

Peter, Julia; Übelmesser, Silke

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Regional Determinants of Attitudes Towards Immigrants

Julia Peter¹ and Silke Uebelmesser^{1, 2}

¹Friedrich Schiller University Jena

²CESifo

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Abstract

Attitudes towards immigrants can play a crucial role in voting behaviour and political decision-making. Such attitudes are shaped by individual characteristics, but the economic and social environment can also play a role. In this paper, we want to investigate, how individual attitudes towards immigrants and the economic and social environment are related. We use individual-level data based on a large-scale representative survey and regional-level administrative data. We focus on regional differences in economic, political and demographic characteristics. We analyse regional determinants of beliefs about the immigrant population and of the concerns about immigration and policy preferences. Furthermore, we make use of an information provision experiment, where information about the actual characteristics of the immigrant population is provided, and assess its impact against the regional background. Our results suggest that the regional impact – beyond the individual characteristics – is small and depends on the type of concern.

Keywords: attitudes, immigrants, regional determinants, economic concerns, policy preferences, COVID-19

Contact:

Julia Peter, Friedrich Schiller University Jena, Carl-Zeiss-Str. 3 07743 Jena, e-mail: julia.peter@uni-jena.de

Silke Uebelmesser, Friedrich Schiller University Jena, Carl-Zeiss-Str. 3 07743 Jena, e-mail: silke.uebelmesser@uni-jena.de

1 Introduction

There is waste evidence from an economic point of view that immigration can contribute to a host country’s labor market and welfare system, especially when facing labor shortage and an aging population (Edo 2019, Albert 2021). Nevertheless, the inflow of immigrants has spurred controversial debates amongst the public and policy makers in the host countries (Halla et al. 2017, Dustmann et al. 2019, Tabellini 2020). Public attitudes toward immigrants and possible voting behaviour likely play an important role for policy decisions overall and related to immigration. These attitudes can be related to concerns about labor market competition and adverse effects on the welfare state (Mayda 2006). However, individuals often do not possess correct and complete information about the immigrant population and neither about immigrants’ effects on the labour market and the welfare state (Dustmann and Preston 2007, Facchini and Mayda 2009, Ortega and Polavieja 2012, Polavieja 2016). Individual characteristics are important determinants of such beliefs and of the resulting attitudes towards immigrants, but the regional environment in which an individual lives can also contribute to both, beliefs and attitudes (Markaki and Longhi 2013).

In this paper, we want to investigate how individual attitudes towards immigrants are shaped by the economic and social environment of an individual and how they can be changed by the provision of information about the immigrant population.¹ So far, the literature on attitudes towards immigrants has mainly focused on individual-level determinants of such attitudes (see Mayda 2006 or Alesina et al. 2023). We want to extend this literature by shedding light on the role of regional-level determinants for individual beliefs about characteristics of the immigrant population and individual attitudes towards immigrants. We use data of two large-scale representative surveys of the German population, conducted in 2020 and 2021, with a total number of observations of more than 6000 participants (based on Dylong and Uebelmesser 2022) and regional-level administrative data.

We start by analysing the regional determinants of beliefs about immigration. Furthermore, we study how those beliefs and other individual-level variables affect individual concerns about immigration and policy preferences paying particular attention to the role of the regional environment. In order to also shed light on the role of information, we make use of an information provision experiment, where respondents were provided with information about the actual characteristics of the immigrant population in Germany (Dustmann and Preston 2007; Naumann et al. 2018; Grigorieff et al. 2020). More precisely, we elicit respondents’ beliefs about the share of immigrants and the unemployment rate of immigrants. We investigate how the provision of information influences concerns about immigration and policy preferences and how this differs on a regional level. As regional characteristics may shape individual beliefs and concerns, also the effect of providing correct information about the immigrant population may depend on the respective region. Respondents from different regions can be more or less responsive to the information and draw conclusions from that. In particular we are interested in economic, political and demographic differences across regions and consider the impact of the COVID-19 pandemic.

The COVID-19 pandemic has far reaching implications for economic activities and the society

¹In our study, immigrants are regarded as people living in Germany without German citizenship.

(Brodeur et al. 2021). Moreover, the economic consequences of the pandemic did not spread evenly across German regions. Depending on the sectoral structure, for example, regions were differently hit by the pandemic. This resulted in different changes of the overall unemployment rates, the sectoral employment rates and economic productivity across regions. The population in regions, which had experienced a more negative economic impact, might be more concerned about the future, both regarding the own economic situation and the situation of the economy in general. Moreover, economic activity in general varies between regions in Germany. Therefore, economically stronger regions might be also more resilient towards the economic consequences of the pandemic. Hence, individuals from such regions might be less concerned about their future prospects. We capture the pandemic by regional 7-day incidence statistics and the economic environment by regional gross value added (GVA) or the change of it, respectively.

More generally, times of crisis can increase overall concerns in a society which can translate into less supportive views about immigration (Poutvaara and Steinhardt 2018). The COVID-19 incidence has varied across German regions and so have the policy measures to counter the spread of the virus. The pandemic might not only have had an economic impact as discussed before, but also directly lead to more social insecurity, which may have fueled concerns about redistribution and the welfare state. There is evidence that the COVID-19 pandemic has been associated with an increase in hostility against immigrants (Bartoš et al. 2021). The effect of providing information on respondents' attitudes might therefore also depend on how strong the region was hit by the pandemic and its economic consequences.

Besides the economic context and the pandemic exposure, other regional aspects can be associated with attitudes towards immigrants. Therefore, we are also focusing on political differences. Most parties have immigration as part of their party programs, but with a different focus. Clear anti-immigration platforms are widespread among German right-wing parties (Marx and Naumann 2018). An example is the *Alternative für Deutschland* (AfD) which received 10.3 % of votes in the last federal election of 2021 (Bundeswahlleiter 2023). On a regional level, vote shares ranged from 5 % in the city-state Hamburg to 27 % in Chemnitz (in Saxony). Furthermore, “left-behind” regions (Ford and Goodwin 2017) and regions experiencing economic hardship show an increase in right-wing populist voting (Gozgor 2022). Hence, the political environment in a region may also influence the narratives about immigration.² Respondents from rather right-voting regions may therefore react less to the information about the immigrant population and hence also less likely to adjust their attitudes.

One further dimension of our analysis refers to demographic differences between regions. We operationalize this by looking at the regional average age. Older individuals tend to express larger concerns about immigration (Calahorrano 2013). However, the specific concerns about immigration may vary between age groups. Younger individuals are more concerned about labor market outcomes whereas older individuals show higher welfare state concerns (Hatton 2016). Providing information might therefore affect regions differently depending on the demographic structure and the type of information provided.

²In September 2021, the federal election took place in Germany and parties invested in election campaigns in the months before. Election campaigns of the parties circled mostly around current topics at that time, e.g. the COVID-19 pandemic or climate change.

We aim at providing insights into the role of these regional-level characteristics for beliefs and attitudes about immigrants by paying attention to the relation with the individual-level characteristics. We find evidence that regional characteristics are correlated with the formation of beliefs about immigration. Respondents living in regions with higher shares of immigrants tend to state higher, and more biased, estimates of the share of immigrants in Germany. However, beliefs about the unemployment rate of immigrants in Germany by respondents from such regions are less biased. On the contrary, respondents from East Germany state higher biases about the unemployment rate of immigrants.

Looking at the relation of regional characteristics and concerns about immigration, regions with higher shares of immigrants are associated with lower labor market concerns. Respondents living in older regions tend to have lower concerns about the labor market and the welfare state, and respondents living in regions with a stronger economy see more the advantages, which immigrants bring, and are more in favour of a more open immigration policy. Other regional characteristics exhibit rather small, and not statistically significant associations.

Providing information about the immigrant population generally results in more positive attitudes towards immigration. The attitudinal changes are larger in regions with lower AfD shares, lower COVID-19 incidences and higher economic growth. Results for the regional average age are rather mixed.

Overall, while the correlational evidence points towards a role of the social and economic environment, we have to abstain from a causal interpretation of our regional-level results regarding biases in prior beliefs and concerns about immigration. The regional environment may shape attitudes and characteristics of an individual, while at the same time, individuals may shape characteristics of their regional environment. Furthermore, individuals, i.e. natives as well as immigrants, are not randomly distributed over regions. They rather select into specific places of residence depending on certain individual and regional characteristics.

Our paper is related to three different strands of the literature. First, there are links to studies which also make use of surveys experiments with information provision in the context of migration. These studies show that providing information about the immigrant population can improve people's beliefs about immigration and make them more supportive towards immigration policies. Grigorieff et al. (2020) provide respondents with information bundles on statistical facts about the immigrant population. Respondents change their beliefs and become more supportive about immigration policy. This also holds for respondents in the study by Haaland and Roth (2020) after receiving information about the effects of immigration on the labor market. Alesina et al. (2023) do not find that respondents change their support for redistribution after being provided with statistical information about the immigrant population. However, information in the form of narratives shape people's attitudes about immigration. Our analysis builds on Dylong and Uebelmesser (2022), who also find that providing information about the immigrant population decreases concerns about immigration. We add to this literature by providing insights into regional differences in the treatment effects of information provision.

Second, there are studies which focus on how economic circumstances influence people's attitudes towards immigrants especially during times of economic crisis. Kuntz et al. (2017)

show that anti-immigration sentiment increases when people perceive higher economic insecurity. McGinnity and Kingston (2017) find that in Ireland attitudes towards immigrants became more negative as unemployment increased during the financial crisis. Furthermore, they show that a recession influences, in particular, attitudes of lower educated individuals. Since our study took place during the COVID-19 pandemic, we also investigate the relationship between pandemic-related regional differences with beliefs and attitudes towards immigrants.

Third, studies in economics mostly look at individual determinants of attitudes towards immigrants. But the regional and social environment of a person also contributes to shaping their attitudes. However, the economic literature is rather scarce here. Hatton (2016) finds that the share of immigrants and the share of social benefits in GDP play an important role for attitudes towards immigrants. A higher share of immigrants as well as a higher share of social benefits in GDP is associated with more negative attitudes. Brenner and Fertig (2006) identify that average attitudes towards immigrants in a country are positively correlated with per capita GDP.

Other studies find a link between regional characteristics and political attitudes more broadly. Lechler (2019) employs panel data regression and an instrumental variable approach to show that, in particular, unemployed and low-skilled individuals living in regions with a higher share of immigrants from EU member countries have negative attitudes towards the European Union. Moreover, Becker et al. (2017) find in the context of the Brexit referendum that on a district-level individuals in areas with lower income and employment voted to leave the European Union with a larger probability. A further aspect is highlighted by Dancygier and Donnelly (2013) who utilize the financial crises in 2008. They show that in times of economic hardship individuals lower their support for immigration if their sector of employment experiences immigration inflows. Our paper contributes to this strand of literature by providing insights on the role of regions for attitudes towards immigrants in the economic literature.

