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# From rally to reality: unveiling long-term dynamics in political trust over two years of COVID-19 in Germany

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## ABSTRACT

Crises like wars, terrorist attacks, and economic or health crises are frequently followed by profound changes in political trust. Whereas immediate external threats often induce a strong initial increase in political trust, the ‘rally-around-the-flag’ effect, prolonged crises are more detrimental to this core feature of political support. We extend previous research on political trust during extended crises by using the case of the global Covid-19 pandemic. Employing individual-level panel data from Germany ( $N = 21,001$ , 2017–2022) and district-level data on infection rates and government-imposed restrictions, we distinguish time trends from both government action and crisis severity for various government and non-government actors such as media or corporations. Results from fixed-effects regression models reveal a prolonged increase in individual-level political trust throughout 2020 and early 2021, followed by a significant decline in 2021/22. Contrary to extant work, we find limited influence of infection rates, whereas more stringent government policies explain decreasing trust later in the pandemic. These results are robust to including individual-level pandemic experiences like changes in work and family life. Thus, our results provide first evidence on the longevity of the initial rally effect in a high-trust country, which remains discernible at least one year into the pandemic.

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Crisis; panel analysis; lockdown; rally-around-the-flag effect; trust in media

## Introduction

Crisis events frequently lead to profound changes in political trust.<sup>1</sup> If such crises are associated with severe external threats, such as interstate wars, terrorism, or public health crises (Blair, Morse, and Tsai 2017; Chanley 2002; Eichenberg, Stoll, and Lebo 2006; Mueller 1970), they are likely to induce a rally-around-the-flag effect, i.e. a swift and substantial increase in trust in/or approval with the political system. Such rally effects are driven by citizens demonstrating greater in-group loyalty, uniting against a

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common adversary, resulting in greater social cohesion (Hogg et al. 2007; Lai and Reiter 2005) and the adoption of opinion leadership by the national executive leading to a quelling of critical voices in the face of an emergency (Baker and Oneal 2001; Groeling and Baum 2008). More prolonged crises, especially economic ones, however, are frequently accompanied by a long-term decrease in citizens' trust in their respective political system (Armingeon and Guthmann 2014; Hooghe and Okolikj 2020; Van der Meer and Van Erkel 2024).

During the onset of the global Covid-19 pandemic, numerous studies have consistently demonstrated higher levels of individual-level trust in government (Bækgaard et al. 2023; Bol et al. 2021; Devine et al. 2023; Esaiasson et al. 2021; Gozgor 2022; Kritzinger et al. 2021; Schraff 2021) and non-government actors (e.g. Rožukalne et al. 2022). Despite the increased number of studies examining the relationship between the Covid-19 pandemic and political trust, our understanding remains incomplete, as most earlier studies were limited to (repeated) cross-sectional data from early 2020 (e.g. Bol et al. 2021; Schraff 2021). Without longitudinal data, these studies were confined to describing the initial rally effect, hindering our ability to understand the long-term development of political trust and the mechanisms driving within-individual changes.

More recent studies were able to rely on short-term panel studies, moving beyond the initial months of the pandemic. However, most of these studies used web-based surveys with non-probability samples (e.g. Aassve et al. 2024; Esaiasson et al. 2021; Kritzinger et al. 2021), which often suffer from self-selection bias. While these surveys allowed for a timely and cheaper data collection, their empirical results are often criticized for being less accurate and farther from true population values compared to probability samples, even after applying weighting adjustments (Kohler and Post 2023). Additionally, the absence of pre-pandemic trust measures in these short-term panel studies makes it challenging to draw conclusions about within-individual changes and the underlying mechanisms of altered trust.

To date, only a few longitudinal studies provide evidence on altered trust based on a within-estimator (Hegewald and Schraff 2022; Kestilä-Kekkonen, Koivula, and Tiihonen 2022; Van Der Meer, Steenvoorden, and Ouattara 2023; Weber et al. 2023). Yet, without longitudinal data extending beyond the pandemic's first year, our ability to understand the long-term development of political trust as the pandemic turned into a prolonged crisis with serious economic implications remains limited (Johansson, Hopmann, and Shehata 2021). To the best of our knowledge, only Colloca, Roccato, and Russo (2024) provide a single exception in this regard. Drawing on Italian panel data from 2019 to 2022, they find a strong but short-lasting rally effect for political parties and parliament, while it is absent for non-partisan or supranational institutions. Yet, this work leaves certain crucial gaps that we address in the present study. First, Colloca, Roccato, and Russo (2024) do not account for the crucial role of fluctuating pandemic threats as emphasized by extant work based on cross-sectional or short-term panel data (Bækgaard et al. 2023; Schraff 2021; Van Der Meer, Steenvoorden, and Ouattara 2023). Second, their focus on trust in different government actors leaves the crucial role of media outlets for citizens' perceptions of government crisis management aside (Rožukalne et al. 2022; Van Aelst et al. 2021). Third, while the case of a low-trust country like Italy is highly valuable, it makes it difficult to generalize to other national settings where political trust tends to be substantially higher.

Building on research showing a substantive relationship between the early phase of the Covid-19 pandemic and political trust, our study explores the extent to which the entire timespan of the pandemic has contributed to within-individual changes in support for political institutions and various non-government actors such as the media or corporations. Drawing on the case of Germany, we utilise a novel combination of large-scale panel data from the National Educational Panel Study (NEPS,  $N = 21,001$ ) and district-level data on Covid-19 infection rates and government-imposed restrictions. By employing fixed-effects panel models using two pre-pandemic waves (2017/18, 2019/20) and two during the pandemic (2020/21, 2021/22), we examine within-individual changes in political trust during the second and third waves of the Covid-19 pandemic. Together with daily information on containment policies and infection rates, we leverage fine-grained district-level data with sufficient temporal and regional variation to understand the role of government action and crisis severity in shaping these changes.

Studying increases and declines in levels of trust has crucial implications for democratic governance, as political trust constitutes a substantial cornerstone of political system support and is a necessary condition for effective collective problem-solving and promoting compliance with policy measures (Citrin and Stoker 2018; Hooghe and Zmerli 2011; Uslaner 2018). Further, higher political trust is linked to a lower susceptibility to conspiracy theories (Krouwel et al. 2017). During the Covid-19 pandemic, higher levels of political trust have additionally been associated with greater willingness to comply with containment policies (Bargain and Aminjonov 2020) and vaccine uptake (Adhikari, Yeong Cheah, and Von Seidlein 2022; Cole, Schofer, and Velasco 2023).

Our contribution to the literature on long-term dynamics of political trust in times of crisis is fourfold: Drawing on the case of the Covid-19 pandemic, we leverage daily records at the district-level, thus exploiting rich temporal and regional variation to assess the role of infection rates and the cumulative impact of various restrictions over time, which speaks to extant conclusions about the role of both government action and crisis severity as underlying mechanisms. Second, our study utilises nationally representative panel data, providing comprehensive measures of political trust towards a large number of different objects ranging from national executive government to law enforcement and different forms of media. This allows us to capture citizens' evaluations of the political system's performance in way more detail than previous studies could. Especially important in this context is the role of different news sources. Thus, these data enable us to uncover potential spillover-effects from core political actors to objects of trust that might not have been directly involved in crisis management but are perceived through the lens of overall government performance and trustworthiness. Third, by focusing on Germany, we present first evidence on long-term dynamics of political trust in a Western high-trust country, thus complementing results from other contexts fruitfully. Finally, the extensive and well-established longitudinal data offer rich measures regarding various potential individual-level changes during the pandemic, such as those related to family life or working conditions. This allows us to explore and assess numerous alternative explanations for the shifts in political trust during a major crisis. As a result, our article presents findings based on a comprehensive within-estimator examining changes in political trust and its underlying mechanisms for these changes in one of the most important global events in recent history.

