Trust and Accountability in Times of Polarization*

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Abstract

The COVID-19 pandemic took place against the backdrop of growing political polarization and distrust in political institutions in many countries. Did deficiencies in government performance further erode trust in public institutions? Did citizens' ideology interfere with the way they processed information on their government performance? To investigate both questions, we conducted a pre-registered online experiment in Spain in November 2020. Respondents in the treatment group were provided information on the number of contact tracers in their region, a key policy under the control of regional governments. We find that individuals greatly over-estimate the number of contact tracers in their region. When we provide the actual number of contact tracers, we find: a decline in trust in governments; a reduction on willingness to fund public institutions; and a decrease in COVID-19 vaccine acceptance. We also find that individuals endogenously change their attribution of responsibilities when receiving the treatment. In regions where the regional and central governments are ruled by different parties, sympathizers of the regional incumbent react to the negative news on performance by attributing greater responsibility for it to the central government. We call this the *blame shifting effect*. In those regions, the negative information does not translate into lower voting intentions for the regional incumbent government. These results suggest that the exercise of political accountability may be particularly difficult in settings with high political polarization and where areas of responsibility are not clearly delineated.

Keywords: trust, accountability, polarization, COVID-19

JEL codes: P00, D72, H1, H7

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1 Introduction

Several scholars have argued that individuals' trust in political institutions and willingness to cooperate with the state are cornerstone characteristics of well-functioning democracies (Levi (1989), Acemoglu et al. (2020)). Citizens' cooperation in terms of tax compliance, voter turnout, and abiding by regulations are understood as key components of effective governments. Trust and cooperation with the state is even more important during times of crises, as the recent COVID-19 pandemic has shown. Compliance with government directives such as social distancing and vaccinations was key in the fight against the virus during the initial stages of the pandemic (Besley and Dray (2022)).

Unfortunately, the pandemic took place at a time when trust in political institutions was at a low point. In the last decades, many countries have experienced declines in trust in political institutions and increases in support for populist or anti-establishment parties (Dustmann et al. (2017), Guriev and Papaioannou (2020)). Furthermore, recent studies have indicated that political trust has further eroded during the pandemic[1] and has led to unrest in some countries (The Economist (2021)). While the reasons behind growing discontent are diverse, some accounts attribute these trends to the citizens' disappointment with the performance of governments in the management of the pandemic and its economic consequences. In the early stages of the pandemic, the frequent change in directives—regarding the modes of virus transmission and the adequacy of masking, for instance—raised doubts of whether governments had the situation under control. As the pandemic evolved, there were increasing concerns that some governments had not exerted enough efforts in developing systems to control the pandemic.[2]

In this paper, we study two main questions. First, did deficiencies in government performance further erode trust in public institutions? In contexts with low underlying confidence in political institutions, negative news about government performance may have led to further distrust in government. The evaluation of governments may not have been circumscribed to changing opinions about the incumbent, but may have affected deeper attitudes towards the political system. Whether and how the policy response to the COVID-19 pandemic affected confidence in the political system has received only limited attention. Examining this question is important since low levels of trust and willingness to cooperate with the state also make the

[1] See, for instance, Davies et al. (2021) for the UK and Hamel et al. (2020) for the US. Note that some countries experienced short-lived increases in trust at the onset of the pandemic. This was likely driven by "rally around the flag" effects. See, for instance, Amat et al. (2020). However, studies that traced the evolution of trust for longer periods of time documented subsequent declines as the pandemic evolved (Davies et al. (2021), Becher et al. (2021)). See also Fisman et al. (2021) for how mounting discontent sometimes leads to policy responses.

[2] Ben Smith (2020). "How Zeynep Tufekci Keeps Getting the Big Things Right." *The New York Times*, August 23. Retrieved on May 24, 2022; Davies et al. (2021).

management of the pandemic more difficult, hence opening the posibility of a negative feedback loop between trust and government effectiveness.[3]

Second, did citizens' ideology interfere with the way they processed information on their government's performance? And, what implications did this have for the exercise of political accountability? Standard models of accountability predict that voters will lower their support for the incumbent when (s)he under performs. However, this result builds on the critical assumption that voters accurately attribute the responsibility to the relevant political actor (Besley (2007)). In contexts of high political polarization, individuals may change their beliefs about areas of responsibility once they confront negative information about the performance of an incumbent they are ideologically aligned to.

To address these questions, we conducted an online survey and pre-registered experiment during the early stages of the pandemic where we provide individuals information about the performance of their governments in developing systems to control the spread of the COVID-19 virus in their region.[4] We focus on the context of Spain, which was one of the countries with the highest COVID-19 mortality rates during the first months of the pandemic[5] and where discontent with the state had been mounting in the years preceding the pandemic.[6]

Obtaining measures of government performance in the management of the pandemic is difficult for two main reasons. First, the virus propagated in unexpected ways.[7] Hence, measures based on COVID-19 incidence may be a misleading indicator of government efforts in containing the virus. Second, individuals oftentimes had conflicting policy preferences regarding policies that reduced contagion but that also negatively affected economic activity, such as lockdowns. In this paper, we focus on one policy that had broad support among the Spanish population and that was effective in reducing COVID-19 transmission without large costs to economic activity: investments in contact tracing systems. Since the beginning of the pandemic, the World Health Organization recommended investing in trace and testing systems to control the pandemic (World Health Organization (2020)). These systems typically comprise a team of public sector employees that reach out to individuals infected with COVID-19, gather their recent contacts, and reach out to those contacts to recommend them to get tested. There

[3] Acemoglu et al. (2020) present a similar argument in the context of Pakistan. Deficiencies in public services reduce individuals' willingness to cooperate with the state, which makes it more difficult for the state to deliver public goods effectively. See also Acemoglu's intervention in "Trust in institutions" online talk.

[4] The experiment was pre-registered in the AEA registry (AEARCTR-0006889) and subject to the evaluation of the Ethics Committee at CEMFI (Application Reference #9; Approval date: October 2020).

[5] By June 2020 Spain was the third country (among large ones) in terms of COVID-19 deaths per capita.

[6] Martín Caparrós (2019) "Vox and the Rise of the Extreme Right in Spain", *New York Times*, November 13. Retrieved on August 18, 2022.

[7] Leonhardt David (2021). "The Covid Fable." *The New York Times*, October 8. Retrieved on May 24, 2022.

is evidence that these systems were highly effective at reducing virus transmission and deaths during the early stages of the pandemic (Fetzer and Graeber (2021)).[8]

Our treatment consists of providing information on the actual number of contact tracers in the respondent's region, together with information on the number of tracers that would be necessary to trace all cases. We estimated the latter using the International Contact Tracing Workforce Estimator, which is a tool developed by the US Health Department to assist governments throughout the world to predict the hiring needs for their contact tracing systems. We interpret the discrepancy between the *necessary* number of tracers and the actual number of tracers as a measure of low quality in the management of the pandemic. Given the effectiveness of contact tracing in reducing virus transmission and the limited cost when compared to the economic cost of tighter restrictions, we find this interpretation plausible.

We also use an important feature of the Spanish political system to investigate our second question of interest: how do individuals attribute responsibility when receiving news about the quality of the management of a key public service. In Spain, health policies are a responsibility of regional governments (a.k.a. autonomous communities). These responsibilities comprise the development of contact tracing systems among other COVID-19 related policies. However, during the pandemic, the central government also took policy decisions to manage the pandemic, such as deploying military personnel to support contact tracing services. Hence, it is possible that citizens perceived some uncertainty regarding areas of responsibility. We use this feature to investigate whether individuals' political leanings affect how they attribute responsibilities and the consequences of this for the exercise of political accountability.

Our online survey was fielded in November 2020 to a representative sample of the Spanish population. About 3,705 individuals completed the questionnaire. The main part of our survey consists of the realization of a survey experiment. We randomly assigned half of respondents to receive information on the number of contact tracers per capita in their region. We further provide them with the information on the "deficit" of tracers in their region (i.e., the difference between necessary number of tracers to trace all cases and the actual number of tracers in their region). This information is provided using a colored slider (using red, orange, green) indicating different degrees of performance. Hence, aside from the numerical values, the treatment conveyed a qualitative measure of quality of the system. We then proceed to collect our main outcomes of interest: assessment of competence of different levels of government, trust in

[8] Fetzer and Graeber (2021) exploit a glitch in the UK contact tracing system that left some cases untraced. They estimate that each case left untraced was associated with 18.6 additional infections and 0.24 deaths. At the time this happened, the level of COVID-19 in the UK was similar to the incidence in Spain in November 2020. Hence, it is likely that contact tracing systems were still effective for virus contagion in the Spain.

political institutions, attribution of responsibilities, and voting intentions.

First, we investigate whether individuals have accurate information about the number of contact tracers in their region. We find that 85% of individuals over-estimate the number of contact tracers in their region. Furthermore, about one third of respondents over-estimate the number of tracer by more than one standard deviation. This indicates that individuals have very imperfect information about the quality of a key policy in the management of the COVID-19 pandemic.

Second, we examine the effects of the provision of this information on the individuals' assessment of the level of competence of different levels of government. We understand these results as a conceptual *first stage*: if our treatment has effects on trust and other outcomes, it probably also affected respondents' beliefs about the level of competence of governments. We hypothesize that the treatment effects on competence assessment will be negative, since most individuals over-estimated the number of tracers prior to the treatment. Consistent with that expectation, we find that the treatment reduces the perceived competence of the regional and central government by around 1 and 0.6 points (on a 0-10 scale), respectively, which represent declines of 21% and 15% over the sample mean.

Next, we examine the effects of trust on political institutions. Our objective is to assess whether the negative news about the management of the pandemic affects individuals' fundamental attitudes, such as trust in political institutions. We measure political trust in different ways. First, we elicit confidence in different institutions on a 0 to 10 scale—as is common in the literature. Second, we measure trust using a modified dictator game in which respondents donate funds to different institutions or to an NGO. Our results indicate that the negative news about the management of the pandemic lowered trust in the regional and central government by 7%. Willingness to contribute to these governments also significantly declines.

We also examine the effects on vaccine hesitancy. By the time our survey was conducted in November 2020, no COVID-19 vaccine had been approved by the European Medicines Agency. Hence, we asked individuals whether they would take a COVID-19 vaccine if recommended by their regional or central government. Given the setting and the formulation of the question, we interpret this question as capturing willingness to follow the advice of their governments, which could be understood as an expression of trust in that institution. Our results show that individuals that receive negative information regarding the quality of the management of the pandemic reduce their willingness to accept the COVID-19 vaccine. These results support the idea that there may be a negative feedback loop between trust in institutions and government effectiveness: worse assessments of government performance can decimate trust and compliance with

vaccination, which in turn makes the management of the pandemic more difficult.

Next, we examine whether political leanings affects how individuals attribute responsibilities for the negative information on performance. The recent literature in political economy suggests that factors such as polarization and identity politics affect how individuals attribute responsibility of outcomes to political parties and officials (Bonomi et al. (2021), Boxell et al. (2020)). Spain is indeed one of the most polarized countries among advanced economies Gidron et al. (2020). To study this, we treat the attribution of responsibility as an outcome variable. In particular, we ask individuals to choose a number between -10 and 10 where -10 (10) means that all responsibility in the management of the pandemic lies on the central (regional) government. We find that individuals politically aligned to the regional incumbent shift responsibility to the central government upon receiving negative news about the number of contact tracers in their region. We call this result the *"blame shifting"* effect: in the presence of negative news about government performance, individuals tend to shift the blame towards the level of government that they are less aligned with. Interestingly, this effect is not present for individuals that are sympathizers of the party of the central government or in regions where both the center and the regional government are ruled by the same party. It is likely that, in those settings, there was less scope for shifting the blame to the central government.

This behavior has important implications for the exercise of political accountability. In an extreme scenario, blame shifting may lead to individuals not punishing incumbent politicians for a deficient performance.[9] We provide evidence consistent with some of these predictions: in regions where the two levels of government are ruled by different parties (and hence there is scope for blame shifting), the treatment does not reduce the electoral support for the regional incumbent. In contrast, in regions where the two governments are ruled by the same party, our treatment leads to a decline in the propensity to vote for the incumbent governments. These results suggest that accountability may be more difficult in times of polarization and in federal systems with divided governments.

We conduct a number of robustness checks and tests for alternative interpretations of our results. For instance, we show that the treatment did not affect trust in economists or life satisfaction of respondents. This mitigates the concern that the results may be affected by experimental demand effects or by inducing a pessimistic mental state in respondents. Finally, some of our results are hard to explain on the basis of experimental demand effects. For instance, the heterogenous effects on attribution of responsibility across political alignment, or the differential

[9]Implicit in this argument is the assumption that the voters politically aligned to the regional government—which are the ones shifting the blame to the central government—are the majority in their region. This is a natural assumption since the regional incumbent, by definition, earned the support of most voters in the previous election.

treatment effects on the relative-performance treatment.

Our paper relates to severals strands of the literature. First, we contribute to the literature that has examined the effects of information about government performance on accountability (Besley and Burgess (2002), Ferraz and Finan (2008), Kendall et al. (2015), Arias et al. (2022), Dunning et al. (2019)). We follow recent papers in this literature by adopting an experimental approach that generates exogenous variation in exposure to information. However, we differ from this literature regarding our main outcome of interest. While this literature has mainly focused on support for the incumbent political representative or government, our objective is to evaluate the effects on broader political attitudes, in particular, trust in political institutions. Whether deficient government performance erodes these deeper expressions of confidence in the political system has received limited attention in the literature, and can be informative to understand trends in support for populist or anti-establishment parties (Guriev and Papaioannou (2020)). There are also several studies that suggest that the COVID-19 pandemic may affected individuals' fundamental political values (Alsan et al. (2021), Becher et al. (2021)).

Our paper is most closely related to Acemoglu et al. (2020), which studies how positive information about the performance of the judicial system in Pakistan affects individuals trust and willingness to engage with the state vis a vis non-state actors. We examine a related question in a very different context: that of the COVID-19 pandemic. Our paper is also related to Becher et al. (2021), which conducts a number of survey experiments providing information on the evolution of the pandemic and experimentally varying whether government action was positively or negatively framed.[10] They find that positive information treatments increased approval of governments. Using an instrumental variable approach, they also find that increases in government approval positively impact support for democracy. We differ from this study by providing information on a more specific but high stakes policy that is closely connected to policy action and by directly examining the effects on political trust. We also differ from both Acemoglu et al. (2020) and Becher et al. (2021) by examining attribution of responsibility as an endogenous outcome and investigating its consequences on political accountability.[11]

Second, a number of papers have studied the determinants of compliance with government directives in the context of the COVID-19 pandemic. For instance, Allcott et al. (2020), Besley and Dray (2022) study the role of political identity and demographics, Durante et al. (2021),

[10] More specifically, individuals received one information treatment related to the economy and another one related to health. These treatments combine information on COVID-19 cases, compared outcomes to previous pandemics, previous economic crises, and other countries.

[11] See also Khan et al. (2021) for a study in which positive information about government performance did not lead to increases in trust in the State. Eichengreen et al. (2020) study how exposure to historical pandemics during the impressionable ages negatively affected trust in government.

Goldstein and Wiedemann (2021) examine the effects of generalized trust, and Bargain and Aminjonov (2020) and Algan et al. (2021) show that countries with higher trust in political institutions and scientists exhibit greater rates of compliance. We differ from these studies by examining the "other side of the coin": whether quality of government performance in the management of the pandemic could explain trust in institutions and compliance with government recommendations.

Third, we contribute to the literature that has studied endogenous attribution of responsibilities in democracies. A number of studies in political science have provided correlations between partisanship and attribution of responsibilities to governments.[12] Some studies have used an experimental design (Tilley and Hobolt (2011), Rico and Liñeira (2018), León and Orriols (2019)). In addition to the focus on trust in political institutions, we differ from these studies in other respects. First, we examine in the same framework attribution of responsibility and voting intentions. This allows us to study the implications of blame-shifting for political accountability, which have not been studied jointly in previous papers. Second, our information treatment provides accurate information about a specific policy rather than general statements about a positive or negative evolution or the economy or public goods. Third, we focus on the unique case of the COVID-19 pandemic. Given the growing trends in political polarization of the last decades (Boxell et al. (2020)), shedding further light on how partisan identities affect attribution of responsibility for poor government performance seems a first order question.[13]

Finally, the paper relates to the emerging literature that uses online surveys to shed light on how individuals form beliefs and attitudes towards policies and governments. Some examples are Kuziemko et al. (2015), Amat et al. (2020), Alsan et al. (2021), Haaland et al. (2021), Bursztyn et al. (2022).

To sum up, to the best of our knowledge, our study is the first to study whether the quality of the management of the COVID-19 pandemic —measured using a direct proxy of government performance—affected trust in political institutions. We are also the first to study how individuals' partisan identities mediated in this process by affecting how individuals attribute responsibility for the deficient government performance in the management of the COVID-19 pandemic.

[12] See, for instance, Bisgaard (2015) in the context of the Great Recession in the UK. Related studies have also studied accountability in decentralized systems. Using aggregate data on vote shares and economic performance, some studies show that federal systems exhibit a weaker association between poor economic outcomes and re-election rates. See, for instance, Powell Jr and Whitten (1993), Anderson (2006), León et al. (2018), and León (2018).

[13] Along this lines, there are interesting studies testing interventions to depolarize individuals' attitudes and examining its effects on political accountability (Enriquez et al. (2022)).

The rest of the paper proceeds as follows. Section 2 provides information on the context. Section 3 describes the data and experimental design. Section 4 presents the results and robustness checks. Section 5 concludes.

2 Background and Context

2.1 The COVID-19 Pandemic in Spain

The World Health Organization declared COVID-19 a world-wide pandemic on March 11, 2020 (Cucinotta and Vanelli (2020)). Spain was one of the countries most severely affected by COVID-19 during the initial stages of the pandemic. By June 2020 it was the third country (among large ones) in terms of COVID-19 deaths per capita.[14] The Spanish government declared the state of alarm in March 14th and it entailed one of the strictest lockdowns in Europe. For almost two months the population was not allowed to leave their homes except for buying necessities or getting to work. As a result of the very strict restrictions, cases and deaths plummeted and COVID-19 incidence was low during the summer of 2020. Restrictions were progressively lifted entering in a phase labeled as "new normality". The main narrative at that time was that the strict lockdown provided governments with enough time to develop strategies to contain the virus, which was pursued as an explicit policy objective. A key component of the containment strategies was the development of contact tracing systems. We provide more details about these systems in the next subsection.

As restrictions relaxed, cases and deaths started building up again. In October 25, 2020 the government re-instated a state of alarm and stricter measures were imposed. In particular, mobility restrictions, a curfew, and limits on the number attendants to social gatherings were reintroduced. This led to a generalized feeling of disappointment since most individuals were not expecting the reinstatement of restrictions. Furthermore, there were growing concerns that governments had not exerted enough effort in developing systems for virus containment.

We conducted our survey and experiment during this phase of the pandemic, in particular, in late November of 2020. At that time, no COVID-19 vaccine had been approved by the European Medicines Agency or the Food and Drug Administration in the USA. There were rumors about the upcoming authorization but there was still considerable uncertainty. The European Medicines Agency approved the first COVID-19 vaccines on December 21, 2020.[15] COVID-19

[14] Our World in Data, Confirmed COVID-19 deaths per million inhabitants. (Last retrieved on August 17, 2022.) See also Figure A1 for a timeline of COVID-19 deaths in international comparison.

[15] European Medicines Agency (2020) EMA recommends first COVID-19 vaccine for authorization in the EU, December 21. Retrieved on August 16, 2022.

vaccines started being administered in Spain on December 27, 2020.[16]

2.2 Contact Tracing

Contact tracing refers to systems to identify and contact all persons that have been in close proximity with an infected individual. In the case of the COVID-19 pandemic in Spain, as in most other countries, these tasks were conducted by teams of workers hired by government health departments. These workers interviewed positive COVID-19 cases by phone, gathered a list of the people that have been in close proximity to them, and reached out to these contacts to recommend them to get tested.[17]

From the beginning of the pandemic, the scientific community and the World Health Organization emphasized the importance of contact tracing in order to reduce virus transmission. In an article published in May 2020, the World Health Organization stated the following: *"when systematically applied, contact tracing will break the chains of transmission of an infectious disease and is thus an essential public health tool for controlling infectious disease outbreaks"* (World Health Organization (2020)). In an article published in the medical journal The Lancet, Kretzschmar et al. (2020) discuss contact tracing as a key component of control strategies during the de-escalation of physical distancing. In particularly before the availability of COVID-19 vaccines, when the disease was associated with high mortality rates, contact tracing was perceived, together with social distancing and masking policies, the key policies for the management of the pandemic.

There is also evidence that contact tracing had a sizeable causal effect in reducing contagion and mortality in settings similar to the one in Spain at the time of our online experiment. Fetzer and Graeber (2021) exploit a coding error in the software to manage contact tracing in the United Kingdom in the fall of 2020, which left untraced around 20% of all cases for more than two weeks. The authors find that one additional COVID-19 case referred late to contact tracing led to 18.6 additional infections and 0.24 deaths in a 6-week period. Taking these estimates at face value, they imply that contact tracing was one of the most cost-effective interventions to

[16] Isabel Valdés (2020) Araceli Hidalgo, 96, the first person in Spain to receive the COVID-19 vaccine, *El País*, December 27. Retrieved on August 16, 2022.

[17] Some countries also developed app-based applications that kept record of other phones—hence, individuals—that had been in close proximity during previous days. That was the case of Germany, for instance. Svea Windwehr and Jillian C. York (2020) Germany's Corona-Warn-App: Frequently Asked Questions, *Electronic Frontier Foundation* , June 17. (Retrieved on August 16, 2022.) In the case of Spain, the app was developed by the Ministry of Health, but it was never active due to problems with compliance with privacy regulations. Sergio Carrasco (2021) The Failures of Spain's Radar Covid App, *Liberties*, May 11. (Retrieved on August 16, 2022.)

save lives, even when compared to interventions in developing countries.[18,19]

Spending on systems of contact tracing had broad support among the Spanish population. It was perceived as enabling some co-existence with the virus without having to impose harsh restrictions that could dampen economic activity. In contrast, policy preferences regarding other measures (mobility or social gathering restrictions) were more heterogeneous: individuals that were more concerned about health issues were more likely to support those measures relative to those more concerned with economic activity.

