Contextual explanations of radical right-wing party support in Sweden: a multilevel analysis

Jens Rydgren and Maria Tyrberg

ABSTRACT

With the aim of studying the role of contextual factors for explaining within-country variation in the vote share of the radical right-wing party, the Sweden Democrats, in the 2014 Swedish election, we specify and test hypotheses pertaining to social marginality, ethnic threat, the contact hypothesis, and the halo effect. We study the variation in the electoral share of the Sweden Democrats at two different levels simultaneously by performing multilevel analyses to account for the ways in which voting districts are clustered within municipalities. The main finding from our analyses is the support for the ethnic threat hypothesis, where the vote share of the Sweden Democrats is significantly higher in those areas that have seen an increase in the foreign-born population, and to some extent also in ethnically diverse areas, contradicting previous research on ethnic minority presence in fine-grained contexts. The expectation that the vote share for the Sweden Democrats should be higher in socioeconomic marginalized districts is partly supported, but we find no evidence of a halo effect, where ethnically homogeneous areas that are geographically close to heterogeneous districts were expected to have a higher vote share for the Sweden Democrats.

ARTICLE HISTORY

Received 19 September 2019; Accepted 27 June 2020

KEYWORDS

Ethnic competition; group position threat; social marginalization; radical right; voting support

Introduction

Radical right-wing parties have emerged and become established in a great number of European countries during the past few decades. These parties differ in several ways, but share a fundamental core of ethnonationalist xenophobia (or nativism), antiestablishment populism, and sociocultural
conservatism, expressed in issues related to national identity, immigration, and law and order (Rydgren 2007, 2018; Mudde 2007).

While the support for radical right-wing parties is generally widespread, there is important variation at both the national and subnational levels. We add to the growing field of literature that is systematically trying to understand within-country variations (e.g. Rydgren & Ruth 2011, 2013; Teney 2012; Westinen 2014) by testing the extent to which contextual factors explain subnational variation in the voting share of the Sweden Democrats in the 2014 parliamentary election across 5,837 voting districts, tapping into the fine-grained neighbourhood surrounding. A multi-level analytical approach is applied in order to account for the ways in which voting districts are clustered within municipalities.

Previous studies have suggested that support for radical right-wing parties is stronger in areas that are socioeconomically deprived and/or where there is a high proportion of foreign-born residents (e.g. Coffé et al. 2007; Lubbers et al. 2002). However, empirical support for these explanations varies, and there are conflicting theories arguing that a high concentration of immigrants in an area is likely to increase the prevalence of interethnic interaction, which in turn will undermine prejudice and outgroup hostility (i.e. the contact hypothesis, see, e.g. Allport 1954). Empirical findings here indicate scale effects, with contact effects in fine-grained contexts and perceptions of threats at higher contextual levels (e.g. Kaufmann and Harris 2015). In addition, the impact of ethnic heterogeneity is not only relevant in absolute but also relative terms, where ethnic change has historically been associated with defensive ethnic nationalism (Kaufmann 2014, 2017). We contribute to this strand of research, paying attention to the potential impact of an increase in a foreign-born population (see also Rink et al. 2009, Piekut and Valentine 2016), in addition to the more commonly tested absolute levels. Finally, we test the recently developed halo effect hypothesis, which combines these conflicting predictions in suggesting that the support for radical right-wing parties is more likely to be higher in areas that are ethnically homogeneous but geographically close to areas with a high proportion of foreign-born residents (Bowyer 2008, Rydgren and Ruth 2013).

We specify and test four hypotheses derived from previous literature. First, we expect the vote share of the Sweden Democrats to be higher in socioeconomically marginalized districts (H1). Second, in line with previous findings of contact effects in fine-grained contexts, we suggest we will see a negative correlation between the proportion of foreign-born residents and the vote share of the Sweden Democrats at the district level.
(H2). Third, we expect there to be a positive correlation between an increase in foreign-born residents and the Sweden Democratic vote share (H3). Finally, based on the halo effect hypothesis, we expect the vote share of the Sweden Democrats to be higher in ethnically homogeneous districts that are geographically close to heterogeneous ones (H4). We test our hypotheses using multilevel analyses, which enables us to capture the effect of our main variables of interest on the voting district level while controlling for similar variables on the municipality level.

We argue that Sweden is an excellent case for testing these hypotheses, in particular H2 and H3, as Sweden has seen an unusually rapid increase in non-European immigration the past 10–20 years, which has been located unevenly across the country, at the same time as the electoral support for the Sweden Democrat has increased at a high speed. There is thus enough variation to account for our change-over-time variables. Moreover, Sweden as a case provides us with high-quality register data on fine-grained contextual levels. This is important for two reasons: (a) when considering contextual effects on voting, we should look for contexts that matter for individuals, and for the factors we are interested in, such contexts are usually small and relatively close to the individual; (b) it allowed us to test key hypothesis for a large-N dataset, which increased the robustness of our results. Also, by applying multilevel analyses we were able to account for the ways in which voting districts are clustered in municipalities and to clarify potential scale effects related to the contact and ethnic competition hypotheses.

Our main finding is the support for the ethnic competition hypothesis. The study indicates that the vote share for a radical right-wing party is higher in those voting districts that have seen an increase in the foreign-born population, and to some extent also in ethnically diverse areas. This is contradicting previous research on ethnic minority presence in fine-grained contexts. Regarding our other expectations, the social marginalization hypothesis is partly confirmed, whereas the halo effect hypothesis receives no support.

**Socioeconomic marginalization, group position theory, and the halo effect**

Contextual explanations of the ascendance of radical right-wing parties often focus in on perceptions of threats among the national majority. First, the concept of socioeconomic marginalization suggests that radical right-wing parties receive greater support in deprived areas. There are
several reasons for this assumption, starting with the idea that conflicts between in-groups and out-groups are likely to intensify when there is competition over scarce resources (Blalock 1967; Coffé et al. 2007). To the extent that radical right-wing parties or other actors articulate tacit discontent by framing immigrants as a reason of socioeconomic problems, such in-group/out-group conflicts may be intensified (Rydgren 2003a). Accordingly, it is expected that radical right-wing parties will gain votes in regions that are poor in socioeconomic resources. In addition, people living in these areas may feel that they have been let down by the established political parties, and are thus prone to be mobilized by the anti-establishment messages of radical right-wing parties (Rydgren 2003b).