The remainder of this paper is structured as follows. Chapter 2 presents our data. In Chapter 3, we give an overview of the descriptive statistics. The empirical model is explained in Chapter 4 and our results are discussed in Chapter 5. Chapter 6 concludes.

2 Data

In our analysis, we do not only want to capture individual-level determinants of beliefs and attitudes towards immigrants, but focus on the regional context and how it relates to individual-level outcomes. We use individual level-data from a representative survey on the German population (see Dylong and Uebelmesser 2022). Data on the regional characteristics is retrieved from regional-level administrative data. We are able to match our regional data based on NUTS-2 regions to the survey data. In total, our data set consists of 6243 individuals and 38 regions.

2.1 Individual-level Data / Experimental Design

The data on individual-level characteristics are from two large-scale representative surveys on attitudes toward immigrants in Germany conducted in November 2020 and September 2021 among the German adult population. The surveys are representative regarding age, gender,

education and residence in Eastern/Western Germany. The data set contains variables related to the assessment of the general economic situation, beliefs about immigration, economic concerns about immigration as well as immigration policy preferences, variables about the COVID-19 crisis and a large number of sociodemographic characteristics (see Table A.1 in the appendix for a description of the variables and Table A.2 for summary statistics).

Moreover, the surveys include an information provision experiment which will be described in the following.³ In the first step, prior beliefs about the immigrant population in Germany are elicited. Respondents are asked about the share of immigrants and the unemployment rate of immigrants in Germany. The absolute bias in prior beliefs is calculated as the difference between the actual value and the answer of the respondents. In the second step, respondents are randomly allocated to one of three treatment groups or the control group. In the first treatment arm, respondents are provided with information about the actual share of immigrants in Germany. In the second treatment group, respondents are provided with the actual unemployment rate of immigrants in Germany. Finally, individuals in the third treatment group receive information on both, the share of immigrants and the unemployment rate of immigrants. The control group is not provided with any information.⁴

In the third step of the experiment, respondents answer questions about their attitudes towards immigrants and policy preferences. The questions and answers are as following:

- Welfare state concerns: "Immigrants pay taxes and receive social benefits from the health care and social insurance systems. On balance, do you think that immigrants in Germany receive more social benefits than they pay taxes, or that they pay more taxes than they receive social benefits?"
Answers: "Receive more social benefits" (0) to "Pay more taxes" (10)
- Labor market concerns: "Do you think that immigrants rather take away jobs from workers in Germany, or that they rather help to create new jobs?"
Answers: "Take jobs away" (0) to "Create new jobs" (10)
- Immigration advantage concerns: "Do you think immigrants have created more disadvantages or more advantages for Germany in the last 10 years?"
Answers: "more disadvantages" (0) to "more advantages" (10)
- Immigration policy preferences: "Do you think that the number of immigrants coming to Germany each year should be:"
Answers: decreased a lot / decreased slightly / stay the same / increased slightly / increased a lot?"

The outcome variables are coded such that higher values indicate more positive attitudes. We measure welfare state, labor market and immigration advantage concerns on a 11-point scale. Immigration policy preferences are measured on a 5-point scale.

³For further details about the surveys and the information provision experiment, please refer to Dylong and Uebelmesser (2022).

⁴All individuals are also asked about their posterior beliefs on both facts at the end of the survey.

2.2 Regional-level Data

In addition to individual-level factors, the regional environment may also shape individuals' beliefs and attitudes. Therefore, we make use of administrative data on the NUTS-2 level. Germany has 38 NUTS-2 regions. Our observations per NUTS-2 region range from 49 in Trier to 426 in Dusseldorf. Table A.3 shows the distribution of our observations over the German NUTS-2 regions and compares them to the German population share for each NUTS-2 region. The share of observations per NUTS-2 region in our sample is relatively close to the German population share per region. In our sample 22 out of 38 NUTS-2 regions are in a range of 90 % to 110 % of the respective German population share. The data come from the German Federal Statistical Office and the statistical offices of the federal states. Table A.1 in the appendix provides further description of the variables and table A.2 provides summary statistics.

One set of variables includes the regional average share of immigrants in 2021 and the regional average unemployment rate of immigrants from August 2021 to account for regional characteristics of the immigrant population. Furthermore, we focus on factors which allow capturing economic, political and demographic differences between regions and consider the impact of the COVID-19 pandemic.

As we conducted the surveys during the ongoing COVID-19 pandemic, we include the 7-day-incidence for the respective week in 2020 and 2021 when the surveys took place⁵ at the regional level to have a measure for the exposure to the pandemic. The 7-day-incidence is then matched to the respective survey wave. To capture the economic conditions as well as the COVID-19 related changes, we include the absolute level of regional gross-value-added (GVA) in 2020 to highlight the general economic productivity of a region and the regional growth of GVA from 2019 to 2020 to account for productivity changes in the region.⁶

For the political dimension, we use the regional vote shares of AfD at the federal elections in 2021. With this variable we want to proxy the political climate and voting behavior in a region regarding right-wing parties with anti-immigrant platforms. Finally, to capture the demographic structure of a region we include the regional average age in 2021.⁷ With the regional average age we can distinguish if we have a relatively young or old region. Furthermore, we also include the population per NUTS-2 region and the population in the respective residential place of the respondents to consider if respondents live in more rural or urban areas. We also include an East-West-Dummy to account for differences between Eastern and Western Germany.

We have standardized all outcome variables and covariates according to their mean and standard deviation for a better comparison.

3 Descriptive Statistics

In the following, we provide some descriptive statistics about attitudes towards immigrants and the regional context in Germany. In particular, we focus on how beliefs as well as economic and

⁵More precisely, we took the 7-day-incidence for survey one on 04.12.2020 and for survey two on 15.09.2021.

⁶For the regional GVA and GVA growth on NUTS-2 level, the latest available data is currently from 2020.

⁷For the average age we take 2021 values since the average age for regions does not significantly change between those two years.

social characteristics differ between regions.

3.1 Prior Beliefs

In general, respondents have biased beliefs about the immigrant population. The actual share of immigrants in Germany is at around 13 % and the actual unemployment rate of immigrants is at around 15 %. Figure 2 shows the average beliefs by region. The share and the unemployment rate of immigrants are both overestimated by a large extent in all regions with regional beliefs going up to 27 % for the share of immigrants and to 41 % for their unemployment rate. In the Eastern regions, the beliefs for the unemployment rate are much more upward biased than in the Western regions, while the bias is smaller for the share of immigrants.

Respondents likely base their estimates on their own perception. Therefore, the regional environment might play a role. The number of immigrants living in a region and their unemployment rate in that region may have an influence on how respondents perceive both values. Figure 3 sets this into perspective. Figure 3a shows the relationship between the actual regional share of immigrants and the regional average of the prior beliefs about the share of immigrants in Germany. Despite respondents overestimating the actual share of immigrants, a positive relationship can still be observed. Respondents from regions with a higher regional share of immigrants tend to expect an even higher share of immigrants in Germany. This observation does not hold for the prior beliefs about the unemployment rate of immigrants. Figure 3b shows the relationship between the actual regional unemployment rate of immigrants and the regional average of the prior beliefs about the unemployment rate of immigrants in Germany. Again, the respondents overestimate the unemployment rate, but there is no relationship with the actual values. The scatter plot rather indicates that respondents are unaware about the unemployment rate of immigrants in their region.

In general, respondents estimate the share of immigrants more accurately than the unemployment rate. Since the answers are somewhat in line with the regional share of immigrants, respondents seem to partially base their estimation on their perception of their regional environment. The unemployment rate of immigrants, on the contrary, does not seem to be a statistical fact which is very salient.

3.2 Regional Heterogeneity

Next, we will focus on different aspects of regional heterogeneity in Germany. In particular, we will look at economic, political and demographic differences across German regions as well as on the impact of the COVID-19 pandemic.

The sectoral employment growth by region can be seen in Figure 4. Looking at all industries, employment has on average slightly decreased. However, there are differences across sectors and across regions. Figure 5 depicts the regional employment growth by industry sector in 2020 differentiating between the primary, secondary and tertiary sector. On average, employment went down by approximately one to two percent in most regions. In the primary and secondary sector, employment decreased especially in the middle and eastern part of Germany, while in the north, and partially in the east and in the south, some regions saw an increase in employment.

The tertiary sector (services) experienced above average declines in employment in almost all regions.

Regions in Germany also differ with respect to political attitudes, demography and the spread of the COVID-19 pandemic. Figure 6 shows the respective regional distributions. There is a clear East-West divide when it comes to the AfD vote share and average age. Figure 6a shows the vote share of the AfD in the federal elections in September 2021. The party scored higher in the East of Germany than in other parts with the highest vote shares in the NUTS-2 region Chemnitz and Dresden. At the same time, as Figure 6b shows, the Eastern regions (except Leipzig) have a higher average age compared to southern and western regions. Average age ranges from 42 in Hamburg to 49 years in Chemnitz. We expect a positive relation of the AfD vote share and beliefs about immigration, i.e. higher estimates for the share and the unemployment rate, and a negative relation with attitudes towards immigrants as well as policy preferences.⁸ Concerning the age structure, beliefs and attitudes might differ for individuals living in relatively older or younger regions and might also differ for different outcomes. Overall, we expect the relations to be less clear-cut. In regions with younger average age, labor market concerns may be more important. But a younger region might also be characterised by a higher labour demand which immigrants could help to address. On the other hand, welfare concerns may be more pronounced in regions with an overall older population.

The spread of the COVID-19 pandemic is depicted in Figure 6c approximated by the 7-day incidence of the week the survey took place in November 2020 and September 2021. On average, especially the regions in the south and the west experienced higher incidences compared to the east and north, with the NUTS-2 region Chemnitz having the highest 7-day incidence on average. Depending on the incidence number, regions implemented different preventative measures which might have affected general well-being and fueled individual economic insecurity due to uncertain future economic prospects (Brodeur et al. 2021).

The regional GVA growth from 2019 to 2020 is shown in Figure 6d. In general GVA declined in all regions. However, we can also observe that regions in the north experienced a smaller decline compared to regions in the south. Similar to employment growth in Figure 5 differences between sectors can be expected.

4 Empirical Method

4.1 Prior Beliefs

We use a linear regression model to estimate the correlation between prior beliefs about immigration and potential individual and regional determinants of those beliefs. We estimate the following OLS model

$$beliefs_i = \beta_0 + \beta_1 X_i + \beta_2 Z_i + \varepsilon \tag{1}$$

⁸Remember that we coded the variables such that higher values indicate more positive attitudes towards immigration.

where $beliefs_i$ denote the prior beliefs about the share of immigrants and the unemployment rate of immigrants, respectively. X_i is a vector of individual covariates and Z_i is a vector of regional covariates. Regional determinants include variables which capture the economic, political, demographic and COVID-19 differences between regions as discussed above. Standard errors are clustered at the NUTS-2 level.⁹

4.2 Concerns about Immigration

The relationship between individual and regional covariates with concerns about immigrants and policy preferences are estimated with the following OLS model

$$concerns_i = \beta_0 + \beta_1 treat1_i + \beta_2 treat2_i + \beta_3 treat3_i + \beta_4 X_i + \beta_5 Z_i + \varepsilon \quad (2)$$

where $concerns_i$ depicts the four outcome variables – welfare state, labor market and immigration advantage concerns as well as preferences for immigration policy. The individual and regional covariates are as before indicated by X_i and Z_i , respectively. The model now also includes indicator variables for the three different treatment arms to estimate the average treatment effects (ATE). The indicator variables take the value 1 if a respondent was allocated to the respective treatment arm and 0 otherwise. ε_i is the error term. Standard errors are again clustered at the NUTS-2 level.

