



Autonomy and accountability: strategic behaviour of German state leaders during the COVID-19 pandemic

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Abstract

This study examines the strategic and opportunistic behaviour of state officials in Germany during the COVID-19 pandemic. Drawing on 600 statements by state incumbents, we provide a comprehensive empirical analysis of state-level political behaviour. Our findings show that German regional leaders emphasised their autonomy when performance metrics were favourable (credit-claiming), but strategically shifted responsibility when outcomes were less favourable (blame-avoidance). This pattern was especially pronounced when public attention was high.

Keywords Accountability · Credit-claiming · Blame-avoidance · COVID-19

Mathematics Subject Classification D72 · D78 · H77

1 Introduction

How do political leaders behave in times of crisis? Are their actions guided by bold decision-making, or are they primarily shaped by the desire to avoid reputational damage? In this article, we address this question using empirical methods, examining the behaviour of state ('Länder') officials in Germany during the Covid-19 pandemic, which offers an almost ideal setting to study how incumbents respond when confronted with far-reaching decisions while simultaneously being subject to exceptional public scrutiny (Kennedy et al. 2022).

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Throughout the pandemic, infection rates became a central metric with a high issue saliency and heightened media attention. As the primary responsibility for pandemic control lay with the *Länder*, voters could readily compare infection rates across regions. This created pressure on state governments (and on the respective Prime-Ministers (PM) in particular) whenever infection rates exceeded the national average. It fell to state governments to decide on school closures, shelter-in-place orders, travel bans, and other measures in response to rising case numbers. Conversely, low infection rates usually prompted discussions about easing existing restrictions, such as lifting bans on private gatherings. Infection figures were therefore both salient and comparable across *Länder*, giving incumbents reason to hope—or to fear—that they would be held accountable.

At the same time, the pandemic in Germany was marked by intensive deliberation between the sixteen states (*Länder*) and the federal government. The most visible expression of this deliberation was the regular *Prime Minister Conferences* (PMC), in which state leaders and the federal government met to discuss measures to mitigate the infections. Although these meetings were informal in nature, some *Länder* were able to use them as an opportunity to shield themselves behind coordinated decisions, thereby partially collectivising responsibility for policy measures. These meetings in particular and Germany's intertwined federal system in general contribute to uncertain responsibilities in voters' perception (Hobolt et al. 2012). While citizens in general have difficulties to identify who is responsible for decisions (Boettke et al. 2011), the German case made legislative competencies particularly opaque (Souris et al. 2024).

When faced with above-average infection rates, Prime Ministers essentially had two options. They could either explain how they are going to respond to the specific situation within their Land, or they could downplay their own responsibility by pointing to the federal government or to the need for harmonised nationwide measures.

If a PM emphasised the role of the federal government or the importance of inter-state coordination, this probably can be interpreted as an attempt at blame avoidance. This is particularly evident when the same leader adopted the opposite stance under more favourable circumstances, i.e., highlighting their own role when infection rates in their Land were below average. Analysing 600 documented statements by PMs during the pandemic, we find precisely this pattern: when infection rates were relatively low, state leaders stressed their own role and the need for autonomous decision-making; when rates were high, their statements became more centralist in orientation. This finding remains robust even when controlling for the general ideological orientations and economic interests of the respective governments and their leaders.

2 Related literature

Our contribution situates itself within the literature on *quasi-markets* (Boettke et al. 2011), in which competition between jurisdictions takes the form of *yardstick competition*. Two promises are associated with such competition. On the one hand, there is a *sorting effect*, whereby the possibility for voters to compare governmental performance leads to the re-election of successful and capable governments, while unsuccessful governments with weak performance are voted out of office. On the other hand, there is a *disciplining effect*, whereby governments, precisely because their performance is comparable, have little room

to pursue policies that diverge from the interests of voters. Both effects work in the same direction (Belleflamme and Hindriks 2005) under certain circumstances.

In this sense, polycentric systems are expected to be more robust and effective, particularly in times of crisis (Congleton 2023; Cowen and Schliesser 2024). During crises, when there is extraordinary uncertainty about what constitutes a good decision, governments often turn to expert advice. Yet such recommendations may also be flawed or produce unintended consequences. Moreover, policymakers in times of crisis tend to establish ad hoc scientific advisory bodies—rather than relying on standing institutions—in order to exert greater control over science (Koppl et al. 2025). This enables them to claim scientific support for their decisions while retaining the option to shift responsibility onto the experts in the event of failure. In a polycentric system with diverse policy approaches, however, even these forms of *expert failure* (Koppl 2021) can be identified and corrected at an early stage.

Many policy measures adopted by governments are not immediately understandable to voters. This is particularly true in the field of public health, where governments intervene in complex epidemiological processes. Precisely in such opaque arenas of policymaking, differences between subnational units should be especially pronounced from a normative perspective (Cheng and Li 2019). For yardstick competition to function effectively, it is not necessary that voters understand every detail of decision-making; rather, what matters is their ability to assess the relative performance of their state government compared with others (Besley and Smart 2007). Yet the theoretical and empirical findings in this field are far from robust. Boffa et al. (2015), for example, highlight potential weaknesses of polycentric systems when voter awareness of political behaviour is (regionally) asymmetric, such that governments tend to align themselves with the interests of better-informed electorates.

James Madison (1975) grappled with the question of when a federation can harness its strengths and what may undermine the appeal of the federal idea. He formulated a condition for its functioning: both the central and the state levels must accept divided authority and acknowledge independent wills, together with the corresponding powers to exercise them.

A number of studies emphasize the incentives for state incumbents to act in the sense described by Madison. The central driving force is career concerns (Kotsogiannis and Schwager 2006; Cheng and Li 2019). By successfully introducing innovative policies, PMs can draw attention to themselves and signal their competence. In doing so, they are perceived by voters as suitable candidates for political office at the federal level. Such incentives may even result in inefficient over-experimentation (Cai and Treisman 2009).

Another strand of research arrives at a markedly different conclusion. According to this view, state officials shy away from independent and innovative decisions because they are risk-averse (Rose-Ackerman 1980) and voters exhibit a *negativity bias* (Weaver 1986), that is, a tendency to be more sensitive to policy failures than to sound decisions. State governments are therefore expected to adopt a wait-and-see attitude, introducing new policies only once they have proved successful in other jurisdictions. In doing so, they speculate on free-riding from a horizontal learning externality (Strumpf 2002).

Such behaviour, driven by opportunistic and strategic motives, may prevent federal systems from realising their potential strengths. Madison was acutely aware of the dangers posed by incentives for opportunism. He identified opportunistic behaviour as a major impediment to the success of a federation. In his *Vices of the Political System of the United States* (1787), he demonstrated a sharp awareness of the risks arising from strategically motivated conduct. Building on Madison's iconic work, Bednar (2009) identified the strat-

egy of *opportunistic abdication*. This describes the conduct of state incumbents who deny responsibility for below-average outcomes in their states. They claim that they are not, or should not be, responsible, instead emphasising the role of the federal level or the need for joint, and hence uniform, decisions across all states. Such a strategy is particularly feasible where responsibilities between federal tiers are not clearly delineated, or are at least perceived by voters as opaque.

