

MIGRATION SHOCKS, ELECTIONS, AND POLITICAL SELECTION

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Abstract

This paper analyzes the electoral performance of local council candidates with an immigrant background. Do voters evaluate these candidates differently when a new wave of refugee immigrants arrives? We study this question using hand-collected candidate-level data on municipal elections (2001-2021) and detailed administrative data on asylum seekers for the German state of Hesse. We rely on existing machine learning classification tools to infer the immigrant background from candidates' names. Descriptively, candidates with an immigrant background face a small electoral disadvantage relative to candidates without an immigrant background. Using a difference-in-differences strategy with continuous treatment, we find that the intake of asylum seekers in the relevant municipality increases the chances of candidates with an immigrant background to get elected into the council.

Keywords: Political selection, local councils, voting behavior, refugee migration

JEL codes: D72, J15, H70, F22

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1 Introduction

Recent years saw the onset of local as well as global crises that prompted considerable migratory movements. The deterioration of living standards due to conflict, economic hardships, and climate change in various parts of the world have increased the number of asylum seekers arriving in European countries. In the fall of 2015, there was an unexpected shock of large numbers of asylum seekers being allocated to German municipalities. We study whether a sudden surge in local asylum seeker arrival and intake influences the electoral performance of candidates with an immigrant background in local elections in the German state of Hesse.¹ This will allow us to measure whether there are spillovers from sudden changes in the composition of the local population to the electoral performance of political candidates that share the relevant characteristics with the people arriving.

From a theoretical perspective it is not clear how the arrival of asylum seekers affects voters' perception and evaluation of candidates with an immigrant background. More contact with and exposure to immigrants may reduce prejudice and aversion to foreigners (Allport, 1954). Previous literature on the role of gender in politics shows that voters discriminate against female candidates and that such biases can be overcome by exposure to female mayors or other female politicians in office (Baskaran and Hessami, 2018). A similar argument can be made with regard to citizens being exposed to immigrants and their personal stories of how and why they left their home countries. On the other hand, the arrival of fairly large numbers of asylum seekers at once can create a perceived group threat that enhances aversion against outgroup members (Sidanius and Pratto, 1999). One could argue that with a higher local asylum seeker intake citizens might develop an anti-immigration attitude and therefore become more reluctant to support candidates with an immigrant background.

¹The term of "immigrant background" is based on the German term *Migrationshintergrund*. These citizens are German nationals that have ancestors who migrated to Germany in the past. Typically, the reason for migration was the active recruitment of workers during the 1960s to cater the labor demand of German firms.

Our paper is related to the literature on the political consequences of refugee migration.² Exploiting institutionalized allocation rules, Dustmann *et al.* (2019) find that the presence of refugees increases the support for right-wing parties in Denmark, especially in rural areas. Dinas *et al.* (2019) find that the presence of refugees on Greek islands increases the vote share of the largest right-wing party. In the German context, Bredtmann (2022) finds that the inflow of refugees is associated with an increase in right-wing voting in Rhineland-Palatine, especially if refugees are hosted in large facilities.³ Zimmermann and Stutzer (2022) show that the presence of refugees affects citizens' voting behavior in Swiss referendums. Due to the presence of refugees, citizens vote more conservatively on topics related to immigration. Contact with refugees matters, however. Right-wing voting decreases when locals frequently interact with refugees: In Austria, the increase in right-wing voting is only observed in municipalities where refugees pass by on their way to Germany, not in municipalities that host refugees (Steinmayr, 2021). Similarly, Gamalerio *et al.* (2018) and Vertier *et al.* (2020) find a negative effect of moderately sized refugee centers on right-wing votes shares in Italian and French municipalities, respectively.⁴

We contribute to this literature in two distinct ways. First, we move beyond aggregate vote shares of parties typically used as outcome and examine the effect of the intake of asylum seekers on individual candidates' electoral performance. For this, we make use of the preferential voting in Hessian municipal elections. Comparing the list rank of candidates before and

²There is a large literature on the political consequences of immigration. Most studies find a positive effect of immigration on vote shares of right-wing/anti-immigrant parties across different European countries (Otto and Steinhardt, 2014; Mendez and Cutillas, 2014; Barone *et al.*, 2016; Halla *et al.*, 2017; Harmon, 2018; Edo *et al.*, 2019). An exception is Lonsky (2021) who finds that immigration decreases right-wing voting in Finland.

³Overall, results from Germany are mixed. Kellermann and Winter (2021) and Tomberg *et al.* (2021) find a positive effect of refugee presence on right-wing voting in federal elections. Conversely, Gehrsitz and Ungerer (2022) do not find an increase in right-wing voting in the aftermath of 2015 in three German states.

⁴Countries neighboring conflict rather than European countries typically receive the largest numbers of asylum seekers. Altındağ and Kaushal (2020) examine the political consequences of refugee migration from Syria finding no significant effects on election outcomes in Turkey.

after the election provides us with a measure for individual electoral performance. Second, we examine the effect on a specific subset of candidates that are affected differently by the intake of asylum seekers: Candidates that have a history of migration themselves. These candidates are of particular interest since their *perceived* cultural similarity to asylum seekers can have positive or negative consequences in the voting booth. In addition, their electoral fortunes have not been analyzed in the context of German local elections yet.^{5,6}

We use hand-collected data on council elections at the candidate level in the German state of Hesse in 2001, 2006, 2011, 2016, and 2021. Given this time series of data, we are able to trace candidates' individual electoral performance in up to four subsequent elections across 426 municipalities.⁷ Municipal councilors in the German state of Hesse are elected via an open-list system (preferential voting). Voters are therefore able to allocate their votes to specific candidates running on party lists. We use the difference between initial list ranks and final list ranks as a measure for how voters evaluate candidates. In addition, we examine the election probability for candidates with an immigrant background. Information on the migration history of candidates is not available directly. To proxy candidates' immigrant background, we rely on information that every voter comes across at the ballot-box: candidates' names as they appear on the ballot. We use existing classification tools – Ethnea and NamePrism – to determine

⁵Street (2014) examines the performance of candidates with an immigrant background in German federal elections. He documents an electoral disadvantage for candidates with an immigrant background. Thrasher *et al.* (2015) find that candidates with non-European names perform worse in British elections than candidates with British names. Broockman and Soltas (2020) use data from US presidential primaries in Illinois and show that non-white delegates receive fewer votes. Portmann and Stojanović (2021) find that candidates with a foreign name are more frequently crossed out in modifiable ballots in Switzerland.

⁶The local context asks for a different approach to identify the immigrant background since the large number of candidates requires automated classification of candidate names.

⁷Due to municipal mergers the number of municipalities decreased to 422 between elections 2016 and 2021.

whether a name stems from a German-speaking region. These classification tools use machine learning algorithms and large training datasets to classify names by broad regions of origin.⁸

We combine our unique electoral data at the candidate level with data on the number of asylum seekers in the municipalities, which we obtain from exclusive access to register data on recipients of asylum seeker's benefits by the Hessian Statistical Office. The arrival of asylum seekers in Hesse varied across time and municipalities. Our main approach is to exploit the arrival of asylum seekers starting in the late summer of 2015 to see whether their intake changed voters' perception of candidates with an immigrant background.

To estimate the effect of asylum seeker intake on local council candidates' individual electoral performance, we employ a difference-in-differences strategy with continuous treatment. Specifically, in our main estimations we compare candidates with an immigrant background running in municipalities with varying levels of asylum seeker intake. We also examine the timing of the effect. The election of 2016 took place right after the increase in asylum seeker numbers. Until the election of 2021, when many asylum seekers had already been allocated to individual municipalities, local citizens already had plenty of time to make contact with their new neighbors. This setting is ideal as it allows us to observe whether there are any immediate effects as well as whether these effects persist. Callaway *et al.* (2021) show that identifying a causal effect using a continuous difference-in-differences strategy requires a number of strong assumptions. We provide evidence that these assumptions are satisfied in our case.

We find that in municipalities which saw a larger intake in asylum seekers in 2015, the average rank improvement of candidates with an immigrant background is significantly higher. That is, candidates ended up on a better list rank than they started from. Similarly, a higher share of candidates with an immigrant background is elected into the council in these municipalities. We document a sizable effect: An increase in the treatment by one standard deviation increases the share of elected candidates with an immigrant background by almost 6 percentage points.

⁸Both tools are publicly available and free of charge. They can be accessed using these links: abel.lis.illinois.edu/cgi-bin/ethnea/search.py and www.name-prism.com.

The effect starts in 2016 and extends to the election of 2021. The effect is more pronounced for candidates at the top of their list. Also, the effect is stronger for male candidates with an immigrant background that face more electoral discrimination to begin with. Our findings are not affected by the overall political leaning of the municipality or whether there were acts of violence against asylum seekers in the municipality. Taken together, our results are in line with the contact hypothesis and related empirical findings (Steinmayr, 2021). Thus, policy-makers should implement policies that facilitate interaction between asylum seekers and locals to reduce prejudice and repercussions in the voting booth.

2 Background

2.1 Local governments in Hesse

Municipal council elections take place every five years in March. Councilors are elected using an open-list system (preferential voting). That is, voters can allocate up to as many votes as the council has seats to the candidates themselves. They are able to split votes across lists (*Panaschieren*) and to cast up to three votes for a single candidate (*Kumulieren*). It is also possible to allocate all votes to a list instead of single candidates.⁹ The overall share of votes a list receives determines its number of seats.¹⁰ Candidates are ranked based on their individual number of votes. Candidates with a rank smaller or equal to the number of seats their list received enter the council. Councils vary in size, ranging from eleven seats in the small village of Cornberg to ninety-three seats in Frankfurt.

Candidates running for a council seat need to be at least eighteen years old and need to have lived in the municipality at least for three months. Candidates must be either German or EU citizens. Information on nationality is not provided on the ballot, however.

⁹There is descriptive evidence from Hessian municipal elections that voters do make use of the possibility to allocate candidate specific votes (Tiefenbach, 2012).

¹⁰More specifically, the allocation of seats follows the Hare-Niemeyer approach. Total seats in council are multiplied by the number of votes for each list and divided by the total number of votes.

Both supra-regional parties and local lists compete in the municipal elections. The conservative CDU and the center-left SPD are present in almost all municipalities (Figure A.1). In most municipalities there is also at least one local list. Right-wing parties, such as the AfD, compete only in few municipalities, however. As a consequence, voters that are discontent with immigration are often not able to express their opinion by voting for a right-wing party.

Hessian municipalities are in charge of the provision of various public goods, such as child care, civil protection, infrastructure, or social services. To perform their duties, they collect revenues from taxes on businesses, general property, and agricultural property. In addition, they receive transfers from other tiers of government. Municipalities enjoy a relatively high level of autonomy. Municipal councilors take the most important political decisions. The mayor is the head of administration but does not have a vote in council decisions (Hessami, 2018).

2.2 Asylum seeker allocation

The allocation of asylum seekers across Germany partly follows institutionalized rules. Asylum seekers are allocated to the sixteen federal states using the allocation scheme *Königsteiner Schlüssel*. The scheme is based on tax revenue (two thirds) and population (one third). Hesse is obliged to host 7.4% of all asylum seekers in Germany. Within Hesse, allocation to its twenty-one counties and five large county-free cities follows a similar rule-based approach. Allocation is staggered by population. Counties with more than 400,000 inhabitants have to host 8.5% of all asylum seekers allocated to Hesse. At the other end of the scale, counties with less than 100,000 inhabitants have to host 1%. There are deductions for counties that already have a high share of non-German population and for counties which host one of the central asylum seeker-facilities (*Verteilungs- und Unterbringungsgebührenverordnung*).¹¹

Counties allocate asylum seekers to municipalities within their borders, both to larger facilities with shared rooms, but also to regular flats. This is done in a non-systematic way

¹¹Details on the population thresholds are collected in Table A.5. Central asylum seeker facilities are located in Gießen, Neustadt/Hessen, Bad Arolsen, Büdingen, Kassel, and Darmstadt. These large facilities are typically former military or police bases.

and in coordination with municipalities. As a consequence, allocation is likely endogenous to the availability of appropriate housing, local political conditions, and subject to non-arbitrary choices by municipalities and counties.¹² Asylum seekers, however, have little say in where to live, at least during the first months after arrival. Thus, self-selection into municipalities is less of an issue in this context (Bredtmann, 2022).

