the treatment allows us to study the differential effect of having deaths from coronavirus in a municipality.

Although the three definitions for the treatment imply a different composition for the treatment group, they are compared to the same control group, municipalities without infected cases or deaths due to the COVID-19 pandemic. An advantage of this approach is that using different definitions for our treatment allows us to study whether not only the treatment but also its intensity had an effect in voter turnout. For each definition of the treatment, we have a dichotomic measure (which takes value 1 if the municipality experienced any COVID-19 cases or deaths) and, when applicable, a continuous measure (rates of infected or deaths per each 100,000 people) that allows for a more precise estimate of the incidence of the pandemic in each municipality.

4.3 Identification

The identifying assumption for our design is that our outcome variable would have evolved similarly for both treatment and control groups in absence of the pandemic, namely, the parallel trends assumption. For this assumption to hold we must compare the evolution of voter turnout prior to the pandemic for the treatment and control groups for the three definitions of the treatment.

As a first piece of evidence for the validity of the comparisons between the treatment and control groups in our specifications, we plot the evolution of voter turnout over time, which shows that the behavior of both groups before the pandemic is similar in the pre-treatment period (Appendix, Figures S3-S5). Particularly, the trends in 2012 and 2016 are closely parallel, thus providing a reliable source for the counterfactual in our estimation.

A more formal test of the fulfillment of the parallel trends assumption is provided by a regression framework in which we use only pre-treatment data and regress turnout on the interactions between time and treatment and time and controls. This test estimates a separate pre-treatment trend for treated and controls observations and allows us to test whether the slope is statistically similar on both trends. Table 1 shows the results of these regressions and the computed F-Tests for equality of coefficients for treatment and control trends are shown in Appendix, Tables S4-S6. The results of these tests confirm that overall trends are parallel in the treatment and control groups during the pre-treatment period in each of the three definitions of the treatment.

	(1) Turnout	(2) Turnout	(3) Turnout
Treatment Trend (TT)	-0.606***	-0.597***	-0.615***
	(0.0221)	(0.0233)	(0.0385)
Control Trend (CT)	-0.642***	-0.642***	-0.642***
	(0.0771)	(0.0773)	(0.0773)
Treatment	1,287***	1,268***	1,309***
	(44.33)	(47.04)	(77.34)
Control	1,364***	1,364***	1,364***
	(154.6)	(155.0)	(155.1)
Observations	1,000	580	544
R-squared	0.990	0.992	0.989
H0: (TT) = (CT)	Accept H0	Accept H0	Accept H0

Clustered standard errors in parentheses

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 1: Parallel Trends Regression

A potential threat for our difference-in-difference design is that assignment into the treatment group is unlikely to be random, as there is evidence of higher rates of prevalence and mortality from COVID-19 in denser, male and older populations [26, 27].

Furthermore, turnout has also been found to be different in cities vs. rural areas and to depend on other demographics such as age or income [28]. These factors could affect both our treatment variable and outcome variable, making our coefficients biased. A standard solution to this potential problem of omitted variables is to include these alternative explanatory factors as controls in our estimation models [29]. We show the tests for comparison of means of our outcome and control variables for the three treatment definitions in Appendix, Table S3.

5 Results

	(1) Turnout	(2) Turnout	(3) Turnout	(4) Turnout	(5) Turnout	(6) Turnout	(7) Turnout
COVID-19 Cases Dummy	-3.184***						
	(0.958)						
COVID-19 Infection Rate		-0.00157***			-0.00179***		-0.00147**
		(0.000395)			(0.000559)		(0.000623)
COVID-19 Cases and Deaths Dummy			-4.541***				
			(0.964)				
COVID-19 Mortality Rate				-0.00644***			
				(0.00222)			
COVID-19 Cases but No Deaths Dummy						-1.983*	
						(1.012)	
Constant	73.25***	72.19***	75.52***	76.52***	74.86***	75.73***	75.33***
	(7.141)	(7.050)	(10.45)	(10.61)	(10.41)	(8.967)	(8.931)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Municipality Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,250	1,250	725	725	725	680	680
R-squared	0.736	0.736	0.801	0.786	0.794	0.653	0.653
Number of municipalities	250	250	145	145	145	136	136

*Clustered standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1*
In Columns 1 and 2 the treatment group is defined as municipalities with COVID-19 cases, whether they have deaths or not.
In Columns 3, 4 and 5 the treatment group is defined as municipalities with COVID-19 deaths.
In Columns 6 and 7 the treatment group is defined as municipalities with COVID-19 cases but no deaths.
The list of controls includes Population Density, Unemployment Rate, Share of Female Population and Share of Population over 65 years old.