Another issue related to socioeconomic marginalization is the concept of welfare chauvinism, suggesting that in-groups exclude out-groups out of the fear of losing what they have, in particular in terms of welfare benefits. This tendency may be more pronounced and more easily translated into radical right-wing party voting in disadvantaged areas (Kitschelt 1995; Rydgren 2003a).

Empirical studies testing socioeconomic explanations of radical right-wing party support show mixed results. It has proven useful when measuring individual differences (e.g. Rink et al. 2009), but less so when explaining national variation. The correlation between unemployment and radical right-wing party voting has occasionally been statistically insignificant (Lubbers et al. 2002, Swank and Betz 2003), negative (Knigge 1998; Arzheimer and Carter 2006), or found to be dependent on the level of immigration (Golder 2003). As of yet, Jackman and Volpert (1996) are the only scholars who have found a positive and significant relationship between the unemployment rate and support for radical right-wing parties when measuring cross-national variation. Regarding income levels, previous studies have shown a variation of correlations with voting results at subnational levels. The findings by Coffé et al. (2007) indicate that high average income is positively associated with votes cast for the radical right-wing party Vlaams Blok in Belgium, whereas Valdez (2014) found support in Sweden for the expected negative relationship with voting for the Sweden Democrats at the labour market level, but not at the municipal level (but see Rydgren and Ruth 2011). Dal Bó et al. (2020) found a correlation between vulnerable economic positions and support for the Sweden Democrats, at the voting district level, and using the same level of analysis Dehdari (2019) showed a positive correlation between lay-off notices among low-skilled native born workers and the increase in support of the Sweden Democrats.
Another form of perceived threat frequently associated with voting support for radical right-wing parties relates to the concentration of immigrants within the contextual area. According to group position theory, the increased presence of a minority group poses a perceived threat to the social position of the majority. People tend to favour their own group over others, thus enhancing xenophobia and anti-immigrant attitudes among the in-group towards the out-group (Blumer 1958; Hjerm 2007). Related to this is the somewhat narrower ethnic competition hypothesis, which states – much like the economic threat mentioned previously – that voters turn to radical right-wing parties in order to reduce competition in housing, social welfare, and to promote cultural hegemony if there is a high proportion of immigrants (Pettigrew 1957, Bowyer 2008).

The ethnic competition hypothesis receives some support in cross-national studies. Lubbers et al. (2002) and Knigge (1998) found a positive correlation between the number of immigrants and the electoral success of radical right-wing parties, whereas Norris (2005) failed to establish a similar relationship between ethnic heterogeneity and radical right-wing party voting. Stockemer (2015) argued that it is the individual perceptions of immigrants that explain the electoral success of radical right-wing parties, not the number of foreign-born citizens present. Moving to the subnational level, Rydgren and Ruth (2011) showed a positive correlation in Sweden between the proportion of immigrants and electoral support for the Sweden Democrats at the municipal level, but not at the level of voting districts (Rydgren and Ruth 2013), whereas Strömblad and Malmberg (2015) did find such a relationship at the district level, but only when unemployment rates were high. Focusing on the local level in Belgium, Rink et al. (2009) found a curvilinear relationship, suggesting that an increase in the number of immigrants matters more for radical right-wing party voting when the existing group of migrants is small. The association between ethnic change and defensive ethnic nationalism has also been raised by Kaufmann (2014). Exploring support for radical right-wing parties in England, he found opposition to ethnic change in areas with fewer immigrants, with a decreasing effect in more ethnically diverse areas. Comparing the acceptance of minority ethnic groups in the UK and Poland, Piekut and Valentine (2016) also showed that a perceived influx of ‘invisible’ minorities (‘White other’ and ‘Mixed ethnicity’) increased levels of prejudice. As discussed by Green et al. (1998), this may be only an initial reaction that is likely to be dampened when the contact between the majority and minority group increases. Kaufmann (2017) also found this form of habituation in a recent study, where the levels of ethnic
minority presence over time decreased support for the British radical right-wing party UKIP, whereas ethnic change increased it.

A possible explanation for the findings of dampened threat perception and prejudice can be drawn from the contact hypothesis, a theory leading to predictions opposite to those of the ethnic competition hypothesis. It presupposes that a higher presence of immigrants undermines prejudice, since it increases interactions between members of different ethnic groups (Allport 1954). The contact hypothesis renders support in several studies. Pettigrew and Tropp (2006) found that intergroup contact clearly reduces intergroup prejudice in both ethnic and other encounters. Findings by McLaren (2003) implied that friendship with members of minority groups reduces the willingness to expel legal immigrants, and on a similar note Schneider (2008) showed that having immigrants as friends, colleagues, or neighbours decreased anti-immigrant attitudes. Focusing on the specifics of radical right-wing party support, Biggs and Knaus (2012) found membership in the British National Party to be less likely when native-born persons lived in a neighbourhood with a substantial proportion of foreign-born, non-whites, or South Asians. The correlation was also seen at the city level when the degree of segregation was low, whereas increased segregation was linked to increased likelihood of membership, which is more in line with the ethnic competition hypothesis. Rydgren (2008) also found some support for the contact theory when exploring voting for radical right-wing parties in Western Europe, but only in two of the six countries included in the analysis. In the remaining four, voters who lacked immigrant friends were neither less nor more likely than others to vote for radical right-wing parties.

The conflicting findings with regard to contact and threat can be linked to scale effects. Studying anti-immigrant attitudes in the Netherlands, Schlueter and Scheepers (2010) found the presence of immigrants to be positively correlated with perceived group threat, whereas actual intergroup contact was negatively associated with disapproval of immigrants. Similarly, Kaufmann and Harris (2015) found a higher proportion of ethnic minorities at the more fine-grained ward level in Britain to be related to less opposition to immigration, whereas the opposite was found at the larger local authority level. This is an important distinction. In order for contact to be effective in altering prejudice, it must reach below the surface. Changed attitudes are, in other words, most likely achieved following contact that leads people to do things together. Positive effects are most likely to occur when majority and minority groups pursue common goals on an equal basis, and intergroup cooperation and
institutional support sanction the contact (i.e. by local atmosphere, custom, or law) (Allport 1954: 276ff). We argue that the potential tension between ethnic threat and the contact hypotheses can be resolved largely by distinguishing between ethnic heterogeneity within and outside structurally constraining interaction spaces. Within such interaction spaces, interethnic contacts are repetitive and may develop into friendships, which may in turn promote tolerance (Rydgren et al. 2013). For that reason, as suggested by Schlüeter and Scheepers (2010), for instance, we expect that the contact hypothesis is more likely to be supported at the voting district level, that is, in smaller geographical areas in which interactions between persons may be repetitive and less anonymous.