## Dynamics of political trust in times of crisis

Prior to the Covid-19 pandemic, studies on long-term developments of political trust in times of crisis have mostly focused on the Great Recession 2008–2012. Using a time-series cross-sectional design with 78 national surveys, Armingeon and Guthmann (2014) find that trust in national parliaments declined sharply throughout Europe. Employing twenty years of cross-sectional data from the Eurobarometer, Van Erkel and Van Der Meer (2016) report a robust detrimental effect of economic duress on political trust (see also Kroknes, Jakobsen, and Grønning 2015). Importantly, this negative impact of long-term crises persists even after the event itself has passed (Dassonneville and Lewis-Beck 2014; Hooghe and Okolikj 2020; Van der Meer and Van Erkel 2024).

The global Covid-19 pandemic witnessed a renewed surge of studies on the consequences of crises on political trust. Yet, longitudinal studies have so far been limited to the first year of the pandemic, and thus, overwhelmingly on the rally-around-the-flag effect (Hegewald and Schraff (2022) and Van Der Meer, Steenvoorden, and Ouattara (2023) for the Netherlands, Kestilä-Kekkonen, Koivula, and Tiihonen (2022) for Finland, Weber et al. (2023) for Germany, and Aassve et al. (2024) for the United States). However, as the pandemic persisted and infections surged dramatically, the significance of political trust has further increased, especially with the implementation of more stringent containment measures until vaccination opportunities expanded. This later stage of the pandemic witnessed large-scale protests against containment policies and vaccination campaigns globally (Sallam 2021), potentially indicating a decline in political trust following the earlier surge and thus calling for a thorough scrutiny of political trust beyond the first year of the crisis. This conjecture is supported by Colloca, Roccato, and Russo (2024), who find a profound decrease in political trust following the initial rally effect using Italian panel data.

Beyond overall trajectories of political trust in times of crisis, several studies have focused on contextual drivers and mechanisms, namely government action and crisis severity. During the Covid-19 pandemic, policies designed to limit the spread of the virus, such as contact limitations, lockdowns, and closures of childcare facilities or schools constitute the major outlet of crisis-bound government action. Examining the Dutch case with a difference-in-differences design, Oude Groeniger et al. (2021) find a substantial effect of the first governmental lockdown announcement on increased trust. Arguably, government action in the shape of restrictions provides both actual and symbolic sense of safety, while also accentuating the salience of the pandemic and prioritizing public health concerns (Bækgaard et al. 2023; Lambert, Schott, and Scherer 2011). This intuition found further support with an interrupted time series leveraging the lockdown announcement in Denmark (Bækgaard et al. 2023).

Crisis severity during the pandemic can be best assessed by higher infection rates, which serve as a major heuristic, potentially inducing citizens to rally behind political leaders (Porat et al. 2019; Rump and Zwiener-Collins 2021; Schraff 2021). Employing a regression discontinuity design to the first Dutch lockdown, Schraff (2021, 1007) found pronounced increases in trust primarily driven by rising infection rates, while ‘standard determinants of political trust – such as economic concerns and social trust – lose explanatory power’, which reflects findings by Rump and Zwiener-Collins (2021) for the case of Germany. Importantly, the latter studies attribute little to no predictive power to

government action once accounting for infection rates. Addressing this puzzle of indeterminate results, Van Der Meer, Steenvoorden, and Ouattara (2023) show that fear of infection is more important for the rally effect than containment measures linked to higher infection rates, using Dutch panel data. However, to date, it remains unknown how government-imposed restrictions have shaped the long-term evolution of political trust over the course of a severe crisis, such as the Covid-19 pandemic.

Beyond contextual factors, only a few studies have examined the impact of individual-level variables throughout the pandemic, highlighting their significance in creating effect heterogeneity. In this sense, higher levels of trust correlate with factors related to being potentially strongly affected by the pandemic, such as age (Hegewald and Schraff 2022) or a migration background, which is predictive of poorer housing and employment conditions (Weber et al. 2023). However, studies examining psychological stress and worries directly found limited evidence of a relationship with trust (Bernardi and Gotlib 2023). In contrast, individuals who reacted to the threat with fear rather than anger showed significant increases in trust (Erhardt et al. 2021; Vasilopoulos et al. 2023). A similar finding has been made for citizens with lower levels of political sophistication (Kestilä-Kekkonen, Koivula, and Tiihonen 2022), while the rally effect has been largely absent among populist citizens (Colloca, Roccato, and Russo 2024). However, the limited evidence based on longitudinal data extending beyond the first year of the pandemic hinders our understanding of the role of objective and subjective changes in individuals' circumstances as underlying mechanisms of changes in trust.

## The Covid-19 pandemic in Germany

Germany provides a well-suited case for studying the impact of the Covid-19 pandemic on political trust due to its distinctive temporal and regional variation in pandemic threat and government measures. Like its European neighbours, Germany experienced the outbreak of the novel Sars-CoV-2 virus in March 2020 (see Online Supplementary Figure A1). The government implemented the first nationwide lockdown on March 16, 2020. By the start of the data collection for our first pandemic wave, NEPS wave 13, in September 2020, the weekly confirmed Covid-19 cases were below 100 per 100,000 inhabitants nationwide.<sup>2</sup> However, this incidence increased rapidly to over 1,200 before the enforcement of a second lockdown in mid-January in 2021 (Table A1 for an overview of measures). Compared to most neighbouring countries, Germany's second pandemic wave showed a less pronounced peak, suggesting a lower average pandemic threat.<sup>3</sup>

Against this background and in line with theoretical arguments and previous empirical studies on the rally-around-the-flag effect, we expect a significant increase in political trust for this first phase of the pandemic. Due to an unprecedented external threat in the form of the novel virus, a striving for societal cohesion and a remarkable degree of opinion leadership acquired by the national government should result in a pronounced increase in trust (cf. Chanley 2002; Groeling and Baum 2008; Lai and Reiter 2005). While the short-term trajectories of this rally effect have already been documented in extant work (Devine et al. 2023; Hegewald and Schraff 2022; Kritzinger et al. 2021; Van Der Meer, Steenvoorden, and Ouattara 2023), we argue that this increase likely lasted well into the second wave of the pandemic hitting in autumn and winter 2020 as the core mechanisms behind increased political trust continued to hold. Further, we presume

that this phenomenon was most pronounced for national executive and legislative government as the core political actors in fighting the pandemic. However, we argue that other actors, such as the media, may well have benefited from smaller spillover effects. As the public relied heavily on the media for accurate and timely information, positive evaluations of government performance likely extended to media institutions, increasing trust in these essential intermediaries between government and the public. By providing critical information and shaping people's risk perceptions, the media could experience a secondary increase in trust, benefiting from the primary rally-around-the-flag effect focused on government institutions (Rožukalne et al. 2022).