Overall, it must be acknowledged that research on the innovative capacity versus opportunistic-driven behaviour within federal systems does not yield clear-cut results (Agrawal et al. 2022). Given the political significance of this issue, such ambiguity is particularly regrettable. Ultimately, the inconclusive state of the literature can be traced above all to the rarity—if not absence—of the following conditions that are crucial for empirical assessments of political behaviour:

1. **Awareness** Public awareness of policy decisions must be high. In practice, however, state-level policies often affect only specific groups and rarely capture the attention of the wider electorate (Boffa et al. 2015; Agrawal et al. 2022).
2. **Comparability** Voters must be able to compare the decisions and outcomes of their own government with those of neighbouring states. Classical yardstick models such as Besley and Case (1995) assume a uniform nationwide shock, yet in reality states often face idiosyncratic challenges—such as floods or wildfires—that lack comparability across jurisdictions.
3. **Strategic latitude** Strategic behaviour presupposes discretion. Where responsibilities are clearly assigned in a federal system, decisions cannot be shifted across levels. But when competences are blurred—at least in the eyes of voters—opportunities for shifting responsibility arise (Hinterleitner et al. 2023).

The COVID-19 pandemic, despite its devastating global impact, created a unique opportunity to study the strategic and opportunistic behaviour of state incumbents.

First, the crisis and governments' responses attracted extraordinary public attention, rendering leaders highly accountable (Neundorff and Pardos-Prado 2021; Algara et al. 2022; Singer 2022).

Second, the pandemic constituted a common shock that affected all regions in broadly comparable ways. Although some were hit harder—e.g. manufacturing hubs—every state faced core decisions such as restrictions on gastronomy and school closures.

Third, in Germany, our empirical case, public health protection formally lies within the remit of the Länder. Yet the federal government asserted influence through concurrent legislation. This left state governments with the option either to act autonomously, for example by closing schools, or to align themselves with nationwide agreements.

3 Institutional background: federalism in Germany

3.1 The federal structure

Germany's constitution does not prescribe federalism in a refined form, nor does it establish a powerful central government. The term 'unitary federal state' (Hesse 1962; Turner and

Rowe 2013) aptly characterizes this blended status.¹ The federal polity is often regarded as the archetype of administrative federalism and cooperative decision-making (Kropp and Behnke 2016). On the federal level, the Länder are represented in the second parliamentary chamber (Bundesrat). They hold a vote on federal laws that trigger the establishment of new administrative proceedings or agencies on the state level (Burkhart et al. 2008), or that impact states' revenues.

A particular feature in Germany's constitutional framework is concurrent legislation (Gunlicks 2007), which applies to a variety of policy fields. Among them is the public health responsibility. Concurrent legislation denotes that the Länder maintain legislation as long as the federal tier makes no use of its legislative powers in the same field. In this respect, concurrent legislation offers both sides, the states as well as the federal government, opportunities for abdication.

3.2 Public health responsibilities in Germany's federal polity

The legal framework governing government intervention during a pandemic is established by the Infection Protection Act (Infektionsschutzgesetz, IfSG). The Länder administer this law, exercising discretion in determining specific measures, their severity, timing, and scope. While the IfSG empowers the federal government to issue recommendations, it also promotes coordination among federal states while allowing flexibility for their actions (Tonti 2022).

State governments have enacted several measures to curb infections, like the imposition of curfews and limitations on the assembly right, the closing of educational institutions, restaurants, stores, and other facilities. The federal government has retained jurisdiction over border controls. Extensive financial aid packages have been designed by the federal government, but were co-financed by the states.²

As already mentioned in the previous subsection, the federal government had the option to take over the tasks handled by the states. However, the federal government did not exercise this authority for the longest time, but only in the summer of 2021 (Rowe and Turner 2023), when the pandemic had relaxed and most restrictions were lifted.

3.3 Response to the COVID-19 pandemic in Germany's federalism

Germany was able to weather the COVID-19 pandemic relatively well compared to other industrialized nations. Infection rates, particularly in the autumn of 2020, were relatively low, thus avoiding widespread strain on the healthcare system.

¹Article 30 of the Basic Law presumes that governmental powers lie with the Länder unless the Basic Law provides otherwise, akin to the Tenth Amendment of the U.S. Constitution. In practice, however, Article 30 was rarely enforced and was labelled a 'living lie' by Scharpf (1994). Furthermore, Article 70 qualifies Article 30 by stating that the Länder have the right to pass legislation only to the extent that the Basic Law does not grant authority to the central tier.

²The legal framework in Germany also allowed municipalities to chart their own course. Some cities began to take advantage of this opportunity early in the pandemic. The most prominent example is Jena, the first city to introduce a requirement for wearing face masks very early on. It became evident that the town of Jena thus generated a prime example of a political laboratory. Mitze et al. (2020) showed that the city's introduction of masking requirements led to an approximated 25% reduction in the infection numbers three weeks following introduction. The success in Jena fostered the nationwide compulsory masking.

The public paid particular attention to infection rates, which were reported by the national health authority in the form of a seven-day incidence rate. This rate is calculated as a moving average over seven days and is expressed in relation to 100,000 inhabitants. The left panel in Fig. 1 depicts this indicator in Germany as well as in the other six G7 countries.

Although infection rates on average were moderate, there were significant differences within Germany (i.e., between the federal states). The right panel in Fig. 1 illustrates the infection rates of the sixteen *Länder* and marks the nationwide average by the orange-coloured line. These values were closely monitored by the public because they were ultimately viewed as the central measure for the possibility of easing the imposed restrictions. Thus, citizens carefully compared how the numbers in their federal state developed compared to other federal states and to the national average (Katz et al. 2022).

The national infection control agency, the Robert-Koch Institute, which collected and published data on the pandemic, categorizes the infection dynamics into three waves, which are graphically depicted in the right display of Fig. 1. Wave 1 ran from February 2nd, 2020 till May 17th, 2020; wave 2 from September 28, 2020 till February 28th, 2021, and wave 3 from March 1st, 2021 till June 13th, 2021.

Shortly after the pandemic's onset, state governments were highly interested in policy coordination in joint meetings of states' prime ministers with the chancellor. During the joint meetings, which initially took place quite frequently, the heads of governments agreed on guidelines for crisis management. During the first wave, coordination and unidirectional measures dominated policymaking. While policy decisions were homogeneous in the first months after the pandemic's onset, decisions became more heterogeneous during the second and third waves (Hegele and Schnabel 2021; Kuhlmann and Franzke 2021).

