



Full Length Article

Left behind in a public services wasteland? On the accessibility of public services and political trust



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A B S T R A C T

Public discourse and scholars alike argue that the spatial divide in voting behavior and attitudes is rooted in geographic inequalities that serve as breeding grounds for political discontent. In previous studies, scholars have mainly focused on the economic conditions to analyze how place-based context influences the voting behavior of citizens. However, this focus on voting behavior and a small set of contextual variables do not allow us to draw direct conclusions as to how, and which, place-based factors relate to discontent on the attitudinal level.

I argue that the accessibility of public service infrastructure specifically serves as a low-intensity information cue for citizens to evaluate the political performance of modern welfare states. These evaluations complement objective economic perceptions and are part of the performance-trust link. Hence, citizens should trust the government less if public services are not provided or only hard to access.

I test this relationship for the German case by spatially linking the addresses of survey respondents with the location of public service facilities and collective municipal-level data. The resulting unique data set allows to explore the relationship between the accessibility of public service facilities and political trust as well as their temporal development. Results of multilevel analyses indicate that shorter distances to train stations are associated with increased trust in the government, but all other results, such as the change in service provision, remain inconclusive. The findings implicate that a long-term lack of public services contributes to geographically polarized discontent in Germany.

1. The geography of discontent

The geography of discontent is one of the emerging fields of studies concerned with explaining attitude formation and political behavior from a place-based perspective. One reason for the re-examination of place as an explanatory factor is the spatial pattern of right-wing populist voting behavior in recent years, which has been echoed in the public controversy about disadvantaged, rural places breeding resentment and populism in Western democracies (Rodríguez-Pose, 2018). At the heart of these 'left behind' studies stands the argument that citizens living in relatively disadvantaged areas have the perception that they lack access to most economic and social resources. This impression leads to a sense of being left behind by globalization, national economic development, and/or political elites (Cramer, 2016).

To examine this mechanism, many empirical studies focus on how economically deprived, rural places drive right-wing populist voting behavior. Research shows that economic trade shocks (Autor, Dorn, & Hanson, 2013; Colantone & Stanig, 2018) or long-term de-industrialization (Broz, Frieden, & Weymouth, 2021) can set off a downward spiral that leads to the electoral success of populist parties and Brexit support. Such effects occur across the US (Rodríguez-Pose, 2018; Scala & Johnson, 2017) and European democracies (Carreras, 2019; Dippel,

Gold, & Heblich, 2015; Evans et al., 2019). Even if these studies point in the direction of geographic inequalities contributing to an up-rise of discontent, the focus on voting behavior and a limited set of contextual variables do not allow us to draw direct conclusions as to how, and which, place-based factors relate to discontent on the attitudinal level. One exception is the study by Hartevelt, van der Brug, Lange, and van der Meer (2021) who investigate multiple roots and paths through which context factors affect populist radical right voting behavior. They find that attitudes preceding vote preferences have different roots in rural and urban places. In addition, McKay, Jennings, and Stoker (2021) show that communitropic distrust is particularly strong in rural areas with a weak local economic status quo.

This paper builds on these studies in highlighting the need to further disentangle contextual effects and understand the antecedents of political behavior expressed on the aggregate level. Specifically, I investigate how political trust is influenced by public service provision, economic hardship, and demographic composition in Germany. If people lack access to economic and social resources, they are likely to blame the state for their living conditions and lose trust in the government. This theoretical mechanism originates from works in the performance-trust framework (Luehiste, 2006; van de Walle & Bouckaert, 2001) that are extended by conceptualizing citizens' living conditions as perceived

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outcomes of the political system. Nevertheless, the question remains which aspects of the living place should factor into this framework. Based on previous studies, economic factors cannot be dismissed. However, other factors besides the economic status should also influence the perception of the local living conditions. I argue that public service provision affects trust independently. On the one hand, some political economists argue that the lack of public services is a direct consequence of long-term economic decline and mediates the economic effects (Broz et al., 2021). On the other hand, Bock's (2016) notion of rural marginalization has been empirically supported as a distinct phenomenon in the analysis of radical and right-wing populist voting behavior in European countries (Bolet, 2021; Hartevelde et al., 2021). Besides, while empirical evidence suggests that class, wealth, attitudes, and party preference in the US are still separated by the rural-urban conflict line (Gimpel, Lovin, Moy, & Reeves, 2020), in Germany the rural-urban divide cannot be reproduced as clearly (Deppisch, Osigus, & Klärner, 2021). One reason might be that rural places vary in their access to public services and economic strength in Germany. In essence, public service provision is of specific interest to answer if and when living conditions translate into a negative government evaluation that decreases trust, in addition to economic factors, composition, and rurality.

To study this relationship, I provide direct measurements of the distance between public service facilities and residences of survey respondents by georeferencing and spatially linking the addresses of a 2018 representative face-to-face study of the German population with locations of hospitals, train stations, and schools. The calculated distances between the respondents and the closest facilities are part of a comprehensive data set that includes additional collective municipal-level data on the economic situation, job opportunities, the composition of a municipality, population density, and their temporal development. The results of several multilevel regressions indicate that the lacking provision of some public services - especially public transportation but also hospitals - are associated with lower levels of trust. However, other place-based factors do not show the expected effects. Even more surprisingly, the decline of living conditions yields no significant results.

