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Plümper, Thomas; Neumayer, Eric; Pfaff, Katharina Gabriela

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ORIGINAL ARTICLE

The strategy of protest against Covid-19 containment policies in Germany

Thomas Plümper[1] | **Eric Neumayer[2]** | **Katharina Gabriela Pfaff[3]**

[1] Department of Socioeconomics, Vienna University of Economics and Business, Vienna, Austria

[2] Department of Geography & Environment, London School of Economics and Political Science (LSE), London, UK

[3] Department of Socioeconomics, Vienna University of Economics and Business, Vienna, Austria

Correspondence
Thomas Plümper, Department of Socioeconomics, Vienna University of Economics and Business, Vienna, Austria.
Email: thomas.pluemper@wu.ac.at

Abstract

Objectives: The article analyzes the epidemiological and political logics of protest against containment policies in Germany. To maximize the mobilization potential, protest organizers organize more protest events when Covid-19 mortality rates are low, the stringency of containment policies is high, and in districts in which the vote share of mainstream parties is traditionally low.

Method: Using a negative binomial model, we analyze the number of protest events in a sample of 401 German districts over the period from March to May 2020.

Results: We find robust positive predicted effects of the stringency of containment policies and negative predicted effects for the mortality rate and the strengths of mainstream parties.

Conclusion: We interpret these findings as evidence of the strategic behavior of protest organizers that target protest participation and mobilization to keep the movement alive and potentially grow it.

KEYWORDS
containment policies, Covid-19, mobilization, protest, SARS-CoV-2

During the first wave of the Sars-CoV-2 pandemic, protest against Covid-19 containment policies was organized by rather short-lived groups with little, if any, coordination between them. In Germany, this changed around mid-2020 with the emergence of the *Querdenken* movement. *Querdenken* started as a local group in Stuttgart, but it did not take long for it to become a nationwide movement and to organize protest events in districts all across Germany. Since the beginning of the second wave, the *Querdenken* group has dominated protest against containment policies.

If we judge the movement by its main goals—*Querdenker*, as members of the group are called, demand the immediate repeal of the restrictions on fundamental rights that have been imposed by the federal and state governments in Germany to prevent the spread of the Sars-CoV-2 virus—the movement has not been very successful. During the winter season of 2020/2021, Germany had implemented one of the

most stringent containment policies in Europe and kept these policies longer in place than most other European governments.[1]

But protest is not necessarily all about immediate policy changes. A protest movement can thrive even though it proves unable to influence political decision making. A movement can slowly gain momentum, institutionalize, win more supporters and increasingly attract media attention. The *Querdenken* movement has not been unsuccessful in these strategic dimensions of a protest movement.

We argue that the survival of the group, the success of the group's leaders, and the moderate institutionalization of the movement have been facilitated by a strong orientation on the potential demand for protest by the protest organizers. The timing and location of protest events follow a strategy that follows two logics. The first logic is politics-oriented. Though protesters come from very different parts of society, evidence suggests that many potential protesters distrust mainstream parties, and at the fringes of protest, potential protesters also include conspiracy theorists, vaccination opponents, and political radicals that oppose, for various reasons, the existing political order and despise the political establishment (Nachtwey et al. 2020). Mobilization will be facilitated if protest events take place in districts in which mainstream parties have traditionally been relatively weak. The second logic is policy-oriented: Protests have predominantly been organized when and where incidence rates were relatively low and when containment policies were relatively stringent. By strategically choosing the time and place of protest events this way, the protest organizers can successfully mobilize those who believe that measures are more stringent than necessary.

This article contributes to a diverse and often unconnected set of literature. Our results speak to the rapidly growing literature that analyzes the political consequences of the SARS-Cov-2 pandemic (Bol et al. 2020; Druckman et al. 2020; Karwowski et al. 2020). As this literature has shown, the pandemic initially triggered a rally-around-the-flag effect, with government support rising in most countries, including Germany (Schraff 2020). After the first wave had peaked, the pandemic and the political measures increased societal polarization and amplified pre-existing political cleavages. Protest against containment policies became increasingly frequent, and protest events grew in size and visibility (Griffin, de Jonge, and Velasco-Guachalla 2020).[2] Our research is also related to the literature on "protest business" (Jordan, Maloney, and Maloney 1997) and the "technology of mobilization" (Lockwood 2019)—labels used to characterize the strategic behavior of the leaders of a protest group or movement.

THE ORGANIZATION OF PROTEST AGAINST CORONAVIRUS POLICIES

This section argues that the timing and location of protest against containment policies in Germany follows a strategic logic. Protest organizers such as the "*Querdenken*" group, which since the late summer of 2020 dominates protest against containment policies in Germany to an extent that the media label every person opposing containment policies in Germany as a *Querdenker*, have largely failed to exert significant influence on containment policies. As a consequence, they aim at keeping the movement alive and potentially growing participation in protest events to gain media attention. The main strategic instruments of the protest organizers are the timing and the location of protest events. As we will explain in greater detail in this section, protest events mobilize more potential protesters when the stringency of containment policies is high while incidence rates are low and where mainstream parties are traditionally relatively weak.

