



## Geographical proximity to refugee reception centres and voting<sup>☆,☆☆</sup>

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### ABSTRACT

A number of studies examine the effect of the presence of migrants or refugees on voting behaviour in the same location, overlooking potential interactions between geographical areas. Exploiting unique data on refugee reception centre locations, we provide novel empirical evidence on the geographical spillover effect of refugee premises on voting outcomes in neighbouring municipalities. Our analysis of the 2016 referendum and the 2013 and 2018 general elections demonstrates that proximity to refugee reception centres increases voter turnout and the share of votes for populist parties in Italy, while reducing support for the centre-left. Importantly, the effect varies by municipality population size, per capita taxable income level, former political orientation, and access to broadband internet. Consistent with the hypothesis that opposition parties might have exploited anti-immigration sentiments to influence both referendum and general election ballots, we find that geographical proximity to refugee centres partly contributes to the recent success of populist parties in Italy.

### 1. Introduction

In 2016 the arrival of over one million unauthorised migrants put a strain on the European asylum system creating reactions in public opinion and concern among politicians. Indeed, recent empirical contributions reveal that large refugee and immigrant inflows play an important role in shaping the success of populist and right-wing parties and reducing the support for governments in power, especially when they promote open policies towards immigration (Altundağ and Kaushal, 2020; Dustmann et al., 2019; Dinas et al., 2019; Fisunoğlu and Sert, 2019; Vasilakis, 2018). These studies mainly focus on the relationship between the presence of migrants or refugees and voting behaviour in the same location,

disregarding any interaction between *geographical areas*, and relying on the assumption that refugee inflows do not affect voting behaviour in non-hosting municipalities.<sup>1</sup> The debate on where refugees should be located leads to political rhetoric and it is reasonable to expect that voters might be affected not only by immigrants and refugees hosted within the places in which they reside but also by the geographical proximity to other municipalities where refugees are hosted.

<sup>1</sup> The evidence on the presence of immigrants and voting patterns in the same area is rather mixed. Steinmayr (2020) and Gehrsitz and Ungerer (2017), who analyse more recent elections, find contrasting results: for Germany and Austria,

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In this paper we emphasize the importance of these geographical spillovers on voting outcomes, and we do this by using data on recent ballots held in Italy, i.e. the 2016 Constitutional referendum and the 2013 and 2018 general elections. We show that the closer non-hosting municipalities are to refugee-hosting locations, the larger the impact on the political participation and on the vote shares for populist parties, and the lower the support for the centre-left. In detail, one km reduction in the distance from the closest municipality hosting a refugee reception centre increases referendum turnout by 0.11 percentage points (pp hereafter) and increases the proportion of people voting against the left-wing government that proposed the reform, measured with 'No' and 'Invalid' (i.e. protest) votes by 0.10 pp and 0.004 pp, respectively. Our cross-sectional estimates on the 2013 and 2018 general elections show that proximity to refugee centres increases populist votes, namely for the 5Star Movement. Further, exploiting the time dimension, i.e. changes in proximity to refugee reception centres over time, we find that new openings of refugee reception centres between 2013 and 2018 penalise voting for the centre-left, with a 1 km reduction in distance leading to 0.07 pp fewer votes in municipalities that do not host refugee centres.<sup>2</sup>

Our estimated effects suggest that voters that live closer to municipalities hosting refugees perceive refugees as a threat, and are therefore more likely to support populists rather than pro-immigration parties. Further analysis of the effect of other factors suggests that the effects of geographical spillovers in the referendum ballot are larger in less populated, poorer, and less left-wing oriented municipalities (according to the past elections). This is consistent with refugees being perceived as a threat especially in smaller communities and by individuals that potentially compete with them for the allocation of welfare resources (Dustmann et al., 2019).

Finally, we examine the interplay between geographical spillovers and media diffusion which is largely neglected by the current migration literature. Interestingly, we document that proximity to refugee reception centres decreases support for the centre-left the lower the access to broadband internet. Although municipality-level data on website searches are not available, our results are in line with greater availability of information reducing the impact of local matters, such as proximity to refugee facilities, on individuals' perceptions of the refugee crisis and their voting behaviour.<sup>3</sup>

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the authors find no effect or even a negative effect on voting for right-wing or anti-immigrant parties, respectively. Steinmayr (2020) explains the negative effects with 'contact theory' (Allport et al., 1954). Edo et al. (2019); Brunner and Kuhn (2018); Harmon (2018); Halla et al. (2017); Barone et al. (2016); Otto and Steinhardt (2014); Mendez and Cutillas (2014); Gerdes and Wadensjö (2008) are examples of scholars reporting positive effects of legal immigrants on voting for right-wing or populist parties. We depart from these studies and investigate the effect of being close to a refugee reception centre.

<sup>2</sup> The 2016 referendum ballot was formally unrelated to migration issues, apart from being held in a period characterised by large refugee inflows. Fig. OA1 shows how natives' attention to the topic of immigration closely follows the inflow of refugees in Italy. Further evidence on the salience of immigrant-related concerns for the referendum ballot is provided in Online Appendix OA.1. While the 'Yes' campaign was led by the Prime Minister, Mr. Renzi, and his party (Democratic Party), which proposed the constitutional reform, the 'No' campaign combined all opposition groups—mainly far-right and populist parties—such as the Lega and the Movimento 5 Stelle (5Star Movement or M5S hereafter). Lega is a right-wing sovereignist party with a strong anti-immigration stance, while the 5Star Movement is an anti-system party whose voters are more heterogeneous and comprise both right-wing- and left-wing-oriented voters, with sometimes opposite stances towards immigration. Thus, roughly speaking, 'No' votes in the referendum can be interpreted as anti-government (see, for instance, Altundağ and Kaushal, 2020; Fisunoğlu and Sert, 2019) and populist votes. The analyses on the 2013 and 2018 general elections, which were both held in a period of relatively low or rapidly decreasing inflow of refugees (Fig. OA1), confirm the results.

<sup>3</sup> To our knowledge, there is no information publicly disclosed on the websites visited by individuals in each municipality that can be used to classify web

In order to estimate geographical spillover effects on voting, we only focus on the municipalities not hosting refugees and consider them as treated with different intensities according to their geographical proximity to the closest refugee-hosting municipality. Two key features of our identification strategy stand out: (a) refugee-hosting municipalities  $j$  are excluded from the estimation sample since the allocation of certain types of refugee centres to municipalities is non-random, as discussed in Section 2; (b) we claim that geographical proximity to  $j$  is 'as good as randomly assigned' for non-hosting municipalities  $i$ . The latter assumption would imply, for instance, that mayors (or local governments) can decide to host refugee reception centres in the municipality they administer but not in neighbouring municipalities. In other words, there are no unobservable characteristics of  $i$  correlated with both its voting pattern and distance from the hosting municipality  $j$  (this assumption is discussed in Section 5.2).

Our contribution differs with respect to existing studies examining the effect of refugee inflows on voting outcomes, as we exclusively focus on geographical spillovers (and we cannot investigate pure 'contact effects'). Yet, our findings are also relevant to that stream of literature. The existence of geographical spillovers between hosting and non-hosting municipalities, and the consequent failure of the Stable Unit Treatment Value Assumption (SUTVA) may lead to a downward bias in the estimated effect of refugees' presence on voting.<sup>4</sup> To illustrate this, we implement an exercise that replicates the empirical strategy used in most papers and demonstrate the relevance of such political spillovers based on geographical proximity. We compare voting outcomes in the 2016 referendum between municipalities hosting a reception centre (treated) and non-hosting municipalities (controls). However, rather than keeping the control group fixed (as it is done in the literature), we progressively exclude the non-hosting municipalities that are below a given distance (radius) from the closest hosting municipality.<sup>5</sup>

In the absence of spillovers, we should obtain similar results independently of how the control group is selected. Interestingly, Fig. 1 demonstrates that voting patterns are increasingly different the farther non-hosting municipalities are considered as controls and that the estimated effect of hosting refugee centres may be downward biased if geographical spillovers across administrative boundaries are neglected. The results offer some nuance of possibly underestimated effects in the refugee literature because of geographical proximity.