The importance of contact tracing was frequently discussed in the Spanish media during this time. Oftentimes these informations were accompanied by concerns that governments had not invested enough resources in developing contact tracing systems.[20]

2.3 Government Responsibilities and Political Situation

Spain is a highly decentralized country. Health and education policies are a responsibility of the 17 regional governments (a.k.a. autonomous communities). In the early stages of the COVID-19 pandemic the central government imposed a number of country-wide restrictions, in particular, during the period of state of alarm. However, after June 2020, the regional governments had discretion over the most relevant policies to manage the pandemic, such as curfews, mobility restrictions, or setting restrictions on maximum number of attendants to social gatherings. Chiefly among these responsibilities was the development of contact tracing systems. Most regions developed these systems by mobilizing and hiring workers within primary health care centers to conduct contract tracing activities.

While contact tracing was a responsibility of regional governments, the central government also deployed military personnel to support contact tracing systems. Hence, it is plausible that there is some perceived ambiguity in what level of government is responsible for handling COVID-19 in general, and contact tracing in particular.

[18] Assuming that one contact tracer can trace 6 cases per day, the estimates imply that each contact tracer-day saves 1.44 lives. On average, each contact tracer-day is likely to cost about 100 euros to taxpayers. In contrast, most estimates of cost per life adverted by interventions in developing countries are in the order of thousands of dollars. For instance, see estimates by the NGO Give Well on the cost-effectiveness of vaccines or insecticide treated bed nets in developing countries. Give Well cost-effectiveness analysis. Version 4. Published on April 12, 2022. (Last retrieved on August 9, 2022).

[19] It is likely that at other stages of the pandemic, contact tracing was not as effective at reducing deaths. In particular, after vaccines were distributed or when COVID-19 incidence was as high as to surpass any feasible effort of contact tracing. However, at the time of our online survey in November 2020, vaccines had not yet been approved and COVID-19 incidence was moderate: 588 cases per 100,000 inhabitants in the previous two weeks in Spain and 478 in the United Kingdom in November 1st. (Source: Our World in Data).

[20] Sevillano, Elena G. and Pablo Linde (2020) "España tiene el doble de rastreadores que en julio, pero llegan tarde" (Spain has doubled the number of contact tracers since July, but they are late), *El País*, October 27. (Retrieved on July 17, 2022.)

At the time of our survey, a center-left coalition led by the Spanish Socialist Workers' Party (PSOE) was in control of the central government. This administration had been in power in Spain since 2018 and was reelected following the general election held in November 2019. The different regions are ruled by different party coalitions, as described in Appendix Table A1. Among the 17 autonomous communities and two autonomous cities, 11 were ruled by coalitions led by the Socialist Party, 6 were ruled by the main opposition party (Popular Party, PP), and two were ruled by other parties.

Regional governments held regular meetings with the central government to coordinate certain aspects of the management of the pandemic. However, in some of the regions led by the opposition party, there were frequent clashes with the central government and both levels of government argued that the other level was not doing enough in the fight against the virus.

3 Data Collection and Experimental Design

3.1 Data Collection

The data used in this project was collected on an online survey that we conducted in late November and early December 2020. Field work was conducted by YouGov, which is a well-established data analytics firm.[21] The company has access to a large panel of individuals that have been recruited through online adds and that regularly respond to surveys on a variety of topics. Respondents accumulate points for answering surveys and they can exchange points for small gifts.

The survey that we study in this paper is a follow-up of a first wave that we conducted in May 2020 for the purpose of a different paper (Martinez-Bravo and Sanz (2021)). The sampling framework of the first survey wave was designed to be representative of the Spanish adult population according to age, gender, region of residence, and education level. This was achieved through a quota-sampling system. This system first segments the population into mutually exclusive sub-groups of age, gender, region, and education level. Then it establishes target numbers respondents of each sub-group that would be necessary to achieve representativeness of the sample. These targets are referred as quotas. Individuals are contacted from the company's panel of respondents until the quotas are filled.

In this study we focus on respondents to the November 2020 survey. After dropping individuals that did not complete the questionnaire, did so unreasonably quickly or carelessly, or were members of strata containing only one observation, our final sample contains 3,705 individuals.

[21] https://es.yougov.com

Appendix A provides more details on the construction of the final sample.

The final sample is close to representative of the Spanish population as we show in Table 1. We have a slightly larger representation of tertiary educated respondents, but the other demographics are closely matched to population averages.[22] Table 2 displays the summary statistics of the main variables used in the analysis. We provide more details as these variables become relevant in the analysis.

Our survey proceeds as follows. First, we asked individuals some basic socio-economic questions, such as education level, occupation, and income. Then, to individuals assign to the treatment group, we elicit their priors and provide them the information on the number and deficit of contact tracers. After that, we proceed to collect our main outcomes of interest: respondents' assessments regarding the competence level of different governments; measures of trust in different institutions; willingness to accept a hypothetical COVID-19 vaccine; perceptions of degree of responsibility of different governments in the management of the pandemic; and voting intentions. Finally, individuals in the control group receive the treatment information *after* they have provided their answers to the outcomes of interest. This allows us to obtain the priors also for the control group. We reproduce the complete questionnaire in section F of the Online Appendix.

3.2 Treatment

The main treatment consists of the provision of information on the number of COVID-19 contact tracers in the respondent's region. We obtained the number of tracers in each region from an article published in October 2020 in *El País*, one of the leading Spanish newspapers.[23] This article reported the number of contact tracers active in October for each region. The journalists obtained this information by contacting the different regional health authorities. There were no publicly available statistics on the number of tracers across regions at that time.

In our treatment, we benchmark this information with the number of tracers that would be necessary to trace all cases. We obtained the estimates of the *necessary* number of tracers from the Contact Tracing Workforce Estimator, which is a tool developed provided by the Health Resources and Services Administration of the U.S. Department of Health and Human Services.[24] This tool was designed and made available at the beginning of the pandemic to help interna-

[22] More generally, while it is possible that respondents who participate in online panels are different in some dimensions from the broader population, the literature has found that they provide a good approximation to measure political preferences and behavior (Ansolabehere and Schaffner (2018)).

[23] Sevillano, Elena G. and Pablo Linde (2020) Op. cit.

[24] The international Contact Tracing Estimator is presented in an excel file downloaded from this website https://www.gwhwi.org/estimator-613404.html (Retrieved on August 20, 2021).

tional policy practitioners to determine the contact tracer workforce need based on the particular situations in each locality.[25]

Before providing this treatment, we provide some introductory information regarding the situation of the COVID-19 pandemic in Spain and the recommendation of the scientific community to develop contact tracing systems.[26] Then, we proceed to elicit individuals' prior regarding the number of contact tracers. In particular, individuals are asked to guess how many contact tracers per 100,000 inhabitants their region had in October 2020. They report this estimate by moving a slider over a horizontal colored bar. The bar is shaded in red, yellow, and green and a legend indicates that each portion corresponds to very few, insufficient, and adequate numbers of tracers, respectively. The legend also reflects that in the red portion "more than half of cases cannot be traced", in the yellow portion "all cases cannot be traced", and in the green portion "all cases can be traced". Note that, while we ask respondents to guess one number, the presence of the colored bar and corresponding legend likely helped respondents incorporate a qualitative assessments of performance in their numerical prior.[27]

Finally, we proceed to provide our main information treatment. The next screen—reproduced in Figure 1 for one particular region—uses the same horizontal colored bar used in the prior elicitation to indicate the actual number of contact tracers in the respondent's region. In addition to the number, the screen includes one of the following two messages in capital letters: *"very few contact tracers"* or *"insufficient contact tracers"*. Furthermore, we add a sentence below the slider providing the *deficit* of contact tracers, i.e. the difference between the number of workers necessary to trace all cases and the actual number of workers the region had.

Importantly, we customized the slider used in the prior elicitation and in the treatment to the situation of each region, and in particular to the number of necessary tracers. The first threshold (where the colored slider turns from green to yellow) corresponds to half of the necessary number of tracers. The second threshold approximates the necessary number of tracers and the range to 20% above that number. All numbers were rounded to close large integers. Appendix Table A2 provides the statistics used to construct the information treatment for each region and it indicates the type of message that appears in the main treatment screen.

A subset of individuals assigned to the treatment group obtain an additional treatment. In

[25] The key data inputs of this tool are the population size and the COVID-19 case count from the past 14 days. The estimates on the number of tracers are produced under certain assumptions that capture the production function of contact tracing. These assumptions reflect expert opinion on how contact tracing works in some settings such as Massachusetts and California. We did not modify the preset parameters of the estimator, albeit if anything, they would seem to underestimate the number of necessary tracers. See section A.3 of the Online Appendix for further details on the data on contact tracers.

[26] See Appendix F.2 for the text of the entire treatment section.

[27] See Figure A2 in the Online Appendix for an image of the prior elicitation screen shown to respondents.

particular, they are presented with additional screens showing a histogram with the ranking of regions according to the deficit of contact tracers. Below the histogram we add a sentence specifying the particular position. For instance, the message that residents of the region of Aragón received was *"your Autonomous Community is the 3rd worse in terms of contact tracers"*. These screens are presented in Appendix Figures A3 and A4. This additional treatment aims to test whether individuals engage in relative performance evaluation when evaluating their governments.

3.3 Experimental Design and Empirical Strategy

We assign individuals to treatment groups according to a stratified randomization procedure. First, individuals are classified in 798 groups or strata with similar baseline characteristics in terms of age, education, region and treatment status of a previous study.[28] Within each strata, we randomly assign half of individuals to receive the main treatment and half of the individuals to the control group. Among individuals assigned to the treatment group, half receive the additional treatment with information on the ranking of performance across regions.

The experimental design was pre-specified in a pre-analysis plan (PaP) that we registered with the AEA Randomized Control Trial Registry in October 2020.[29] We also obtained approval from the ethics committee at CEMFI for the survey and experimental design (Application Reference #9; Approval date: October 2020).

As we will show in Section 4.1, the vast majority of respondents received bad news on government performance. Hence, we focus on estimating average treatment effects, and explore heterogeneities by prior in some additional analyses.[30]

Given the randomized nature of the survey design, the empirical strategy is straightforward. Our baseline econometric model is

$$y_{ig} = \beta Treatment_{ig} + \delta_g + \varepsilon_{ig}, \tag{1}$$

where y_{ig} is the outcome of interest for individual i, $Treatment_{ig}$ is an indicator that takes value one for individuals receiving the main treatment, and δ_g are strata fixed effects. The

[28] In particular, we define strata by combination of individuals in the following categories: 19 regions (autonomous communities and autonomous cities), 3 age levels, 2 education levels, and 7 first-wave assignments to a treatment in a previous wave of the survey. The previous treatment was unrelated to contact tracing and it is unlikely to affect the results of the current study.

[29] Deviations from the pre-analysis plan were minor. They are explained in Appendix C. We reproduce the text of the PaP in Appendix Section G.

[30] This follows our pre-analysis plan, in which we first laid out specifications for average treatment effects and then considered the heterogeneous response by priors.

coefficient of interest, β, captures the effect of our main information treatment on contact tracers on outcomes of interest.

The key identifying assumption is that the treatment and the control groups are identical in their observable and unobservable characteristics on expectation. To verify this assumption, we examine whether a number of characteristics differ between the treatment and the control groups. The first two columns of Table 3 show the estimates for two of the variables used in the stratification: age group and education level. The next columns show the results for some additional variables that were not used in the stratification: gender, household income, household income change relative to 2019, the difference between the prior and the actual number of contact tracers, and a dummy indicating whether that difference was positive. The results reveal that covariates are balanced across treatment and control groups.[31]

We also investigated whether treatment assignment is associated with the probability of leaving the survey incomplete. This is typically referred to differential attrition and can lead to biased estimates. Appendix Table A5 shows the results of regressing a dummy taking value one for observations exiting the survey on the treatment indicators. The results indicate that treatments and controls were equally likely to exit the survey. This suggests that selective attrition is unlikely to affect the validity of our estimates.

4 Results

In this section we present the main results of the paper. We first examine whether individuals had accurate information about the quality of contact tracing in their region prior to receiving the treatment. Then we proceed to evaluate how our information treatments affected respondents' attitudes and beliefs.

4.1 Do Individuals Have Accurate Information on Contact Tracing?

To answer this question we first examine the distribution of individuals' priors regarding the number of contact tracers per 100,000 inhabitants in their region, which is represented by the red bars in Figure 2. As we can see, the priors range between 0 and 400 and have a mean of 71. Superposed in this graph we can also find the *actual* distribution of contact tracers in the respondents' regions depicted in black. The actual number of contact tracers per 100,000 inhabitants ranges between 7 and 42 with an average of 20.[32] The comparison of these two

[31] Appendix Table A3 shows analogous results including strata fixed effects. Appendix Table A4 shows balance tests for region of residence. All results suggest there is balance across treatment and control groups.

[32] See Appendix Table A2 for additional statistics of contact tracing across regions.

distributions illustrates that, on average, respondents over-estimate the number of contact tracers in their region. To further investigate this point, for each individual, we compute the difference between their prior and the actual number of contact tracers in their region. Figure 3 reports the distribution of these differences. For 85% of respondents the difference is positive, meaning that they over-estimate the actual number of contact tracers in their region. Furthermore, about one third of respondents over-estimate the number of contact tracers by more than one standard deviation in the distribution of differences between prior and actual contact tracers.[33]

These results indicate that most individuals have a very noisy perception of the number of contact tracers in their region, which was a highly relevant metric of the quality in the management of the pandemic at the time of the survey. Despite the availability of news reporting on the deficiencies of contact tracing systems at the time of our survey, most individuals still over-estimated the number of contact tracers. Finally, these findings also have implications for the interpretation of our results: to most respondents, our information treatment provided negative news about the quality of contact tracing in their region.

4.2 Average Treatment Effects on Perception of Competence and Trust

Next, we examine the effects of our main information treatment on outcomes. We estimate specification (1), which aggregates both treatments and estimates the effect of receiving any treatment on outcomes. We first examine the effects on respondents' evaluation of their governments performance, which we captured with the following question:

> *"On a scale of 0 to 10, where 0 is "very bad" and 10 is "very good", how would you evaluate the quality of management of government X in dealing with a crisis like the COVID-19 one?",*

where we replaced X by regional or central government in two subsequent questions. Since our treatment provides information on a key policy to manage the pandemic, we expect to find changes in the respondents' perception of the degree of competence of their governments in this matter.

Column 1 of Table 4 presents the results. Panel A reports the effects on the assessment of the regional governments and Panel B on the central government. The treatment has a large

[33] In Appendix Table A6 we show the correlates of both the priors and the accuracy of the priors with respondents' demographics. We find that neither the priors nor the accuracy are significantly correlated with gender, age, or education level. We also find that individuals that are sympathizers with their regional government tend to have a higher prior and be more negatively surprised. We return to this point in section 4.4.

and negative effect on the perceived competence of both administrations: competence of the regional government declines by 1.03 points on a 0 to 10 scale, which represents a 21% reduction over the control sample mean. Assessed competence of the central government also declines by 0.59 points, or 15% over the control sample mean.

As expected, the negative information treatment on the quality of contact tracing systems lowered the respondents' assessment of their governemnts' competence in dealing with the crisis. We interpret these results as a first check or as a conceptual *first stage* for our other results.

Next, we proceed to evaluate if the treatment also affected deeper expressions of confidence in the political system. We measure this in different ways. First, we follow the literature in measuring political trust by asking individuals how much confidence they have on different institutions on a scale from 0 to 10.[34] Column 2 of Table 4 reports the results on confidence in the regional and central governments. The treatment significantly reduces both expressions of trust in political institutions. Individuals in the treatment group report a lower level of confidence in the regional government of 0.3 points, or 7% of the control mean, than individuals in the control group. For confidence in the central government the reduction is of 0.2 points or 6.5% of the control mean.[35]

Next, we examine the effects on trust through a variation of a fund dictator game. In particular, we ask the following questions:

> *"Imagine that you win a prize of 1,000€ aimed at alleviating the effects of COVID-19 in Spain. You cannot keep the prize. You can only donate it to the following two institutions: COVID-19 fund from the Ministry of Health of the Central government and the Red Cross. What percentage of the prize would you donate to each of them?"*

In a subsequent question, we ask respondents to allocate donations across a similar fund from their regional government and the Red Cross. These questions are inspired in the well-known dictator game in experimental economics, in which players need to choose how much

[34] This is a similar wording to the one used in the World Value Survey and other surveys. See question 28 in Appendix F for the complete question.

[35] The magnitude of our estimates is similar to those of other papers in the literature. For instance, Kuziemko et al. (2015) find that providing information about inequality leads to a decrease in trust. They measure trust with a binary variable taking the value of 1 if the respondent answers "always" or "most of the time" as opposed to "only some of the time" and "never" when asked about how much of the time they can trust the federal government of the US to do what is right. They find a reduction in trust of 2.9 p.p. for a control mean of 0.158, which corresponds to a 18.3% effect. To define our dependent variable in a similar way to Kuziemko et al. (2015), we measure trust with a binary variable taking the value of 1 if the respondent expressed a level of trust in the regional government of 7 or higher (on a 0-10 scale). When defined this way, we find a a 2.2 p.p. effect for a control mean of 0.198, which corresponds to an 11.1% effect.

money to allocate to different purposes.[36] Answers to this game may capture individuals' willingness to support and contribute to government organizations relative to a well respected NGO. The outcome variables are two dummies indicating whether the share of the prize donated to the regional (or central) government, relative to the Red Cross, is equal to or above 50%.[37] The results, presented in column 3 of Table 4, indicate that the information treatment significantly lowers the respondents' propensity to contribute to government funds, both for the regional and central government. While the magnitudes are moderate, they consistently show that receiving negative information about government performance can crowd out individuals' willingness to financially support the state.

Finally, we consider individuals' willingness to accept a hypothetical COVID-19 vaccine. We ask the following question:

> *"Suppose that in the next few months a vaccine against COVID-19 is approved. Imagine that the government X recommends vaccination in your age group. How likely would you be to follow the government's recommendation and agree to be vaccinated?"*

where X corresponds to regional or central government in two subsequent questions. We define the outcome variables as indicators for answering that they would certainly accept to be vaccinated.[38] The effects on these outcomes are reported in column 4 of Table 4. We find that the information treatment significantly lowers the respondents' willingness to accept the COVID-19 vaccine by 4 percentage points. The estimates represent 8% and 11% declines over the control sample mean if recommended by the regional and central government, respectively. These results indicate that learning about a deficient management of the pandemic also erodes individuals' willingness to follow the advice of governments in key matters, such as vaccination against a serious disease. Note that given the hypothetical and uncertain nature of COVID-19 vaccines at the time of our study, it is likely that our measure of vaccine acceptance provides a measure of trust in government advice, rather than of compliance with regulations. See section

[36] Note, however, than in the standard dictator game players can keep the money for themselves, while in our formulation we require a donation between two entities. Also, due to logistical difficulties in setting up payment systems, the games are not incentivized. However, most respondents report answers broadly consistent with their other attitudes. The reported contribution to the central government and the measure of trust are significantly correlated.

[37] About 60% of respondents choose values 0, 50%, or 100%. Hence, a binary outcome variable captures better the underlying variation than a continuous one.

[38] The possible answers to the question were *I would certainly accept to be vaccinated; It is likely that I would accept to be vaccinated; I do not know whether or not I would accept to be vaccinated; It is likely that I would not accept to be vaccinated; I would certainly not accept to be vaccinated; I do not know*. The results are robust to specifying the dependent variable in a linearized way. See Appendix Table A7.

C in the Appendix for additional results on proxies of compliance.[39]

Overall, the results presented in Table 4 indicate that receiving negative information about government performance erodes trust and willingness to support the government. The magnitude of the effects is similar for confidence in both the regional and central government. This is natural since the areas of responsibility regarding the management of the pandemic were not clearly delineated among these two administrations. Indeed, most respondents evenly attribute responsibility among both administrations, a point to which we return later in the paper. Next, we explore whether these negative effects on confidence also spillover to other state institutions that have little or no responsibility over the management of the pandemic. The results are presented in Panel A of Appendix Table A8. We find no effect on trust in the Spanish Congress of Deputies and there is a negative—albeit insignificant—effect on trust in local governments, the judiciary system, and the European Union. The last column shows the result for an index aggregating the effects on these four institutions.[40] While the effect is negative, it is not statistically significant at conventional levels (the p-value is 0.23). Overall, these results provide suggestive evidence that, if anything, trust in political institutions may decline upon receiving negative news about government performance, even when not directly responsible.[41]

4.3 Heterogeneity Analysis

Next, we examine if our main results are heterogenous across individuals that had different priors about the number of contact tracers. Table 5 shows the effects on perceived confidence and trust in the regional government. Columns 1 and 4 present the baseline results for comparison. The other columns show specifications that include an indicator for individuals whose difference between the prior and the actual number of contact tracers was higher than the median, as well as its interaction with the treatment dummy. The coefficient on this interaction captures the *additional* effect for the individuals more negatively surprised by the information treatment.

[39] More specifically, in section C of the Appendix we provide results on willingness to wear masks and compliance with quarantines. Interestingly, the treatment did not affect these outcomes. One possible interpretation is that, at that stage of the pandemic, both masking and quarantines were familiar technologies for virus containment. In contrast, there was still considerable uncertainty about the effectiveness and safety of Covid-19 vaccines. Hence, the measure of hypothetical vaccine acceptance at that point may better interpreted as a measure of trust in government advice rather than of compliance. See section C in the Appendix for further discussion.

[40] We construct indices by standardizing each variable in the index, then taking the mean of the standardized variables.

[41] In panel B we show results for confidence in non-state entities, such as epidemiologists, economists, media, and pharmaceutical companies. There is no significant effect for any of these institutions or for the index. This result suggests that there is not a generalized negative effect on all responses of trust. This is supportive of the idea that respondents considered the questions carefully and evaluate different entities independently.

This additional effect is negative albeit imprecisely estimated.[42]

In columns 3 and 6 we examine whether the effects are stronger for the subsample of respondents that express a high degree of confidence in their priors. We measure strength of priors by asking respondents to assess on a scale from 0 (least confident) to 10 (most confident) how sure they are about their prior of contact tracers. The data indicate a moderate degree of confidence in peoples' prior: the average value of this variable is 4.6. It is likely that individuals with weak priors did not rely on them much on them when updating their measures of confidence or trust in institutions. To examine this, we restrict the samples in columns 3 and 6 to individuals are in the top quartile of the distribution of prior's confidence. The results indicate that, for this subsample, the effects are highly heterogenous by individuals' priors and only significantly negative for those individuals that were more negatively surprised.[43,44]

These findings suggest that individuals more negatively surprised have stronger negative effects on perceived competence and trust in the regional government. This is consistent with our pre-registered hypothesis and supports the notion that our results on trust are driven by processing the information on government performance.

4.4 Attribution of Responsibilities and Accountability

Next, we examine whether individuals' political leanings interfere with how they process the negative news about government performance. First, we study whether individuals endogenously change their attribution of responsibility across levels of government upon receiving negative news about the management of the pandemic. To measure this, we asked the following question:

> *"We would like to ask you about which institution you think bears greater responsibility in the management of the COVID-19 pandemic in your region (containment*

[42] Unfortunately, since most respondents underestimated the number of contract tracers, we do not have a meaningful sample of individuals that over-estimated contract tracers to evaluate the effect on this subpopulation.