In summary, this paper contributes to the emerging literature on the geography of discontent in three ways. Firstly, previous literature often considers economic inequalities the main, and sometimes the only, factor in determining discontent. However, neither government performance nor left behind places need to be exclusively perceived through an economic lens. In contrast, recent studies show that the diversity of factors contributing to the geographic divide on the sub-national level is of specific interest to understand which contextual factors matter most (Gimpel et al., 2020; Hartevelde et al., 2021; McKay et al., 2021). Based on insights of the trust literature, I apply the distinction between economic and political performance factors. By analyzing non-economic regional indicators that cover the political side of the performance-trust link, I examine if and when these factors contribute to citizens' trust in the government. Explicitly, the main focus is the accessibility of public services and infrastructures that are regularly in the center of public debates.

Secondly, this study links the theoretical work of Hetherington (2005) and Easton (1965) on political trust and system support with the place-based left behind research. It builds on the assumption that the evaluation of government performance is partly influenced through cues from citizens' place of residence. If these places are deprived, trust levels should erode. The focus on the relationship of trust and place is of special interest in places like Germany where the geographic divide in voting behavior has recently received much scholarly attention (Deppisch, 2021; Diermeier, 2020; Förtner, Belina, & Naumann, 2020; Kurtenbach, 2019) but the underlying mechanisms concerning the source of discontent are yet to be discussed.

The third advancement this paper makes it to further address the methodological approach of many, though not all, previous studies. Instead of relying on aggregate level data, this study uses several fine-

grained spatial measurements of place-based factors linked with individual-level survey data. Thus, it builds on recent studies contributing more insights into the individual-level attitudes and mechanisms (Hartevelde et al., 2021; McKay et al., 2021). With an increasing amount of available data, the possibilities to capture the respondent's living conditions more precisely grow. As such, this paper highlights different operationalizations of accessibility measurements and their application.

2. The performance-trust link

The belief that trust in government declines when citizens are unhappy with the outcomes of the political system lies at the very core of political trust research.¹ Political trust is the "degree to which people perceive that the government is producing outcomes consistent with their expectations" (Hetherington, 2005, p. 9) and as such, a cognitive, evaluative orientation towards political authorities and political institutions. This definition is closely related to Easton's (1965) concept of political system support. In this framework, specific support can be defined as a performance-based and output-oriented evaluation of the political system (van de Walle & Bouckaert, 2001). Hence, political trust depends strongly on contextual performance factors, i.e., outcomes of the political system, which are the basis for citizens' evaluations of the executive institutions of the state. Whenever the political system does not produce the expected outcome, citizens' trust in the government should erode. A major part of the trust literature focuses on material benefits as expected outcomes of the political system. The evaluations of this outcome can rely on one's own economic situation (Healy, Persson, & Snowberg, 2017) or the perceived economic performance of the state (Hansford & Gomez, 2015). Both considerations influence the confidence in political institutions (Criado & Herreros, 2007; Luehiste, 2006; McAllister, 1999; Zmerli, 2013). The individual-level characteristics and perceptions are accompanied and influenced by contextual effects. The regional distribution of economic resources directly affects job opportunities and income levels but might be even more influential as a source of information about the state of the economy. Citizens are exposed to the conditions of their neighborhood in their daily lives and these place-based context conditions serve as low-intensity information cues (Baybeck & McClurg, 2005; Cho & Rudolph, 2008). Eventually, the "adverse local conditions translate into political opposition" (Lipps & Schraff, 2021, p. 7) and can result in a spatial divide of trust along the lines of regional disparities.

Additional empirical studies on political trust as part of the "geography of discontent" (McKay et al., 2021) emerging in recent years find mixed results. They highlight that it is necessary to distinguish between sub-national factors, national contexts, and studied outcomes. Trust is lower in peripheral areas in Norway but economic factors do not have a similar effect (Stein, Buck, & Bjørnå, 2019). People living in the 'backwaters' of the UK hold more grievances and are Eurosceptic but do not express higher levels of distrust or democratic dissatisfaction (Jennings, Stoker, & Twyman, 2016). In contrast, people living in both economically deprived and less populated areas in the UK hold more negative views about how well their community is listened to by politicians (McKay, 2019). Most recently, McKay et al. (2021) focused on the place-based explanations of trust, perceived social marginality, and

¹ In comparison to social or interpersonal trust, where two individuals develop mutual trust, political trust describes a vertical relationship between two (or more) partners. Scientific literature accounts for this difference in some instances by differentiating semantically between 'trust' in a mutual relationship and 'confidence' as a one-sided form of reliance on a partner (Schnaudet, 2019). Others differentiate between trust and confidence on a more conceptual level by defining confidence as a 'represent belief on the capacity of an agency' (Norris, 2017, p. 19). Acknowledging that the relation underlying interpersonal and political trust is different, the term trust is used here to depict volatile evaluations of political actors.

perceived economic deprivation. They find that people residing in economically deprived and rural areas lack governmental trust and identify several, area-specific mechanisms. In cross-country comparisons, EU support is depressed in economically challenged regions, but intertwined with national trust and citizens' education level (Lipps & Schraff, 2021; Mayne & Katsanidou, 2022).

Besides the mixed results, this overview shows that the trust literature is still limited in its geographic scope. For example, geographic trust divides in the UK and US as 'high inequality context' are comparatively well studied while sub-national studies of other European countries are sparse. Finally, economic factors are rather omnipresent in studies on place and trust. However, when studying the performance-trust link, it seems intuitive that the economic conditions are not solely shaping the relation of trust and living conditions. Besides economic performance factors, citizens also expect their nation state to ensure the provision of social services, infrastructure, and security (Dalton, 2004; Luehiste, 2014) influencing the political system similarly to economic factors. But which factors measuring sub-national inequalities should matter besides the economy, and when?