Table 2: Difference in Difference Estimates. Dependent Variable: Voter Turnout

5.1 Decrease in Turnout as a consequence of the Pandemic

Table 2 shows the Difference-in-Difference regression estimates of the effect of the pandemic in voter turnout (the complete table can be found in Appendix, Table S7). Each column describes the estimates for a measure of the incidence of the pandemic. A common result of our specifications is that the incidence of the pandemic has caused a substantial decrease in voter turnout and that the significance of this effect does not

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disappear after controlling for sociodemographic factors and municipality and time fixed effects. However, these estimates vary according to the definition of treatment and the measure used in the specification.

Columns 1 and 2 estimate the average effect of having infected cases in a municipality on its voter turnout, whether these infected cases turn or not into causalties. Column 1 shows that municipalities with infected cases have decreased its voter turnout on the election by -3.184 percent points with respect to those municipalities without infected cases (this would amount to a decrease of -4.7% with respect to the mean turnout in 2016). Column 2 provides a more precise estimate of this effect by using the infected rate per each 100,000 people as the measure of the treatment. The estimated effect of an increase of this rate by 1 person is a decrease in turnout of -0.00157 percentage points.

Columns 3 and 4 estimate the effect of the pandemic by using as treated group municipalities with deaths from COVID-19. Column 3 shows that the average effect in voter turnout of having victims of coronavirus is a decrease of -4.541 percentage points with respect to the control group (this would amount to a decrease of -6.7% with respect to the mean turnout in 2016). Column 4 provides a more detailed measure of this effect by using the mortality rate per each 100,000 people. Increasing the mortality rate in one person would cause a decrease in the voter turnout of -0.00644 percentage points with respect to the control group.

We provide a further specification within the subsample formed by the treatment and control group of Columns 3 and 4. Column 5 shows that the estimated effect on voter turnout of increasing the infection rate by 1 person is a decrease of -0.00179 percentage points. This result is very similar to the same estimate on the whole sample shown in column 2.

Finally, Columns 6 and 7 study the incidence of the pandemic by using the municipalities with infected cases but no deaths as the treatment group. Column 6 shows that the average effect of having infected cases of COVID-19 in a municipality is a decrease in voter turnout of -1.983 percentage points with respect to the control group. Column 7 includes a detailed measure of this effect with the infected rate showing that increasing the infected rate by 1 person decreased voter turnout by -0.00147. This effect is also very similar to the other estimations with the infected rates shown in Columns 2 and 5, which is a good indication that our results are robust.

5.2 Differential Effects and Heterogeneity of the Results

We could interpret the estimates of columns 1, 3 and 6 as estimates of the impact of the first infected case and the first deaths from coronavirus in a municipality. This would imply that having a first deceased case of coronavirus has deterred more voters than having the first infected in a municipality. These observations are consistent with our intuitive expectations about how the fear of dying from COVID-19 has bigger consequences than only getting the disease. The comparisons between the estimates in columns 2, 5 and 7 using mortality rates and infected rates also reflect this idea, being the effect found with the mortality rate estimate more than three times the size of the effects found with the infection rates estimates.

One obvious question is whether the reduction in turnout affects the composition of the electorate. We tested whether there are differences on the effects of COVID-19 on turnout among relatively older municipalities and denser municipalities, the hypothesis being that in older and denser populations the opportunity cost of in-person voting would be higher. We did not find, however any clear composition effect.