Furthermore, in the following analysis we will focus on the regional differences in treatment effects. Thereby we will look at the treatment response in different regional contexts. In particular we focus on the regional variation in political, economic and demographic factors as well as the exposure to the COVID-19 pandemic.

5 Results

In this section, we will first study the role of regional determinants for the prior beliefs. In a second step, we will consider the outcomes, i.e. concerns about immigration and policy preferences, where we consider the untreated outcomes of the control group as well as the treatment effects with a special focus, again, on regional differences.

5.1 Prior Beliefs

Figure 7 shows individual and regional determinants of absolute biases in prior beliefs about immigration. Positive values indicate a higher bias in prior beliefs, i.e. a respondent’s answer was further away from the actual value about the share or the unemployment rate of immigrants. Negative values indicate a smaller bias.

The correlation of the bias in prior beliefs of the share of immigrants with the regional share of immigrants is significant and positive. The relationship between the regional unemployment rate and the bias in prior beliefs of the unemployment rate of immigrants is negative, but not significant.

⁹Our results do not change when we use different clustering methods.

Respondents from East Germany already report higher values for the unemployment rate of immigrants (see Figure 3b above). Still, we find a positive and significant correlation for living in East Germany and biases in prior beliefs about the unemployment rate. The correlation for the bias in the share of immigrants is slightly positive, but not significant. Further regional variables show rather small and mostly statistically insignificant relationship with both beliefs.

Individual-level characteristics have a larger explanatory power for the biases in prior beliefs. We see that higher education and higher income lead to less biased estimates of both facts, while being female indicates a larger bias. Concerns about immigration and about the economic development are other examples of positive correlations with a larger bias.

5.2 Concerns about Immigration and Policy Preferences

In the following section, we analyse concerns about immigration and policy preference. We only consider the control group to ensure that there is no interaction with the experiment. Our sample reduces to 1559 respondents. Figure 8 shows our outcome variables and the regional covariates. The regression further includes the individual-level controls which are not shown here.

Correlations with the regional variables depend on the respective outcome. The regional share of immigrants has a positive correlation with labor market concerns and welfare state concerns, though not significant, and a borderline-significant negative correlation with preferences for immigration policy. Regions with a higher share of immigrants are associated with more positive attitudes regarding the labor market participation of immigrants and are less concerned about an overburdening of the welfare state. On the contrary, those regions also tend to favor a reduction of the number of immigrants, possibly because they see fewer advantages. For the regional unemployment rate no statistically significant correlations are found. We have already seen in the scatter plot for prior beliefs about the unemployment rate and the regional unemployment rate of immigrants that respondents are rather ignorant about it (Figure 3b).

Furthermore, older regions tend to have less concerns about welfare state and the labor market related to immigrants. Labor market concerns seem to be more associated with younger regions as the population feels more directly exposed to competition on the labor market with immigrants. Relatively older regions do not only have an older workforce but also a relatively higher number of retirees. Labor market concerns are less relevant for this group of people.

Considering the economic power of a region, respondents living in regions with higher total GVA are associated with more positive attitudes about the welfare state, see more the advantages of immigration and have more preferences towards more open immigration policies.

The further economic variables do not show statistically significant results for our outcome variables.

5.3 Treatment Effects: Regional Heterogeneity

In the next section we will investigate if treatment effects are affected by regional characteristics. In particular, we take a look at the regional variation in political, economic and demographic

factors as well as the COVID-19 pandemic in order to see if the treatment effects differ across regions. For a detailed discussion on the treatment-heterogeneity by individual characteristics please refer to Dylong and Uebelmesser (2022).

5.3.1 Regional AfD vote turnout

The political environment in regions can shape regional societal narratives about immigration. Immigration is a comparatively important topic in the party program of populist and right-wing conservative parties. To test if this plays a role for the effects of our information treatment, we divide regions in two groups based on the AfD vote share. Regions with above median vote share are coded as “high AfD vote share” regions and regions below or equal median vote share as “lower AfD vote share” regions. Results are reported in Figure 9. Low-share regions show larger treatment effects in 9 out of the 12 cases when considering the point estimates, indicating less concerns about immigration and policy preferences for more migration.

When comparing the confidence intervals of the estimated treatment effects, the effect of receiving the information bundle for labor market concerns differs significantly between the subgroups. People living in regions with lower AfD shares significantly increase their positive attitudes towards migrants concerning the labor market when receiving the bundle of information. On the contrary, the treatment effect is negative, though not significant, for people living in regions with higher AfD share. The AfD received high vote shares especially in “left-behind” regions. So called “left-behind” regions are often former industrial or rural areas, which went through social and economic change. Those regions are characterized by a declining or stagnating economy and lower labor market opportunities. Such regions are often linked to feelings of marginalization and economic insecurity that translates into right-wing voting (Ford and Goodwin 2017; Dijkstra et al. 2020). Hence, individuals in “left-behind” regions might be less willing to change their attitudes after receiving the information bundle.

We also find large (and almost statistically significant) differences in the treatment effects of the information bundle on welfare state concerns when we compare low-AfD and high-AfD regions. Considering again that the AfD received higher vote shares in “left-behind” regions, the information bundle tends to be less convincing there regarding welfare state concerns.

Regarding immigration advantage concerns, results for regions with high and low AfD vote share do not differ. This is also the case when looking at preferences for immigration policy.¹⁰

5.3.2 Regional exposure to COVID-19

The COVID-19 pandemic resulted in general economic slowdown and economic insecurity across Germany. Moreover, regions were differently exposed to the spread of the pandemic. Hence, the general exposure to COVID-19 can have an effect regarding the outcomes of our information provision experiment. To test this, regions with above-median 7-day incidence are coded as high-exposure regions; regions with below or equal median incidence as low-exposure regions.

¹⁰Note however, that both the treatment where information about the unemployment rate is provided and the treatment with the bundle of information show a positive effect for the low-share regions, while the effects are insignificant for the high-share regions.

Results are reported in Figure 10.

As before, the point estimates of the treatment effects are larger for the low-exposure regions in 9 out of the 12 cases. However, the differences are mostly insignificant. When looking at the confidence intervals we cannot necessarily infer significant differences between the two groups for our outcome variables. Regions with higher and lower exposure to COVID-19 both exhibit positively significant estimates for welfare state concerns and for immigration advantage attitudes (except for the bundle treatment). On the other hand, in regions with lower exposure to COVID-19, the treatment for labour market concerns and preferences for immigration policy results mostly in less concerns about immigration compared to regions with higher exposure, concerning the point estimates. Especially for labor market concerns, we observe no statistically significant treatment effects for regions with high exposure to COVID-19, but significant effects for providing information on the share and unemployment for regions with low exposure to COVID-19. Information seems to play a larger role for individuals from less exposed regions.

5.3.3 Regional Demography

The regional age structure might also indicate differences in concerns about immigration and affect the treatment effects. The differences may also be specific to certain concerns. Labor market concerns may be more pronounced in younger regions whereas older regions might express more welfare state concerns. Relatively old regions are coded as regions with an average age above the median. Relatively young regions are coded as regions with an average age below or equal to the median. Results are reported in Figure 11. The effects of the information provision treatment do not seem to differ much between the two subgroups.

Furthermore, results are mixed considering the point estimates. Regarding welfare state concerns, the point estimates are higher for providing information about either the share or the unemployment rate for regions with high average age. However, providing the information bundle, regions with lower average age show higher point estimates. For welfare state concerns and preferences for immigration the information bundle results in positive and significant treatment effects for younger regions. The information provision has no effect on labor market concerns.

For concerns about the advantage of immigration, treatment effects are significant and positive for regions with high average age only for providing information about the unemployment rate. Regions with low average age report significant treatment effects for information about the share and the unemployment rate. For preferences about immigration, significant and positive effects are reported for information about the share of immigrants in both subgroups. However, for the unemployment rate, we only find this for regions with high average age.

5.3.4 Regional GVA growth

Treatment effects may also differ by economic characteristics of the regions. Germany experienced an economic downturn due to the COVID-19 pandemic. Here, the regional GVA growth proxies the economic impact of the pandemic on a regional level. Regions with above median GVA growth are regarded as regions with relatively high growth, which means here less shrinking. On the other hand, regions with lower growth or higher shrinking are regions with below

or equal to the median GVA growth. Results are reported in Figure 10.

For regions with lower GVA growth, information about the share and unemployment rate of immigrants resulted mostly in higher concerns or less positive attitudes about all outcome variables than for regions with higher GVA growth, regarding the point estimates. Welfare state concerns do not differ much for both subgroups. Providing information on the actual values results in less concerns about the welfare state for both types of regions.

Regions with lower GVA growth experienced more severe economic impacts during the COVID-19 pandemic. Hence, labor market competition with immigrants is expected to be perceived as high in those regions. Regarding concerns about the labor market, low GVA growth regions report insignificant treatment effects. We observe positive and significant treatment effects, on the contrary, for respondents living in high GVA growth regions. Being economically relatively well off and comparatively less hit by the pandemic, knowing about the true values results in less concerns about the competition with immigrants on the labor market. Similar patterns can be observed for immigration advantage attitudes and immigration policy preferences.

6 Conclusion

In this paper we analyzed how individual attitudes about immigration is shaped by the regional environment of an individual. The analysis is based on a representative survey of the German population and regional-level administrative data. We analyze regional determinants of biases in beliefs and concerns about immigration. Furthermore, we investigate how providing information about characteristics of the immigrant population in Germany, i.e. the share and the unemployment rate, changes concerns about immigration in different regions in Germany. In particular, we look at economic, political and demographic differences across regions and the impact of different exposure to the COVID-19 pandemic.

We find that regional characteristics are correlated with the formation of beliefs about immigration. The impact however depends on the type of concerns investigated. When considering the correlation of regional characteristics and different concerns about immigration, the current economic situation of a region does not seem to play a role. However, the social environment – here the regional share of immigrants and the regional average age – seems to matter for concerns about the labor market and the advantages of immigration. Furthermore, we find that providing respondents with information about characteristics of the immigrant population can decrease concerns and increase positive attitudes towards immigration. We also observe, depending on the type of information and the concern, that treatment effects can differ between region. Broadly speaking, respondents from regions that are economically better off, less exposed to the pandemic and have lower right-wing voting shares seem to react more positively to the treatment.