2.1. A focus on public services

One answer highlighted in this study is the accessibility of public services.² Evaluations of the welfare state play a crucial role in understanding individual political trust levels in modern democracies where citizens have a clear expectation that a welfare state provides sufficient public goods (Kumlin & Haugsgjerd, 2017). Several studies support this assumption, shedding light on the role of satisfaction with the provision of public services for political trust on an individual level (Christensen & Laegreid, 2005; Criado & Herreros, 2007; Luehiste, 2006; van der Meer & Dekker, 2011; Zmerli, 2013). Furthermore, public management studies show that experience with and perceptions of service delivery - often analyzed from a micro performance perspective - add up to an evaluation of the quality of public services, which then influences trust in the public sector in particular, or the government in general (Bouckaert, van de Walle, & Kampen, 2005; van de Walle & Bouckaert, 2003; van de Walle, van Roosbroek, & Bouckaert, 2008). An exception to these studies with a focus on subjective perceptions are geographical approaches explaining the relationship of service delivery and citizens' perceptions of the government in developing countries. Service provision is a core element of accountable governance and less accessible services should induce dissatisfaction and distrust. However, empirical studies yield mixed results (Brinkerhoff, Wetterberg, & Wibbels, 2018; Chukwuma, Bossert, & Croke, 2019). From the left behind literature, one can conclude that - though studying other outcomes - public service provision as an indicator for local marginalization and decreasing social and cultural capital has an independent and similar effect compared with economic performance measures (Harteveld et al., 2021). Thus, public services seem of specific interest for analyzing if their accessibility can function as an objective indicator for subjective perceptions in Western democracies. In line with the theoretical arguments and previous empirical results, the main hypothesis reads as follows:

A lower accessibility of public services is associated with a lower level of trust in the government. (H1)

Based on previous studies, I assume the same relationship for the above mentioned context factors, namely: lower economic power, older demographic, and lower population density.

2.2. Static situation or temporal change?

Underlying the first hypothesis is the assumption that citizens have a

² The accessibility of public services and socioeconomic infrastructure is here conceptualized as the spatial proximity between a citizen and the location of a service facility (Levesque, Harris, & Russell, 2013; Weber, 2003).

sense that their neighborhood is lacking services and experiences economic hardship relative to other places in the nation. Newman, Velez, Hartman, and Bankert (2015) is one of the few studies with empirical support for this assumption: the share of immigrants and the unemployment rate in the near neighborhood of US citizens strongly correlates with the perception of local immigration and job opportunities. Still, the discussion of the temporality of left behind places is part of the yet needed specification of this concept (Pike et al., 2023). On the one hand, sustained spatial disparities and stagnation of unfavorable living conditions can contribute to manifesting distrust. On the other hand, citizens are known to react to temporal changes if politicized on the national level (Hopkins, 2010) and the left behind literature usually refers to a vicious cycle of reinforcing decline that induces discontent (Broz et al., 2021). Thus, if change is the decisive root of place-based effects, the following hypothesis can be derived:

A decline of accessibility of public services is associated with a lower level of trust in the government. (H2)

Again, I assume the same relationship for the decline of economic opportunities, increase in older demographic, and decline of population density.

2.3. Narrowing down salient services in Germany

Until now, I have addressed public services and infrastructure as observable infrastructure facilities provided by welfare states. In this study, Germany serves as a case study of an established welfare state with overall average political trust levels compared to other EU countries (Torcal, 2017). Studies on political discontent - often using voting for the German radical-right party AfD (Deppisch, 2021; Diermeier, 2020) or turnout (Hausner & Kaeding, 2019; Schaefer & Roßteutscher, 2015) in federal elections as a proxy for this concept - show an association with economic inequalities, lacking service delivery, and rurality. Looking at the actual distribution of regional indicators (see supplementary material, Figure A1), one can observe for all indicators that heterogeneity exists between and within urban and rural municipalities taking population density as an indicator for the level of rurality.³ However, some clusters emerge. Firstly, one can still observe the persistent differences between East (the area of the former GDR) and West Germany. Specifically, the economic indicators, tax revenue and unemployment, illustrate the East-West divide. Furthermore, clusters of a high share of elderly poses a challenge only for some, mainly East German states (Salomo, 2019). High levels of unemployment are not only clustered in East Germany but occur increasingly in the urban centers in West Germany. Within the areas of provided public services, accessibility of health care, public transport, and education are identified by state institutions as the most important to secure the provision of services of general interest (Bundesinstitut für Bau-, Stadt- und Raumforschung, 2017). While the overall accessibility of services is rather good, the provision of public services poses a particular challenge in some but not all remote places. In general, the accessibility of public services in Germany is not solely determined by rurality but there exists noticeable variation across rural areas (Küpper & Peters, 2019; Milbert & Furkert, 2020). As such, I focus specifically on these three areas that

³ Deppisch et al. (2021) point out in their paper the often simplified definition of rurality. While most studies, like this one, rely on population density and/or remoteness to proxy the rural-urban spectrum, other factors such as settlement density, housing development, and land use add to a more complex and arguably valid definition. While agreeing with the authors that a simplified measurement of rurality should not be the basis to draw a conclusion of the geography of either populist voting or political trust in deprived areas, the analyses here opt for separating out the density dimension and include it as an independent contextual predictor along economic, infrastructural and demographic indicators. Thus, less dense areas are not inevitably more economically weak or lack infrastructure.

also have a high salience in the public debate. For example, a controversy on hospital provision was initiated in 2019 by a report of the *Bertelsmann Stiftung* suggesting more than half of the German clinics should be closed to finance a smaller number of larger, more specialized hospitals. The COVID-19 crisis again draws public attention to the provision of health care in general and the accessibility and capacity of hospitals in particular. While the discussion of school provision focuses mostly on the attractiveness of a neighborhood, mobility through public transport is decisive for many citizens in their daily lives. Between 2000 and 2017, nearly 200 train connections (approximately 2000 km of train lines) were closed with local initiatives protesting the closure of stations or advocating for re-opening stations and lines which have already been taken out of service for a long time (Prengel, 2022; Eisenbahn-Bundesamt, n.d.). Moreover, the German railway company (*Deutsche Bahn AG*) is financially benefiting from current climate change legislation raising the question of if and how they will dissolve geographic inequalities in the accessibility to the rail network. As a consequence of these controversies, the German federal government appointed a commission on *Equal Living Conditions* in 2018, which is tasked to develop policy recommendations to address the issue of inequality in - among others - these three areas.