5.3 Robustness of results

In order to assess the robustness of our results, we perform two placebo tests in which we alter the sample to estimate our DD design in settings that, if the identification correctly captures a genuine treatment effect in turnout, it should not find a significant treatment effect.

In the first placebo model, we randomize the dichotomic for the measures of the treatment definitions across municipalities in 2020. Since the assignment of the treatment is random, there should not be an effect of the pandemic in voting turnout and the placebo difference-in-difference estimates should not be significant.

In the second placebo model, we replicate the main analysis but altering the sample in two ways. First, we use only the observation in the pre-treatment period. Second, we create new treatment variables reconsidering 2005 and 2009 as the artificial pre-treatment period and 2012 and 2016 as the artificial post-treatment period. This way, there should not be an effect of our placebo treatment regardless of the measure if the evidence is consistent with the parallel trends assumption in our pre-treatment period.

The result of the first placebo test is displayed in Appendix, Table S8. The DD estimate of the placebo treatment in each specification is not significant, which is what we should expect since the treatment has been randomized. Like in our main estimates, we find that the fixed effects of municipality and year capture a high share of variation for our outcome but that in this case the placebo estimates are not significant.

Our second placebo test is displayed in Appendix, Table S9. The placebo DD estimate of the treatment after 2009 is not significant at any level for out benchmark specification and our specification for municipalities with infected cases but no deaths. The Placebo DD Estimate on the specification for municipalities with deaths from COVID-19 is significant at a 10 percent level of confidence. This could raise some caution about the results of these estimates, but is nonetheless a nonsignificant coefficient at standard levels of confidence. In addition, working with more observations for the pre-treatment period that follow parallel trends (as it is the case in our analysis and is shown in Appendix, Tables S4-S6) would soften this issue. Furthermore, our testing of the identification assumption is robust and the randomized placebo test reinforces this validy.

Taken together, these tests results support the validity of our Difference-in-Difference design and show that the estimates of our various specifications are robust.

6 Discussion

A standard rational theory approach to the mechanisms behind voter turnout indicates that individuals may weigh the costs and benefits (steaming from individual expected gains or to other factors such as a sense of civic duty) of voting before deciding whether to vote or not (see Mueller [30] for a review). These costs may include external factors that make voting convenient, such as the distance to the voting site [31], or the weather on voting day [32]. More relevant to our research, there is recent evidence on the importance of health factors into turnout [33].

Consequently, we can discuss two mechanisms that may have been at work in the decision of voting in an election held in the midst of the COVID-19 pandemic. A first mechanism links the perception of the risk of getting infected (or infecting others) with an increased cost of voting, thus inducing to a decrease in the in-person voting turnout and an increase in the alternatives to in-person voting, such as vote by mail. A second mechanism links the renewed importance of which government will manage the pandemic with an increased value of the act of voting, thus inducing to an increase in voting turnout. Our data sources combine data from both presential and by-mail voting and, thus, we cannot test the effect of each mechanism separately, only observe which of both dominates[3].

Regardless of the definition of the incidence of the pandemic and the measure we use, all of our estimations show that the pandemic has caused a substantial decrease on voter turnout and that this effect does not disappear after controlling for both fixed effects and sociodemographic factors. The size of these effects is quite large, considering that the mean turnout for the 2016 election for municipalities was 67.15 percent and that this estimations control for sociodemographic factors and both time and municipality fixed

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[3] In Spain, to vote by mail citizens have to apply several weeks prior to election day. Aggregate data about the number of applications to vote by mail shows a more-than double increase for this election. In the 2016 elections, there were 51,981 applications, a 3.03 percent of the census. In the 2020 election, there were 124,473 applications, a 7.24 percent of the census. This is consistent the first mechanism being the one that dominates.

effects. The magnitude of the effect reaches -4.7% with our benchmark specification for municipalities with infected, which is a substantial decrease. We have also shown that this effect on turnout is higher for municipalities affected by deaths, reaching -6.6% with the dummy estimate. When considering the analogous measures for the intensity of the treatment, we also find a three times higher measure of the effect when mortality rate than when using the infection rate. These results show further light on the consequences that the impact of the pandemic is having into the perception of fear, risk and economic anxiety among the people called to the polls, thus reducing voter turnout.

