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The Electoral Consequences of Labor Immigration – Analysing the Effect of Immigrant Skill on the Vote for a Populist Radical Right Party

Abstract

Previous studies have shown that individual attitudes towards immigration vary over immigrant skill and that native citizens are generally more open towards highly-skilled migrants compared to lower-skilled migrants. Assuming that these attitudinal differences and supposed micro-foundations have consequences for observed political outcomes, this paper draws on previous findings and analyses whether they translate into actual voting behaviour. Accordingly, the impact of immigrants' presence on native citizens' opposition to immigration leading to the vote for anti-immigration and populist radical right parties, varies contingently upon the skill levels of immigrants. Using district-level data from 400 districts in Germany (NUTS-3 level) for the 2017 and 2021 federal elections, this paper shows that the share of foreigners with no and with lower levels of professional qualification is positively related to Alternative für Deutschland (AfD) vote shares, while the share of foreigners with an academic qualification has no effect on AfD vote share. Testing whether the effect is moderated by natives' own labour market position and increased labour competition due to immigration provides limited support for the so-called *Labor Market Competition Hypothesis*.

Keywords: Labour Immigration, Voting Behaviour, Populist Radical Right Parties, Europe

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Introduction

Over the last few decades, immigration has become one of the most politicized issues in Europe, making it an important topic over which parties compete in elections at the supra-national, national and sub-national levels. Conventional wisdom suggests that political competition over this issue and rising immigrant inflows have contributed to the success of populist radical right parties across many European countries. This conjecture is partly supported by evidence at the national level (Barone et al., 2016; Halla et al., 2017; Otto & Steinhardt, 2014). At the same time, globalization and demographic are driving increased demand for foreign labour, especially highly skilled labour, in industrialized countries (cf. Rhein & Spilker, 2022). Most recently, this has been illustrated by the passage of the new “Skilled Immigration Act” in Germany that aims to address the shortage of skilled workers by facilitating the migration of qualified workers from outside the European Union (EU) to Germany (Bundesregierung, 2023).

Furthermore, studies have shown that individual attitudes of natives towards immigration are contingent upon immigrant skill (Hainmueller & Hiscox, 2010; Malhotra et al., 2013; Mayda, 2006; Rhein & Spilker, 2022; Scheve & Slaughter, 2001). Theoretical explanations regarding this effect range from accounts of economic self-interest to cultural and sociotropic mechanisms. However, to better understand the transformation of the European party landscape, it is crucial to see if and how this effect translates into actual voting behaviour. So far, only a few studies at both the individual and aggregate levels, have explored the link between immigrant skill levels and the political preferences of native citizens, examining how this relationship affects vote choices (Mayda et al., 2022; Moriconi et al., 2022).

This paper assumes that attitudinal differences and underlying micro-foundations influence observed political outcomes. By synthesizing two strands of literature – one showing that the presence of immigrants increasing opposition towards immigration (Barone et al., 2016; Edo et al., 2019; Halla et al., 2017; Harmon, 2018; Otto & Steinhardt, 2014) and the other identifying the attitudinal differences of natives based on immigrant skill levels (Malhotra et al., 2013; Mayda, 2006; Rhein & Spilker, 2022; Scheve & Slaughter, 2001) – results in an explicit expectation. Namely, that the presence of immigrants will affect natives’ opposition to immigration contingent upon immigrants’ skill levels, and ultimately affect the vote for anti-immigration populist radical right parties.

Using district-level data from 400 districts in Germany (NUTS-3) for the 2017 and 2021 federal elections, this paper empirically tests whether the share of foreigners in the workforce differently affects the vote share of a populist radical right party contingent upon the professional qualification of foreigners. The district level is the second smallest administrative unit in Germany and the smallest unit for which this data is available. Districts in Germany usually include a city or several smaller municipalities, suggesting that native citizens are likely to have realistic perceptions about the presence of immigrants in their own district. This paper estimates the effect of the share of three different groups of foreigners, i.e. with *no qualification*, *with qualification*, and with

academic qualification, on the share of second votes for the AfD (Alternative für Deutschland).¹ The paper's empirical approach relies on exploiting regional variations between districts and on an informed selection of observable potential confounders. This strategy aims to identify the key differences between areas where migrants live while maximizing the explanatory variation in the data. However, the decision to condition only on observables implies that causal interpretations of the results should be made with caution.

The paper finds the effect to be heterogeneous over different levels of foreigner qualifications. Conditional on a set of observables, the share of foreigners with *no qualification* as well as *with qualification* is found to increase the vote share for AfD. At the same time, the share of foreigners with an *academic qualification* seems to have no effect on AfD vote share. Further, the evidence suggests that for the group with non-academic qualification, the effect might be driven by labour market pressure induced by the presence of foreigners.

First, this paper adds in a broader sense to literature focusing on the electoral consequences of globalization in highly industrialized countries (cf. Ahlquist et al., 2020; Colantone & Stanig, 2018; Hellwig & Samuels, 2007). Second, it adds to the literature on the determinants of individual preferences towards immigration and tests whether the heterogeneity effect across immigrant skill can be observed on the aggregate level (cf. Malhotra et al., 2013; Mayda et al., 2022; Scheve & Slaughter, 2001), and whether the effect on individual attitudes translates into voting behaviour. Third, it adds to research linking the surge of the populist radical right in Europe to immigration (cf. Halla et al., 2017; Haugsgjerd & Bergh, 2023) and tests this relationship with more new and refined data.

The remainder of this paper is structured as follows: The second section reviews the related literature and outlines the theoretical argument. The third section describes the data that used to test the hypotheses, discusses the operationalization of variables, and presents the estimation strategy. The fourth section presents the empirical findings. Finally, the last section concludes the paper, discusses limitations, and suggests possibilities for future research.

¹ One point of caution is that not all qualifications foreigners have acquired might be easily acknowledged in Germany. This would mean that foreigners with some professional qualifications would be counted as without qualification. While such concerns cannot be ruled out completely, since 2012, the German federal government's introduction of a new law that regulates the acknowledgement of professional qualifications means the large majority of degrees acquired outside of Germany or the EU are officially acknowledged (Bundesministerium für Bildung und Forschung, 2019).

Immigrant Skill and the Electoral Behaviour of Natives

The exposure to globalization of industrialized countries in recent decades has not only affected local industries by facilitating the import and export of goods, but has also significantly changed labour conditions in both importing and exporting countries (cf. Dancygier & Walter, 2015). The overall increase in labour mobility, but also a decentralization of several factors of production, has largely affected the labour supply and demand equilibria. Among other external economic factors, labour markets today are largely affected by labour immigration. From an economic perspective, it is not far-fetched to state that "[...] immigration has consequences, and these consequences generally imply that some people lose while others benefit" (Borjas, 2014, p. 4). Even more than other factors related to globalization, immigration has entered to the forefront of the political arena and is politicized being stepstone for the populist radical right in Europe (cf. Hutter & Kriesi, 2022; Kriesi et al., 2006; Shehaj et al., 2021). However, it is not without reason to suspect that the aggregate effect of labour immigration on the electoral success of populist right parties is likely to be heterogeneous across immigrant skill, as shown by previous work on the individual level.