2.4. Attribution of responsibility

Is the federal government actually the one to blame for the (under) provision of health, public transport, and education infrastructures? The German Federal State is partly involved in financing all three services and deciding on their location. Germany's health system is not technically a federal state system, but the national government decides on general health policies, and the health system is mainly publicly funded. Thus, the German states' governments are responsible for hospital planning, including the location of hospitals (Ridic, Gleason, & Ridic, 2012). When it comes to public transportation, the German railway company has a de facto monopoly for passenger transport by land. Regional transport infrastructure lies in the hand of the state administrations, but needs to meet the objectives of the national spatial planning law that aims at the regional equality of living conditions. In contrast, education in Germany falls exclusively in the states' responsibility, even though the federal government is obliged to supervise the German school system. Thus, the states are responsible for implementing this educational mandate.

Besides the governments' actual role in providing these infrastructures, it might be even more critical for citizens to perceive the federal government as responsible. The attribution of responsibility in infrastructure provision is challenging because of the number of (political) actors involved in the decision-making processes. In economic voting research, several studies looked into the effects of attribution of responsibility dealing with a similar problem (Arceneaux, 2006; Rudolph, 2016). The empirical results show that even in low clarity contexts, economic voting is still observable (Dassonneville & Lewis-Beck, 2017), but that information shortcuts become more critical. In these cases, citizens tend to blame (or credit) "the most inviting target" (Norpoth, 2001, p. 420). The same mechanism is at work when it comes to political trust. In multi-level systems with several government levels being responsible for each policy area, citizens are not able to differentiate their trust evaluations (Muñoz, 2017). Especially in the German health and transport sectors, the shared responsibilities between federal and state governments are unknown to most citizens and difficult to disentangle. In these contexts, the federal government should be the most inviting target to blame for the shortcomings. The case is different when it comes to education policies. The federal government

has passed its sovereignty to the German states and is prohibited by law to influence the states' education policies.⁴ The hypothesis is, therefore:

If the government is perceived as the responsible provider of services, lower accessibility of public services is associated with a lower level of trust in the government. (H3)

In the German case, lacking access to hospitals and train station should decrease governmental trust but school accessibility should not have the same effect.

3. Data and measurements

3.1. Data Sources

To investigate these hypotheses, I use survey data from the German General Social Survey (GGSS) 2018 (GESIS-Leibniz Institute for the Social Sciences, 2019). The GGSS is a representative cross-section study of the German population over 18 living in a private household. In addition to the repeated core questionnaire, the GGSS 2018 included a module on political attitudes containing all individual-level measurements. In the first sample stage, municipalities are selected with a probability proportional to their number of adult residents and, in the second stage, the municipal registration offices provide a random address sample of individual persons to conduct the face-to-face interviews. To allow data linking and fine-grained spatial analyses, the addresses of the GGSS 2018 respondents were geocoded in accordance with the General Data Protection Regulation (GDPR) following strict data security regulations. For each address of the sample, the geo-coordinate was determined by using the Geocoding Service of the Federal Agency of Cartography and Geodesy (BKG) (Schweers, Kinder-Kurlanda, Müller, & Siegers, 2016).⁵ Based on the geo-coordinate, the respondents were mapped on 100 × 100 m INSPIRE grid cells (European Commission, 2020) and assigned the coordinate of the centroid of the grid cell for data security reasons. Additionally, point coordinates were retrieved for the location of hospitals, schools, and train stations to construct the independent variables for the following analyses. Firstly, the location of hospitals was obtained from the Federal Statistical Office of Germany (*Statistische Ämter des Bundes und der Länder*, 2019). The yearly published hospital register includes the addresses and contacts of the hospitals' main offices in Germany. The annual data from 2003 to 2017 were georeferenced to create a complete panel data set of all hospital locations in Germany. Secondly, point coordinates of train stations and additional information on the station type are available via the open data portal of the German railway company (*Deutsche Bahn*, 2017). The year of reference is 2017. Thirdly, school locations were retrieved from the *Points of Interest* data set, which is curated by the BKG (*Bundesamt für Kartographie und Geodäsie*, 2018). The federal office collected and georeferenced the addresses of all German schools relying on information provided by the Statistical Offices of the German states 2017/2018. The last included data source provides additional context information about the living environment of the respondents, their corresponding (collective) municipality. On the level of collective municipalities, small German municipalities are merged into self-governed units, which allows a better nationwide comparison between the very heterogeneous municipalities, resulting in a total of 4668 German collective municipalities. This level offers a more refined measurement than the often used district-level data, and at the same time the analyses can profit from a broad range of indicators

⁴ Following this argument, one would expect that the lack of schools has a negative effect on trust in state governments. Unfortunately, such a measurement is missing in the data and the hypothesis cannot be tested.