This decrease in turnout has important implications for modern democracies. If the results obtained in these estimates can be extrapolated at greater scale, the political consequences in terms of loss of political inclusion, representation and legitimacy could be substantial. Consequently, these results show the potential value of public policies with the aim of protecting political participation from the consequences of the COVID-19 Pandemic. In this sense, governments should consider measures that improve the safety of the polling stations, other forms non-presential voting (when secure) as well as measures to overcome the pandemic or prevent its spread. The benefits of this policies should be considered not only for its economic benefits, but also to avoid its negative political consequences.

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Appendix

Database

	N	mean	sd	min	max
Municipalities	1,250	125.5	72.20	1	250
Infected Cases	1,250	17.24	191.9	0	4,668
Number of Deaths	1,250	1.296	14.58	0	364
COVID-19 Cases Dummy	1,250	0.876	0.330	0	1
COVID-19 Cases and Deaths Dummy	725	0.786	0.410	0	1
COVID-19 Cases but No Deaths Dummy	680	0.772	0.420	0	1
COVID-19 Infection Rate	1,250	142.2	416.8	0	6,013
COVID-19 Mortality Rate	1,250	8.864	48.63	0	949.4
Control Dummy	1,250	0.124	0.330	0	1
Turnout	1,250	68.41	8.563	38.85	98.63
Unemployment Rate	1,250	4.469	1.997	0.291	30.73
% Female Population	1,250	45.16	2.863	36.45	58.86
% Population Over 65	1,250	19.88	4.473	8.170	41.60
Population Density	1,250	512.4	1,458	3.700	15,276

Table S1: Summary Statistics

The incidence of COVID-19 Pandemic in the Basque Country (Spain)

	Not Deceased	Deceased	Total
Not Infected	31	0	31
Infected	105	114	219
Total	136	114	250

Table S2: Distribution of Municipalities by the Incidence of the COVID-19 Pandemic.