In the context of this assessment, it is crucial to note the high level of public awareness regarding the outcomes of the joint meetings. To illustrate this awareness, we analysed data from Google. Figure 2 depicts the number of Google searches for the term 'Ministerpräsidentenkonferenz' (the German term for the joint conference) and closely related terms suggested by Google (such as 'results of the joint conference'). The numbers are presented

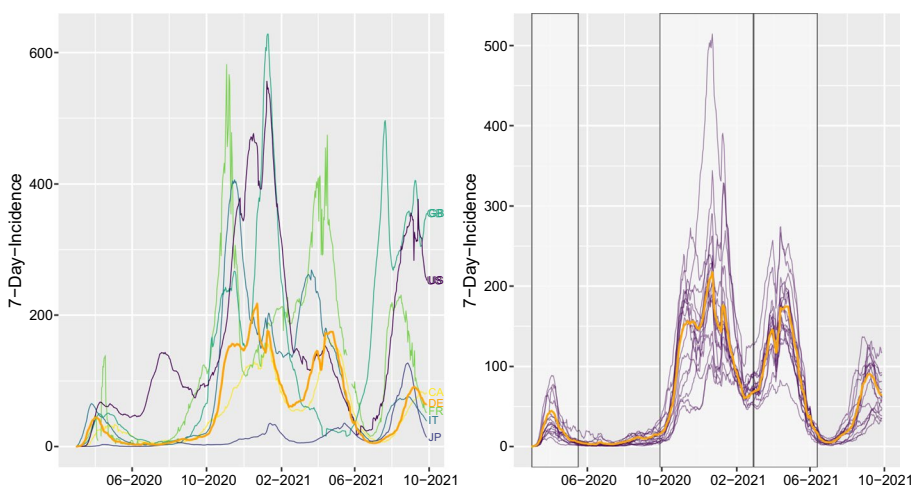


Fig. 1 COVID-19 infections in Germany compared to the other G7 countries and among German states. Source: Guidotti (2022)

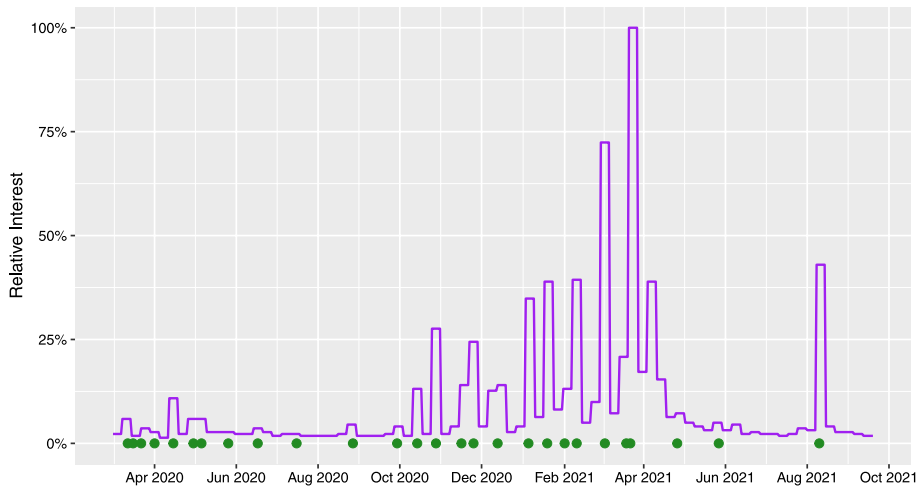


Fig. 2 Google hits for joint conferences (and related search items)

relative to the peak search volume, where a value of 60% signifies that the searches on a given date amounted to 60% of the searches on the day with the highest volume. The green dots mark the dates on which the joint conferences occurred. Figure 2 indicates that the public showed significant interest in the outcomes of these joint conferences.

Not only did public attention increase rapidly around the time of the meetings, but the statements and opinions of the prime ministers also concentrated heavily on the days immediately following the conferences. We show this analytically in Sect. 5 (see Table 4). We interpret this as an additional indicator that the conferences received high attention both from political leaders and the public.

From the second wave onwards, the conferences took place generally every third week. Despite this high frequency of coordination meetings, some states preferred to take their own measures and deviated from the measures discussed at the conference.

The times and intensity of measures implemented by the Länder to contain the pandemic are summarized in a comprehensive dataset by Steinmetz et al. (2022). Three particularly salient measures were the stay-at-home requirement ('leavehome'), the closure of schools ('school'), and the closure of childcare facilities ('daycare'). The decisions of the countries to tighten their measures in these areas or to relax the respective restrictions are illustrated in Fig. 3.

Each vertical line denotes a measure adopted by the respective state government, either towards a more stringent regulation (value of 1 or 2) or towards a relaxation (value of 0). Each state is marked by its own colour. When these vertical lines appear close together or even overlap, this suggests that the Länder implemented changes at roughly the same time. For instance, in the school-closure panel ('school'), it is evident that schools were closed more or less simultaneously at the onset of the pandemic. However, the Länder differed in the timing of school re-openings, as seen around September 2020, where the transition from a Stringency Index value of 1 (schools closed) to 0 (schools open) varies across countries. The grey-highlighted boxes in each panel indicate the periods during which the aforementioned waves spread.

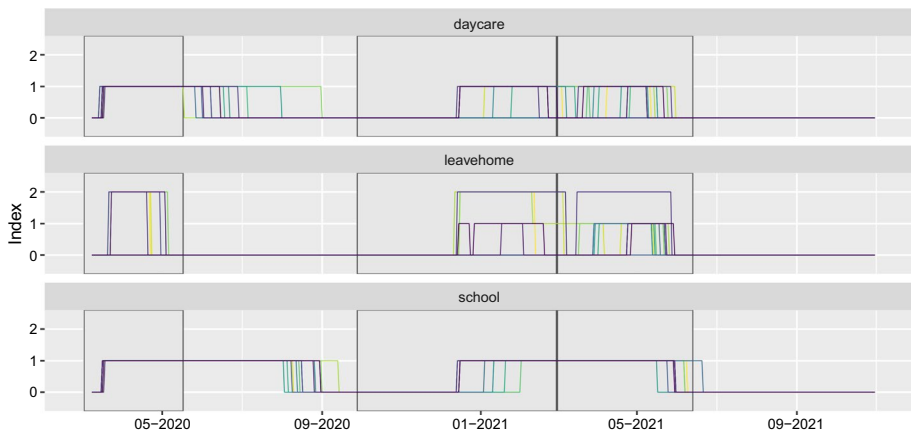


Fig. 3 Stringency index for relevant restriction measures. Data source: Steinmetz et al. (2022)

Overall, Fig. 3 shows that during the second and especially the third wave, the states did not make their decisions synchronously. In particular, they relaxed measures earlier or later than discussed between the federal government and the states. The data also depicts the homogeneity of policy decisions during the first wave.

4 Data and methods

Our data originate from statements made by the Prime Ministers, which they disseminated through various channels. These include government declarations, press releases, and, to a significant extent, Twitter posts, which we retrieved via the corresponding API (Kearney 2019). During the pandemic, Twitter was still the primary medium through which most Prime Ministers communicated with the public.³ We did not apply any selective criteria but included all statements that addressed their own role as well as that of the federal government or other states.