The distributional logic of containment policies is simple: The old and vulnerable benefit, while the relatively young bear the brunt of the costs of the pandemic. This is because, on the one hand, Covid-19

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[1] https://www.bsg.ox.ac.uk/research/research-projects/coronavirus-government-response-tracker and https://www.ecdc.europa.eu/en/covid-19/data.

[2] Other research provides evidence that the pandemic had an impact on protest in general, showing that after an initial decline in protest activity in Spring 2020 (Kowalewski 2020; Libal and Kashwan 2020; Metternich 2020; Pinckney and Rivers 2020), the number of protest events increased and bounced back to at least pre-pandemic levels (Berman et al. 2020; Bloem and Salemi 2021). Research on protest against containment policies itself remains relatively rare (Brennan 2020; Nachtwey et al. 2020; Neumayer et al. 2021; Pfaff et al. 2021; Iacoella et al. 2021).

mortality is strongly correlated with age with people aged 80 facing a roughly 70 times higher risk of dying than people half that age (Dowd et al. 2020). On the other hand, the younger and healthier parts of the population have little to fear but bear the main brunt of the economic and social burden of containment policies especially if they are employed in sectors that crucially depend on social contact and that are not considered indispensable. Thus, a simple epidemiological logic suggests that protest against coronavirus policies is largely driven by the young, by the economically worse off, and by those of lower educational attainment. Yet this is not the case, at least not in Germany. Protesters are not necessarily young, and they tend to be better educated than the population average (Nachtwey et al. 2020). Protest against Covid-19 containment policies is therefore not predominantly driven by those who suffer from the economic and social consequences of the pandemic or from the policies implemented to contain the pandemic.

Instead, protest against coronavirus policies is first and foremost political. Protest organizers do not only manage to mobilize those that are strongly affected by containment policies and who believe the cure is far worse than the disease. Protests also draw in firm believers in conspiracy theories who believe that the pandemic has been invented by a small elite to manipulate the political and economic order and by political radicals who stand in fundamental opposition to the German political mainstream. According to Nachtwey et al.'s (2020) recent survey among participants of protest events, a staggering 92 percent of protest participants have no intention of voting for mainstream parties in the future and instead want to vote for radical and niche parties in the next election. Likewise, looking at those who approve of rather than actively participate in the protest, in early November 2020, only between 3 percent and 7 percent of the supporters of the Conservative, Social Democrat, and Green political parties in Germany approved of protest against coronavirus measures. At the same time, more than half, namely, 53 percent, of the supporters of *Alternative für Deutschland* approved of these protests. Non-marginal approval of protest events also derives from supporters of the Free Democratic Party, 18 percent of whom approve of protests, and the radical party from the far left of the political spectrum, *Die Linke* (15 percent).[3]

Protest event organizers can maximize mobilization if they strategically locate events into districts in which support for mainstream parties tends to be lower. Distrust of mainstream parties is spatially very unevenly distributed in Germany. Voters of *Die Linke* predominantly live in former East German states—the party succeeded the communist party of the former German Democratic Republic. While *Die Linke* regularly wins between 15 percent and 30 percent of the vote share in East German states with the exception of Saxony, the party's vote share rarely exceeds 5 percent in West German districts. Likewise, the AfD has its strongholds in East German states and especially where *Die Linke* is relatively weak by East German standards, most notably in Saxony. Generally speaking, the AfD wins more votes in Eastern districts than in Western districts and in districts located in the South of Germany than in the North. In aggregate, the stronghold of the party is Saxony, and the party is weakest in Schleswig-Holstein, Lower Saxony, and North Rhine-Westphalia. In turn, mainstream parties are strongest in Schleswig-Holstein and Lower Saxony with aggregate vote shares in excess of 80 percent, and weakest in Saxony and Thuringia with vote shares just above 50 percent (all data from the last election to the *Bundestag*, the federal German parliament, in 2017).[4]

Protest organizers can also strategically time protest events with a view toward the dynamics of the pandemic and the containment policies adopted by governments. The protesters' demands are more plausible the higher the stringency of the containment measures. It, therefore, makes perfect sense for protest organizers to stage more protest events when more people oppose containment policies, which is when these policies are more intrusive and biting. With more stringent policies in place, the number of supporters of protest measures is higher, and supporters are more willing to participate in protest events. For both reasons, mobilization becomes easier. As a welcome side-effect, when containment policies are felt the most, the media are also likely to pay more attention.

The stringency of containment policies influences the timing of protest events much more than their location. This is because with the few exceptions of infection hotspots, there is little variation in containment policies at the district level within the same state, and even if we compare measures across states,

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[3] https://www.zdf.de/nachrichten/politik/politbarometer-rueckhalt-fuer-geltende-massnahmen-100.html.