⁵ The 'ALLBUSS/GGS - Sensitive Regional Data' (GESIS-Leibniz Institute for the Social Sciences, 2018) contains sensitive regional variables as an extension to the publicly available Scientific Use File of the GGSS 2018. The access to the sensitive data is subject to access restriction but data can be analyzed onsite.

published by the [Bundesinstitut für Bau-, Stadt- und Raumforschung \(2022\)](#).

3.2. Operationalization

Government trust: The dependent variable of this study is trust in the German government. It is based on a question included in an item battery of the GGSS 2018 asking about trust in political institutions. Respondents state their level of trust in the German government on a 7-point Likert-scale ranging from 0 *no trust at all* to 6 *a great deal of trust*.

Accessibility of public services: The independent variables are defined as the proximity between a respondent and locations of public service facilities. As introduced before, three types of facilities are examined: hospitals, train stations, and schools. For all three facility types, the Euclidean (straight-line) distance in kilometers between a respondent and the closest facility serves as proxy for the accessibility of public service facilities.⁶ The measurements result from calculating distance matrices between survey respondents and the service locations in Germany. The closest location was identified for each respondent and the distance in kilometers retrieved from the matrix. For all models, I transform the distance measurements by adding one unit and taking the logarithm. [Górecki and Marsh \(2014\)](#) established this transformed measurement when analyzing voter-candidate proximity to account for the non-linearity in the model. Arguably, a 1 km change in the distance to the next hospital does not have the same influence on individuals' perception if the person lives in an urban or in a remote area. For distances smaller than 1 km, the logarithmic function would increase rapidly, so one unit is added before the log-transformation.

Economic hardship, composition, and rurality: Besides the distance measurements, I also introduce several context-level measurements on the level of collective municipalities: economic hardship, job opportunities, demographic composition, and population density of the collective municipalities.

Economic hardship is proxied with the logged mean tax revenue per capita on the level of collective municipalities. With aggregated income levels not available on this aggregation level, logged tax revenues capture the economic condition as closely as possible, which is reflected in the correlation coefficient of 0.80 between logged GDP and logged tax revenues per inhabitant at the district level. As a second indicator of economic hardship, the subsequent analyses include the share of unemployed. As a consequence of the exodus of young citizens, a place would be left with a relatively high level of elderly citizens. This is why the share of citizens above the age of 65 is included as a proxy in the analyses. Lastly, population density per km² serves as a continuous measure of rurality.

Individual-level controls: The following analyses include several individual-level control variables that are known covariates of the trust items and could also confound the accessibility measures. The theoretical section already mentioned that performance evaluations are also based on economic performance. On the individual level, I include the perception of the *own economic situation* ranging from 0 *very bad* to 4 *very good*. Additionally, I include the three most prominent covariates of governmental trust in the models: incumbent support, political interest, and interpersonal trust ([Keele, 2007](#); [Newton & Norris, 2000](#); [Zhao & Hu, 2017](#); [Zmerli, 2013](#)). The variable *incumbent support* takes the value 1 if respondents identify themselves as a partisan of one of the two

coalition parties, as citizens tend to have more trust in a government if it is controlled by their preferred party ([Anderson, Blais, Bowler, Donovan, & Listhaug, 2005](#)). Further, citizens who are interested in politics are more likely to understand the functioning of the political system and feel able to influence the political decision-making processes. Given this, they are more likely to trust political institutions ([Catterberg, 2005](#)). Therefore, a 5-point Likert-scale measures *political interest*. The general feeling that fellow citizens are trustworthy should manifest in a generalized disposition affecting other attitudes and functions as a trait that spills over when evaluating political authorities and institutions ([Almond & Verba, 1963](#); [Gamson, 1968](#)). *Interpersonal trust* is measured on a scale from 0 *One cannot be careful enough* to 2 *Most people can be trusted*. Additionally, I included a measure of formal education,⁷ age in years, and gender as sociodemographic controls.

Summary statistics of all variables can be found in the supplementary material ([Table A1](#)).

4. Results

For the following analyses, linear multilevel regression models with a random intercept and state fixed effects are estimated clustering the observations on the collective municipal-level. Multilevel modelling is necessary because the 2-stage sampling method leads to the clustering of respondents, as do the context-level variables. Survey weights are applied in all calculations to account for the oversampling of East German municipalities.

4.1. Inaccessibility of services, economic opportunity, and population

The first models depict the main effects of the log of the straight-line distance to the public service facilities on trust in the German government ([Fig. 1 & Table 1](#)). Based on the outlined theoretical argument, a higher distance to the closest service facility should be associated with a decrease in trust levels. The same should apply for the other contextual factors: economic hardship and job opportunities, population composition and density. In the main models, the distance to the closest hospital (Model 1) and train station (Model 2) are the only variables of interest that reach statistical significance. The distance to the closest train station keeps its significance level when controlling for all other distance measurements (Model 4). As expected, the distance to the closest school (Model 3) does not relate with political trust but it seems surprising that none of the other context-level factors (tax revenue, unemployment, population density, and share of elderly) shows a significant association with the dependent variable, either. In contrast, individual-level factors seem to be more important for the trust relationship: a preference for the incumbent party, higher interpersonal trust, and a positive evaluation of the own economic situation are associated with higher trust levels.