Following the broader theory of group position theory, the narrower halo effect hypothesis states that anti-immigrant attitudes are most common in areas close to neighbourhoods with a higher concentration of immigrants, rather than within such neighbourhoods (e.g. Bowyer 2008). The underlying reasons relate to aspects from both ethnic competition theory and contact theory. With regard to ethnic competition, areas bordering neighbourhoods with a high proportion of immigrants are often lower middle-class districts, where people may fear losing economic position and social status (Rydgren and Ruth 2013). On the other hand, residents within areas with a higher proportion of immigrants are more likely to have friendly interactions with members from different ethnic groups, thus reducing stereotypes (Allport 1954). As discussed by Rydgren and Ruth (2013), an assumption regarding the halo effect can be based on Miles’ (1989: 15) distinction between the experienced and the imagined ‘other’. The former indicates that direct contact and interaction with the ‘other’ is expected in immigrant-dense areas, whereas those living in bordering neighbourhoods are more likely to face the imagined ‘other’, without experiencing the contact (Miles 1989; Rydgren and Ruth 2013). According to the contact theory, actual interaction is key to undermining prejudice, and such interethnic interaction occurs less when living close to immigrant-dense areas rather than within such areas.

The halo effect has received some support in previous literature. In Sweden, Rydgren and Ruth (2013) found a positive correlation between the neighbouring district with the highest immigration level and voting for the Sweden Democrats in voting districts with a low proportion of immigrants, when controlling for socioeconomic factors. Similarly, Valdez (2014) showed that anti-immigrant attitudes are more likely to translate into votes for the Sweden Democrats in neighbourhoods where resident contact with immigrants is fleeting. With focus on variation
within Britain, Bowyer (2008) investigated support for the British National Party and found it to be concentrated in homogeneous areas within ethnically diverse cities. These findings suggest the relevance of testing the halo effect hypothesis further on new and unexplored electoral results.

**Hypotheses**

Based on previous research, as discussed above, we stipulate four hypotheses to be tested.

H1: We expect that there will be a higher vote share for the Sweden Democrats in socioeconomically marginalized districts.

H2: Testing for the contact theory, we expect a negative association between the proportion of foreign-born residents and the vote share of the Sweden Democrats.

H3: In line with the ethnic competition hypothesis, we expect a positive association between an increase in foreign-born residents and the Sweden Democrats vote share.

H4: Based on the halo effect hypothesis, we expect that the voting support of the Sweden Democrats will be higher in ethnically homogeneous districts that have neighbouring heterogeneous districts.

**Radical right-wing parties in Sweden**

While radical right-wing parties have been present in many Western European parliaments since the 1980s and 1990s – and in some instances longer than that – Sweden was for long an exception (Rydgren and van der Meiden 2019). Aside from the right-wing populist New Democracy, which obtained 6.7 percent of the votes in the parliamentary election in 1991 but then imploded and was voted out of parliament in 1994 (Rydgren 2006), no radical right-wing party in Sweden had come close to winning representation in the Swedish parliament until 2010.

The Sweden Democrats was formed in 1988 as a direct successor to the Sweden Party, which in turn was a merger between the Swedish Progress Party and the BBS (Keep Sweden Swedish). The Sweden Democrats (SD) has its roots in Swedish fascism, and the party has tried to project a more respectable façade since the end of the 1990s (Rydgren and van der Meiden 2018; Erlingsson et al. 2014; Widfeldt 2015). Still, the party programme is dominated by nationalism and the quest to lower immigration
and making Sweden less ethnically diverse, and this programmatic core is embedded in a populist framework in which the ‘common people’ is pitted against cultural and political elites (Elgenius & Rydgren 2019). Hence, the Sweden Democrats can be defined as a radical right-wing party (as defined above). Empirical studies suggest that voters support the Sweden Democrats foremost because of the immigration issue, and over 90 percent of those voting for the Sweden Democrats want to reduce immigration. Another distinguishing characteristic of Sweden Democrats voters is their low level of trust in political parties, politicians, and the media (Jylhä et al. 2019).

The Sweden Democrats received 5.7 percent of the votes in the 2010 election and 12.9 percent in the 2014 election, which means that they occupied 49 seats out of 349 in the Swedish parliament. In the 2018 election, the party continued to grow, and are now holding 62 seats in the national parliament (Valmyndigheten 2014, 2016). Figures 1 and 2 illustrates the municipal variation in Sweden Democratic vote share in the 2010 and 2014 elections, where darker shades indicate stronger party support.

**Data and methods**

Sweden has 290 municipalities at the local level, each subdivided into voting districts. During the 2014 election there were 5837 voting districts. The size of the districts vary, but they usually include between 1000 and 2000 voters. The smallest district consists of several hundred voters, and the largest over 2000 voters. The arrangement of voting districts is decided by the county administrative boards in Sweden, in accordance with recommendations made by the municipal assemblies, and may vary somewhat from one election to another (Valmyndigheten 2016). Municipalities and voting districts constitute the two contextual levels of this study.

In order to test our hypotheses, we use multilevel regression analyses, including these two separate levels: voting districts \( n = 5,837 \) and municipalities \( n = 290 \). There are two main benefits with this analytical strategy. Firstly, our main interest lies in the fine-grained context of voting districts where actual interaction is most likely to occur. Multilevel analyses enables capturing the effect of our main variables of interest on the micro level (voting districts) while controlling for similar variables on the macro level (municipalities). In other words, by simultaneously analysing the two levels we limit the risk that the measurements on
voting district level are inflated by ignoring patterns on the municipal level (Jones et al. 2015). Multilevel analyses thereby allows us to explore the clustered nature of the data (Gelman et al. 2006). An additional advantage
is that we can capture some of the scale effect related to the contact and group position theory raised in prior work, where we could expect a negative association between the proportion of foreign-born residents and the

Figure 2. Sweden Democratic vote share, 2014.
vote share of the Sweden Democrats on the district level but a positive association on the municipal level.