[4] The definition of "mainstream" parties includes the Free Democratic Party here.

the variation in stringency is much smaller than the variation over time given states tend to coordinate containment policies with each other. By contrast, incidence and mortality rates vary strongly not merely over time but also across space. The credibility of the protesters' argument that containment measures are an unnecessary and disproportionate political reaction to the health risks associated with the pandemic is highest when Covid-19 mortality is low. Conversely, where and when mortality rates are high, the credibility of protest against containment policies declines—while the health risk of participation in protest events increases (Lange and Monscheuer 2021). For flexible protest organizers, the best time and place to organize protest events is where the credibility of protest is highest—that is, when and, to some extent, where containment measures are more stringent and when and where and when mortality rates are low. When the pandemic does not appear to be serious but the containment measures are stringent, the protesters' argument that the cure is worse than the disease is most plausible.

In sum, we argue that protest organizers can use the location and timing of protest events to mobilize potential protesters based on a political and an epidemiological logic. We predict that more protest events take place where mainstream parties are relatively weak, when and, to some extent, where containment policies are stringent, and when and where mortality rates are relatively low.

RESEARCH DESIGN

In this section, we describe how we design the empirical tests of the predictions derived from our theoretical framework. Our dependent variable is the monthly number of protest events in a German district over the period March 2020 to January 2021. We sourced data from the Armed Conflict Location & Event Data (ACLED) Project (Raleigh et al. 2010) on organized protest events against governmental policy measures responding to the Covid-19 pandemic. The coding process captures events in which protesters criticize the handling of the pandemic by the federal, state, or local government, express their opposition toward Covid-19 containment policies, or demand more economic support as compensation for loss from containment policies. To ensure that our sample only covers events directed against governmental actors, we restrict our definition of protest events to peaceful protests, car rallies, violent demonstrations, or protests in which the police intervened, excluding protests opposing working conditions and hygiene measures in private companies.[5]

ACLED reports 1322 protest events against containment policies in total over our sample period. Berlin, the German capital, saw the highest number of these protest events of all states, with 94 events; 154 of the 401 districts did not experience any protest events throughout the sample period. The highest number of protest events took place at the end of the pandemic's first wave, in May, when incidence and mortality rates were low but containment measures were still relatively stringent, and in November, when incidence rates in Germany kept rising, mortality was still low, and politicians were discussing a second lockdown. The smallest number of protest events took place in March 2020 with 13 events when the pandemic was still new and the vast majority of people were shocked by the TV footage of a collapsing health system in Italy. In general, protest events did not show strong temporal patterns. Nevertheless, in one robustness test, we include the lagged-dependent variable to account for potential temporal persistence.

Figure 1 displays the distribution of protests against containment policies across German districts. We employ a moderately exponential scale such that districts with darker coloring hosted many more protest events in total than districts with lighter coloring. Districts without a single protest event are kept in white to allow easy identification. The majority of protest events were located in districts in the East of Germany and in the South of Germany where either *Die Linke* or the AfD have their strongholds and in large cities

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[5] The ACLED do not include information on the event organizers and cover participant information only for about 60 percent of total protest events. We checked whether the participant information is reliable as a proxy for event organizers and found that it is not. In a robustness test for which results are reported in the Online Appendix, we have dropped all events that mention groups other than *Querdenken* in the participant information from our dependent variable, reaching substantively identical results.
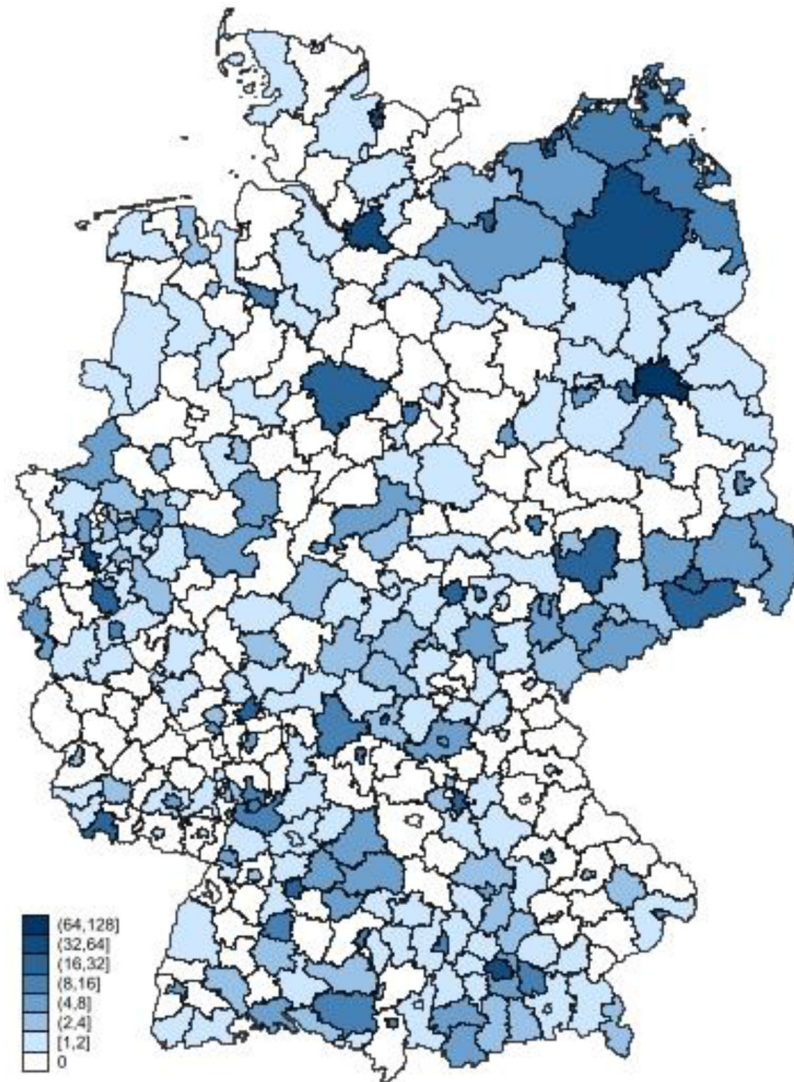
FIGURE 1   Number of protest events by district (March 2020 to January 2021 total)