3 Data

3.1 Candidate-level data

Election data Data on election results at the candidate level is not available centrally for most of the elections in Hesse. Thus, we hand-collected information on candidates by gathering files from municipalities' websites and bulletins. The collection of candidate data follows Baskaran and Hessami (2018) and is described in more detail in the online appendix. We have information on candidates' name, list, initial list rank, final list rank, votes, and gender. For a subset there is information on age and occupation. The data covers the elections of 2001, 2006, 2011, 2016, and 2021.¹³

[Figure 1 goes here]

Figure 1 shows the coverage of our dataset, both in terms of municipalities and candidates. For the elections in 2016 and 2021 we cover all 426 and 422 Hessian municipalities, respectively. Coverage declines for elections further in the past. In total, our sample includes 159,626 candidates. About 31% of candidates succeeded in getting elected into a municipal

¹²As an example, there is anecdotal evidence on asylum seeker allocation from the county of Gießen. The administration of the county suggest that local conditions should be taken into account when allocating asylum seekers. Large asylum seeker facilities should be well connected to child care facilities, schools, medical support, and public transportation (Landkreis Gießen, 2015). In addition, there is evidence that the availability of housing played a major role for allocation in general (Schaub *et al.*, 2020).

¹³This corresponds to all election years since the introduction of the open-list system in 1999.

council. Table A.1 in the online appendix shows summary statistics on candidate characteristics: About 27% of candidates are female, candidates are on average 52 years old, and about 31% of candidates have a university degree.

Name classification Candidates in Hesse need to be German citizens or stem from a member country of the European Union. Information on nationality or the immigrant background of candidates is not provided on the ballot. Instead, we use candidate’s names to proxy for perceived immigrant background.¹⁴

93,032 unique candidate names are classified by the two publicly available classification tools Ethnea and NamePrism. Both approaches use machine learning algorithms to classify names by broad linguistic regions. Ethnea uses a training dataset containing the names of authors in bio-medicine scientific journals. The approach provides probabilities for first and last name separately, as well as the joint probability (Torvik and Agarwal, 2016). NamePrism is trained on a large dataset of names from 118 countries. Names stem from e-mail contacts and Twitter users (Ye *et al.*, 2017). Overall Ethnea seems to be more strict as the number of candidates with an immigrant background is lower than for NamePrism. We thus use Ethnea in our baseline and NamePrism for a robustness test.¹⁵

We provide a list of the most frequent German and non-German names in Tables A.2 and A.3 of the online appendix. We complement the binary classification of immigrant background by introducing a number of indicator variables corresponding to linguistic origins. Ethnea

¹⁴To correctly identify candidates’ origin from their name, one must assume that both first and second name reflect the origin even generations later. Naturally, marriage and assimilation to German naming conventions, casts doubt on this assumption. Gerhards and Hans (2008) provide evidence that in Germany children of immigrants frequently receive first names from their parents origin, however. Beside this, for our approach the perceived immigrant background is more relevant than the true immigrant background.

¹⁵We pre-process candidate names by removing all special characters, accent marks, and umlauts. In addition, we strip names from titles such as *Dr.* or *Prof.*, the German equivalents of PhD and professor. Both tools were accessed in an automated way using webscraping in late 2021 and early 2022.

provides classification for 22 origins. The most common surnames in each region are collected in Table A.4 of the online appendix.

Naturally, both approaches cannot provide full accuracy. In particular, surnames that are frequent in German, Dutch, French, and English result in ambiguous classification patterns. Consider two candidates *David Martin* and *Lena Martin*, two common German names. They are both classified as English by Ethnea. Given that our setting is the German state of Hesse, voters likely assess both names as German, however. This higher chance due to the setting itself is not incorporated in the algorithms. Thus, we check ambiguous cases manually to increase precision. Details on our approach are provided in Section A.2 of the online appendix.

Rank improvement To measure electoral performance we use the rank improvement of candidates. It reflects how voters perceive candidates relative to list leaders.¹⁶ We define the rank improvement following Baskaran and Hessami (2018):

$$\text{Rank improvement} = \left(\frac{\text{initial rank} - \text{final rank}}{\text{council size}} \right) \times 100 \quad (1)$$

Ultimately, the final list rank will determine whether a candidate enters the council: The numerically smaller the final list rank, the higher the personal votes she received and the higher the chance to enter the council. Conversely, if a candidate has a numerically larger final list rank than initial list rank, corresponding to a negative rank improvement, she is demoted by the voters. For comparability we normalize the rank improvement by dividing it by council size. Figure A.5 shows the distribution of the rank improvement. While the distribution is centered around zero, there is a considerable share of candidates that move up or down on the list. In addition, we calculate the normalized initial list rank, i.e. the list rank before the election relative to the total number of candidates on a list.

¹⁶Note that using the final list rank alone is not sufficient to assess performance, since it might be affected by initial list rank, e.g. due to higher visibility on the list.

3.2 Municipality-level data

Municipality data We obtain information on population, area, employment, number of non-German citizens, and various fiscal variables from the Hessian Statistical Office. Since elections always take place in early March, we combine election data and municipal data from the previous year. Data on buildings and empty flats are obtained from the German census of 2011. Descriptive statistics for municipality-level data can be obtained from Table 1.

[Table 1 goes here]

Asylum seeker data The number of asylum seekers at the municipality level is obtained from administrative data on recipients of asylum seeker's benefits. Numbers are based on a dataset covering the universe of people that receive these benefits in a given year. Data at the individual level is aggregated at the municipality level by using the address of recipients.¹⁷ The number of asylum seekers can be split by gender, age, asylum status, type of accommodation, employment status, and country of origin. Numbers are available from 2005 until 2020. As with municipality characteristics, we lag asylum seeker numbers by one year.

[Figure 2 goes here]

Subfigure (a) of Figure 2 shows the arrival of asylum seekers over time. The number of asylum seekers increased considerably in 2015 and subsequently declined after 2016. The majority of asylum seekers is male (63.8%). Subfigure (b) shows the share of asylum seekers by countries of origin. The three most common countries of origin are Syria (27.5%), Afghanistan

¹⁷Due to privacy protection this data is available only via the research data center of the German Statistical Office. Access is subject to a fee. The Hessian Statistical Office provided the specific dataset for this analysis, for which we are grateful. Due to privacy protection, asylum seeker numbers below three and above zero, as well as other values that allow conclusions to individuals are censored by the statistical office (2005–2019). Since 2020, all asylum seeker numbers are rounded up or down to the nearest value divisible by five to ensure privacy protection. Figure A.6 shows the extent of censored data across years. Bredtmann (2022) uses the same data on recipients of asylum seeker's benefits for Rhineland-Palatine.

(18.2%), and Eritrea (7.6%). Subfigure (c) of Figure 2 shows the distribution of the share of asylum seekers relative to population size across Hessian municipalities as of 2020. There is considerable variation across municipalities. Municipalities, that host an exceptionally high share of asylum seekers, are often found in relatively rural areas.¹⁸

3.3 Candidates with an immigrant background

We first descriptively examine the context in which candidates with an immigrant background participate in municipal elections. Across the five elections we cover about 6% of candidates that have an immigrant background.¹⁹ During our period of observation the share of candidates with an immigrant background is consistently increasing. The share of candidates with an immigrant background is 8.1% for the election of 2021 using our preferred classification (Subfigure (a) of Figure 3).

[Figure 3 goes here]

Subfigure (b) of Figure 3 shows the spatial distribution of the share of candidates with an immigrant background. The share is higher in urban areas, such as Frankfurt, Kassel, or Fulda. In addition, there is a large cluster of municipalities that exhibit a high share of candidates with an immigrant background around Frankfurt, the economic center of Hesse. In the rural areas of northern Hesse there is a substantial number of municipalities that do not have candidates with an immigrant background at all.

Most frequently, candidates with an immigrant background have a Turkish, Slavic, French, English, Italian, or Hispanic background. Figure 4 shows the share of candidates from a spe-

¹⁸One reason is that often former military bases are located in these municipalities. Due to the availability of large numbers of rooms these bases are well suited to host asylum seekers. Examples include Wolfhagen, Lorch, or Schwarzenborn. Berbée *et al.* (2022) use the exogenous variation in asylum seekers across German counties due to military bases for identification. This approach is not feasible here due to the low number of bases in Hesse.

¹⁹This points to a substantial under-representation of candidates with an immigrant background. About 27% of citizens in Germany have an immigrant background (Statistisches Bundesamt, 2022). Only about 11% of parliamentarians in the German *Bundestag* have an immigrant background (DW, 2021).

cific background for the major parties competing in municipal elections. The left-wing parties *Linke* and *Gruene* have a relatively high share of candidates with an immigrant background, especially candidates with a Turkish, Slavic, and Arabic background. The parties at the center of the political spectrum, e.g. CDU and FDP, exhibit a lower share of candidates with immigrant background. Interestingly, the right-wing AfD has a relatively high share of candidates with an immigrant background. This is driven by candidates with a Slavic background. In line with their anti-immigration rhetoric, there are almost no candidates with a Turkish, Arab, African, or Asian background on their lists.

[Figure 4 goes here]

We next examine the electoral performance of candidates with an immigrant background relative to their non-immigrant background peers. Subfigure (a) of Figure 5 illustrates the normalized rank improvement of candidates with and without immigrant background over time. Candidates with an immigrant background end up on a worse rank than they started from. That is, on average their rank improvement is negative in all election years we cover. On the contrary, the rank improvement of candidates without an immigrant background is close to zero.²⁰ Subfigure (b) of Figure 5 shows the normalized initial list rank of candidates over time. Candidates with an immigrant background have a slightly higher initial list rank, corresponding to a worse placement on the list. Taken together, this indicates an electoral disadvantage of candidates with an immigrant background. While this is mere descriptive evidence and we cannot rule out confounding factors, this observation is in line with previous findings (Street, 2014; Thrasher *et al.*, 2015; Portmann and Stojanović, 2021).

[Figure 5 goes here]

²⁰This descriptive finding is confirmed by estimation results collected in Table A.7 of the online appendix. Details on the estimation can be obtained in Section A.3. Note, that across all candidates on a list the individual rank improvements add up to zero as the number of ranks is fixed. In practice, occasional missing information on initial or final rank explains small deviations (see Table A.1). When comparing subsamples of candidates, however, their respective average rank improvements must not necessarily add up to zero. This is due to differences in the magnitude of the rank improvements as well as in the number of candidates between the subsamples.

4 Empirical specification

4.1 Difference-in-differences specification

In Section 3, we document an electoral disadvantage for candidates with an immigrant background. We now examine how an exogenous shock can affect the electoral performance of candidates with an immigrant background. Clearly, the most notable event related to immigration in recent years is the intake of asylum seekers during the summer and fall of 2015.

We examine how the intake of asylum seekers at the municipal level affects the electoral performance of candidates with an immigrant background. For this, we use a difference-in-differences strategy with continuous treatment.²¹ The unit of observation is a municipality-election pair. We limit the sample to municipality-election pairs in which at least one candidate with an immigrant background participated and asylum seeker data is available (about 81% of municipality-election pairs). Detailed information on the reason why municipality-election pairs are missing is provided in Table A.6. We then estimate the following two-way fixed effects specification (TWFE).

$$y_{m,t} = \alpha + \sum_{t=2006}^{2021} \beta(\Delta \text{Asylum seekers}_{m,2015} \times T_t) + \gamma_m + \zeta_t + \varepsilon_{m,t}. \quad (2)$$

$y_{m,t}$ are outcomes capturing the average electoral performance of candidates with an immigrant background in municipality m in election year t . We consider the municipal average of the individual normalized rank improvement and the share of elected candidates with an immigrant background relative to all candidates with an immigrant background. The continuous treatment $\Delta \text{Asylum seekers}_{m,2015}$ is the change in the population share of asylum seekers between 2014 and 2015 in municipality m .²²

²¹Our specification is inspired by Lindo *et al.* (2019). A similar approach is used by Duflo (2001). In addition, the recent advances in the literature on difference-in-differences with continuous treatment by Callaway *et al.* (2021) are applied in Borg *et al.* (2022).

²²The treatment is calculated $\Delta \text{Asylum seekers}_{m,2015} = \frac{\text{Asylum}_{m,2015} - \text{Asylum}_{m,2014}}{\text{Pop}_{m,2014}}$. We multiply the treatment by 100, such that the number can be interpreted per 100 inhabitants. A similar specification is used by Bredtmann

We interact this change in the population share of asylum seekers with indicators for the election years 2006, 2016, and 2021. The election of 2011 serves as the base year. That is, we compare electoral outcomes in municipalities that were exposed differently to the inflow of asylum seekers in 2015 separately by election year. By including municipality (γ_m) and year (ζ_t) fixed effects we control for time-invariant municipality characteristics and time-varying shocks affecting all municipalities. In addition, we control explicitly for the share of non-Germans in the municipality, the number of candidates with an immigrant background, the share of female councilors, and an indicator for municipalities with below median population. Standard errors are clustered at the municipality level.