Immigrant skill and individual attitudes towards immigration

The literature has identified several economic and non-economic channels through which immigration can affect natives and their attitudes towards immigration (cf. Hainmueller & Hopkins, 2014). First and foremost, immigration can generate direct or indirect costs for natives. Depending on how high these costs are perceived to be, they are likely to affect individual attitudes on immigration.

Generally, the inflow of foreign labour can increase competition in domestic labour markets. An increase in labour supply coupled with a stable demand for labour can worsen the bargaining positions of native workers negatively affecting their wages or even risking their employment. From this perspective, labour immigration can generate high costs for natives if it increases job competition. Following this rationale, the *Labor Market Competition Hypothesis* states that natives form opposing attitudes towards immigration if immigration puts them in a worse economic position due to an increase in job competition. However, not every immigrant will pose the same labour market threat to a given native. Therefore, the literature has assumed that natives compete with immigrants within the industry they work in (Dancygier & Donnelly, 2013) or only with immigrants that have similar skill levels as themselves (Malhotra et al., 2013; Mayda, 2006; Rhein & Spilker, 2022; Scheve & Slaughter, 2001). Low-skilled natives should only feel threatened by low-skilled immigrants and highly-skilled natives should only feel threatened by highly-skilled immigrants. In short, natives should have stronger negative attitudes towards immigrants with the same skill level than towards immigrants with a different skill level.

While some studies have found evidence that both low- and highly-skilled natives tend to oppose low-skilled immigration (Goldstein & Peters, 2014; Hainmueller & Hiscox, 2010), only a few studies report that opposition is actually higher among highly-skilled natives when it comes to highly-skilled immigrants compared to low-skilled immigrants (Malhotra et al., 2013; Rhein & Spilker, 2022). The literature introduces two different explanations for these findings. Hainmueller and Hiscox (2010) argue that skill or education is positively associated with cultural traits, so highly-skilled natives are generally more open to immigration. On the other hand, Malhotra et al. (2013) and Rhein and Spilker (2022) both point to the low prevalence of cases where highly-skilled natives compete against highly-skilled immigrants, and show that when competition for highly-skilled jobs is high, highly-skilled natives hold more negative attitudes towards highly-skilled immigration. As globalization has increased job pressures for low-skilled workers in industrialized countries, it has created relatively favourable conditions for highly-skilled workers (Dancygier & Walter, 2015). Immigration of low-skilled immigrants is likely to exacerbate this situation while immigration of highly-skilled immigrants should not be met with the same concerns by natives. Therefore, on average, natives might have stronger negative attitudes towards low-skilled than highly-skilled immigrants.

Lastly, not only economic self-concerns but also cultural anxieties and worries about compositional amenities have been shown to determine opposition to immigration (Card et al., 2012; Dustmann & Preston, 2007). Furthermore, perceptions of so-called sociotropic effects, i.e. effects of immigration on society or the economy as a whole, are found to influence immigration attitudes (cf. Hainmueller & Hopkins, 2014). Arguably, highly-skilled immigrants might be perceived to be beneficial for the economy while the opposite might be the case for low-skilled immigration (Hainmueller & Hiscox, 2010; Hainmueller & Hopkins, 2015). Additionally, the political salience of issues such as demographic changes and the shortage of skilled workers in some European countries, exemplified by the newly introduced German Skilled Immigration Act (Bundesregierung, 2023), could further amplify this effect.

Immigration and electoral behaviour

Moving from individual attitudes to electoral behaviour, another strand of the literature assesses the electoral consequences of the exposure to globalization in industrialized countries (Ahlquist et al., 2020; Colantone & Stanig, 2018; Dippel et al., 2015). The underlying assumption of these studies is that import penetration boosted by globalization, along with the exposure to other external economic shocks, creates winners and losers, and that the losers are generally more inclined to vote for the far right driven by the issue of economic nationalism (Colantone & Stanig, 2019). In a similar vein, the exposure to foreign labour in the form of labour immigration should have similar consequences.

Without taking immigrant skill into consideration, previous work has shown that immigration can have a positive effect on the vote share of populist radical right parties.

In Austria, Halla et al. (2017) have shown that the presence of immigrants is positively related to votes for the Freiheitliche Partei Österreichs (FPÖ). On the city district level, a study that looks at Germany similarly finds that the share of foreigners positively affects the vote share of a radical right party (Otto & Steinhardt, 2014). Without further disaggregating the groups of immigrants or foreigners, the literature suggests that there is a positive relationship between the share of foreigners and the vote shares of centre-right or populist right parties, i.e. parties that are generally perceived as “anti-immigration” (Barone et al., 2016; Edo et al., 2019; Harmon, 2018). Combining these results from the literature with the findings on individual immigration attitudes, this paper suspects that the presence or inflow of immigrants has a similar effect on natives’ electoral behaviour conditional on immigrants’ skill level. The presence of highly-skilled immigrants should provoke less opposition than the presence of low-skilled immigrants, and the latter should more strongly lead to an increase in votes for populist radical rights parties than the former.

With some important exceptions, the literature is limited in dealing with the question of how immigrant skill can influence electoral behaviour. Combining individual level survey data with aggregated immigration data from Europe, Moriconi et al. (2022) show that an inflow of highly-skilled immigrants is associated with native citizens being less likely to vote for nationalist parties, while an inflow of less educated immigrants increases the likelihood of native citizens to vote for nationalist parties. Mayda et al. (2022) show that in the U.S., an increase in low-skilled immigrants positively affected the Republican vote share while an increase in highly-skilled immigrants negatively affected the Republican vote share. Therefore, the evidence provided by these two studies is consistent with the evidence on the effect of immigrant skill on individual attitudes of natives. Furthermore, it even suggests that the presence or inflow of highly-skilled immigrants can have a *negative* effect on the electoral success of “anti-immigration” parties (cf. also Harmon, 2018).

Hypotheses

Previous research has shown that the presence of immigrants can increase opposition towards immigration and the vote for populist radical right parties (Barone et al., 2016; Edo et al., 2019; Halla et al., 2017; Harmon, 2018; Otto & Steinhardt, 2014). At the same time, the literature suggests that individual attitudes towards immigration and immigrants differ contingent upon immigrant skill (Goldstein & Peters, 2014; Hainmueller & Hiscox, 2010; Malhotra et al., 2013; Rhein & Spilker, 2022). Assuming that such attitudinal differences have consequences for actual political outcomes, the derives the first hypothesis:

H1: The positive effect of immigrant presence on the vote share of populist radical right parties decreases with an increase in immigrants’ skill level.

To be more specific, some researchers suggest that natives especially oppose immigrants with whom they compete for jobs if they work in the same industry or share the same skill level (Malhotra et al., 2013; Mayda, 2006; Rhein & Spilker, 2022; Scheve & Slaughter, 2001). Based on the so-called *Labor Market Competition Hypothesis*, the second hypothesis is:

H2: The effect of the presence of immigrants with a given skill level is especially high in districts with high labour market competition on the same skill level.