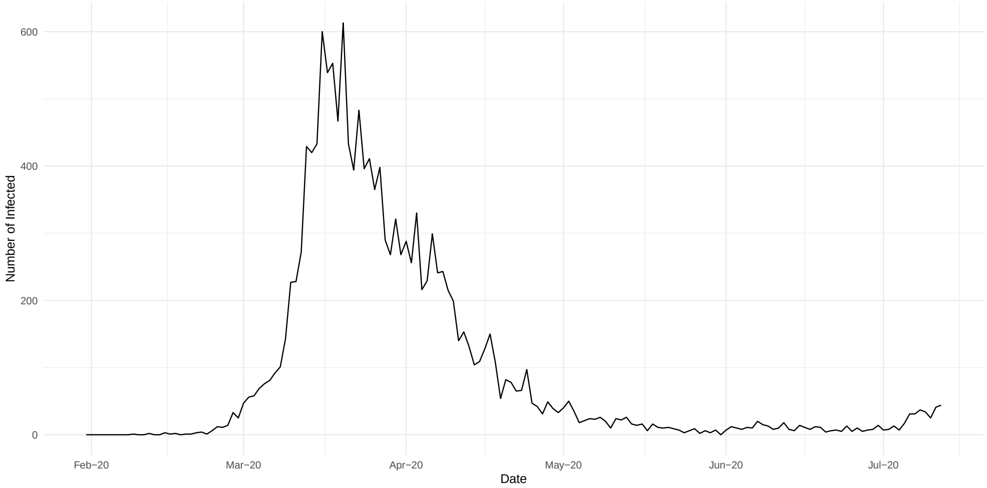

Figure S1: Evolution of the Pandemic. Daily New Infected Cases

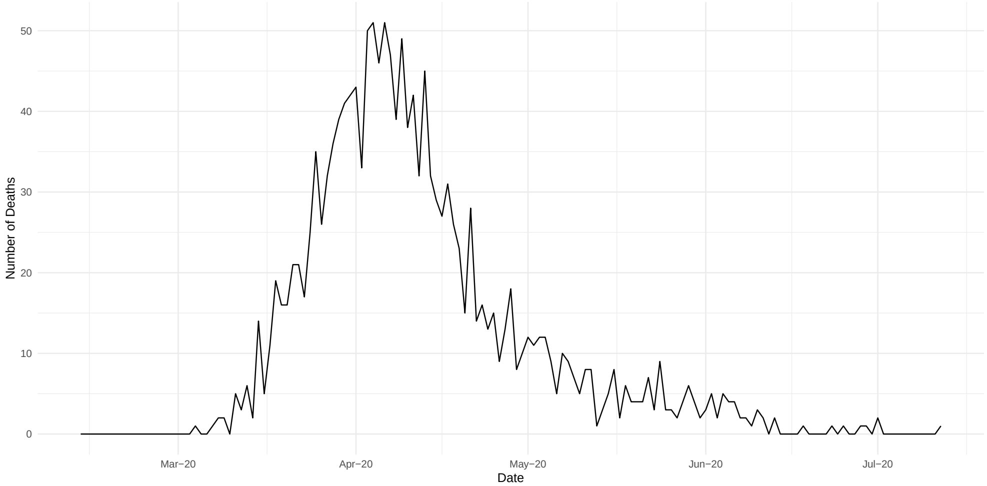

Figure S2: Evolution of the Pandemic. Daily Deaths

Distribution of Variables within Treatment and Control

	Control Mean	Treated Mean	Mean Difference	P-Value
	Treatment: (All) Municipalities with COVID-19 Cases			
Turnout	73.24	69.88	3.36	0
Density	46.57	577.99	-531.42	0
Unemployment Rate	3.09	4.46	-1.36	0
% Female Population	44.33	45.80	-1.46	0
% Poputation Over 65	21.87	19.29	2.58	0
	Treatment: (Only) Municipalities with COVID-19 Cases and Deaths			
Turnout	73.24	68.36	4.87	0
Density	46.57	1,028.92	-982.34	0
Unemployment Rate	3.09	5.08	-1.98	0
% Female Population	44.33	46.02	-1.69	0
% Poputation Over 65	21.87	18.70	3.16	0
	Treatment: (Only) Municipalities with COVID-19 Cases but No Deaths			
Turnout	73.24	71.521	1.726	.037
Density	46.57	88.424	-41.84	.001
Unemployment Rate	3.09	3.787	-.694	0
% Female Population	44.33	45.558	-1.226	0
% Poputation Over 65	21.87	19.925	1.945	0

Table S3: T-Test. Treated and Control Groups for Outcome and Sociodemographic Variables in the Pre-treatment period