4.2 Identifying assumptions

The identifying assumption is that electoral outcomes of candidates with an immigrant background would have evolved similarly in municipalities with higher and lower intake of asylum seekers in 2015 – in the absence of the treatment. We can corroborate the validity of the common trends assumption by showing the absence of pre-trends as shown in Figure 6 and Table 2.²³ Callaway *et al.* (2021) show that to estimate the average causal response to the treatment (ACRT) – i.e. the causal effect of a marginal increase in the treatment – additional assumptions need to hold. These assumptions go beyond the standard notion of common trends. If there is treatment heterogeneity across doses, i.e. the reaction to a marginal increase differs across municipalities, there is selection bias in addition to the actual effect. Put differently, municipalities face an incentive to select themselves into a lower or higher treatment dose based on expected costs or benefits from hosting asylum seekers. This bias does not disappear by assuming stan-

(2022). The asylum seeker data reveal a striking outlier. Gießen is home to the central reception facility for asylum seekers in Hesse and thus saw by far the largest inflow of refugees. We exclude Gießen in all regressions. Figure A.7 of the online appendix shows the distribution of the treatment.

²³Additional descriptive evidence for the notion of common trends is provided in Figure A.8 of the online appendix.

dard common trends. Instead, municipalities that received different doses of the treatment also need to be suitable counterfactuals.

Thus, we examine the distribution of observable municipality characteristics across five doses of the treatment. Since asylum seeker allocation is neither randomized nor follows a rule-based approach down to the municipality level, local conditions determine the share of asylum seekers endogenously. A key determinant is the availability of housing (Bredtmann, 2022; Berbée *et al.*, 2022). Also, financial characteristics and the share of non-German citizens could affect the willingness to host a large number of asylum seekers. Figure A.9 shows boxplots of a number of municipality characteristics across five doses of the treatment. Population density, population shares by age group, and the share of non-Germans are balanced across doses. In a similar vein, financial characteristics of municipalities seem to be broadly similar. Importantly, there are no large differences in the share of empty flats as of 2011, a key indicator for the availability of housing before the arrival of asylum seekers.²⁴ Additional graphical evidence for this is provided in Figure A.10: The distribution of the share of empty flats is similar across the five doses of the treatment.

5 Asylum seekers and electoral performance

5.1 Results of the difference-in-differences estimation

Table 2 collects the results for our baseline specification. We first examine the average rank improvement of candidates with an immigrant background in Models (1) to (3). We find that a higher change in the population share of asylum seekers results in a higher average rank improvement of candidates with an immigrant background. The coefficient is positive and significant at the 5% level for election years 2016 and 2021.

For the 2021 election, an increase by one standard deviation in the treatment is associated with an increase in 1.5 ranks in a hypothetical council with 100 seats. This corresponds to an

²⁴This is particularly important since we cannot control for the share of empty flats directly as it is available for 2011 only and thus collinear with the fixed effects.

increase of half a rank in a council with the average size of 37 seats. Results are similar when including covariates and when estimating a reduced form of our baseline specification, i.e. by pooling election years.²⁵ Importantly, the coefficient is insignificant and close to zero for the election years of 2001 and 2006, i.e. before the intake of asylum seekers began. This absence of pre-trends supports the notion of common trends.

Models (4) to (6) show the results for the average share of elected candidates with an immigrant background relative to all candidates with an immigrant background. There is a significantly positive effect in election years 2016 and 2021. In 2021, an increase of the change in population share of asylum seekers by one standard deviation increases the share of elected candidates with an immigrant background by 5.7 percentage points. This effect is sizable, given that 28% of candidates with an immigrant background are elected into the council. Again, there is no evidence for differential pre-trends before 2016. The coefficients of the interaction terms between the treatment and the elections of 2001 and 2006 are insignificant. The effect is similar in size when including covariates and when pooling election years.

[Table 2 goes here]

In summary, a higher change in the population share of asylum seekers increases the rank improvement of candidates with an immigrant background and also their chances of getting elected into the council. The effect starts with the election of 2016 and extends to 2021. This baseline finding is illustrated graphically in Figure 6.

[Figure 6 goes here]

The improvement in the electoral performance of candidates with an immigrant background is consistent with the contact hypothesis (Allport, 1954). A higher intake of asylum seekers facilitates interaction of the electorate with people from different origins and thus increases tolerance. A number of studies find a decrease in aggregate right-wing vote shares due

²⁵The treatment is zero before the election year of 2016 and corresponds to the change in the population share of asylum seekers thereafter.

to the intake of asylum seekers (Gamalerio *et al.*, 2018; Vertier *et al.*, 2020; Steinmayr, 2021). Our results show that these findings extend to the individual electoral performance at the local level.

5.2 Robustness

We find a significantly positive effect of the change in the population share of asylum seekers on the electoral performance of candidates with an immigrant background. Next, we examine the robustness of this finding. Results are collected in Tables 3 and 4. First, we ensure that the way to determine the immigrant background does not drive our results. For this, we define the immigrant background by using NamePrism and Ethnea jointly. This more strict classification produces a smaller number of candidates with an immigrant background. The effect is similar in size and significant for the share of elected candidates with an immigrant background. The effect is insignificant for the average rank improvement of candidates with an immigrant background, however.

[Table 3 goes here]

We also assess the robustness of our findings with respect to the specification of our model. The effect also extends to models limited to 2011 and 2016 – the elections before and directly after the arrival of asylum seekers in 2015. Also, results are qualitatively unchanged when transforming the treatment using the inverse hyperbolic sine. This additionally ensures that outliers do not drive our main results. Furthermore, we find similar results when using the share of asylum seekers relative to population size as of 2015 (instead of the change thereof) as treatment. Coefficients are less significant, however.

[Table 4 goes here]

Next, we assess the robustness of our findings to the initial list rank of candidates with an immigrant background. The initial list rank likely affects the number of votes candidates receive since list rank signals candidate motivation for office and affects visibility. At the

same time, we abstain from controlling for the initial list rank since it is likely affected by a candidates' immigrant background itself. We ensure that our findings do not capture the mere position of candidates by splitting the sample into candidates with an immigrant background in the top and bottom half of the list. Results are robust, both for the average rank improvement and the share of elected candidates with an immigrant background. The effect is stronger and more significant for candidates in the top half of the list.

Finally, we address the possibility of bias due to selection into treatment explicitly. As the allocation of asylum seekers is rule-based only down to the county level, municipalities are able to influence the number of asylum seekers they receive. To ensure that our results are not driven by selection on expected gains or losses from asylum seekers, we exclude municipalities at the tails of the distribution of the treatment (Marie and Zwiers, 2022; Arold, 2022). Municipalities that end up with such extreme values had the strongest incentive to influence the number of asylum seekers or were most successful in doing so. In Figure 7 we repeat our baseline regression while excluding the top and bottom 15%, 10%, 7.5%, and 5% of the distribution of the change in the population share of asylum seekers, respectively. The effect on the share of elected candidates with an immigrant background remains positive and similar in size. Coefficients are less precisely estimated and turn insignificant in some cases, however. Findings are less robust for the average rank improvement of candidates with an immigrant background.

5.3 Effect Heterogeneity

5.3.1 Municipality characteristics

We next examine the heterogeneity of our findings with respect to different municipality characteristics. We focus on the share of candidates with an immigrant background that are elected into the council as an outcome since these results are more robust than our findings for the average rank improvement. Results are collected in Table 5.

Rural municipalities We examine whether the effect is different in rural municipalities in Model 1. Küpper (2016) provides an index that captures several dimensions of rurality. The

index includes aspects such as population density, remoteness, the prevalence of agricultural areas, or house type. In addition, the socio-economic circumstances of municipalities are considered. We interact this index with the change in the population share of asylum seekers. There is no significant additional effect for more rural municipalities. The direct effect remains significantly positive, as well as similar in size.

County seat Along similar lines, we examine whether there is a differential effect in municipalities that are also a county seat (*Kreisstädte* or *Kreisfreie Städte*). We interact an indicator for the 23 county seats with the change in the population share of asylum seekers (Model 2).²⁶ There is a significantly positive additional effect on the performance of candidates with an immigrant background in county seats. While the effect is not driven by the rurality of municipalities as shown in Model (1), the effect still seems to be more pronounced in the largest and most central municipalities of Hesse.

[Table 5 goes here]

Political leaning We examine political aspects of municipalities next (Model 3). Voters' overall political leaning likely matters for their electoral choices at the local level. Yet, we cannot use e.g. the right-wing vote share in municipal elections as a proxy, since not in all municipalities a right-wing party is on the ballot. Instead, we use the vote share for far-right parties in the federal election of 1998, i.e. before the first local election included in our sample. At this point in time, no single party of the far-right was able to gather a large vote share in federal elections. Thus, we aggregate the vote share of several smaller parties.²⁷ We construct an indicator that is one if a municipality had an above median vote share for the far-right in

²⁶There are twenty-one counties and five self-governed cities in Hesse. In two cases, self-governed cities are also the seat of the surrounding county. The 23 county seats include almost all larger cities in Hesse. As stated above, we do not include the county seat Gießen in our analysis.

²⁷Data is obtained from the Federal Election Office. We include *Deutsche Volksunion* (DVU), *Nationaldemokratische Partei Deutschlands* (NPD), *Die Republikaner* (REP), *Pro Deutsche Mitte - Initiative Pro D-Mark* (pro DM), *Bund freier Bürger* (BfB), and *Ab jetzt ... Demokratie durch Volksabstimmung - Politik für die*

1998. We interact this indicator with the change in the population share of asylum seekers. There is no significant additional effect in municipalities that saw more voting for the far-right.

Violence In addition to the overall political leaning, the presence of demonstrations, vandalism, or even assault against asylum seekers can hint towards the attitudes harboured in municipalities. The non-profit organizations *Amadeo Antonio Stiftung* and *Pro Asyl* collected acts of violence against asylum seekers across Germany in 2014 and 2015. The data are made usable by Benček and Strasheim (2016). For Hesse, the dataset includes 182 incidents in 99 municipalities. We interact an indicator for at most one act of violence against asylum seekers with the change in the population share of asylum seekers (Model 4). There is no significant additional effect in municipalities that saw acts of violence against asylum seekers. These findings have to be taken with a grain of salt due to the relatively low number and of incidents, however.

Housing As indicated earlier, the intake of asylum seekers is at least partially determined by the availability of appropriate housing. During the fall of 2015, housing for asylum seekers was often improvised and had to be provided on short notice. This included the usage of camps, former military bases, or disused hotels. To the best of our knowledge there is no comprehensive dataset capturing the availability of these housing options at the municipality level. Instead, we use the share of empty flats relative to all flats. These data are collected during the German census of 2011.

We interact the share of empty flats with the change in the population share of asylum seekers. There is a significantly negative additional effect (Model 5). That is, the effect of asylum seekers on the performance of candidates with an immigrant background is smaller in municipalities that have a higher share of empty flats. This might be due to the selection of municipalities that were required to host asylum seekers purely due to their housing availability but where otherwise skeptical about them living there. Also, the share of empty flats captures economic conditions of municipalities. Relatively poor municipalities might have seen the fi-

Menschen (Deutschland). All but the small and short-lived *pro Dm* where under surveillance of the federal or state office for protection of the constitution at least once during their existence.

nancial benefits of hosting refugees, while the electorate in this municipalities did not approve the intake of asylum seekers. In any case, the direct effect remains significantly positive indicating that the availability of housing alone does not explain our main result.

Local economy Finally, we examine the heterogeneity of the effect with respect to economic conditions in municipalities directly. We use the overall tax revenue per capita a municipality collects. This includes revenues from business taxes as well as property taxes. Again, this measure is interacted with the change in the population share of asylum seekers (Model 6). There is no additional effect in municipalities that are able to collect more taxes. The direct effect of the change in the population share of asylum seekers falls just short of significance.

5.3.2 Candidate characteristics

Next, we assess which candidates with an immigrant background benefit from the intake of asylum seekers. Again, we focus on the share of candidates with an immigrant background that are elected into the council as outcome. In all models we limit the sample to candidates with the respective personal characteristic before calculating the municipal average of the outcome. Results are collected in Table 6.