[43] In Appendix Table A9 we show that the results are robust to using a linear variable (prior - actual number of contact tracers) instead of the above-the-median dummy. In Appendix Table A10 we show the results for assessed competence and trust in the central government. In this case, the heterogeneity by prior is less clear-cut. One possible explanation of these results is that individuals only used the difference between the prior and actual number of tracers to learn about the quality of performance of the regional government, but not of the central government. The effects on attitudes towards the central government may be more affected by other considerations, such as political sympathies. We return to this hypothesis in the next sub-section.

[44] In the Appendix, we examine the existence of heterogenous effects by whether respondents obtained the additional treatment, which provided a comparison of performance across regions. Appendix Table A11 shows the effects on competence assessment and trust in the regional government and Appendix Table A12 presents analogous results for the central government. The results indicate that, in general, receiving this additional treatment does not lead to differential effects. The only exception is for individuals living in low-performing regions. For those individuals, the additional treatment makes them further update downward their assessment of regional government performance and trust in the regional executive.

measures, healthcare, contact tracing, testing, etc.). On a scale of -10 to 10, where -10 is "all responsibility lies with the central government" and 10 "all responsibility lies with the regional government", what degree of responsibility would you attribute to each government?"

Figure 4 shows the empirical distribution of this variable for respondents in the control group. The mode of the distribution is 0, indicating that the most common answer corresponds to evenly assigning responsibility between the central and the regional government. However, there is also considerable variation in the degree to which individuals assign responsibilities across the different levels of government.

In Table 6 we explore the treatment effects on this variable. Column 1 shows that, on average, the treatment makes respondents assign a greater responsibility to the central (relative to the regional) government. While this result is interesting, we did not have a prior prediction regarding this effect. More interestingly, we examine how this effect differs depending on the political alignment of individuals. Our prior was that individuals politically aligned to the regional government would change their attribution of responsibility by assigning greater responsibility to the central government. We provide a test for this in column 2, where we interact the main treatment indicator with a dummy that takes value of 1 for respondents that voted for one of the parties that support the incumbent regional government.[45] The uninteracted coefficient indicates that individuals not aligned to the regional government do not change their attribution of responsibility. In contrast, the treatment makes aligned individuals attribute a greater responsibility of the management of the pandemic to the central government. We call this result the *blame-shifting effect*. One possible interpretation of this finding is that those individuals experienced discomfort when confronting evidence suggesting that their preferred government was performing poorly. This may have led them to find other actors to blame, in particular the central government. This type of behavior is consistent with theories of confirmation bias or cognitive dissonance,[46] as well as with recent evidence of *scapegoating* during crises (Bursztyn et al. (2022)).

Naturally, we expect this effect to be driven by regions where being aligned to the regional government means being misaligned to the central government. In column 3 we restrict the

[45] See Appendix Table A1 for the parties forming each regional government coalition. See also section A.4 in the Appendix for details on the construction of this variable. The results are similar if we use alternative definitions of alignment, for instance, by focusing on the party of the regional governor. These results are available upon request.

[46] Some examples of applications of confirmation bias in the economics literature are the following: Mullainathan and Shleifer (2005) argue that individuals have a preference for media outlets that confirm their world views; Mullainathan and Washington (2009) find that the act of voting for one party makes individuals express more lenient evaluation of the performance of that party.

sample to regions where the two levels of governments are supported by parties in opposite sides of the ideological spectrum, i.e., a center-right regional government and a left-wing central government. We label these regions as having "divided governments".[47] The results indicate that the blame-shifting effect is entirely driven by these regions. In regions with non-divided governments there are no effects, as shown in column 4. In those regions there is limited scope for shifting the blame since both levels of government are supported by the same parties.

The blame shifting effect can have important implications for the exercise of political accountability. If individuals endogenously change their attribution of responsibility upon receiving negative news about government performance, politicians may not suffer declines in their reelection probability after deficient performance.[48] We examine this by studying the effects on voting intentions. The dependent variables in Table 7 are indicators for willingness to reelect the incumbent government if elections were to be held again tomorrow. Note that the number of observations is smaller because some respondents did not to respond to these questions.[49,50] In columns 1 and 2 we restrict the sample to regions with divided governments. We find that in those regions—where the blame shifting effect is present—, the treatment does not affect the voting intention for either the regional government or the central government. In contrast, columns 3 and 4 show that in regions with non-divided governments—where there is no evidence of blame shifting—, we find large declines in the willingness to reelect both the regional and the central government incumbent. The regional and central governments experience declines of 7 p.p. and 9 p.p. in their reelection rate, respectively.

These results are consistent with the hypothesis that individuals' political sympathies of individuals affect how they process the information on government performance. In particular, by endogenously changing the attribution of responsibility, individuals may downplay the informativeness of signals that convey negative performance of their preferred political representatives. This could hinder political accountability, by limiting the extent to which negative information on performance translates into voting behavior. These patterns are likely to be more acute in settings with highly polarized political preferences and where areas of responsibility across levels of government are more ambiguous.

[47] Regions with divided governments are Andalucía, Castilla y León, Cataluña, Madrid, Galicia, and Murcia. See Appendix Table A1 for details.

[48] Implicit in this argument is the assumption that the voters politically aligned to the regional government—which are the ones shifting the blame to the central government—are the majority in their region. This is a natural assumption since the regional incumbent, by definition, earned the support of most voters in the previous election.

[49] In particular, the dependent variable takes value 1 if the respondent intends to vote for one of the parties that supports the governing coalition of the central or regional government, respectively. See column 3 of Appendix Table A1 for the list of supporting parties in each region.

[50] The other results in the paper are similar when we restrict to this smaller sample. The results are available upon request.

4.5 Robustness and Additional Results

Experimenter Demand Effects An important concern in experimental methodologies is the presence of social experimenter demand effects. This refers to the possibility that respondents provide the answers that they think the experimenter or research team wants them to report. This is particularly problematic when the treatment induces individuals to make a differential inference regarding experimenter's intentions. Previous studies have found little evidence of experimenter demand effects in online experiments. See de Quidt et al. (2018), for instance. However, we provide evidence that suggests that the effects may also be small in our setting. First, at the beginning of the questionnaire we state that the results of the study will be used by a team of researchers from the *Center for Monetary and Financial Studies* and other academic institutions. At the same time the survey is fielded by the data analytics company YouGov. It is unclear what type of inference respondents would make regarding the intentions of researchers. Perhaps, respondents are (correctly) inferring that researchers are economists. However, we do not find that respondents exposed to the treatment develop a different attitude towards economists. Column 2 of Appendix Table A8, panel B, shows that there is no effect on trust in economists.

Another concern is that the treatment may induce individuals to have a more negative mindset or a pessimistic view of the world. However, as indicated shown in Appendix Table A8, there is no evidence that the treatment induced a generalized decline in trust in different organizations. Only institutions more directly linked to our government performance measure seem affected. We also find that there are no effects on broader measures of well-being. In particular, we examine effects on responses to the following question: *(question 73) "On a scale of 0 to 10, where 0 indicates "great discomfort or depression" and 10 indicates "full happiness", how would you rate your emotional well-being?"*. There is no evidence that the treatments had effects on subjective levels of well-being. We present these results in Appendix Table A13.

A related concern is that our treatment may have led to a generalized level of disappointment with political institutions by increasing the salience of COVID-19 containment policies and the degree of government responsibility during the pandemic. However, a number of results are at odds with this being the driver of our results. First, as shown in Appendix Table A8 the treatment did not generate a generalized decline in trust across different types of political institutions. Second, we do find that the effects on performance assessment and trust in regional governments are heterogeneous by prior. Third, a generalized disappointment with government cannot explain the blame-shifting results, which are heterogeneous by political alignment. Overall, this evidence is consistent with respondents updating their beliefs about the quality of government performance and areas of responsibility and, hence, changing their

attitudes accordingly.

Robustness Main Results Appendix Tables A14, A15, A16, and A17, show robustness checks for our main results. Column (1) in each table shows our baseline results for comparison. Column (2) drops the strata fixed effects, hence, presenting results without controls. Column (3) drops the region of Galicia, for which we have less reliable information regarding the number of contact tracers as described in Appendix section A.3. In column (4) we control for a set of controls that we pre-specified in our PaP: indicators for past voting decisions, left-right ideological position on a 1-10 scale, gender, nationality, socio-economic situation (pre-pandemic and change with the pandemic), household income (pre-pandemic and change with the pandemic), and baseline values of the outcomes as measured in the first wave of the survey conducted in July 2020 to the same individuals. All results are robust to these robustness exercises. See section B in the Appendix for further details.

Robustness Blame-Shifting Results In Appendix Table A18, we implement the robustness checks described above to the blame-shifting results. The results are highly robust.

We also explore an alternative interpretation of the blame-shifting results. Note that as we discussed in Section 4.1 and show in Appendix Table A6, individuals aligned with the regional government had, on average, a higher prior on performance. This is natural, since they are sympathizers of the regional incumbent. However, their differences in prior could generate different treatment effect since aligned individuals may update their beliefs to a greater extent. In other words, aligned individuals were more negatively surprised about the information treatment. It is unclear how this would bias the estimates, since we do not have clear predictions how this should affect attribution of responsibility. Nevertheless, we explore whether our results are robust by controlling for the individuals' prior and its interaction with the treatment. Appendix Table A19 shows that the results are fully robust to this specification. The main coefficients of interest are unaffected, even when we also let the prior have a different impact by political alignment and treatment status. The results are also similar, albeit less precisely estimated, when restricting the sample to individuals highly confident about their prior.

In Appendix Table A20, we examine the heterogeneity of the blame-shifting effects by whether individuals obtain the additional treatment that showed the ranking across regions. While the evidence needs to be taken with caution due to the multiple slicing of the data, the results are thought-provoking: the blame-shifting effects are much smaller in the sample that obtains the ranking treatment. One possible interpretation of these results is that, when indi-

viduals see the performance of their region in comparison with other regions, they have less scope to shift the blame to the central government (perhaps because they see that even holding constant the central government, some regions are indeed performing better than theirs).

Robustness Accountability Results In Appendix Table A21 we examine alternative dependent variables for the accountability results. We consider sympathy for the parties supporting the regional government, and the average feeling for them. These measures may be less sensitive than voting intentions. The results are high robust to using these other dependent variables.

Additional Results In Appendix Tables A23 and A22 examine the heterogeneity of effects on accountability and trust by divided government and political alignment. An important caveat is that statistical power is significantly reduced when we examine these two dimensions of heterogeneity simultaneously. Consistent with the reduced power, most results do not show notable heterogeneities. The only exception, shown in Appendix Table A22, is that individuals aligned to the regional government in divided regions have a negative effect on trust in the central government, which is consistent with the blame shifting behavior. Note that we do not observe an analogous negative effect on electoral support for the central government in Appendix Table A23. This is likely to be the case because individuals aligned to the regional government have very low levels of voting intentions for the central government in any case. Hence, there is not much margin to further reduce electoral support for this group.

Finally, Appendix C considers some additional outcomes that we intended to study following our pre-analysis plan: compliance with rules and regulations, political polarization, and support for taxation and redistribution. Overall, we do not find significant effects for these outcomes.

5 Conclusion

How do individuals process information on the performance of their governments at times of crisis? The COVID-19 pandemic offers a unique setting to study this question. The rapidly changing reality of the pandemic represented a challenge to most governments throughout the world. Policymakers had to rapidly adjust their decision-making and decide over new policies and actions. In this study we focus on a policy that was perceived as a key to reduce the spread of the virus during the early months of the pandemic: the development of contact tracing systems. From the beginning of the pandemic, the World Health Organization and the scientific community recommended developing systems to trace the virus. Countries that were successful

at the containment of the virus had highly effective contact-tracing systems, such as South Korea or New Zealand.

In Spain, the strict lockdown that took place between early March and late April effectively reduced the spread of the virus. During the summer of 2020 there was the expectation that contact-tracing systems, together with other restrictions, could contain the spread of the virus. However, early in the fall of 2020 numerous news articles indicated that the number of contact tracers was insufficient to trace all COVID-19 cases effectively in almost all regions. While contact-tracing, as well as with most other health provision areas are a responsibility of the regional governments, the central government contributed to these systems with the occasional deployment of military personnel to work as contact-tracers.

In this study, we first show that individuals have very imperfect information on the number of contact tracers in their region. 85% of individuals over-estimate the quality of the contact tracing systems in their region. This is despite the fact that respondents were given a colored-range to guide the interpretation of the number of contact tracers. Second, we show that providing information on the actual number of contact tracers has significant effects on a number of different outcomes. We show that it decreases the assessed level of competence of both regional and central governments. It also has negative effects in trust in political institutions. Third, we find that the treatment also negatively affects the willingness of people to accept an eventual COVID-19 vaccine. This indicates that information that may erode trust in government institutions could also reduce compliance with government directives. Fourth, we find that individuals endogenously change their attribution of responsibility across levels of government. Individuals that are politically aligned to the regional government attribute greater responsibility of the management of the pandemic to the central government when presented negative news on contact tracing systems. Fifth, we find that accountability is reduced when the government is divided: when the regional and central government are opposing political coalitions, the treatment does not induce any punishment to either the central or the regional government. By contrast, when the same coalition is in office, then both the central and the regional governments lose support. These results suggest that political accountability may be difficult in highly polarized contexts and in federal systems, since individuals may shift the blame to levels of government they are not politically aligned with.

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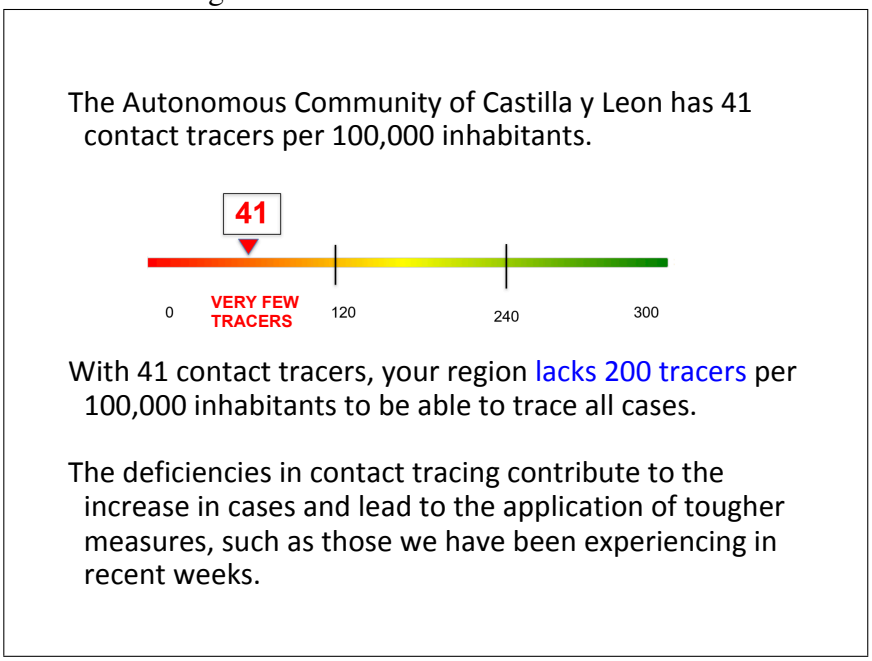
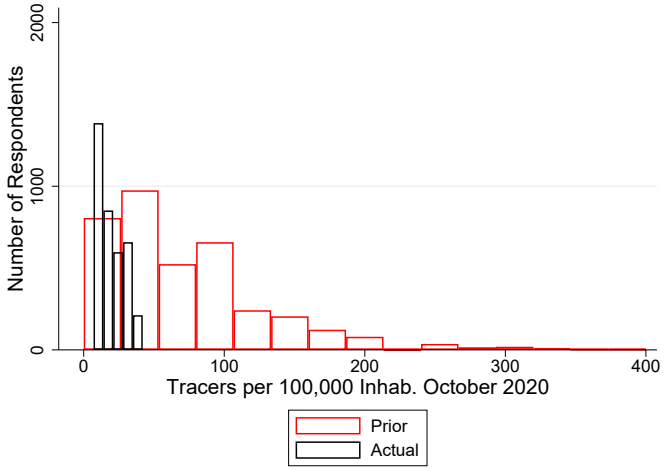
Figures

Figure 1: Main Screen of the Treatment



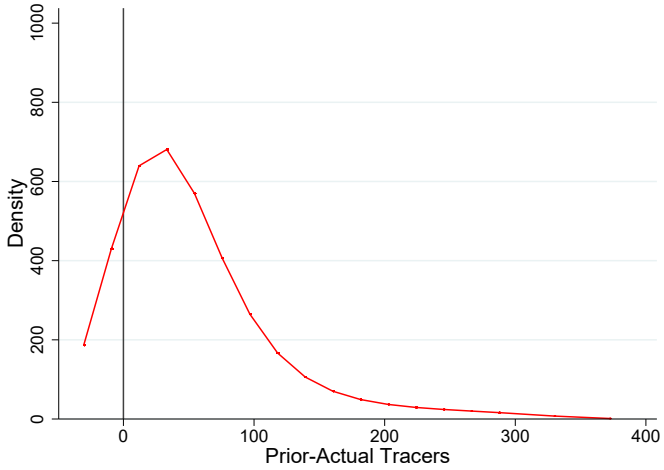
Notes: Main treatment screen shown to the treatment group prior to the collection of outcomes.

Figure 2: Distribution of Priors Regarding the Number of Contact Tracers



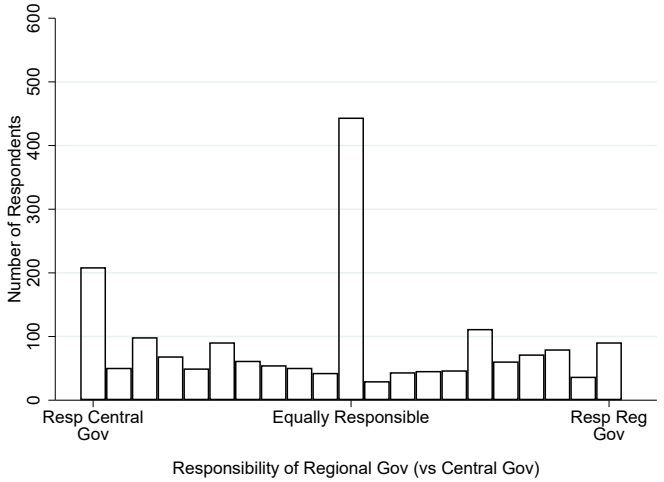
Notes: Histograms of individuals' priors regarding the number of contact tracers in their region (in red) and the actual number of contact tracers in the individuals' regions (in black). The y-axis shows the number of respondents in each bin.

Figure 3: Distribution of Prior-Actual Number of Contact Tracers



Notes: Density of the difference between the prior and the actual number of contact tracers. To estimate the densities, we use the Poisson regression method known as "Lindsey's method". First, we split the variable of interest into n equally sized bins. Second, we take the central value of the variable for each bin ($x_{(k)}$, where k denotes the corresponding bin) and compute up to its 4th power. Third, we count the number of observations in each bin ($\mu_{(k)}$). At this point, we assume that $\mu_{(k)}$ follows an iid Poisson distribution, which is described by an exponential polynomial with 4 degrees of freedom on $x_{(k)}$: $log(\mu_{(k)}) = \sum_{j=0}^{4} \beta_j x_{(k)}^j$. (We choose 4 degrees of freedom to balance the bias-variance trade-off: lower-order polynomials do a poor job in fitting the data, and higher-order polynomials do not fit it substantially better.) Then, we estimate $\{\hat{\beta}_j\}_{j=0}^{4}$ by maximum likelihood, and compute the predicted number of observations for each bin. Finally, we obtain the estimated densities by plotting the predicted number of observations ($\hat{\mu}_{(k)}$) against the central values of the variable ($x_{(k)}$) for each bin.

Figure 4: Distribution of Attribution of Responsibility (Control Group)



Notes: Histogram of control group responses to the question of which institution bears greater responsibility in the management of the COVID-19 pandemic (containment measures, healthcare, contact tracing, testing, etc.). The y-axis shows the number of respondents who choose each numeric answer ranging from -10 ("all responsibility lies with the central government") to 10 ("all responsibility lies with the regional government").

Tables

Table 1: Sample Characteristics

	Spanish Population (source: INE)	Our Sample
Female	0.52	0.50
Ages 18-24	0.08	0.06
Ages: 25-34	0.14	0.15
Ages: 35-44	0.19	0.22
Ages: 45-54	0.19	0.22
Ages: 55+	0.39	0.33
North-East Region	0.21	0.21
East Region	0.14	0.14
South Region	0.24	0.24
Center Region	0.22	0.25
North-West Region	0.09	0.09
North Region	0.09	0.07
Primary Education or Less	0.18	0.10
Secondary Education	0.29	0.19
Upper Secondary Education	0.14	0.18
Vocational Training	0.08	0.11
Tertiary Education	0.31	0.41
Observations	1	3705

Notes: This table displays representative statistics from the National Institute of Statistics (INE) in 2019 alongside summary statistics from our survey.

Table 2: Summary Statistics

	Mean	Min.	Max.	Std. Dev.	Observations
Demographic Characteristics					
Female	0.50	0.00	1.00	0.50	3705
Age Group	2.17	1.00	3.00	0.79	3705
Age	46.48	18.00	91.00	13.97	3705
Education Level	1.78	1.00	2.00	0.42	3705
Household Income	2274.34	0.00	8000.00	1632.10	3359
HH Income Change	-216.41	-1500.00	1000.00	470.53	3525
Variables for Heterogeneities					
Prior-Actual	51.31	-41.00	383.00	59.10	3705
Divided Gov	0.67	0.00	1.00	0.47	3705
Aligned Regional Gov	0.34	0.00	1.00	0.47	3705
Outcomes					
Competence Regional Gov	4.34	0.00	10.00	2.65	3705
Competence Central Gov	3.60	0.00	10.00	2.70	3705
Trust Regional Gov	3.78	0.00	10.00	2.75	3705
Trust Central Gov	3.03	0.00	10.00	2.87	3705
Contrib. Regional Gov$\geq$50%	0.63	0.00	1.00	0.48	3489
Contrib. Central Gov$\geq$50%	0.58	0.00	1.00	0.49	3451
Vaccine Regional Gov	0.33	0.00	1.00	0.47	3551
Vaccine Central Gov	0.34	0.00	1.00	0.47	3558
Resp Reg Gov vs Central Gov	-0.94	-10.00	10.00	6.02	3705
Vote Regional Gov	0.38	0.00	1.00	0.49	2980
Vote Central Gov	0.35	0.00	1.00	0.48	2982

Notes: This table displays summary statistics of the main variables used in the study. The unit of observation is a respondent. Some of the outcomes have a smaller number of observations as respondents were allowed not to respond to those questions.