After a relatively mild summer in 2021 and the easing of the most intrusive containment measures, the new Omicron variant signalled a third pandemic wave. Despite harsh containment measures like curfews and extended closures of schools and childcare facilities it led to a surge in infections with up to around 4,500 in some districts in February and March 2022. During this later stage of the pandemic, the seeming inability of political actors to ensure the safety of citizens fostered large-scale protests and widespread scepticism against arguably ineffective government actions (Hunger, Hutter, and Kanol 2023) that eroded a sense of societal unity and quelled government's opinion leadership. Thus, effective crisis response became increasingly contested as the pandemic continued, which likely resulted in lower levels of support for the government (cf. Armingeon and Guthmann 2014; Magalhães 2014). Consequently, we expect decreasing levels of political trust in the pandemic's second year. Further, we argue that this withdrawal of trust and the attribution of blame led to more pronounced shifts in the case of national government compared to other non-government actors that previously had benefited from spillover effects during the onset of the pandemic.

Focusing on the case of Germany, it is important to note that the spread of the virus varied considerably across Germany's Federal states and districts, with regional hotspots changing multiple times during our survey period. As a result, containment measures exhibited substantial variation between Federal states, with stringency levels falling between those of countries like Austria or Italy and those of Spain or Switzerland. Furthermore, the level of fluctuation in measures was more moderate compared to the United Kingdom for example.<sup>4</sup> From a trust perspective, Germany is usually described as a country with, on average, high levels of political trust among democratic countries without reaching very high levels like for example in Northern Europe. This is important as higher baseline levels of political trust decrease overall state scepticism and uncertainty in making trust decisions, thus increasing the overall propensity towards a rally effect. Given these characteristics and trajectories of the Covid-19 pandemic, Germany offers valuable insights into how the crisis has impacted political trust. The country's large size, the regional and temporal variation of both pandemic threat and stringency of government measures and its positioning as somewhat intermediate among other European countries, makes it potentially representative for a range of other countries, allowing for broader implications beyond the immediate confines of our data.

## Data and estimation strategy

We examined changes in political trust by estimating linear fixed-effects regression models using annual individual-level data from the Adult Cohort of the National

Educational Panel Study from Germany (NEPS Network 2023), combined with daily administrative records on district-level incidence rates and governmental measures.<sup>5</sup> The NEPS Adult Cohort is a high-quality, nationally representative panel study on causes and consequences of education, educational outcomes, and individual life-course trajectories (Blossfeld and Roßbach 2019), employing high efforts to maintain high levels of reliable and valid survey data (Allmendinger et al. 2019; Anger et al. 2019). Approximately 12,000 individuals born between the mid-1940s and mid-1980s have been surveyed annually between September and March in the following year, which allows for capturing variation in the pandemic throughout the field period. Due to an individual-based sampling strategy across all German districts, we can also leverage substantial regional variation. To capture changes to work and family life as well as additional pandemic stressors from the Covid-19 pandemic, a wide array of additional items was introduced since 2020. Thus, this dataset is especially well-suited to track within-individual changes of political trust both before and during the Covid-19 pandemic in Germany.

Our sample is based on all NEPS waves that survey political trust: wave 10 (2017/18), wave 12 (2019/20), wave 13 (2020/21), and wave 14 (2021/22) (baseline sample: 27,474 observations based on 8,394 individuals; Table A2). As we focus on the pandemic's effect on within-change in trust, comparing trust before and during the crisis, we restricted our sample to individuals who had at least one observation in one of the two pre-pandemic waves (wave 10 or 12) and in at least one of the Covid-19 waves (wave 13 or 14;  $N = 2782$ ). After excluding observations with non-response on all trust items and without complete information in relevant control variables ( $N = 2,264$ ) and, as a result, those with less than two valid person-years ( $N = 1,427$ ), our final sample consisted of 21,001 observations (8,879 during and 12,122 before the pandemic) based on 6,501 individuals from 353 of the 402 districts in Germany.

The main dependent variable was a mean index derived from individuals' responses to nine 4-point Likert-scaled items (1 no trust – 4 very much): Federal Constitutional Court, Banks, European Union, Police, Federal Government, Federal Parliament, Press, TV, and Social Media (for coding details see Table A4; e.g. Marien 2017).<sup>6</sup> Thus, we include trust in the three branches of the national government as well as law enforcement, supranational actors, and media, which sheds light on different objects of political trust, whose perceived trustworthiness is crucial to a well-functioning democratic system. To further examine which trust objects in particular were driving the observed changes in trust, we also analysed all items in separate models. All items were recoded, so that higher index values indicated higher levels of trust. The key independent variable indicated the Covid-19 pandemic using time dummies (0 = pre-Covid19 waves vs 1 = wave 13 in 2019/20 and 2 = wave 14 in 2020/21), thus capturing the 'full' impact of the crisis on political trust over two years. Descriptive results suggested an increase in average trust during the first wave of the pandemic (Table A3 and Figures A2-A4).<sup>7</sup> In contrast, we observed no statistically significant trends for the index or individual items in the pre-crisis waves when accounting for age effects.

We investigated the impact of the Covid-19 pandemic on political trust by estimating linear regressions with fixed effects (FE), which allowed us to account for any observed or unobserved time-constant characteristics (Ludwig and Brüderl 2021). The FE-models estimate the relationship between changes in trust  $y_{it}$  and the Covid-19 pandemic  $C_{it}$ , while considering time-variant independent control variables at the individual-, household- and

district-level, represented as a vector  $\mathbf{x}_{it}$  in equation 1.  $\varepsilon_{it}$  denotes random variation and the combined effect of time-invariant unobserved variables was captured by  $\mathbf{u}_i$ . To address the nested structure of individuals in our data, we estimated clustered standard errors at the individual level. Moreover, we conducted robustness tests, estimating fixed-effects linear probability models and fixed-effects logistic regressions with a binary variable distinguishing lower and higher levels of trust, which provided further support for our results (Figure A8).

$$y_{it} = \beta_{1t} + \beta_2 C_{it} + \beta_3 \mathbf{x}_{it} + \mathbf{u}_i + \varepsilon_{it} \quad (1)$$

We implemented a two-step strategy to explore the effects of the Covid-19 pandemic on political trust: First, we examined the average effect of each year of the pandemic using two time-dummies that denote the two waves fielded after the start of the crisis. Our baseline models included age to separate the change in trust that is linked to the experience of the pandemic waves from more general age effects. To do this, we used dummy variables for each age year that provide a fully flexible specification without assuming a linear or U-shaped pattern.