Methodological Approach

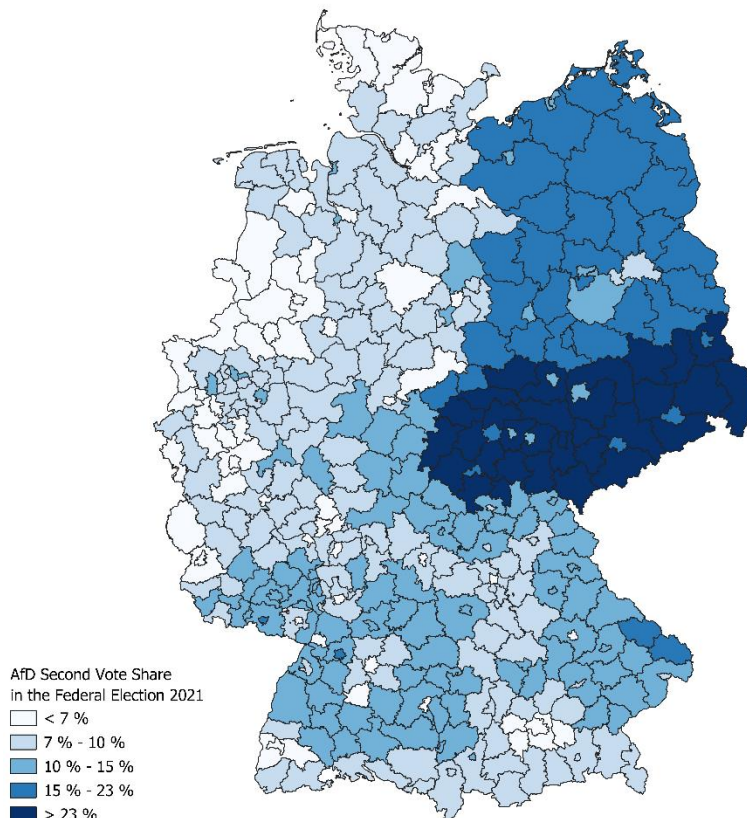
This paper tests these two hypotheses using aggregate level data on electoral outcomes and the presence of foreigners from all 400 German districts (*dt.: Landkreise und kreisfreie Städte*) at the NUTS-3 level (Statistische Ämter des Bundes und der Länder, 2023). It observes every district twice, i.e. in the years 2017 and 2021 when the last two federal elections in Germany took place. Using aggregate-level data faces the limitations of always yielding some problems in terms of accuracy, and does not allow to draw direct inferences at the individual level or about micro foundations. Nonetheless, this method permits the observation of the whole electorate and to use the actual election results in the sample. Furthermore, solely relying on individual level survey data and not measuring the presence of immigrants at the aggregate level means that other studies have to rely on the respondents' perceptions regarding the presence of immigrants. While such perceptions are important determinants of individual attitudes, they might fall short of explanatory power when trying to answer how the actual presence of immigrants can affect the vote share of populist radical right parties. Using the German case is justified for several reasons. Since 2015, Germany has seen a significant increase in immigration and refugee arrivals, being the most popular European destination for immigrants overall. However, beginning with guest workers, immigration is not a new social, political, or economic phenomenon for Germany, as this is the case for other European countries such as France or the United Kingdom. Additionally, the presence of the AfD – a populist, radical right party with a distinctly anti-immigration stance since 2015 – aligns Germany with other European countries like France, Italy, and Austria, which also have strong populist, anti-immigration movements and parties.

AfD Vote Shares

As the dependent variable for analysis, this paper uses the second AfD vote shares (*dt.: Zweitstimmenanteil*) for which data is available at the district level. The AfD is a German populist radical right-wing party that has drastically changed the German political party landscape since entering the Bundestag in 2017. With its adoption of a clear anti-immigration agenda, it gained politically from the inflow of refugees in Germany in 2015 (Decker, 2022). The AfD first took part in the 2013 German federal

elections where it just missed the 5% threshold to enter into parliament. In the 2017 elections, it received 12.6% of the general second vote entering the Bundestag. In 2021, the party received 10.3% remaining in the Bundestag for the second consecutive term. The paper uses election data from the 2017 and 2021 federal elections in its main analysis, but it is important to note that it does not include data from the 2013 federal election. Although the party had already formed anti-immigration positions in 2013, its core political agenda was a Euro-/EU-sceptic position (Schmitt-Beck, 2014). Looking at the election results from the 2021 federal election, Figure 1 reveals that there exists a large degree of regional variation in vote shares for the AfD, which is important for the analysis conducted in this paper. At the same time, however, this variation is not evenly distributed across Germany. Vote shares appear to be systematically higher in eastern Germany than in the west, which is important to account for in developing the research design further.

Figure 1. AfD second vote shares in the 2021 federal election.



Presence of Foreigners with Different Levels of Professional Qualification

To analyse the different effects of immigration on AfD vote shares according to immigrants' skill level, this paper measures the share of employed foreigners in the workforce of a given district summarized in three different groups.² The first group includes all foreigners that have no formally recognized professional qualification (*No Qualification*). The second group includes all foreigners with some non-academic professional qualification (*With Qualification*). Lastly, the third group includes foreigners with an academic professional qualification (*Academic Qualification*). As this measurement of professional qualification relies on peoples' educational degrees, some cautionary remarks are necessary. Some argue that education is not a well-suited proxy for skill, as skill can be extremely heterogeneous for people with the same educational level (cf. Malhotra et al., 2013, pp. 393–394). This is relevant when focusing on the labour market threats posed by immigrants. For example, a political scientist and a physicist might both have an academic degree, but do not compete in the labour market since they possess two completely different skillsets. Hence, it is not certain whether labour market competition actually varies across and within the three different levels of professional qualifications that the paper measures. Related to this point is the question of whether the division of foreigners into the different groups measures different systematic differences between the groups besides professional qualification. For example, one possibility could be that one type of qualification is correlated with a particular country or region of origin. Note that the data used does not provide any information about the origin of foreigners. Therefore, stereotypical or xenophobic judgements and perceptions by natives that are unrelated to the immigrants' actual skill level, education, or professional qualification could influence individual attitudes towards immigration and natives' voting behaviour.

² The data that the paper uses measures all those that are employed subject to social insurance (*dt.: sozialversicherungspflichtig beschäftigt*). This group includes the large majority of formally employed people in Germany. Groups of employees that do not fall into this category are people that are self-employed, in minor employment, or not formally employed. It should be noted that the International Labour Organisation estimates the share of informal employment in Germany is around 2.5% (International Labour Organisation, 2024). People that are unemployed are not counted by this statistic which is another reason why the paper controls for the unemployment rate in each district as explained later in this section.