This paper is organised as follows. Section 2 provides a description of the main features of Italy's refugee reception system. The empirical strategy and the data are described in Sections 3 and 4, respectively. Section 5 reports the main results and a falsification check of the identifying assumptions. Section 6.1 investigates mechanisms and heterogeneous effects, while Section 7 provides additional results on general elections. Section 8 summarises the main findings and offers some concluding remarks.

## 2. The refugee reception system in Italy

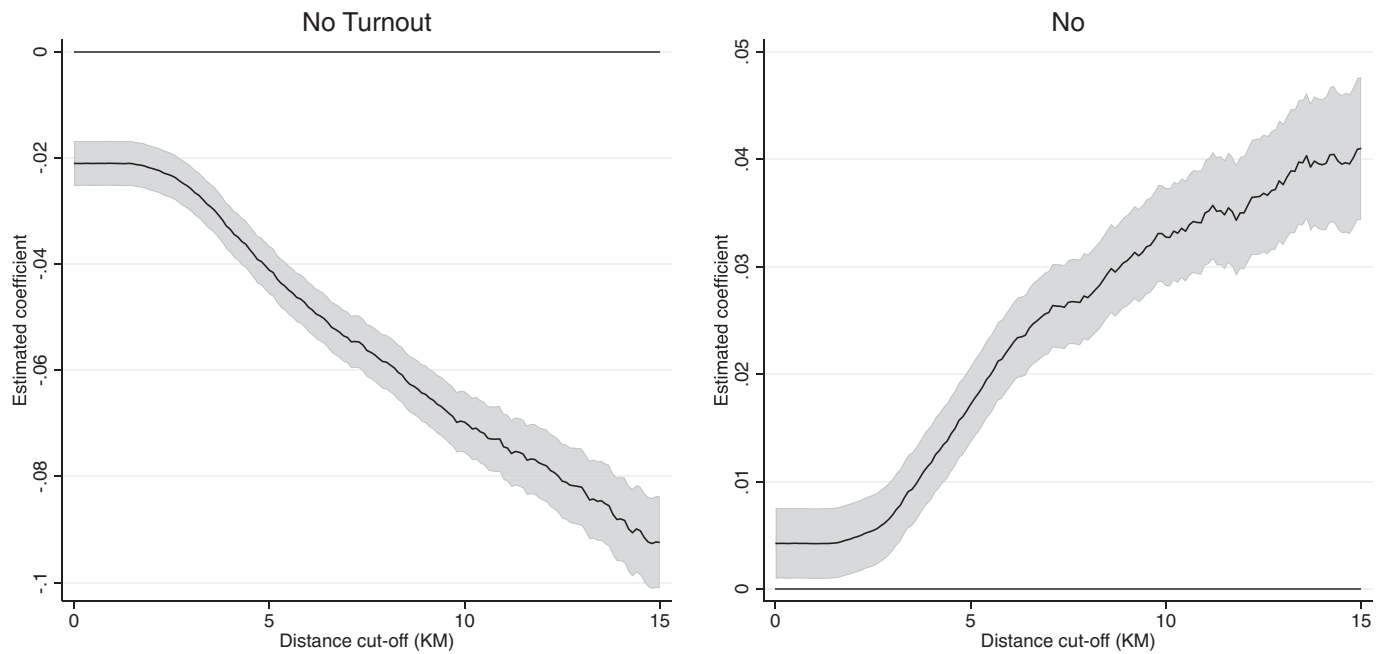
In 2016, the Italian reception system was articulated in three phases based on the Legislative Decree (LD) 142/2015: first aid and assistance, first reception, and second reception schemes. The LD 142/2015 qualifies as an international protection applicant, the foreigner, resident, or

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sources between those providing more neutral and objective news on refugees and "partisan" sources.

<sup>4</sup> The paper by Barone et al. (2016) mention the failure of the SUTVA as a potential explanation for the lack of an effect of the share of legal migrants on voting in small municipalities, whose populations might be more affected by immigrant arrivals in neighbouring municipalities.

<sup>5</sup> For instance, when we consider a zero minimum distance (on the horizontal axis), all control municipalities are included in the estimation no matter their distance from the closest hosting municipality. When the distance is set to 2 km, we select a more distant control group, as we drop control municipalities located within 2 km from the closest treated ones, and so forth.



**Fig. 1.** Hosting refugee reception centres and voting outcomes in the 2016 referendum. *Note.* The graph plots the OLS estimated coefficient  $\hat{\beta}$  of the following regression:  $y_i = \alpha + \beta RC_i + \epsilon_i$ , where the dependent variable  $y_i$  is the share of 'No Turnout' (left panel) and the share of anti-government votes (i.e. 'No' votes, right panel) in the Italian constitutional referendum of the 4th of December 2016 in municipality  $i$ , respectively; the independent variable  $RC_i$  is a dichotomous indicator for a municipality hosting refugee reception centres and  $\epsilon_i$  the error term; the same regression was estimated in different samples, in which non-hosting municipalities with a distance lower than the one indicated in the horizontal axis (distance cut-off in kilometers) are excluded from the estimation sample (Data source: Italian Ministry of Interior). The graph shows that by retaining in the sample control units that are geographically closer to the treatment units (and potentially partially treated in case of geographical spillovers), the magnitude of the estimated coefficients falls.

stateless person who has applied for protection to obtain the status of refugee or subsidiary protection. Article 22 states that asylum seekers are allowed to work 60 days after the deposit of the request for asylum in case they do not receive an answer before this term, and in any case after the refugee status has been recognized.

The first-line reception phase operates during the time needed to complete the identification, the recording of the asylum application (if any), and the assessment of the refugees' overall health condition. Once the identification operations are concluded, individuals applying for asylum protection are transferred to one of the second-line reception facilities, where they remain until a final decision is made on their application.<sup>6</sup>

The second-line reception phase provides the relocation of refugees and asylum seekers under the program called Protection System for Asylum Seekers and Refugees (SPRAR).<sup>7</sup> The SPRAR was created in 2002 as a joint action of the Ministry of the Interior, the National Association of the Italian Municipalities, and the United Nations High Commissioner for Refugees (UNHCR), with the aim of building the first national programme for asylum seekers supported by shared responsibility be-

<sup>6</sup> During this time they are obliged to stay in the centre they have been assigned to with restrictions regarding mobility towards other municipalities, unless they are relocated by the responsible authorities.

<sup>7</sup> Refugee status is granted only to those individuals who can prove that they risk persecution or death in their native country, according to the Italian Law 189/2002. In theory, EU law requires migrants to seek asylum in whichever country they first land. Individuals classified as irregular migrants are placed in detention centres until an expulsion order comes through. These places, called Centres of Identification and Expulsion (CIEs), are reserved for irregular migrants who do not request asylum and international protection or do not have the right to request it. In Italy, there are five such centres located in the cities of Turin, Rome, Bari, Trapani, and Caltanissetta.

tween local and central public entities.<sup>8</sup> The SPRAR system relies on the concept of 'integrated reception', which involves different actors at local levels (municipalities, third-sector organizations, volunteers, non-governmental organizations) to foster the integration and the social inclusion of refugees through activities such as the provision of training courses, work, and cultural exchanges (Gamalerio, 2018). It is worth mentioning that SPRAR centres can only be managed by non-profit organisations (NGOs). The SPRAR network aims to find free housing units for refugees and the recipients of subsidiary or humanitarian protection, which may be small or medium-sized apartments or larger premises (e.g. decommissioned military barracks and former hotels or schools).

In 2014, the insufficient capacity of the SPRAR to cope with the increasing arrivals to Italian shores led to the creation of extraordinary reception centres (CAS). Unlike with the opening of a SPRAR centre, which requires an agreement between prefectures and municipalities, CAS centres only require the authorisation of Italian prefectures, which allocate funds to NGOs in charge of assisting immigrants and providing housing and food. The Italian government (Ministry of the Interior) assigns migrants to each province based on the resident population, with the prefectures being in charge of finding suitable NGOs tasked with providing the necessary services to guests. As accommodation facilities, NGOs often use private properties that are adapted (at their expense) to meet the legal requirements for hosting refugees.