The data used for the analyses comes from several national registers, including Statistics Sweden, the Swedish National Council for Crime Prevention, the Swedish Social Insurance Agency, and the Municipal and County Data Base. Our main dependent variable is the proportion of votes for the Sweden Democrats in the national election of 2014, using the 5837 voting districts as the units of observation. Hence, we have the advantage of analysing a large number of units, and of including the total number of districts, rather than a selection of cases.

In order to capture social marginality on the independent side, we include variables at the voting district level, measuring the long-term unemployment rate, income, educational level, ill health, and proportion of blue-collar workers. For the contact and ethnic competition hypotheses, we use the proportion (H2) and change (H3) in the foreign-born population. Since the number of voting districts does not remain constant over the years, we lose a small number of cases when including the change variable. As a result, the N is somewhat lower in the models that include these variables.

The previous literature has made us reflect on the differences across minority groups, rather than measuring immigrants, which is a heterogeneous umbrella category. As shown by Ford (2011), there are large variations in attitudes towards immigrants, where white migrants tends to be preferred over non-whites. In addition, the empirical results indicate a hierarchy of preferences between the groups within each racial category. In line with these findings, Ford and Goodwin (2010) showed that the presence of a large Muslim community within the constituency increased radical right-wing party support in Britain, while such a correlation did not exist when looking at other immigrant groups. In fact, support was actually lower in areas with larger black (non-Muslim) populations. Similarly, a study by Coffé et al. (2007) indicated a positive correlation between voting for a radical right-wing party and the presence of Turkish or Maghrebian immigrants, but not of other minority groups. This finding can be linked to the fact that radical right-wing parties often single out immigration from Muslim countries as particularly problematic (Zaslove 2004; Rydgren 2008). Disregarding variations within the immigrant group can

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1Blue collar workers include the proportion of the working age population employed in agriculture, forestry, fishing, manufacturing, mining, energy, environmental activities, and construction. The measurement does not enable us to exclude those in managerial position but includes all individuals employed within these professions.
therefore result in misleading conclusions. The data used enable us to take variations within the immigrant group into account, including separate measurements for a European- and non-European-born population.

When testing hypotheses H2-H4, we use a weighted dependent variable so that the vote share is adjusted upward when the proportion of residents born outside of the European countries increases. This is a way to address the risk that support for the contact hypothesis is an effect of non-European born residents being heavily underrepresented among the radical right-wing voters, which – all else being equal – will reduce electoral support for such parties in ethnically diverse areas. According to the election survey VALU (2014), only 3 per cent of residents born outside of Europe voted for the Sweden Democrats in the 2014 election, which indeed is a strong under-representation. The weighted variable is constructed by dividing the vote share for the Sweden Democrats with the proportion of residents born within the European countries, which means that we are in practice analysing the variance in electoral support of the Sweden Democrats for European-born voters only.

Finally, for the halo hypothesis, we include the proportion of foreign-born in the neighbouring district with the highest proportion of immigrants. In order to fully measure the effect, we subtract the proportion of foreign-born within the district from the share in the neighbouring district, using this remainder as the main independent variable. That way we can capture potential differences in population composition within the district compared to the neighbouring district. As mentioned, we include similar variables as the ones listed above also on the municipal level as an attempt to isolate the contextual impact on the voting district level.

The potential problem with selection bias is often raised when exploring the correlation between immigrant-dense regions and support for radical right-wing parties (Schneider 2008; Biggs and Knaus 2012), since people who share xenophobic attitudes are more likely to move to areas with fewer immigrants. Previous research, however, suggests that contact

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2The results from a multilevel analysis when including all variables simultaneously and an unweighted dependent variable are shown in Model 6, Table A2 of the Appendix.

3The number is based on unweighted data. The election survey is distributed to voters outside of polling stations around the time for elections to the Swedish parliament, the EU parliament and referendums. The survey is carried out in cooperation between the Swedish public service television company (SVT), the Department of Political Science at the University of Gothenburg and the KTH Royal Institute of Technology.

4We also tested two other weighted measurements, where the vote share was adjusted upward when the proportion of residents born outside of Sweden or the Nordic countries increases. Using these measurements did not alter the main results.
outweighs such self-selection (Pettigrew and Tropp 2006; Kaufmann and Harris 2015). Taking the cross-sectional nature of our data into account, we include variables that are theoretically likely to have an impact on both the main independent and dependent variables to further balance the risk of omitted variables. At the district level, we control for distance to the largest city within the municipality, with the expectation that support for the Sweden Democrats is stronger in outlying areas. At the municipal level, we include the number of crimes per 100,000 citizens, population size, and gross regional product, which aims to measure municipal prosperity. In addition, when testing hypotheses H2-H4 we also control for the main independent variables used in the socioeconomic marginality model. Descriptive statistics are presented in Table 1.

Table 1. Descriptive statistics.

| Level          | Variable                                           | Year     | N    | Mean  | SD    | Min  | Max  |
|----------------|----------------------------------------------------|----------|------|-------|-------|------|------|
| District       | SD vote share                                      | 2014     | 5837 | 13.08 | 5.68  | 0.57 | 36.89|
|                | SD vote share (weighted measurement)               | 2014     | 5837 | 14.58 | 6.20  | 1.14 | 40.72|
|                | % Long-term unemployment                           | 2014     | 5837 | 3.34  | 2.11  | 0    | 18.79|
|                | % High education                                   | 2014     | 5837 | 25.20 | 13.26 | 5.36 | 78.34|
|                | % Low income                                       | 2014     | 5837 | 24.61 | 9.74  | 7.60 | 94.625|
|                | % Blue collar employed                             | 2014     | 5837 | 22.91 | 10.51 | 3.52 | 64.55|
|                | Ill health days per capita (16-64 years)           | 2014     | 5837 | 26.51 | 10.38 | 0.002| 91.76|
|                | % European born                                    | 2004     | 5976 | 1.94  | 1.42  | 0    | 18.84|
|                | % European born                                    | 2014     | 5837 | 3.21  | 2.17  | 0    | 26.86|
|                | % Non-European born                                | 2004     | 5976 | 6.23  | 8.55  | 0    | 65.26|
|                | % Non-European born                                | 2014     | 5837 | 9.83  | 10.76 | 0    | 66.01|
|                | Change in European born %                          | 2014–2004| 4785 | 1.14  | 1.40  | −5.10| 17.58|
|                | Change in non-European born %                     | 2014–2004| 4785 | 3.02  | 5.01  | −53.13| 45.35|
|                | Districts distance to biggest city in municipality (km) | 2014     | 5837 | 8.14  | 9.39  | 0.04 | 113.99|
| Municipality   | Change in crime per 100000 citizen                 | 2009–2014| 290  | 928.96| 1621.12| −7193| 3048|
|                | % High education                                   | 2014     | 290  | 10.73 | 4.49  | 5.25 | 32.50|
|                | Mean income (in 1000 SEK)                          | 2013     | 290  | 244.23| 31.17 | 192.40| 456.30|
|                | Ill health rate                                    | 2014     | 290  | 31.10 | 6.01  | 12.10| 50.20|
|                | % Foreign born                                     | 2014     | 290  | 12.69 | 5.77  | 4.33 | 40.16|
|                | % Change in foreign born %                         | 2014–2004| 290  | 3.78  | 1.80  | 0.31 | 11.09|
|                | % Long-term unemployment                           | 2013     | 290  | 3.57  | 1.34  | .80  | 8.10|
|                | Gross regional product/citizen in 1000 SEK         | 2013     | 290  | 299   | 127   | 119  | 1245|
|                | % Blue collar employed                             | 2010     | 290  | 25.03 | 11.28 | 4.34 | 66.61|