We construct an index measuring state governments' positioning during the COVID-19 pandemic. This "pandemic policy index" (PPI) measures the extent to which a prime minister, at a given moment during the COVID-19 pandemic, claims responsibility for favourable and unfavourable outcomes or attempts to shift responsibility for favourable and unfavourable outcomes to the federal government, the second parliamentary chamber and/or the prime minister conferences. On the one extreme, a Prime Minister can insist on nationwide regulations or criticize the federal government for not implementing uniform nationwide rules. At the other extreme, a prime minister can state that his/her state will act alone or criticize that the federal government encroaches too much. When prime ministers will claim responsibility for favourable outcomes only but will shift responsibility to the federal level

³Prime Minister Günther of Schleswig-Holstein gave the last COVID-19 related government declaration in January 2021 and replaces them afterwards with oral reports. From Jan. 20th 2021 on, these COVID-19-related reports are included instead of government declarations. Prime Minister Laschet of North Rhine-Westphalia does not give government declarations during the time of interest. Instead, we utilize COVID-19-related briefings of this state's government to its local parliament.

for unfavourable outcomes, they demonstrate strategic behaviour in which they engage in “blame attribution” (Souris et al. 2024). Consequently, the categorization of the statements is not made in the light of whether a prime minister favours central or local decision making in general but rather whether a prime minister claims or shifts responsibility for a currently observable outcome by advocating for central or local decision making.

Each statement is attributed to one out of four distinct categories using an ordinal scale. A value of one indicates that a state prefers to act individually, while a value of four means that it asks for more action on the federal level or blames it for problems. Making statements belonging to categories one and two can be interpreted as expressing a preference for federalistic decision-making, and conversely, making statements belonging to categories three and four can be construed as expressing a preference for unitary decision-making.

A multi-step categorization approach was adopted to ensure high reliability in both scaling and rating. First, a subset of all statements was pre-rated to identify the relevant dimensions (decision-making, action, and accountability). Subsequently, categorization criteria were carefully predefined to ensure consistency, and all raters received training on both the application of these criteria and the use of the PPI scale. In cases where coders disagreed, the category selected most frequently was used in the empirical analysis. All coders had attended lectures on federalism and had prior training in the field of fiscal federalism, having completed at least one course on the topic in recent years. In addition, all raters underwent specific training on the categorization criteria outlined in Table 1. The rating process was conducted in 2023.

We provide in Appendix A several translated examples to illustrate how we applied the categories to the statements.

Ultimately, the inter-rater reliability was tested by rating the same statements three times independently and the inter-rater reliability was calculated using Fleiss’ kappa (κ) (Fleiss et al. 2003, Ch. 18), which is a generalization of Cohen’s kappa for cases with more than two raters. The κ -statistic compares the observed level of agreement between coders (judges, observers) to the level that is expected under chance. If there is no agreement among coders, then κ hovers around zero, while $\kappa = 1$ indicates perfect agreement. Following Fleiss et al. (2003), a κ -statistic greater than 0.75 indicates an “excellent” level of agreement. In our case, κ was 0.91, which implies that rating using the PPI was done reliably and consistently.

Table 1 Categorization criteria federalism index

Value	1	2	3	4
Criteria	Decide to act individually (state acts on its own)	Support the individual action of the other states	Support decisions and actions jointly made with the federal government and/or all other states	Ask for more regulation and action on the federal level
	Criticize that the federal government does too much	State does not criticize the individual actions of others but does not decide to act individually	Criticize the individual actions of others	Criticize that the federal government does not enough
	State does not hold the federal government accountable for problems	Go not along with joint recommendation	Go along with joint recommendation Voting for a law but not supporting it	State holds the federal government accountable for problems

As the rating process took place shortly after the subsiding of the pandemic, the results may have been biased by the specific timing of the assessment. To address this concern, in 2025 we engaged three additional coders and tasked them with the same categorization exercise. These three individuals had a background similar to that of the initial coders; in particular, each had attended at least one course on federalism and received training based on the categorization table outlined above. The Fleiss' κ across all six coders was 0.862, indicating a consistently high level of inter-coder reliability. We therefore conclude that the timing of the assessment did not influence the coders' categorization.

To further assess the reliability of our coding procedure, we trained an artificial intelligence model to replicate the classification task previously performed by six human coders. We accessed the OpenAI API through python's openai library and submitted each statement along with the same classification scheme used by the human coders. In a robustness check, we used the AI-generated classifications as the dependent variable in our main specification.

Our dataset relies on 600 prime minister statements. Of these, 35.5%, 6.2%, 44.8% and 13.5% were classified with index values 1, 2, 3 and 4, respectively.

In our study, we investigate whether state governments adapt their stances opportunistically based on their own performance. Specifically, we examine if they favour decentralized decision-making when their performance is good, and shift towards centralized decision-making when their performance is poor. The lower the state-level rate compared to the national average, the better the state's performance. An advantage of this measure is that the data were collected by an authoritative national agency and were widely regarded by the population.

The main ordered logistic regression equation for our analyses is:

$$\ln \left(\frac{P(Y \leq j)}{P(Y > j)} \right) = \beta_{j0} + \beta_1 \ln(\text{incstate}_{it}) + \beta_2 \ln(\text{incfed}_t) + X'\gamma + u_{it} \quad (1)$$

in which $\frac{P(Y \leq j)}{P(Y > j)}$ is the odds of giving a statement falling into category j or lower. β_{j0} for $j \in \{1, \dots, 4\}$ give the four category-specific intercepts. incstate_{it} is the incidence rate for state i on date t , and incfed_t is the federal-level incidence rate on date t . In our results, we report the exponent of each coefficient (e^{β_1} , etc.) so that the interpretation is in odds. Coefficients larger than 1 imply that an increase in a variable leads to an increase in the odds of giving a statement that lies in a higher category.

We take the natural logarithm of both incstate_{it} and incfed_t , so that the coefficient e^{β_1} gives the increase in the odds of giving a higher category statement when the ratio of incidence rate at the state-level divided by incidence rate at the federal level doubles.

An alternative would have been not to include both these variables, but instead measure

the deviation between state and federal incidence rate as $\frac{\text{incstate}_{it} - \text{incfed}_t}{\text{incfed}_t}$, for which for example a value of zero means that the state rate equals the federal one, and a value of one indicates that the state rate is double that of the federal one. Both specifications only differ in their functional form assumptions. We will show a robustness check in which we demonstrate that the estimated effects sizes in both cases are virtually identical.