Gender We examine the gender of candidates in Models (1) and (2). The effect is insignificant and considerably smaller for female candidates with an immigrant background. The effect is significantly positive for male candidates with an immigrant background. At the same time, the overall electoral disadvantage is larger for male candidates with an immigrant background. Thus, it stands to reason that they benefit more from the intake of asylum seekers.

[Table 6 goes here]

Education In Models (3) and (4) we examine the educational background of candidates. We consider candidates with a university degree and candidates without a university degree separately. The effect is significant for both, candidates with and without university degree.

Coefficients are almost identical in size. Thus, the education of candidates does not drive the effect.

Age Similarly, we do not find that the age of candidates with an immigrant background affects our main finding. When splitting candidates into below or equal 40 years and above 40 years, both coefficients are significant and qualitatively similar (Model 5 and 6). If anything, the coefficient for candidates above 40 years is somewhat smaller.²⁸

6 Conclusion

We examine how the intake of asylum seekers at the local level affects the electoral performance of candidates with an immigrant background. We find evidence for an electoral advantage of candidates with an immigrant background in municipalities that saw a relatively larger intake of asylum seekers. Our difference-in-differences estimates indicate that candidates with an immigrant background have a higher rank improvement and are more likely to get elected into the council. The effect starts at the election of 2016 and extends to the election of 2021. The effect is stronger for candidates in the top half of their list and for male candidates. Also, we provide evidence that the effect is more pronounced in municipalities that are the seat of the county administration and municipalities that had a higher share of empty flats in 2011.

These findings are consistent with the hypothesis that contact with asylum seekers reduces prejudice and expression of discontent in the voting booth. Consequently, policy makers should facilitate the interaction of asylum seekers with the local population, e.g. by providing funding for workshops, language classes, or for volunteer work by local initiatives. In addition, contact can be facilitated by housing asylum seekers in regular flats and by providing access to the labor market.

²⁸We also examine the incumbency status of candidates with an immigrant background. The coefficient for the sample of the incumbents with an immigrant background is very imprecisely estimated, potentially due to the small sample size. Thus, we abstain from reporting these estimates and drawing conclusions.

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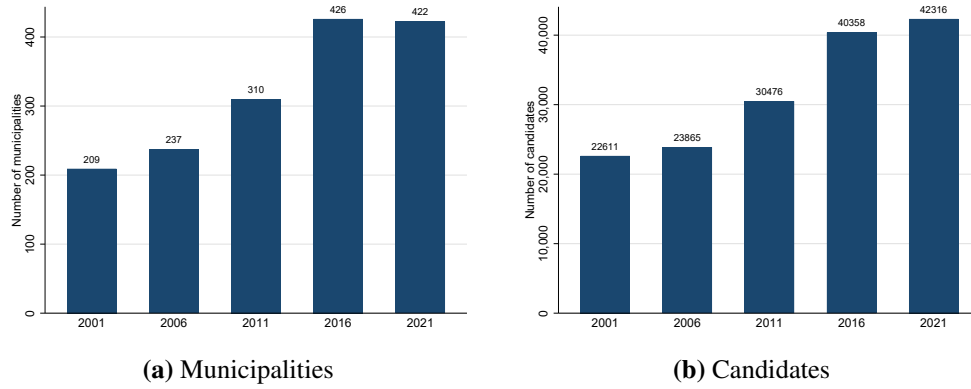


Figure 1: Data coverage This graph shows the number of municipalities (a) and candidates (b) in our sample. We have full coverage for election years 2016 and 2021.

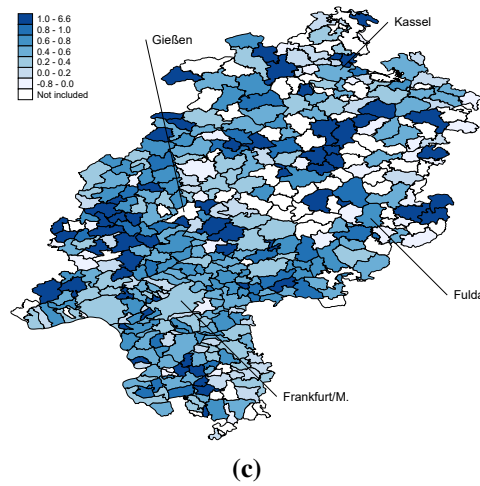
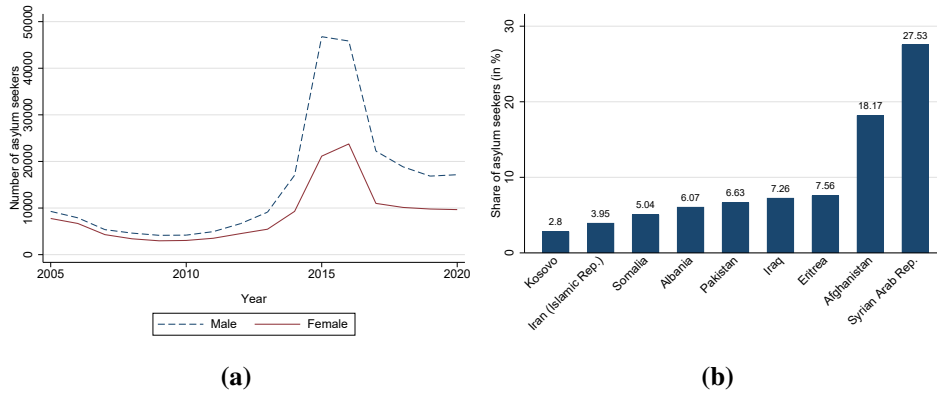


Figure 2: Gender, origin, and spatial distribution of asylum seekers in Hesse This graph shows the number of asylum seekers over time, separate by gender (a). In addition, the Top-10 countries of origin as of 2015 are depicted (b). The map in subfigure (c) shows the change in the population share of asylum seekers between 2014 and 2015 in Hessian municipalities (per 100 inhabitants). Municipalities in red are not included in the estimation sample. Grey areas are uninhabited (*Gemeindefreie Gebiete*).

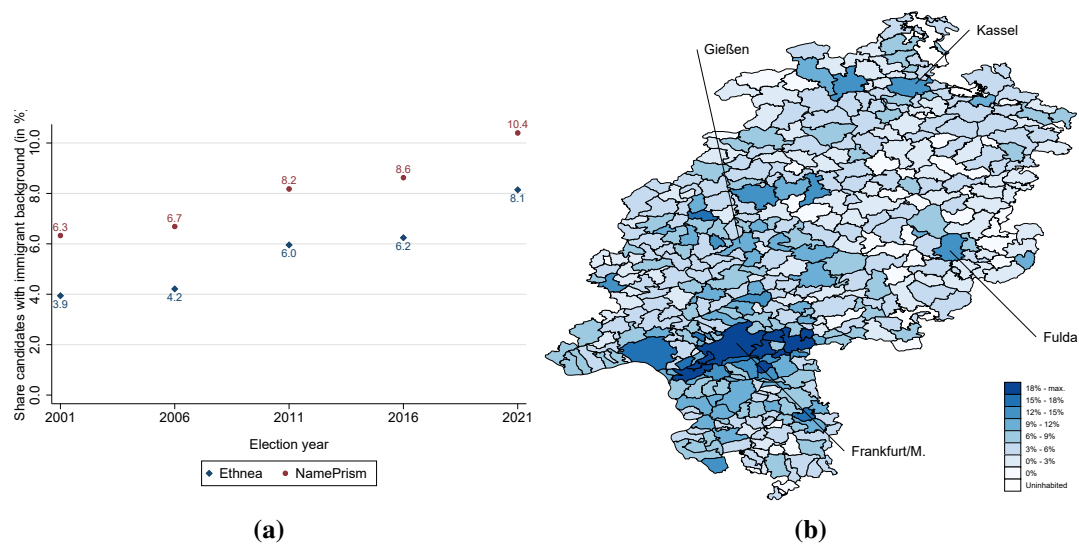


Figure 3: Candidates with an immigrant background in Hesse This graph shows the share of candidates with an immigrant background across election years (a). NamePrism and Ethnea classification are shown for comparison. In addition, this graph shows the share of candidates with an immigrant background in the 422 Hessian municipalities for the election of 2021 (b). Immigrant background is determined using Ethnea.

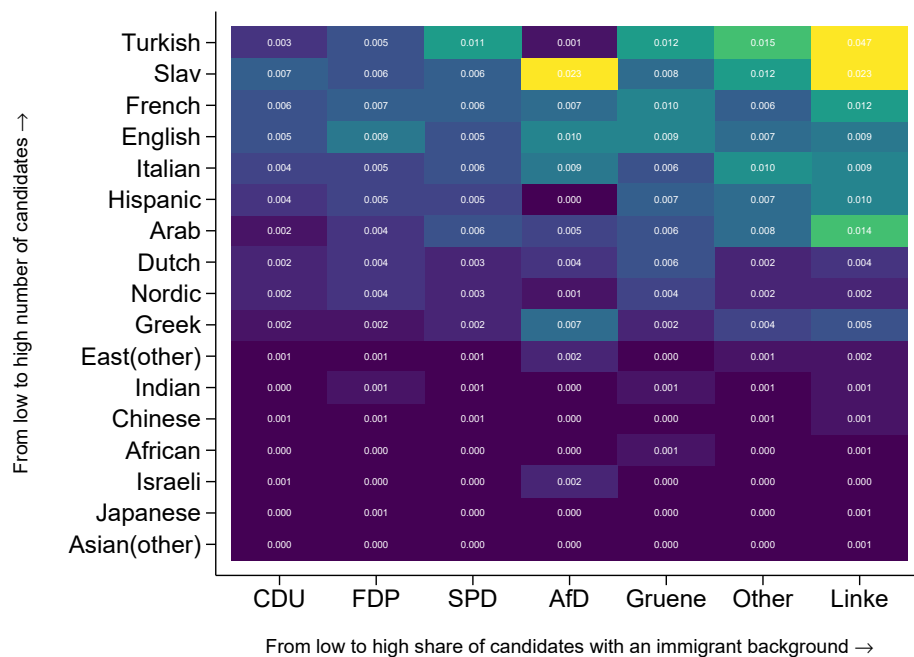


Figure 4: Candidate origin by list This graph shows the share of candidates with an immigrant background by list. The immigrant background is divided into the different origins determined by the classification tool. The axes are sorted as indicated in the graph. For example, 4.7% of candidates on the list *Linke* have a Turkish background. This is also the list with the highest share of candidates with an immigrant background overall. In addition, Turkish is the most frequent background among the candidates with an immigrant background.

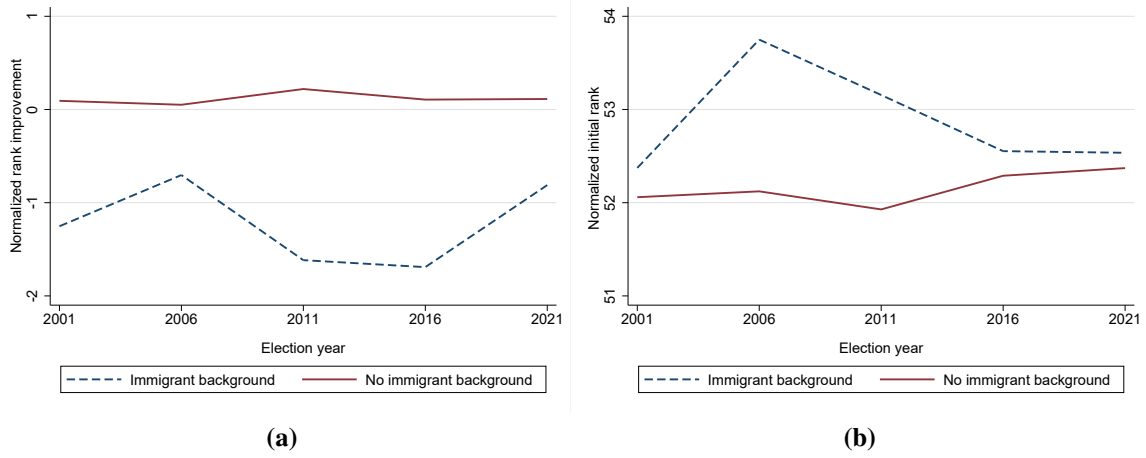


Figure 5: Electoral performance over time This graph shows the average normalized rank improvement for candidates with and without immigrant background (a). The normalized rank improvement is the difference between initial and final list rank, relative to council size. If a candidate has a higher final list rank than initial list rank – corresponding to a negative rank improvement – she is demoted by the voters. Subfigure (b) shows the normalized initial rank of candidates with and without immigrant background. The normalized initial rank is the initial rank of a candidate relative to the total number of ranks on a list. Note, that a higher initial rank corresponds to a worse placement on the list.