Comment: The variables measuring change on the district level have a lower N due to variation in arrangement of voting districts between the elections. The neighbouring variables have two less units because these voting districts do not have neighbours.
Results

As an initial step to investigate the variance between the different levels, we estimate the intraclass correlation (ICC) for the municipalities. The correlation is based on a multilevel analysis including only the main dependent variable at the district level, and allowing for a random intercept at municipal level. As expected, the result indicate clustering at municipality level (see Table A1 in the Appendix), further supporting the multilevel modelling strategy to account for this clustering.

We proceed with running our main models including random intercepts at the municipal levels, and allowing the slopes for the main independent variables to vary between municipalities. We start off with testing the socioeconomic marginality hypothesis (H1). Results are presented in Table 2, Model 1, showing the associations between the main independent variables at the district level and the vote shares of the Sweden Democrats. The results indicate mixed support for the socioeconomic marginality hypothesis, in line with previous findings. Reviewing the results that reach statistically significance, proportion of blue collar employed is, as expected, positively correlated with the voting shares of the Sweden Democrats, while high education shows a negative correlation. Contrary to expectations, however, long-term unemployment and low income also show negative correlations. One potential explanation for this result is the association between socioeconomic status and the share of foreign-born residents, who are more likely to be unemployed and low-income but less likely to vote for the Sweden Democrats. This explanation is to some extent supported in the following model (Model 2), where share of foreign born residents is included. All variables capturing socioeconomic marginalization here show the expected direction of associations, indicating at least partial support for H1, but depending on model specification.

Turning to the tests of the contact theory and ethnic competition hypothesis, that is, hypotheses H2 and H3, results are shown in Table 2, Models 2–3. In Model 2 we test the association between the proportion of foreign-born population at the district level and the vote share of the Sweden Democrats, while Model 3 explores the correlation with a change in foreign-born population. As shown in Model 2, there is a positive and significant association between the presence of foreign-born residents and the voting shares of the Sweden Democrats, but only for the European group, The association with non-European born residents is, in turn, insignificant. This result is unexpected considering that previous
## Table 2. Multilevel models – estimates of SD vote share in the 2014 election, district level.

|                           | (1) Socioeconomic marginalization | (2) Contact/ethnic competition theory | (3) Halo effect |
|---------------------------|----------------------------------|--------------------------------------|-----------------|
| **Electoral district level** |                                  |                                      |                 |
| % Population with high education | $-0.256^{***}$                   | $-0.244^{***}$                       | $-0.194^{***}$  |
|                           | (0.012)                           | (0.007)                              | (0.008)         |
| % Blue collar employed    | $0.214^{***}$                     | $0.210^{***}$                        | $0.233^{***}$   |
|                           | (0.012)                           | (0.010)                              | (0.010)         |
| Ill health days/capita    | $0.016$                           | $0.043^{***}$                        | $0.054^{***}$   |
|                           | (0.009)                           | (0.006)                              | (0.007)         |
| % Long-term unemployment  | $-0.195^{**}$                     | $0.304^{***}$                        | $0.293^{***}$   |
|                           | (0.066)                           | (0.060)                              | (0.058)         |
| % Population with low income | $-0.029^*$                      | $0.018^*$                           | $0.006^{**}$    |
|                           | (0.012)                           | (0.007)                              | (0.008)         |
| Distance to biggest city in municipality (km) | $0.013^{**}$                    | $-0.026^{***}$                      | $-0.023^{***}$  |
|                           | (0.005)                           | (0.006)                              | (0.006)         |
| % European born           | $0.160^{***}$                     |                                      |                 |
|                           | (0.048)                           |                                      |                 |
| % Non-European born       | $0.019$                           |                                      |                 |
|                           | (0.014)                           |                                      |                 |
| % Change European born    | $0.185^{***}$                     |                                      |                 |
|                           | (0.054)                           |                                      |                 |
| % Change non-European born| $0.203^{***}$                     |                                      |                 |
|                           | (0.020)                           |                                      |                 |
| European born neighbouring – % in own district | $-0.017$                      |                                      |                 |
|                           | (0.024)                           |                                      |                 |
| Non-European born neighbouring – % in own district | $-0.017^{**}$                  |                                      | (0.006)         |
| **Municipal level**       |                                  |                                      |                 |
| % Population with high education | $0.314^{***}$                    | $0.106$                              | $0.084$         |
|                           | (0.057)                           | (0.107)                              | (0.111)         |
| % Blue collar employed    | $-0.043$                          | $-0.049$                             | $-0.049$        |
|                           | (0.025)                           | (0.029)                              | (0.031)         |
| Ill health rate           | $-0.207^{***}$                    | $-0.202^{***}$                       | $-0.206^{***}$  |
|                           | (0.048)                           | (0.061)                              | (0.063)         |
| % Long-term unemployment  | $0.666^{***}$                     | $0.424$                              | $0.277$         |
|                           | (0.155)                           | (0.237)                              | (0.259)         |
| Mean income               | $-0.026^{***}$                    | $-0.024$                             | $-0.024$        |
|                           | (0.006)                           | (0.013)                              | (0.013)         |
| Gross regional product    | $-0.002$                          | $-0.006^{**}$                        | $-0.008^{**}$   |
|                           | (0.001)                           | (0.002)                              | (0.002)         |
| Population size (Ln)      | $-0.326$                          | $0.447$                              | $0.777^*$       |
|                           | (0.232)                           | (0.363)                              | (0.379)         |
| Change crime/citizen      | $-0.000$                          | $-0.000$                             | $-0.000$        |
|                           | (0.000)                           | (0.000)                              | (0.000)         |
| % Foreign born            | $0.123^{**}$                      |                                      | $0.193^{***}$   |
|                           | (0.046)                           |                                      | (0.044)         |
| % Change foreign born     | $0.497^{**}$                      |                                      |                 |
|                           | (0.168)                           |                                      |                 |
| Fixed intercept           | $26.289^{***}$                    | $19.035^{***}$                       | $15.531^{**}$   |
|                           | (3.733)                           | (5.431)                              | (5.764)         |
| Random intercept (Municipality) | Yes                          | Yes                                  | Yes            |
| AIC                       | $27031.07$                        | $28839.74$                           | $23853.92$      |
|                           | (28389.74)                        | (23853.92)                           | (24014.75)      |
| BIC                       | $27271.27$                        | $29006.54$                           | $24014.75$      |
|                           | (27351.27)                        | (29006.54)                           | (29604.47)      |
| Log restricted-likelihood | $-13479.537$                      | $-14394.87$                          | $-11901.461$    |
|                           | $-14693.838$                      |                                      |                 |
| Electoral districts       | $5837$                            | $5837$                               | $4785$          |
|                           | $5835$                             | $5835$                               |                 |
| Municipalities            | $290$                             | $290$                                | $286$           |
|                           | $290$                             | $290$                                |                 |