To provide an illustration, we present some data for three states in Fig. 4. The left ordinate displays the variable $\text{incstate}_{it} - \text{incfed}_{it}$, while the right ordinate displays the PPI values, rescaled to enable visual comparison on a common scale. The blue solid line

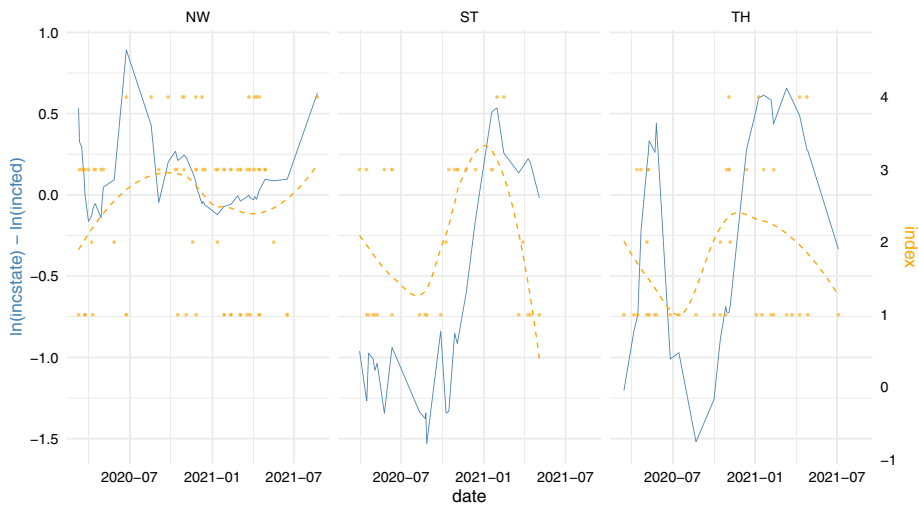


Fig. 4 PPI-values and $\text{incstate}_{it} - \text{incfed}_{it}$ over time. Separate panels are shown for each state. NW = North Rhine-Westphalia, ST = Saxony-Anhalt, TH = Thuringia

depicts $\text{incstate}_{it} - \text{incfed}_{it}$, and the orange points represent the index values. The orange dashed line shows a locally weighted regression fit to the index values, providing a smoothed trajectory over time.

In our regression equation, the matrix X includes a set of covariates. These will be included in our regressions in several steps. First, we will control for a linear time trend to capture a potential general trend in stances regarding federalistic decision-making. As it could be argued that such trends during this unusual time period may have been non-linear, we next swap the linear time trend for week fixed effects.

In the following step, we additionally control for a set of state-level variables. First among these is the fundamental stance of the state government towards federalism. It must be noted that none of the prime ministers or governing coalitions changed over our observation period. This means that many relevant political variables remained constant over time, and we should be more concerned about between-state variation.

If a state generally advocates increased de/centralization, this will not necessarily be driven solely by opportunistic or strategic considerations; ideological convictions can often supersede pragmatic political interests. For example, in the USA, it is known that ideological convictions play a pivotal role in shaping states' and citizens' preferences toward de/centralization. Specifically, conservatives exhibit a genuine attachment to decentralization, while attitudes toward federalism tend to be more instrumental among liberals (Glaser et al. 2023; Rendleman and Rogowski 2022). In our context, take, for example, a state government with above-average incidence rates that advocates for decisions regarding school closures or openings to be made collectively and implemented uniformly across the federation. This stance may be opportunistic if the state government generally favours decentral (i.e., federalistic) decision-making. Still, it may also be congruent with a fundamental belief that the respective state harbours no sympathy for the autonomy of states. For the variable measuring the fundamental stances of state governments towards federalism, we used data from Barbaro and Rode (2025), who determined these general stances based on each state's coali-

tion agreements prior to the outbreak of the COVID-19 pandemic. The data were classified such that a designation of one signifies a promotion of strong federalism, while four indicates a willingness to cede competencies to the federal level. Each state's resulting average attitude-index values toward federalism are visualized in Appendix B, Fig. 5.

In this step, we furthermore control for states' pre-pandemic (2019) share of the manufacturing sector in their gross value added. This variable shows how severely the COVID-19 pandemic affected each state's economy (Flach and Steininger 2020). Furthermore, we control for states' financial strength, measured as the sum of states' tax revenues and the tax revenues of their municipalities, which, in Germany, is referred to as states' financial capacity ("Finanzkraftmesszahl").

In the German redistributive system, financially weak states receive funds out of other states' financial means and additional federal government grants ("financial equalization"). This may affect their stances toward federalistic vs decentral decision-making.⁴

In the final step, we additionally control for the natural logarithm of the state and federal vaccination rates at each given date. Data on state- and national-level vaccination rates are available from the epidemiological database for COVID-19 (Guidotti 2022).

Both variables receive the value 0 for dates before vaccinations started, and a dummy variable for the pre-vaccination period is included. State vaccination rates, relative to federal vaccination rates, can be thought of as another measure of the success of local policies, although they less clearly result from policies and interventions at the state level than from incidence rates.⁵ Moreover, access to vaccinations was only possible starting in January 2021.

Our analyses utilize prime minister statements from waves 2 and 3 of the pandemic. Before wave 2 started, incidence rates were considerably less reliably recorded. Measurement error in the initial phase of the pandemic may have differed between states and potentially so in an endogenous way. Moreover, during wave 1, and especially the period between waves 1 and 2, the difference between state-level and federal-level incidence rates measured in percentages fluctuated wildly as reported rates were often low.

In our ordered logistic regression, the coefficients β_1 , β_2 , and γ are assumed to be the same across all categories. We test this proportional odds assumption for our main model (5) using a Brant test (Brant 1990) and find no evidence for a violation of this assumption: the null hypothesis of equality of the coefficients is not rejected with $\chi^2(22) = 28.7$, $p = 0.154$.

Standard errors are clustered at the date-time level to account for any between-state correlations that arise because during the pandemic all states often experienced similar events (e.g., pandemic-related news) at the same moment.

During our study period, the prime ministers of North Rhine-Westphalia and Bavaria fiercely and publicly contested the chancellor candidacy of the conservative parties (CDU and CSU). Both tried to distinguish themselves with their own positions on handling the pandemic (Demler 2025). Therefore, it is possible that the internal party campaign biased the statements of these two prime ministers. We excluded these two states in a robustness

⁴We use 2021 data for this as data for this year most accurately reflect the situation during the pandemic. Moreover, data for pre-pandemic years are less useful as the financial equalization scheme has been reformed. The German statistical office (Statistisches Bundesamt) provides data for this measure.

⁵The federal government procured the vaccine doses, but the states organized the vaccinations. Each state had its own vaccination centres and procedures for scheduling vaccination appointments. For example, some states offered vaccinations on buses that travelled to university campuses and smaller towns. Therefore, high vaccination rates can be attributed to the respective states' high administrative quality.

check to account for this. We furthermore run an analysis in which we include a dummy for the five East German states, and a dummy for the state of Berlin. These states are historically different from the West German states, and there are frequently differences in attitudes and policies between the eastern and the western part of the country (Alesina and Fuchs-Schündeln 2007; Barbaro and Rode 2025).