To gain a better understanding of the changes in trust, we examined the role of various explanatory variables in stepwise regression models. Thus, we can account for potential mechanisms and suppressor effects that might explain the relationship between the pandemic and altered trust. In a first subset, we accounted for the regional 7-day rolling average incidence rates (per 100,000 inhabitants) at the time of the interview and whether respondents lived in districts where the incidence was higher than the country average. Additionally, we included district-level measures of government-imposed restrictions, categorised into four levels of policies: measures from the Infection Protection Act (e.g. contact restrictions in private and public, mask obligations, and distancing regulations), work-related measures, education-related measures (e.g. closures of childcare facilities, primary or secondary schools), and restricted civil rights (e.g. lockdown).<sup>8</sup> Each measure accounted for the relative proportion of time respondents had been affected by that restriction since their last interview. As different groups of citizens, such as young parents, students, or the (vulnerable) elderly, were affected differently by these mitigation measures, we can effectively account for such heterogeneity. By using multiple measures, we prevent the potential cancellation of specific restrictions' impacts and provide a more nuanced understanding of the overall effect of government actions for citizens' daily lives, crises affectedness, and thus potentially altered trust. As some of the measures exhibited high collinearity, for example, measures capturing measures in different school levels, we examined the relationship and explanatory power of all measures in separate models (Table A5 and A6) but included only selected individual measures in our full models. However, the results did not vary according to the selected subgroup measures. Additionally, these analyses showed a strong positive link between all district-level measures and political trust for our first pandemic survey wave compared to negative associations during the second, highlighting declining trust the longer individuals experienced imposed restrictions in their county. Moreover, we tested alternative specifications using imposed measures at the time of the interview that provided similar patterns (Table A7 and A8), however, none of the restrictions showed a statistically significant association with trust at the 5%-level in full models (Table A12).

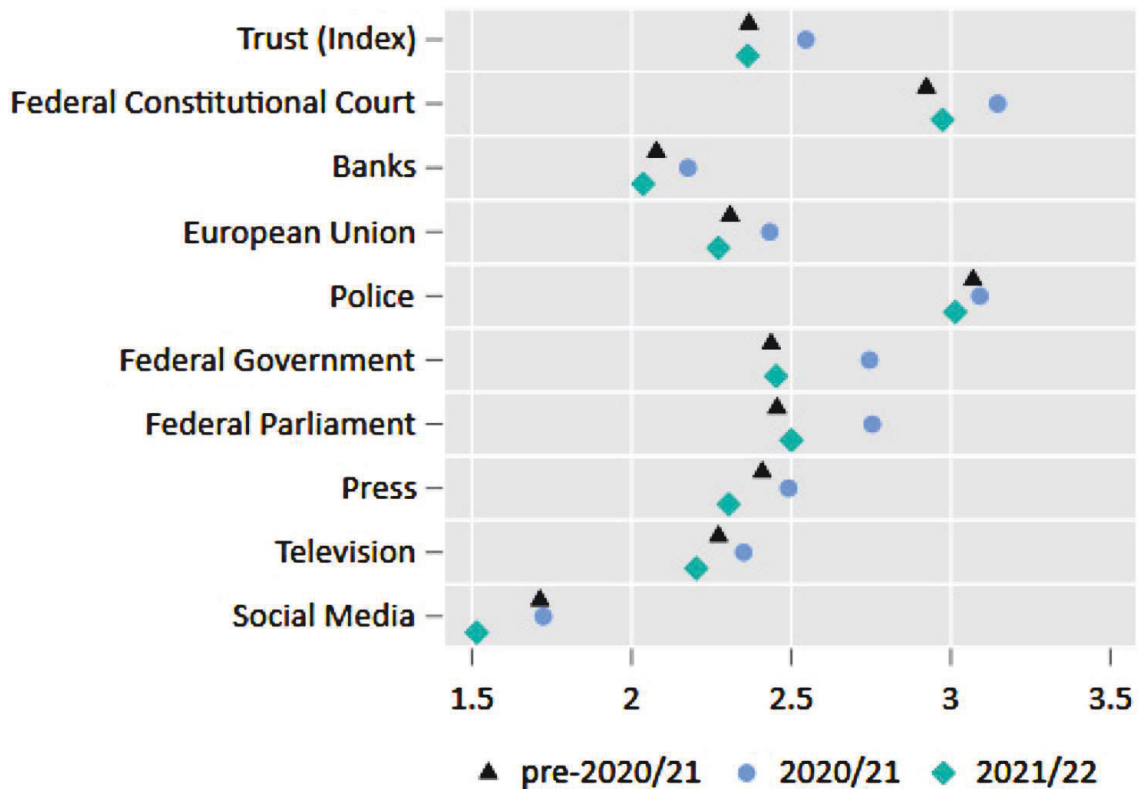
Furthermore, we examined whether changes in trust were also linked to other changes at the individual and household levels. We accounted for respondent's employment status (working, unemployed, retired), working hours and household income (in 2020 €), as well as whether respondents experienced remote work or short-time work. We also considered changes in subjective health and how respondents felt negatively affected by the pandemic, captured through three indices on social, economic, and reconciliation problems.

In a second step, we leveraged the variation in interview dates across the field time of each NEPS wave, conducted between September and March/April of the subsequent year. By using a set of dummy variables for every interview month during the pandemic wave, the dummy impact function allowed for a fully flexible specification to compare trust in a given month during the crisis with average levels of trust in the year(s) before the pandemic (Ludwig and Brüderl 2021). Thus, we provide additional insights into whether increased trust persisted or diminished over the course of our observation window.

## Results

The descriptive results confirmed a positive association between the first year of the Covid-19 pandemic and political trust, both for the overall index and the individual items (see Figure 1 and Table A3). Comparing responses from 2020/21 to those in pre-pandemic waves revealed a notable increase in respondents' average level of trust from 2.37 to 2.55 in the first pandemic survey wave (2020/21).<sup>9</sup> These increases were particularly pronounced for items closely related to political actors on the national level, such as 'Federal Constitutional Court', 'Federal Government' and 'Federal Parliament'. In contrast, the second wave did not show any particularly increased trust levels compared to pre-pandemic measures. On the contrary, as the crisis progressed, respondents indicated even less trust in some of the institutions than before, particularly in various media outlets. Closer examinations of the increased average in the first year revealed that only a very small share of respondents reported lower levels of trust than before the pandemic, illustrating a comparatively homogenous increase in trust (Figure A3). Furthermore, a comparison of the distribution of answers before and during the first pandemic survey wave highlighted that most respondents transitioned from the category 2 'little trust' to 3 'pretty much trust' (see Figures A4–A5).<sup>10</sup>

We present the results from linear FE-regression models graphically in Figure 2, comparing the coefficients from separate regressions for the index and individual items with the results from ordinary least square regression (OLS) models. Estimates from both models confirmed that in the first pandemic wave, 2020/21, respondents increased their average trust (mean index) by about 0.14, corresponding to approximately one third of the standard deviation. Additional analyses for each trust item confirmed increased levels of trust for most items, with particularly pronounced increases observed for the items 'Federal Government' and 'Federal Parliament'. Conversely, we found smaller changes in trust towards different forms of media and institutions not pertaining to national-level government, such as trust in banks or the European Union, while the effect for trust in the police was negative but statistically insignificant. Overall, the OLS results showed some slightly larger and some smaller changes than the FE-models, indicating that the observed changes may be in part related to time-invariant compositional