To check the robustness of these findings, alternative model specifications and operationalizations were tested. All tables can be found in [Appendix II](#) of the supplementary material. Ordered logit multilevel models, which are implemented to safeguard against bias due to the ordinal nature of the dependent variable, indicate that the effect of station distance holds under several alternative model specifications but the distance to the closest hospital is not as robust ([Table A2](#)). This finding is repeated in additional tests, e.g. when running the same OLS models with one distance measure or other contextual factor at a time to rule out that a correlation of the contextual level variables biases the results ([Table A3](#)). The analyses show that the findings for the distance

⁶ Straight-line distance might differ in some instances from the actual travel time to a facility because of physical barriers and road networks. Still, previous studies found that both measurements are highly correlated and the added precision of the more complex calculation of travel time was without consequences for the results ([Boscoe, Henry, & Zdeb, 2012](#); [Phibbs & Luft, 1995](#)). Still, even though the Euclidean distance is a straightforward operationalization to proxy travel time and suits the theoretical argument of casual observation, it is not sensitive to all aspects of service provision.

⁷ The measurement is based on the *International Standard Classification of Education* and recoded to three levels: lower secondary education and lower (1), upper secondary and post-secondary (2), short-cycle tertiary and higher (3).

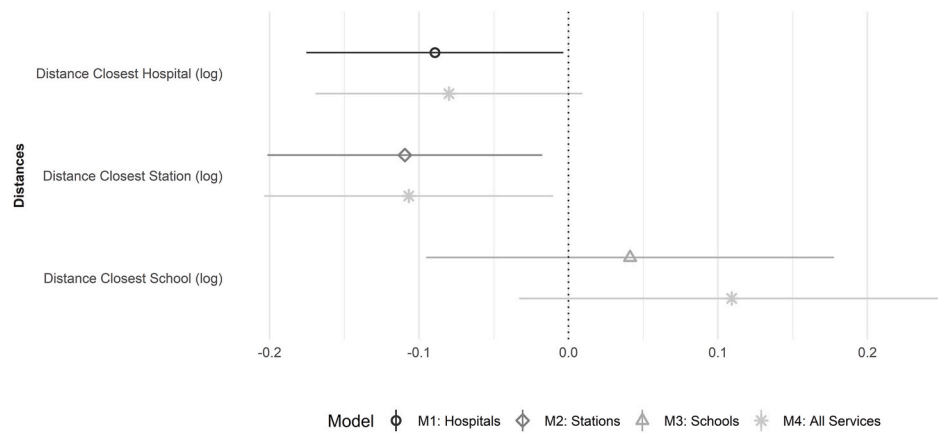


Fig. 1. Distance to Public Service Facilities and Trust in Government

Note. Regression coefficients with 95% confidence intervals. Data Sources: GGSS 2018, Federal Statistical Office 2017, BKG 2018, Deutsche Bahn 2017 and BBSR 2022. Fitted Models: OLS multilevel random effect regression with state fixed effects. Survey weights are applied.

Table 1

Full models distance to public service facilities and trust in government.

	M1	M2	M3	M4
Dist. Closest Hospital (log)	-.09 (.04) *			-.08 (.05)
Dist. Closest Station (log)		-.11 (.05) *		-.11 (.05) *
Dist. Closest School (log)			.04 (.07)	.11 (.07)
Individual Level				
Incumbent Preference	.66 (.05) ***	.66 (.05) ***	.65 (.05) ***	.65 (.05) ***
Interpersonal Trust	.32 (.03) ***	.32 (.03) ***	.32 (.03) ***	.32 (.03) ***
Political Interest	-.02 (.03)	-.02 (.03)	-.01 (.03)	-.02 (.03)
Own Economic Situation	.35 (.03) ***	.35 (.03) ***	.35 (.03) ***	.35 (.03) ***
Women	.16 (.05)**	.16 (.05)**	.16 (.05)**	.16 (.05) ***
Education (middle)	-.06 (.10)	-.06 (.10)	-.06 (.10)	-.07 (.10)
Education (high)	.11 (.10)	.11 (.10)	.11 (.10)	.10 (.10)
Age	-.00 (.00) *	-.00 (.00) *	-.00 (.00) *	-.00 (.00)
Municipality Level				
Tax Revenue (log)	-.08 (.28)	-.01 (.28)	-.04 (.28)	-.06 (.28)
Population Density	-.16 (.22)	-.16 (.21)	-.01 (.22)	-.20 (.22)
Share of Elderly (>65)	-.04 (.23)	-.04 (.23)	-.03 (.23)	-.04 (.22)
Unemployment Rate	.07 (.24)	.09 (.23)	.11 (.24)	.10 (.23)
State FE	Yes	Yes	Yes	Yes
No. Observations	3041	3041	3041	3041
No. Municipalities	149	149	149	149

GGSS 2018, Federal Statistical Office 2017, BKG 2018, Deutsche Bahn 2017 and BBSR 2022. Fitted Models: OLS multi-level random effect models with state fixed effects. Survey weights are applied. Standard errors reported in parentheses. *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.

to the next station are consistent but the other context factors are still not reaching conventional significance levels.⁸ I also include district fixed effects - rather than the state fixed effects - in the model to safeguard against any unobserved variables influencing the results. None of the distance or context level measurements reach significance in this specification (Table A4). However, this result might simply reflect the lacking variance at this aggregation level (with often only one collective municipality located in a district). Besides these model specifications, I test alternative measurements of service provision to check whether

alternative conceptualizations of accessibility apply here (see Apparicio et al. (2017) for a discussion of several alternatives). To capture the overall accessibility and provision of services in Germany for a respondent, the mean distance to all facilities was calculated for each respondent and service type. The number of service facilities within a 10- and 20-km buffer zone are also tested, following the assumption that respondents might rank the choice between several options in close proximity higher than shorter distances to the closest location. None of the alternative measures reach statistical significance (Table A5). The raw distances to the closest facility yield the same results as the main models (Table A6). Further, the main models include all public service facilities regardless of their type. However, additional characteristics were available for the included facilities which allowed for the sub-sampling of locations that might be more decisive in citizens' perception: hospitals offering basic care⁹ or a maternity ward, long-distance train stops, primary and secondary schools. Again, the Euclidean distance to these facilities were calculated and the distance to the closest facility retrieved. Neither the often-discussed accessibility of hospitals with maternity wards or providing basic care nor the distance to the closest long-distance train stations or different school types (primary and secondary schools) show the expected results (Table A7). In two additional analyses, I investigated if the findings change when a sub-sample analysis of rural, suburban, and urban municipalities is applied (Appendix III) or when the interaction effects of service accessibility and belonging to a social group that is more likely to rely on these services are considered (Appendix IV). Again, the results stay inconclusive.