Table 3: Balance of Characteristics across Treatment and Control Groups

	Age Group	Education Level	Female	Household Income	HH Income Change	Aligned Reg Gov	Ideology 1-10	Prior-Actual	Indicator (Prior-Actual) > p50
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treatment	0.00	0.01	0.03	-55.03	4.54	-0.02	0.12	-0.06	0.00
	(0.03)	(0.01)	(0.02)	(56.31)	(15.86)	(0.02)	(0.08)	(1.94)	(0.02)
Observations	3,705	3,705	3,705	3,359	3,525	3,705	3,699	3,705	3,705
R^2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dep. Var. Mean (Control)	2.17	1.77	0.49	2301.97	-218.69	0.35	4.57	51.34	0.47

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. No controls included. The dependent variables are age group codified as follows (1 for ages 18-35, 2 for ages 36-50, 3 for ages above 50); education level codified as follows (1 if no schooling, primary or secondary, 2 if above secondary education); monthly household income in 2019 in euros; change in monthly household income from 2019 to November 2020 in euros; aligned with the regional government (=1 if aligned, as described in Appendix A.4); pre-recorded political ideology (1=extreme left, 10=extreme right); difference between the actual number of contact tracers in their region of residence and their prior; a dummy indicating whether this difference is negative. *p<0.1; **p<0.05; ***p<0.01.

Table 4: Effects on Perceived Competence and Trust in Governments

	Dependent Variables			
	Competence of Government (scale 0-10)	Trust (scale 0-10)	Contribution Gov$\geq$50%	Vaccination Acceptance
	(1)	(2)	(3)	(4)
	Panel A. Regional Government			
Treatment	-1.05***	-0.31***	-0.04**	-0.03**
	(0.09)	(0.09)	(0.02)	(0.02)
Observations	3,705	3,705	3,470	3,537
R^2	0.19	0.17	0.15	0.16
Dep. Var. Mean (Control)	4.88	3.95	0.64	0.35
	Panel B. Central Government			
Treatment	-0.59***	-0.20**	-0.04**	-0.04**
	(0.09)	(0.10)	(0.02)	(0.02)
Observations	3,705	3,705	3,429	3,545
R^2	0.16	0.14	0.16	0.16
Dep. Var. Mean (Control)	3.91	3.13	0.60	0.36

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. All specifications include strata fixed effects. The dependent variables are perceived of competence of the regional (or central) government, on a 0-10 scale; trust in the regional (or central) government, on a 0-10 scale; a dummy indicating that the respondent would donate to the regional (or central) government half or more of a hypothetical prize; and a dummy indicating that the respondent would "very likely" get vaccinated if the vaccine were recommended by the regional (or central) government. *p<0.1; **p<0.05; ***p<0.01.

Table 5: Heterogeneous Effects on Perceived Competence and Trust (Regional Government)

	Dependent Variables:					
	Perceived Competence of Regional Gov			Trust in Regional Gov (scale 0-10)		
	Full Sample	Full Sample	Strong Prior	Full Sample	Full Sample	Strong Prior
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	-1.05***	-0.92***	-0.33	-0.31***	-0.27**	-0.09
	(0.09)	(0.12)	(0.27)	(0.09)	(0.12)	(0.27)
$\mathbb{1}\{\text{(Prior-Actual)} > \text{p50}\}$		1.32***	2.34***		1.22***	2.48***
		(0.13)	(0.34)		(0.14)	(0.35)
T*$\mathbb{1}\{\text{(Prior-Actual)} > \text{p50}\}$		-0.29*	-0.99**		-0.11	-0.92**
		(0.17)	(0.44)		(0.19)	(0.43)
Observations	3,705	3,705	815	3,705	3,705	815
R^2	0.19	0.23	0.37	0.17	0.20	0.39
Dep. Var. Mean (Control)	4.88	4.88	4.93	3.95	3.95	4.28

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. All specifications include strata fixed effects. The dependent variable are perceived of competence of the regional government, on a 0-10 scale, and trust in the regional government, on a 0-10 scale. Strong prior is defined as individuals in the top quartile of the distribution of confidence in their prior. They are the ones that selected 7 or above on a 0-10 scale. *p<0.1; **p<0.05; ***p<0.01.

Table 6: Blame-shifting: Perceived Responsibility in Managing the Pandemic

	Dependent Variable: Responsibility of Regional Gov (vs. Central Gov)			
	Sample:			
	All		Divided Gov	Non-divided Gov
	(1)	(2)	(3)	(4)
Treatment	-0.42**	-0.08	0.01	-0.18
	(0.20)	(0.25)	(0.29)	(0.46)
Aligned Reg Gov		-1.15***	-2.41***	1.89***
		(0.33)	(0.39)	(0.57)
T*Aligned Reg Gov		-1.08**	-1.45***	-0.06
		(0.45)	(0.53)	(0.81)
Observations	3,705	3,705	2,498	1,207
R^2	0.14	0.15	0.15	0.24
Dep. Var. Mean (Control)	-0.75	-0.75	-0.47	-1.33

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. All specifications include strata fixed effects. The dependent variable is which institution the responder thinks has a greater responsibility in the management of the COVID-19 pandemic in their region of residence on a -10 to 10 scale, where -10 means all responsibility is of the central government and 10 means that all responsibility is of regional governments. Aligned Reg Gov = 1 if the respondent voted for one of the parties supporting the regional government in the past general election—see Section A and Table A1 for details. Divided Gov = 1 for respondents living in a region where there is no overlap between the parties supporting the regional and central governments—see Table A1 for details. *p<0.1; **p<0.05; ***p<0.01.

Table 7: Accountability

	Dep Var: Indicator for Intention to Vote for Incumbent Government			
	Divided Gov		Non-divided Gov	
	Vote Regional Gov	Vote Central Gov	Vote Regional Gov	Vote Central Gov
	(1)	(2)	(3)	(4)
Treatment	-0.02	0.01	-0.07**	-0.09**
	(0.02)	(0.02)	(0.03)	(0.04)
Observations	1,910	1,910	893	893
R^2	0.14	0.12	0.29	0.26
Dep. Var. Mean (Control)	0.39	0.32	0.44	0.45

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. All specifications include strata fixed effects. The dependent variable Vote Regional Gov equals 1 if the respondent intends to vote for any of the parties in the regional government in the next regional election. The dependent variable Vote Central Gov equals 1 if the respondent intends to vote for any of the parties in the central government in the next general election. Divided Gov = 1 for respondents living in a region where there is no overlap between the parties in office at the regional government and the parties in office at the central government—see Table A1 for details. The sample is reduced due to some respondents preferring not to declare their voting intention. *p<0.1; **p<0.05; ***p<0.01.

Online Appendices. *For Online Publication Only*

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A Data Appendix

A.1 Survey and Study Sample

The data used in this project was collected on an online survey that we conducted in late November and early December of 2020. 16% of respondents submitted the questionnaire in November and 84% in December. Field work was conducted by YouGov, which is a well-established data analytics firm.[1] The company has access to a large panel of individuals that have been recruited through online adds and that regularly respond to surveys on a variety of topics. Respondents accumulate points for answering surveys and they can exchange points for small gifts.

Most of the respondents in our study sample were re-contacted from a first wave survey that we conducted in May 2020. The data from both surveys was studied in Martinez-Bravo and Sanz (2021) to investigate the evolution of inequality during the pandemic. The first survey incorporated a different experiment, which provided information treatments about the severity of the economic crisis and the introduction of a guaranteed minimum income scheme to a randomly selected treatment group. Note that we stratify by treatment assignment in the first wave. Hence, it is unlikely that the first-round treatments interfere in the results of our current study. The sampling framework of the first wave was designed to be representative of the Spanish adult population according to age, gender, Nielsen region of residence, and education level.[2] Representativeness was achieved through a quota-sampling system. The population is first segmented into mutually exclusive sub-groups of age, gender, region, and education level. Then individuals are contacted from Yougov's panel of respondents until all quotas are filled. The first wave sampled 5,051 individuals that were all recontacted for the second wave. 3,456 (68%) individuals responded the second wave. To increase sample size, 1,706 individuals that had not participated in the first wave were surveyed in the second wave. Hence, we start our analysis with 5,162 individuals.

We impose some sample restrictions to ensure the quality of the responses. First, we drop 168 observations because they completed the questionnaire in less than 8 minutes, while most other respondents needed more than 20 minutes to complete the survey. We also drop 103 observations that did not complete the questionnaire. Among this, 50 were in the treated group and 53 in the control group—also see Table A5 for a test of differential attrition.

Next, we drop 139 observations that did not pass our quality checks, as stated in our pre-analysis plan. Specifically, we look for inconsistent answers across four sets of questions: the party the respondent feels the closest to, the intention to vote in the following regional and general elections, and the rating given to each party. We consider a response as inconsistent if the political preferences suggested by two different answers are severely contradictory, e.g., stating that the preferred party is a far-right party VOX and giving the highest grade to left-wing party Podemos. We drop observations with two or more inconsistencies.

We then drop 920 observations with missing information on past vote and ideological placement on a 0-10 scale, which are needed to construct the alignment variable. The reason this information is missing is that these were observations from a panel external to Yougov, and hence Yougov did not have any pre-recorded variable for these individuals. Finally, we drop 127 observations belonging to strata containing only one observation. All of our specifications contain strata fixed effects, so these observations do not have identifying variation to our estimation of the treatment effects.

[1] https://es.yougov.com

[2] Nielsen regions are six geographical areas of the country that are frequently used by data analytics firms.

The resulting sample consists of 3,705 observations. Appendix B shows that the main results are robust to changes in the sample selection.

A.2 Construction of Income Variables

We define two income variables: household income in 2019, and change in household income from the start of the pandemic to the time of the survey. To construct these variables, we follow closely the approach by Martinez-Bravo and Sanz (2021), who study income inequality in Spain using the same survey.

We asked individuals for their household income before the pandemic. In particular, we asked for their net (after-tax) *total* income, including wages, earnings from professional activities, pensions, and government transfers during the average month of 2019 (question 10). Individuals were asked to select an interval that includes their level of income. We take the mid-point of each interval as a proxy of their income level. We defined narrow intervals in order to have high precision in their self-reported income. The intervals offered are the following (all expressed in € per month): 0, 0-300, 300-600, 601-900, 901-1200, 1201-1500, 1501-1800, 1801-2100, 2101-2300, 2401-3000, 3001-4500, 4501-6000, more than 6,000. We consider 8,000€ as the proxy of income for the highest interval. Few individuals select the largest income bracket. Hence, the precise income estimate for the top income bracket will not have a large effect on our results. In order to make comparisons across households, we define equivalent income for a four-member household formed of two adults and two children. We follow the convention used in Eurostat and other statistical agencies and assign children a weight of 0.5 when assessing their consumption demands. Hence, we divide the reported household income by the number of adult-equivalent individuals in the household, and then multiply by three, which corresponds to a household of two adults and two children. On average, the monthly disposable income of a household with four members in 2019 was 2,274€ per month.

Individuals were also asked about how their household and individual incomes had changed at the time of responding with respect to their income at the start of the pandemic. We also collected this information discretely by asking individuals to choose between different income-change intervals. The average change in household income is -216€ per month.

A.3 Contact Tracing Data

Extensive scientific evidence exists on the importance of contact tracing for the control of COVID-19. For instance, in a recent article published in the medical journal The Lancet, Kretzschmar et al. (2020), the authors discuss contact tracing as a key component of control strategies during the de-escalation of physical distancing. Therefore, assessing whether regions have the necessary number of contact tracers is central to successfully controlling the epidemic.

A key component of our experiment is to provide individuals with the number of contact tracers in their autonomous region and to compare them with the ideal number of contact tracers they should have had to trace all cases.

The information on the number of contact tracers in each region was obtained an article published on October 27, 2020 in *El País*, one of the main newspapers in Spain.[3] The journalists obtained the number of contact tracers by contacting the health authorities of each regional

[3] Sevillano, Elena G. and Pablo Linde (2020) "España tiene el doble de rastreadores que en julio, pero llegan tarde" *El País*, October 27. Retrieved on July 17, 2022.

government. We present the contact tracers to respondents divided by 100,000 inhabitants in the region. The population figures are extracted from the National Institute of Statistics (INE) for the year 2019.

The article from *El País* did not provide the number of tracers for the region of Galicia. To fill in this gap, we used the information from another article published in the online newspaper *elDiario.es*.[4] However, the count from this alternative source includes personnel like preventive care physicians who are not exclusively dedicated to contact tracing tasks. Given this information, we assumed that the equivalent full time number of contact tracers is 10% of the reported workforce. Note that our results are fully robust to excluding the region of Galicia or to use different assumptions regarding the number of equivalent tracers.

The estimation of the necessary number of contact tracers needed to trace all cases was obtained using the Contact Tracing Workforce Estimator (CT Estimator) tool, provided by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS).[5] This tool was design to help policy international practitioners to determine the workforce need of contact tracers based on the particular situations in each locality. The key data input used by this tool is the population count and the COVID-19 case count from the past 14 days. The tool provides an estimate of the number of contact tracers needed to be able to trace all cases within a week of each new COVID-19 case. The tool adopts a number of assumptions regarding the efficiency of contact tracing systems and the work-load that each positive case generates. Some of the main assumptions are the following:

- The average number of close contacts of each new COVID-19 case is 10.
- All contacts need to be traced.
- In a 8-hour shift a contact tracer can conduct 6 interviews of new cases, 12 initial contact notifications, and 32 follow-ups of contacts.
- Each contact of a positive case is followed-up 7 times during one week.
- There is one supervisor per 10 contact tracers.

The preset parameters of the estimators reflect expert opinion and capture how they work in certain settings, such Massachusetts and California. The parameter assumptions are optimistic in terms of the efficiency of contact tracers. For instance, the European Centers for Disease Control (ECDC) considers that initial case interviews are twice as long as those reflected the by preset parameters of this estimator. The presets are also optimistic on the expected workload that follows outbreaks of COVID-19 cases can generate. Once social-distancing restrictions are lifted, many contact tracing systems had to handle larger average cases of contacts. In other words, the resulting estimate in the number of necessary contact tracers may underestimate the ideal number of contact tracers to effectively trace all cases in the depth that they require.

[4]Pampín, María (2020) "De 20 a 6.000 rastreadores en mes y medio: la Xunta engorda sus cifras con personal médico que no hace seguimiento de contactos", (From 20 to 6,000 tracers in a month and a half: the Xunta fattens their statistics with medical personnel who do not work on contact tracing) *elDiario.es*, August 13, 2020 (Retrieved on August 22, 2022).

[5]The international Contact Tracing Estimator is presented in an excel file downloaded from this website https://www.gwhwi.org/estimator-613404.html.

A.4 Construction of the Alignment Variable

We first consider information pre-recorded by Yougov on the (self-reported) vote at the previous Congress election (November 2019). This was asked by Yougov shortly after that election. We code a respondent as aligned with the regional government if the respondent voted for one of the parties that voted "yes" to the investiture of the regional government. Table A1 shows the list of parties. Alternative definitions of alignment based on which parties are part of the executive, or which party has the regional presidency, yield very similar results.

Second, for 555 individuals with missing past vote information, we use an alternative pre-recorded variable, ideological placement on a 1-10 scale, where 1 is extreme left and 10 is extreme right. We code a respondent as aligned with the regional government if the regional government is right-wing and the respondent positions himself at a 5 or above, or if the regional government is left-wing and the respondent positions himself below 5.

B Robustness Checks

Appendix Tables A14, A15, A16, A17, and A18 show robustness checks for our main outcomes of interest. Column (1) in each table shows our baseline results for comparison. Column (2) drops the strata fixed effects, hence, presenting results without controls. Column (3) drops the region of Galicia, for which we have less reliable information regarding the number of contact tracers as described in Appendix section A.3. In column (4) we control for a set of controls that we pre-specified in our PaP: indicators for past voting decisions, left-right ideological position on a 1-10 scale, gender, nationality, socio-economic situation (pre-pandemic and change with the pandemic), household income (pre-pandemic and change with the pandemic), and baseline values of the outcomes as measured in the first wave of the survey conducted in July 2020 to the same individuals.[6,7] All results are robust to this set of robustness exercises.

C Deviations from the Pre-Analysis Plan

Next, we present here the effects of our treatment on three additional sets of outcomes that, as stated in our PaP, we are also interested in studying.

Compliance In our survey we include a number of outcomes to measure willingness to comply with governments' directives. In the main text, we focus on willingness to accept a Covid-19

[6] In particular, for past voting decisions, we include dummies for voting for the main parties (PSOE, PP, VOX, Unidas Podemos, Ciudadanos, and other), and another dummy for not reporting past vote. For nationality and gender, we include dummies for whether the respondent is female and a Spanish citizen, respectively. For socio-economic situation, we include dummies for private sector worker, public sector worker, self-employed, retired, non-employed who worked previously, non-employed who never worked, student, domestic work, and others, all for both the current status and the pre-pandemic status. For income, we include current household income per capita and change relative to before the pandemic, as described in Appendix A.2. Baseline outcomes are coded from the responses to the same questions in a previous survey that we ran in July 2020 to the same individuals. We asked about trust in regional and central governments but did not ask about perceived competence or perceived responsibility, so we only include baseline outcomes for Tables A16 and A17.

[7] The sample size is smaller for this column because some controls are missing as we allow not to respond some questions (e.g., income) or do not have the pre-determined values from the first wave for some individuals (e.g., pre-pandemic status, or baseline outcomes).

vaccine if recommended by the different governments. This is likely to capture to a great respondents' confidence in governments because at that point no vaccine had been approved. The question asked about the hypothetical acceptance of a new product and technology.

In the survey we also asked individuals about their willingness to comply with better understood measures to prevent the spread of COVID-19: masking and quarantines. Regarding masking, question 46 stated: *"The government of your autonomous community recommends people to wear masks, also outdoors, even if a safety distance of two meters can be maintained. Please indicate which of the following statements best reflects your opinion about this measure."* Note that this was the regulation at the time of the survey. As an outcome, we consider an indicator for the most favorable response, which is *"It is a good measure. It is important to wear a mask to protect everyone's health"*.

Regarding quarantines, question 47 stated the following: *"The government of your autonomous community requires people who have been in close contact with a person infected with COVID-19 to be confined to home for at least 10 days. These are called "quarantines". If you were in such a situation, would you comply with this indication?"* As an outcome, we consider a dummy indicating the most favorable answer, which is *"Yes, I would stay at home for 10 days or more"*. Question 48 asked about the perceived degree of compliance with quarantines and other restrictions by people similar to them, on a 0-10 scale, where 0 is "rarely met" and 10 is "strictly met".

Table A24 shows the results of compliance with masking and quarantines. The results are small and insignificant. This contrast with our results on willingness to accept the COVID-19 vaccine presented in the main paper, which are negative and significant.

One possible reason for these different results is that vaccines were a new technology for which government advice may have been more relevant. Also, note that, for masking and quarantines, we only asked about willingness to comply as requested by the *regional* government (a.k.a. autonomous communities). We did this to avoid deception, since these requirement were decided by regional governments. Instead, for vaccines we elicited willingness to comply if the recommendation came from the regional and if it came from the central government. This description of the question may have emphasized the role of the different governments as endorsing institutions. Hence, the vaccine questions may have been more direct measures of willingness to follow governments' recommendations and confidence in governments. Initially, we thought of compliance with masking, quarantines, and vaccination mandates as proxies for compliance. However, given the hypothetical and uncertain nature of COVID-19 vaccines at the time of our study, we believe it is a better proxy of trust in government advice rather than of compliance with regulations. For this reason, we incorporate the vaccine outcome in the main text as an additional proxy for trust.

Polarization Following our PaP, we consider four types of polarization: ideological polarization, affective polarization, partisanship, and vote for parties in the extremes of the ideological spectrum.

We measure the ideological polarization as the standard deviation of the responses to a question on individuals' position on a 0 (extreme left)-10 (extreme right) scale. We measure affective polarization through the "feeling" question. For each individual, we compute the standard deviation of responses across all parties. For example, if a respondent grades all parties the same, then the standard deviation will be zero. We measure partisanship through self-reported persistence in voting preferences. We focus on the share of respondents that answer that they always vote for the same party, or that they always or generally vote for the same party.

We measure support for parties on the ideological extremes through the share of respondents that report an intention to vote for UP, VOX, or CUP.

Table A25 shows the results. While some specifications suggest that the treatment may reduce polarization, overall the effects are small and not significant.

Support for Taxation and Redistribution We consider three types of outcomes regarding support for taxation and redistribution: ideological stance regarding taxes, support for higher spending or higher taxes, and preferences regarding the progressivity of the tax system.[8]

We measure the ideological stance regarding taxes based on a question asking individuals to indicate which of a series of statements best reflects their opinion about taxes (question 42). We define a categorical variable taking the value of 3 if the respondent answers "taxes are a means to better redistribute wealth in our society"; 2 if "taxes are necessary for the state to be able to provide public services"; 1 if "what we pay in taxes does not correspond to the public services we receive, due to corruption"; 0 if "the money that the state collects in taxes would be better off in the pockets of citizens". When multiple options are chosen, we calculate the mean.

We measure support for higher spending and taxes based on a question asking respondents where, on a scale from 0 to 10, they would place themselves, where 0 means decreasing spending and taxes and 10 means increasing spending and taxes (question 43).

We measure preferences towards progressive taxation based on a question asking respondents, if taxes were to be raised, which group do you think should bear the greatest increase in tax payments (question 44). We construct an indicator for whether a hypothetical increase in taxes should be mainly charged to very high-income individuals (higher than 120,000 €/year).

Table A26 shows the results. We do not see any effect of the treatment on any of the outcomes.

Heterogeneity by Over-estimation of Number of Contact Tracers. In our PaP we specified that we were going to examine whether the effects were heterogenous depending on whether individuals over- or under- estimated the number of contact tracers. However, the data showed that only 15% of respondents over-estimated the number of contact tracers, which hinders the examination of heterogenous results. Instead, we explore the heterogeneity of results by being above/below the median difference between Prior and Actual contact tracers. The results are presented in Appendix Tables A9 and A10. In the case of competence and trust in the regional government, the effects are indeed heterogeneous: individuals more negatively surprised develop a worse attitude towards the regional government.