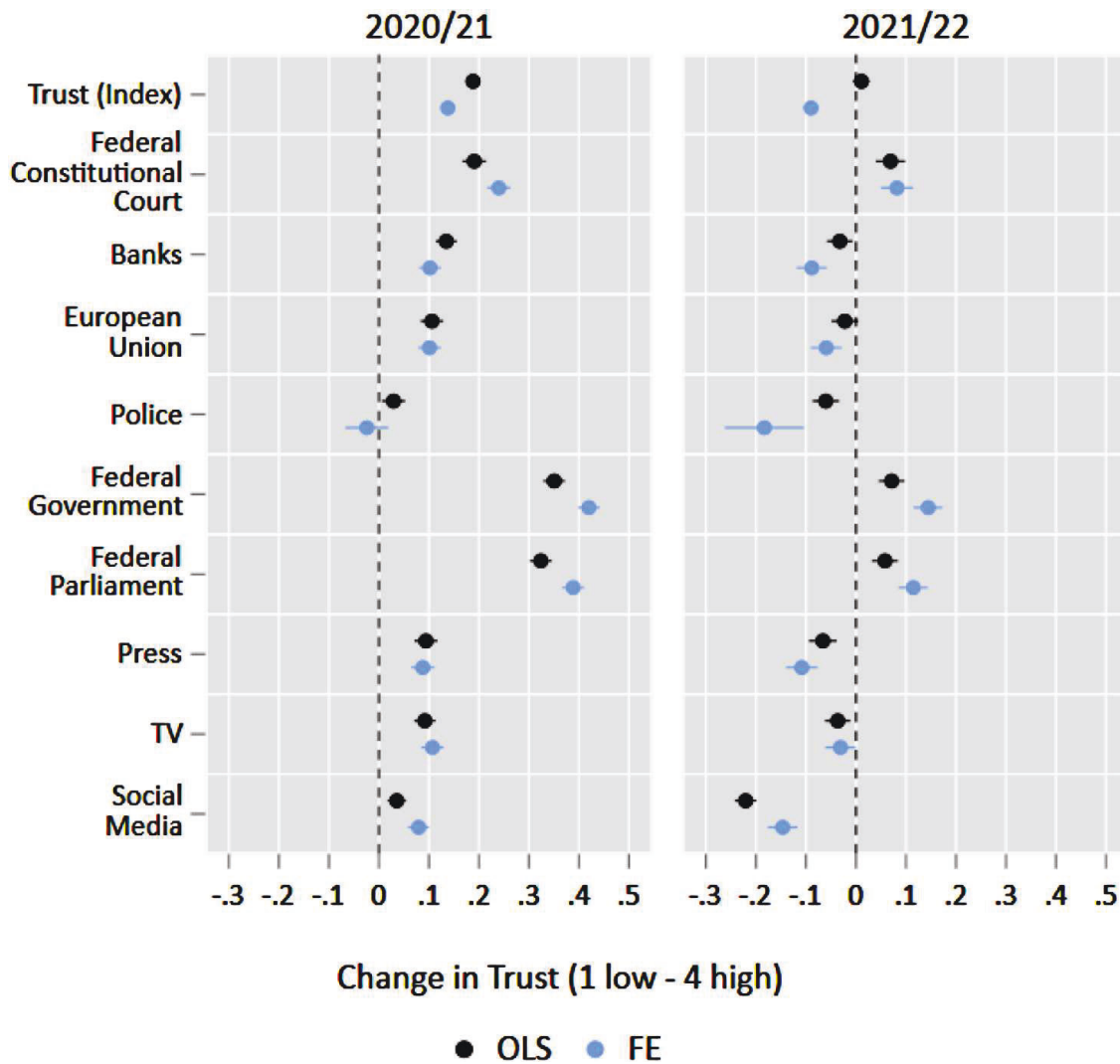


**Figure 1.** Average levels of political trust before and during the Covid-19 pandemic.

Note: Mean index is based on all available items and rounded (1 low – 4 high). 95-% confidence intervals. Source: NEPS: SC6:14.0.0 (2017–2022),  $N = 21,001$ , weighted. See Table A9–A11 for full regression results.

differences, effect heterogeneity, and omitted variable bias driving between-group variation in trust changes. Altogether, the within-findings across various trust measures for the first wave supported our expectation, presuming a significant increase in political trust during the early phase of the pandemic, with the most pronounced changes for national executive and legislative government as the core political actors, as well as spillover effects for all other observed dimensions of trust.

In the second year, the FE-coefficients for the index and most of the individual items indicated a statistically significant decline in political trust to levels below those before the crisis (Figure 2 as well as Table A12). This decline was particularly notable for the items ‘Police’ and ‘Social Media’ when compared to pre-crisis levels. Conversely, trust in core political actors remained significantly higher than pre-crisis levels, albeit substantially less elevated than in the first year. Additional results utilizing the elevated trust levels in the first year of the pandemic as a reference category further illustrated a statistically significant decrease in trust in the second year of the pandemic across all items and the index (Figure A6). Importantly, this withdrawal of trust was most pronounced for core political actors. Similarly, additional findings re-estimating our models on altered trust based on a reduced index focusing solely on the three branches of national government (government, parliament, constitutional court) provide further support for our analyses (Figure A7). Hence, our results provided not only support for our expectation that levels of political trust decreased in the pandemic’s second year but also showed substantial effect heterogeneity across objects of trust.



**Figure 2.** The Covid-19 pandemic and changes in political trust compared to pre-pandemic survey waves.

Note: Results from FE and OLS models accounting for age. 95-% confidence intervals. Source: NEPS:SC6:14.0.0 (2017–2022),  $N = 21,001$ .

In the next step, we estimated stepwise FE-models to further explore the role of mediating variables and suppressor effects that might underlie changes in trust (Table 1, single items in Table A9–A11). In the first subset, we included wave-specific district-level measures on incidence rates to account for crisis severity and containment policies to test the role of government action, the latter measuring the relative proportion of time respondents had been affected by these restrictions since the last interview. During the first year of the pandemic, respondents in districts with particularly strong increases in the incidence rate at the time of the interview reported higher levels of trust compared to those with comparatively low increases in incidence rates. Conversely, respondents residing in districts where the incidence was higher than the country average demonstrated lower levels of trust. This suggests that when respondents perceived their local situation as particularly bad or poorly managed, their trust diminished. Similarly, longer durations with contact restrictions and a curfew decreased political trust, however, the latter was statistically not significant. Despite some statistically significant relationships