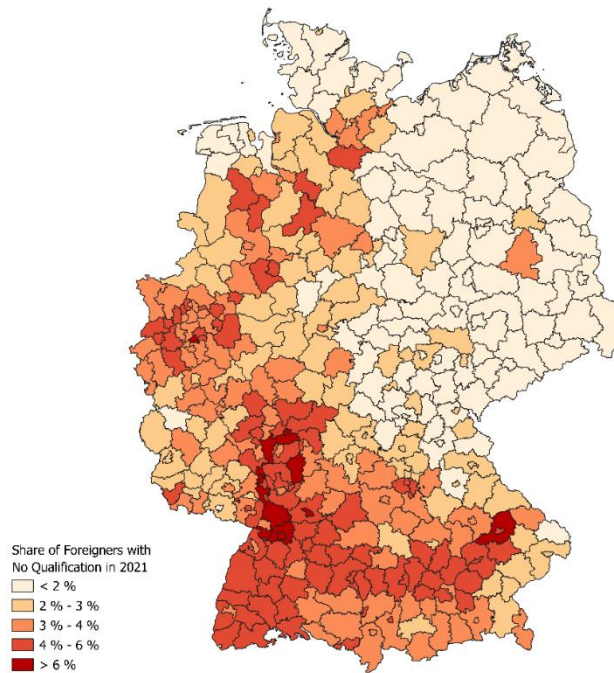
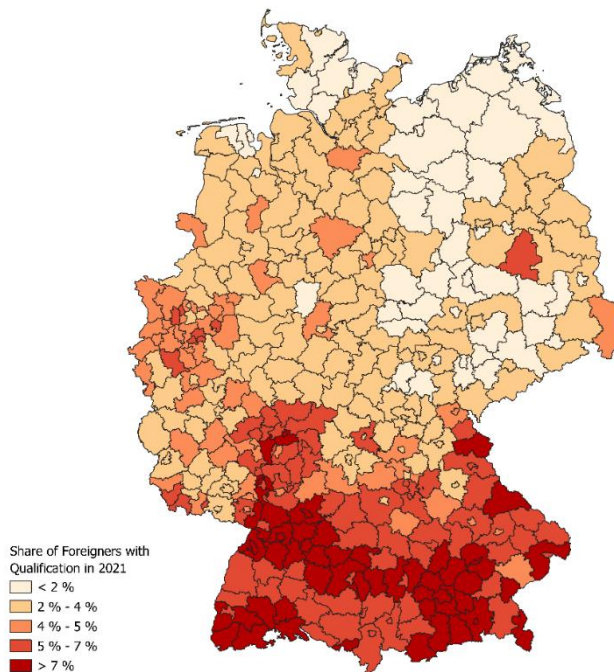
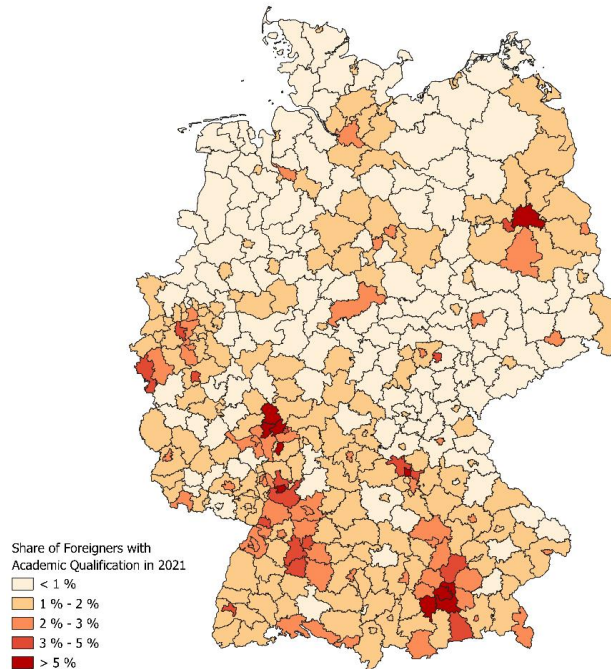
Figure 2. Share of Foreigners with No Qualification in 2021**Figure 3.** Share of Foreigners with Qualification in 2021

Figure 4. Share of Foreigners with Academic Qualification in 2021

Figures 2, 3, and 4 illustrate the regional variation of the share of foreigners with the three different types of qualification across Germany in 2021. As described in Figure 2, employed foreigners with *no qualification* are particularly scarce in eastern Germany. This is notable considering that eastern Germany has a systematically higher AfD vote share than the west. The share of foreigners *with qualification* are strongly clustered in southern Germany (Figure 3). Lastly, the share of foreigners with an *academic qualification* are concentrated in and around large cities, which is most apparent for Berlin, Munich and Frankfurt (Figure 4). The most important but equally unsurprising insight from these figures is that the location of foreigners is not random. Foreigners in Germany might choose to work in more welcoming districts or districts where natives have more positive attitudes towards immigration. Other studies account for such cases of reverse causality with instruments relying on previous immigration inflows disaggregated by country of origin (Mayda et al., 2022), or on randomly located immigration settlements (Moriconi et al., 2022). Unfortunately, this paper is unable to implement the former method as the data does not differentiate between different origins of foreigners. The latter method is not well-suited for this paper's purposes either, as the location of foreigners in all of the three qualification groups is not likely to be equally affected by such settlements. This paper, therefore, relies on the inclusion of observable control variables to account for potential endogeneity caused by the non-random location of foreigners.

Control Variables

To control for potential endogeneity that could induce biases in my estimations, this paper includes two sets of observable covariates as control variables. First, it includes a set of time varying district specific variables. It includes the *Share of Natives* with the respective qualification level, i.e. the *Share of Natives with No Qualification* in the model that estimates the effect of the *Share of Foreigners with No Qualification* etc. Also, it includes the *Logged Total Population* of a district, as population size might be related to the presence of foreigners in a district as well as to AfD vote shares. This paper further controls for the *Share of Youth*, i.e. the share of people under 18 years old, the *Share of Elderly*, i.e. the share of people over the age of 64, and the *Share of Foreigners* in the overall population. It uses two aggregate economic measurements, namely *GDP Per Capita* and the *Unemployment Rate*, to control for the overall economic strength of a district that might be related to the AfD vote share and the share of foreigners in the workforce. Second, it includes a set of time-independent dummy variables to control for systematic differences between districts that are fixed over time. The variable *East* is 1 if a district is located in the former German Democratic Republic (GDR) territory and 0 otherwise³, and controls for systematic differences between East and West Germany that might be related to the AfD vote shares and the share of foreigners in the workforce as is suggested by Figures 1 through 4. The descriptive finding supporting the claim that the AfD vote share is comparatively higher in Eastern Germany, i.e. in areas of the former GDR, compared to West Germany, can be explained by an East-West divide in terms of economic development and political representation which still persists thirty years after the reunification (Weisskircher, 2020). Not controlling for this continuing persistent divide would likely confound the results, because systematically, fewer foreigners live in eastern compared to western Germany. Likewise, the paper controls for two other structural characteristics of districts that might affect where foreigners live or do not live and might be related with the AfD vote share, leading to confounding variation in the data. As universities might attract especially higher educated foreigners, the population living in cities/districts with a university tends to be more progressive and might be less likely to vote for populist radical right parties. Hence, the variable *University* is 1 if a university or other tertiary education institution is located within a district and 0 otherwise. Additionally, this paper controls for systematic differences between urban and rural districts, as foreigners are likely to live in urban areas, so support for the AfD might be generally higher in rural areas. To account for this, the variable *Urban* is 1 for every district for which the population density is equal to or higher than the median population density and 0 if population density is below the median. Lastly, the district independent variable *Election 2021* is 1 for the observations from the year 2021 and 0 for observations from the year 2017, as this aims to control for unobserved election-specific effects affecting all 400 districts.

³ Note that this paper has coded the variable *East* as 0 for Berlin.