As of December 2016, more than 176,257 immigrants were in the Italian system of reception, of which 77.8% were hosted in CAS centres and only 13.1% in SPRAR centres, with the remaining hosted in other types of centres (Camera dei Deputati, 2017). This caused some significant dysfunction in the system. First, governmental funds supporting reception services should have been assigned by

<sup>8</sup> In December 2018, SPRAR was renamed SIPROIMI (Protection System for Beneficiaries of International Protection and for Unaccompanied Foreign Minors).

prefectures/municipalities to NGOs and other organisations through public procurement, but in many cases this did not happen and direct assignment was preferred in order to speed up the procedures. Second, the CASS, which were originally part of the first-line reception centres, in practice became second-line reception centres, creating a parallel system to SPRAR, although they were limited in terms of service provision to migrants.

In the rest of the paper, we refer more generally to ‘refugee centres’, which include all of the types described above.

### 3. Empirical strategy

We exploit geographical data at the finest administrative level available in Italy, which comprise roughly 8000 municipalities, to identify the causal effect of proximity to refugee centres on voting in the 2016 referendum. Our baseline model aims to explain how geographical proximity to a refugee centre, measured as the distance from the closest municipality hosting a refugee hosting facility, affects voting outcomes.

The main challenge to identification is that the location of refugee centres is unlikely to be random. Unobserved factors (e.g. characteristics of the mayor in office and the lobbying process between local authorities and the central government) that are not fully controlled for by the variables in the empirical model may jointly affect the decision to open a refugee reception centre in a given municipality (or not) and the voting behaviour in that municipality. To address this selection problem, our main empirical specifications are based on the sample of municipalities that do not host a refugee centre at the time of the referendum, and we exploit potential geographical spillovers for the identification of the effect of interest. Our idea is to leverage a neighbouring municipality’s choice to host refugees (in the case of SPRAR centres) or the prefecture’s decision to allocate refugees to a specific town (in the case of CAS centres) to assess the effect of geographical proximity to a refugee reception centre on voting outcomes in municipalities that do not host refugees. In what follows, we generally use the term ‘refugee’ even if the centres can host both immigrants seeking international protection or asylum who are waiting for a decision on their status and refugees.

The empirical model can be described as follows:

$$Y_{ij}^k = \beta_0 + \beta_1 D_{ij} + \beta_2^T \mathbf{X}_i + c_j + u_{ij}. \quad (1)$$

In Eqn 1,  $Y_{ij}^k$  is the share of votes within the voting-eligible population (ranging from 0 to 1) in municipality  $i$  and  $j$  is the index for the closest municipality hosting at least one refugee centre. The superscript  $k$  indicates the four voting outcomes of interest, computed as shares over the population of eligible voters: (1) ‘No Turnout’, namely the difference between the total eligible population and the number of people voting in the referendum, (2) ‘Yes’ votes, (3) ‘No’ votes, and (4) ‘Invalid’ votes, defined as the sum of blank, invalid, and contested votes.<sup>9</sup>  $D_{ij}$  is the distance, in hundreds of kilometres, between municipality  $i$  and the closest municipality with a refugee centre  $j$ , i.e. the geodesic distance between the centroids of  $i$  and  $j$ .<sup>10</sup> Our parameter of interest,  $\beta_1$ , measures the

<sup>9</sup> We prefer to use shares of the population of eligible voters rather than of the total number of voters since the latter is a variable also potentially affected by proximity to refugees. Indeed, our analysis shows that distance from a refugee reception centre significantly affects voter turnout.

<sup>10</sup> As in other studies, distances are computed as if all reception centres were located in the municipality’s centroid and voters were entirely located in the centroid of the potentially affected municipality. This is simply an approximation and may lead to a measurement error. Considering very small geographical units such as Italian municipalities, which have a median area of about 20 km<sup>2</sup>, should make measurement error a minor issue. In some robustness checks, we also exclude large municipalities. In a robustness check in the Online Appendix, we run a simulation exercise to check the sensitivity of our estimates to assumptions regarding the location of refugee centres within a municipality. From now on, we do not distinguish between different types of refugee centres.

**Table 1**  
Main descriptive statistics.

Main variables	Mean	St. Dev.
Share of No Turnout	0.325	0.089
Share of Yes	0.265	0.075
Share of No	0.403	0.071
Share of invalid votes	0.007	0.004
Distance (100 km) from hosting municipality $j$	0.076	0.051
Non-hosting municipalities	5042	
Hosting municipalities	1131	

*Note.* This table shows the mean and standard deviations of the main dependent variables, while Table OA2 in the Online Appendix displays the descriptive statistics for the covariates included in the empirical analysis.

effect of geographical proximity to a municipality with a refugee reception centre on voting behaviour. The vector  $\mathbf{X}_i$  controls for a large set of geographical, socio-economic, and demographic characteristics of municipality  $i$  that are described in the next section, while  $u_{ij}$  is the error term.

We estimate a fixed effects model at the level of the closest municipality  $j$  that hosts at least one refugee centre ( $c_j$ ), leveraging the within-group geographical variation in the proximity of the non-hosting municipalities  $i$  that share the same closest refugee-hosting municipality  $j$ . In so doing, we consider the relative distance from  $i$  to  $j$ , the closest municipality hosting refugees, to be ‘as good as random’, i.e. the decision of  $j$  to be uncorrelated with unobserved determinants of voting in  $i$ . Opening a refugee centre in  $j$ , either with the agreement of the mayor or through the decision of the prefecture, might potentially foster spillover effects to municipality  $i$ . The citizens living in  $i$  ‘suffer’ from the decision of  $j$ ; in fact, they cannot do much about it, neither at the time of opening (by means of protests) nor later (e.g. by voting against their mayor in the next administrative election). The inclusion of the fixed effects (FEs, hereafter)  $c_j$  accounts for other unobservable characteristics that are shared by neighbouring municipalities and allows us to exploit smaller, intra-group distances for identification.

### 4. Data and descriptive statistics

Our analysis combines data from different sources. First, we use a novel and unique dataset on the geographical distribution of refugee centres for all Italian municipalities (Ministry of Interior). This allows us to identify locations hosting at least one refugee centre as of November 2016, i.e. less than a month before the day of the referendum. Fig. 2 shows the geographical distribution of refugee centres in Italy, which define our group fixed effects ( $c_j$ ). In total, there were 2215 municipalities  $j$  that hosted a centre and 5544 municipalities  $i$  that did not host a centre.<sup>11</sup> After dropping singletons in each group, defined by  $c_j$  (502), the final sample consists of 5042 non-hosting municipalities.

Second, we use data on the results of the 2016 constitutional referendum and several general and local elections gathered from the Ministry of the Interior, which are used either as control variables or as dependent variables in the falsification checks (Section 5.2) and further results (Section 7). Descriptive statistics on the electoral outcomes are reported in Table 1.

Third, we collect our control variables  $\mathbf{X}_i$  from several data sources made available by the Italian National Statistical Institute (ISTAT),

<sup>11</sup> In Italy, there are around 8000 municipalities. We exclude the Aosta Valley from the sample due to missing values in the 2001 general election results (74 municipalities), which appears among the control variables. We also exclude some municipalities that changed administrative borders by either merging with or splitting from others, for which it is impossible to link the 2001 general election results (included in the vector of controls) to the current municipality, and 39 municipalities with missing values in either the referendum voting outcomes (which were not communicated to the Ministry of the Interior) or in the control variables, e.g. results of past elections.