**Note:** Standard errors in parentheses, *p < 0.05, **p < 0.01, ***p < 0.001.

**Comment:** The dependent variable is weighted in Models 2–4 to account for the underrepresentation of non-European born residents among radical right-wing voters.
work mainly link radical right-wing party support with the presence of non-European born residents, and further highlights the importance of taking variation within the immigrant group into account. Moreover, our findings contradict the expectation of the contact hypothesis (H2), instead rendering support for the ethnic competition hypothesis, since the vote share of the Sweden Democrats is positively associated with the proportion of foreign-born resident, under control for the municipal level variables.

We test the ethnic competition hypothesis (H3) further by replacing the share of foreign-born residents with changes in immigration within voting districts. As shown in Model 3, the correlation with Sweden Democratic vote share and foreign-born increase is now positive and statistically significant for both the European-born and non-European-born population, consistent with the ethnic competition hypothesis.

This result can be further clarified with an illustrative example. Taking the results from the regression analysis in Model 3 into account, a voting district experiencing a 3 per cent increase in non-European born residents from 2004 to 2014 (the empirical average) is expected to have a 16 per cent vote share for the Sweden Democrats in the 2014 election. Keeping all else equal, the Sweden Democratic vote share is expected to increase from 16 to 17.5 per cent if the change in non-European born residents would increase from 3 to 10 per cent in the same district, equalling less than half a standard deviation increase in vote share.

Finally, we turn to the halo hypothesis (H4). Some initial signs of the halo effect can be depicted already in Models 2 and 3 when testing for the contact theory and ethnic competition hypothesis, where there is an independent effect of the share of immigrants in the municipality and the change of that share, when controlling for the same variables in the district. Assuming that the municipality can be considered as a neighbourhood in which the district is embedded, these results thus render potential support for the halo effect. Testing the halo hypothesis further, we turn to the analyses where the more immediate surrounding is tested, capturing the difference between electoral districts and their neighbouring districts. As shown in Table 2, Model 4, we find a negative and significant association for the non-European born group but not for the European born population. The theoretical expectation however is that the halo effect is interactive, in that it mainly concerns districts with a low share of foreign-born residents neighbouring districts with a high share of foreign-born residents. In order to fully test the halo effect, we therefore split the sample into districts with low, medium, and high proportions.
of foreign-born residents (Table 3). We expect the halo effect to be dependent on the level of non-European-born residents within the district, and thereby find a positive correlation in the sample with a low proportion of foreign-born residents. Focusing on the group that is most theoretically relevant, the non-European residents, we do find a positive association

| Table 3. Multilevel models – estimates of SD vote share in the 2014 election, in districts with different levels of non-European residents. |
|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|
|                                            | (1) Low levels (<4) | (2) Medium levels (>4 < 9) | (3) High levels (>9) |
| **Electoral district**                      |                    |                          |                    |
| Non-European born neighbouring – % in own district | 0.009 (0.011)    | −0.007 (0.007)          | −0.035*** (0.009) |
| % Population with high education                | 0.058 (0.138)   | −0.175*** (0.009)       | −0.163*** (0.015) |
| % Blue collar employed                            | −0.288*** (0.013) | 0.230*** (0.016)       | 0.325*** (0.028) |
| Ill health days/capita                             | 0.051* (0.020)  | 0.038*** (0.009)       | 0.071*** (0.012) |
| % Long-term unemployment                         | 0.172*** (0.015) | 0.448*** (0.108)       | 0.225** (0.084)  |
| % Population with low income                       | 0.025* (0.013)  | 0.058*** (0.012)       | 0.004 (0.010)    |
| Distance to biggest city in municipality (km)     | −0.051**** (0.007) | 0.018 (0.009)          | −0.016 (0.027)  |
| **Municipal level**                               |                    |                          |                    |
| % Population with high education                   | −0.039** (0.015) | 0.138 (0.100)          | 0.226* (0.110)   |
| % Blue collar employed                              | 0.262 (0.251)   | −0.041 (0.031)         | −0.142*** (0.037) |
| Ill health rate                                    | 0.166 (0.118)   | −0.168** (0.064)       | −0.136 (0.078)   |
| % Long-term unemployment                           | −0.018 (0.032)  | 0.402 (0.230)          | 0.810** (0.266)  |
| Mean income                                        | −0.009**** (0.003) | −0.029* (0.012)        | −0.038** (0.014) |
| Gross regional product                             | −0.249*** (0.068) | −0.008*** (0.002)      | −0.002 (0.003)   |
| Change crime/citizen                                | 0.176*** (0.052) | −0.000 (0.000)         | −0.000* (0.000)  |
| Population size (Ln)                               | 0.000 (0.000)   | 0.459 (0.369)          | 0.217 (0.428)    |
| % Foreign born                                      | 0.472 (0.417)   | 0.121*** (0.044)       | 0.193*** (0.051) |
| Fixed intercept                                    | 26.117*** (6.056) | 16.067*** (5.610)      | 20.516** (7.064) |
| Random intercept (Municipality)                    | Yes             | Yes                    | Yes              |
| AIC                                               | 10262.01 (10379.83) | 8450.999 (8566.879)    | 10785.47 (10902.82) |
| BIC                                               | 10379.83 (10110.0032) | 8566.879 (4204.4997)   | 10902.82 (5371.735) |
| Log restricted-likelihood                          | −5110.0032 (2019) | −4204.4997 (1841)      | −5371.735 (1975) |
| Electoral districts                                | 276 (2019)      | 276 (1841)             | 215 (1975)       |

Note: Standard errors in parentheses, * p < 0.05, ** p < 0.01, *** p < 0.001.