Estimation Strategy

This paper estimates the effect of the presence of foreigners in the workforce with different levels of professional qualifications on AfD vote shares using a linear model described by

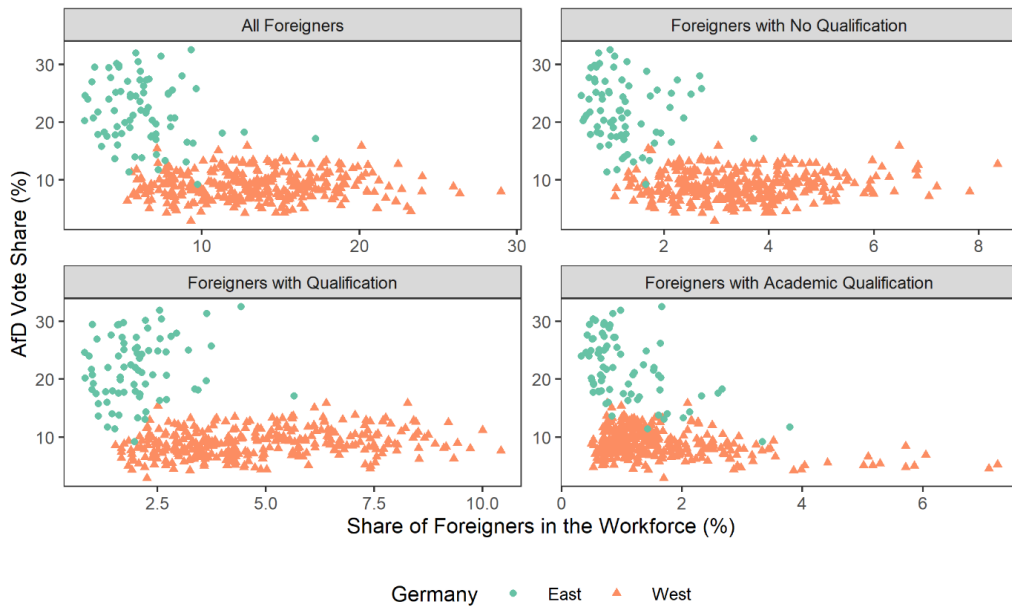
$$AfD_{dt} = \beta \frac{\text{Foreigners in Workforce}_{dtq}}{\text{Total Workforce}_{dt}} + X'_{dt}\delta + Z'_d\gamma + \alpha_t + \varepsilon_{dt},$$

where the share of foreigners with different professional qualification, i.e. *No Qualification*, *With Qualification* and *Academic Qualification*, is given by the ratio of foreigners in the workforce with qualification q to the total amount of people in the workforce in district d at time t . X'_{dt} is a vector of district-specific time-varying control variables that are described above. Note that even though this paper uses a balanced panel dataset, it does not include district-specific fixed effects as the main variation in the data that it aims to exploit is regional, i.e. across district. Relying solely on intra-district variation over the two elections in 2017 and 2021, which this paper would do using a fixed effects estimation, would likely discard explanatory variation of the independent variables. However, this paper uses a set of time-fixed dummy variables described by the vector Z'_d , that include the variables *East*, *University* and *Urban*, to partly account for structural and cultural effects that are likely to be fixed over the two elections in the sample. α_t is a time fixed effect that controls for unobserved election-specific effects that might influence AfD vote shares over all 400 districts. Lastly, the idiosyncratic error is described by ε_{dt} .

Empirical Findings

Before turning to the presentation of the main results from the regression analysis, Figure 5 provides a descriptive insight into the relationship between the presence of foreigners in the workforce and AfD vote shares at the district level. For all three groups with different qualification levels as well as for the total share of foreigners in the workforce, there seems to be an overall negative relationship with AfD vote share. The visual evidence, however, supports the considerations from the previous section and suggests that this negative relationship is largely driven by differences between East and West Germany. Districts in East Germany seem to have significantly lower shares of foreigners in the workforce while at the same time AfD vote shares are significantly higher.

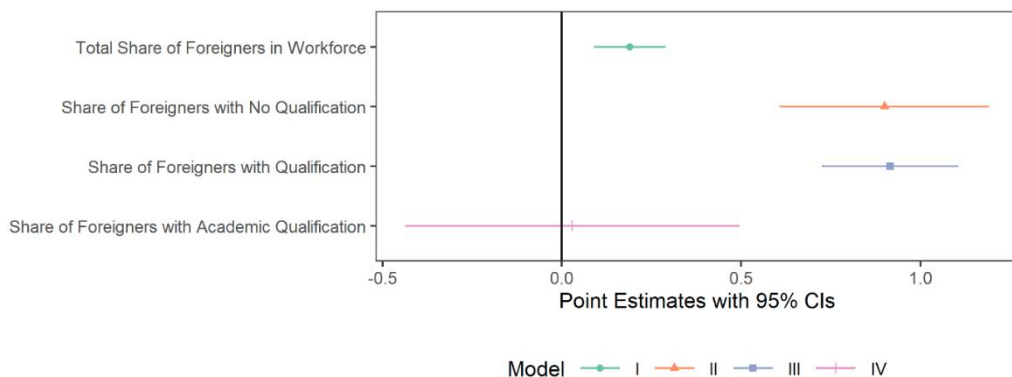
Figure 5. Shares of foreigners in the workforce and AfD vote share for each district, in East and West Germany, in the federal election 2021.



Main Results

Estimates of the effect of the presence of foreigners with different levels of professional qualification on the vote share for the AfD, i.e. the main coefficients of interest, are shown in Figure 6, while the full regression results are reported in Table 1. Conditional on the observables for which this paper controls, the overall share of foreigners in the workforce, i.e. all three groups with different qualifications taken together, has a positive and significant, yet comparatively small effect on AfD vote share (Model 1).

Figure 6. Effects of Foreigners with different Qualifications on AfD Vote Share (%) in the 2017 and 2021 federal elections. Point estimates and 95% CIs are taken from the respective models for which full results are reported in Table A1 in the Appendix.



Further disaggregating the share of foreigners into the different qualification levels, however, reveals that heterogeneity across the qualification of foreigners does exist. Both the share of foreigners with *no qualification* (Model 2) as well as the share of foreigners *with qualification* (Model 3) have a positive and sizable effect conditional on the set of covariates that are controlled for. In both cases, an increase in the share of foreigners with *no qualification* and *with qualification* by 1 percentage point is on average associated with an increase in the AfD vote share by nearly 0.9 percentage points. On the other hand, the share of foreigners with *academic qualification* shows to have no effect on the AfD vote share conditional on the set of observables (Model 4).

Table A1. Effects on AfD Vote Share

	<i>Dependent Variable:</i>			
	AfD Vote Share (%)			
	I	II	III	IV
Total Share of Foreigners in Workforce	0.190***			
	(0.051)			
Share of Foreigners with No Qualification		0.899***		
		(0.149)		
Share of Natives with No Qualification		-0.096		
		(0.087)		
Share of Foreigners with Qualification			0.915***	
			(0.097)	
Share of Natives with Qualification			0.311***	
			(0.029)	
Share of Foreigners with Academic Qualification				0.029
				(0.237)
Share of Natives with Academic Qualification				-0.352***
				(0.053)
Logged Population	-0.814***	-0.785***	0.181	0.014
	(0.185)	(0.186)	(0.202)	(0.190)
Share of Youth	0.278**	0.231*	0.319***	0.141
	(0.118)	(0.120)	(0.099)	(0.110)