**Table 2**  
Voting behaviour and proximity to a refugee centre, 2016: baseline results.

Panel A	Share of votes:			
	No Turnout (1)	Yes (2)	No (3)	Invalid (4)
Distance	0.1400*** (0.0237)	-0.0213 (0.0292)	-0.1143*** (0.0319)	0.0044* (0.0023)
R-squared	0.8217	0.7530	0.6673	0.2783
Controls				
Geography	✓	✓	✓	✓
Centre FEs	✓	✓	✓	✓
<b>Panel B</b>	Share of votes:			
	No Turnout (1)	Yes (2)	No (3)	Invalid (4)
Distance	0.1235*** (0.0227)	0.0259 (0.0272)	0.0926*** (0.0279)	0.0050** (0.0023)
R-squared	0.8535	0.7802	0.7075	0.2894
Controls				
Geography	✓	✓	✓	✓
Centre FEs	✓	✓	✓	✓
Socio-economic and demographic	✓	✓	✓	✓
<b>Panel C</b>	Share of votes:			
	No Turnout (1)	Yes (2)	No (3)	Invalid (4)
Distance	0.1115*** (0.0215)	0.0079 (0.0223)	0.0990*** (0.0242)	0.0046** (0.0022)
R-squared	0.8596	0.8214	0.7548	0.2932
Controls				
Geography	✓	✓	✓	✓
Centre FEs	✓	✓	✓	✓
Socio-economic and demographic	✓	✓	✓	✓
Past elections	✓	✓	✓	✓
Observations	5042	5042	5042	5042

*Note.* Sample of non-hosting municipalities as of November 2016. We report the estimates of the effect of distance to the closest  $j$  municipality with a refugee centre (in hundreds of km) on voting behaviour (i.e. the shares of 'No Turnout', 'Yes', 'No', and 'Invalid' votes). All regressions include fixed effects at the level of the closest municipality  $j$  hosting a refugee centre (centre FEs). In panel A, we only include centre FEs and geographic controls (municipality's area, altimetry, urbanization degree, seismicity, mountainous terrain, waste-water purification services). In panel B, we add demographic and socio-economic controls (population, population density, level of education, share of migrants, income and age structure both for natives and foreigners). In panel C, we add the 2001 past general election controls. Standard errors are clustered at the level of the closest municipality with a refugee centre. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

which contain information on the characteristics of Italian municipalities. Whenever possible, controls are measured in 2015, i.e. one year before the constitutional referendum. We include geographical, demographic, and socio-economic aspects that may correlate with both voting in favour of the government and the location of refugee centres, such as total area, degree of urbanisation, indicators for being in a mountainous area, hydrological situation and different indicators of seismicity, total population, population density, and the proportion of non-EU citizens (the full list of controls is included in Table OA2.<sup>12</sup> and taxable income per capita to capture differences in the size and wealth of municipalities. We also include controls for the level of education using the highest educational qualification achieved by individuals from the most recent population census (2011), as it is a predictor of both political preferences and attitudes towards migrants.

<sup>12</sup> Controlling for the presence of registered immigrants is relevant as it has direct effects on individuals' voting preferences (see Barone et al., 2016). Like in the extant literature, we cannot control for the stock of 'undocumented' immigrants. However, using mass regularisation episodes in Italy, Bianchi et al. (2012) show that the geographical distribution of regular and irregular immigrants are tightly related. We also estimate two additional regressions: first, we consider the proportion of regular immigrants from countries where the majority of asylum seekers come from (Nigeria, Pakistan, Gambia, Senegal, Bangladesh, Mali, Ukraine, and Afghanistan); second, we consider the proportion of registered migrants from Africa. The results are robust to these two alternative specifications, which are not shown for brevity.

Municipality  $j$  creates clusters of towns  $i$  that are, *ceteris paribus*, heterogeneous in their geographical exposure to the nearest refugee centre  $j$ . Indeed, our empirical setup is based on towns  $i$  that neighbour each other and that determine clusters of non-hosting municipalities sharing the closest municipality  $j$  with a refugee centre. The size of each cluster is between 2 and 28 municipalities, with a mean of 7 and a median of 5, as shown in Fig. OA2 (left panel). Looking at the minimum distance by quartile of cluster size (right panel), we observe similar distribution patterns for the first three quartiles, with a median distance to a refugee centre of about 5 km, while more dispersion emerges in the largest clusters (10–30), where the median distance is almost double.

Fig. OA3 presents the distribution of distances from the closest municipality with a refugee centre by cluster size and the four Italian macro-regions. On average, similar distances to refugee centres are observed across areas, although larger clusters (above 18 municipalities) are predominantly located in southern Italy.

## 5. Results

Focusing on the sample of municipalities  $i$  that do not host a refugee centre, we study the effect of geographical distance from the closest municipality with a refugee centre on four outcome variables, namely 'No Turnout', 'Yes' votes, 'No' votes, and 'Invalid' votes in the 2016 constitutional referendum.



Fig. 2. The distribution of refugee centres across Italy (November 2016). *Note.* The figure displays the geographical distribution of refugee centres in Italy (as of November 2016). The dots represent a municipality ( $j$ ) hosting at least one refugee centre (source: Italian Ministry of Interior).

The coefficients on  $Distance$  ( $D_{ij}$ ) must sum to zero across the four columns since the dependent variables are proportions that sum up to one. Thus, the coefficient on  $Distance$  for ‘No Turnout’, in column (1), is equal to the sum of the coefficients in columns (2)–(4) but with the opposite sign. We report the coefficient of ‘No Turnout’ in the first column since we deem it informative to evaluate how proximity to a refugee centre affects voter turnout and how the casted votes are distributed across the remaining voting outcomes, namely ‘Yes’, ‘No’, and ‘Invalid’ votes.

Table 2 reports our main results organised into three sections. In panel A, we include fixed effects at the level of the closest municipality with a refugee centre and the geomorphological characteristics of municipality  $i$ . In panel B, we add a rich list of socio-economic and demographic controls at the municipality level, and in panel C, which is our preferred specification, we also account for the 2001 general election results.

In panel A of Table 2, we observe a strongly significant positive effect of distance from municipalities with refugee centres on ‘No Turnout’. A 1 km increase in the distance positively affects the share of “No Turnout” by 0.14 pp, meaning that it decreases the share of eligible voters attending the ballot. Negative effects of distance emerge both for the proportions of “No” and “Invalid” votes, with a 1 km increase in the distance negatively affecting these outcomes by 0.11 and 0.004 pp, respectively. The inclusion of the demographic and socio-economic controls yields a marginal reduction in the coefficients (panel B), and adding past general election outcomes at the municipality level, we observe stable estimates (panel C). According to our preferred specification in panel C, a 1 km

increase in the distance reduces voter turnout and the share of “No” and “Invalid” votes by 0.11, 0.10, and 0.005 pp, respectively.<sup>13</sup>

Several robustness checks on our baseline specification are reported in Online Appendix OA.3.

### 5.1. Alternative measures of geographical proximity

To check the robustness of our results to how proximity and geographical spillovers in voting are defined, we implement alternative measures of closeness to refugee reception centres, presented in Table 3. For each municipality  $i$  that does not host a refugee settlement, we define the number of refugee centres (i.e. hosting municipalities  $j$ ) that are located within a certain radius (0 to 5, 5 to 10, and 10 to 15 km). The number of centres within 5 km displays a significant effect on both the share of “No Turnout” and the share of “No” votes: one additional centre in this radius leads to a reduction of 0.24 pp in the share of “No turnout” and an increase of 0.33 pp in the share of “No” votes. The effects of centres situated within a 5–10 km radius are smaller in magnitude—about 0.18 pp and 0.12 pp, respectively—and the effects of centres situated farther away are even smaller (0.06 for “No turnout” and insignificant for the “No” votes), showing evidence of a geographical decay in the proximity effects.<sup>14</sup>

Panel B of Table 3 considers the 1st distance, the difference between the 2nd and the 1st distance, and the difference between the 3rd and the 2nd distance as an alternative measure of proximity to a refugee centre. The specification accounts both for the closest hosting municipality  $j$  and other neighbouring  $j$  municipalities that might impact voting in the non-hosting municipality  $i$ . Indeed, in addition to the effects of the closest municipality, which are very similar to those found in panel C of Table 2, namely 0.13 pp for “No turnout” and  $-0.13$  for “No” votes, similar effects—albeit smaller in magnitude—are observed for the difference between the 2nd and the 1st distance (0.05 pp for “No turnout” and 0.09 pp for “No” votes, respectively). Conversely, the coefficients on the difference between the 3rd and the 2nd are never statistically significant and very small in magnitude.

In panel C of Table 3, we consider the share of refugee-hosting municipalities within the same local labour market as a different treatment. In this case as well, we observe a negative effect on “No turnout” ( $-0.016$ ) and a positive effect on “No” votes (0.014).<sup>15</sup> The larger the number of hosting municipalities within a local labour market (LLM), the larger the share of individuals attending the ballot and voting against the government. To conclude, the results demonstrate a clear geographical pattern in voting, with qualitatively and quantitatively different measures leading to similar conclusions.