**Table 1.** Explaining within-changes in Average political trust (Index).

	m1	m2	m3	m4	m5	m6	m7	m8	m9
2020/21 (ref. before)	0.14*** (0.01)	0.14*** (0.01)	0.15*** (0.01)	0.16*** (0.01)	0.17*** (0.02)	0.17*** (0.02)	0.17*** (0.02)	0.18*** (0.02)	0.18*** (0.02)
2021/22 (ref. before)	-0.09*** (0.01)	-0.09*** (0.01)	-0.08*** (0.01)	-0.07* (0.03)	-0.06 (0.05)	-0.05 (0.05)	-0.05 (0.05)	-0.04 (0.05)	-0.04 (0.05)
<b>2020/21#</b>									
incidence rate (sd)		0.02 (0.01)	0.03* (0.01)	0.03** (0.01)	0.03** (0.01)	0.03** (0.01)	0.03** (0.01)	0.03** (0.01)	0.03** (0.01)
incidence > Federal average			-0.02* (0.01)	-0.02** (0.01)	-0.02** (0.01)	-0.02** (0.01)	-0.02** (0.01)	-0.02** (0.01)	-0.02** (0.01)
restriction: contacts (priv.)				-0.04* (0.02)	-0.04* (0.02)	-0.04* (0.02)	-0.04* (0.02)	-0.04* (0.02)	-0.04* (0.02)
restriction: workplace				-0.00 (0.02)	-0.00 (0.02)	-0.00 (0.02)	-0.00 (0.02)	-0.00 (0.02)	-0.00 (0.02)
restriction: secondary schools					-0.01 (0.03)	-0.00 (0.03)	0.00 (0.03)	0.01 (0.03)	0.01 (0.03)
restriction: curfew						-0.06 (0.04)	-0.06 (0.04)	-0.06 (0.04)	-0.06 (0.04)
<b>2021/22#</b>									
incidence rate (sd)		0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
incidence > Federal average			-0.02+ (0.01)	-0.02 (0.01)	-0.02 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
restriction: contacts (priv.)				-0.02 (0.03)	-0.02 (0.03)	-0.02 (0.03)	-0.02 (0.03)	-0.02 (0.03)	-0.02 (0.03)
restriction: workplace				0.00 (0.02)	0.00 (0.02)	0.00 (0.02)	0.00 (0.02)	0.00 (0.02)	0.00 (0.02)
restriction: secondary schools					-0.01 (0.05)	-0.02 (0.05)	-0.01 (0.05)	-0.01 (0.05)	-0.01 (0.05)
restriction: curfew						-0.01 (0.03)	-0.01 (0.03)	-0.01 (0.03)	-0.01 (0.03)
<b>Individual and household controls</b>									
working hours							-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
remote work							-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
remote work missing							-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
short-time work							-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)

HH-income (log)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
	0.03***	0.03***	0.03***	0.03***	0.03***	0.03***	0.03***	0.03***	0.03***
Unemployed	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Retired	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
consequences: economic	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
consequences: social	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
	-0.02*	-0.02*	-0.02*	-0.02*	-0.02*	-0.02*	-0.02*	-0.02*	-0.02*
consequences: time	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
subjective health	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
	-0.01**	-0.01**	-0.01**	-0.01**	-0.01**	-0.01**	-0.01**	-0.01**	-0.01**
Constant	1.92***	1.93***	1.93***	1.93***	1.93***	1.93***	1.93***	1.93***	1.93***
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Observations	21,001	21,001	21,001	21,001	21,001	21,001	21,001	21,001	21,001
Individuals	6,501	6,501	6,501	6,501	6,501	6,501	6,501	6,501	6,501
P	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
r <sup>2</sup> <sub>a</sub>	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15

Results from fixed effects models with clustered-standard errors in parentheses. All models include age dummies. Incidence rate at interview, restrictions in 0–100% of time since last interview.

See Table A9–A11 for the individual items.

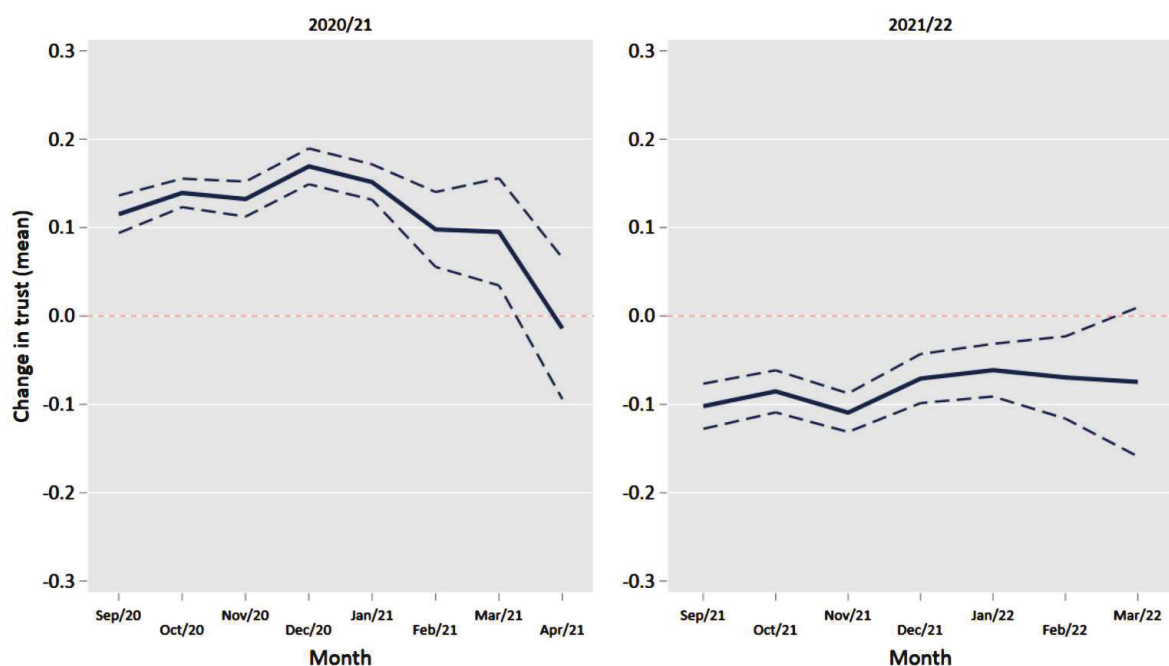
+  $p < 0.10$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Source: NEPS:SC6:14.0.0 (2017–2022).

and moderate effect sizes, the measures had only limited explanatory power for the observed changes in trust during the first year of the crisis. However, the situation was different for the further course of the pandemic: Although none of the variables showed a statistically significant relationship with changes in trust, the inclusion of these indicators somewhat explained the decreased levels of trust in the second year of the pandemic. Conversely, the effect of the first pandemic survey wave on trust remained substantial and statistically significant when accounting for increased infection risks and imposed restrictions, suggesting that other factors were at play in shaping trust during the first phase of the pandemic.

To further examine the driving mechanisms behind changes in trust, we introduced a comprehensive set of time-varying variables to investigate whether these changes were linked to individual – and household-level factors. Surprisingly, objective factors such as changes in respondents' employment status, working hours and household income as well as potentially altered working characteristics, such as remote work or short-time work, yield no further explanatory value to our main relationship of interest. While changes in subjective health and respondents' personal feelings of being negatively affected by the pandemic were negatively linked to changes in trust, they did not further explain the observed changes in political trust.

Finally, we utilised the variation in interview dates across the two pandemic survey waves to explore whether the changes in average trust levels either remained consistent or decreased throughout the observation period spanning from October to March in each wave. Figure 3 illustrates the results from the FE-model with a dummy impact function by plotting the coefficients for each interview month along with 95-% confidence intervals. The findings underlined a moderately enduring effect of the Covid-19 pandemic on increased levels of trust during the first pandemic survey wave. Between September



**Figure 3.** Within-changes in trust across the month of interview in 2020/21 and 2021/22.

Note: Results from FE-models with a dummy impact function, accounting for age. 95-% confidence intervals. Source: NEPS:SC6:14.0.0 (2017–2022),  $N = 21,001$ .