such as Berlin, the capital and largest German city; Stuttgart, the hometown of the *Querdenken* movement; Hamburg, Munich, Cologne the second-, third-, and fourth-largest cities in Germany.

Since our dependent variable is an over-dispersed count variable—the number of protest events in a district in a particular month—we estimate our models with negative binomial regression. In a robustness test, we use a hurdle estimation model that relaxes the assumption that observations with no protest events are determined by the same data generating process as observations with non-zero event counts.

We measure support for mainstream parties by coding the share of votes in the last federal election that Christian Democrats, Social Democrats, Free Democrats, and the Green party received together, with the two radical parties on either side of the political spectrum as the main rivals (*Die Linke* and *Alternative für Deutschland*). The Free Democrats would normally be considered part of the political mainstream, yet approval of protest events among the party's support base is non-negligible as we have noted above. It does not matter for our estimations whether or not we include the vote share for Free Democrats in the vote share of mainstream parties (results in Online Appendix). Results are also robust if we calculate the

mainstream vote share based on the most recent state elections rather than at the last federal election (results in Online Appendix). Support for mainstream parties, or lack thereof, is consistent with the two measures highly correlated at $r = 0.93$. Data were sourced from the Federal Statistics Office.[6]

The "Corona Datenplattform,"[7] a data collection project sponsored by the German Federal Ministry for Economic Affairs and Energy, has collected data on Covid-19 containment policies at the level of districts note that other than in March 2020, it is exceedingly rare that measures taken in a district deviate from measures taken at the level of the state, with 16 states together making up the Federal Republic. We create an aggregate measure of the stringency of containment policies based on the average percentage of 20 policy measures in place listed in Appendix 1 that are each coded as one (present) or zero (absent). These measures capture restrictions to social contact indoors and outdoors, the closing of schools and child-care facilities, the prohibition of public events indoors and outdoors, the closing of cultural and educational institutions such as museums, retail businesses, restaurants, service providers, nightlife venues, the prohibition of touristic overnight accommodation, the prohibition of sports activities indoors and outdoors, the requirement to wear masks in various places, and the order to stay at home unless one has a reasonable excuse to leave. The resulting aggregate measure would score 100 in a district month in which all policies are adopted, and the absence of all restrictions would generate a score of zero. In a robustness test, we employ the "stringency index" from the widely used Oxford University's Covid-19 government response tracker as well as an aggregate stringency measure based on data from the European Centre for Disease Prevention and Control (ECDC).[8] Note, however, that these alternative measures are only available at the federal level and therefore have no cross-sectional variation at all. Accordingly, these alternative data only allow us to test the temporal and not the local dimension of protest.

A district's epidemiological situation is captured by the monthly average of the notified seven-day Covid-19 mortality rate (confirmed deaths from Covid-19 per 100,000 people), with data taken from the "Corona Datenplattform." The original mortality figures are collected by the Robert Koch Institute, which in turn receives notifications from the district's local public health authorities. We rely on mortality rates instead of incidence rates (confirmed positively tested cases) for two main reasons. Most importantly, the mortality rate is much less prone to measurement error in the first wave of the pandemic in Germany when limited testing capacity meant that a large number of infections, indeed the majority of infections, remained unconfirmed by polymerase chain reaction tests. The credibility of protest is more sensitive to mortality rather than incidence rates. Many protesters against containment policies have criticized the concentration on incidence rates and suggested hospitalizations. What these arguments overlook is the strong correlation, albeit with a three- to four-week lag, between infection rates and mortality rates. This correlation becomes even stronger if we control for the age structure of those positively tested for an infection.

Data for control variables come from the Federal Statistics Office. Population size, which we include as its natural log, population density, and the centrality of its location all render a district more strategically opportune for locating a protest event.[9] Given the finding that protest participants have an average level of education well above that of the general population, we control for the share of the workforce that is university educated. Last, we include the average gross domestic product (GDP) in thousands of euros though we have no strong a priori expectation of how this might correlate with protest events. Appendix 2 provides the summary of descriptive variable statistics.

RESULTS

Table 1 presents estimation results that are consistent with our predictions. We find that more protest events take place in districts in which mainstream parties have seen less support in the last federal

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[6] https://www.destatis.de/DE/Home/_inhalt.html.