### 5.2. Threats to the identification

Our identification strategy relies on the assumption that municipality  $i$  suffers from the decision of municipality  $j$  to host refugees. In other words, the opening of a reception centre in location  $j$  can be considered “as good as random” with respect to voting behaviour in  $i$ .

Although we exclude municipalities  $j$  from our main estimation sample, concerns may still arise in the case of political agreements between neighbouring municipalities and between municipalities and the central government or prefectures in the decision process to host refugee

<sup>13</sup> To get a sense of the meaningfulness of these effects, we make a simple back-of-envelope calculation, multiplying the average distance in our sample by the estimated coefficients. We find the proximity to refugee centres increased turnout by 0.8 pp and the share of “No” votes by 0.7 pp.

<sup>14</sup> The effect on the share of “Yes” votes does not show a monotonic pattern but is very close to zero in all radius groups and often not statistically significant.

<sup>15</sup> In this case, the coefficients are not immediately comparable to those in panels A and B of Table 3 and panel C of Table 2, which include closest hosting municipality fixed effects, but the conclusions are qualitatively similar.

**Table 3**  
Alternative definitions of proximity.

Panel A	Share of votes:			
	No Turnout (1)	Yes (2)	No (3)	Invalid (4)
[1] # Centres within 5 km	0.0024*** (0.0009)	0.0009 (0.0010)	0.0033*** (0.0011)	0.0000 (0.0001)
[2] # Centres between 5 and 10 km	0.0018*** (0.0005)	0.0006 (0.0005)	0.0012** (0.0006)	0.0000 (0.0001)
[3] # Centres between 10 and 15 km	0.0006* (0.0004)	0.0009** (0.0004)	0.0002 (0.0004)	0.0000 (0.0000)
Observations	5042	5042	5042	5042
R-squared	0.8586	0.8217	0.7536	0.2921
<b>P-value Test [1] vs [2]</b>	0.4223	0.1162	0.0398	0.7821
<b>P-value Test [2] vs [3]</b>	0.0378	0.645	0.0211	0.9543
<i>Controls</i>				
All controls <sup>(a)</sup>	✓	✓	✓	✓
Panel B	Share of votes:			
	No Turnout (1)	Yes (2)	No (3)	Invalid (4)
[1] 1st Distance	0.1271*** (0.0243)	0.0055 (0.0256)	0.1290*** (0.0285)	0.0036 (0.0025)
[2] 2nd Distance – 1st Distance	0.0481* (0.0288)	0.0436* (0.0258)	0.0934*** (0.0293)	0.0017 (0.0026)
[3] 3rd Distance – 2nd Distance	0.0083 (0.0368)	0.0003 (0.0326)	0.0122 (0.0364)	0.0036 (0.0031)
Observations	5042	5042	5042	5042
R-squared	0.8597	0.8215	0.7555	0.2934
<b>P-value Test [1] vs [2]</b>	0.009	0.150	0.192	0.052
<b>P-value Test [2] vs [3]</b>	0.312	0.213	0.040	0.574
<i>Controls</i>				
All controls <sup>(a)</sup>	✓	✓	✓	✓
Panel C	Share of votes:			
	No Turnout (1)	Yes (2)	No (3)	Invalid (4)
Share of hosting municipalities (LLM)	0.0155** (0.0074)	0.0019 (0.0073)	0.0139** (0.0067)	0.0003 (0.0004)
Observations	5544	5544	5544	5544
R-squared	0.7641	0.7062	0.6159	0.1210
<i>Controls</i>				
Geography	✓	✓	✓	✓
Socio-economic and demographic	✓	✓	✓	✓
Past elections	✓	✓	✓	✓
Region FEs	✓	✓	✓	✓

*Note.* We report the estimates of three different alternative definitions of geographical proximity. In panel A, we define our independent variable as the number of refugee centres in a given radius, namely 0–5, 5–10, or 10–15 km. We include centre FEs and all controls as in panel C of Table 2. We report the  $p$ -value of the  $t$ -test between the estimated coefficients in bold. In panel B, we construct a different indicator showing the distance of municipality  $i$  to the closest municipality with a refugee centre  $j$  (1st Distance), the difference with the second distance (2nd Distance–1st Distance), and the residual difference between the second and the third distance to  $j$  (3rd Distance–2st Distance). In panel C, we use the number of refugee centres within the municipality's local labour market (LLM). Observations in panel C are different from Table 2 due to the inclusion of region FEs instead of centre FEs (i.e. by different numbers of singletons). Standard errors are clustered at the level of the closest municipality with a refugee centre. <sup>(a)</sup> considers the same controls as in panel C of Table 2. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

settlements. Using general election results in 2008, we test this potential self-selection issue. In this respect, the 2008 election represents the first available ballot since the beginning of important refugee inflows in Italy, which culminated with the 2013 Lampedusa migrant shipwreck and the subsequent launch of Operation *Mare Nostrum*. We regress the shares (on eligible voters) of voter turnout, centre-right, centre-left, and other party (the residual category of minor parties and invalid votes) votes on our main indicator of proximity, i.e. the distance from the closest municipality with a refugee centre. The results are reported in panel A of Table 4. Importantly, we do not observe any statistically significant relationship between distance and past voting, suggesting that being close to a municipality  $j$  hosting a refugee centre is not correlated with the past political orientation of the non-hosting municipality  $i$ .<sup>16</sup>

<sup>16</sup> At the time, the centre-right coalition included the following parties: The People of Freedom, Lega, and Movement for the Autonomies. The centre-left

Furthermore, we consider local elections as an additional falsification exercise in which we analyse a mayor's probability of being re-elected as a function of distance from the closest hosting municipality.<sup>17</sup> We collect the list of mayors in charge at the time of the referendum (2016) in all non-hosting municipalities  $i$  and the list in charge in the previous round. Since mayors can be re-elected for a maximum of two mandates (10 years), we include in the analysis only those that could

comprised the Democratic Party and Italy of Values. The residual category accounted for less than 3.6% of votes. Table OA3 replicates a similar placebo using the 2006 general election. The conclusions remain identical.

<sup>17</sup> Since our estimation sample mainly includes small municipalities, for which it is difficult to determine the political orientation of the mayor in office owing to the prevalence of "civic lists" (see Bordignon et al., 2016), it was not possible to investigate whether the effect of distance was larger for left-wing mayors, which were politically aligned with the central government.

**Table 4**  
Falsification: general election of 2008 and mayor's re-election .

Panel A	Share of votes:			
	Share of centre-right (1)	Share of centre-left (2)	Share of no turnout (3)	Share of other parties and invalid (4)
<i>Distance</i>	0.0134 (0.0284)	0.0368 (0.0234)	0.0104 (0.0250)	0.0338 (0.0281)
Observations	5041	5041	5041	5041
R-squared	0.9104	0.7845	0.7265	0.8102
<i>Controls</i>				
All controls <sup>(a)</sup>	✓	✓	✓	✓
<b>Panel B</b>	Re-elected (1)			
<i>Distance</i>	0.0727 (0.2848)			
Observations	2781			
R-squared	0.3142			
<i>Controls</i>				
All controls <sup>(a)</sup>	✓			

*Note* This table reports the estimates of two falsification excises. In panel A, we use the voting outcomes in the 2008 general election. At the time, the centre-right coalition included the following parties: The People of Freedom, Lega, and the Movement for the Autonomies. The centre-left comprised the Democratic Party and Italy of Values. The residual category accounts, on average, for 3.6% of the total votes in municipalities in the sample. The observations differ from Table 2 because for one municipality, the information about the electoral outcomes in 2008 is not available. In panel B, we show the probability that a mayor is re-elected conditional on being in their first mandate. Standard errors are clustered at the level of the closest municipality with a refugee centre. The final sample comprises 2781 observations due to the exclusion of municipalities with a mayor already in their second mandate (2167) and who therefore cannot be re-elected, and of singletons (595). The major has been re-elected in 1455 cases over 2,781. <sup>(a)</sup> considers the same controls as in panel C of Table 2. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

be re-elected, that is, the ones that were in their first mandate.<sup>18</sup> In column (1) of panel B in Table 4, we report the results. Distance does not significantly affect the probability of re-election. The evidence supports our claim that mayors were not paying political costs *by being close to* refugee-hosting municipalities and that they probably would not have had particularly strong incentives to lobby for not having refugee centres in the surrounding municipalities.<sup>19</sup>

## 6. Mechanisms and heterogeneity of geographical spillovers on voting

### 6.1. Proximity and media effects

Why do voters participate more and vote more against the government in power the closer they are to refugee reception centres? Since we adopt an estimation strategy based on geographical spillovers and focus on non-hosting municipalities, the estimated effects are unlikely to reflect contacts between natives and refugees but more likely to reflect voter perceptions.<sup>20</sup> We put forward that voters may perceive refugees as a threat if there are refugee facilities in neighbouring municipalities. Moreover, media attention in a period of increasing refugee arrivals might have played an important role in shaping natives' attitudes and creating anxiety towards the government's actions in dealing with the large inflows of refugees (Bellucci et al., 2019).