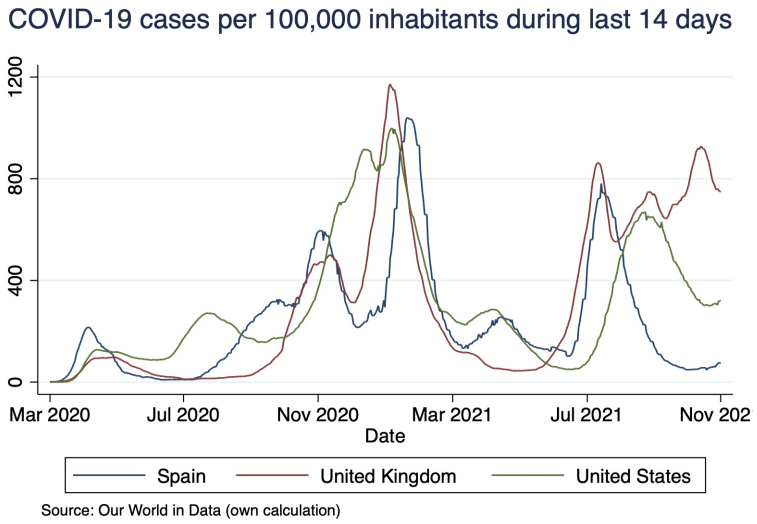
Responsibility for the Crisis and Factors behind Voting. In Appendix Table A27 we report results on two additional outcomes that we specified in the PaP. Columns 1 and 2 show the effects on a measure of whether individuals think that the evolution of the pandemic depends on government action (as opposed to exogenous factors). While the interaction with the alignment dummy has a negative coefficient, it is not statistically significant. These results contrast with our main *blame-shifting* results presented in Table 6. While individuals politically aligned with the regional government do shift the blame to the central government when confronted with the negative news on performance, it is less clear that they shift the blame towards exogenous factors.

[8] See **?** for an experimental evaluation of the public finance effects of the pandemic.

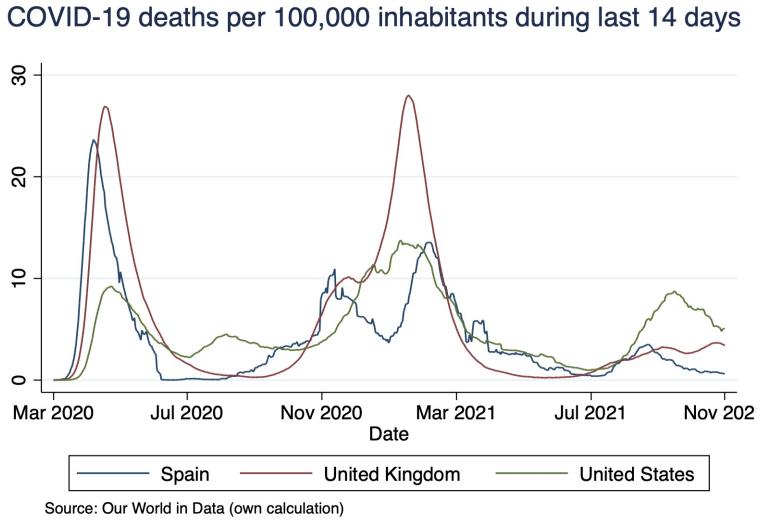
Columns 3 and 4 examine the effects on a measure of how much importance voters give to party ideals relative to performance track-record of the party. The results suggest that the treatment makes respondents pay more attention to performance when casting their voting decisions. The effect is not different depending on whether they are politically aligned with the regional government.

D Appendix Figures

Figure A1: Timeline of the Pandemic: Spain, UK, US



(a) Cases



(b) Deaths

Figure A2: Prior Elicitation

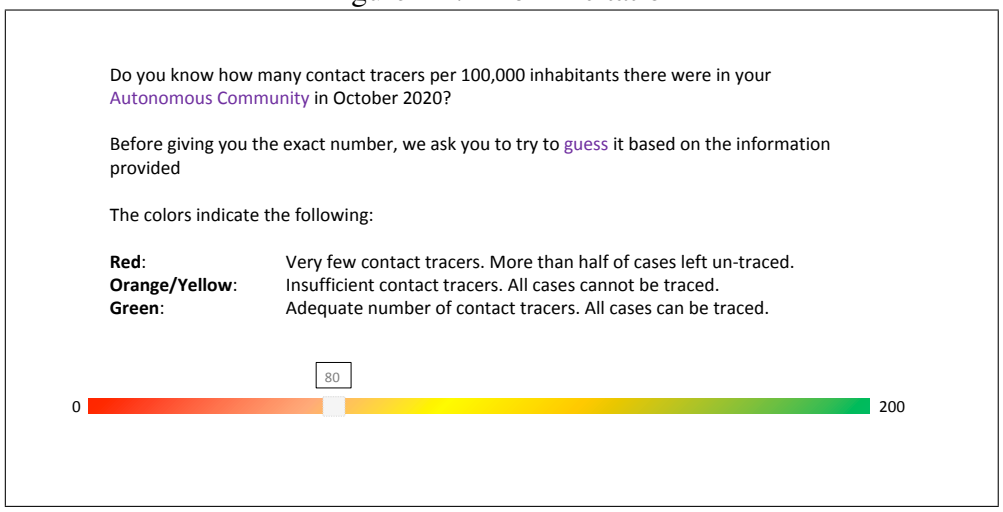


Figure A3: Additional Screens in Treatment (Additional)

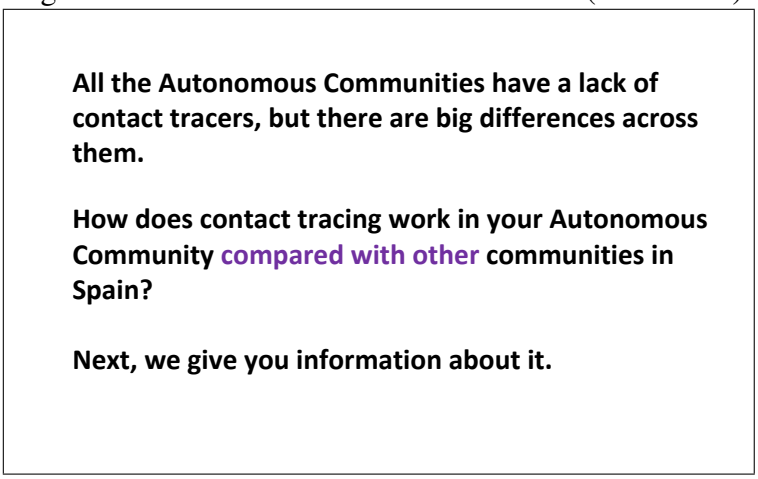
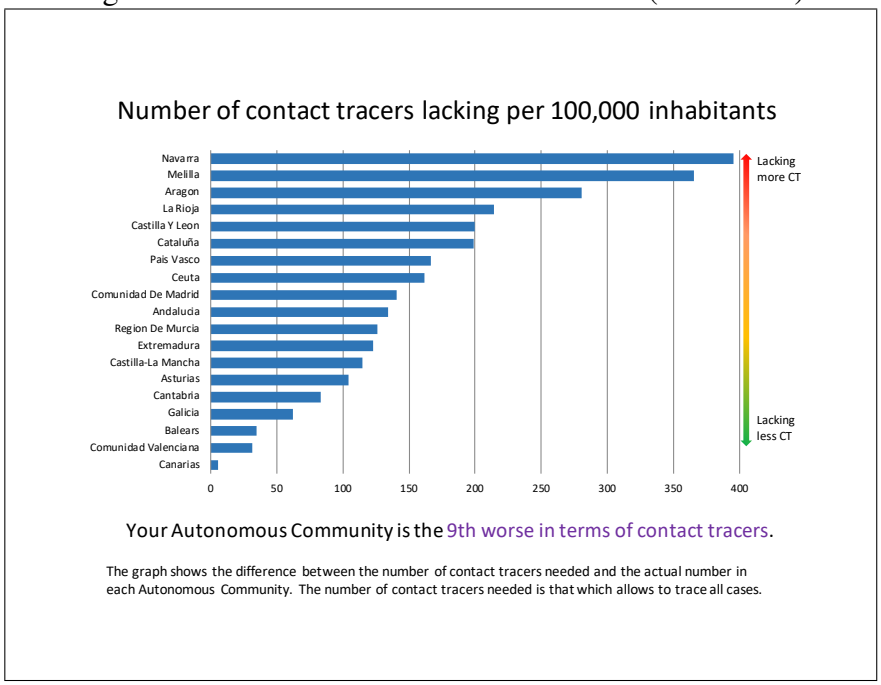


Figure A4: Additional Screens in Treatment (Additional)



E Appendix Tables

Table A1: Government Coalitions and Divided Governments, by Region

Region	President	Gov Coalition	Gov Formation	Divided Gov
	(1)	(2)	(3)	(4)
Central Government	PSOE	PSOE, UP	PSOE, UP, MP, PNV, BNG, Reg.	
Andalucía	PP	PP, Cs	PP, Cs, VOX	Yes
Aragón	PSOE	PSOE, UP, Reg.	PSOE, UP, Reg.	No
Asturias	PSOE	PSOE	PSOE, UP	No
Canarias	PSOE	PSOE, UP, Reg.	PSOE, UP, Reg.	No
Cantabria	Reg	PSOE, Reg.	PSOE, Reg.	No
Castilla y León	PP	PP, Cs	PP, Cs	Yes
Castilla La Mancha	PSOE	PSOE	PSOE	No
Cataluña	ERC	JxC, ERC	JxC, ERC	Yes
Ceuta	PP	PP	PP	Yes
Com. Valenciana	PSOE	PSOE, UP, Reg.	PSOE, UP, Reg.	No
Com. Madrid	PP	PP, Cs	PP, Cs, VOX	Yes
Galicia	PP	PP	PP	Yes
Extremadura	PSOE	PSOE	PSOE	No
Islas Baleares	PSOE	PSOE, UP, Reg.	PSOE, UP, Reg.	No
La Rioja	PSOE	PSOE, UP	PSOE, UP	No
Melilla	Cs	Cs, PSOE, Reg	Cs, PSOE, Reg	No
Murcia	PP	PP, Cs	PP, Cs, VOX	Yes
Navarra	PSOE	PSOE, UP, PNV	PSOE, UP, PNV	No
País Vasco	PNV	PNV, PSOE	PNV, PSOE	No

Notes: The column President indicates the party of the president of the regional government at the time of the survey. Gov Coalition indicates the parties that are part of the regional government (the executive). Gov Formation indicates the parties that voted "yes" to the investiture of the regional president. The first row shows analogous values for the central government, i.e., party of the prime minister, parties that are part of the central government, and parties that voted "yes" to the investiture of the prime minister. Divided Gov indicates regions in which there is no overlap between the government formation parties for that region and for the central government. "Reg." stands for voting for any regionalist (or nationalist) party running in that region only.

Table A2: Statistics about Contact Tracers used in the Information Treatment

	Actual Number of Contact Tracers per 100.000 inhab. (1)	Recommended Number of Contact Tracers Provided by Estimation Tool (2)	First threshold (red turns to yellow) (3)	Second threshold (yellow turns to green) (4)	Range (max) (5)	Deficit of Contact Tracers (6)	Message displayed in Main Treatment (7)	Message displayed in Additional Treatment *Your region is the ...* (8)
Navarra	17	413	200	400	500	396	Very few C.T.	... worse in terms of C.T.
Melilla	32	398	200	400	500	365	Very few C.T.	... 2nd worse in terms of C.T.
Aragón	26	307	150	300	400	281	Very few C.T.	... 3rd worse in terms of C.T.
La Rioja	42	256	125	250	350	214	Very few C.T.	... 4th worse in terms of C.T.
Castilla y León	41	241	120	240	300	200	Very few C.T.	... 5th worse in terms of C.T.
Cataluña	20	219	110	220	300	199	Very few C.T.	... 6th worse in terms of C.T.
País Vasco	17	184	90	180	250	167	Very few C.T.	... 7th worse in terms of C.T.
Ceuta	44	205	100	200	250	162	Very few C.T.	... 8th worse in terms of C.T.
Com. Madrid	13	153	75	150	200	141	Very few C.T.	... 9th worse in terms of C.T.
Andalucía	7	141	70	140	200	134	Very few C.T.	... 10th worse in terms of C.T.
Murcia	27	153	75	150	200	126	Very few C.T.	... 11th worse in terms of C.T.
Extremadura	34	156	75	150	200	123	Very few C.T.	... 12th worse in terms of C.T.
Castilla La Mancha	33	148	75	150	200	115	Very few C.T.	... 13th worse in terms of C.T.
Asturias	19	124	60	120	150	105	Very few C.T.	... 14th worse in terms of C.T.
Cantabria	24	107	50	100	150	83	Very few C.T.	... 5th closest to reaching the necessary C.T.
Galicia	22	85	40	80	100	62	Insufficient C.T.	... 4th closest to reaching the necessary C.T.
Islas Baleares	30	64	30	60	100	34	Insufficient C.T.	... 3rd closest to reaching the necessary C.T.
Com. Valenciana	32	64	30	60	100	32	Insufficient C.T.	... 2nd closest to reaching the necessary C.T.
Canarias	23	29	15	30	50	6	Insufficient C.T.	... closest to reaching the necessary C.T.

Notes: This table provides information on how the information treatment was customized for each region.

Table A3: Balance of Pre-treatment Characteristics (Includig Strata Fixed Effects)

	Age Group	Education Level	Female	Household Income	HH Income Change	Past Vote PP	Past Vote PSOE	Ideology 1-10	Prior-Actual	Indicator (Prior-Actual) > p50
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Treatment	-0.00	-0.00	0.03*	-58.54	6.83	0.02	-0.01	0.10	1.03	0.01
	(0.00)	(0.00)	(0.02)	(56.82)	(16.24)	(0.01)	(0.02)	(0.08)	(1.67)	(0.02)
Observations	3,705	3,705	3,705	3,339	3,512	3,109	3,109	3,699	3,705	3,705
R^2	1.00	1.00	0.15	0.19	0.15	0.13	0.15	0.18	0.39	0.31
Dep. Var. Mean (Control)	2.17	1.77	0.49	2299.97	-218.72	0.08	0.22	4.57	51.34	0.47

Notes: The table shows the same results as Table 3 but now including strata fixed effects in all regressions. See notes to Table 3 for details.

Table A4: Balance of Characteristics: Region of Residence

	And	Ara	Cant	CyL	CLM	Cat	Ceu	Mad	Nav	Val	Ext	Gal	Bal	Canar	Rio	Mel	PV	Ast	Mur
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
Treatment	-0.00	-0.00	0.00	0.01	0.00	-0.00	0.00	0.01	-0.01*	-0.00	0.00	-0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00
	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.01)	(.)	(0.01)	(0.00)	(0.01)	(0.00)	(0.01)	(0.00)	(0.01)	(0.00)	(.)	(0.01)	(0.01)	(0.01)
Observations	3,705	3,705	3,705	3,705	3,705	3,705	3,705	3,705	3,705	3,705	3,705	3,705	3,705	3,705	3,705	3,705	3,705	3,705	3,705
R^2	0.00	0.00	0.00	0.00	0.00	0.00	.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.	0.00	0.00	0.00
Dep. Var. Mean (Control)	0.19	0.03	0.02	0.05	0.04	0.16	0.00	0.18	0.01	0.11	0.02	0.07	0.01	0.02	0.00	0.00	0.04	0.03	0.02

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. No controls included. The dependent variables are dummies indicating whether the respondent is a resident of any given region. *p<0.1; **p<0.05; ***p<0.01.

Table A5: Differential Attrition

	Dependent Variable: Indicator for Dropping Out of the Sample
	(1)
Treatment	-0.001
	(0.004)
Observations	5,162
R^2	0.00
Dep. Var. Mean (Control)	0.02

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. The sample includes all respondents that completed any part of the survey. See Appendix A for details on the data. No controls included. The dependent variables is a dummy taking the value of one if the respondent exited the survey before its completion. *p<0.1; **p<0.05; ***p<0.01.

Table A6: Correlates of Priors and Accuracy of Priors

	Dependent Variables:			
	Prior		Prior-Actual	
	(1)	(2)	(3)	(4)
Female	0.58		0.89	
	(1.93)		(1.96)	
Age	-0.07		-0.08	
	(0.07)		(0.07)	
Education Level	1.20		2.12	
	(2.33)		(2.37)	
Aligned Regional Gov		11.99***		13.25***
		(2.08)		(2.09)
Observations	3,705	3,705	3,705	3,705
R^2	0.00	0.01	0.00	0.01
Dep. Var. Mean (Control)	71.34	71.34	51.34	51.34

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. All specifications include strata fixed effects. The dependent variables are Prior, which denotes the respondents' estimated number of contact tracers in their region, and (Prior-Actual), which is the prior minus the actual number of contact tracers in their region. Aligned Reg Gov = 1 if the respondent voted for one of the parties supporting the regional government in the past general election—see Section A and Table A1 for details. *p<0.1; **p<0.05; ***p<0.01.

Table A7: Effects on Vaccination: Robustness

	Dependent Variable: Willingness to Accept Vaccination					
	If Recommended By: Reg Government			Central Government		
	Dummy	Linear	Index	Dummy	Linear	Index
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	-0.03**	-0.08*	-0.07**	-0.04**	-0.07	-0.07**
	(0.02)	(0.05)	(0.03)	(0.02)	(0.05)	(0.03)
Observations	3,537	3,537	3,537	3,545	3,545	3,545
R^2	0.16	0.17	0.16	0.16	0.17	0.17
Dep. Var. Mean (Control)	0.35	2.62	0.03	0.36	2.64	0.03

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. All specifications include strata fixed effects. The dependent variables in columns (1) and (4) are a dummy indicating that the respondent would "very likely" get vaccinated if the vaccine were recommended by the regional (or central) government. The dependent variables in columns (2) and (5) are lineal variables taking the value of 5 if the respondent is "sure" to get vaccinated; 4 if "likely"; 3 if "doesn't know"; 2 if "likely not"; 1 if "sure not". The dependents variable in columns (3) and (6) are indexes aggregating the dependent variables in the previous two columns: we standardize each variable, then take the mean of the standardized variables. *p<0.1; **p<0.05; ***p<0.01.

Table A8: Effects on Trust: Additional Institutions

	Panel A. Political Institutions				
	Congress	Local Governments	EU Institutions	Judiciary System	Index
	(1)	(2)	(3)	(4)	(5)
Treatment	0.00	-0.14	-0.05	-0.14	-0.03
	(0.08)	(0.09)	(0.08)	(0.09)	(0.03)
Observations	3,705	3,705	3,705	3,705	3,705
R^2	0.15	0.15	0.17	0.16	0.16
Dep. Var. Mean (Control)	2.26	4.19	4.47	3.94	0.02
	Panel B. Other Institutions				
	Epidemiologists	Economists	Media	Pharmaceutical Industry	Index
	(1)	(2)	(3)	(4)	(5)
Treatment	-0.07	-0.11	-0.05	-0.04	-0.03
	(0.09)	(0.08)	(0.09)	(0.09)	(0.03)
Observations	3,705	3,705	3,705	3,705	3,705
R^2	0.18	0.16	0.17	0.15	0.18
Dep. Var. Mean (Control)	6.10	4.38	3.25	4.31	0.02

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. All specifications include strata fixed effects. The dependent variables are trust, on a 0-10 scale, in Congress, local governments, EU institutions, judiciary system, epidemiologists, economists, media, and pharmaceutical industry. The dependent variable in the last columns is an index aggregating the previous dependent variables: we standardize each variable, then take the mean of the standardized variables. *p<0.1; **p<0.05; ***p<0.01.

Table A9: Heterogeneous Effects by Prior on Perceived Competence and Trust (Regional Government)

	Dependent Variables:									
	Perceived Competence of Regional Gov					Trust in Regional Gov (scale 0-10)				
	Full Sample	Full Sample	Strong Prior	Full Sample	Strong Prior	Full Sample	Full Sample	Strong Prior	Full Sample	Strong Prior
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Treatment	-1.05***	-0.92***	-0.33	-1.07***	-0.76***	-0.31***	-0.27**	-0.09	-0.32***	-0.48**
	(0.09)	(0.12)	(0.27)	(0.08)	(0.21)	(0.09)	(0.12)	(0.27)	(0.09)	(0.21)
$\mathbb{1}\{$(Prior-Actual) > p50$\}$		1.32***	2.34***				1.22***	2.48***		
		(0.13)	(0.34)				(0.14)	(0.35)		
T*$\mathbb{1}\{$(Prior-Actual) > p50$\}$		-0.29*	-0.99**				-0.11	-0.92**		
		(0.17)	(0.44)				(0.19)	(0.43)		
Prior-Actual				1.36***	2.28***				1.30***	2.26***
				(0.13)	(0.26)				(0.13)	(0.26)
T*(Prior-Actual)				-0.14	-0.75**				-0.08	-0.88***
				(0.16)	(0.33)				(0.16)	(0.33)
Observations	3,705	3,705	815	3,705	815	3,705	3,705	815	3,705	815
R^2	0.19	0.23	0.37	0.24	0.40	0.17	0.20	0.39	0.22	0.40
Dep. Var. Mean (Control)	4.88	4.88	4.93	4.88	4.93	3.95	3.95	4.28	3.95	4.28

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. All specifications include strata fixed effects. The dependent variable are perceived of competence of the regional government, on a 0-10 scale, and trust in the regional government, on a 0-10 scale. Strong prior is defined as individuals in the top quartile of the distribution of confidence in their prior. They are the ones that selected 7 or above on a 0-10 scale. *p<0.1; **p<0.05; ***p<0.01.

Table A10: Heterogeneous Effects by Prior on Perceived Competence and Trust (Central Government)

	Dependent Variables:									
	Perceived Competence of Central Gov					Trust in Central Gov (scale 0-10)				
	Full Sample	Full Sample	Strong Prior	Full Sample	Strong Prior	Full Sample	Full Sample	Strong Prior	Full Sample	Strong Prior
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Treatment	-0.59***	-0.74***	-0.73**	-0.60***	-0.43*	-0.20**	-0.34**	-0.64**	-0.20**	-0.28
	(0.09)	(0.13)	(0.30)	(0.09)	(0.23)	(0.10)	(0.14)	(0.31)	(0.10)	(0.24)
$\mathbb{1}$ {(Prior-Actual) > p50}		0.36**	0.59				0.43***	0.51		
		(0.14)	(0.39)				(0.15)	(0.39)		
T*$\mathbb{1}$ {(Prior-Actual) > p50}		0.30	0.72				0.28	0.85*		
		(0.19)	(0.47)				(0.20)	(0.48)		
Prior-Actual				0.64***	1.07***				0.65***	0.92***
				(0.13)	(0.31)				(0.13)	(0.32)
T*(Prior-Actual)				0.07	-0.10				-0.01	-0.09
				(0.16)	(0.37)				(0.17)	(0.39)
Observations	3,705	3,705	815	3,705	815	3,705	3,705	815	3,705	815
R^2	0.16	0.16	0.27	0.17	0.28	0.14	0.15	0.27	0.15	0.27
Dep. Var. Mean (Control)	3.91	3.91	3.97	3.91	3.97	3.13	3.13	3.47	3.13	3.47

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. All specifications include strata fixed effects. The dependent variable are perceived of competence of the regional government, on a 0-10 scale, and trust in the regional government, on a 0-10 scale. Strong prior is defined as individuals in the top quartile of the distribution of confidence in their prior. They are the ones that selected 7 or above on a 0-10 scale. *p<0.1; **p<0.05; ***p<0.01.