Policy makers should take into account that beliefs and attitudes towards immigrants are shaped not only by individual characteristics but also by the regional context. Therefore, information campaigns or policy interventions may have different effects depending on the region in which they are implemented.

So far we have only investigated the short term impact of the regional context on beliefs and attitudes about immigration. Areas for future research would be to look into the change of beliefs and attitudes about immigration over time and the role of the regional economic and social context. Moreover, our analysis is based on a representative survey on the German population. Hence, an extension of our analysis to other countries would bring insights on how the nexus between beliefs and attitudes about immigration and the regional economic context differ between countries.

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A Appendix - Tables

A.1 Data Description

Variable Name	Year	Regional Level	Range	Description / Question in Survey	Source
Welfare State Concerns	2020 / 2021	individual	Numerical (0-10)	Do you think that immigrants in Germany get more in benefits than they pay in taxes, or pay more in taxes than they get in benefits?	WOM survey
Labor Market Concerns	2020 / 2021	individual	Numerical (0-10)	Are immigrants more likely to take jobs away from workers in Germany or are they more likely to help create new jobs?	WOM survey
Immigration Advantage Concerns	2020 / 2021	individual	Numerical (0-10)	Do you think immigrants have created more disadvantages or more advantages for Germans in the last 10 years?	WOM survey
Immigration Policy Concerns	2020 / 2021	individual	Numerical (1-5)	Do you think that the number of immigrants coming to Germany each year should be	WOM survey
Belief: share of immigrants	2020 / 2021	individual	Numerical	“Now it is about the share of immigrants in Germany. What do you estimate, please answer spontaneously: What percentage of people living in Germany do not have German citizenship?”. Hint text (clickable via question mark icon): “The percentage is understood here as the number of immigrants per 100 inhabitants in Germany.”	WOM survey
Belief: unemployment rate of immigrants	2020 / 2021	individual	Numerical	Now it is about the unemployment rate of working-age immigrants in Germany. What do you estimate, please answer spontaneously: What percentage of these people are unemployed?”. Hint text (clickable via question mark icon): “The percentage is understood here as the number of unemployed persons per 100 immigrants of working age in Germany. Immigrants are considered unemployed if they are registered as unemployed with the Federal Employment Agency. Asylum seekers and tolerated persons are included in the unemployment rate if they have a work permit but no job and are registered as unemployed.”	WOM survey
Concerns about immigration	2020 / 2021	individual	Numerical (0-10)	Concerns about immigration to Germany	WOM survey
Concerns about economic development	2020 / 2021	individual	Numerical (0-10)	Concerns economic development in Germany	WOM survey
Concerns about COVID-19 crisis	2020 / 2021	individual	Numerical (0-10)	Concerns due to the Covid pandemic	WOM survey
Attitude towards cultural diversity	2020 / 2021	individual	Numerical (0-10)	It is better for a country if almost everyone has the same customs and traditions	WOM survey
Political attitude	2020 / 2021	individual	Numerical (0-10)	Measures a respondent’s generalized political attitude on an 11-point scale from 0 for “Left” to 10 for “Right”	WOM survey
Age group	2020 / 2021	individual	Numerical (1-5)	Respondent’s age group according to the ranges: 16 to 29, 30 to 39, 40 to 49, 50 to 64, 65 and older	WOM survey
Education	2020 / 2021	individual	Numerical (1-5)	Respondent’s education based on highest school-leaving certificate according to the ranges: low, medium, high.	WOM survey

Variable Name	Year	Regional Level	Range	Description / Question in Survey	Source
Household size	2020 / 2021	individual	Numerical	Number of persons living in a respondent's household	WOM survey
Female	2020 / 2021	individual	Binary	Indicates a respondent's gender	WOM survey
Employed	2020 / 2021	individual	Binary	Indicates whether a respondent is employed	WOM survey
Income	2020 / 2021	individual	Numerical (1-5)	Respondent's household net income in Euro according to the ranges: Below 1500, 1500–2500, 2500–3500, 3500–4500, 4500 and above	WOM survey
Partner	2020 / 2021	individual	Binary	Indicates whether a respondent lives in a partnership	WOM survey
Migration Background	2020 / 2021	individual	Binary	Indicates whether a respondent or one of their parents was born outside of Germany	WOM survey
East Germany	2020 / 2021	individual	Binary	Indicates whether a respondent lives in East Germany (excluding Berlin)	WOM survey
Share of immigrants	2021	NUTS-2	Numerical	Regional share of immigrants in Germany	Statistisches Bundesamt
Unemployment rate of immigrants	2021	NUTS-2	Numerical	Regional unemployment rate of immigrants in August 2021	Statistisches Bundesamt
Vote share AfD	2021	NUTS-2	Numerical	Regional vote share of AfD during the federal elections in Germany in 2021	Statistische Ämter des Bundes und der Länder
Average age	2021	NUTS-2	Numerical	Regional average age	Regionaldatenbank Deutschland
7-day-incidence	2020 / 2021	NUTS-2	Numerical	Regional 7-day COVID-19 incidence at time of survey wave in 2021 and 2022	Corona Daten Plattform
GVA	2020	NUTS-2	Numerical	Regional gross value added	Statistische Ämter des Bundes und der Länder
GVA growth	2020	NUTS-2	Numerical	Regional gross value added growth with respect to 2019	Statistische Ämter des Bundes und der Länder

Notes: For the WOM survey, see Dylong and Uebelmesser 2022.

A.2 Summary Statistics

	Mean	SD	Minimum	Maximum
Individual				
Welfare State Concerns	3.841	2.446	0.000	10.000
Labor Market Concerns	5.224	2.397	0.000	10.000
Immigration Advantage Concerns	4.239	2.653	0.000	10.000
Immigration Policy Preferences	2.187	1.022	1.000	5.000
Prior belief: share of immigrants	23.593	15.893	1.000	97.000
Prior belief: unemployment rate of immigrants	30.910	23.598	1.000	99.000
Concerns about immigration	5.933	3.230	0.000	10.000
Concerns about economic development	6.140	2.553	0.000	10.000
Concerns about COVID-19 crisis	5.539	2.906	0.000	10.000
Attitude towards cultural diversity	5.269	2.939	0.000	10.000
Political attitude (extreme left = 0; extreme right = 10)	4.712	1.901	0.000	10.000
Age	49.887	16.704	18.000	99.000
Female	0.503	0.500	0.000	1.000
Household size	2.113	1.287	0.000	20.000
Employed	0.521	0.500	0.000	1.000
Partner	0.625	0.484	0.000	1.000
Migration background	0.228	0.419	0.000	1.000
Survey	1.625	0.484	1.000	2.000
<i>Education</i>				
Low education	0.363	0.481	0.000	1.000
Medium education	0.310	0.463	0.000	1.000
High education	0.327	0.469	0.000	1.000
<i>Income</i>				
Below 1500 EUR	0.260	0.439	0.000	1.000
1500–2500 EUR	0.288	0.453	0.000	1.000
2500–3500 EUR	0.223	0.417	0.000	1.000
3500–4500 EUR	0.138	0.345	0.000	1.000
4500 EUR and above	0.090	0.286	0.000	1.000
<i>Local Population</i>				
Below 5000 residents	0.177	0.382	0.000	1.000
5000–10000 residents	0.123	0.328	0.000	1.000
10000–50000 residents	0.260	0.439	0.000	1.000
50000–200000 residents	0.176	0.381	0.000	1.000
200000 residents and above	0.264	0.441	0.000	1.000
Regional				
East Germany	0.145	0.352	0.000	1.000
Share of immigrants (%)	13.573	6.113	2.500	37.500
Unemployment rate of immigrants (%)	14.147	5.915	3.100	32.300
Vote share AfD (%)	10.148	5.113	5.026	26.724
Average age	44.679	1.451	42.100	48.800
Population	2813420.076	1292415.282	536772.000	5197679.000
COVID-19 7-day-incidence	108.560	65.728	3.500	529.200
Total GVA (EUR)	107432.060	63028.132	14861.202	250951.335
GVA growth (%)	-2.408	1.330	-7.224	-0.425
Observations	6243			

A.3 NUTS-2 Regions

	Number of Observa- tions	Number in % of Sample	German Population (in %)	Sample/ German Population
Arnsberg	275	4.39	4.28	1.03
Berlin	312	4.98	4.42	1.13
Brandenburg	165	2.63	3.05	.865
Braunschweig	131	2.09	1.91	1.09
Bremen	54	.862	.813	1.06
Chemnitz	107	1.71	1.68	1.01
Darmstadt	317	5.06	4.84	1.05
Detmold	118	1.88	2.47	.763
Dresden	122	1.95	1.9	1.02
Düsseldorf	426	6.8	6.24	1.09
Freiburg	149	2.38	2.75	.867
Gießen	76	1.21	1.26	.962
Hamburg	152	2.43	2.23	1.09
Hannover	164	2.62	2.58	1.02
Karlsruhe	219	3.5	3.38	1.04
Kassel	77	1.23	1.46	.841
Koblenz	117	1.87	1.81	1.04
Köln	345	5.51	5.37	1.03
Leipzig	90	1.44	1.27	1.13
Lüneburg	126	2.01	2.08	.968
Mecklenburg-Vorpommern	120	1.92	1.94	.991
Mittelfranken	165	2.63	2.14	1.23
Münster	186	2.97	3.16	.94
Niederbayern	97	1.55	1.51	1.03
Oberbayern	335	5.35	5.68	.942
Oberfranken	97	1.55	1.28	1.21
Oberpfalz	59	.942	1.34	.703
Rheinhessen-Pfalz	172	2.75	2.48	1.11
Saarland	83	1.33	1.18	1.12
Sachsen-Anhalt	153	2.44	2.61	.938
Schleswig-Holstein	262	4.18	3.51	1.19
Schwaben	128	2.04	2.47	.849
Stuttgart	284	4.53	4.99	.91
Thüringen	162	2.59	2.53	1.03
Trier	49	.782	.645	1.21
Tübingen	100	1.6	2.25	.716
Unterfranken	99	1.58	1.59	.997
Weser-Ems	171	2.73	3.07	.89

A.4 Prior Beliefs

	(1)		(2)	
	Share		Unemployment Rate	
	of Immigrants		of Immigrants	
Concerns about immigration	0.169***	(0.0175)	0.198***	(0.0191)
Concerns about economic development	0.0501***	(0.0139)	0.0461***	(0.0134)
Concerns about COVID-19 crisis	-0.0121	(0.0123)	-0.0684***	(0.0128)
Attitude towards cultural diversity	-0.0266	(0.0183)	0.0429**	(0.0175)
Political attitude	0.0114	(0.0144)	0.0363**	(0.0165)
Age group	-0.129***	(0.0116)	0.0221*	(0.0125)
Education	-0.208***	(0.0135)	-0.0440***	(0.0151)
Household size	0.0575***	(0.0181)	0.0266*	(0.0133)
Female	0.210***	(0.0146)	0.0903***	(0.0137)
Employed	0.0346**	(0.0144)	0.00181	(0.0186)
Income	-0.129***	(0.0119)	-0.0635***	(0.0165)
Partner	0.0335*	(0.0191)	0.00894	(0.0156)
Migration background	0.0658***	(0.0131)	0.00113	(0.0122)
Local population size	-0.0308	(0.0209)	-0.0311*	(0.0168)
East Germany	0.0111	(0.0304)	0.150***	(0.0360)
Share of immigrants	0.0749**	(0.0282)	-0.0208	(0.0222)
Unemployment rate of immigrants	-0.00793	(0.0184)	0.000751	(0.0163)
Population	0.0481	(0.0490)	-0.0280	(0.0440)
Voter turnout AfD	0.00875	(0.0304)	-0.0540	(0.0411)
Average age	-0.00322	(0.0214)	-0.00472	(0.0243)
COVID-19 7-day-incidence	0.0232	(0.0142)	-0.000768	(0.0188)
total GVA	-0.0297	(0.0517)	0.0118	(0.0515)
GVA growth	0.000196	(0.0130)	-0.000625	(0.0135)
Survey	0.0703***	(0.0230)	-0.00275	(0.0306)
Constant	-0.114***	(0.0369)	0.00500	(0.0522)
<i>N</i>	6243		6243	
adj. R^2	0.174		0.109	

Standard errors in parentheses

Notes: Standard errors clustered at NUTS-2 level.