	<i>Dependent Variable:</i>			
	AfD Vote Share (%)			
	I	II	III	IV
Share of Elderly	0.583*** (0.078)	0.571*** (0.077)	0.353*** (0.068)	0.463*** (0.073)
Share of Foreigners	0.083 (0.057)	0.025 (0.048)	0.137*** (0.051)	0.298*** (0.036)
Unemployment Rate	-0.135* (0.074)	-0.100 (0.073)	0.111 (0.071)	-0.319*** (0.060)
GDP Per Capita (in thousands)	0.005 (0.009)	0.014* (0.009)	0.026*** (0.007)	0.032*** (0.007)
East Germany	11.256*** (0.471)	11.071*** (0.650)	11.018*** (0.389)	13.006*** (0.440)
University	0.248 (0.250)	0.302 (0.247)	0.175 (0.225)	0.285 (0.240)
Urban	-1.340*** (0.278)	-1.502*** (0.276)	-0.213 (0.248)	-0.443* (0.252)
Election 2021	-3.268*** (0.236)	-3.461*** (0.236)	-2.867*** (0.196)	-2.577*** (0.218)
Constant	2.261 (4.068)	3.737 (4.170)	-29.439*** (4.770)	-0.095 (3.745)
Observations	800	800	800	800
R2	0.744	0.750	0.793	0.767
R2 Adj.	0.740	0.746	0.789	0.763

Note: Regression coefficients shown with robust standard errors in parentheses.
 $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

First, the positive effect of the overall share of foreigners is consistent with previous studies that provide evidence for a positive effect of the presence of immigrants or foreigners on votes for populist radical right parties at the aggregate level (Barone et al., 2016; Halla et al., 2017; Otto & Steinhardt, 2014). Furthermore, the findings lend some support to the hypothesis that the effect of the share of foreigners in the workforce on

the vote share of a populist radical right party is heterogenous depending on the professional qualification of foreigners. However, the effect does not consistently seem to decrease with an increase in foreigners' qualification levels. Even though the paper finds a substantial change in the effect when moving from the category *with qualification* to *academic qualification* and the effect is not significant, it finds no difference in the effect size between the share of foreigners with *no qualification* and the share of foreigners *with qualification*. Lastly, the null effect of the share of foreigners with an *academic qualification* and AfD vote share diverges from previous findings that report a negative association between the share of highly skilled immigrants and the vote share of "anti-immigration" parties on the aggregate level (Harmon, 2018; Mayda et al., 2022; Moriconi et al., 2022).

Robustness

Some scholars argue that it is actually the demographic changes of communities due to influxes of immigrants that shape opposing attitudes towards immigration, and not the static measurement of immigrant shares at one point in time (Hopkins, 2010). To follow this line of argumentation and to probe the robustness of the main findings against model specification, this paper estimates the effect of a change in the share of foreigners between the 2017 and 2021 elections on AfD vote share in the 2021 federal elections. All four models with changes in the share of foreigners, instead of static shares, are reported in Table A2 in the Appendix. The results of this robustness analysis are largely consistent with the main findings presented above. Changes in the overall share of foreigners as well as changes in the share of foreigners with *no qualification* and *with qualification* are shown to have a positive effect on AfD vote share. A change in the share of foreigners with an *academic qualification* has no significant effect on AfD vote share. This diverges from the main findings in one critical aspect, as the effect of changes in the share of foreigners with *no qualification* is substantively smaller than the effect of changes in the share of foreigners *with qualification*. Taken from the main analysis and from this robustness test together, the results do not support the hypothesis that the effect of the presence of immigrants on the votes for populist radical right parties consistently decreases when immigrant qualifications increase. On the other hand, the results still show that heterogeneities across the levels of qualifications of foreigners do exist, and that the qualification of foreigners matters when it comes to the electoral consequences of labour immigration.

Labor Market Competition

One possible explanation for the main findings presented in Figure 6 could be that there is a stronger competition for jobs where no qualification or some non-academic qualification is needed. This could explain why on average voters might see their own labour market position threatened by the presence of foreigners with these qualification levels. On the other hand, lower competition for jobs where an academic qualification

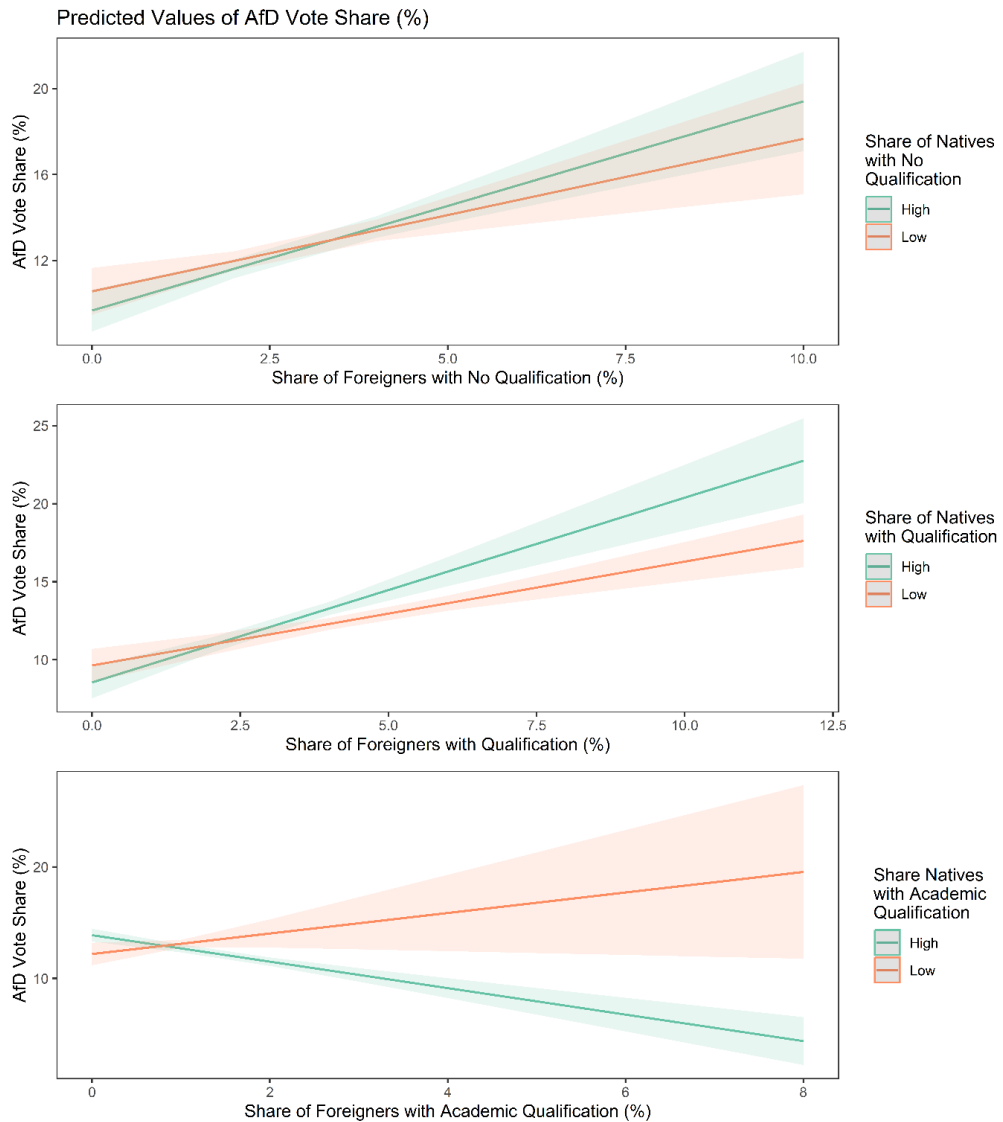
is needed could explain the null finding when it comes to foreigners with an *academic qualification*. In order to test whether different levels of competition drive the different observed effects, the paper will now construct a dummy variable for each category, that measures whether the share of natives in the respective category compared to the overall workforce is higher or smaller than the sample median. It will estimate the interaction effects between the share of foreigners with the respective qualification levels and the dummy that measures the share of natives in the overall workforce with the same qualification using the original set of control variables.⁴