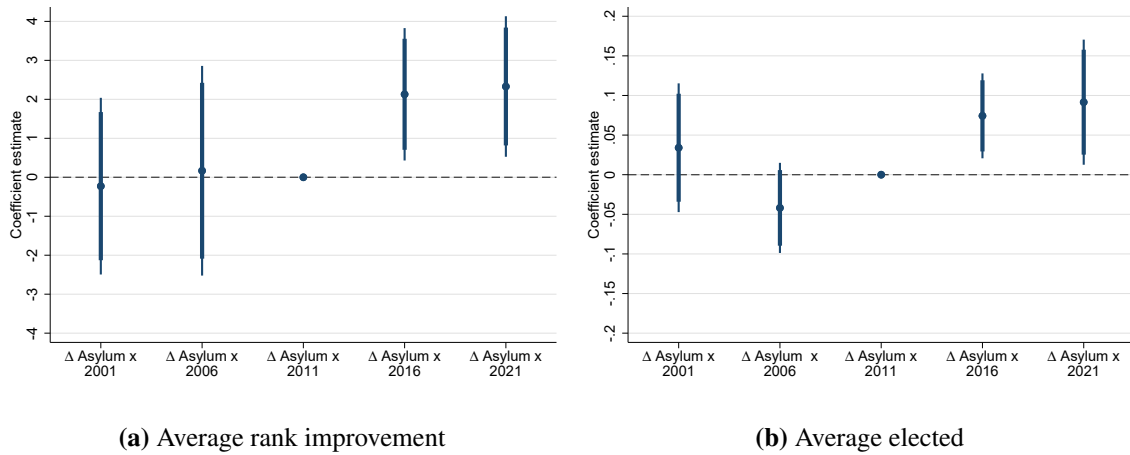
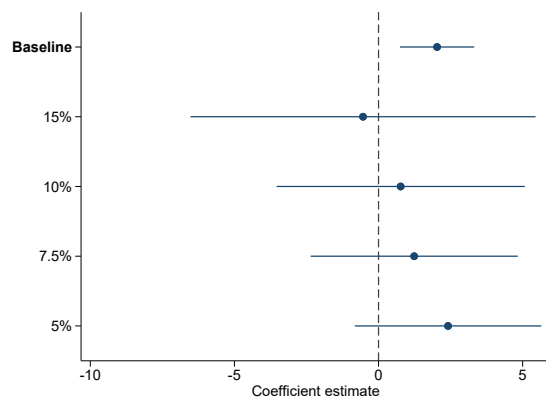
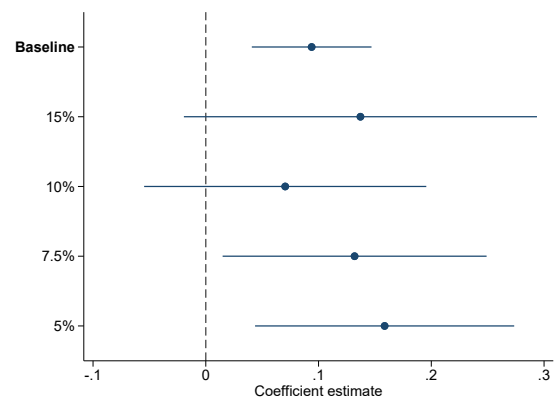


Figure 6: Timing of the effect These graphs show coefficients of the interaction terms in Equation (2). The continuous treatment is the change in the population share of asylum seekers between 2014 and 2015. The outcomes are the average rank improvement of candidates with an immigrant background (a) and the share of elected candidates with an immigrant background (b). Regressions include year and municipality fixed effects, as well as control variables. 2011 serves as the base year. 90% and 95% confidence intervals indicated in the graph.



(a) Average rank improvement



(b) Average elected

Figure 7: Excluding outliers This graph shows the coefficients of regressions that relate the change in the population share of asylum seekers to the specified outcomes. Before estimation, the 15%, 10%, 7.5%, and 5% most extreme cases at the top and the bottom of the distribution of the treatment are excluded. Baseline estimates indicated for comparison. 95% confidence intervals indicated in graph.

Table 1: SUMMARY STATISTICS OF MUNICIPALITY CHARACTERISTICS

Variable	Count	Mean	SD	Min.	Max.
Avg. rank improvement	1256	-1.70	9.72	-40	65
Avg. elected	1256	0.27	0.29	0	1
Δ Asylum seekers	1256	0.63	0.67	-0.8	6.6
Share of asylum seekers	1256	0.01	0.01	0.0	0.2
Rural municipality	1256	0.58	0.49	0	1
Share of non-Germans	1256	0.09	0.06	0.0	0.4
No. candidates with imm. backgd.	1256	7.35	17.12	1	376
Share of female councilors	1256	0.25	0.10	0.0	0.5
Index rural	1256	-0.35	1.17	-5	1
County seat	1256	0.08	0.27	0	1
Above med. right 1998	1256	0.50	0.50	0	1
Incident	1256	0.27	0.44	0	1
Share of empty flats	1256	0.04	0.02	0.0	0.1
Tax revenue p.c. (in 1000€)	1256	0.96	0.57	0.3	9.3

Notes: This table reports summary statistics on key variables for the estimation sample (based on Table 2, Model 1). All variables are at the municipality level. Average rank improvement is the average across all candidates with an immigrant background. Average elected is the share of elected candidates with an immigrant background relative to all candidates with an immigrant background. Δ Asylum seekers is the change in the population share of asylum seekers between 2014 and 2015. Share of asylum seekers is the number of asylum seekers relative to population. Rural municipality is an indicator that is one if its population is below the median. Share of non-Germans is the number of non-German citizens relative to population. Share of female councilors is the number of women in council relative to all councilors. Index rural is capturing the rurality of a municipality (Küpper, 2016). County seat is an indicator that is one for municipalities that are the seat of a county. Above median right 1998 is an indicator that is one if the far for far-right vote share was above the median in the federal election of 1998. Incident is an indicator that is one if there were acts of violence against asylum seekers in the municipality. Share of empty flats is the share of unleased flats relative to all flats. Tax revenue p.c. is revenue from business and property tax relative to population.

Table 2: DIFF-IN-DIFF ESTIMATIONS: ASYLUM SEEKER INTAKE AND ELECTORAL PERFORMANCE OF CANDIDATES WITH AN IMMIGRANT BACKGROUND

	Avg. norm. rank improvement			Avg. elected		
	(1)	(2)	(3)	(4)	(5)	(6)
Δ Asylum seekers			2.236*** (0.660)			0.083*** (0.024)
Δ Asylum seekers $\times$ 2001	-0.132 (1.069)	-0.228 (1.153)		0.045 (0.036)	0.034 (0.041)	
Δ Asylum seekers $\times$ 2006	0.313 (1.280)	0.168 (1.368)		-0.029 (0.028)	-0.042 (0.029)	
Δ Asylum seekers $\times$ 2016	2.017** (0.864)	2.129** (0.864)		0.070*** (0.027)	0.074*** (0.027)	
Δ Asylum seekers $\times$ 2021	2.241** (0.911)	2.329** (0.917)		0.089** (0.039)	0.092** (0.040)	
Mean (SD)	-1.70 (9.72)	-1.70 (9.72)	-1.79 (9.72)	0.27 (0.29)	0.27 (0.29)	0.27 (0.30)
Year FE	✓	✓	✓	✓	✓	✓
Municipality FE	✓	✓	✓	✓	✓	✓
Controls		✓	✓		✓	✓
Municipalities	355	355	364	359	359	369
N	1,256	1,256	1,278	1,284	1,283	1,307

Notes: This table reports results from regressions that relate the change in the population share of refugees (Δ *Asylum seekers*) to electoral outcomes of candidates with an immigrant background. Outcomes are municipality averages. The election of 2011 serves as the base year. Models (1) to (3) use the average rank improvement as outcome. Models (4) to (6) use the share of elected candidates with an immigrant background as outcome. In Models (2), (3), (5), and (6) we add an indicator for rural municipality, the share of non-Germans, the number of candidates with an immigrant background, and the share of female councilors as controls. Stars indicate significance levels at 10%(*), 5%(**), and 1%(***). Heteroscedasticity and cluster-robust standard errors in parentheses. The unit of clustering is the municipality.

Table 3: ROBUSTNESS I – ALTERNATIVE NAME CLASSIFICATION, SAMPLE PERIOD, AND TREATMENT SCALING

	Avg. norm. rank improvement			Avg. elected		
	(1) NP & Ethnea	(2) 2011 & 2016	(3) IHS	(4) NP & Ethnea	(5) 2011 & 2016	(6) IHS
Δ Asylum seekers	-0.066 (0.930)	2.666*** (0.970)		0.131*** (0.029)	0.098*** (0.028)	
IHS Δ Asylum seekers			3.294** (1.404)			0.142*** (0.042)
Mean (SD)	-1.89 (9.49)	-2.01 (9.06)	-1.79 (9.72)	0.27 (0.33)	0.29 (0.30)	0.27 (0.30)
Year FE	✓	✓	✓	✓	✓	✓
Municipality FE	✓	✓	✓	✓	✓	✓
Controls	✓	✓	✓	✓	✓	✓
Municipalities	307	230	364	311	235	369
N	1,045	462	1,278	1,072	472	1,307

Notes: This table reports results from regressions that relate the change in the population share of refugees (Δ *Asylum seekers*) to electoral outcomes of candidates with an immigrant background. The outcomes are municipality averages. Models (1) to (3) use the average rank improvement as outcome. Models (4) to (6) use the share of elected candidates with an immigrant background as outcome. In models (1) and (4) candidates are classified using both Ethnea and NamePrism. In Models (2) and (5) the estimation sample is limited to election years 2011 and 2016. In models (3) and (6) the treatment is transformed using the inverse hyperbolic sine. Stars indicate significance levels at 10%(*), 5%(**), and 1%(***). Heteroscedasticity and cluster-robust standard errors in parentheses. The unit of clustering is the municipality.

Table 4: ROBUSTNESS II – TOP AND BOTTOM RANKS

	Avg. norm. rank improvement			Avg. elected		
	(1)	(2) Top ranks	(3) Bottom ranks	(4)	(5) Top ranks	(6) Bottom ranks
Share asylum seekers	1.668** (0.690)			0.043+ (0.028)		
Δ Asylum seekers		2.294** (0.897)	1.322* (0.795)		0.154*** (0.033)	0.033* (0.019)
Mean (SD)	-1.80 (9.71)	-5.40 (10.10)	1.53 (11.13)	0.27 (0.30)	0.50 (0.38)	0.08 (0.23)
Year FE	✓	✓	✓	✓	✓	✓
Municipality FE	✓	✓	✓	✓	✓	✓
Controls	✓	✓	✓	✓	✓	✓
Municipalities	370	292	315	375	293	323
N	1,306	956	1,049	1,335	961	1,095

Notes: This table reports results from regressions that relate the change in the population share of refugees (Δ *Asylum seekers*) to electoral outcomes of candidates with an immigrant background. The outcomes are municipality averages. Models (1) to (3) use the average rank improvement as outcome. Models (4) to (6) use the share of elected candidates with an immigrant background as outcome. In models (1) and (4) the sample is limited to candidates in the top half of their list. In Models (2) and (5) the estimation sample is limited to candidates in the bottom half of their list. In models (3) and (6) the treatment is the share of refugees relative to overall population in the year before the election. Stars indicate significance levels at 15%(*), 10%(*), 5%(**), and 1%(***). Heteroscedasticity and cluster-robust standard errors in parentheses. The unit of clustering is the municipality.