Parallel Trends

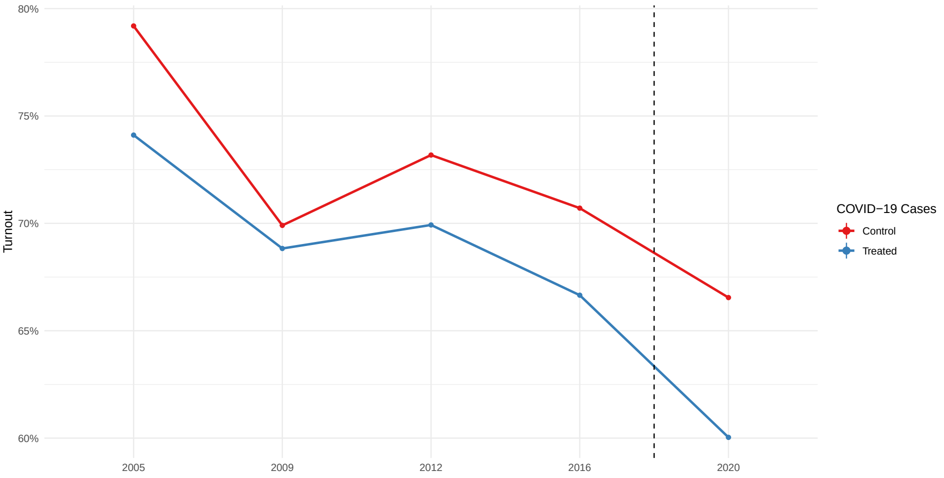

Figure S3: Treatment: (All) Municipalities with COVID-19 Cases

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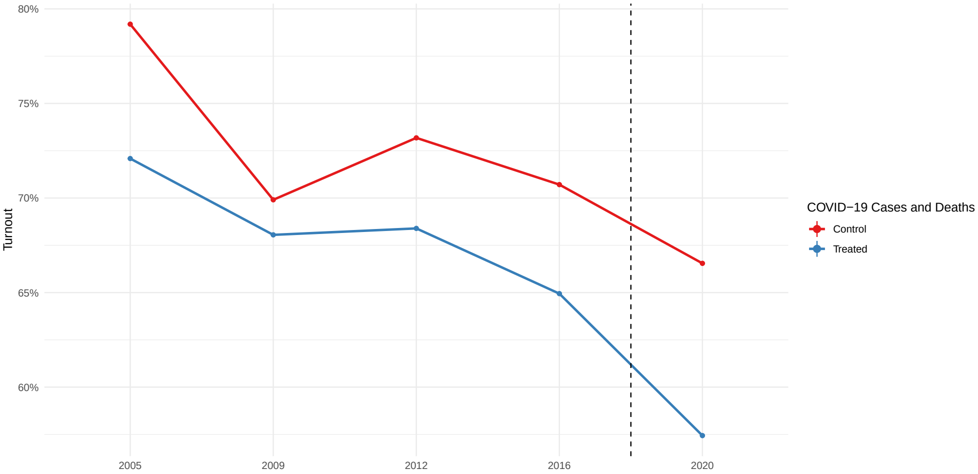

Figure S4: Treatment: (Only) Municipalities with COVID-19 Cases and Deaths

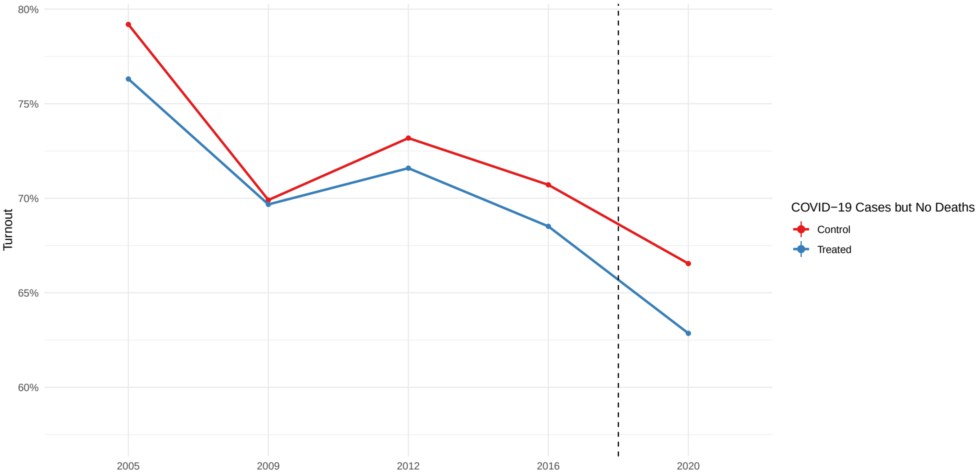

Figure S5: Treatment: (Only) Municipalities with COVID-19 Cases but No Deaths

	(1) Turnout
Trend Infected	-0.606***
	(0.0221)
Trend Control	-0.642***
	(0.0771)
Dummy Infected	1,287***
	(44.33)
Dummy Control	1,364***
	(154.6)
Observations	1,000
R-squared	0.990

Clustered standard errors in parentheses
**** p<0.01, ** p<0.05, * p<0.1*
The pre-treatment trends for the control and treatment group are not significantly different, F(1, 249) = 0.21, p = 0.6480

Table S4: Parallel Trends Test. Treatment: (All) Municipalities with COVID-19 Cases