In light of these robustness checks, the general assumption that the inaccessibility of public services, economic hardship, and population composition are associated with trust in the government (H1) does not hold in all circumstances. The only significant and mostly robust finding of this first set of analyses is that an increasing distance to the closest train station is related to a decrease of political trust. When assessing the hypothesis that citizens only blame the government if it is perceived as the provider responsible for these services (H3), the presented results are not completely comprehensive but point in the expected direction. The results support the hypothesis because the inaccessibility of schools does not have an effect on governmental trust but the opposing effects of health provision proves not to be robust. Previous studies have highlighted that it may be the change in the economic or social situation of a neighborhood, not the status quo, that influences political behavior and

⁸ The collective municipality measurements are also not yielding towards significant result when excluding the distance measure and including each indicator separately (Appendix II; Table A8).

⁹ Hospitals with at least one of these service offerings and/or specializations qualify as hospitals who provide basic care: internal medicine, general surgery, trauma surgery, orthopedics.

attitudes. I turn to these issues next.

4.2. The perception of temporal change

Living conditions should become (more) decisive for government evaluations if citizens experience eroding infrastructures, economic decline, and an exodus of young people. Even though we would assume that this mechanism appears for both the distance to train stations and hospitals, data are only available to test this hypothesis for hospital locations. Changes in distance to the closest hospital, tax revenue, unemployment, and share of elderly citizens is calculated for two time points (5 and 10 year change). The models yield no significant effects (Table 2), neither do robustness checks including each change factor separately (Appendix II; Table A10). Hence, the second hypothesis finds no support in this analysis.

5. Discussion

The results of these analyses stand in stark contrast to previous analyses which mostly attribute citizen dissatisfaction and the rise of right-wing populist parties to subnational economic changes (Carreras, 2019; Dippel et al., 2015; Evans et al., 2019). For Germany, I find that (static) distance to the nearest train station has an independent effect on citizens' trust in the national government, even when controlling for static economic contextual conditions and in the absence of effects of economic decline. Remarkably, Guilluy (2018) finds a similar effect for the relationship between station accessibility and the electoral success of right-wing populist parties in France. But how can such findings be explained in the German context?

Comparing the effects of the three areas of public services, the distance effects for public transport might stand out for two reasons. First, a heterogeneous group of citizens rely on public transport for their daily lives: young adults travelling for social activities, commuters, and those who cannot afford or do not drive a car. In 2017, about nine million Germans did not live within walking distance of a regularly served public transport station (Bundesinstitut für Bau-, Stadt- und Raumforschung, 2017). Hospitals, by comparison, are less regularly frequented and can be partially supplemented by on-call medical services. The relevance of school accessibility depends more on the family situation and, as mentioned, the federal government is not accounted for their provision. Thus, individual-level factors other than those tested in the additional analyses as limited proxies for the need for specific services may be at play. Individual characteristics, such as social class, could further influence access to public services. Second, public transport is a

particularly charged topic in the national discourse. In addition to complaints about delays and controversies over redevelopment mega-projects such as *Stuttgart 21*, newspapers report that more than 100 cities have been disconnected from the long-distance rail network over the past two decades, including medium-sized cities with almost 250,000 inhabitants such as Chemnitz and Krefeld (Luik, 2021). Also, between 2000 and 2017, nearly 200 train connections were shut down and local initiatives protest against the closure of stations or for the reopening of stations and connections that have been closed for a long time (Prengel, 2022; Eisenbahn-Bundesamt, n.d.). The latter may also indicate that station closures need not be the only source of frustration: The persistent absence of services can have a similar effect. Thus, these discussions are reinforced by questioning how the lack of infrastructure threatens the quality of life and how the German railway company contributes to changing transport policies towards more sustainability. Against this background, the finding on station accessibility suggests that macro-level factors such as the national debate can serve as an activator and influence which aspects of a place are associated with political distrust. Overall, this interpretation of the results is related to the overall argument of the article: Access to public services can play a role in linking services and trust, but which services and when seems to depend on micro and macro factors.

The non-results on the economic context also need to be explained. The average unemployment rate of 5.7% in Germany in 2017 was one of the lowest rates since German reunification and among the lowest rates of all OECD countries. Even with a variation of 0.7% to 15.2% across all German municipalities, the unemployment rate may not be high enough to influence the government's assessment. Moreover, a lower unemployment rate does not necessarily mean that economic conditions have improved. In East German municipalities in particular, the falling employment rate is often a consequence of 'passive reorganization': the volume of work and the number of people in work are declining at the same time. This means that a change in the numbers may not reflect a change in the actual situation of the citizens. Finally, the result also plays into the paradox of the relationship between economic performance and trust: while subjective assessments of economic performance and political trust show a strong and robust relationship, objective measures yield mixed results in explaining differences in trust levels – sometimes depending on the level of aggregation and operationalizations (van der Meer & Hakhverdian, 2016).