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

A.5 Post Treatment Concerns - Control Group

	(1)		(2)		(3)		(4)	
	Welfare State	Concerns	Labor Market	Concerns	Immigration Advant.	Concerns	Immigr. Policy	Preferences
Belief: share of immigrants	-0.0201	(0.0317)	-0.104**	(0.0273)	-0.0440	(0.0261)	-0.0456*	(0.0264)
Belief: unemployment rate of immigrants	-0.128***	(0.0230)	-0.0223	(0.0235)	-0.0769***	(0.0197)	-0.0672***	(0.0173)
Concerns about immigration	-0.408***	(0.0288)	-0.417***	(0.0370)	-0.535***	(0.0306)	-0.566***	(0.0298)
Concerns about economic development	0.00246	(0.0252)	0.0378	(0.0240)	0.0173	(0.0202)	-0.00395	(0.0164)
Concerns about COVID-19 crisis	0.0200	(0.0205)	0.0104	(0.0237)	0.0607***	(0.0169)	0.0449***	(0.0145)
Attitude towards cultural diversity	-0.0853***	(0.0296)	-0.149***	(0.0338)	-0.157***	(0.0310)	-0.128***	(0.0258)
Political attitude	-0.0775***	(0.0268)	-0.0690**	(0.0301)	-0.0811***	(0.0249)	-0.0864***	(0.0238)
Age group	-0.0117	(0.0277)	0.0307	(0.0274)	-0.0118	(0.0200)	-0.0305	(0.0233)
Education	0.0833**	(0.0309)	0.113***	(0.0237)	0.0620**	(0.0230)	0.0469*	(0.0254)
Household size	-0.0291	(0.0187)	-0.0221	(0.0244)	0.0220	(0.0202)	-0.0345**	(0.0152)
Female	-0.0700**	(0.0275)	0.0358	(0.0240)	-0.0378**	(0.0186)	-0.0205	(0.0183)
East Germany	-0.0811	(0.0502)	-0.0694	(0.0567)	-0.0629*	(0.0348)	-0.0577	(0.0546)
Employed	0.00910	(0.0221)	-0.0114	(0.0253)	-0.0185	(0.0178)	-0.00614	(0.0144)
Income	-0.0287	(0.0342)	0.0363	(0.0248)	0.00916	(0.0195)	0.00927	(0.0201)
Partner	0.0254	(0.0287)	0.00265	(0.0220)	-0.0316	(0.0211)	-0.00891	(0.0225)
Migration background	0.0129	(0.0196)	-0.0122	(0.0197)	0.0106	(0.0171)	0.0156	(0.0173)
Local population size	0.0198	(0.0333)	-0.0326	(0.0261)	-0.0150	(0.0270)	0.0239	(0.0310)
Survey	-0.0259	(0.0232)	0.0304	(0.0346)	0.0282	(0.0194)	0.0571**	(0.0218)
Share of immigrants	0.0265	(0.0366)	0.102**	(0.0406)	-0.0402	(0.0282)	-0.0356	(0.0225)
Unemployment rate of immigrants	0.0192	(0.0331)	0.0226	(0.0265)	0.0356	(0.0212)	0.0122	(0.0272)
Population	-0.117*	(0.0687)	0.00955	(0.0756)	-0.0477	(0.0325)	-0.101*	(0.0580)
Voter turnout AfD	0.0175	(0.0522)	0.0203	(0.0581)	0.0471	(0.0468)	0.0525	(0.0551)
Average age	0.0772**	(0.0356)	0.110***	(0.0283)	0.00832	(0.0217)	-0.00821	(0.0356)
COVID-19 7-day-incidence	-0.0381**	(0.0183)	-0.0284	(0.0295)	-0.0170	(0.0180)	-0.0156	(0.0221)
total GVA	0.152*	(0.0753)	0.0220	(0.0905)	0.105***	(0.0381)	0.139**	(0.0615)
GVA growth	-0.00340	(0.0155)	0.00907	(0.0145)	0.00950	(0.00952)	-0.0000300	(0.0165)
Constant	-0.0879***	(0.0183)	-0.0282	(0.0188)	-0.0485***	(0.0134)	-0.0419**	(0.0163)
<i>N</i>	1559		1559		1559		1559	
adj. <i>R</i> ²	0.345		0.363		0.530		0.554	

Standard errors in parentheses; clustered at NUTS-2 level; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

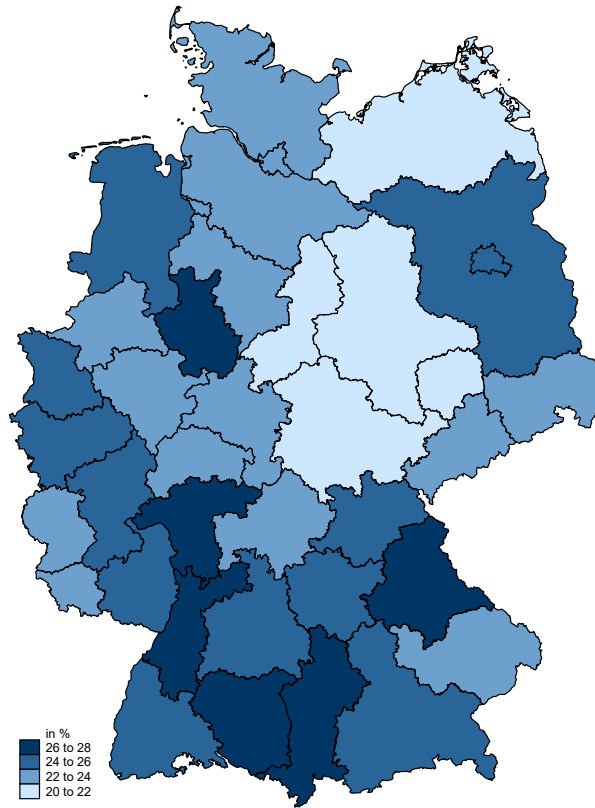
B Appendix - Figures

Figure 1: Distribution of Prior Beliefs



Figure 2: Regional Distribution of Prior Beliefs

(a) Prior Beliefs: Share of Immigrants



(b) Prior Beliefs: Unemployment Rate of Immigrants

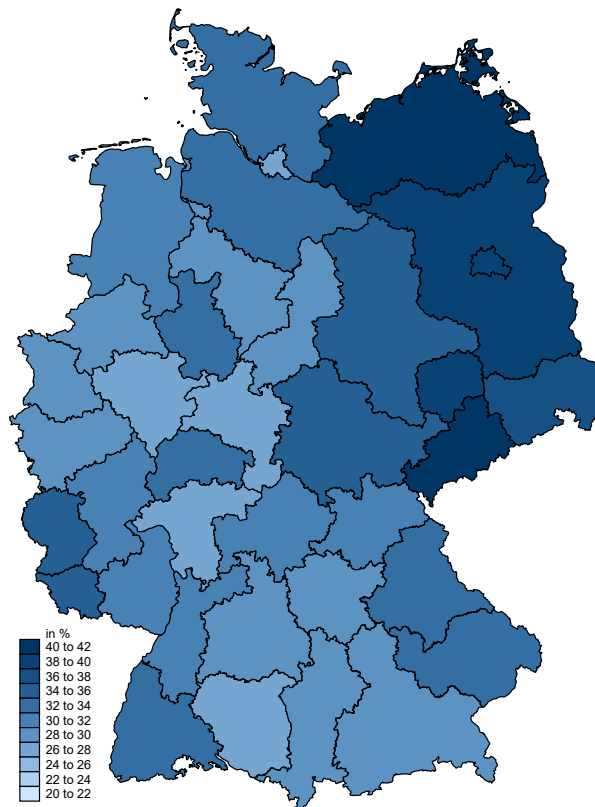
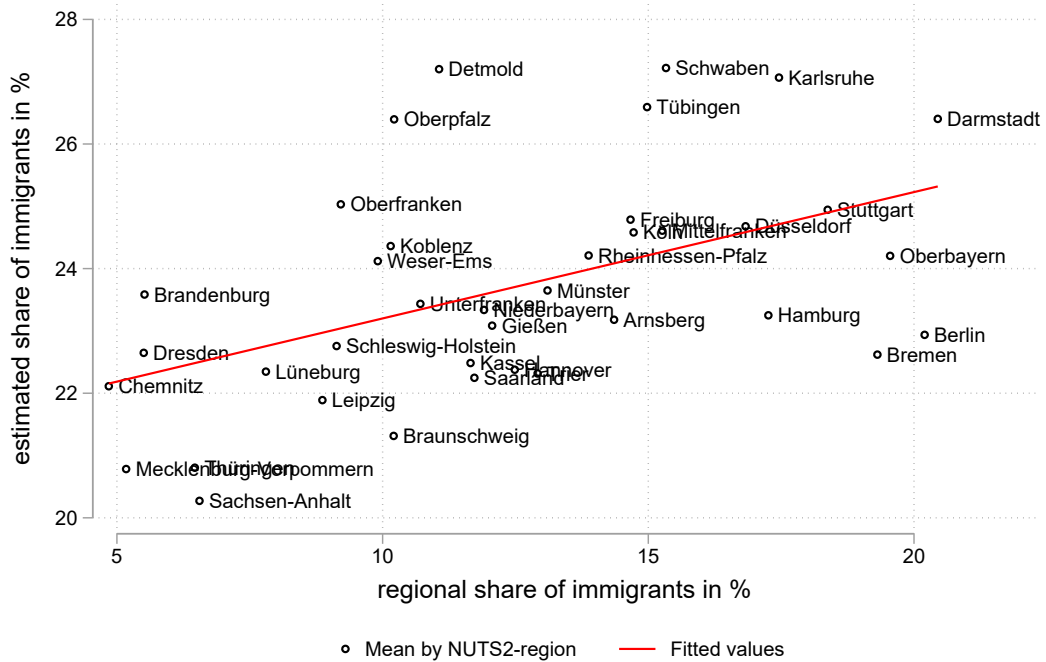


Figure 3: Prior Beliefs about Immigration in relation with the actual regional values.