Because controlling for observed covariates can never guarantee that all potential omitted variable bias is taken care of, in a further robustness check, we take this idea of potential differences between states one step further by conducting a state fixed effects (conditional) ordered logistic regression. This has the advantage of relying solely on within-state variation but has drawbacks. First, we lose a lot of the variation of interest and, therefore, statistical power. Second, we cannot simultaneously include week fixed effects any more. Third, this method cannot be estimated when the clustering of the standard errors is at a different level (here: time) than the grouping variable (here: state). Hence, some relevant autocorrelation is ignored, while clustering occurs for a low number of groups (16 states), which might lead to inconsistent standard errors.

During the pandemic, the joint conferences of the state prime ministers were closely watched by the population as many of the central pandemic-related interventions were discussed and decided upon. We expect that prime ministers will have been especially likely to make their stance with respect to centralized or decentralized decision-making clear in the week around these conferences, and perhaps most so in the days immediately following such a conference. We, therefore, conduct two sets of analyses. First, we analyse to what extent the number of statements issued per day changed during the week of a conference (three days before, three days after the conference) and immediately subsequent to a conference (day of the conference till three days afterward). For this, we calculate the number of statements issued daily and regress this on a linear time trend with a dummy indicating the time period right around / right after the prime ministers' conference. Second, we conduct our main analyses similar to our main ones, in which we use the specification that includes all controls while limiting the data to the time period right around / right after prime ministers' conferences.

5 Results

5.1 Main analysis

The results of the regression analyses using Equation (1) are shown in Table 2, with the last three rows representing the covariates. The dependent variable is a 4-point ordinal scale with higher scores indicating a stronger preference for unitary (centralized) decision-making.

The table presents exponentiated coefficients from an ordered logistic regression. The coefficients to the natural log of state-level incidence rates give the increase in odds $\left(\frac{P(Y \leq j)}{P(Y > j)} \right)$ of giving a statement that falls into category j or lower. Coefficients larger than one indicate that an increase in an independent variable leads to higher scores on the PPI, while coefficients smaller than one indicate the opposite. Increases in incidence rates in a state relative to the country-wide level lead prime ministers to display a greater preference for centralized decision-making. As can be seen by comparing columns (1) to (5), the main result is robust throughout all specifications. If the incidence rate in a state doubles compared to that at the federal level, the odds of giving a statement that is categorized as being one point higher on the PPI also roughly doubles. An alternative way of interpretation is by

Table 2 Covid-19 incidence rates and state prime ministers' statements favouring (de)centralized decision-making

	(1)	(2)	(3)	(4)	(5)
ln (state-level incidence rate)	1.730*** [1.22,2.45]	1.904*** [1.34,2.70]	1.874*** [1.28,2.74]	2.106*** [1.32,3.35]	2.145*** [1.35,3.41]
ln (state-level vacc. rate)					0.792* [0.61,1.02]
Linear time trend	No	Yes	No	No	No
Week fixed effects	No	No	Yes	Yes	Yes
State-level controls	No	No	No	Yes	Yes
Observations	600	600	600	600	600

Each column reports exponentiated coefficients from a separate ordered logit regression. Dependent variable is the 4-point pandemic policy index (PPI). Higher values indicate a stronger expressed desire for centralized decision-making. Coefficients are expressed as changes in the odds ratio of giving a statement Y that falls into a higher vs a lower category j , i.e., $P(Y \leq j)/P(Y > j)$. All regressions control for ln(federal level incidence rate) and column (5) additionally controls for ln(federal level vaccination rate) and a dummy for the pre-vaccination period. State-level controls include states' general stances towards federalism, share of the manufacturing sector in gross value added, and financial strength ("Finanzkraftmesszahl"). *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

looking at marginal effects. If a state's incidence level doubles while the federal-level rate remains constant, then the likelihood that a prime minister's statement will fall into category 1 (meaning a strong expressed preference for states acting autonomously) decreases by 16.4 percentage points. The probability of a statement falling into category 3 or even 4 (expressing a strong preference for action at the federal level) increased by 8.9, and 8.5 percentage points, respectively.

The coefficient to the log of the state-level vaccination rate suggests that higher vaccination rates in a state, compared to the nationwide average, lead prime ministers to give statements that are more federalistic in nature, i.e., more strongly in favour of decentralized decision-making. A doubling of a state's vaccination rate while the federal rate remains constant decreases the likelihood of a category 1 statement by 5.0 percentage points. However, this estimate does not reach significance at conventional levels.

In Appendix C, we will present models (4) and (5) in an extended form, with the specific coefficients of the covariates listed individually. As can be seen from this more comprehensive table, the coefficients to none of the three variables covariates reach significance. The coefficient to the variable measuring states' general stances towards federalism suggests that states that had been strongly in favour of centralization before the pandemic became relatively less so during the pandemic, and vice versa.

5.2 Robustness checks

As outlined in the previous section, we conducted a series of robustness checks. In the first robustness check, we do not include the logs of the state- and federal-level rates, but instead take the relative difference between both rates, with e.g., a value of one indicating that the state rate is double that of the federal one. The estimates are almost the same as in the main analyses (see Table 3, column (1)).

The second robustness check concerns the two prime ministers who were in an intra-party competition during the observation period. In fact, these two prime ministers made the highest number of statements. Therefore, this intra-party campaign could distort the results.

Table 3 Robustness checks: COVID-19 incidence rates and state prime ministers' statements favouring (de) centralized decision-making

	Deviations in- instead of logs	Excluding NW and BY	Dummies for Eas-tern States + Berlin	Fixed effects	Fixed effects
	(1)	(2)	(3)	(4)	(5)
ln (state-level incidence rate)		2.343*** [1.40,3.93]	2.260*** [1.32,3.86]	1.610 [0.91,2.86]	1.504 [0.86,2.63]
ln (state-level vacc. rate)		0.739** [0.57,0.96]	0.730** [0.572,0.932]		0.740** [0.56,0.98]
Perc. diff.: state- versus fed.-level incid. rate	2.022** [1.17,3.84]				
Perc. diff.: state- versus fed.-level vacc. rate	1.276 [0.74,2.21]				
Week fixed effects	Yes	Yes	Yes	No	No
Linear time trend	No	No	No	Yes	Yes
State-level controls	Yes	Yes	Yes	No	No
State fixed effects	No	No	No	Yes	Yes
Observations	600	479	600	600	600

Column (1) shows results from a regression in which the independent variable of interest is measured as percent difference between state-level and federal-level rates. Columns (2) – (5) each report exponentiated coefficients from a separate ordered logit regression. In columns (4) and (5), these are state fixed effects (conditional) ordered logistic regressions. Dependent variable is the 4-point pandemic policy index (PPI). Higher values indicate a stronger expressed desire for centralized decision-making. Coefficients are expressed as changes in the odds ratio of giving a statement Y that falls into a higher vs a lower category j , i.e., $P(Y \leq j)/P(Y > j)$. Regressions Columns (2) – (5) control for ln(federal level incidence rate). Regressions (2), (3) and (5) additionally control for ln(federal level vaccination rate). Regressions (1), (2), (3) and (5) include a dummy for the pre-vaccination period. State-level controls include states' general stances towards federalism, share of the manufacturing sector in gross value added, and financial strength ("Finanzkraftmesszahl")*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Therefore, we repeated the regression analysis from Table 2, column (5), but without the data from these two states, which results in the loss of 121 observations.