Table 5: EFFECT HETEROGENEITY I: MUNICIPALITY CHARACTERISTICS

	Dep. var.: Average elected					
	(1)	(2)	(3)	(4)	(5)	(6)
Δ Asylum seekers	0.0760*** (0.025)	0.0807*** (0.023)	0.0735*** (0.019)	0.0790*** (0.023)	0.1539*** (0.059)	0.0547 (0.047)
Δ Asylum seekers $\times$ Index rural	0.0006 (0.019)					
Δ Asylum seekers $\times$ County seat		0.1125*** (0.040)				
Δ Asylum seekers $\times$ Above med. right 1998			0.0298 (0.038)			
Δ Asylum seekers $\times$ Incident				0.0274 (0.040)		
Δ Asylum seekers $\times$ Empty flats					-0.8956* (0.538)	
Tax revenues p.c.						0.0137 (0.034)
Δ Asylum seekers $\times$ Tax revenues p.c.						0.0316 (0.042)
Mean (SD)	0.27 (0.30)	0.27 (0.30)	0.27 (0.30)	0.27 (0.30)	0.27 (0.30)	0.27 (0.30)
Year FE	✓	✓	✓	✓	✓	✓
Municipality FE	✓	✓	✓	✓	✓	✓
Controls	✓	✓	✓	✓	✓	✓
Municipalities	369	369	369	369	369	369
N	1,307	1,307	1,307	1,307	1,307	1,307

Notes: This table reports results from regressions that relate the change in the population share of refugees (Δ *Asylum seekers*) to electoral outcomes of candidates with an immigrant background. Outcomes are municipality averages. The election of 2011 serves as the base year. In model (1), we interact the treatment with an index capturing the rurality of municipalities. In model (2), we interact the treatment with an indicator for municipalities that are also the seat of the county administration. In model (3), we interact the treatment with an indicator that is one if the municipality saw an above median vote share for far-right parties in the federal election of 1998. In model (4), we interact the treatment with an indicator that is one of the municipality had an anti-asylum seeker incident in the aftermath of 2015. In model (5), we interact the treatment with the share of empty flats in the municipality. In model (6), we interact the treatment with the tax revenue per capita in the municipality. Note, that we are not able to examine the direct effect of time-invariant interaction-variables, since they are captured by the fixed effects. Stars indicate significance levels at 10%(*), 5%(**), and 1%(***). Heteroscedasticity and cluster-robust standard errors in parentheses. The unit of clustering is the municipality.

Table 6: EFFECT HETEROGENEITY II: CANDIDATE CHARACTERISTICS

	<i>Dep. var.: Average elected</i>					
	(1) Female	(2) Male	(3) University	(4) No university	(5) ≤ 40 years	(6) > 40 years
Δ Asylum seekers	0.045 (0.044)	0.071** (0.032)	0.116* (0.065)	0.113*** (0.041)	0.138** (0.064)	0.081*** (0.031)
Mean (SD)	0.27 (0.35)	0.27 (0.32)	0.41 (0.40)	0.28 (0.35)	0.27 (0.35)	0.28 (0.31)
Year FE	✓	✓	✓	✓	✓	✓
Municipality FE	✓	✓	✓	✓	✓	✓
Controls	✓	✓	✓	✓	✓	✓
Municipalities	269	334	189	259	210	342
N	804	997	542	752	567	1,045

Notes: This table reports results from regressions that relate the change in the population share of refugees (Δ *Asylum seekers*) to electoral outcomes of candidates with an immigrant background. Outcomes are municipality averages. The election of 2011 serves as the base year. In model (1), we limit the sample to female candidates with an immigrant background. In model (2), we limit the sample to male candidates with an immigrant background. In model (3), we limit the sample to candidates with an immigrant background that have university education. In model (4), we limit the sample to candidates without university education. In model (5), we limit the sample to candidates with an immigrant background that are below or equal 40 years. In model (6), we limit the sample to candidates with an immigrant background that are above 40 years. Stars indicate significance levels at 10%(*), 5%(**), and 1%(***). Heteroscedasticity and cluster-robust standard errors in parentheses. The unit of clustering is the municipality.

Online appendix

A.1 Details on collection of council election data

The process of data collection is described in more detail in Baskaran and Hessami (2018). Information on the most recent election in March 2021 was collected by hand and added to the dataset. Our research assistants downloaded information on election results from the home-pages of municipalities, typically in pdf format. Then, data was transferred into standardized Excel-sheets by hand. The Excel files were then merged into one dataset using municipal code and year. Since collecting the data by hand is error-prone, a number of plausibility checks were conducted to ensure data quality. Whenever mistakes were found, they were corrected or set to missing. For the election of 2021 we cover the universe of Hessian municipalities.

A.2 Name classification

To identify candidates with an immigrant background as correctly and objectively as possible, we followed several steps. First, we pre-processed candidate names by removing or transforming all special characters, accent marks, and umlauts. In addition, we strip names from titles such as *Dr.* or *Prof.*, the German equivalents of PhD and professor. After removing duplicate names 93,032 unique candidate names remain to be classified.

The basis for our main analysis is the classification by Ethnea, a web-based publicly available classification tool (Torvik and Agarwal, 2016). It provides probabilities for 22 different linguistic origins separately for first and second name, as well as the joint probability. The algorithm determines probabilities for seven origins for each name. On average, probability drops substantially between first and second origin (see Figure A.2). Thus, the algorithm seems to be relatively sure in its first choice. We limit the data collection to the first four suggested origins. The process of data collection was done using webscraping in late 2021 and early 2022.²⁹ We notified the administrators of Ethnea and paused the scraper for one second after every query.

²⁹We used the Python package *BeautifulSoup*, which is a standard package for tasks like this.

While for many names, such as *Schneider*, *Schuster*, or *Schmidt* the algorithm performs very well, there are names where the classification is less clear. If the probability that the origin of a candidates' name is German is more than 25%, we code the candidate as no immigrant background. If the probability is below 1%, the candidate is coded as immigrant background. We examine the 4,700 names that are in between 1% and 25% manually and adjust classification where necessary. Adjustments are made based on gut feeling of the German speaking authors on the origin of the name, likely resembling the situation of voters in the booth.³⁰ In addition, we reflect the classification result by using another publicly available tool – NamePrism (Ye *et al.*, 2017) – for robustness checks.

To substantiate the classification by the two algorithms, we additionally benchmark them against human classification. We randomly draw a subsample of about 400 candidates ($\approx$ 0.25% of all candidates) and classify them manually. There is a strong overlap of human and machine classification: Ethnea (NamePrism) agrees with the human classification in 93.98% (93.48%) of cases.

The most frequent German and non-German surnames as classified by Ethnea are collected in Tables A.2 and A.3, together with the number of times a surname is classified German and non-German. The German surnames seem very plausible. It is well established that e.g. *Mueller* is one of the most frequent surnames in Germany. Prima facie, non-German names are plausible as well. However, in some cases surnames are classified both German and non-German with similar frequency. Still, among the most common non-German names there are plausible instances, such as the Turkish surnames *Yilmaz* or *Can*.

Ethnea provides information on 22 different linguistic origins. Figure A.3 shows the most frequent linguistic regions.³¹ Consistent with migration patterns in Germany during the 20th century, many names stem from Turkish, Slavic, French, Italian, or English linguistic origin.

³⁰We only change the classification into immigrant background versus no immigrant background. We are not able to check and correct the linguistic origins of names.

³¹Note, that in this case we count names as soon as the linguistic origin is among the first four origins. In the empirical analysis we use only the most likely origin.

Table A.4 shows the three most frequent surnames for each of the relevant linguistic origins. Overall the classification seems to be plausible. However, Figure A.4 shows that some linguistic origins are more similar to German than others. Specifically, English, French, Nordic, and Dutch names are frequently the second guess for German names.

A.3 Candidate level regressions

In this Section we describe the background of the estimations presented in Table A.7. In these estimations we aim to assess differences in electoral performance of candidates with and without an immigrant background. Thus, we estimate the following structural relationship.

$$y_{i,l,m,t} = \alpha + \beta \text{ImmigrantBackground}_{i,l,m,t} + \lambda_l \times \gamma_m \times \zeta_t + \varepsilon_{i,l,m,t}. \quad (3)$$

The main outcome $y_{i,l,m,t}$ corresponds to the normalized rank improvement of a candidate i on list l in municipality m in election year t . $\text{ImmigrantBackground}_{i,l,m,t}$ is an indicator that is one if the candidate has an immigrant background. In addition, we include interacted list (λ_l), municipality (γ_m), and year (ζ_t) fixed effects. That is, we compare candidates with and without immigrant background within the same municipality, the same election year, and on the same list. This specification accounts for observed and unobserved municipality, year, and list characteristics. In one model we control for gender, age, and an indicator for university education. Standard errors are clustered at the municipality of the candidate.

The identifying assumption is that candidate characteristics are orthogonal to the immigrant background of candidates, conditional on the interacted fixed effects. Candidates with and without immigrant background that run on the same list in a given election must be equal in all other observed and unobserved characteristics. If this assumption holds and still there are residual differences in outcome between the two groups this can be interpreted as electoral disadvantage based on the immigrant background. We corroborate the validity of this assumption by controlling explicitly for the most salient personal characteristics – gender, age, and education – in an additional specification. Guryan and Charles (2013) point out that in

regression-based approaches to determine electoral differences based on candidate characteristics the cautious choice of covariates is key. It is necessary to control for personal characteristics that might confound the effect while avoiding to control for variables, that are the outcome of differences in characteristics themselves. We thus do not control for political characteristics of candidates, such as initial list rank or incumbency status.

The key challenge to the assumption stated above is the self-selection of candidates with an immigrant background into local politics. We do not observe the universe of citizens but a selection of citizens that choose to run for office. Given their under-representation outlined in Section 3.1 there is a high likelihood that citizens with an immigrant background face higher barriers to entry into local politics. Consequently, candidates that chose to contest could have a compensating differential relative to citizens that abstain from running for office.³² In particular, they may be more motivated for office, affecting e.g. their effort during the campaign and thus their visibility. In such a scenario we obtain a positively selected sample of candidates with an immigrant background. Under the assumption that voters know their candidate's characteristics we would expect them to perform better than candidates without an immigrant background.

Results are collected in Table A.7. We first regress an indicator for immigrant background on the normalized rank improvement. In the subsequent models we include municipality, year, and list fixed effects. In our preferred specification, we interact the fixed effects and compare candidates with and without immigrant background that compete in the same municipality, the same election year, and on the same list. The coefficient for *ImmigrantBackground* is negative and highly significant in all specifications. Candidates with an immigrant background end up 1.7 ranks lower in a hypothetical council with 100 seats relative to their non-immigrant background peers. In the average council with 37 seats this corresponds to 0.6 ranks.³³ This

³²We lend this phrasing from Marshall (2023), who uses this term in the context of Regression Discontinuity Designs centred around close races between candidates with different characteristics.

³³In a comparable setting, Baskaran and Hessami (2018) find that closely elected female mayors positively affect the rank improvement of female candidates by 3.7 ranks per 100 seats.

electoral disadvantage of candidates with an immigrant background is in line with findings by Street (2014), Thrasher *et al.* (2015), or Portmann and Stojanović (2021).

A.4 Additional figures

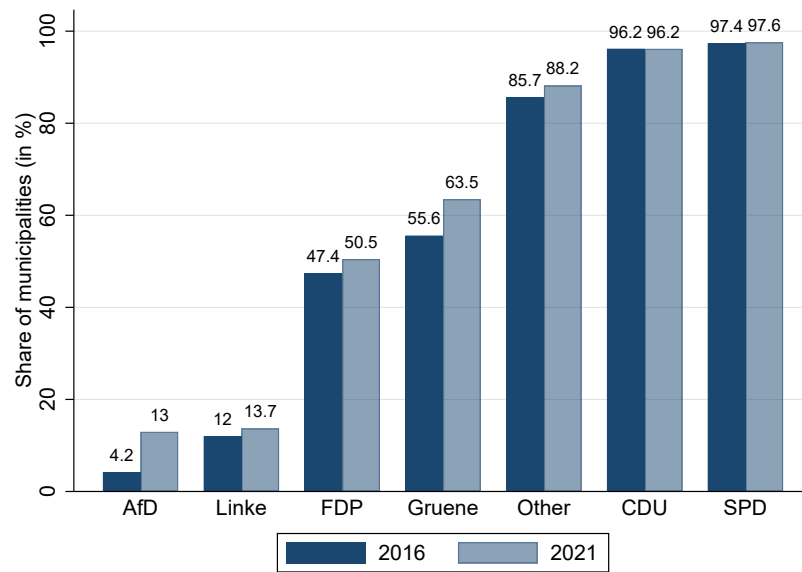


Figure A.1: Large parties in municipal elections This graph shows the share of municipalities in which larger parties participate in the municipal elections of 2016 (left) and 2021 (right).