(a) Share of Immigrants



(b) Unemployment Rate of Immigrants

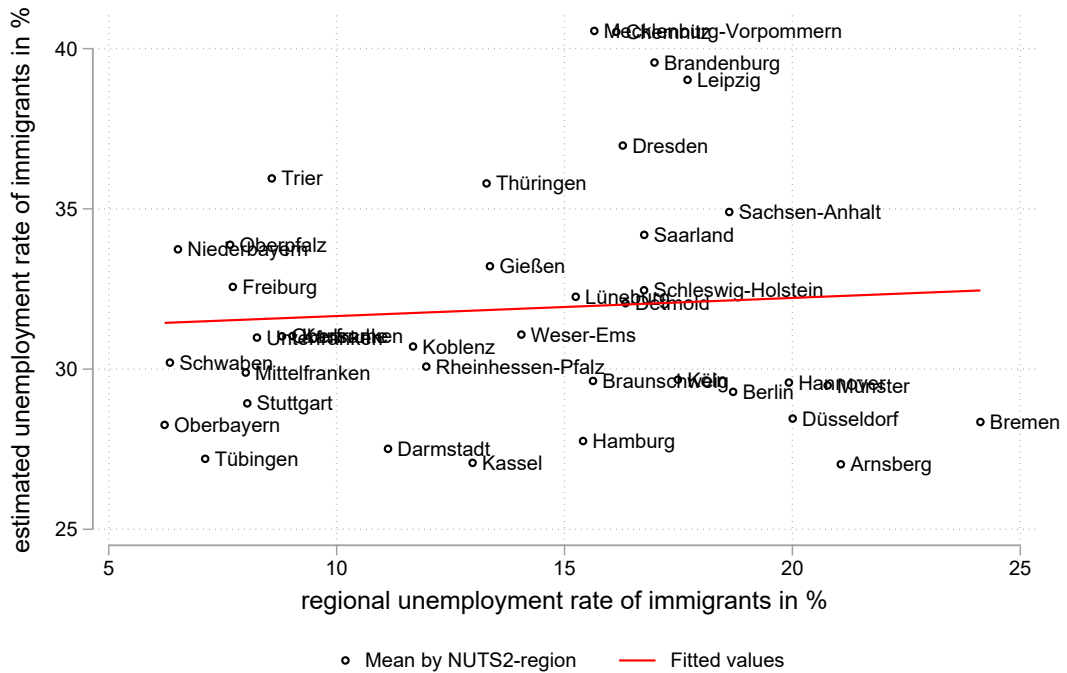


Figure 4: Sectoral Employment Growth 2020

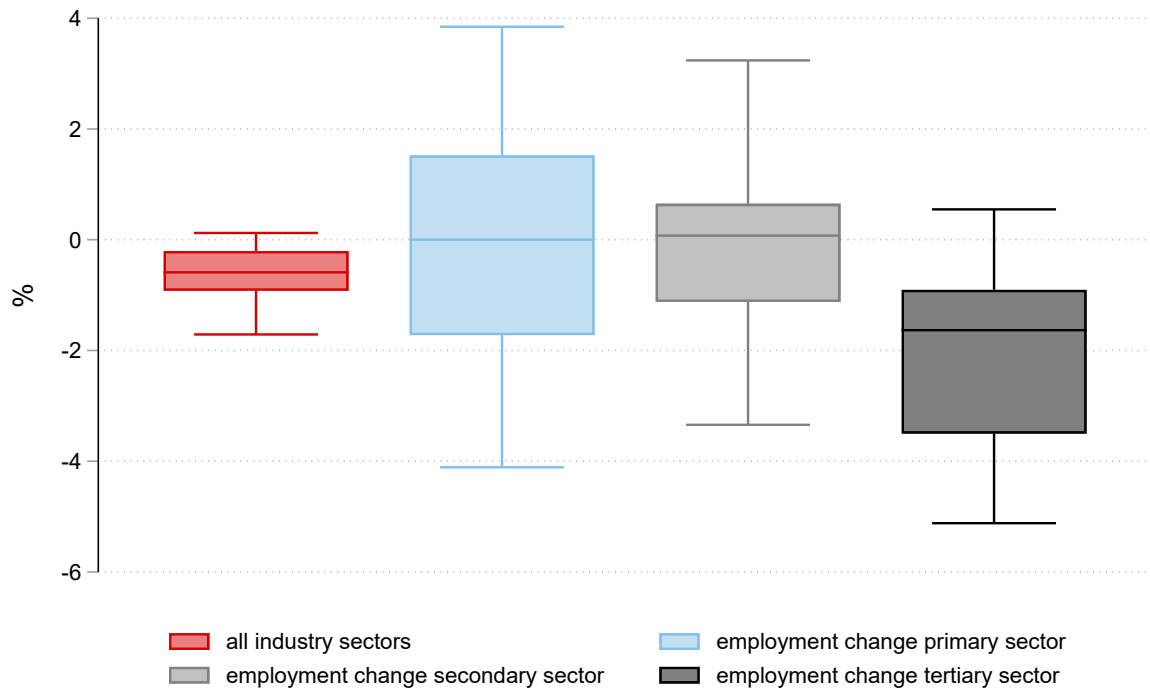


Figure 5: Sectoral Employment Growth by NUTS-2 Regions (2020)

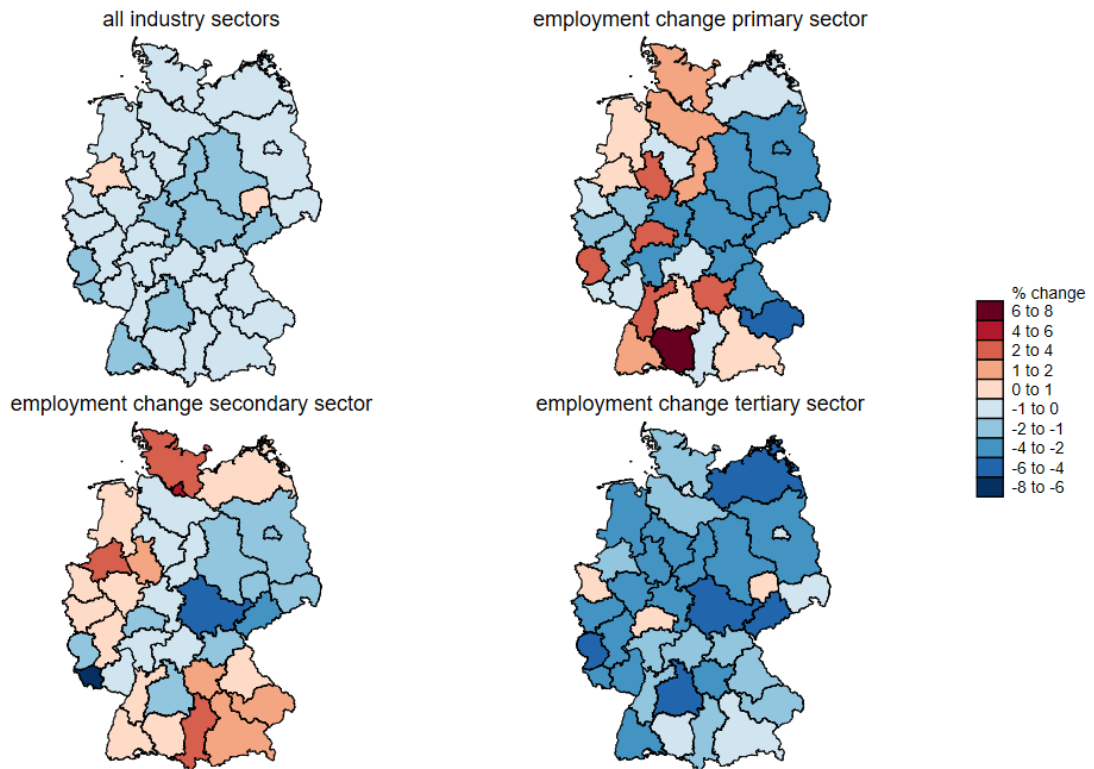
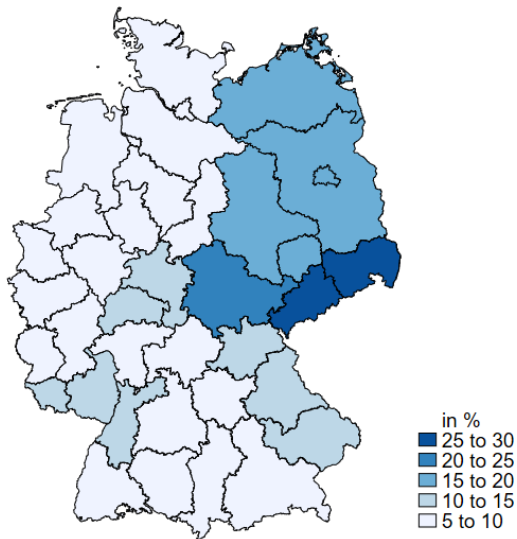
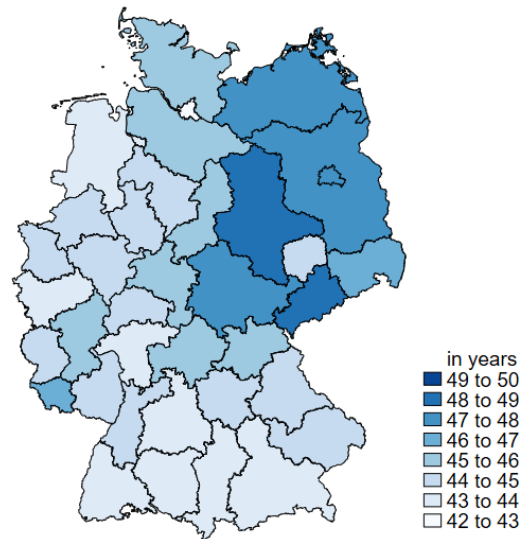


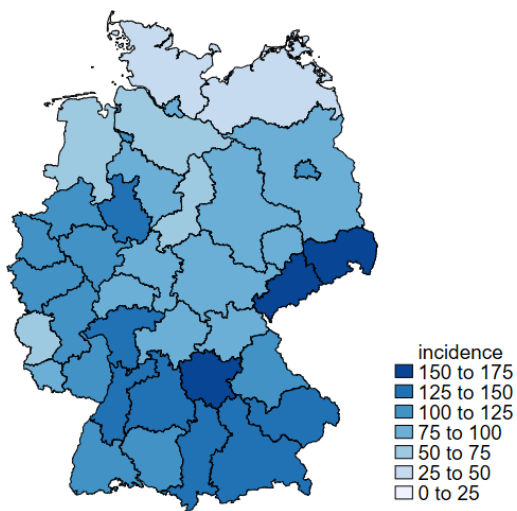
Figure 6: Further regional heterogeneity