The literature on refugees and voting is rather silent about the role of the media. Interactions of proximity effects with media are ex-ante

<sup>18</sup> The mayors that were in their first mandate comprised 61% of the total local administrators.

<sup>19</sup> Gamalerio (2018) demonstrates instead the existence of high political costs for hosting SPRAR centres. Indeed, he shows that the probability of hosting a SPRAR reception centre is 24% lower for mayors in the final year of their term (i.e. just before elections), regardless of their political orientation.

<sup>20</sup> Unfortunately, data on refugee mobility across municipalities is not available and we cannot measure the importance of such contacts. However, the municipalities in our sample are unlikely to be destinations for substantial refugee mobility because non-hosting municipalities are small, on average. Refugees are indeed likely to move towards the largest municipalities to benefit from better employment opportunities and co-ethnic network effects.

ambiguous. On the one hand, one might expect the media to act as a echo chamber amplifying the effect of proximity, if more voters become aware of refugee centres in neighbouring municipalities through information conveyed by the media. On the other hand, access to media may provide to voters information on the refugee crisis and directly shape their perceptions and refugee-related concerns, making them less sensitive to local circumstances.

The estimates reported in Table 5 aim to shed light on whether proximity and the media could jointly shape natives' opinions about refugees. First, we investigate whether there is an interplay between the traditional media and the effect of proximity to a refugee centre. As a proxy for traditional media, we include an interaction term between distance and the circulation of newspapers at the province level (i.e. sales per capita). Results are reported in panel A of Table 5, in which we do not observe a clear-cut relation between distance and traditional media. Indeed, newspaper sales appear to interact with distance only in determining the 'No votes, and with an inverse U-shaped pattern. However, these results must be interpreted with caution, especially given the limited variation that newspaper circulation has within clusters, which often include municipalities belonging to very few provinces. Moreover, one may also have doubts on the relevance of the press as an important source of information for voters, especially in light of the decline in newspaper readership in recent years, in part due to the introduction of new media such as digital terrestrial television (Mastorocco and Minale, 2018) or web-based media.

A variant of this test is implemented in panel B. Since sales of local newspapers are concentrated at the province level, we include in the model a dummy for the hosting and non-hosting municipalities being in the same province, and its interaction with distance. If the local press was the main vehicle of information about the location of (nearby) refugee centres, we might expect a positive interaction.<sup>21</sup> In this case, the results in Table 5 show no significant differences across the interactions for all voting outcomes. All in all, the evidence presented in panels A and B suggest that that voters may acquire information on proximity

<sup>21</sup> We select the top 15 national daily newspapers in Italy, which account for almost 70% of total sales, including also a large number of sports newspapers and magazines.



**Table 5**  
Heterogeneity by media exposure.

Panel A	Share of votes:			
	No Turnout (1)	Yes (2)	No (3)	Invalid (4)
[1] Distance * Journals <sub>High</sub>	0.1165*** (0.0427)	0.0518 (0.0515)	-0.1681*** (0.0520)	-0.0002 (0.0053)
[2] Distance * Journals <sub>Medium</sub>	0.0801** (0.0315)	0.0258 (0.0270)	0.0485 (0.0365)	0.0058* (0.0030)
[3] Distance * Journals <sub>Low</sub>	0.1349*** (0.0301)	0.0276 (0.0286)	0.1013*** (0.0330)	0.0060** (0.0026)
Observations	5042	5042	5042	5042
R-squared	0.8602	0.8217	0.7556	0.2938
<b>P-value Test [1] = [2]</b>	0.496	0.171	0.056	0.339
<b>P-value Test [2] = [3]</b>	0.17	0.958	0.238	0.945
<i>Controls</i>				
All controls <sup>(a)</sup>	✓	✓	✓	✓
<b>Panel B</b>	Share of votes:			
	No Turnout (1)	Yes (2)	No (3)	Invalid (4)
[1] Distance * Same Province	0.1139*** (0.0237)	0.0128 (0.0248)	0.0969*** (0.0257)	0.0041 (0.0025)
[2] Distance * Different Province	0.1194*** (0.0351)	0.0233 (0.0307)	0.0910** (0.0385)	0.0051 (0.0031)
Observations	5042	5042	5042	5042
R-squared	0.8596	0.8216	0.7548	0.2933
<b>P-value Test [1] = [2]</b>	0.932	0.567	0.734	0.906
<i>Controls</i>				
All controls <sup>(a)</sup>	✓	✓	✓	✓
<b>Panel C</b>	Share of votes:			
	No Turnout (1)	Yes (2)	No (3)	Invalid (4)
[1] Distance * Broadband = 1	0.0733*** (0.0236)	0.0001 (0.0211)	0.0684** (0.0267)	0.0049** (0.0022)
[2] Distance * Broadband = 0	0.1325*** (0.0238)	0.0122 (0.0263)	0.1158*** (0.0276)	0.0045* (0.0026)
Observations	5042	5042	5042	5042
R-squared	0.8598	0.8214	0.7551	0.2936
<b>P-value Test [1] = [2]</b>	0.012	0.571	0.077	0.856
<i>Controls</i>				
All controls <sup>(a)</sup>	✓	✓	✓	✓

*Note.* In panel A, we define low/medium/high tertiles as being below the 33rd/between the 33rd and 66th/above the 66th percentile of the distribution of sales of newspapers per capita. In panel B, we use an indicator that takes a value of one if municipality  $i$  is in the same province as the hosting municipality  $j$  (i.e. same media market). In panel C, we use a dummy that takes a value of one if the municipality has access to broadband internet and zero otherwise. In all panels, we include the same controls as in panel C of Table 2. Standard errors are clustered at the level of the closest municipality with a refugee centre. <sup>(a)</sup> considers the same controls as in panel C of Table 2 \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

of refugee centres through informal or personal channels, such as by word of mouth.

In panel C, we investigate the interplay between geographical proximity and the access to non-traditional media (e.g. social media), proxied by access to a broadband internet connection at the municipality level.<sup>22</sup> We use a binary indicator for a municipality having access to broadband or not. Interestingly, the results suggest that the effects of distance on both “No Turnout” and “No” votes are smaller in municipalities where broadband internet connection is available. Clearly, information