Table A11: Heterogeneous Effects by Additional Treatment (Regional Government)

	Dependent Variables:					
	Perceived Competence of Regional Gov			Trust in Regional Gov (scale 0-10)		
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	-1.05***	-1.07***	-0.93***	-0.31***	-0.36***	-0.52***
	(0.09)	(0.11)	(0.17)	(0.09)	(0.11)	(0.19)
Treatment (Additional)		0.04	0.38*		0.11	0.47**
		(0.12)	(0.20)		(0.13)	(0.21)
T*Low Performance			-0.21			0.23
			(0.22)			(0.23)
T_Add*Low Performance			-0.51**			-0.53**
			(0.25)			(0.26)
Observations	3,705	3,705	3,705	3,705	3,705	3,705
R^2	0.19	0.19	0.19	0.17	0.17	0.17
Dep. Var. Mean (Control)	4.88	4.88	4.88	3.95	3.95	3.95

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. All specifications include strata fixed effects. The dependent variable are perceived of competence of the regional (or central) government, on a 0-10 scale and trust in the regional (or central) government, on a 0-10 scale. In columns 3 and 7 the measure of "Low Performance" is a dummy that takes value for respondents in regions with an above the median deficit of contact tracers. Note that in these specifications the uninteracted variable of "Low Performance" is absorbed by the strata fixed effects. In columns 4 and 8 the measure of "Low Performance" is a dummy that takes value one for respondents for which the difference between their prior and the actual number of contact tracers is above the median. Those are likely to be the individuals more negatively surprised by our information treatment. *p<0.1; **p<0.05; ***p<0.01.

Table A12: Heterogeneous Effects by Additional Treatment (Central Government)

	Dependent Variables:					
	Perceived Competence of Central Gov			Trust in Central Gov (scale 0-10)		
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	-0.59***	-0.62***	-0.53***	-0.20**	-0.24**	-0.35*
	(0.09)	(0.11)	(0.20)	(0.10)	(0.12)	(0.21)
Treatment (Additional)		0.05	-0.10		0.09	0.12
		(0.12)	(0.22)		(0.14)	(0.24)
T*Low Performance			-0.13			0.16
			(0.24)			(0.25)
T_Add*Low Performance			0.22			-0.06
			(0.27)			(0.29)
Observations	3,705	3,705	3,705	3,705	3,705	3,705
R^2	0.16	0.16	0.16	0.14	0.14	0.14
Dep. Var. Mean (Control)	3.91	3.91	3.91	3.13	3.13	3.13

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. All specifications include strata fixed effects. The dependent variable are perceived of competence of the regional (or central) government, on a 0-10 scale and trust in the regional (or central) government, on a 0-10 scale. In columns 3 and 7 the measure of "Low Performance" is a dummy that takes value for respondents in regions with an above the median deficit of contact tracers. Note that in these specifications the uninteracted variable of "Low Performance" is absorbed by the strata fixed effects. In columns 4 and 8 the measure of "Low Performance" is a dummy that takes value one for respondents for which the difference between their prior and the actual number of contact tracers is above the median. Those are likely to be the individuals more negatively surprised by our information treatment. *p<0.1; **p<0.05; ***p<0.01.

Table A13: Effects on Well-being

	Dep. var: Well-being (0-10)	
	(1)	(2)
Treatment	-0.01	0.08
	(0.08)	(0.10)
Aligned Reg Gov		0.32**
		(0.12)
T*Aligned Reg Gov		-0.28
		(0.17)
Observations	3,639	3,639
R^2	0.14	0.14
Dep. Var. Mean (Control)	5.24	5.24

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. All specifications include strata fixed effects. The dependent variable is how the respondent would rate their emotional well-being, on a scale of 0 to 10, where 0 indicates "great discomfort or depression" and 10 indicates "full happiness". Aligned Reg Gov = 1 if the respondent voted for one of the parties supporting the regional government in the past general election—see Section A and Table A1 for details. *p<0.1; **p<0.05; ***p<0.01.

Table A14: Robustness: Competence of Regional Government

	Dep. var: Competence of Reg Gov (0-10)			
	Baseline	No FE	Drop Galicia	Controls PaP
	(1)	(2)	(3)	(4)
Treatment	-1.05***	-1.07***	-1.08***	-1.18***
	(0.09)	(0.09)	(0.09)	(0.10)
Observations	3,705	3,705	3,474	2,560
R^2	0.19	0.04	0.19	0.26
Dep. Var. Mean (Control)	4.88	4.88	4.84	4.90

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. The dependent variable is the perceived competence of the regional government, on a 0-10 scale. Column (1) includes strata fixed effects. Relative to that column, column (2) drops the strata fixed effects, column (3) drops observations from Galicia, and column (4) includes the controls specified in our PaP: indicators for past voting decisions, left-right ideological position on a 1-10 scale, gender, nationality, socio-economic situation (pre-pandemic and change with the pandemic), household income (pre-pandemic and change with the pandemic), and baseline values of the outcomes as measured in the first wave of the survey conducted in July 2020 to the same individuals. *p<0.1; **p<0.05; ***p<0.01.

Table A15: Robustness: Competence of Central Government

	Dep. var: Competence of Cent Gov (0-10)			
	Baseline	No FE	Drop Galicia	Controls PaP
	(1)	(2)	(3)	(4)
Treatment	-0.59***	-0.61***	-0.62***	-0.54***
	(0.09)	(0.09)	(0.09)	(0.09)
Observations	3,705	3,705	3,474	2,560
R^2	0.16	0.01	0.15	0.44
Dep. Var. Mean (Control)	3.91	3.91	3.87	3.99

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. The dependent variable is the perceived competence of the central government, on a 0-10 scale. Column (1) includes strata fixed effects. Relative to that column, column (2) drops the strata fixed effects, column (3) drops observations from Galicia, and column (4) includes the controls specified in our PaP: indicators for past voting decisions, left-right ideological position on a 1-10 scale, gender, nationality, socio-economic situation (pre-pandemic and change with the pandemic), household income (pre-pandemic and change with the pandemic), and baseline values of the outcomes as measured in the first wave of the survey conducted in July 2020 to the same individuals. *p<0.1; **p<0.05; ***p<0.01.

Table A16: Robustness: Trust in Regional Government

	Dep. var: Trust in Reg Gov (0-10)			
	Baseline	No FE	Drop Galicia	Controls PaP
	(1)	(2)	(3)	(4)
Treatment	-0.31***	-0.35***	-0.36***	-0.35***
	(0.09)	(0.09)	(0.09)	(0.08)
Observations	3,705	3,705	3,474	2,558
R^2	0.17	0.00	0.17	0.57
Dep. Var. Mean (Control)	3.95	3.95	3.95	3.96

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. The dependent variable is trust in the regional government, on a 0-10 scale. Column (1) includes strata fixed effects. Relative to that column, column (2) drops the strata fixed effects, column (3) drops observations from Galicia, and column (4) includes the controls specified in our PaP: indicators for past voting decisions, left-right ideological position on a 1-10 scale, gender, nationality, socio-economic situation (pre-pandemic and change with the pandemic), household income (pre-pandemic and change with the pandemic), and baseline values of the outcomes as measured in the first wave of the survey conducted in July 2020 to the same individuals. *p<0.1; **p<0.05; ***p<0.01.

Table A17: Robustness: Trust in Central Government

	Dep. var: Trust in Cen Gov (0-10)			
	Baseline	No FE	Drop Galicia	Controls PaP
	(1)	(2)	(3)	(4)
Treatment	-0.20**	-0.20**	-0.22**	-0.15**
	(0.10)	(0.09)	(0.10)	(0.07)
Observations	3,705	3,705	3,474	2,558
R^2	0.14	0.00	0.14	0.70
Dep. Var. Mean (Control)	3.13	3.13	3.11	3.19

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. The dependent variable is trust in the central government, on a 0-10 scale. Column (1) includes strata fixed effects. Relative to that column, column (2) drops the strata fixed effects, column (3) drops observations from Galicia, and column (4) includes the controls specified in our PaP: indicators for past voting decisions, left-right ideological position on a 1-10 scale, gender, nationality, socio-economic situation (pre-pandemic and change with the pandemic), household income (pre-pandemic and change with the pandemic), and baseline values of the outcomes as measured in the first wave of the survey conducted in July 2020 to the same individuals. *p<0.1; **p<0.05; ***p<0.01.

Table A18: Robustness: Blame-shifting

	Dep. var: Trust in Cen Gov (0-10)			
	Baseline	No FE	Drop Galicia	Controls PaP
	(1)	(2)	(3)	(4)
Treatment	-0.08	-0.04	-0.18	0.24
	(0.25)	(0.24)	(0.26)	(0.29)
Aligned Regional Gov	-1.15***	-0.87***	-1.19***	-0.63
	(0.33)	(0.30)	(0.34)	(0.40)
T*Aligned Reg Gov	-1.08**	-1.09***	-0.98**	-1.44***
	(0.45)	(0.41)	(0.46)	(0.52)
Observations	3,705	3,705	3,474	2,560
R^2	0.15	0.02	0.15	0.26
Dep. Var. Mean (Control)	-0.75	-0.75	-0.79	-0.74

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. The dependent variable is which institution the responder thinks has a greater responsibility in the management of the COVID-19 pandemic in their region of residence on a -10 to 10 scale, where -10 means all responsibility is of the central government and 10 means that all responsibility is of regional governments. Relative to that column, column (2) drops the strata fixed effects, column (3) drops observations from Galicia, and column (4) includes the controls specified in our PaP: indicators for past voting decisions, left-right ideological position on a 1-10 scale, gender, nationality, socio-economic situation (pre-pandemic and change with the pandemic), household income (pre-pandemic and change with the pandemic), and baseline values of the outcomes as measured in the first wave of the survey conducted in July 2020 to the same individuals. Aligned Reg Gov = 1 if the respondent voted for one of the parties supporting the regional government in the past general election—see Section A and Table A1 for details. *p<0.1; **p<0.05; ***p<0.01.

Table A19: Blame-Shifting: Robustness to Controlling for Priors

	Dependent Variable: Responsibility of Regional Gov (vs. Central Gov)				
	All			Strong Prior	
	(1)	(2)	(3)	(4)	(5)
Treatment	-0.084	-0.109	-0.097	-0.160	-0.161
	(0.248)	(0.248)	(0.247)	(0.573)	(0.573)
Aligned Regional Gov	-1.146***	-1.303***	-1.294***	-1.829**	-1.834**
	(0.327)	(0.326)	(0.326)	(0.810)	(0.811)
T*Aligned Reg Gov	-1.077**	-1.045**	-0.984**	-1.265	-1.124
	(0.454)	(0.453)	(0.453)	(1.081)	(1.079)
Prior-Actual		0.012***	0.013***	0.009	0.007
		(0.003)	(0.004)	(0.007)	(0.008)
T*(Prior-Actual)		-0.001	0.003	0.005	0.012
		(0.004)	(0.004)	(0.008)	(0.009)
Aligned*(Prior-Actual)			-0.003		0.005
			(0.006)		(0.014)
T*Aligned*(Prior-Actual)			-0.013		-0.022
			(0.008)		(0.019)
Observations	3,705	3,705	3,705	815	815
R^2	0.15	0.16	0.16	0.32	0.33
Dep. Var. Mean (Control)	-0.75	-0.75	-0.75	-0.05	-0.05

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. All specifications include strata fixed effects. The dependent variable is which institution the responder thinks has a greater responsibility in the management of the COVID-19 pandemic in their region of residence on a -10 to 10 scale, where -10 means all responsibility is of the central government and 10 means that all responsibility is of regional governments. Aligned Reg Gov = 1 if the respondent voted for one of the parties supporting the regional government in the past general election—see Section A and Table A1 for details. Prior denotes the respondents' estimated number of contact tracers in their region, measured as a deviation to its mean. Prior-Actual is the difference between the prior and the actual number of contact tracers in their region, also measured as a deviation to its mean. *p<0.1; **p<0.05; ***p<0.01.

Table A20: Blame-Shifting: Heterogeneity by Treatment

	Dependent Variable: Responsibility of Regional Gov (vs. Central Gov)					
	Sample Treatment: Control or T (not T_Add)			Control or T_Add (not T)		
	Sample Regions: All	Low Competence	High Competence	All	Low Competence	High Competence
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	0.18	0.30	0.01	-0.43	-0.64*	0.09
	(0.30)	(0.36)	(0.54)	(0.31)	(0.37)	(0.58)
Aligned Regional Gov	-1.33***	-2.31***	1.39**	-1.15***	-2.12***	1.53**
	(0.34)	(0.39)	(0.62)	(0.34)	(0.39)	(0.64)
T*Aligned Reg Gov	-1.49***	-1.86***	-0.39	-0.42	-0.28	-0.75
	(0.55)	(0.63)	(1.07)	(0.59)	(0.68)	(1.14)
Observations	2,708	1,831	877	2,726	1,850	876
R^2	0.18	0.18	0.25	0.17	0.16	0.23
Dep. Var. Mean (Control)	-0.77	-0.46	-1.43	-0.72	-0.46	-1.27

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. All specifications include strata fixed effects. The dependent variable is which institution the responder thinks has a greater responsibility in the management of the COVID-19 pandemic in their region of residence on a -10 to 10 scale, where -10 means all responsibility is of the central government and 10 means that all responsibility is of regional governments. Aligned Reg Gov = 1 if the respondent voted for one of the parties supporting the regional government in the past general election—see Section A and Table A1 for details. Divided Gov = 1 for respondents living in a region where there is no overlap between the parties supporting the regional and central governments—see Table A1 for details. *p<0.1; **p<0.05; ***p<0.01.

Table A21: Accountability: Robustness to Sympathy and Feel

	Dependent variables:							
	Sympathy				Feel			
	Divided Gov		Non-divided Gov		Divided Gov		Non-divided Gov	
	Reg Gov	Cent Gov	Reg Gov	Cent Gov	Reg Gov	Cent Gov	Reg Gov	Cent Gov
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treatment	-0.00	-0.00	-0.10***	-0.07**	-0.06	-0.18	-0.40*	-0.35*
	(0.02)	(0.02)	(0.03)	(0.03)	(0.12)	(0.13)	(0.21)	(0.20)
Observations	1,897	1,897	887	887	1,897	1,897	887	887
R^2	0.14	0.12	0.28	0.30	0.14	0.14	0.28	0.28
Dep. Var. Mean (Control)	0.39	0.32	0.43	0.45	0.39	0.32	0.43	0.45

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. All specifications include strata fixed effects. The dependent variable Sympathy takes the value of 1 if the respondent reports one of the parties supporting the regional (or central) government as the party that s/he feels the most sympathy for (question 37). Feel is the average rate given to parties supporting the regional (or central) government on a 0-10 scale (where 0 is you do not like the party at all, and 10 is you like it a lot, question 38). Divided Gov = 1 for respondents living in a region where there is no overlap between the parties supporting the regional government and the parties supporting the central government—see Table A1 for details. *p<0.1; **p<0.05; ***p<0.01.

Table A22: Trust by Alignment and Divided Government

	Dep. var.: Trust in Goverment (scale 0-10)							
	Divided Gov				Non-divided Gov			
	Reg Gov		Cent Gov		Reg Gov		Cent Gov	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treatment	-0.24**	-0.17	-0.14	0.00	-0.47***	-0.43**	-0.33*	-0.23
	(0.11)	(0.13)	(0.11)	(0.14)	(0.17)	(0.20)	(0.18)	(0.21)
Aligned Regional Gov		1.97***		-1.52***		2.08***		2.86***
		(0.16)		(0.17)		(0.25)		(0.26)
T*Aligned Reg Gov		-0.22		-0.40*		0.26		0.18
		(0.23)		(0.22)		(0.33)		(0.36)
Observations	2,498	2,498	2,498	2,498	1,207	1,207	1,207	1,207
R^2	0.12	0.21	0.10	0.17	0.25	0.36	0.22	0.39
Dep. Var. Mean (Control)	3.72	3.72	2.98	2.98	4.42	4.42	3.45	3.45

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. All specifications include strata fixed effects. The dependent variable is trust in the regional or central government on a 0-10 scale. Aligned Reg Gov = 1 if the respondent voted for one of the parties supporting the regional government in the past general election—see Section A and Table A1 for details. *p<0.1; **p<0.05; ***p<0.01.

Table A23: Accountability by Alignment

	Dep Var: Indicator for Intention to Vote for Incumbent Government							
	Divided Gov				Non-divided Gov			
	Vote Reg Gov		Vote Cent Gov		Vote Reg Gov		Vote Cent Gov	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treatment	-0.02	-0.02	0.01	0.02	-0.07**	0.00	-0.09**	-0.04
	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.04)	(0.03)
Aligned Reg Gov		0.69***		-0.45***		0.71***		0.66***
		(0.03)		(0.03)		(0.04)		(0.04)
T*Aligned Reg Gov		0.00		-0.02		-0.03		0.03
		(0.04)		(0.04)		(0.06)		(0.06)
Observations	1,910	1,910	1,910	1,910	893	893	893	893
R^2	0.14	0.53	0.12	0.31	0.29	0.63	0.26	0.57
Dep. Var. Mean (Control)	0.39	0.39	0.32	0.32	0.44	0.44	0.45	0.45

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. All specifications include strata fixed effects. The dependent variable Vote Regional Gov equals 1 if the respondent intends to vote for any of the parties supporting the regional government in the next regional election. The dependent variable Vote Central Gov equals 1 if the respondent intends to vote for any of the parties supporting the central government in the next general election. Aligned Reg Gov = 1 if the respondent voted for one of the parties supporting the regional government in the past general election—see Section A and Table A1 for details. Divided Gov = 1 for respondents living in a region where there is no overlap between the parties supporting the regional and central governments—see Table A1 for details. The sample is reduced due to some respondents preferring not to declare their voting intention. *p<0.1; **p<0.05; ***p<0.01.

Table A24: Effects on Compliance

	Dependent Variables:		
	Mask	Quarantine (own)	Quarantine (observed)
	(1)	(2)	(3)
Treatment	-0.01	0.01	-0.08
	(0.01)	(0.01)	(0.08)
Observations	3,685	3,641	3,705
R^2	0.15	0.12	0.16
Dep. Var. Mean (Control)	0.78	0.83	5.58

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. All specifications include strata fixed effects. The dependent variable in column (1) is an indicator for the response "it is a good measure" to the question on which statement best reflects the respondent's opinion about masking. The dependent variable in column (2) is an indicator for the most favorable answer, "Yes, I would stay at home for 10 days or more", to the question on whether the respondent would comply with an indication by the regional government to be confined at home for at least 10 days if in close contact with a person infected with COVID-19. The dependent variable in column (3) is the response, on a 0-10 scale, to the question on which is the perceived degree of compliance with quarantines and other restrictions by people similar to them, where 0 is "rarely met" and 10 is "strictly met". *p<0.1; **p<0.05; ***p<0.01.

Table A25: Effects on Polarization

	Dependent Variables:			
	Ideological	Affective	Partisanship	Vote
	(1)	(2)	(3)	(4)
Treatment	-0.09	-0.02	-0.01	-0.02
	(0.09)	(0.05)	(0.02)	(0.02)
Observations	3,438	3,705	3,260	2,939
R^2	0.20	0.16	0.36	0.14
Dep. Var. Mean (Control)	6.59	2.52	0.42	0.27

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. All specifications include strata fixed effects. The dependent variable in column (1) is the standard deviation of the respondent's position on a 0 (extreme left)-10 (extreme right) scale. The dependent variable in column (2) is the standard deviation of the "feel" grade given by each respondent to all parties. The dependent variable in column (3) takes the value of 1 if the respondent reports that they always vote for the same party, or that they always or generally vote for the same party. The dependent variable in column (4) takes the value of 1 if the respondent reports an intention to vote for UP, VOX, or CUP. *p<0.1; **p<0.05; ***p<0.01.

Table A26: Effects on Support for Taxation and Redistribution

	Dependent Variables:		
	Taxes Useful	Support More Taxes	Progressive Taxes
	(1)	(2)	(3)
Treatment	0.00	-0.10	-0.01
	(0.02)	(0.09)	(0.02)
Observations	3,705	3,705	3,705
R^2	0.17	0.16	0.15
Dep. Var. Mean (Control)	1.39	3.50	0.49

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. All specifications include strata fixed effects. The dependent variable in column (1) is a categorical variable taking the value of 3 if the respondent answers "taxes are a means to better redistribute wealth in our society"; 2 if "taxes are necessary for the state to be able to provide public services"; 1 if "what we pay in taxes does not correspond to the public services we receive, due to corruption"; 0 if "the money that the state collects in taxes would be better off in the pockets of citizens". When multiple options are chosen, we calculate the mean. The dependent variable in column (2) is where respondents would place themselves regarding taxes and spending on a 0-10 scale, where 0 means decreasing spending and taxes and 10 means increasing spending and taxes. The dependent variable in column (3) is an indicator for whether a hypothetical increase in taxes should be mainly charged to very high-income individuals (higher than 120,000 €/year). *p<0.1; **p<0.05; ***p<0.01.

Table A27: Effects on Perceived Influence of Endogenous vs. Exogenous Factors, and on Vote According to Ideals vs. Management

	Dependent Variables:			
	Endogenous (vs. Exogenous)		Ideals (vs. Management)	
	(1)	(2)	(3)	(4)
Treatment	-0.11	0.11	-0.43**	-0.39
	(0.18)	(0.22)	(0.22)	(0.27)
Aligned Reg Gov		0.28		-0.15
		(0.29)		(0.34)
T*Aligned Reg Gov		-0.65		-0.13
		(0.40)		(0.47)
Observations	3,705	3,705	3,291	3,291
R^2	0.13	0.13	0.16	0.16
Dep. Var. Mean (Control)	1.14	1.14	0.33	0.33

Notes: Robust standard errors shown in parentheses. The unit of observation is the respondent. All specifications include strata fixed effects. The dependent variable in columns (1) and (2) is what factors the respondent thinks are more important to handle the pandemic, on a -10 to 10 scale, where -10 means "pandemic depends only on other factors (population density, aging population, etc.)" and 10 means "pandemic depends only on government management (containment measures, contact tracing, testing, etc.)". The dependent variable in columns (3) and (4) is, when considering which party to vote for in general elections, whether the respondent takes into account the competence in the management of each party, or the proximity of the party to their ideals, on a -10 to 10 scale, where -10 means "the management of each party" and 10 means "the party's proximity to your ideals". Aligned Reg Gov = 1 if the respondent voted for one of the parties supporting the regional government in the past general election—see Section A and Table A1 for details. *p<0.1; **p<0.05; ***p<0.01.