A comparison of Tables 2 and 3 (column (2)) shows that the estimated effect of incidence rates on prime ministers' stances regarding (de)centralized decision-making remains robust when the states of North Rhine-Westphalia (NW) and Bavaria (BY) are omitted from the data.

When we include dummies for the Eastern states and for Berlin, the results remain unchanged, too (see column (3)).⁶ Finally, in columns (4) and (5), we show the results from fixed effects (conditional) ordered logistic regressions. The results should be treated with some caution because, as we pointed out at the end of Sect. 4, not all autocorrelation is taken into account, and standard errors may be inconsistent. Moreover, we cannot simultaneously include week fixed effects. The point estimates are robust to the inclusion of fixed effects, though coefficients are slightly smaller than in our main analyses.

To account for a potential bias of the coders employed in this study, we generated the PPI values using artificial intelligence. We then re-estimated the five initial model specifications from Table 2, this time with the AI-generated values as the dependent variable. The results

⁶ In further robustness checks, we additionally controlled for state-level vaccination rates among those aged 60+ in 2019, for average population age, and for the state's vote share of the governing coalition. The results remained unchanged. Nevertheless, it should be noted that controlling for observed covariates can never entirely rule out the potential for residual confounding.

are highly consistent with those reported in Table 2. In our main specification (5), the odds ratio is 2.07 with a confidence interval of [1.28, 3.35].

Regarding the influence of vaccination rates, the robustness checks show a similar coefficient to the main analysis. However, the vaccination-rate coefficient becomes significant at the 95% level when the states of Bavaria and North Rhine-Westphalia are excluded as well as in the analysis that includes dummies for eastern states and for Berlin, and in the fixed-effects specification do we find evidence. The coefficients are smaller than one, which indicates that if state-level vaccination rates increase relative to the federal level, prime ministers tend to propagate more decentralized decision-making.

This evidence on significant effects of the vaccination-rates coefficient may be seen as further support for our main hypothesis, according to which above-average success (in this case: higher vaccination rates than the national average) motivates the state prime ministers to emphasize their states' own responsibility and self-determination more strongly.

5.3 Focusing on the time around prime ministers conferences

The previous analyses cover all dates during the second and third waves of the pandemic. We argued that public awareness was exceptionally high on the days around the prime ministers' conferences (see Fig. 2). This means, conversely, that statements by the prime ministers on days with lower attention are weighted the same as statements on days with very high attention to the topic of COVID-19.

Prima facie, it cannot be ruled out that prime ministers will have timed those statements that were meant to most clearly convey a message right around conferences, as they knew that statements at these moments would have reached the most attention and the largest possible audiences.

To address this, we first examine whether the prime ministers made their statements particularly in the context of the conferences. Then, we re-run our above analysis using only the statements made around the time of the conferences.

First, as Table 4 shows, the statements of the prime ministers do indeed concentrate around the conferences. In the week around prime minister conferences (3 days before till 3 days after), prime ministers issue more statements: around 1.8 more statements (tweets) are issued per day. This effect is entirely concentrated in the time immediately after the PMCs: the number of tweets (statements) per day does not increase in the 3 days prior to a PMC, but in the period between the PMC and 3 days afterward, around 2.7 more statements are issued by prime ministers daily.

Table 4 Numbers of statements per day around prime ministers conferences (PMC)

	(1)	(2)	(3)
Week of PMC	1.786*** (0.492)		
3 days before PMC		0.081 (0.422)	
Day of PMC till 3 days afterwards			2.672*** (0.727)
Observations	289	289	289

Each column reports results from an OLS regression in which each observation contains the number of statements (tweets) given by state prime ministers per day. Each regression corrects for day of the week fixed effects and time, and includes a dummy indicating a period around the PMCs. In column (1), this is the time period from three days before till three days after PMCs, in column (2), this is three days before PMCs and in column (3), this is the days of PMCs + 3 days afterwards. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Table 5 Covid-19 incidence rates and state prime ministers' statements favouring (de)centralized decision-making around the prime ministers conferences

	Week of prime ministers conference (PMC)	Day of PMC till 3 days afterwards
	(1)	(2)
ln (state-level incidence rate)	2.517** [1.33,4.75]	3.501*** [1.64,7.50]
ln (state-level vaccination rate)	2.263 [0.07,72.04]	0.403 [0.01,17.06]
Observations	294	223

Each column reports exponentiated coefficients from a separate ordered logit regression. Column (1) limits the sample to the week around prime ministers conferences (PMC). Column (2) limits the sample to the days of PMCs +3 days afterwards. Dependent variable is the 4-point pandemic policy index (PPI). Higher values indicate a stronger expressed desire for centralized decision-making. Coefficients are expressed as changes in the odds ratio of giving a statement Y that falls into a higher vs a lower category j , i.e., $P(Y \leq j)/P(Y > j)$. Both regressions control for ln(federal level incidence rate), ln(federal level vaccination rate), a dummy for the pre-vaccination period and a linear time trend. State-level controls include states' general stances towards federalism, dummies for Eastern states and Berlin, share of the manufacturing sector in gross value added, and financial strength ("Finanzkraftmesszahl")

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Secondly, we re-run the main analysis but now focus on the week of PMCs (Table 5, column (1)) and the period between a PMC and three days afterward (column (2)). It turns out that directly following a PMC, prime ministers respond especially strongly to the perceived successfulness of their policies as measured by state-level incidence rates. The odds ratio increases to 3.5. This implies that a doubling of the incidence rate in a state compared to that at the federal level leads to 3.5 times higher odds of giving a statement that falls into a higher category of the PPI. Thus, if we focus on those statements that received particular attention, the effect we examined is even stronger than in the main analysis. We interpret this as a reinforcement of our core finding.

6 Conclusion

Whether the potential of federal systems can be realized crucially depends on the behaviour of political incumbents. Do they assume responsibility and adopt appropriate measures under political pressure, or do they attempt to shift responsibility elsewhere? Our analysis shows that autonomy and independent decision-making were emphasised when infection rates within a state were below average. By contrast, rising infection rates—particularly when exceeding the national average—led Prime Ministers to issue statements indicative of strategic abdication. This effect was strongest when public attention was most intense.

Within the scope of this study, we were unable to determine whether such strategically motivated behaviour ultimately proved politically rewarding for the Prime Ministers. State elections take place at very different points in time, and not all incumbents stood for re-election immediately after the pandemic. Pandemic policies are likely to have been far more salient in elections held directly thereafter than in those taking place one or more years later, when other factors may have influenced electoral outcomes. We therefore leave it to future research to address the question of political profitability.