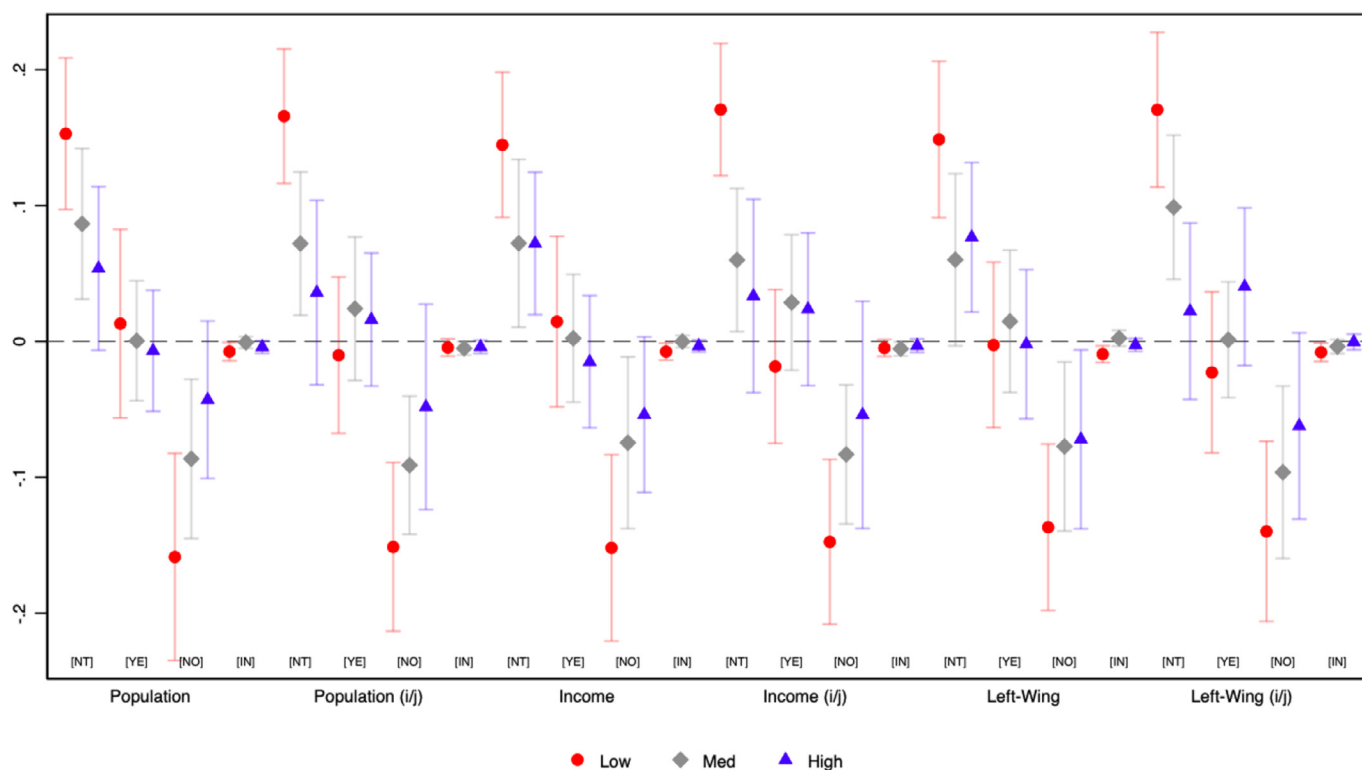
on websites visited by voters in each municipality is not disclosed so that we cannot classify whether they are likely to provide objective vs. partisan information on refugees.<sup>23</sup> Our findings are however consistent with voters being less affected by geographical proximity when they can potentially access wider information, meaning that distance to refugee centres plays a less relevant role in increasing both the voter turnout and the anti-government vote shares.

## 6.2. Heterogeneous effects

Other studies on refugees and voting behaviour underline potential pre-determined characteristics that might either alleviate or exacerbate the impact of refugees on voting. Our context is different from previous

<sup>22</sup> Official data were collected and released at the municipality level from the Italian Ministry of Economic Development starting from 2018. ISTAT reports that there was about a 6 pp increase in the percentage of households using a broadband internet connection between 2016 and 2018. Since this increase also includes households living in municipalities already served by a broadband connection in 2016, we expect the change in the percentage of municipality coverage between the two years to be smaller. Some background information on the evolution of broadband internet in Italy is provided by Campante et al. (2018). In our baseline specifications, we control for many covariates potentially affecting the demand for broadband internet (e.g. population size and density, educational level, income, geomorphological characteristics), and which may also affect voting.

<sup>23</sup> Opposite interpretations are theoretically possible. On the one hand, access to broadband internet may increase support for populist parties and their anti-immigration stances (Lelkes et al., 2017; Schaub and Morisi, 2019), so as refugees are perceived as a threat irrespective of their location, reducing this way the role of proximity. On the other hand, broadband access may contribute to a better knowledge of the refugee and immigration dynamics, leading to an overall improvement in attitudes towards refugees and immigrants (Romarri, 2020) and reducing the geographical spillovers in voting.



**Fig. 3.** Effect heterogeneity:  $i$  and the ratio between  $i$ 's and  $j$ 's characteristics. *Note.* The heterogeneity analysis is based both on  $i$  municipality characteristics and the ratio between  $i$ 's and  $j$ 's municipality characteristics ( $i/j$ ). NT, YE, NO, IN are the outcomes at the referendum, i.e. shares of 'No Turnout', 'Yes', 'No', and 'Invalid' votes, respectively. We define low/medium/high types as being below the 33rd /between the 33rd and 66th/above the 66th percentiles of the interacted variables: population, per capita taxable income (source: ISTAT 2015), and left-wing votes in the 2001 general election (source: Italian Ministry of Interior).

contributions since we rely on geographical spillovers from places that host a refugee centre to non-hosting locations. We first investigate the heterogeneity according to  $i$ 's characteristics. The heterogeneity analysis is based on the interaction term between the distance to the closest hosting municipality and a specific tertile of a given characteristic. Then, we focus on the ratio between  $i$ 's and  $j$ 's covariates, with the aim of capturing the effect of relative differences between hosting and non-hosting municipalities.

We consider potential mediating variables that are often highlighted as relevant in the literature (Barone et al., 2016; Halla et al., 2017; Dustmann et al., 2019), such as population size, population density, the share of people aged above 75, the level of educational attainment, the share of illiterates, the index of the vulnerable population, the percentage of buildings in poor condition, the share of migrants, the share of commuters to  $j$ , crime rates, per capita taxable income levels, and past political attitudes.

Larger effects for municipalities at the highest tertile compared to the lowest tertile of a given characteristic mean that this contributes to explaining voter concerns about the geographical proximity of refugees to their municipality. We limit the discussion here to the heterogeneous effects that turn out to be statistically significant at least at the 10% level (tests for the equality of the effects for the first and third tertiles of the characteristics of interest are reported in Table OA16, namely that of population size, per capita income, and past political orientation. Note that voting behaviour is affected by voter perceptions, so the main causal pathways are based on the assumption that voters' negative opinions about refugees are stronger in municipalities with a greater prevalence of 'negative attributes', e.g. the crime rate, which might positively correlate with immigrants or refugees.

Fig. 3 shows both the set of estimates based on  $i$ 's features and the one on the ratio between  $i$  and  $j$  characteristics. First, the impact of geographical proximity is heterogeneous depending on population

size. In particular, results point to voting against the left-wing government in office, i.e. more 'No' votes in the referendum, being stronger in smaller municipalities.<sup>24</sup> This effect is consistent with early findings by Barone et al. (2016) and Dustmann et al. (2019).<sup>25</sup> Although both articles motivate this evidence with higher residential segregation between natives and immigrants or refugees in large compared to small cities, this is unlikely to be the main explanation in our case as we consider municipalities that do not host refugees. Yet voters, looking at closer refugee-hosting municipalities, may fear the opening of centres in their municipality as well and perceive that their potential impact could be more negative in smaller communities.<sup>26</sup>

Stronger effects at the lowest tertile, compared to the largest tertile, on 'No votes are also found for per capita taxable income. A potential explanation is provided by Facchini and Mayda (2009). The authors consider two possible models of a redistributive welfare state. In the first, a larger inflow of unskilled immigrants produces an increase in the tax rate (tax adjustment model), while in the second model it produces a reduction in benefits per capita (benefit adjustment model). The authors show, theoretically, that in the second case are low-income individuals who are the least in favour of immigration. To put it simply, low-income individuals may perceive that in case a refugee

<sup>24</sup> Our findings are also consistent with Genovese et al. (2016), who report that people close to immigrant reception centres are less supportive of migration, especially if they live in small municipalities.

<sup>25</sup> More precisely, Barone et al. (2016) find larger effects for the 10th–50th percentiles of population size and no effect on the first and last deciles. Dustmann et al. (2019) find no effect on the top 5% largest municipalities.

<sup>26</sup> Indeed, the National Plan of Allocation of Asylum Seekers and Refugees, which was signed in December 2016, had a target of 2.5 migrants per 1000 inhabitants, creating expectations of a plausible homogeneous distribution of refugees across municipalities.

reception centre is opened in their municipality (like it was done in near municipalities), they will be competing with immigrants and refugees for welfare state resources. This is likely to be the case for Italy, where the income tax rate is already very high, and it is sensible to expect a reduction in benefit per capita as a consequence of an increase in the number of beneficiaries. Thus, our results point to proximity causing more anti-government voting in poorer municipalities.