2020 and January 2021, respondents reported trust levels that were similarly increased compared to previous answers across all months. However, starting in February 2021, respondents reported trust levels that were still higher than before the pandemic, but slightly lower than those reported until January 2021 (left panel). However, the larger confidence intervals indicated higher uncertainty due to the small number of respondents surveyed towards the end of the field period. Similarly, respondents reported lower trust levels compared to the pre-crisis average during all field times in the second year of the pandemic (right panel). Additional analyses showed no statistically significant differences in sociodemographic characteristics of respondents at the beginning and end of the field period. Only employment status increased the risk of being interviewed later, which is likely related to time conflicts and thus delayed interviews. Our results therefore provide the first empirical evidence that, in Germany, the initial rally effect lasted well into the second wave of the pandemic hitting in autumn and winter 2020 as the core mechanisms behind increased political trust continued to hold. However, in the second year of the pandemic, lower levels of political trust were evident across the full observation period, with only moderate fluctuation across the winter months.

We conducted several robustness checks to ensure that our findings were robust to changes in sample and empirical strategy. First, we re-estimated all models based on a balanced panel for the two pre-pandemic and two pandemic waves ( $t=4$ ). The findings for this somewhat smaller sample showed similar patterns (see Figure A9 and A10) and therefore support the presented results while addressing concerns of selective attrition. To address concerns about the relevance of national or regional incidence rates, we re-estimated our models using national incidence rates, however, our results remained consistent. Finally, we re-estimated our models including a measure of generalized social trust (1–11), available annually only from wave 12. Social trust is conceptually distinct from political trust (Devine et al. 2023; Newton 2007) and there is conflicting evidence regarding its causal relationship with the latter (Newton and Zmerli 2011; Sønderskov and Dinesen 2016). Yet, it may also change in times of crisis, while being related to political trust (Aassve et al. 2024; Esaiasson et al. 2021). Although increased social trust was positively linked to average political trust (index), the results from models accounting for changes in social trust followed similar patterns. Lastly, we conducted robustness tests using information on changes in CATI interviewers' characteristics (Zoch 2021), which did not alter our results (Table A13).

## Discussion and summary

How did individual-level political trust evolve throughout the Covid-19 pandemic? To what extent did the fluctuating severity of the crisis and government action to contain it influence changes in trust? Focusing on the case of Germany, our study provides one of the first longitudinal analysis of altered political trust due to the Covid-19 pandemic beyond its first year for a country characterized by comparatively high levels of political trust. By exploiting longitudinal data linked with records on district-level crisis severity and government actions from Germany, it is the first study that examines how dynamics of political trust are driven by regional variation in infection rates and government-imposed restrictions as well as changes on the individual and household levels.

The findings from fixed-effects regression models reveal a statistically significant increase in average trust during the first pandemic survey wave in 2020/21. However, our results demonstrate that these initial increases in trust vary considerably across different government and non-governmental actors. Specifically, we observe larger increases for items most closely related to the main actors during the pandemic, i.e. the national government and parliament, while coefficients for media or other institutions indicate only small to medium changes (see also Bækgaard et al. 2023; Rožukalne et al. 2022). Consequently, our results illustrate that the rally effect primarily manifests in the national executive and main legislative, while we also observe spillover effects to most other objects of political trust that might have been less directly involved in the crisis management but are perceived through the lens of citizens' evaluation of overall government performance and trustworthiness (Marien 2017).

Our findings for the first year of the pandemic provide support for previous research, indicating significantly higher levels of political trust compared to pre-pandemic levels and thus a profound rally-around-the-flag effect for Germany (Bol et al. 2021; De Vries et al. 2021; Esaiasson et al. 2021; Kritzinger et al. 2021). However, our results provide first empirical evidence that, in Germany, the rally effect observed right after the onset of the pandemic lasted far longer than earlier claims asserted (Colloca, Roccato, and Russo 2024; Johansson, Hopmann, and Shehata 2021; Kritzinger et al. 2021; Nielsen and Lindvall 2021; Van Der Meer, Steenvoorden, and Ouattara 2023). Only from February 2021, in the second year of the crisis, we start to observe slightly lower increases in trust. Thus, our results offer first empirical evidence of a comparatively long-lasting rally effect extending beyond conjectures by earlier literature.

Moreover, during the later months of the second pandemic year in 2022 and its gradual normalization (Colloca, Roccato, and Russo 2024; Johansson, Hopmann, and Shehata 2021), our analyses show a pronounced decrease in political trust almost across the board. Whereas trust in national core institutions like Federal government and parliament remains slightly higher than before the pandemic, trust in the police or different news sources hits levels significantly below pre-crisis measures. Despite a marked decrease in trust compared to elevated levels during the first year of the pandemic, our results suggest that national government continued to be evaluated more positively than before the pandemic and to profit from higher levels of trust than before the crisis at least until spring 2022. Our findings indicate that a certain residual of the rally effect may indeed translate into long-term political support due to the higher overall trust in Germany compared to other national settings such as Italy, where political instability and lower baseline levels of political trust may be behind a swifter dissipation of the rally effect (see Colloca, Roccato, and Russo 2024). However, compared to pre-crisis measures, objects of political trust closer to citizens' everyday pandemic malaise, such as the police as primary enforcer of restrictions and various forms of media as conveyors of negative news (Van Aelst et al. 2021), also suffered from discontent among the population. Thus, our results highlight that the prolonged pandemic affects trust in different objects along divergent trajectories with a fading rally effect.

Surprisingly, incidence rates as a measure of crisis severity and government-imposed restrictions do not offer strong explanatory power for the initial increase in political trust. At the time of the second survey wave in late 2021 and early 2022, however, decisive government action in the form of long school closures and curfews had a depressing

effect on political trust. Hence, our findings emphasise that previous conclusions about the explanatory power of infection rates (Schraff 2021; Van Der Meer, Steenvoorden, and Ouattara 2023) and lockdown measures (Bækgaard et al. 2023; Kritzinger et al. 2021) can only be partly replicated for later stages of the pandemic. A possible explanation for this finding lies in the cue-based assessment of government performance by most citizens (Porat et al. 2019; Schraff 2021). During the first months of the pandemic, an incidence rate of 50 per 100,000 inhabitants was considered severe, whereas the second wave saw more than 60 times as many cases in strongly affected districts. Citizens might therefore be less inclined to use incidence rates as heuristics for pandemic threat as Covid-19 became more pervasive. Meanwhile, decisive government action to curb the spread of the virus was becoming increasingly unpopular due to its perceived ineffectiveness and the high social and economic costs imposed on the populace (De Meijere et al. 2023). Thus, it makes sense that earlier findings of lockdown announcements inducing rally effects became reversed in the second pandemic year.