Appendix A Categorization criteria for the federalism index

In the following, we present two examples for each category of the PPI. In parentheses, we indicate the state of the PM from whom the respective statement originates.

Statements of category 1

1. But I want to make it very clear: I believe the past few days have shown that it is important for us in Mecklenburg-Western Pomerania to follow our own path (Mecklenburg-Western Pomerania).
2. This is not a development limited to Lower Saxony; the same applies to infections as well as fatalities. Nevertheless, even after the past weeks, it remains true that Lower Saxony performs significantly better than the national average. Our political decisions [...] have certainly contributed to this outcome (Lower Saxony).

Statements of category 2

1. Although I can understand the step taken by my Bavarian colleague given the high number of cases in Bavaria, I hope that in Hamburg we can continue our own strategy and manage without further restrictions (Hamburg).
2. I do not believe it is currently urgent to convene another Prime Minister Conference, as we already made agreements in December that leave room for state-specific manoeuvre in both directions (Berlin).

Statements of category 3

1. As long as infection levels remain this high, and as long as we cannot explain clearly where infections are occurring more frequently, the only option is to reduce contacts [...]. All federal states, incidentally, see it the same way. The Prime Minister Conference once again made this clear: regardless of whether a state is governed by the Greens, the CDU/CSU, or the SPD, all support this approach (Bavaria).
2. This was also the shared conviction—uncontested by anyone—of the federal government and all 16 states at our conference last Wednesday. We must once again reduce direct contacts among people in our country (Saxony-Anhalt).

Statements of category 4

1. It would therefore be appropriate to agree nationwide in advance on how to deal with schools in light of the current pandemic situation (Hesse).
2. My demand towards the federal government is: rapid approval of the tests and an ambitious, preferably nationwide, testing strategy (Lower Saxony).

Appendix B State governments' stances toward federalism

See Fig. 5.

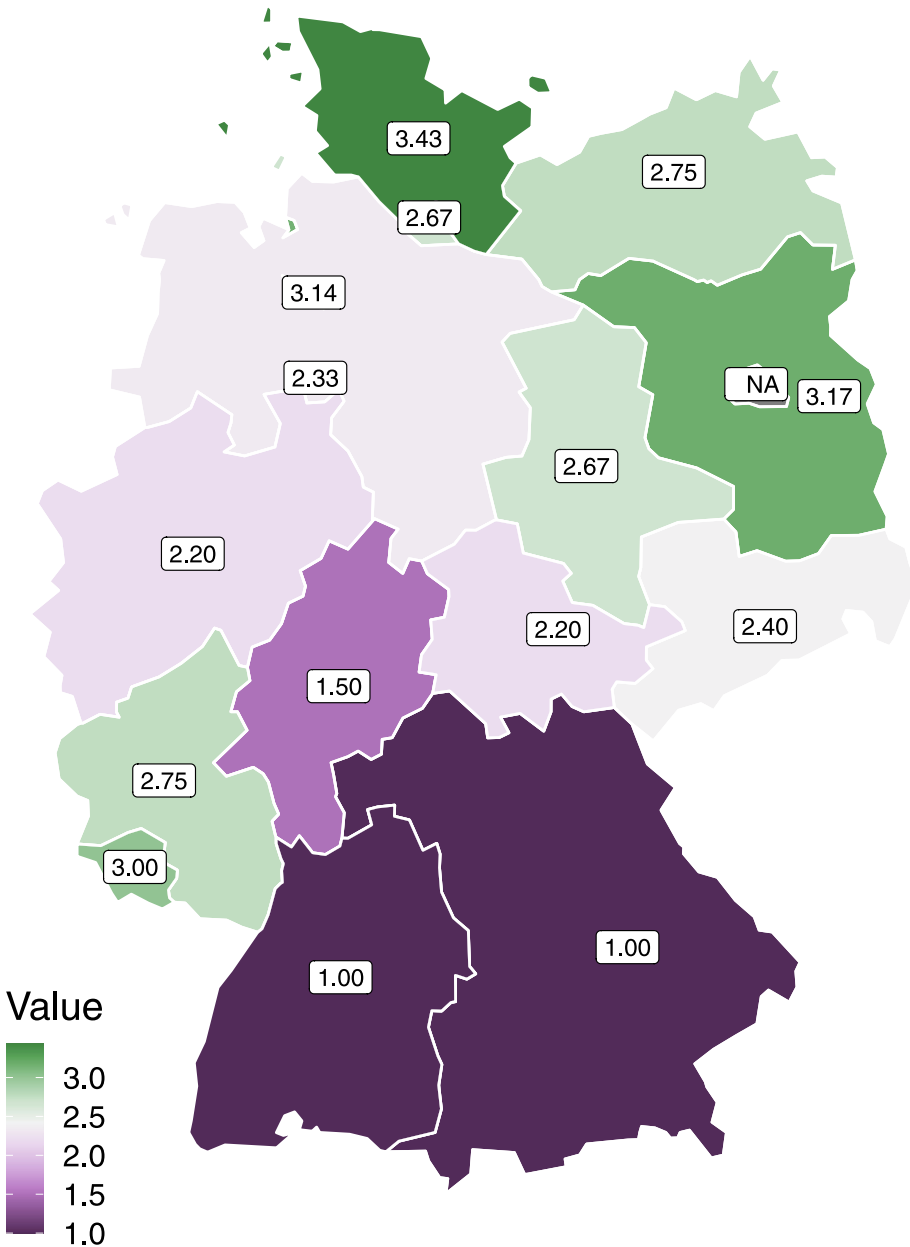


Fig. 5 States' general stances towards federalism (average values). Source: (Barbaro and Rode 2025)

Appendix C Full regression results

See Table 6.

Table 6 Covid-19 incidence rates and state prime ministers' statements favouring (de)centralized decision-making

	(4*)	(5*)
ln (state-level incidence rate)	2.106*** [1.32,3.35]	2.145*** [1.35,3.41]
ln (state-level vacc. rate)		0.792* [0.61,1.02]
State's general stance towards federalism (1 = decentralization, ... 4 = centralization)	1.126 [0.92,1.37]	1.112 [0.91,1.36]
State's financial strength (mean 94, SD 17)	1.001 [0.99,1.01]	1.000 [0.99,1.01]
State's share of the manufacturing sector in gross value added	1.634 [0.08,32.43]	1.603 [0.08,31.46]
Week fixed effects	Yes	Yes

This table corresponds to columns (4) and (5) in Table 2, with the difference that the state-level controls are reported individually. For explanations of the values, we refer to the description of Table 2.*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

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Data availability The data and replication materials that support the findings of this study are openly available in the GitHub repository at <https://github.com/salvabarbaro/BER>.

Declarations

Conflict of interest The authors declare no conflict of interest.

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