As can be seen in Figure 7, the paper finds no difference in effect sizes of the share of foreigners with *no qualification* when comparing districts with a high share of natives with *no qualification* with districts with a low share of natives in the same category. The effect of the share of foreigners *with qualification*, however, varies with the share of natives in the same category. As seen in Figure 7, the effect is bigger in size in districts with both a high share of foreigners and natives compared to districts with either a low share of foreigners or a low share of natives. The share of foreigners with an *academic qualification* only shows to have null-effect on AfD vote share in districts with a low share of natives with an *academic qualification* and a substantially large negative effect in districts with a high share of natives with an *academic qualification*. Full regression results are reported in Table A3 in the Appendix.

Overall, these results provide some, yet limited, support for the *Labor Market Competition Hypothesis* across the three different levels of qualification that this paper can observe. Accordingly, the performed test yields no support for a hypothesized mechanism relating to labour market competition for the effects of the share of foreigners with *no qualification* or with an *academic qualification*. The findings for foreigners *with qualification*, however, suggest that concerns of the native population about their own labour market competition might at least partly drive the positive effect of the share of foreigners *with qualification* on AfD vote share – under the assumption that a higher share of people working in this category indicates a higher competition for jobs where such a form of qualification is needed. Lastly, the results for the category *academic qualification* should be treated with some caution. Specifically, the negative effect of the share of foreigners with *academic qualification* observed in districts with a high share of natives with the same qualification is inconsistent with the findings from the main models (Figure 5), where this paper estimates an average null-effect. Foreigners with an *academic qualification* might also self-select into districts with a high share of academically qualified natives, which arguably might be districts in which voters have more open attitudes towards immigration in general and are less likely to vote for the AfD.

⁴ To avoid problems arising from multicollinearity, the paper excludes the shares of natives with the respective qualification levels from the models, because they are each highly correlated with the dummy variables constructed for this test. The full models are reported in Table A3 in the Appendix.

Figure 7. Predicted values of AfD vote share conditional on the share of foreigners with respective level of qualification for high and low share of natives with same qualification. The slopes and 95% confidence intervals refer to the results reported in Table A3 in the Appendix. The sample median of the variables *share of foreigners with no qualification*, *share of foreigners with professional qualification*, and *share of foreigners with academic qualification* is 2.55, 3.50 and 0.99.



Conclusion

Although the exact theoretical explanations are contested, previous research shows that the presence of immigrants differently affects natives' attitudes towards immigration for different levels of immigrant skill (Hainmueller & Hopkins, 2014; Malhotra et al., 2013; Mayda, 2006; Rhein & Spilker, 2022; Scheve & Slaughter, 2001). The insight from previous literature that natives are generally more opposed to lower-skilled immigrants compared to highly-skilled immigrants suggests that such considerations also play a role when it comes to the votes for "anti-immigration" parties. This paper has showed that the share of foreigners with no and with low-levels of professional qualification is positively related to AfD vote shares while the share of foreigners with an academic qualification has no such effect. The main results of this paper are therefore largely consistent with previous work considering individual attitudes, as it shows that on the aggregate level, the presence of immigrants with different skill levels has varying effects on electoral behaviour. Other work looking at electoral behaviour has reported positive effects of the presence of immigrants on vote shares of right-wing and radical right parties (Barone et al., 2016; Edo et al., 2019; Halla et al., 2017; Otto & Steinhardt, 2014). By showing that the presence of foreigners has varying effects on the votes for the AfD in Germany, this paper contributes to the generalization of similar results from France (Harmon, 2018) and the U.S. (Mayda et al., 2022). The consistency across this limited set of countries leads to the expectation that similar results can be predicted in other countries. This might be especially the case in larger European countries where the presence of immigrants with different skill levels can be expected to vary on the same level, i.e. NUTS-3. On the other hand, varying welfare and labour market structures across countries might affect such results and future research could help identify the limits of generalisability. Importantly, this paper has found no negative effect of the presence of foreigners with an *academic qualification* on AfD vote share, while previous studies have reported a negative effect of highly skilled immigration on the votes for "anti-immigration" parties (Harmon, 2018; Mayda et al., 2022; Moriconi et al., 2022). Lastly, this paper's results only report preliminary and limited evidence in relation to labour market competition and can therefore only tentatively contribute to the ongoing debate about the so-called *Labor Market Competition Hypothesis* (Malhotra et al., 2013; Rhein & Spilker, 2022; Scheve & Slaughter, 2001).

While the results are mostly consistent with the theoretical expectations and findings from relevant literature, this paper has limitations as discussed earlier. The non-random locations of foreigners and other unobserved endogenous factors might affect the results, which implies that the results remain correlational to a certain extent. Immigrants with lower levels of professional qualifications might self-select into districts that already are more prone to voting for the AfD for reasons not observed by this paper's methodology. Furthermore, the specific origin of foreigners might be correlated with their qualification. Stereotypical or xenophobic judgements towards immigrants from non-European or non-Western countries, who might also systematically exhibit lower levels of professional qualification, could have affected the

results. Further research could help clarify the causal pathways through which immigrant skill levels influence native citizens voting for populist radical right parties.

These results might also help explain dynamics in European party landscapes regarding the topic of immigration. Some research suggests that mainstream parties respond to the success of radical right parties in altering their positions towards immigration (Abou-Chadi, 2016; Abou-Chadi & Krause, 2020). In that light, the latest “Skilled Immigration Act” in Germany (Bundesregierung, 2023) could be seen as an attempt to relatively increase higher-skilled immigration compared to lower-skilled immigration, thereby, tackle the electoral fortunes of the AfD. Furthermore, the empirical observation that low-skilled immigration has the potential to increase votes for “anti-immigration” parties could also be understood as motivation for legislators to reduce immigration of lower qualified migrants in order to reduce votes for the populist radical right parties. While this can be seen as one possible implication of this paper’s results and also that of previous studies (cf. Harmon, 2018; Moriconi et al., 2022), it should be noted that politicians and parties themselves play an important role in influencing citizens’ attitudes towards immigration (Vrânceanu & Lachat, 2021). The behaviour of so-called mainstream parties and radical right or “anti-immigration” parties should not be left unnoticed when it comes to the political space in which citizens shape their attitudes towards immigration and their decision for whom to vote.

Lastly, the data used in this paper does not allow accounting for sector-specific differences. Yet when it comes to the effects of immigration on labour competition, sector-specific differences might play an important role. Future research could focus on the electoral consequences of immigration to different industrial sectors, as has been done in a similar manner concerning individual attitudes by Malhotra et al. (2013). More generally, the results have shown that immigrants’ characteristics can differently affect electoral behaviour and the vote share of radical right parties. Future research might turn to other characteristics of immigrants in order to gain a more refined and complete picture of how immigration affects the votes of radical right parties. In that regard, one interesting question would be whether the presence of immigrants that migrated for different reasons, i.e. persecution or economic reasons, also has varying effects on voting behaviour because it has been previously shown to affect individual attitudes towards immigration (Bansak et al., 2016; Hainmueller & Hopkins, 2015).