F Complete Questionnaire

Answer options are in *italics*, separated by a semicolon.

1. Last June you responded to a survey on the effects of COVID-19 on the household economy. The following questionnaire is a continuation of the previous one and aims to collect additional information. Thank you for your collaboration!

   Your participation is voluntary, completely anonymous, and you can leave the survey at any time. We will ask you a series of questions about your personal and economic situation. We will also give you information that you may find useful about some recent changes in our society.

   The results of this survey will be used by a team of researchers from the Center for Monetary and Financial Studies and other academic institutions for scientific purposes only.

2. Do you agree to participate?

   Yes; No

F.1 Background Socio-economic Measures

3. In which autonomous community do you live?

   Andalucía; Aragón; Cantabria; Castilla y León; Castilla-La Mancha; Cataluña; Ceuta; Comunidad de Madrid; Comunidad Foral de Navarra; Comunidad Valenciana; Extremadura; Galicia; Islas Baleares; Islas Canarias; La Rioja; Melilla; País Vasco; Principado de Asturias; Región de Murcia

4. What is the highest educational or work qualification you have?

   Incomplete primary education; Primary education; First stage of Secondary Education (ESO or EGB); Second stage of Secondary Education (Bachillerato, BUP or COU); Vocational education (Intermediate Level); Vocational education (Advanced Level); Incomplete university studies; University Studies (Bachelor's Degree); Master's Degree or PhD; Other; I prefer not to answer

5. What is your age?

6. Which of the following options best represents your current employment status?

   Employee (private sector); Employee (public sector); Entrepreneur, professional or self-employed; Retiree or pensioner; Unemployed but I have worked before; Unemployed and I have not worked before; Student; Unpaid domestic work; Other (please specify);

   [If the respondent answers *"Retiree or pensioner"*, *"Unemployed and I have not worked before"*, *"Student"*, *"Unpaid domestic work"* or *"Other (please specify)"*, go to question 10.]

7. What type of occupation or position best reflects your current work activity?

   Directors and managers; Professionals, scientists and intellectuals; Technicians and associate professionals; Clerical support workers; Service personnel in the hotel, tourism

and catering industry; Service personnel in other sectors; Domestic service; Sales workers; Delivery men and women; Security personnel; Cleaning personnel; Agricultural workers; Officers, and craft and related trades workers; Plant and machine operators, and assemblers; Healthcare personnel (doctors or managers); Healthcare personnel (nurses or assistants); Healthcare personnel (other); Military and police occupations; Teaching personnel; Other (please specify); I do not know

8. What type of contract or occupation best reflects your current situation?

   Salaried employee with indefinite contract (full time); Salaried employee with indefinite contract (part-time); Salaried employee with temporary contract (full time); Salaried employee with temporary contract (part-time); Entrepreneur or professional with employees; Professional or self-employed with no employees; Household chores; Other situation (please specify)

9. What is the main activity of the company or organization where you currently work?

   Agriculture, livestock and primary sector; Extractive industries; Manufacturing industry; Power, gas and water production and distribution; Construction; Retail trade, repair of vehicles and objects; Hotels, tourism, catering; Transportation, warehousing and communications; Financial services; Consulting, advertising or other business services; Real estate activities; Public service; Security and defense services; Education; Health and veterinary services, social services; Culture and sports; Other personal services; Households employing domestic workers; Activities ancillary to transportation, travel agencies; Computer activities; Other activities (please specify)

10. What was your monthly income, on average, during 2019? Please specify both:

    - Your individual monthly income
    - That of your household as a whole

    By income we mean, for example, wages, income from professional activities, pensions and subsidies, among others. Please indicate the net income, this is, your income after taxes. You do not need to indicate the exact amount, just need to indicate in which interval of the following scale are included your income and the income of your household. We remind you that this information is completely confidential.

    I have no income at all; 0-300€; 301-600€; 601-900€; 901-1,200€; 1,201-1,500€; 1,501-1,800€; 1,801-2,100€; 2,101-2,400€; 2,401-3,000€; 3,001-4,500€; 4,501-6,000€; 6,000€+; I do not know / I prefer not to answer

11. Thinking about your net monthly income, has it changed since the COVID-19 epidemic broke out (this is, between February 2020 and now)? Please, specify this for:

    - Your individual monthly income
    - That of your household as a whole

    Yes; No

12. And, more precisely, how has your net monthly income (after taxes) changed between February 2020 and today? Please, specify this for:

- Your individual monthly income
- That of your household as a whole

Reduced by more than 1,000€ per month; Reduced between 600€ and 1,000€ per month; Reduced between 400€ and 600€ per month; Reduced between 200€ and 400€ euros per month; Reduced between 100€ and 200€ euros per month; It is more or less the same; Increased between 100€ and 500€ per month; Increased by more than 500€ per month; I do not know; I prefer not to answer

13. Have you received any public subsidy, aid or benefit during the last 6 months? Check all that apply:

    Unemployment benefit; ERTE[9] benefit; Pension; Moratorium on mortgage or rent payments; Minimum Vital Income from the state government; Minimum Insertion Income or Guaranteed Income from your autonomous community; Extraordinary benefit for self-employed who cease activity; Other benefits (please specify); I have not received any subsidy, aid or public benefit; I do not know

    [If the respondent answers *"Minimum Vital Income from the state government"*, go to question 14. If the respondent answers *"Minimum Insertion Income or Guaranteed Income from your autonomous community"*, go to question 15. Otherwise, go to question 16.]

14. Please, indicate the approximate monthly amount that your household has received or been granted for the Minimum Vital Income in the last few months.

    0€-99€; 100€-199€; 200€-299€; 300€-399€; 400€-499€; 500€-599€; 600€-699€; 700-799€; 800€-899€; 900€-1,000€; 1,000€-1,100€; I do not know

    [Go to question 16]

15. Please, indicate the approximate monthly amount that your household has received or been granted for the Minimum Insertion Income or Guaranteed Income from your autonomous community in the last few months.

    0€-99€; 100€-199€; 200€-299€; 300€-399€; 400€-499€; 500€-599€; 600€-699€; 700-799€; 800€-899€; 900€-1,000€; 1,000€-1,100€; I do not know

16. We are interested in knowing the size of the municipality in which you live. Consider very large (more than 1,000,000 people), large (between 500,000 and 1,000,000 people), medium (between 100,000 and 500,000 people), small (between 10,000 and 100,000 people) and very small (less than 10,000 people). To show that you have read the question, select the two answers "Very large" and "Very small" regardless of the reality. What is the size of the municipality in which you have your normal residence?

    Very small; Small; Medium; Large; Very large

F.2 Elicitation of Priors and Treatments (only Treatment Groups)

17. *TREATMENT GROUP:* The COVID-19 pandemic has greatly changed our lives. Below, we would like to show you some information that might be of your interest.

[9] Record of Temporary Employment Regulation

In the last weeks, harsh measures have been imposed to contain the advance of COVID-19: curfews, mobility restrictions, maximum of 6 people in social gatherings, cancellation of cultural events.

How did we get here? Could these measures have been avoided with a more efficient management of the pandemic by our governments?

In March 2020, the scientific community recommended developing mass testing and contact tracing systems. Investing in these systems reduces the spread of the virus and helps to avoid having to take harsher measures.

Have our politicians done their homework? Next, we will give you information about the quality of the tracing system in your autonomous community (at the end of the survey we will give you more information about the data used).

Do you know how many contact tracers per 100,000 inhabitants there were in your autonomous community in October 2020? Before giving you the exact number, we ask you to try to guess based on the information provided. The colors indicate the following:

- Red: Very few contact tracers. More than half of cases left un-traced.
- Orange/Yellow: Insufficient contact tracers. All cases cannot be traced.
- Green: Adequate number of contact tracers. All cases can be traced.

Colored slider.

18. *TREATMENT GROUP:* On a scale of 0 to 10, where 0 is "very unsure" and 10 is "very sure", how sure are you that your guess was close to the correct number of tracers?

    0; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10

19. *TREATMENT GROUP:* Your autonomous community has x contact tracers per 100,000 inhabitants. With x contact tracers, your autonomous community lacks t-x contact tracers per 100,000 inhabitants to be able to track all cases.[10] Deficiencies in tracing contribute to the increase in cases and lead to the application of tougher measures, such as those we have been experiencing in recent weeks.

    [If the respondent answered *"Galicia"* to question 3, display the following paragraph]

    The official number of contact tracers in Galicia includes primary healthcare personnel. In our estimation of the number of contact tracers we have taken into account that primary healthcare personnel only spend part of their working day on tracing tasks. More information is provided at the end of the survey.

20. *ADDITIONAL TREATMENT GROUP:* All the autonomous communities have a lack of contact tracers, but there are big differences across them. How does contact tracing work in your autonomous community compared with other communities in Spain? Next, we give you information about it.

    Your autonomous community is the yth worse in terms of contact tracers.

[10] x refers to the number of contact tracers per 100,000 inhabitants corresponding to the autonomous community of the respondent, according to the answer to question 3. t refers to the number of contact tracers per 100,000 inhabitants that would be necessary to track all cases.

F.3 Outcomes

21. On a scale of 0 to 10, where 0 is "very bad" and 10 is "very good", how would you evaluate the quality of management of the government of your autonomous community in dealing with a crisis like the COVID-19 one?

    0; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10

22. On a scale of 0 to 10, where 0 is "very bad" and 10 is "very good", how would you evaluate the quality of management of the Government of Spain in dealing with a crisis like the COVID-19 one?

    0; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10

23. We would like to ask you about which institution you think bears greater responsibility in the management of the COVID-19 pandemic in your region (containment measures, healthcare, contact tracing, testing, etc.).

    On a scale of -10 to 10, where -10 is "all responsibility lies with the Government of Spain" and 10 "all responsibility lies with the government of your autonomous community", what degree of responsibility would you attribute to each government?

    -10; -9; -8; -7; -6; -5; -4; -3; -2; -1; 0; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10

24. We would like to ask you about what factors you think have the most influence on the evolution of the pandemic (this is, on the number of COVID-19 infections). What do you think is more important, government management (containment measures, contact tracing, testing, etc.) or other factors (population density, aging population, etc.)? On a scale of -10 to 10, where -10 is "pandemic depends only on other factors" and 10 is "pandemic depends only on government management", where would you place yourself?

    -10; -9; -8; -7; -6; -5; -4; -3; -2; -1; 0; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10

25. When you consider which party to vote for in general elections, do you take more into account the competence in the management of each party, or the proximity of the party to your ideals? On a scale of -10 to 10, where -10 is "the management of each party" and 10 is "the party's proximity to your ideals", where would you place yourself?

    -10; -9; -8; -7; -6; -5; -4; -3; -2; -1; 0; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10

26. On a scale of 0 to 10, how would you rate the ability of each of the following parties to manage a crisis similar to the one generated by COVID-19?

    - PP (Partido Popular)
    - PSOE (Partido Socialista Obrero Español)
    - Cs (Ciudadanos)
    - VOX
    - Podemos

    0; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10

27. Which level of government do you think has the greatest capacity to manage a crisis similar to the one generated by COVID-19? On a scale of -10 to 10, where -10 is "the government of the autonomous community" and 10 is "the Government of Spain", where would you place yourself?

    -10; -9; -8; -7; -6; -5; -4; -3; -2; -1; 0; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10

28. Next, we want to ask you about your level of confidence regarding a number of institutions or groups of people. Using a scale of 0 to 10, where 0 means "I have very little confidence in them" and 10 means "I have a lot of confidence in them", how much confidence do you have in the following ones?

    - Politicians in the Congress of Deputies
    - Government of Spain
    - Government of your autonomous community
    - Government of your municipality
    - European Union Institutions
    - The judicial system
    - The public health system
    - Epidemiologists
    - Economists
    - Media
    - Pharmaceutical companies

    0; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10

29. On a scale of 0 to 10, where 0 is "very low" and 10 is "very high", how would you rate the ability of the political system to provide solutions to the main problems faced by citizens?

    0; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10

30. Imagine that you win a prize of 1,000€ aimed at alleviating the effects of COVID-19 in Spain. You cannot keep the prize. You can only donate it to the following two institutions: COVID-19 fund from the Ministry of Health of the Central government and the Red Cross. What percentage of the prize would you donate to each of them?

    - COVID-19 Fund of the Ministry of Health, Government of Spain
    - Red Cross

    Text box (one for each institution)

31. Imagine that you win another similar prize of 1,000€ and the two institutions to which you can donate it are the following ones. Which percentage of the prize would you donate to each of them?

    - Fund against COVID-19 of the Health Department of your autonomous community
    - Red Cross

Text box (one for each institution)

32. From your point of view, which of the following terms best represents the current situation in Spain? You can select up to two options.

    Hope; Amelioration; Unity; Solidarity; Uncertainty; Division; Inequality; Deterioration; Despair

33. If a general election were to be held tomorrow, this is, an election to the Spanish Parliament, which party would you vote for?

    PSOE; PP; Vox; Unidas Podemos; Ciudadanos; Más País-Equo; ERC-Sobiranistes; Junts-JuntsxCat; CUP-PR; EAJ-PNV; EH Bildu; Other (please specify); Abstention/ Would not vote; I do not know

34. If regional elections were to be held again tomorrow, this is, elections to the Parliament of your Autonomous Community, which party would you vote for?

    List of political parties adapted to the answer to question 3.

35. Are you one of those people who always votes for the same party, who usually votes for the same party or, depending on what convinces them most at a particular time, votes for one party or another, or does not vote at all?

    I always vote for the same party; I usually vote for the same party; I vote for one party or another, or I do not vote at all, depending on what convinces me most at a particular time; I tend to vote blank or null; I do not usually vote; I prefer not to answer

36. When talking about politics, the expressions left and right are commonly used. On a scale of 0 to 10, where 0 means "left" and 10 means "right", where would you place yourself?

    0; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10; I prefer not to answer

37. Please, indicate which party you feel more sympathy for:

    PSOE; PP; Vox; Podemos; Ciudadanos; Más País-Equo; ERC; Junts-JuntsxCat; CUP; EAJ-PNV; EH Bildu; Izquierda Unida; Other (please specify); None of them

38. On a scale of 0 to 10, where 0 is "you do not like it" and 10 is "you like it", how would you rate the following parties?

    - PSOE
    - PP
    - Vox
    - Podemos
    - Ciudadanos
    - ERC
    - EAJ-PNV
    - Más País-Equo
    - CUP

- Junts-JuntsxCat
- EH Bildu
- Izquierda Unida

0; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10

39. Since the COVID-19 epidemic broke out (this is, February 2020), have you regularly participated in pots and pans protests against the political management?

    Always; Almost always; Few times; Almost never; Never

40. Since the COVID-19 epidemic broke out (this is, February 2020), have you participated in any protest or demonstration?

    Yes; No

    [If the respondent answers *"No"*, go to question 42.]

41. Could you indicate the reason for the protest?

    Text box

42. Please indicate which of the following statements best reflects your opinion about taxes. You can select more than one option if you prefer.

    Taxes are a means to better redistribute wealth in our society; Taxes are necessary for the state to be able to provide public services; What we pay in taxes does not correspond to the public services we receive, due to corruption; The money that the state collects in taxes would be better off in the pockets of citizens

43. The COVID-19 crisis has led to an increase in public spending to finance health and social protection measures, such as the ERTE[11] benefits. Some politicians argue that it is necessary to raise taxes to finance these additional costs, while others propose lowering taxes to revive the economy. Indicate your position on a scale of 0 to 10, where 0 is "lower taxes" and 10 is "raise taxes".

    0; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10

44. If taxes were to be raised, which group do you think should bear the greatest increase in tax payments?

    Taxpayers with income over 120,000€ per year (10,000€ per month); Taxpayers with income over 60,000€ per year (5,000€ per month); All taxpayers in proportion to their income

45. In recent months many people have been infected with COVID-19. Below we will ask you some questions regarding potential containment measures. Remember that all information you provide will be treated confidentially and used only in aggregate form by our researchers.

[11] Record of Temporary Employment Regulation

46. The government of your autonomous community recommends people to wear masks, also outdoors, even if a safety distance of 2 meters can be maintained. Please indicate which of the following statements best reflects your opinion about this measure. Check all that apply.

    I think it is a good measure. It is important to wear a mask to protect everyone's health; It seems excessive to me. It should only be mandatory indoors, and outdoors when a distance of 2 meters cannot be maintained; It seems excessive to me. It should only be mandatory indoors; The use of masks should not be mandatory. It is an imposition against individual freedom; Other (please specify)

47. The government of your autonomous community requires people who have been in close contact with a person infected with COVID-19 to be confined to home for at least 10 days. These are called "quarantines". If you were in such a situation, would you comply with this indication? We remind you that your answer is completely confidential.

    Yes, I would stay at home for 10 days or more; I would try to leave my house as least as possible for 10 days; It would be impossible for me not to leave home for 10 days due to professional and/or family responsibilities; I would not follow such directions. I would act according to my own judgment; Other (please specify); I prefer not to answer

48. Based on what you see in your neighborhood or municipality, which do you think is the degree of compliance with quarantines and other restrictions by people similar to you? Please, indicate on a scale of 0 to 10, where 0 is "rarely met" and 10 is "strictly met".

    0; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10

49. Imagine that in the next few months a vaccine against COVID-19 is approved. Imagine that the Government of Spain recommends vaccination in your age group. How likely would you be to follow the government's recommendation and agree to be vaccinated?

    I would certainly accept to be vaccinated; It is likely that I would accept to be vaccinated; I do not know whether or not I would accept to be vaccinated; It is likely that I would not accept to be vaccinated; I would certainly not accept to be vaccinated; I do not know

50. If, instead, the government of your autonomous community was to recommend vaccination in your age group, how likely would you be to follow this recommendation and agree to be vaccinated?

    I would certainly accept to be vaccinated; It is likely that I would accept to be vaccinated; I do not know whether or not I would accept to be vaccinated; It is likely that I would not accept to be vaccinated; I would certainly not accept to be vaccinated; I do not know

F.4 Open-ended Questions on the Economic Situation and Management of the COVID-19 Pandemic

51. The COVID-19 crisis has greatly changed our lives. We are really interested in your views on how the situation has been handled. Below we ask you some questions and leave some boxes for you to tell us your vision. You can write as much as you like. We will be happy to read it. Thank you very much.

52. When you think about the economic situation, what aspects seem most relevant to you?

    Text box

53. What is your opinion on how the COVID-19 pandemic has been managed in Spain?

    Text box

54. When you think about the impact of COVID-19 and its impact on the economy, which population groups are you most concerned about?

    Text box

F.5 Usefulness of Treatment Information (only Treatment Group)

55. *TREATMENT GROUP:* On a scale of 0 to 10, where 0 is "not useful at all" and 10 is "very useful", how useful did you find the information on the number of contact tracers in your autonomous community that we have provided in this survey?

    0; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10

    [If the respondent answers *"5"* or greater, go to question 57.]

56. *TREATMENT GROUP:* Your answer above indicates that the information provided on the number of contact tracers has not been very useful to you. Could you tell us the reason(s)? Please, check all that apply.

    I already knew this information; I do not consider this information relevant; I have doubts about the quality of the data provided; I do not agree with some of the statements; Other (please specify)

F.6 Elicitation of Priors and Usefulness of Treatment Information (only Control Group)

Control group receives here questions in Sections F.2 and F.5.

F.7 Exposure to COVID-19 and Health Services

57. Below, we would like to ask you some questions about how you have felt over the last few months. We remind you that your answers are completely confidential.

58. In the past few months, have you had symptoms consistent with COVID-19?

    No symptoms; Mild symptoms (for instance, cough or fever less than 38 degrees); Severe symptoms (for instance, fever greater than 38 degrees or breathing difficulties), without hospitalization; Severe symptoms, with hospitalization; I prefer not to answer

59. Have you been tested for COVID-19? Check all that apply.

    Yes, PCR test or antigen test with positive result (infected); Yes, PCR or antigen test with negative result (not infected); Yes, antibody test with positive result (past infection); Yes, antibody test with negative result (not infected); No; I prefer not to answer

    [If the respondent answers *"No"* or *"I prefer not to answer"*, go to question 66]

60. How long did it take from the time you were tested until you received the results?

    Less than 24h; Between 24 and 48h; 3 to 5 days; 5 to 10 days; More than 10 days; I did not receive the results; I do not know, I prefer not to answer

    [If the respondent answered *"Yes, PCR test or antigen test with positive result (infected)"* or *"Yes, antibody test with positive result (past infection)"* to question 59, go to question 61. If the respondent answered *"Yes, PCR or antigen test with negative result (not infected)"* or *"Yes, antibody test with negative result (not infected)"* to question 59, go to question 66.]

61. After your positive COVID-19 test result, did healthcare personnel contact you to follow up on your health status?

    Yes; No

    [If the respondent answers "No", go to question 63]

62. How many times did healthcare personnel contact you during the 14 days following your positive COVID-19 test result?

    0 (never); 1; 2; 3; 4; 5; 6; 7; 8; 9; 10

63. After your positive COVID-19 test result, were you contacted for an interview to gather information about the people you had been in contact with in previous days?

    Yes; No

    [If the respondent answers *"No"*, go to 66]

64. Do you know whether the contact tracing system, after the interview, reached out to any of the people you had been in contact with?

    Yes, all of them were contacted; Yes, most of them were contacted; Yes, they contacted some of them; I am not aware that they were contacted; I do not know

    [If the respondent answers *"I am not aware that they were contacted"* or *"I do not know"*, go to question 66]

65. Approximately, how long did it take for the contact tracing system to phone the people you had been in contact with?

    They called them within the first 24 hours after my positive test result; They called them within 24 to 48 hours after my positive test result; They called them within 48 to 72 hours after my positive test result; They called them more than 72 hours after my positive test result

66. Have you been reached out, at any time, by personnel from the contact tracing system to alert you that you may had been in contact with a person who had tested positive for COVID-19?

    Yes; No; I do not know; I prefer not to answer

67. During the last few months, have you had difficulties accessing health services in general (for instance, due to cancelled or delayed medical appointments)?

    Yes; No; I prefer not to answer

68. We would like to know your views on the risk of COVID-19 infection in your municipality. How likely do you think it is that you will be infected with COVID-19 in the following month?