Comment: The dependent variable is weighted to account for the underrepresentation of non-European born residents among radical right-wing voters.
in districts with low and medium levels of non-European-born populations, but the results are insignificant. In districts with high levels, in turn, there is a negative and significant association. The halo effect hypothesis is thereby not supported in any of the samples.\(^5\)

Turning briefly to the variables on the municipal level, we are mainly interested in the measurements capturing the presence of a foreign-born population, related to the scale effects discussed in previous studies where contact effects can be expected in fine-grained contexts and perceptions of threats at higher contextual levels. In line with this notion, Models 2 and 3 respectively show positive and significant associations between the share and increase of foreign-born residents when controlling for factors pertaining to social marginalization.

To further test the robustness of our results, we re-ran all models controlling for municipal fixed effects instead of multilevel analyses (see Models 1–4 in Table A2 of the Appendix). The results at large hold, albeith with one condition when testing the contact hypothesis. Whereas the association between the share of non-European born and vote share for the Sweden Democrats was found to be positive and insignignificant in the multilevel analysis, it is negative and significant in the fixed effect analysis. The direction of association and statistical significance thereby vary depending on modelling strategy, indicating a lack of robustness for this specific result.

As a final robustness check, we introduce a sample restriction when testing the ethnic competition hypothesis, taking into consideration that the borders of electoral districts can change between elections while retaining the same identity code. Following a similar approach as Lindgren and Vernby (2016), we exclude all districts where the population has changed by more than 15 percent between 2004 and 2014.\(^6\) The number of observations is reduced substantially (by about 50 percent) but the results are very similar to those presented earlier (see Model 5 in Table A2 of the Appendix).

**Conclusions**

Voter support of the radical right-wing parties in Europe is neither even nor stable, but varies both between and within countries. Previous

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\(^5\)We also tried an alternative approach where we included the proportion of foreign-born within the district and the share in the neighbouring district as two separate variables and as an interaction, the results were very similar to those presented before.

\(^6\)Lindgren and Vernby (2016) focused on a shorter time span (between two elections), which means the 15 percent limit is stricter in our case. We therefore tested also for higher limits for change, with the same results.
literature discussing these variations has often focused on socioeconomic deprivation and the proportion of foreign-born residents as contextual explanatory factors (Rydgren 2018). The more recent halo effect hypothesis combines these two theories, and suggests that the support for radical right-wing parties is higher in ethnically homogeneous areas that border areas with a high proportion of foreign-born residents (Bowyer 2008, Rydgren and Ruth 2013). The aim of this study was to further explore these theoretical assumptions at the subnational level in Sweden by studying variation in voter support for the Sweden Democrats in the 2014 election across 5,837 voting districts, and 290 municipalities.

Our results render partial support for the expectation of higher Sweden Democratic vote share in socioeconomic marginalized areas. However, the analyses show no indication of a halo effect, where the vote share of the Sweden Democrats was expected to be larger in districts with a low proportion of non-European residents that borders districts with higher ethnic heterogeneity.

Our main finding is the support for the ethnic competition hypothesis. We find this primarily related to a change in the presence of foreign-born residents, but to some extent also the absolute level. We consistently find a positive association between the increase of foreign-born residents and the vote share of the Sweden Democrats. While the results are less robust when investigating the absolute levels, the findings in general point to a positive correlation here as well. The main conclusion from our study therefore suggests that the presence of foreign-born residents within the immediate surrounding increases perceptions of ethnic threat and does not reduce stereotypical prejudice. We expected this in relation to an increased presence of foreign-born residents, but not with regard to absolute levels, where contact is posited to outweigh threat in the form of closer surroundings we study here, where regular interactions between groups are likely to occur. Contributing to the theoretical discussion on scale effects, we find a strong relationship between vote share for the Sweden Democrats and absolute levels and increase of foreign-born residents on the municipal level, where interactions are less likely to occur. These findings further highlight the importance of taking several contextual levels into account when testing for the contact and ethnic competition theory, as is done here.

The aggregated nature of the data does not permit us to measure actual intergroup contacts, but the context used is more fine-grained than what has commonly been used in previous literature on the relationship between ethnic diversity and radical right-wing support,
focusing for instance on municipalities (Rydgren & Ruth 2011) and countries (Schneider 2008). Using aggregated data comes with some limitations, however, and we should be aware that we cannot draw individual-level inferences without the risk of ecological fallacy (Firebaugh 1978, Robinson 2009). Further research is thus needed in order to clarify whether the results presented in this study hold also when taking individual-level variation at the neighbourhood level into account. As for generalizability, we can only speculate about the extent to which the findings of this study is valid for contexts beyond Sweden. We believe they are, but there are caveats. Sweden has seen a larger increase of non-European immigrants than most other countries in Europe during the time period studied in this paper. It is possible that this has influenced the effect of perceived ethnic threat on the support for the radical right, as the baseline has been moved to a higher level. This is an issue for future research to deal with, which – if possible – should systematically test the association between ethnic change and ethnic heterogeneity, in fine-grained areas, and electoral support for radical right-wing parties across a larger number of countries that vary substantially along these variables.

**Disclosure statement**

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

**Funding**

This work was supported by Vetenskapsrådet [grant number 1369209].

**Notes on contributors**

_Jens Rydgren_ is Professor of Sociology at Stockholm University. He is working within the research areas of political sociology, ethnic relations, and social networks. His articles have appeared in journals such as the American Journal of Sociology, British Journal of Sociology, European Sociological Review, and European Journal of Political Research. He has published several books on radical right-wing politics, and in 2018 he was the editor of The Oxford Handbook of the Radical Right (OUP).