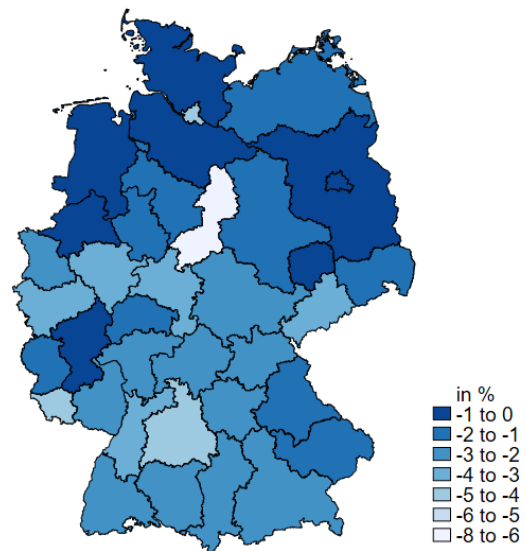
(a) Political: Vote shares AfD



(b) Demography: Average age

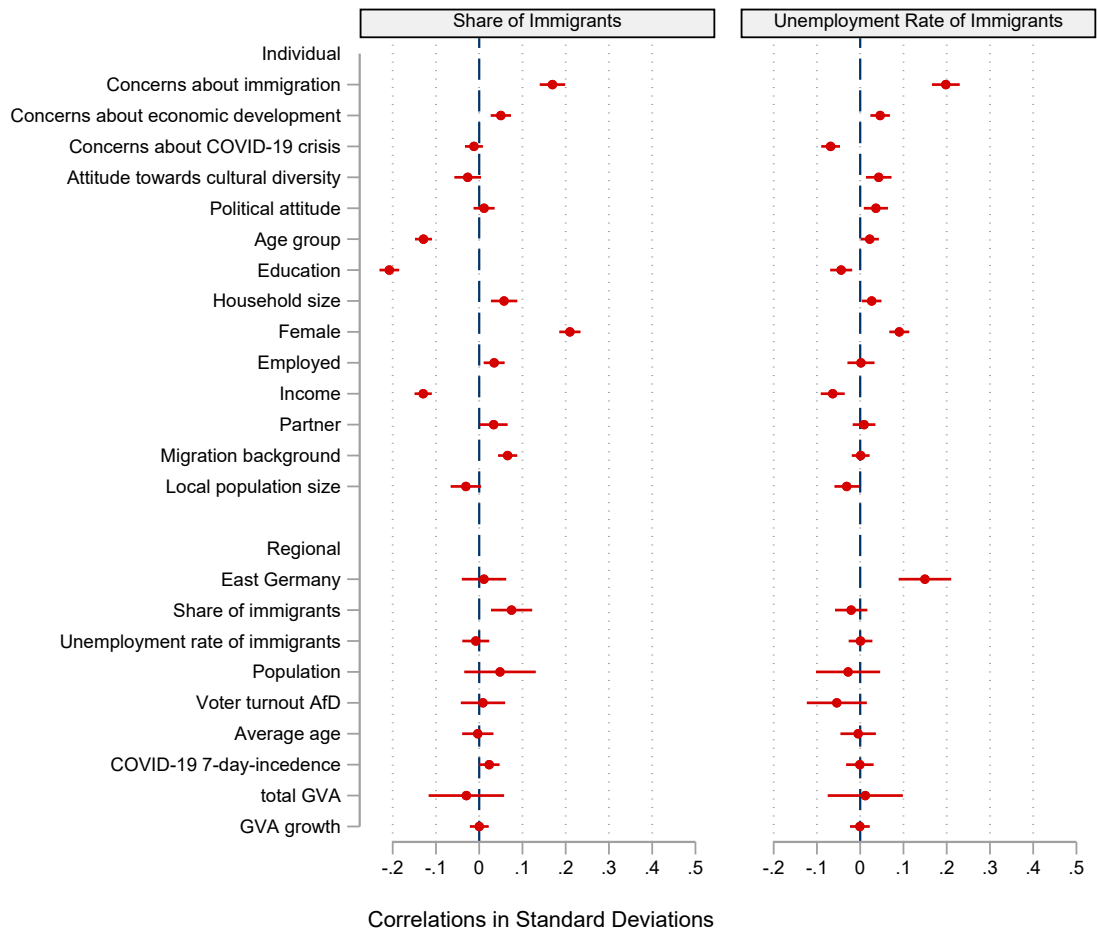


(c) COVID-19: 7-day-incidence



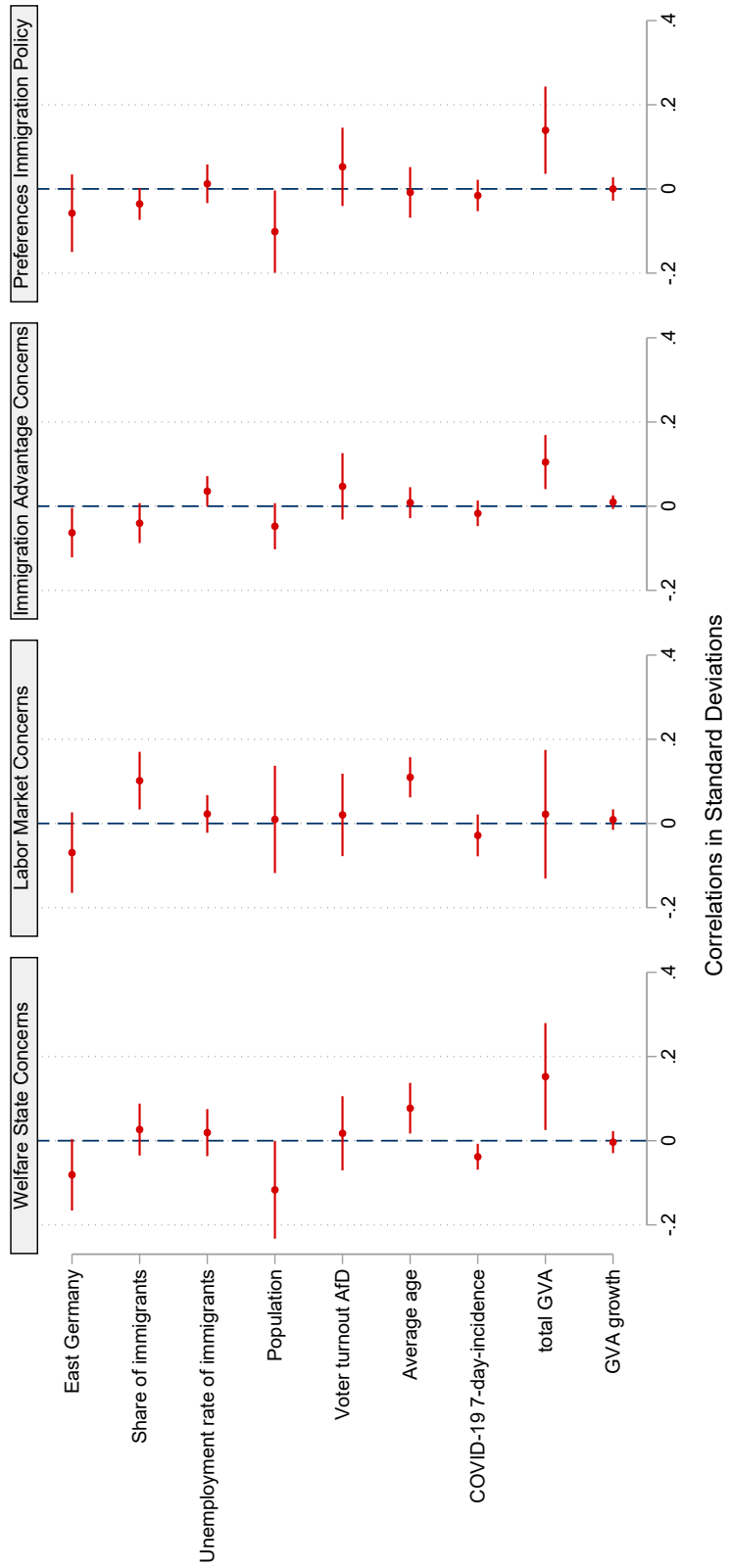
(d) Economic: GVA growth

Figure 7: Prior Beliefs: Regional Determinants



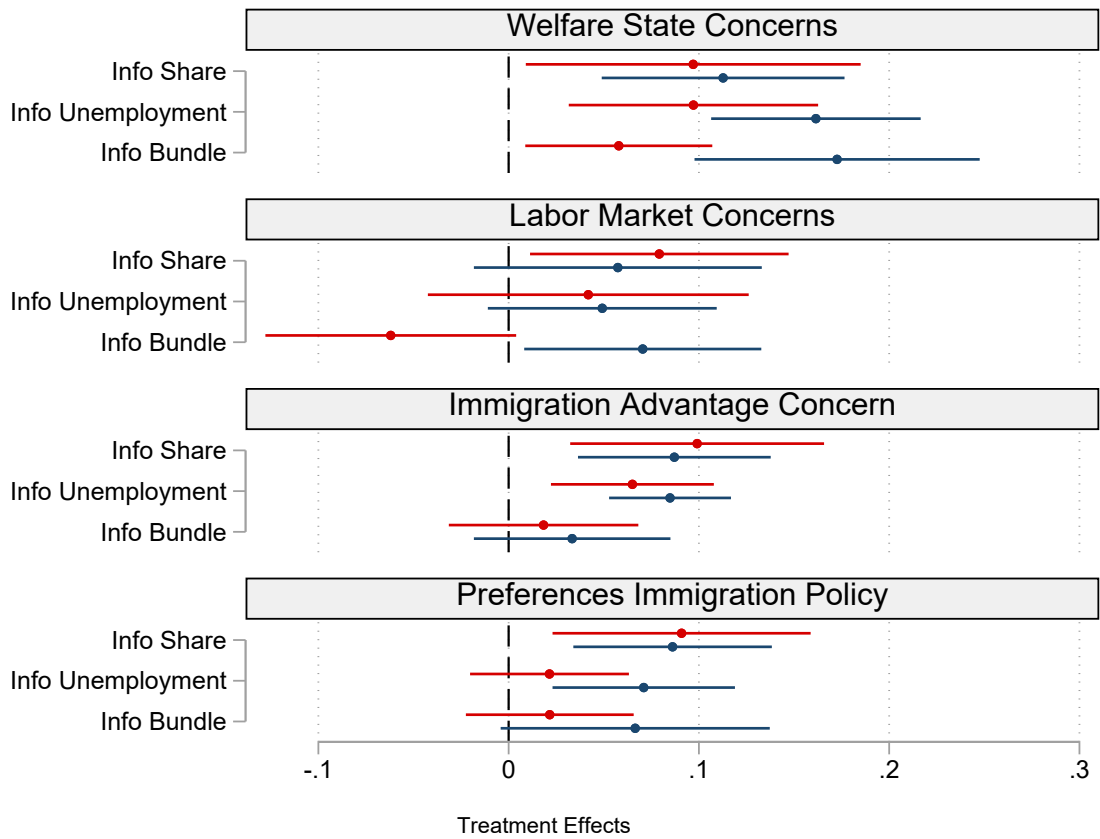
Notes: Standard errors clustered by NUTS-2 regions. 90 % confidence intervals displayed.