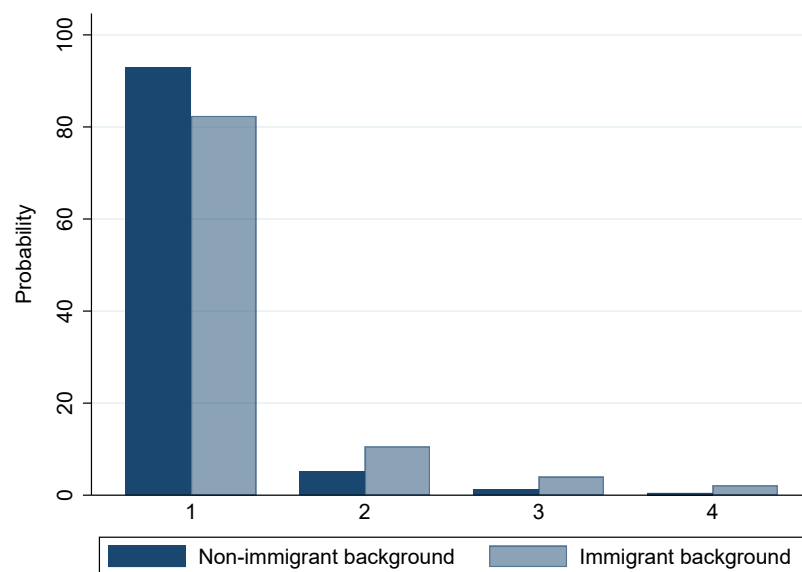


Figure A.2: (Average) Probability for the first four origins This graph shows the average probability across for the first, second, third, and fourth most likely origin. Averages are depicted separately for immigrant background and non-immigrant background candidates. Probabilities are provided by Ethnea.

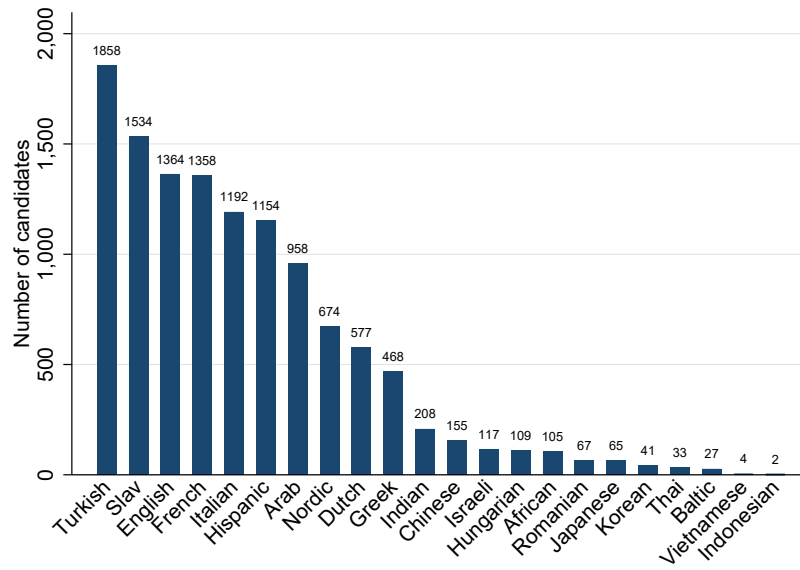


Figure A.3: Origin of non-German names This graph shows number of candidates by linguistic regions from which their non-German names originally stem. Ethnea classification is used.

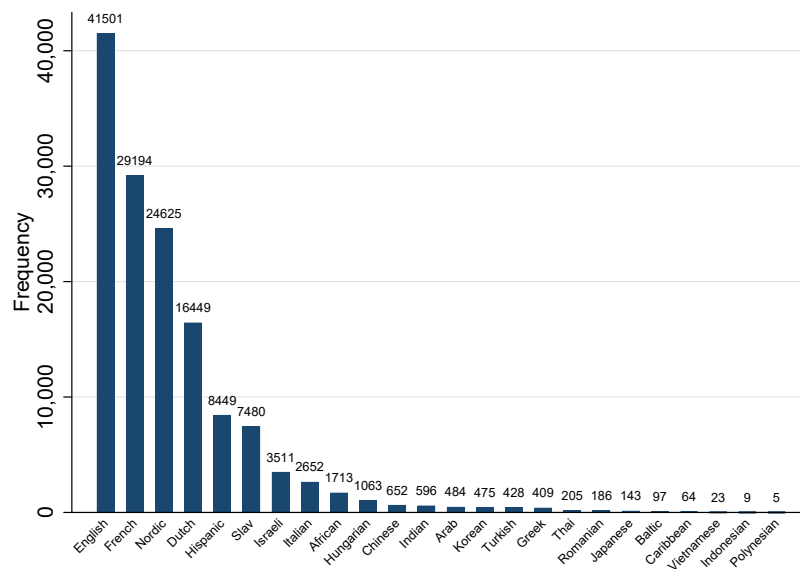


Figure A.4: Similarity to German names This graph shows the most frequent second classification for German names. That is, these categories are the second guess of the algorithm for relatively sure German names. Ethnea classification is used.

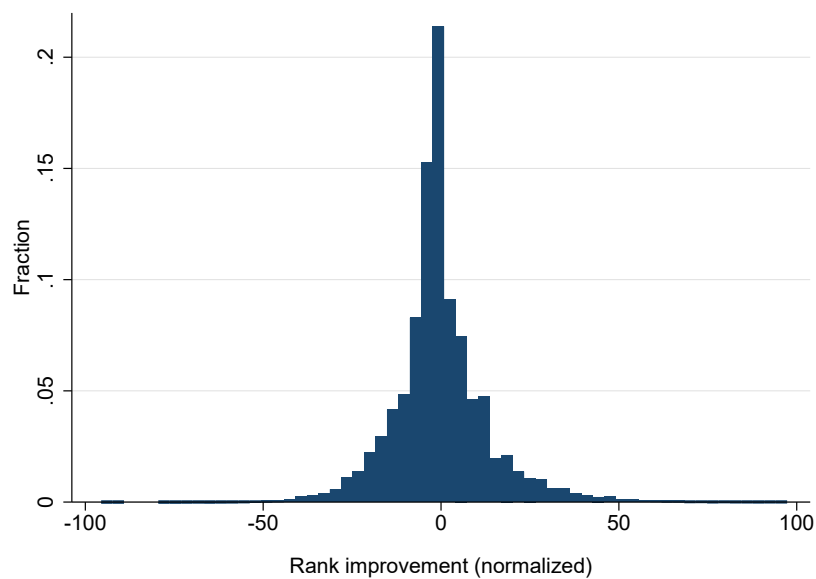


Figure A.5: Rank improvement This graph is a histogram of the rank improvement, i.e. the difference between initial list rank and final list rank relative to council size, for all candidates.

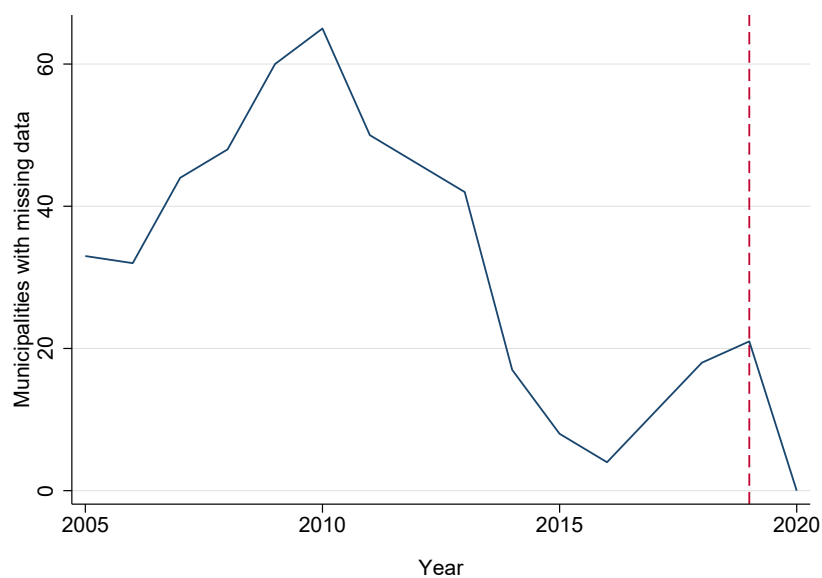


Figure A.6: Censored asylum seeker data This graph depicts the number of municipalities that are subject to censoring over time. Due to privacy protection asylum seeker numbers below three and above zero, as well as values that allow conclusions about censored values are censored by the statistical office (2005–2019). Since 2020, all asylum seeker numbers are rounded up or down to the nearest value divisible by five.

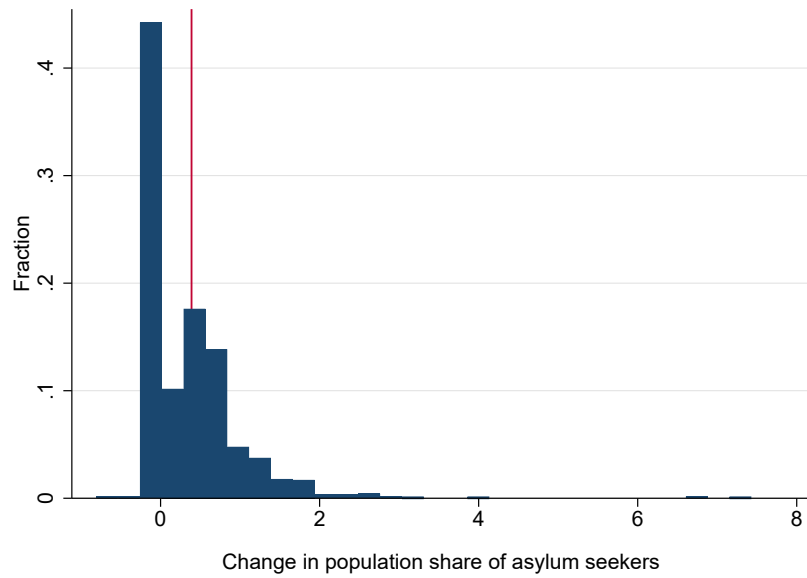


Figure A.7: Change in population share of asylum seekers This graph shows the distribution of the change in the population share of asylum seekers. The red line indicates the mean (0.4 per 100 inhabitants).

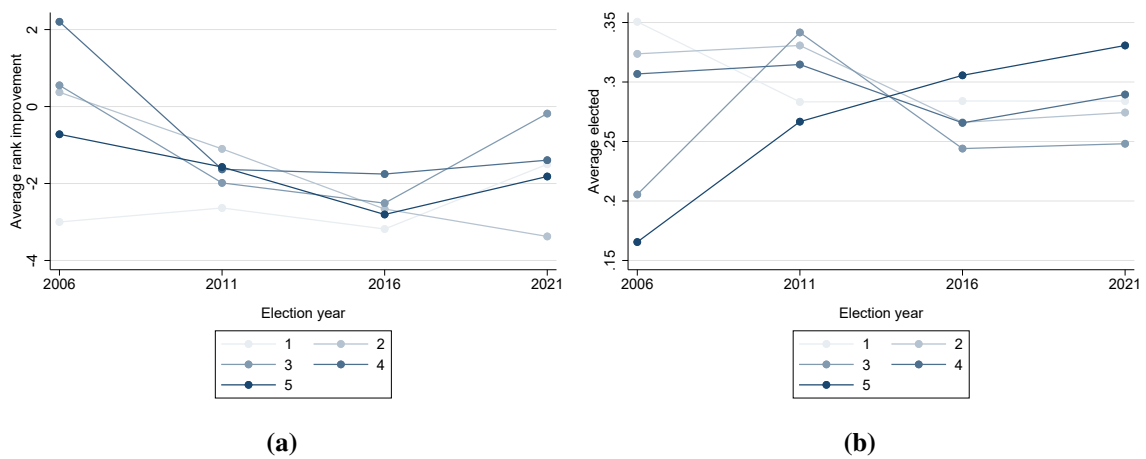


Figure A.8: Common trend This graph shows the average rank improvement (a) and the share of elected candidates with an immigrant background (b) over time by treatment dose. A higher number corresponds to a higher change in the population share of asylum seekers.