	(1) Turnout
Trend COVID-19 Cases and Deaths	-0.597***
	(0.0233)
Trend Control	-0.642***
	(0.0773)
Dummy COVID-19 Cases and Deaths	1,268***
	(47.04)
Dummy Control	1,364***
	(155.0)
Observations	580
R-squared	0.992

Clustered standard errors in parentheses
**** p<0.01, ** p<0.05, * p<0.1*
The pre-treatment trends for the control and treatment group are not significantly different, F(1, 144) = 0.32, p = 0.5728

Table S5: Parallel Trends Test. Treatment: (Only) Municipalities with COVID-19 Cases and Deaths

	(1) Turnout
Trend COVID-19 Cases but No Deaths	-0.615***
	(0.0385)
Trend Control	-0.642***
	(0.0773)
Dummy COVID-19 Cases but No Deaths	1,309***
	(77.34)
Dummy Control	1,364***
	(155.1)
Observations	544
R-squared	0.989

Clustered standard errors in parentheses

**** p<0.01, ** p<0.05, * p<0.1*

The pre-treatment trends for the control and treatment group are not significantly different, F(1, 135) = 0.10, p = 0.7561

Table S6: Parallel Trends Test. Treatment: (Only) Municipalities with COVID-19 Cases but No Deaths

Difference-in-Difference Estimates

	(1) Turnout	(2) Turnout	(3) Turnout	(4) Turnout	(5) Turnout	(6) Turnout	(7) Turnout
COVID-19 Cases Dummy	-3.184***						
	(0.958)						
COVID-19 Infection Rate		-0.00157***			-0.00179***		-0.00147**
		(0.000395)			(0.000559)		(0.000623)
COVID-19 Cases and Deaths Dummy			-4.541***				
			(0.964)				
COVID-19 Mortality Rate				-0.00644***			
				(0.00222)			
COVID-19 Cases but No Deaths Dummy						-1.983*	
						(1.012)	
Population Density	0.000561	0.000475	0.000516	0.000433	0.000438	-0.00474	-0.00656
	(0.000889)	(0.000861)	(0.000847)	(0.000895)	(0.000835)	(0.0153)	(0.0158)
Unemployment Rate	-0.0942	-0.0613	-0.0221	0.0301	0.0342	-0.0661	-0.0570
	(0.121)	(0.131)	(0.110)	(0.136)	(0.118)	(0.134)	(0.143)
% Female	0.0289	0.0524	-0.0758	-0.0593	-0.0439	0.0352	0.0505
	(0.112)	(0.111)	(0.157)	(0.162)	(0.159)	(0.136)	(0.136)
% Over 65 years old	0.00506	0.00146	0.0667	-0.0297	0.0181	0.00554	-0.00346
	(0.108)	(0.104)	(0.165)	(0.162)	(0.160)	(0.142)	(0.140)
2009	-5.629***	-5.677***	-5.122***	-5.249***	-5.223***	-7.121***	-7.144***
	(0.390)	(0.398)	(0.405)	(0.426)	(0.407)	(0.573)	(0.576)
2012	-4.114***	-4.178***	-4.241***	-4.381***	-4.363***	-4.785***	-4.804***
	(0.474)	(0.493)	(0.454)	(0.496)	(0.457)	(0.617)	(0.627)
2016	-7.294***	-7.303***	-7.679***	-7.656***	-7.666***	-7.708***	-7.696***
	(0.488)	(0.500)	(0.478)	(0.513)	(0.484)	(0.648)	(0.654)
2020	-10.78***	-12.45***	-11.00***	-13.98***	-13.20***	-11.45***	-12.18***
	(1.082)	(0.654)	(1.121)	(0.653)	(0.735)	(1.176)	(0.864)
Constant	73.25***	72.19***	75.52***	76.52***	74.86***	75.73***	75.33***
	(7.141)	(7.050)	(10.45)	(10.61)	(10.41)	(8.967)	(8.931)
Time Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Municipality Fixed-Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,250	1,250	725	725	725	680	680
R-squared	0.736	0.736	0.801	0.786	0.794	0.653	0.653
Number of municipalities	250	250	145	145	145	136	136

*Clustered standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$*

In Columns 1 and 2 the treatment group is defined as municipalities with COVID-19 cases, whether they have deaths or not.