[7] https://www.corona-datenplattform.de/

[8] https://www.bsg.ox.ac.uk/research/research-projects/coronavirus-government-response-tracker and https://www.ecdc.europa.eu/en/covid-19/data.

[9] Centrality is coded from 1 to 4 where 1 represents a district that is very peripherally located, 2 means peripherally, 3 centrally, and 4 very centrally located.

TABLE 1 Baseline model estimation results

	m1: baseline model
Vote share mainstream parties	−0.0352[***]
	(0.00854)
Stringency C-19 containment policies	0.0221[***]
	(0.00239)
C-19 mortality rate	−0.0356[**]
	(0.0139)
Population (ln)	0.736[***]
	(0.128)
Centrality of location	0.386[***]
	(0.146)
Population density	0.000278[**]
	(0.000120)
Share workforce with university education	0.0988[***]
	(0.0247)
Gross domestic product (GDP) per capita	0.0113[*]
	(0.00680)
Constant	−11.15[***]
	(1.749)
Districts	401
Observations	4411

Note: Standard errors clustered on districts in parentheses. ***statistically significant at 0.01, **0.05, *0.1 levels.

election. More protest events are predicted to take place when and where Covid-19 containment policies are stricter and Covid-19 mortality rates are lower. More populous, more densely populated, and more centrally located districts also see more protest events. Last, we find evidence that more events take place in districts that are richer on average and where a higher share of the workforce has higher educational attainment.

In non-linear estimation models, coefficients do not represent effect sizes. Due to the non-linearity of the estimator, the size of any variable depends on the effect of all other variables included in the model (Hanmer and Ozan Kalkan 2013; King, Tomz, and Wittenberg 2000). To facilitate an interpretation of the substantive results of our analyses, Figure 1 shows counterfactual effect size estimates together with 95 percent confidence intervals for each explanatory variable and for each month of our estimation period from March 2020 to January 2021 (indicated as Months 3 to 13 in Figure 2). As counterfactual, we take the sample minimum of each variable, keeping all other variables at their observed value when we compute these counterfactual effect sizes of a specific variable.

As Figure 2 shows, by far the strongest effect size stems from the vote share of mainstream parties. This is followed by the size of districts' population and by the stringency of Covid-19 containment policies, the effect of which varies strongly over time with the strongest effects in April and May of last year and then again from November onward. Of course, the U-shape in the effects sizes over time is partly a consequence of the covariates, especially the mortality rate, and results from the fact that estimated effect sizes of any variable in non-linear models depend on the covariates. It is therefore not surprising that time-invariant covariates have time-varying effect sizes. Covid-19 mortality rates exert effects of negligible sizes except in April last year and then again from November 2020 onward. Support for containment policies has generally been higher when incidence and mortality rates declined and when the worst seemed to be over
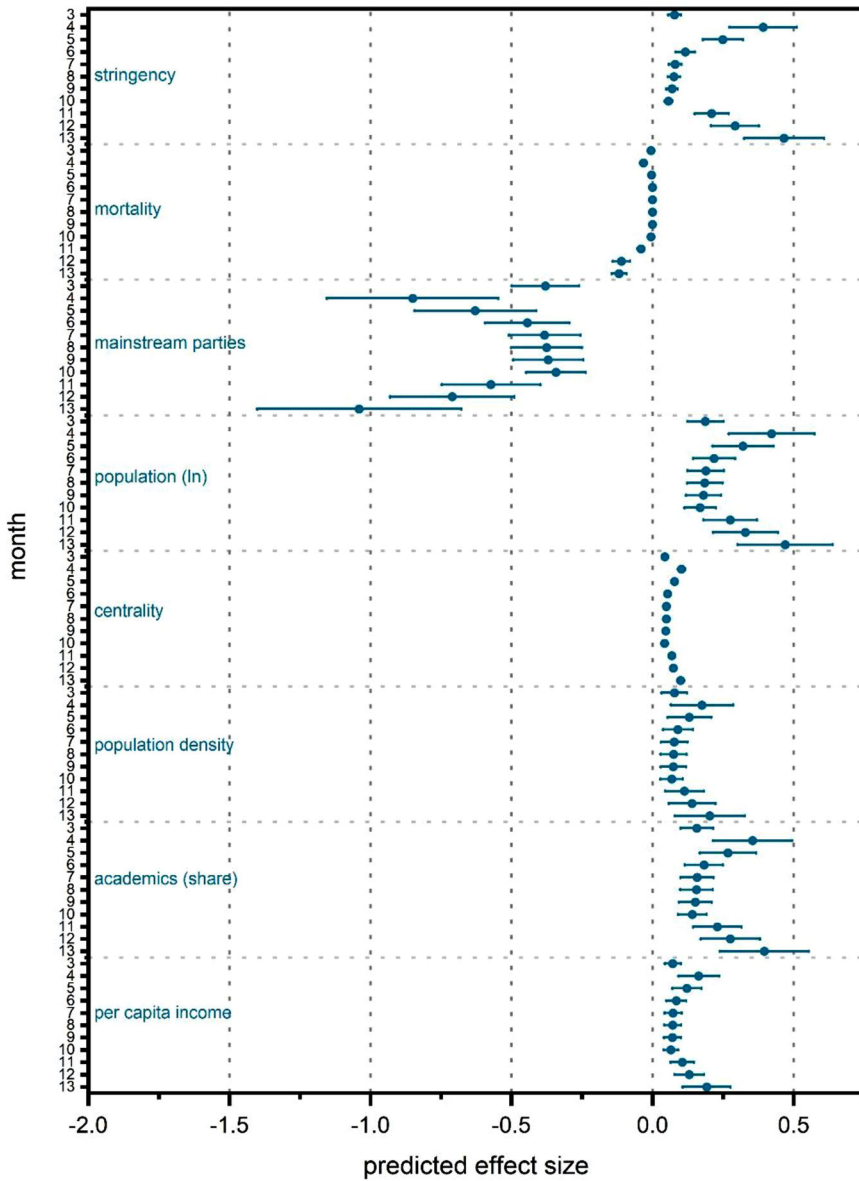
FIGURE 2   95 percent confidence intervals of effect sizes for each month