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Appendix

Table A1. Effects on AfD Vote Share

	<i>Dependent Variable:</i>			
	AfD Vote Share (%)			
	I	II	III	IV
Total Share of Foreigners in Workforce	0.190***			
	(0.051)			
Share of Foreigners with No Qualification		0.899***		
		(0.149)		
Share of Natives with No Qualification		-0.096		
		(0.087)		
Share of Foreigners with Qualification			0.915***	
			(0.097)	
Share of Natives with Qualification			0.311***	
			(0.029)	
Share of Foreigners with Academic Qualification				0.029
				(0.237)
Share of Natives with Academic Qualification				-0.352***
				(0.053)
Logged Population	-0.814***	-0.785***	0.181	0.014
	(0.185)	(0.186)	(0.202)	(0.190)
Share of Youth	0.278**	0.231*	0.319***	0.141
	(0.118)	(0.120)	(0.099)	(0.110)
Share of Elderly	0.583***	0.571***	0.353***	0.463***
	(0.078)	(0.077)	(0.068)	(0.073)
Share of Foreigners	0.083	0.025	0.137***	0.298***
	(0.057)	(0.048)	(0.051)	(0.036)
Unemployment Rate	-0.135*	-0.100	0.111	-0.319***

	<i>Dependent Variable:</i>			
	AfD Vote Share (%)			
	I	II	III	IV
	(0.074)	(0.073)	(0.071)	(0.060)
GDP Per Capita (in thousands)	0.005	0.014*	0.026***	0.032***
	(0.009)	(0.009)	(0.007)	(0.007)
East Germany	11.256***	11.071***	11.018***	13.006***
	(0.471)	(0.650)	(0.389)	(0.440)
University	0.248	0.302	0.175	0.285
	(0.250)	(0.247)	(0.225)	(0.240)
Urban	-1.340***	-1.502***	-0.213	-0.443*
	(0.278)	(0.276)	(0.248)	(0.252)
Election 2021	-3.268***	-3.461***	-2.867***	-2.577***
	(0.236)	(0.236)	(0.196)	(0.218)
Constant	2.261	3.737	-29.439***	-0.095
	(4.068)	(4.170)	(4.770)	(3.745)
Observations	800	800	800	800
R2	0.744	0.750	0.793	0.767
R2 Adj.	0.740	0.746	0.789	0.763

Regression coefficients shown with robust standard errors in parentheses.

p < 0.1, ** p < 0.05, *** p < 0.01

Table A2. Effects of Changes in the Share of Foreigners (between 2017 and 2021) on AfD Vote Share in 2021

	<i>Dependent Variable:</i>			
	AfD Vote Share (%)			
	I	II	III	IV
Change in Total Share of Foreigners in Workforce	0.441**			
	(0.176)			
Change in Share of Foreigners with No Qualification		0.460*		
		(0.259)		
Change in Share of Natives with No Qualification		-1.945***		
		(0.386)		
Change in Share of Foreigners with Qualification			2.226***	
			(0.488)	
Change in Share of Natives with Qualification			0.207	
			(0.159)	
Change in Share of Foreigners with Academic Qualification				-1.031
				(0.866)
Change in Share of Natives with Academic Qualification				-1.600***
				(0.354)
Logged Population	-0.617**	-0.340	-0.471*	-0.236
	(0.249)	(0.260)	(0.257)	(0.263)
Share of Youth	0.421***	0.491***	0.340**	0.160
	(0.154)	(0.151)	(0.153)	(0.163)
Share of Elderly	0.682***	0.706***	0.635***	0.493***
	(0.109)	(0.103)	(0.104)	(0.101)
Share of Foreigners	0.190***	0.190***	0.136***	0.236***
	(0.044)	(0.043)	(0.048)	(0.053)
Unemployment Rate	-0.159*	-0.027	-0.013	-0.225***
	(0.081)	(0.084)	(0.087)	(0.084)

Dependent Variable:

AfD Vote Share (%)

	I	II	III	IV
GDP Per Capita (in thousands)	0.001 (0.010)	-0.007 (0.009)	0.008 (0.011)	0.022** (0.011)
East Germany	11.030*** (0.705)	13.080*** (0.698)	10.921*** (0.702)	10.508*** (0.762)
University	0.043 (0.341)	0.003 (0.317)	0.052 (0.325)	-0.049 (0.320)
Urban	-1.629*** (0.385)	-1.265*** (0.367)	-1.268*** (0.365)	-1.175*** (0.366)
Constant	-7.425 (5.738)	-13.284** (5.628)	-7.848 (5.600)	-0.780 (5.351)
Observations	400	400	400	400
R2	0.787	0.804	0.800	0.805
R2 Adj.	0.782	0.799	0.795	0.799

Regression coefficients shown with robust standard errors in parentheses.

$p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table A3. Interaction Effects with High Share of Natives with same Level of Qualification

	<i>Dependent Variable:</i>		
	AfD Vote Share (%)		
	I	II	III
Share of Foreigners with No Qualification	0.709*** (0.184)		
High Share of Natives with No Qualification	-0.893 (0.597)		
(Share of Foreigners with No Qualification)*	0.264		
(High Share of Natives with No Qualification)	(0.162)		
Share of Foreigners with Qualification		0.665*** (0.112)	
High Share of Natives with Qualification		-1.084* (0.646)	
(Share of Foreigners with Qualification)*		0.518***	
(High Share of Natives with Qualification)		(0.153)	
Share of Foreigners with Academic Qualification			0.920* (0.556)
High Share of Natives with Academic Qualification			1.691*** (0.571)
(Share of Foreigners with Academic Qualification)*			-2.107***
(High Share of Natives with Academic Qualification)			(0.538)
Logged Population	-0.750*** (0.188)	-0.630*** (0.182)	-0.299 (0.191)
Share of Youth	0.237** (0.120)	0.296*** (0.109)	0.264** (0.107)
Share of Elderly	0.582*** (0.077)	0.538*** (0.076)	0.550*** (0.074)
Share of Foreigners	0.047	0.001	0.316***

Dependent Variable:

AfD Vote Share (%)

	I	II	III
	(0.049)	(0.049)	(0.037)
Unemployment Rate	-0.143*	0.072	-0.347***
	(0.074)	(0.075)	(0.061)
GDP Per Capita (in thousands)	0.014	0.012	0.013*
	(0.009)	(0.008)	(0.007)
East Germany	11.137***	11.722***	12.028***
	(0.567)	(0.480)	(0.455)
University	0.268	0.291	-0.077
	(0.246)	(0.235)	(0.240)
Urban	-1.498***	-1.045***	-1.068***
	(0.278)	(0.275)	(0.280)
Election 2021	-3.449***	-3.309***	-2.850***
	(0.236)	(0.217)	(0.233)
Constant	2.668	-0.680	-2.963
	(4.049)	(3.819)	(3.882)
Observations	800	800	800
R2	0.750	0.767	0.758
R2 Adj.	0.746	0.763	0.754

Regression coefficients shown with robust standard errors in parentheses.

p < 0.1, ** p < 0.05, *** p < 0.01