_Maria Tyrberg_ is a PhD Candidate at the Department of Political Science, University of Gothenburg. Her research is concerned with radical right-wing party support, contextual effects, and political integration. Her articles have appeared in Journal of Ethnic and Migration Studies, Political Studies, Journal of Youth Studies, and Public Administration.
ORCID

Maria Tyrberg ♦️ http://orcid.org/0000-0003-2648-1036

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## Appendix

### Table A1. Intra class correlation

|                | Weighted measurement | Unweighted measurement |
|----------------|----------------------|------------------------|
| ICC            | 0.579                | 0.623                  |
| Standard error | 0.022                | 0.021                  |
| N              | 290                  | 290                    |

### Table A2. Estimates of SD vote share, Robustness checks.

| Electoral district level                              | (1)         | (2)         | (3)          | (4)          | (5)          | (6)          |
|------------------------------------------------------|-------------|-------------|--------------|--------------|--------------|--------------|
| % Population with high education                     | −0.158***   | −0.212***   | −0.189***    | −0.195***    | −0.192***    | −0.217***    |
|                                                      | (0.006)     | (0.007)     | (0.008)      | (0.007)      | (0.010)      | (0.007)      |
| % Blue collar employed                               | 0.248***    | 0.204***    | 0.221***     | 0.226***     | 0.222***     | 0.183***     |
|                                                      | (0.009)     | (0.011)     | (0.011)      | (0.010)      | (0.013)      | (0.010)      |
| Ill health days/capita                               | 0.055***    | 0.051***    | 0.056***     | 0.056***     | 0.057***     | 0.034***     |
|                                                      | (0.005)     | (0.006)     | (0.007)      | (0.006)      | (0.008)      | (0.006)      |
| % Long-term unemployment                             | −0.474***   | 0.551***    | 0.304***     | 0.331***     | −0.015       | 0.176**      |
|                                                      | (0.043)     | (0.057)     | (0.056)      | (0.049)      | (0.078)      | (0.055)      |
| % Population with low income                         | −0.027***   | 0.033***    | −0.002       | 0.015*       | −0.011       | 0.043***     |
|                                                      | (0.005)     | (0.007)     | (0.008)      | (0.006)      | (0.011)      | (0.008)      |
| Distance to biggest city in municipality (km)        | −0.010*     | −0.035***   | −0.024***    | −0.029***    | −0.014       | −0.033***    |
|                                                      | (0.005)     | (0.006)     | (0.006)      | (0.006)      | (0.008)      | (0.005)      |
| % European born                                      | 0.163***    |             |              |              |              | 0.201***     |
|                                                      | (0.028)     |             |              |              |              | (0.050)      |
| % Non-European born                                  | −0.065***   |             |              |              |              | −0.216***    |
|                                                      | (0.009)     |             |              |              |              | (0.009)      |
| % Change European born                               | 0.166***    |             |              |              | 0.204**      | −0.002       |
|                                                      | (0.035)     |             |              |              | (0.071)      | (0.052)      |
| % Change non-European born                           | 0.058***    |             |              |              | 0.210***     | 0.035***     |
|                                                      | (0.011)     |             |              |              | (0.025)      | (0.009)      |
| European born neighbouring – % in own district        |             |             |              |              |              |              |

(Continued)
Table A2. Continued.

|                          | (1)         | (2)         | (3)         | (4)         | (5)         | (6)         |
|--------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                          | −0.041*     | 0.050*      |             |             |             |             |
|                          | (0.019)     | (0.021)     |             |             |             |             |
| Non-European born       | −0.006      | −0.011**    |             |             |             |             |
| neighbouring – % in      |             |             |             |             |             |             |
| own district             |             |             |             |             |             |             |
| Municipal level          |             |             |             |             |             |             |
| % Population with       | 0.080       | 0.069       |             |             |             |             |
| high education          | (0.112)     | (0.102)     |             |             |             |             |
| % Blue collar employed  | −0.041      | −0.039      |             |             |             |             |
|                         | (0.031)     | (0.028)     |             |             |             |             |
| Ill health rate         | −0.257***   | −0.172**    |             |             |             |             |
|                         | (0.064)     | (0.058)     |             |             |             |             |
| % Long-term unemployment| 0.456       | 0.201       |             |             |             |             |
|                         | (0.262)     | (0.239)     |             |             |             |             |
| Mean income             | −0.028*     | −0.020      |             |             |             |             |
|                         | (0.014)     | (0.013)     |             |             |             |             |
| Gross regional product  | −0.008**    | −0.007***   |             |             |             |             |
|                         | (0.002)     | (0.002)     |             |             |             |             |
| Population size (Ln)    | 0.675       | 0.674       |             |             |             |             |
|                         | (0.381)     | (0.360)     |             |             |             |             |
| Change crime/citizen    | −0.000      | −0.000      |             |             |             |             |
|                         | (0.000)     | (0.000)     |             |             |             |             |
| % Foreign born          |             |             |             |             |             |             |
| % Change foreign born   | 0.432*      | 0.324       |             |             |             |             |
|                         | (0.169)     | (0.179)     |             |             |             |             |
| Fixed intercept         | 9.993***    | 11.932***   | 11.020***   | 11.555***   | 18.844**    | 15.498**    |
|                         | (0.632)     | (0.719)     | (0.768)     | (0.716)     | (5.810)     | (5.422)     |
| Random intercept        | –           | –           | –           | –           | Yes         | Yes         |
| (Municipality)          |             |             |             |             |             |             |
| AIC                     | 27374.99    | 28669.06    | 23529.76    | 28722.34    | 14660.26    | 22850.07    |
| BIC                     | 29349.89    | 30657.31    | 25432.89    | 30710.49    | 14809.9     | 23011.9     |
| Log restricted-likelihood | –           | –           | –           | –           | −7305.1292  | −11400.037  |
| Electoral districts     | 5837        | 5837        | 4785        | 5835        | 2938        | 4783        |
| Municipalities          | –           | –           | –           | –           | 275         | 286         |

Note: Standard errors in parentheses. * p < 0.05, ** p < 0.01, *** p < 0.001.

Comment: Models 1–4 include municipal fixed effects, Model 5 is a restricted sample, Model 6 includes an unweighted dependent variable.