Although the present study is the first to estimate a within-change of political trust over the full two years of the pandemic in a high-trust context based on large-scale, representative panel data, there are also certain limitations. While fixed effects models help control for much constant heterogeneity, the risk of biased estimates remains due to unobserved time-invariant characteristics that may correlate with the observables, thus potentially influencing our findings. However, by accounting for constant observed and unobserved heterogeneity and exploiting substantial variation within individuals and the different districts across Germany, our results provide a more robust picture than previous cross-sectional studies and descriptive analyses based on small scale or non-representative data. Unfortunately, the rather small number of interviews during the later field period did not allow for further subsample analyses. In a similar vein, our survey waves were fielded during autumn and winter, when the pandemic was most severe. Consequently, we cannot gauge how political trust developed during the milder pandemic threat of the summer months. Moreover, similar to other long-running panel studies, our data suffers from some degree of attrition both before and during the Covid-19 pandemic. However, given attrition particularly among respondents with lower levels of education and income (Zinn, Würbach, and Steinhauer 2020) and, thus, lower baseline levels of political trust, we believe that our estimates, if anything, are conservative in nature. Further, while the mechanisms behind the rally effect, especially the opinion leadership mechanism, should apply to all citizens (Chowanietz 2011), it appears possible that during later stages of the pandemic political trust followed different trajectories for supporters and opponents of the incumbent government especially in times of growing societal polarization. While this is outside the scope of our study and data on party preferences are not available with the current dataset, such analyses might be a worthwhile avenue for future research. Similarly, neither do the present data allow for studying differences between trust in national and trust in state government in a federal country like Germany. Yet, given that most restrictions were introduced by national government through a coherent legal framework, we expect national actors to be the core objects for citizens' trust evaluations. Nonetheless, studying trust in other levels of government in times of relevant crisis might prove a fruitful avenue for future research, too. Finally, our findings suggest that the role of contextual factors like governmental containment measures and infection rates changed over the course of the pandemic. Yet with

annual data on trust, a more fine-grained investigation thereof is beyond the scope of this study. Thus, the dynamic nature of underlying mechanisms influencing political trust during the pandemic might also be addressed further by future research.

Despite these limitations, our findings contribute significantly to our understanding of how a long term crisis like the Covid-19 pandemic reshaped individuals' levels of political trust over time. By leveraging fine-grained administrative data and nationally representative panel data with pre-crisis trust measures for a wide range of objects, we provide robust evidence on the nuanced dynamics of political trust in a high-trust environment such as Germany. Our findings highlight the ambivalent roles of crisis severity and government action, revealing that both infection rates and government-imposed restrictions do not explain changes in trust during the first pandemic survey wave, whereas strong restrictions explain changes during the second pandemic survey wave. Similarly, by controlling for a wide range of individual and household variables, we uncover the limited explanatory power of these potential mechanisms for both the rally effect and the entire course of the pandemic. As such, our longitudinal results highlight the long-term evolution of the rally effect during this unprecedented pandemic. Additionally, we observe altered trust across a wide range of objects, with the most pronounced reduction in trust found in the media, which is crucial given the media's role in informing the public and shaping citizens' perceptions during crises. As our case, Germany, has experienced a more moderate pandemic crisis than some of its European neighbours, while introducing more stringent measures than others, we expect our results to be comparable to other cases. Yet, similar analyses with different national contexts would be necessary to validate our results further. Overall, these insights underscore the far-reaching impact of the pandemic on the legitimacy and functioning of key institutions (Aassve et al. 2024), speak to longstanding concerns about declining political trust (Hetherington and Rudolph 2015) and the rise of conspiracy beliefs (Šrol, Ballová Mikušková, and Čavojová 2021) as well as illustrate the complex interplay of factors influencing trust trajectories during prolonged crises, offering valuable implications for future research.

## Notes

1. Political trust stems from 'a rational or affective belief in the benevolent motivation and performance capacity' of different actors within a political system (Norris 2017, 19) and is driven by citizens' evaluations of these actors meeting these beliefs (van der Meer 2018). It is inherently situation-specific and relational (Bauer and Freitag 2018). Objects of political trust include executive government, legislative assemblies, the judiciary, government agencies, law enforcement, and non-government actors like the media, corporations, and NGOs (Marien 2011).
2. Covid-19 incidence rates and information on government-imposed restrictions are provided by *infas 360 healthcare daten platform* (<https://www.healthcare-datenplattform.de>).
3. Data retrieved from WHO Covid-19 dashboard (<https://covid19.who.int/>) (last accessed August 6, 2023).
4. Oxford COVID-19 Government Response Tracker, Blavatnik School of Government, University of Oxford – Last updated 24 July 2023 (<https://ourworldindata.org/covid-stringency-index>) (last accessed August 6, 2023).
5. *infas 360 healthcare daten platform* provides information on Covid-19 incidence rates and government-imposed restrictions (<https://www.healthcare-datenplattform.de>).

6. Only the item on police was not surveyed in wave 10 (2017/18). All results are unchanged when excluding this item.
7. We present graphical illustrations using the STATA graphic scheme *plottig* (Bischof 2017).
8. These measures were introduced as part of the German 'Infektionsschutzgesetz' (Protection Against Infection Act) and the 'Gesetz zum Schutz der Bevölkerung bei einer epidemischen Lage von nationaler Tragweite' (Act to Protect the Population During an Epidemic Situation of National Significance). Thus, they applied to all Federal States equally depending on district-level incidence rates.
9. While this overall increase is undoubtedly lower than initial spikes during the first weeks of the pandemic between 0.1 and 0.2 on a scale from 0 to 1 (Esaiasson et al. 2021; Kritzinger et al. 2021), such a finding more than six months into the crisis shows clearly that changes in political trust went beyond a short-lived rally effect.
10. Notably, even items displaying particularly high levels of trust, such as 'Federal Constitutional Court' or 'Police', elicited minimal responses in the highest trust category in 2020/21. Hence, the risk of potential ceiling effects appeared to be low across all items.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

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## CRediT author statement

Zoch: Conceptualization, Formal analysis, Investigation, Methodology, Writing – Original Draft, Writing – Review & Editing, Visualization, Supervision, Project administration, Funding acquisition. Wamsler: Conceptualization, Writing – Original Draft, Writing – Review & Editing, Visualization – Support, Project administration – Support.

## Data availability statement

The paper uses data from the National Educational Panel Study (NEPS). The NEPS is carried out by the Leibniz Institute for Educational Trajectories (LifBi, Germany) in cooperation with a nationwide network. The data (Starting Cohort Adults, current version: 14.0.0), is available, free of charge, to individuals with a valid NEPS data usage contract via three modes of access – download, Remote-NEPS and on-site. Further information regarding the sourcing of data as well as contract forms can be found on the data access site. In addition, the paper uses public administrative records on incidences and government-imposed restrictions from the infas 360 healthcare daten platform. Data is available after registration on the data access site.

## Ethics approval statement

The NEPS study is conducted under the supervision of the German Federal Commissioner for Data Protection and Freedom of Information (BfDI) and in coordination with the German Standing Conference of the Ministers of Education and Cultural Affairs (KMK)

and – in the case of surveys at schools – the Educational Ministries of the respective Federal States. All data collection procedures, instruments and documents were checked by the data protection unit of the Leibniz Institute for Educational Trajectories (LifBi). The necessary steps are taken to protect participants' confidentiality according to national and international regulations of data security. Participation in the NEPS study is voluntary and based on the informed consent of participants. This consent to participate in the NEPS study can be revoked at any time.

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