after social distancing and higher temperatures had ended the first wave. In these months, the influence of containment measures and support for mainstream parties on the choice of a location for protest events was relatively weak. These factors became more important again when the virus returned after the summer holidays and politicians started to discuss whether a second lockdown would become necessary. This was the time when protests against containment measures left the sphere of the somewhat obscure and esoteric and found their way closer to the center of civil society.

The specification of any baseline model can be challenged as plausible alternative assumptions about the data generating process result in different specifications (Neumayer and Plümper 2017). We explore the robustness of the results from our baseline model to such alternative specification choices. The first robustness test addresses the measurement uncertainty of the "stringency" variable. The variable we use

TABLE 2 Robustness tests: Alternative measures for containment policies

	m2: Oxford measure	m3: European Centre for Disease Prevention and Control measure
Vote share mainstream parties	−0.0383***	−0.0401***
	(0.00867)	(0.00879)
Stringency C-19 containment policies	0.0403***	0.0295***
	(0.00431)	(0.00396)
C-19 mortality rate	−0.0438***	−0.0615***
	(0.0157)	(0.0188)
Population (ln)	0.694***	0.700***
	(0.120)	(0.119)
Centrality of location	0.291**	0.287**
	(0.137)	(0.137)
Population density	0.000289**	0.000286**
	(0.000119)	(0.000118)
Share workforce with university education	0.0857***	0.0857***
	(0.0232)	(0.0233)
GDP per capita	0.0123*	0.0127*
	(0.00676)	(0.00671)
Constant	−11.91***	−10.01***
	(1.677)	(1.647)
Districts	401	401
Observations	4411	4411

Note: Standard errors clustered on districts in parentheses. ***statistically significant at 0.01, **0.05, *0.1 levels.

in principle measures stringency at the district level but much of the variation in stringency is between the states and, given states tend to co-ordinate containment policies with each other and with the federal government, the majority of variation is in fact over time rather than across space. This characteristic of the stringency of the Covid-19 containment policies variable allows us to test the robustness of our findings to two alternative measures of the stringency of Germany's containment policies at the aggregate federal level that exclusively vary over time. As a consequence, these alternative variables do not contribute to explain regional variation in protest intensity, but, if our theory holds, they should still have a positive effect on protest events since protest varies significantly over time. In model 2 of Table 2 we employ the stringency index from the Oxford University's Covid-19 government response tracker, and in model 3 of Table 2, an aggregate stringency measure based on data from the ECDC (for detail on its construction, see Neumayer et al. 2021). These alternative measures are correlated at $r = 0.88$ and $r = 0.78$ with our preferred measure. Results are substantively indistinguishable from the results of the baseline model.

In further robustness tests, we explore the impact of potential path dependency on the results and whether results vary across major episodes of the pandemic in Germany. If, for whatever reason, protest events start in certain districts in a particular month, it may become more likely that a local support movement establishes itself that organizes additional protest events in subsequent months. Alternatively, if protest organizers are interested in the spread of the movement, we could perhaps even see a negative temporal correlation of protest events. This would suggest that relatively more protest events take place in a district in which in the previous month, relatively few protest events took place. To account for both