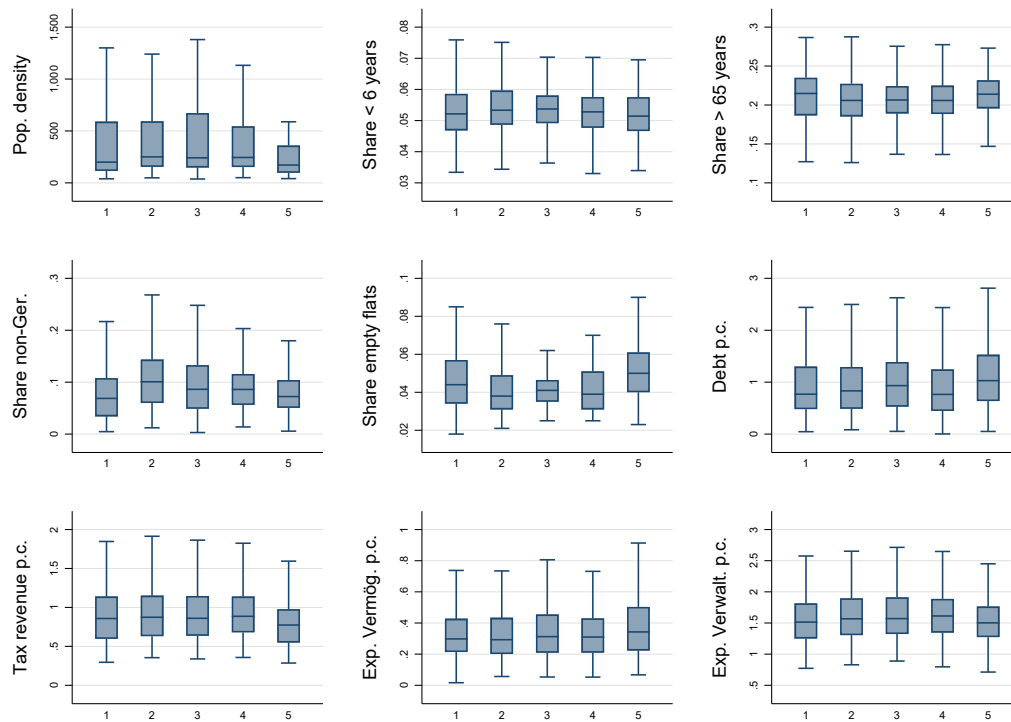


Figure A.9: Balancing tests across five dose groups This graph shows boxplots for selected municipality characteristics across five treatment doses. The characteristics are population density, the share of children below six years relative to population, the share of senior citizens above 65 years relative to population, the share of non-Germans relative to all citizens, the share of empty flats relative to all flats, municipal debt per capita, total tax revenue per capita, expenditure in the *Vermögenshaushalt* per capita (e.g. deletion of credit), and expenditure in the *Verwaltungshaushalt* per capita (e.g. labor cost and spending on municipal services). Outside values are excluded for better readability.

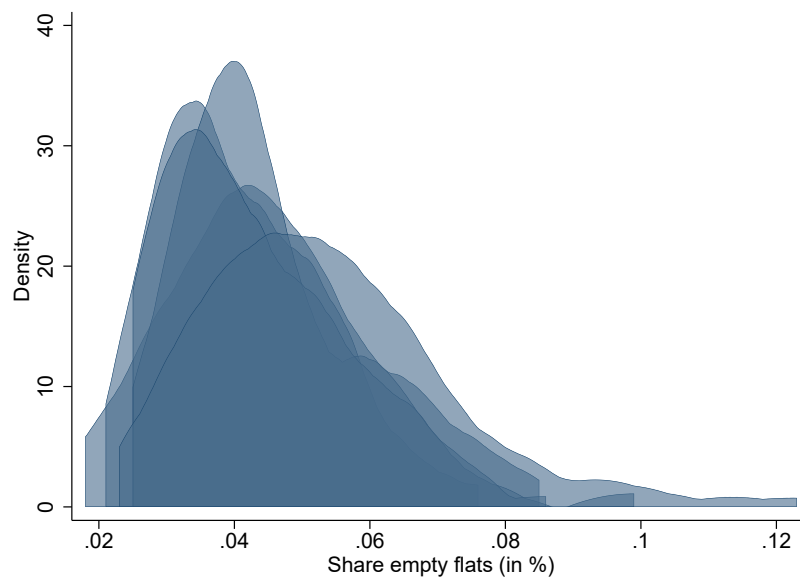


Figure A.10: Distribution share of empty flats This graph shows the distribution of the share of empty flats as of 2011 for the treatment doses.

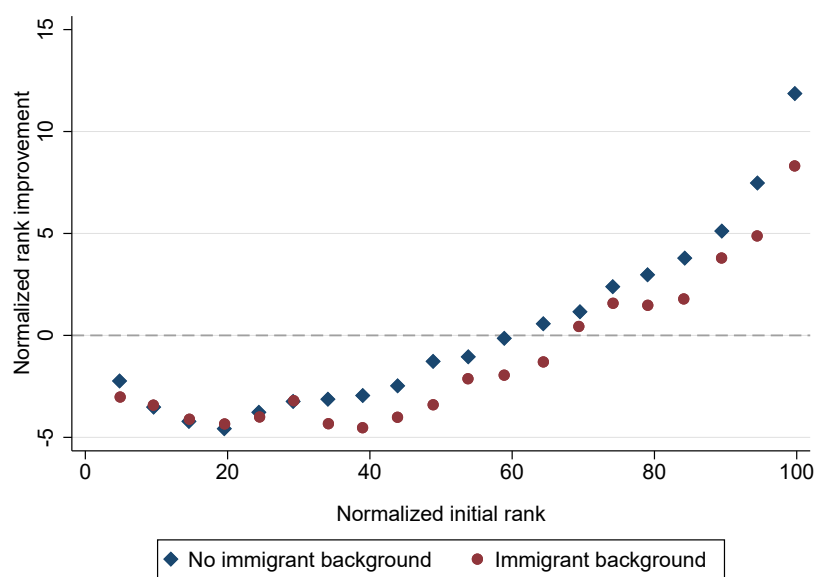


Figure A.11: Rank improvement by initial list rank This graph shows the average normalized rank improvement separately for immigrant background and non-immigrant background candidates. Initial list rank normalized to be between 0 and 100.

A.5 Additional tables

Table A.1: SUMMARY STATISTICS FOR CANDIDATE CHARACTERISTICS

Variable	Count	Mean	SD	Min	Max
Rank improvement (normalized)	153749	0.04	13.65	-96	97
Initial list rank (normalized)	158238	52.22	28.88	1	100
Immigrant background (Ethnea)	159626	0.06	0.24	0	1
Immigrant background (NP)	159626	0.08	0.28	0	1
Female	159521	0.27	0.44	0	1
Age	113605	52.25	14.33	18	102
Highschool	97812	0.63	0.48	0	1
University	97812	0.31	0.46	0	1
PhD	97812	0.06	0.23	0	1
Architect	97417	0.01	0.09	0	1
Businesswoman/-man	97417	0.08	0.27	0	1
Engineer	97417	0.06	0.23	0	1
Lawyer	97417	0.03	0.18	0	1
Civil administration	97417	0.08	0.26	0	1
Teacher	97417	0.05	0.22	0	1
Employed	114473	0.70	0.46	0	1
Self-employed	114473	0.06	0.23	0	1
Student	114473	0.04	0.20	0	1
Retired	114473	0.16	0.37	0	1
Housewife/-husband	114473	0.02	0.13	0	1

Notes: This table reports summary statistics on candidate characteristics. Statistics are on the full sample of candidates in Hessian municipal elections between 2001 and 2021. NP is the abbreviation for NamePrism.

Table A.2: LIST OF MOST FREQUENT NON-GERMAN SURNAMES (TOP-25)

Surname	Count (non-German)	Count (German)
yilmaz	26	0
sahin	22	0
dogan	22	1
yildiz	19	0
oeztuerk	17	0
can	16	0
demir	16	4
vanloon	15	0
pelekanos	14	0
kumar	14	0
kuepelikilinc	13	0
tosun	13	0
kaya	13	2
yildirim	13	1
singh	12	0
celik	12	1
akdeniz	12	0
aydin	12	4
kluin	12	0
khan	12	0
bibo	11	6
russo	11	0
colloseus	11	7
viel	10	7
basmara	10	0

Notes: This table shows the most frequent non-German surnames. While the classification tool uses first and surname, only surnames are depicted to enhance variation in the list. A surname can be classified non-German as well as German depending on the first name. The respective numbers Count (non-German) and Count (German) indicate the respective frequencies. The origin of names is determined using Ethnea.

Table A.3: LIST OF MOST FREQUENT GERMAN SURNAMES (TOP-25)

Surname	Count (non-German)	Count (German)
mueller	0	1627
schmidt	0	1503
schneider	0	1101
schaefer	0	1022
becker	1	887
weber	0	784
wagner	0	637
koch	1	633
fischer	0	608
hofmann	0	598
schmitt	0	551
hartmann	1	407
wolf	2	394
moeller	0	363
jung	2	331
koehler	1	308
klein	1	307
roth	0	294
hoffmann	0	276
schwarz	0	274
werner	0	273
hahn	0	265
richter	0	252
friedrich	0	251
kraft	0	244

Notes: This table shows the most frequent German surnames. While the classification tool uses first and surname, only surnames are depicted to enhance variation in the list. A surname can be classified non-German as well as German depending on the first name. The respective numbers Count (non-German) and Count (German) indicate the respective frequencies. The origin of names is determined using Ethnea.

Table A.4: LIST OF MOST FREQUENT SURNAMES BY LINGUISTIC ORIGIN

Linguistic origin	Surnames (Top-3)
African	demele, sylla, krassa
Arab	khan, khalid, ahmad
Baltic	kuras, wember, cifersons
Chinese	seng, puersuen, klueh
Dutch	kluin, vanloon, fokken
English	miss, hix, downing
French	godry, zarda, blanc
Greek	pelekanos, chatzis, stergiou
Hispanic	macho, dias, alcocermaestre
Hungarian	kavai, kovacsek, boesz
Indian	kumar, singh, hossain
Indonesian	santoso, punalgamboa, majcen
Israeli	silberbonz, fraikin, yuvali
Italian	russo, basmara, piscopia
Japanese	ide, huwa, schatta
Korean	fascung, raiserlucsdoo, chomphoo
Nordic	colloseus, friis, rohark
Romanian	dumitrescu, craciun, silea
Slav	pecka, fistric, avdovic
Thai	tichai, ostrizkij, kolpak
Turkish	yilmaz, dogan, sahin
Vietnamese	pham, tran, thuy

Notes: This table shows the three most frequent surnames for the different linguistic origins. The origin of names is determined using Ethnea.

Table A.5: ALLOCATION OF ASYLUM SEEKERS TO COUNTIES

Population groups	Allocation quota (in %)	Number counties
up to 100,000	1.0	1
100,000 – 150,000	2.0	4
150,000 – 200,000	4.0	6
200,000 – 250,000	4.5	5
250,000 – 300,000	5.5	6
300,000 – 400,000	6.0	2
more than 400,000	8.5	2

Notes: This table shows the allocation rule for asylum seekers to the 26 Hessian counties. In addition, the share of non-Germans and the existence of central asylum seeker facilities are taken into account.

Table A.6: MUNICIPALITY-YEAR PAIRS NOT INCLUDED IN ESTIMATION

Reason	Number
No candidates with an immigrant background	351
Missing data on asylum seekers	49
Missing outcome	0
Singletons	32
Sum not included	432
Total	1567

Notes: This table shows the reason for municipality-election year pairs not included in the baseline regression depicted in Table 2, Model (6).

Table A.7: IMMIGRANT BACKGROUND AND ELECTORAL PERFORMANCE

	<i>Dep. Var.: Normalized rank improvement</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
Immigrant background	-1.337*** (0.281)	-1.343*** (0.281)	-1.434*** (0.284)	-1.566*** (0.279)	-1.687*** (0.291)	-0.928*** (0.296)
Mean (SD)	0.04 (13.65)	0.04 (13.65)	0.04 (13.65)	0.04 (13.65)	0.04 (13.65)	0.18 (13.73)
Year FE		✓	✓	✓	(✓)	(✓)
Municipality FE			✓	✓	(✓)	(✓)
List FE				✓	(✓)	(✓)
Year × Mun × List FE					✓	✓
Controls						✓
N	153,749	153,749	153,749	153,741	153,708	92,115

Notes: This table reports results from regressions that relate an indicator for immigrant background to the normalized rank improvement, i.e. the difference between initial and final list rank relative to council size. Model (1) presents a simple bivariate regression. Model (2) additionally controls for year fixed effects. Model (3) adds municipality fixed effects. Model (4) adds lists fixed effects. Model (5) includes the interaction of the fixed effects (which incorporate municipality, year, and list fixed effects and thus compare candidates from the same list in the same election and municipality). Model (6) includes gender, age, and an indicator for higher education as additional controls. Stars indicate significance levels at 10%(*), 5%(**), and 1%(***). Heteroscedasticity and cluster-robust standard errors in parentheses. The unit of clustering is the municipality of the candidate.