In Columns 3, 4 and 5 the treatment group is defined as municipalities with COVID-19 deaths.

In Columns 6 and 7 the treatment group is defined as municipalities with COVID-19 cases but no deaths.

Table S7: Difference in Difference Estimates. Dependent Variable: Voter Turnout

Robustness Checks

	(1) Turnout	(2) Turnout	(3) Turnout
COVID-19 Cases Dummy	-1.217		
	(0.757)		
COVID-19 Cases and Deaths Dummy		-0.682	
		(0.749)	
COVID-19 Cases but No Deaths Dummy			-0.812
			(0.847)
Population Density	0.000741	0.00112	4.72e-05
	(0.000893)	(0.00106)	(0.000959)
Unemployment Rate	-0.0579	-0.0642	-0.00553
	(0.148)	(0.156)	(0.142)
% Female	0.0273	-0.000585	0.0983
	(0.111)	(0.113)	(0.123)
% Over 65 years old	-0.0357	-0.0307	0.0304
	(0.104)	(0.102)	(0.114)
2009	-5.724***	-5.719***	-5.721***
	(0.413)	(0.422)	(0.417)
2012	-4.251***	-4.269***	-4.251***
	(0.528)	(0.544)	(0.522)
2016	-7.371***	-7.436***	-7.309***
	(0.524)	(0.534)	(0.534)
2020	-12.56***	-12.95***	-13.39***
	(0.933)	(0.858)	(0.948)
Constant	73.96***	74.94***	69.51***
	(7.029)	(7.118)	(7.775)
Time Fixed-Effects	Yes	Yes	Yes
Municipality Fixed-Effects	Yes	Yes	Yes
Observations	1,250	1,145	1,136
R-squared	0.731	0.681	0.698
Number of municipalities	250	250	250

*Clustered standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$*

In Column 1 the treatment group is defined as municipalities with COVID-19 cases, whether they have deaths or not.

In Column 2 the treatment group is defined as municipalities with COVID-19 deaths.

In Column 3 the treatment group is defined as municipalities with COVID-19 cases but no deaths.

Table S8: Placebo Regressions 1. Randomize control and Treated.

	(1) Turnout	(2) Turnout	(3) Turnout
COVID-19 Cases Dummy	-0.586		
	(0.806)		
COVID-19 Cases and Deaths Dummy		-1.589*	
		(0.910)	
COVID-19 Cases but No Deaths Dummy			-0.190
			(0.856)
Population Density	0.000434	0.000449	0.00753
	(0.00105)	(0.00104)	(0.00949)
Unemployment Rate	-0.261**	-0.106	-0.347*
	(0.130)	(0.156)	(0.193)
% Female	0.121	0.0492	0.204
	(0.128)	(0.175)	(0.157)
% Over 65 years old	0.142	0.294*	0.110
	(0.105)	(0.158)	(0.139)
2009	-5.228***	-4.816***	-6.634***
	(0.407)	(0.447)	(0.631)
2012	-2.912***	-2.518***	-3.725***
	(0.828)	(0.872)	(0.960)
2016	-6.186***	-6.071***	-6.623***
	(0.764)	(0.755)	(0.881)
Constant	66.74***	65.58***	65.41***
	(7.753)	(11.08)	(9.519)
Time Fixed-Effects	Yes	Yes	Yes
Municipality Fixed-Effects	Yes	Yes	Yes
Observations	1,000	580	544
R-squared	0.552	0.617	0.528
Number of municipalities	250	145	136

*Clustered standard errors in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$*

In Column 1 the treatment group is defined as municipalities with COVID-19 cases, whether they have deaths or not.

In Column 2 the treatment group is defined as municipalities with COVID-19 deaths.

In Column 3 the treatment group is defined as municipalities with COVID-19 cases but no deaths.

Table S9: Placebo Regressions 2. Treatment After 2012.