6. Conclusion

This study's launching point was the question of whether, and when, a lack of public service infrastructure, economic hardship, and/or a neighborhood's population composition translate into low levels of trust in the German government. The only relationship that proved to be robust was that the inaccessibility of train stations is associated with lower trust in the government, with hospital inaccessibility pointing in the same direction. The inaccessibility of schools, low tax revenues, high unemployment, a high share of elderly people, and low population density, in contrast, are not associated with distrust. It might be even more puzzling that a change in service provision, economic situation, or population composition and density has no effect on the trust levels of the affected residents.

The discussion of results underlines that the empirical focus on voting behavior and a small set of contextual variables do not allow us to draw direct conclusions as to which and how place-based factors are related to underlying attitudes like political trust. Reversing this argument, the findings for political trust might only be an indication for similar effects when shifting the focus on behavioral outcomes. However, this study has shown that place-based measurements can indeed function as objective measurement to further approach the performance-trust link. In the context of the current left behind narrative and the previous findings on the subjective perceptions of service provision, it seems worthwhile to expand political trust research to

Table 2
Temporal change and trust in government.

	5 Years	10 Years
5 Year Change		
Dist. Closest Hospital	.02 (.01)	
Tax Revenue	-.00 (.00)	
Population Density	-.00 (.00)	
Share of Elderly (>65)	.00 (.04)	
Unemployment Rate	-.04 (.05)	
10 Year Change		
Dist. Closest Hospital		.01 (.01)
Tax Revenue		-.00 (.00)
Population Density		-.00 (.00)
Share of Elderly (>65)		.00 (.02)
Unemployment Rate		-.02 (.03)
State FE	Yes	Yes
Individual Level Controls	Yes	Yes
No. Observations	3041	3041
No. Municipalities	149	149

Note. GGSS 2018, Federal Statistical Office 2017, BKG 2018 and BBSR 2022. Fitted Models: OLS multi-level random effect regression with state fixed effects. Survey weights are applied. Standard errors reported in parentheses. ***p < 0.001; **p < 0.01; *p < 0.05.

analyze the difference – and the interaction - between subjective and objective economic and political performance measures. Still, some limitations of this study and avenues for further research need to be addressed.

When examining attitudes towards the German state from a geographical perspective, the former division into West and East Germany still influences living conditions. For example, the rural-urban divide in terms of economic strength is more pronounced in Eastern Germany. In addition, much of the East German infrastructure was restructured after reunification, leading to the closure of some public services, the improvement of railroad infrastructure, and the reopening of cross-border connections. Future research could further investigate these possibly interacting effects on a more comprehensive data basis than was possible here.

One limitation that this study inevitably faces concerns sorting effects. Citizens might self-select by moving to or remaining in neighborhoods based on their predisposition, including political attitudes (Cho, Gimpel, & Hui, 2013; Gimpel & Hui, 2015; Maxwell, 2019) but also needs for public services, resources, and forms of living (e.g. on residential self-selection in Germany Rössel & Hoelscher, 2012; Scheiner, 2014). Furthermore, cultural, arguably historically grown, differences in the composition of regions can contribute to the politically divided landscapes (Dijkstra, Poelman, & Rodríguez-Pose, 2020; Maxwell, 2020). Hence, found effects might simply mirror the existing neighborhood composition. The threat of endogenous findings due to the self-selection of respondents into contexts cannot be resolved within the scope of this study and without longitudinal data. One way to face this limitation was to include several individual- and contextual-level factors to safeguard against omitted variables and show the robustness of the relationship between place and trust.

A methodological advancement of this study is to construct measurements to capture the living conditions of respondents as precisely as possible. Specifically, the measurement of service accessibility gives an example for future research to employ measurements that are not bound to neighborhoods defined by administrative borders. This advancement will benefit future research even more when more longitudinal data become available to further analyze change. However, the scale of the additional contextual data - collective municipalities - needs to be handled with caution because the size of the area and population vary greatly between these administrative units. For some respondents, we might be unable to capture the reference unit on which their assessment of the government's economic and political performance is based. The tested measurements of service provision offer a first insight on how to safeguard against this issue, but the remaining operationalizations are still constrained to one spatial scale. Still, the collective municipality seems to be the most approximate scale available on which citizens perceive and attribute contextual conditions to their own living situation and the feeling of being left behind. In this regard, an important path for future research will be to more closely investigate the relationship between place-based measurements and the subjective perceptions of citizens living under these conditions. How does the actual accessibility of public service facilities deviate from citizens' perceptions? And does an objective lack of service provision translate into grievances and deprivation? The initial empirical evidence points towards mediating effects of relative deprivation, grievances, and perceived marginalization (McKay, 2019; Salomo, 2019) of the living place. The development of appropriate measurements to capture both the relevant point of reference and the feeling of being left behind are only two of the challenges along this research path.

Finally, the question remains as to what these findings mean for service provision and policies to improve local living conditions in Germany. The findings suggest that some areas of Germany have long lacked access to some public services and that the persistent lack - and not the decline - is associated with a manifestation of political distrust. The situation will most likely continue considering that experts often call for a cost-efficient focus to support urban centers and not invest in a

nationwide provision of public services (Diermeier, 2020). The recent decision to invest in public transportation through discount ticket prices reflects this trend: citizens without access to public transportation will hardly profit from such a policy. In the future, it might be necessary to reconsider this approach to counter the manifestation of geographically polarized discontent.

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Declaration of competing interest

The author confirms that they have no conflict of interest.

Data availability

The data that has been used is confidential.

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Appendix A. Supplementary data

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