    Extremely likely, Very likely; Somewhat likely; Unlikely; Very Unlikely

69. And how likely do you think it is that a person in his/her 30s, who works on site and lives in your neighborhood or municipality will be infected with COVID-19 in the following month?

    Extremely likely, Very likely; Somewhat likely; Unlikely; Very Unlikely

70. How many of your personal acquaintances have been infected with COVID-19?

    0; 1; 2; 3 to 5; 6 to 10; 10+

71. On a scale of 0 to 10, where 0 is "very bad" and 10 is "very good", how would you rate the quality of care received by you and those close to you in the following areas?

    - COVID-19 detection system (speed of tests, results notification, etc.)
    - Contact tracing system
    - Follow-up healthcare for COVID-19 cases
    - Access to the healthcare system (telephone accessibility, availability of appointments, etc.)
    - Medical attention by healthcare personnel

    0; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10

72. We would like to know how your habits have changed as a result of COVID-19. Comparing your habits before the start of the pandemic with your current habits, how has the frequency with which you perform the following actions changed?

    - Eating or drinking in restaurants or bars (indoors)
    - Eating or drinking in restaurants or bars (outdoors/terrace)
    - Meeting with close relatives who do not live with you (parents, siblings, aunts and uncles, nieces and nephews).
    - Meeting with other, more distant, relatives
    - Meeting with friends
    - Leaving my municipality for leisure purposes (travel, visits, etc.)

    Much more frequently; More frequently; As before; Less frequently; Much less frequently

F.8 Emotional Well-being

73. On a scale of 0 to 10, where 0 indicates "great discomfort or depression" and 10 indicates "full happiness", how would you rate your emotional well-being?

    0; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10

74. Comparing your emotional well-being before the first state of alarm was declared (March 14, 2020) with your current one, how would you say your emotional well-being has changed?

    It is now much better; It is now slightly better; About the same; It is now slightly worse; It is now much worse; I prefer not to answer

    [If the respondent answers *"It is now much better"*, *"It is now slightly better"*, *"About the same"* or *"I prefer not to answer"*, go to question 76.]

75. You have previously told us that your emotional well-being has worsened since the state of alarm was declared, select the main reasons. Check all that apply.

    Loss of employment and/or income; Difficulties in reconciling work and child care; Uncertainty about the future; I have reduced my contact with my loved ones; Health problems; Family conflicts; Other (please specify); I prefer not to answer

F.9 Knowledge and Opinion about the Minimum Income Scheme (*Ingreso Mínimo Vital*)

76. On May 29, the government approved the Minimum Vital Income, which aims to guarantee a minimum income for all families. Have you (or someone in your household) applied for this benefit or do you intend to apply for it?

    I have already applied for it; I have not applied for it, but I am going to apply for it; I have not applied for it and I do not know if I will do so; I have not and will not apply for it

    [If the respondent answers something different to *"I have already applied for it"*, go to question 79.]

77. Have you received a response to your application for the Minimum Vital Income benefit?

    Yes, we have been granted the aid and we have received it; Yes, we have been granted the aid but we have not yet received it; Yes, the aid has been denied; We have no response yet

    [If the respondent answers *"Yes, the aid has been denied"* or *"We have no response yet"*, go to question 79.]

78. Please, indicate the approximate monthly amount that your household has been granted as Minimum Vital Income.

    0€-99€; 100€-199€; 200€-299€; 300€-399€; 400€-499€; 500€-599€; 600€-699€; 700-799€; 800€-899€; 900€-1,000€; 1,000€-1,100€; I do not know

79. What is your opinion about the Minimum Vital Income? Please, use the scale of 0 to 10, where 0 means "I do not like it at all" and 10 means "I like it very much".

    0; 1; 2; 3; 4; 5; 6; 7; 8; 9; 10

80. Select the option that best captures your opinion about this aid. You can select more than one option if you prefer.

    It will help to those people most in need; It will help reduce inequality; It will help reduce child poverty; It is too costly for the state; It will discourage beneficiaries to seek

employment; It will foster the informal economy; It is not fair to give an aid to people who are able to work; Other (please specify); I do not know, I prefer not to answer

81. According to the announcement by the government, the Minimum Vital Income that will be granted to an eligible family consisting of two adults and two children is 877€ per month. If this family has an income of 400€ per month from their current job, what transfer do you think they should receive?

    877€ per month; 477€ per month; 277€ per month; No transfer; I do not know

82. Do you want to tell us something more? In the space below you can give us your opinion on this survey or on any of the topics covered, we will be happy to read it!

    Text box

F.10 Additional Information on Sources Used for the Treatment

83. Additional Information

    - There is extensive scientific evidence on the importance of contact tracing.
    - Here[12] you can find an scholarly article published in the prestigious journal The Lancet (in English).
    - The calculation of the number of contact tracers needed has been done using the U.S. Health Resources and Services Administration (HRSA) tool.

      The calculation takes into account the population of each autonomous community and the number of cases per 100,000 inhabitants. Here[13] you can find the tool (in English).
    - The estimated number of contact tracers per inhabitant in each autonomous community has been calculated using data supplied by the regional Health Departments, and information provided by Elena G. Sevillano and Pablo Linde.

      Here[14] you can find more information.

    [If the respondent answered *"Galicia"* to question 3, display the following paragraph]

    - As we said, there is no reliable data for Galicia, because the autonomous community also considers personnel who are not exclusively dedicated to this task. You can find more information here.[15]

      For the calculation of the number of contact tracers needed to track all cases, we have assumed that the staff spends 10% of their working day on this task.

[12] https://www.sciencedirect.com/science/article/pii/S2468266720301572

[13] https://www.gwhwi.org/estimator-613404.html

[14] https://elpais.com/sociedad/2020-10-26/espana-tiene-el-doble-de-rastreadores-que-en-julio-pero-llegan-tarde.html

[15] https://www.eldiario.es/galicia/politica/20-6-000-rastreadores-mes-medio-xunta-engordacifras-personal-medico-no-seguimiento-contactos_1_6162599.html

G Pre-Analysis Plan

Here we reproduce the content of our pre-analysis plan (**?**).

G.1 Introduction

This document outlines the hypotheses to be tested and specifications to be used in the study about the effects of quality in the management of the Covid-19 crisis on political attitudes. Since the authors completed the plan before the data was delivered to the authors and analyzed, the plan can provide a useful reference in evaluating the final results of the study. In particular, we registered this study with the American Economic Association (AEA) Randomized Control Trial Registry on December 13, 2020.

This study is related to the project 'The Political Consequences of the Covid-19 Crisis' that we conducted in June and July 2020 and for which we submitted a Pre-Analysis Plan to the American Economic Association (AEA) Randomized Control Trial Registry AEARCTR-0006084. This Pre-Analysis Plan focuses on describing new experiments that we plan to conduct within the new survey, which will take place in November 2020.

We have received IRB clearance from CEMFI (Centro de Estudios Monetarios y Financieros)'s IRB for these data collection and survey experiment (Application Reference #9; Approval date: October 2020).

The rest of this plan is outlined as follows: Section 2 reviews the motivation for the study; Section 3 presents the data sources, experimental design and econometric specifications; Section 4 presents the main outcomes to be tested; Section 5 the main hypotheses; Section 6 describes the analysis of heterogeneous effects and potential non-linearities.

G.2 Motivation

In this study, we analyze the political and economic consequences of the (mis)management of the Covid-19 crisis. With this objective, we plan to implement a number of large-scale online experiments conducted to a representative sample of the Spanish population. Spain is one of the most severely affected countries by the Covid-19 pandemic, both in terms of the public health crisis and the expected economic downturn.

Our main research question is to study how providing information about the importance and the quality of the public management of the crisis and about the difference in management of the crisis across Spanish regions affect trust in institutions, support for extremist parties, polarization, and compliance with the rules, among other political attitudes.

G.3 Data sources, experimental design and econometric specifications

G.3.1 Data

To perform this study, we will conduct a large-scale survey in Spain during November and early-December of 2020. We expect the sample size to be of approximately 4,000 individuals. These individuals will be selected by recontacting the 5,000 individuals that we surveyed in a baseline survey conducted in July 2020 (see AEA Pre-Analysis Plan AEARCTR-0006084). Given that a few months have passed since the baseline survey, we anticipate there will be some attrition.

In this survey we will collect some basic socio-demographic information, expose individuals to different information treatments, and elicit beliefs and political attitudes that are examined as outcomes of interest. We outsourced the data collection to YouGov, which is a well-established data analytics firm.[16]

G.3.2 Experimental design

Individuals will be randomly assigned to one of the following three groups:

T1: This group obtains a treatment that consists on information on the importance of political action in managing the Covid crisis. In particular, it emphasizes the relevance of contact tracing. First, we elicit the individual's prior on what is the number of contact tracers in his/her region (Autonomous Communities in Spain). Second we provide the actual number of contact tracers in their region in October 2020. In order to provide a benchmark for this information, we also provide information on the recommended number of contact tracers according to the Fitzhugh Mullan Institute for Health Workforce Equity.

T2: This group obtains the same information and prior elicitation as those in T1. At the end of that treatment, they receive additional information on how the number of contact tracers in their region compares to the rest of Spanish regions. This information provides an additional benchmark to the number of contact tracers.

Control: This group receives the treatment T1 at the end of the survey. Since at the time of answering all relevant outcomes the control group has not received yet the information treatment, this group serves as a control group. By providing the treatment information to this group at the end of the survey, we can obtain from them the prior about the number of contact tracers in their region.

Randomization

The sample is randomized to the three groups according to the following proportions: T1 (1/4 of the sample), T2 (1/4 of the sample), Control (1/2 of the sample).

The randomization is stratified by region, age, education level, and treatment assignment in the survey wave conducted in July 2020.[17] In particular, the combination of each of the 17 Autonomous Communities of Spain, 3 age-levels, 2 education groups, and 6 first-wave assignments define different strata. Individuals in each stratum are randomly assigned to the three groups (treatments and control) without replacement.

G.3.3 Econometric specifications

In a first econometric specification we will combine the two treatment groups into a single group, which we denote as T_{ic}, and compare it to the control group. In particular, T_{ic} is an indicator that takes value 1 if the individual i living in region c is assigned to groups T1 or T2. Note that since the information provided differs by region, we include subindex c. The specification we plan to estimate is

$$Y_{ic} = \alpha + \beta T_{ic} + X'_{ic}\delta + u_{ic} \tag{1}$$

where Y_i is one of our outcomes of interest measured at the individual level (we describe outcomes in detail in the next section); T_{ic} is defined as described above; X'_{ic} is a vector of

[16] https://es.yougov.com/?stay. Contact: Pau Pinós pau.pinos@yougov.com.

[17] See AEA Pre-Analysis Plan AEARCTR-0006084.

controls that we specify below. β captures the effect of receiving the treatment information on the number of contact tracers in region c on political attitudes.

We are also interested in the heterogeneous response by priors:

$$Y_{ic} = \beta_0 + \beta_1 T_{ic} + \beta_2 T_{ic} \times (\mu_{ic} - a_c) + \beta_3 (\mu_{ic} - a_c) + X'_{ic}\delta + e_{ic} \tag{2}$$

where Y_{ic} and T_{ic} are defined as in equation 1; a_c is the measure of the number of contact tracers in region c, μ_{ic} is individual i's prior about the number of contact tracers in region c. Hence, $(\mu_{ic} - a_c)$ captures the information shock to the individual. If $\mu_{ic} - ac > 0$ the individual got bad news, if $\mu_{ic} - a_c < 0$, the individual got good news. β_1 captures the effect of receiving the information treatments for individuals that do not update their priors. β_2 captures the additional effect for individuals that receive bad news.

We will examine a number of variations of specifications 1 and 2:

- We will examine if the effects are different depending on whether individuals received treatment T1 or T2 (i.e., for whether individuals obtained additional information about the performance of their region relative to the rest of the country).
- In specification 2, instead of the continuous measure of 'bad news', $\mu_{ic} - a_c$, we will use a dummy for receiving bad news $d_i = 1$ iff $\mu_{ic} - a_c > 0$. In that specification, β_1 captures the effect for individuals that obtain 'good news' (i.e., $\mu_{ic} - a_c < 0$), while β_2 captures the differential (or additional) effect for individuals that obtain good news.
- We will also allow all the main coefficients in equation 2 to vary by whether the news received is good or bad news: we will interact the main terms with d_i defined above.
- We will examine whether the coefficients are heterogeneous on the basis of whether the individual is ideologically aligned to the government of their Autonomous Community, as well as by whether the individual is right-wing leaning of left-wing leaning (which proxies for alignment with the left-leaning central government).

Controls. Ideally, the vector of controls X'_i will include strata fixed effects defined by the combination of each autonomous region (17 in total), educational level (3 levels), age level (2 groups), and treatment assignment of first wave (6 treatments) which amounts to 612 strata. However, many strata will have very few or no observations and, hence, little variation on treatment assignment. In case the inclusion of strata fixed effects leaves little remaining identifying variation, we will replace the strata fixed effects for the variables used in the stratification. We will also add a number of controls to improve the precision of our estimates. In particular, pre-treatment ideological variables (self-reported vote in the last Congress election and left-right ideological position on a 1-10 scale); gender; centrality; socio-economic situation (pre-shock and change with the shock); and household income (pre-shock and change with the shock). As a robustness check, we will also add baseline values of the outcome as measured in the first wave of the survey conducted in July 2020 by the same individuals. We may exclude some of these covariates if they have too many missing values and their inclusion would lead to an important drop in the sample size. We will report the results with and without covariates.

Randomization balance check. We will report a balance table to check whether the different treatment groups are balanced across all the pre-treatment variables mentioned in the previous paragraph.

Outcomes. As we describe in the next section, we will aggregate outcomes on six different families of outcomes. For each of these families of outcomes, we will construct mean effects indices following. We will also report the estimates for each separate outcome.

Data cleaning. Before proceeding with the analysis, we will examine the internal quality of the data. In case of detecting observations for which we have evidence of careless response patterns, we will drop those observations from the sample. The criteria that we will use to detect those observations will be: (i) abnormally short time to answer all questions (less than 2 standard deviations from the mean, bottom 5% of time to complete); (ii) inconsistent answers across similar questions, (for instance, inconsistent description of occupation and sector); or (iii) abnormal responses (e.g., answering 0 or 10 to all questions with a 0-10 scale, or always answering the same number).

G.4 Outcomes

We have 6 different sets of outcomes and hypotheses.

1. Beliefs.
2. Trust in political institutions.
3. Political preferences and support for the incumbent government.
4. Polarization.
5. Support for taxation and redistribution.
6. Compliance.

G.4.1 Beliefs

Competence of regional government in handling of the pandemic

- Measure in a scale from 0 to 10 of how good or bad has the handling of the Covid-19 pandemic in their region, where 0 is very bad and 10 is very good.

Competence of central government in handling of the pandemic

- Measure in a scale from 0 to 10 of how good or bad has the handling of the Covid-19 pandemic by the central government, where 0 is very bad and 10 is very good.

Regional versus central government responsibility

- Measure in a scale from -10 to 10, where -10 means only the central government is responsible and 10 means only the regional government is responsible.

Exogenous versus endogenous factors responsible

- Measure in a scale from -10 to 10, where -10 means the evolution of the pandemic only depends on exogenous factors and 10 means only endogenous factors responsible.

Voting based on management or ideals

- Measure in a scale from -10 to 10, where -10 means individual votes only based on management and 10 means only on ideals.

Competence of parties (PP, PSOE, Cs, Vox, Podemos) in management

- Measure in a scale from 0 to 10, where 0 means very bad and 10 means very good.

Competence of central versus regional governments in management

- Measure in a scale from -10 to 10, where -10 means regional governments more competent and 10 means central government more competent.

G.4.2 Trust

Trust in regional government

- Measure of degree of trust on the regional government on a scale from 0 to 10.
- Share of money chosen to donate to regional government (vs. Red Cross). Alternatively, we will consider a dummy indicating whether the individual chooses to donate more than 50% to the regional government.
- Share of money chosen to donate to regional government (vs. Red Cross) net of central government vs. Red Cross.

Trust in the political system and other institutions

- Measure of degree of trust on the following institutions on a scale from 0 to 10: Spanish government, members of central parliament, local government, institutions of the European Union, judicial system, public health system.
- Assessment of the capacity of political institutions to address citizens' main problems. On a scale from 0 to 10.
- Share of money chosen to donate to central government (vs. Red Cross). Alternatively, we will consider a dummy indicating whether the individual chooses to donate more than 50% to the central government.

Additional analysis:
We will collect measures of trust on other entities or groups of individuals: economists, epidemiologists, media, and pharmaceutical companies. We will use these measures as outcomes to explore if the effects on trust are generalized across groups, or specific to institutions.

G.4.3 Political preferences and support for the regional incumbent party

- An indicator for whether the individual intends to vote for one of the parties that form the regional government.
- An indicator for whether the individual mentions one of the parties that form the regional government as the party to which he/she feels the most sympathy.
- Mean sympathy for the parties that form the regional government. On a scale from 0 to 10.

Additional analyses:

- We plan to explore as outcomes the whole vector of vote intention and sympathy for all parties.
- We plan to explore as outcomes the support for centralist and pro-regional independence parties.
- We plan to explore as outcomes participation in collective action, e.g., demonstrations.
- We plan to explore as outcomes responses about what term best describes the situation of the country.

G.4.4 Polarization

We will consider four types of polarization: ideological polarization, affective polarization, partisanship, and support for radical parties.

a. We measure **ideological polarization** through a question on individuals' position on a 0 (extreme left)-10 (extreme right) scale. We construct three ideological polarization variables: the standard deviation of the responses, and the share of respondents in the extreme positions (0 and 10 or, alternatively, 0-1 and 9-10).

b. We measure **affective polarization** through a set of questions on how each party 'makes the respondent feel'. We construct two affective polarization variables. First, for each individual, we will compute the standard deviation of responses across all parties. For example, if a respondent grades all parties the same, then the standard deviation will be zero. Second, for each individual, we will compute the difference between her 'feelings' about her preferred party (as answered in the question about which party they feel closest to) and the mean of her feelings for the parties in the opposite side of the ideological spectrum. Parties on the right (left) of the ideological spectrum are CS, PP, and VOX (PSOE, Podemos, Más País-Equo, and Izquierda Unida). For example, for a respondent whose preferred party is the PSOE, this variable will take the value of the feeling about the PSOE minus the mean feeling for CS, PP, and VOX. For voters whose preferred party is a nationalist party (ERC, Junts, CUP, PNV, and EH Bildu), we consider central right-wing parties (CS, PP, VOX) as parties on the opposite side. For voters whose preferred party is 'another' or 'none', we will consider the party for which they report the highest feeling as their preferred party, and then proceed following the previous steps. In case the respondent gives more than two parties her highest valuation, we will randomly choose one as the preferred party to construct this variable.

c. We measure **partisanship** through self-reported persistence in voting preferences. We will focus on the share of respondents that answer that they always vote for the same party, or that they always or generally vote for the same party.

d. We measure **support for parties on the ideological extremes** through the share of respondents that report an intention to vote for Podemos, VOX, or CUP; or through the share of voters that mention one of these parties as the party for which they feel the most 'sympathy'; or through the sympathy felt for these parties on a 0-10 scale.

G.4.5 Support for taxation and redistribution

- Support for taxation and redistribution based on ideological stance regarding taxes. Two alternative outcome variables:

  - Categorical variable that takes the following values:
    * sup_tax = 3 if answer 'tax revenue is a way to better redistribute wealth in society'
    * sup_tax = 2 if answer 'taxes are necessary to fund the provision of public goods'
    * sup_tax = 1 if answer 'the amount we pay in taxes is not in accordance with the public goods we receive due to corruption'
    * sup_tax = 0 if answer 'tax money would be better used in people's pockets'
    * When multiple options are chosen, we will calculate the mean.
  - Indicator that takes value 1 if the answer 'tax revenue is a way to better redistribute wealth in our society' (and 'tax money would be better used in people's pockets' is not chosen); and takes value 0 otherwise.

- Support for higher spending and taxes. On a scale from 0 to 10 where 0 means decreasing spending and taxes and 10 means increasing spending and taxes

- Preferences towards progressive taxation. In particular:
  - Indicator for whether a hypothetical increase in taxes should be mainly charged to very high-income individuals (higher than 120,000 €/year).
  - Indicator for whether a hypothetical increase in taxes should be mainly charged to high-income individuals (higher than 60,000 €/year).

Additional analysis:

- We will also test whether the treatment has larger effects on support for redistribution for people that self-identify as left-leaning (or voted for left-wing parties in the last election), and a more negative effect for people that self-identify as right-leaning (or voted for right-wing parties).

G.4.6 Compliance

- Support for mask use. Indicator for whether it is a good idea or linearized variable.
- Willingness to quarantine. Indicators for options (a) or (a or b) or linearized variable.
- Observed willingness to quarantine. 0-10.
- Willingness to get vaccine. 0-10.

G.5 Hypotheses

'First Stage': We will first examine the effects on the perceived level of competence of regional governments (first outcome of section 4.1.). This regression can be understood as a 'first stage', since we hypothesize that the effects on the rest of outcomes are mediated through a change in the perceived level of competence in the quality of political reaction to the Covid-19 crisis.

We expect our treatments to have a negative effect on the perceived level of competence of regional governments ($\beta < 0$ in specification 1, $\beta_1 < 0$ and $\beta_2 < 0$ in specification 2).

We also expect these effects to decline in magnitude when the respondent is ideologically aligned to the regional government and misaligned to the central government. We expect T2 to have larger (smaller) effects in magnitude for individuals in regions with a below-median (above-median) response.

'Other Outcomes': We expect to find similar effects for outcomes that measure 'favorable' political attitudes, such as trust in government, support for redistribution, lack of polarization, and compliance with rules and regulations. In particular, we expect ($\beta < 0$ in specification 1, $\beta_2 < 0$ in specification 2). We also expect similar heterogeneous effects on the basis of ideological alignment with regional and central governments.

G.6 Heterogeneous effects and non-linearities

G.6.1 Heterogeneous treatment effects

For all outcomes, we will explore heterogeneous effects along several dimensions: age, educational level, region, gender, centrality, pre-treatment ideological variables (self-reported vote at the last Congress election and left-right ideological position on a 1-10 scale), socio-economic situation (pre-shock and change with the shock), and household income (pre-shock and change with the shock), by having suffered from Covid-19 disease personally or in the household, by eligibility to GMI (proxied using pre-treatment questions, such as reported household income), by health and personal experience with handling of the pandemic.

G.6.2 Non-linear effects

For the 0-10 outcome variables, in addition to linear models, we will allow for non-linearities by considering as alternative outcomes indicators for whether respondents respond above a given number.

For multiple-choice qualitative outcome variables, in addition to dummies for each category, we will consider ordered probits.