TABLE 3 Robustness tests: Path dependency and sub-periods of the pandemic

	m4: lagged-dependent variable	m5: first wave (March–May)	m6: summer (June–September)	m7: second wave (October–January)
Protest events ($t-1$)	0.243***			
	(0.0580)			
Vote share mainstream parties	−0.0327***	−0.0389***	−0.0165	−0.0364***
	(0.00762)	(0.0108)	(0.0158)	(0.00965)
Stringency C-19 containment policies	0.0188***	0.0205***	0.0173	0.00615**
	(0.00222)	(0.00403)	(0.0159)	(0.00294)
C-19 mortality rate	−0.0357***	−0.345***	−1.295	−0.0310**
	(0.0129)	(0.0909)	(1.021)	(0.0156)
Population (ln)	0.583***	0.754***	1.272***	0.500***
	(0.119)	(0.144)	(0.229)	(0.126)
Centrality of location	0.275**	0.370**	0.504*	0.294**
	(0.131)	(0.145)	(0.279)	(0.145)
Population density	0.000189*	0.000165	0.000223	0.000360***
	(0.000111)	(0.000149)	(0.000205)	(0.000119)
Share workforce with higher education	0.0860***	0.0935***	0.0966**	0.0898***
	(0.0218)	(0.0289)	(0.0414)	(0.0249)
GDP per capita	0.0102*	0.0221***	0.00883	0.00494
	(0.00566)	(0.00721)	(0.00997)	(0.00699)
Constant	−8.927***	−10.83***	−19.61***	−6.893***
	(1.657)	(2.031)	(3.449)	(1.755)
Districts	401	401	401	401
Observations	4022	1203	1604	1604

Note: Standard errors clustered on districts in parentheses. *** statistically significant at 0.01, ** 0.05, * 0.1 levels.

possibilities, model 4 includes the lagged-dependent variable in the model. The positive coefficient for the temporal lag suggests a relatively large (small) number protest events in 1 month leads to a relatively large (small) number of protest events in the next month.

In model 5, we restrict the sample to the months of March to May 2020, the pandemic's first wave, in model 6 to the months of June to September 2020, the calm summer months before the storm brought a second wave of infections from October 2020 onward, which is the period in model 7. As can be seen from Table 3 , our estimation model is not well-suited to explain protests over the summer. Containment policies became relaxed, mortality rates were down to low levels, and there were only a few protest events taking place. Only population size, the centrality of a district's location, and the share of the workforce with higher education continue to predict where more events take place.

The next set of tests explores the robustness of our results to plausible changes to the way we deal with regional heterogeneity (see Table 4). In model 8, we include state fixed effects. We restrict the sample to the 324 districts in Western Germany in model 9 and to the 77 districts in Eastern Germany in model 10. Even more than 30 years after reunification, many profound structural differences persist between Western and Eastern Germany. One such difference is in the support for the two main non-mainstream political

TABLE 4 Robustness tests: Regional heterogeneity

	m8: state fixed effects	m9: Western Germany	m10: Eastern Germany
Vote share mainstream parties	−0.0453[*]	−0.0766[***]	0.00735
	(0.0243)	(0.0218)	(0.0314)
Stringency C-19 containment policies	0.0245[***]	0.0239[***]	0.0274[***]
	(0.00238)	(0.00254)	(0.00729)
C-19 mortality rate	−0.0359[**]	−0.0932[***]	−0.00679
	(0.0144)	(0.0249)	(0.0204)
Population (ln)	0.651[***]	0.710[***]	1.065[***]
	(0.143)	(0.132)	(0.305)
Centrality of location	0.117	0.258[*]	0.586[**]
	(0.126)	(0.140)	(0.277)
Population density	0.000283[*]	0.000202	−3.37e-05
	(0.000157)	(0.000140)	(0.000357)
Share workforce with univ. education	0.0892[***]	0.100[***]	0.134[**]
	(0.0263)	(0.0270)	(0.0678)
GDP per capita	0.00898	0.00903	0.0299
	(0.00612)	(0.00673)	(0.0306)
Constant	−8.560[***]	−7.262[***]	−19.12[***]
	(2.528)	(2.140)	(5.212)
Districts	401	324	77
Observations	4411	3564	847

Note: Standard errors clustered on districts in parentheses. [***] statistically significant at 0.01, [**] 0.05, [*] 0.1 levels.

parties.[10] Interestingly, while the inclusion of state fixed effects hardly affects results, and the results from Western Germany strongly resemble those for the entire Federal Republic, neither the mortality rate nor the vote share of mainstream parties plays a role in explaining the variation in protest events across Eastern German districts. Of course, one needs to keep in mind that the vote share of mainstream parties is relatively low and does not vary much in Eastern Germany. From the perspective of protest event organizers, there is no lack of support for the protest against containment policies in most districts in Eastern Germany, and it is, therefore, less important to focus on the mobilization of potential supporters than to spread protest evenly across the districts. As a consequence of this largely supportive environment for protest, Eastern German districts account for 34.6 percent of all protest events despite a population share of only 19.3 percent.

As a final robustness test, we relax the assumption that district months with no protest events, which make up the vast majority of observations in our sample, are the product of the same data generating process as district months with one or more protest events. To do so, we employ a hurdle or two-part model (Hilbe 2011). The first column in Table 5 presents results of logit estimation where the dependent variable is one if at least one protest event took place in the district month and zero otherwise. The second column presents the corresponding zero-truncated negative binomial regression results for the restricted sample of 667 observations in 247 districts with strictly positive counts of protest events. The Covid-19 mortality rate does not have a statistically significant impact on whether any protest events take place in a district but conditional on any protest taking place, fewer events take place in districts with a

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[10] On average, mainstream parties only attracted a bit more than half of the vote share in the last federal election in Eastern Germany and never more than two-thirds of the vote, which is approximately the minimum vote share of mainstream parties in any of the districts in Western Germany.