Figure 8: Concerns about Immigration (control group)



Notes: Standard errors clustered by NUTS-2 regions. Further controls include individual variables. 90 % confidence intervals displayed.

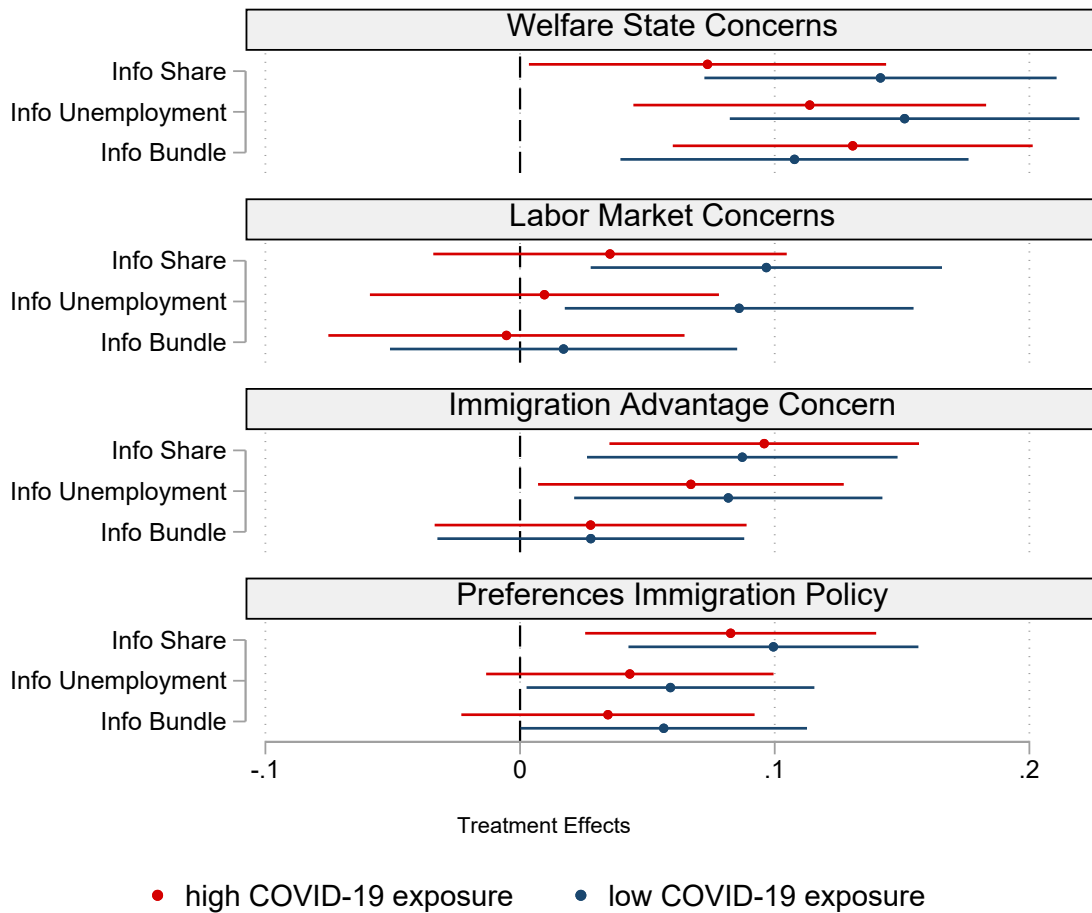
Figure 9: Treatment effects by region: AfD vote share



• high AfD vote share • low AfD vote share

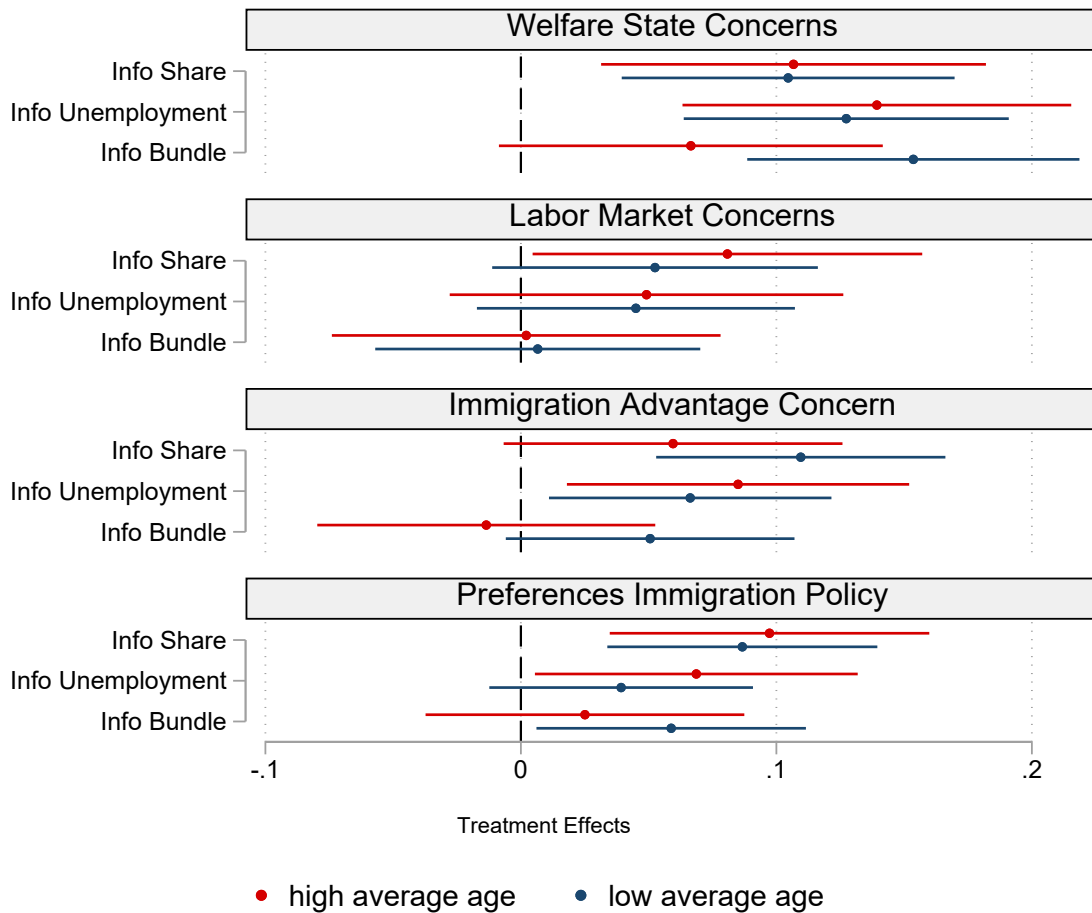
Notes: Standard errors clustered by NUTS-2 regions. 90 % confidence intervals displayed

Figure 10: Treatment effects by region: COVID-19 pandemic



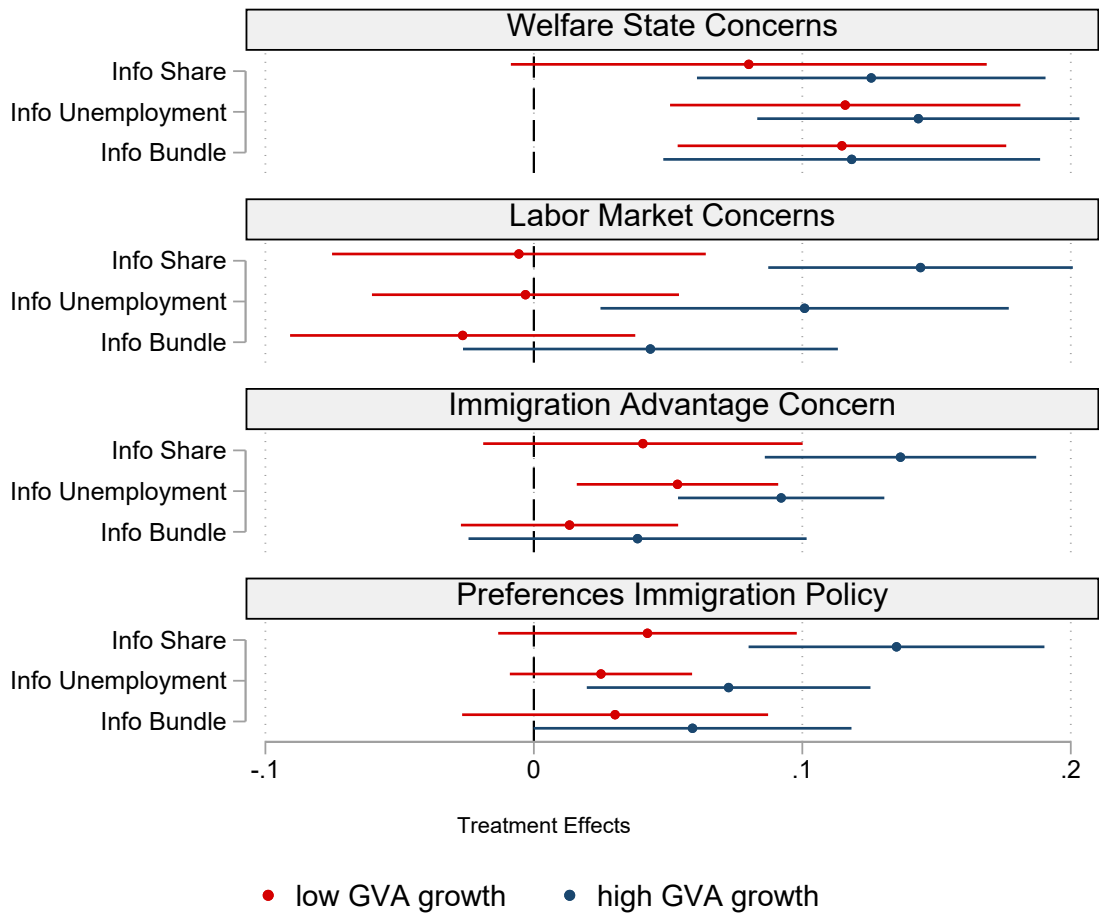
Notes: Standard errors clustered by NUTS-2 regions. 90 % confidence intervals displayed

Figure 11: Treatment effects by region: Average age



Notes: Standard errors clustered by NUTS-2 regions. 90 % confidence intervals displayed

Figure 12: Treatment effects by region: GVA growth



Notes: Standard errors clustered by NUTS-2 regions. 90 % confidence intervals displayed