TABLE 5   Robustness test: Hurdle model

	m11	
	Logit	**Zero-truncated negative binomial**
Vote share mainstream parties	−0.0279[***]	−0.0368[***]
	(0.00881)	(0.00965)
Stringency C-19 containment policies	0.0364[***]	0.0243[***]
	(0.00477)	(0.00650)
C-19 mortality rate	−0.0110	−0.101[***]
	(0.0155)	(0.0246)
Population (ln)	0.701[***]	0.620[***]
	(0.135)	(0.114)
Centrality of location	0.339[***]	0.308[*]
	(0.120)	(0.166)
Population density	0.000501[***]	0.000137
	(0.000133)	(8.74e-05)
Share workforce with university education	0.0882[***]	0.0269
	(0.0248)	(0.0202)
GDP per capita	0.00975	0.00802[*]
	(0.00659)	(0.00452)
Constant	−12.94[***]	−8.347[***]
	(1.866)	(1.702)
Districts	401	247
Observations	4411	667

Note: Standard errors clustered on districts in parentheses. *** statistically significant at 0.01, ** 0.05, * 0.1 levels.

higher mortality rate. By contrast, higher population density and a higher share of the workforce with higher education do not have a statistically significant effect on the number of protest events but render it more likely that any protest event takes place. The other substantive explanatory variables have effects qualitatively similar to our baseline model that assumes the same data generating process for observations of zero and observations with strictly positive event counts.

CONCLUSION

Protests against Covid-19 containment policies have become a widespread side-effect of the pandemic. In Germany, protests are not randomly distributed. We have argued and empirically shown that protest organizers follow a strategic logic and organize more protests where and when incidence rates are low, when containment measures are relatively stringent, and where the previous vote share of mainstream parties is relatively low. By following this logic, protest organizers ensure that supply meets the demand for protest. Empirically, we have also shown that protest events are more frequent in districts with a large population and that can be reached more easily—that are centrally located.

The strategic location of protest events helps with the mobilization of potential protesters, which in turn ensures that media attention remains on the protest movement. It is this combination of participation and media attention and the mutual reinforcement between these two factors that keep the movement

alive despite not reaching its ultimate political goals and gives organizers time and resources to further institutionalize the movement.

It remains unclear what degree of institutionalization the movement is likely to achieve in the longer run. The vast majority of protesters are unlikely to have any long-term ambitions beyond the cancellation of all Covid-19 containment policies. Despite a growing opposition to Germany's coronavirus policies, the influence of the protest movement on policies remains negligible. At the same time, the chances of sustainably positioning yet another party within the German party system are not great. The protest organizers have gained some influence on the *Basisdemokratische Partei Deutschland*, which was founded in the summer of 2020 in protest against lockdown and containment policies. As yet, the newcomer still has to win a single seat in one of Germany's state or federal elections, and a party that focuses on Covid-19 containment policies will face an identity crisis when the pandemic is contained and containment policies have been relaxed. This not only puts significant pressure on the movement's leaders but reduces the odds of the eventual success of any long-lasting institutionalization of the movement. In the long run, we would therefore not expect the movement to survive.

ORCID

Thomas Plümper https://orcid.org/0000-0002-1461-0737
Eric Neumayer https://orcid.org/0000-0003-2719-7563
Katharina Gabriela Pfaff https://orcid.org/0000-0002-3393-4374

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of the article at the publisher's website.

APPENDIX 1

List of Covid-19 containment policy measures in aggregate measure.

- Social contact indoors restricted to a maximum of two people from different households, close family members exempted
- Social contact outdoors restricted to a maximum of five people
- Social contact outdoors restricted to maximum of two people from different households, close family member exempted
- Secondary schools open only for children from specific groups of parents
- Primary schools open only for children from specific groups of parents
- Pre-school childcare open only for children from specific groups of parents
- Public events indoors prohibited
- Public events outdoors prohibited
- Cultural and educational institutions closed
- Retail business closed unless providing critical services
- Restaurants closed unless for take-away
- Services with avoidable contact closed except for health and care services
- Nightlife venues closed
- Touristic overnight accommodation prohibited
- Indoor sports activities prohibited
- Outdoor sports activities prohibited
- Mask-wearing mandatory in public transport
- Mask-wearing mandatory in shops
- Mask-wearing mandatory in public realm
- Leaving home allowed only with a reasonable excuse

APPENDIX 2

Summary descriptive variable statistics ($N = 4411$).

Variable	Mean	Std. Dev.	Min	Max
Monthly count of protest events	0.30	1.06	0	23
Stringency C-19 containment policies	32.81	19.89	0	80
C-19 mortality rate	1.75	3.37	0	37.08
Vote share mainstream parties	72.57	9.60	44.44	87.84
Population (ln)	11.98	0.66	10.44	15.11
Centrality of location	2.15	0.87	1	4
Population density	536.93	708.38	35.61	4776.89
Share workforce with university education	10.22	4.57	4.10	30.40
GDP per capita	37.09	16.04	16.40	172.40