Additionally, Fig. 3 also demonstrates that proximity to refugee centres negatively affects 'No' votes more in the case of municipalities with a less left-wing political attitude (measured on past electoral outcomes). In all cases, Fig. 3 shows larger effects for 'No Turnout' at the lowest tertile. Considering the relative importance of  $i$  over  $j$ , we observe similar voting patterns for the mediating factors just discussed.

## 7. Extensions: General elections

The results discussed in the previous sections focus on voting in the 2016 constitutional referendum. However, one may wonder whether similar geographical spillovers are observed in general election ballots too. We analyse the last two general elections, which took place in Italy on the 25th of February, 2013 and the 4th of March, 2018. In 2013, the centre-left was the most voted-for coalition, with 29.5% of preferences, and took the majority of seats, followed by the centre-right coalition and the 5Star Movement with 29.2% and 25.6% of votes, respectively.<sup>27</sup> In 2018, the centre-right was the most voted-for coalition, with about 37% of votes, followed by the 5Star Movement (32%).<sup>28</sup>

Our empirical analysis adopts the same specification as outlined in Section 5, while using the shares of votes for the three main coalitions, 'No Turnout', and a residual share that includes both invalid and other minor party votes.

Results in Table 6 mimic the main findings on the referendum ballot. The coefficients related to 'No Turnout' are positive and sizeable, meaning that municipalities closer to a hosting municipality  $j$  register a larger share of individuals attending the general election. This is counterposed by the negative coefficients associated with the 5Star Movement and the centre-right coalition, i.e. the two main political forces opposing the centre-left coalition (albeit statistically significant only for the 5Star Movement). The empirical findings are in line with the results obtained for the share of 'No' votes in the referendum consultation, suggesting that the 5Star voters might have been affected by proximity to refugee centres in the referendum. Contrary to what one may have expected, votes for the centre-right coalition do not appear to be significantly affected, and this is robust to splitting the coalition into Lega and other centre-right parties.

Our interpretation is that centre-right voters might have a stronger stance against immigration and may be less affected by proximity to refugee centres. 5Star Movement voters, in contrast, comprise both voters with right-wing and left-wing political backgrounds and are much more heterogeneous in terms of attitudes towards immigration; their votes may be more sensitive to their proximity to refugee centres. Additionally, similarly to the coefficient related to the 'Yes' votes in the referendum, the empirical evidence does not show any relevant relationship

<sup>27</sup> However, due to different electoral rules in the two chambers, the centre-left was not able to obtain the majority of seats in the Senate and after three months of institutional crisis, it formed a new government, led by Mr. Letta, with the moderate component of the centre-right led by Mr. Alfano.

<sup>28</sup> Since 2013, the political spectrum moved from a two-party system to three main political actors: the centre-left coalition led by the Democratic Party of Mr. Bersani in 2013 and Mr. Renzi in 2018, the centre-right led by Mr. Salvini's Lega and Mr. Berlusconi's Forza Italia, and the 5Star Movement, led by Mr. Grillo in 2013 and Mr. Di Maio in 2018. The electoral law was changed between 2013 and 2018. No single coalition had the majority of seats to form a new government in the new electoral system. It took three months to solve the institutional crisis, after which a coalition government was formed by the 5Star Movement and the Lega, with Mr. Conte as the Prime Minister.

between proximity to a refugee centre and votes for the centre-left. Results for the 2013 general election are in line with the 2018 estimates, but not surprisingly, are smaller in magnitude compared to 2018, probably because in 2013 refugee- and immigrant-related matters were not as salient as in 2018 (Fig. OA1) and the number of refugee centres was very low.<sup>29</sup>

So far, our analysis exploits the *cross-sectional* variation in proximity to refugee centres as a source of identification, but geographical spillovers could also be investigated through empirical strategies that leverage *time* variation. Thus, we focus on the last two general elections that took place in Italy in 2013 and 2018 and we estimate a model that exploits the variation of proximity over time. The estimated equation is as follows:

$$Y_{ijt}^k = \beta_0 + \beta_1 D_{ijt} + \mu_i + \gamma_t + u_{ijt}, \quad (2)$$

where  $Y_{ijt}^k$  is the outcome of interest in municipality  $i$  for election  $t$  and  $j$  is the index for the closest municipality hosting at least one refugee centre. Our parameter of interest  $\beta_1$  is associated with  $D_{ijt}$ , which is the distance in hundreds of kilometres between municipality  $i$  and the closest municipality with a refugee centre  $j$ ;  $\mu_i$  and  $\gamma_t$  are municipality and election fixed effects, respectively. Finally,  $u_{ijt}$  is the error term clustered at the closest refugee-hosting municipality (in 2016, since data for 2018 is not available).

Exploiting within-municipality variability means that the identification is based only on non-hosting municipalities that registered a change in the relative distance to  $j$  between 2013 and 2018. It has to be emphasized that this model leverages a completely different source of variation for identification compared to the estimates previously discussed. While the latter compare municipalities within the same cluster generated by the closest hosting municipality, in the panel estimates the identification hinges on cross-time and within-municipality variation, i.e. the parameter  $\beta_1$  in Eq. (2) is identified by variation in distance over time. This implies that the municipalities that do not undergo a change in distance between the two elections do not contribute to the estimation of the parameter of interest. Since we exclude from the sample the municipalities with refugee centres both in 2013 and 2018, a zero change in distance occurs when the composition of the surrounding refugee-hosting municipalities  $j$  does not vary between 2013 and 2018.

These estimates are not exempt from caveats. Elections took place during two periods in which the political relevance of the refugee topic was quite different (see Fig. OA1), while Eq. (2), as any panel estimate pooling several elections, assumes that the coefficient of interest ( $\beta_1$ ) is constant over time.<sup>30</sup>

Notwithstanding this limitation, Table 7 provides some intriguing results: municipalities that registered a reduction in the relative distance between 2013 and 2018, presumably owing to the opening of new refugee reception centres, voted more against the centre-left coalition, mainly shifting their preferences in favour of minor parties.<sup>31</sup> This is in line with the results for the 2016 referendum, in which we observe proximity negatively impacting support for the centre-left government.<sup>32</sup>

<sup>29</sup> Therefore, in 2013 the number of municipality clusters (i.e. centre FEs) considered in the analysis is lower, which implies that, on average, larger within-cluster differences in distance to refugee-hosting municipalities are exploited in the estimation.

<sup>30</sup> Our cross-sectional analysis for the 2013 and 2018 elections, which is not immediately comparable to the panel analysis with municipality fixed effects, seems to confirm that the coefficients are consistent across elections, albeit somehow of different sizes, in particular the effect on 'No Turnout'.

<sup>31</sup> Among the 5501 municipalities considered in the estimation, only 5 reported an increase in the distance from the closest refugee centre, 245 reported no difference, 1423 had a reduction between 0 and 10 km, 1585 between 10 and 20 km, and finally, 2243 registered a reduction greater than 20 km.

<sup>32</sup> Carrying out an exercise similar to the one for the referendum outcomes, i.e. multiplying the estimated coefficient for the average distance reduction between

**Table 6**  
General elections.

Panel A: General Election 2013					
	Share of votes:				
	Centre-right	Centre-left	SSM	No turnout	Other parties and invalid
Distance	-0.0106 (0.0192)	0.0303 (0.0308)	-0.0400** (0.0157)	0.0211*** (0.0065)	-0.0009 (0.0059)
Observations	7603	7603	7603	7603	7603
R-squared	0.5591	0.4455	0.6535	0.7111	0.3644
<i>Controls</i>					
All controls <sup>(a)</sup>	✓	✓	✓	✓	✓
Panel B: General Election 2018					
	Share of votes:				
	Centre-right	Centre-left	SSM	No turnout	Other parties and invalid
Distance	-0.0324 (0.0295)	0.0017 (0.0166)	-0.0672** (0.0283)	0.1078*** (0.0267)	-0.0100 (0.0197)
Observations	4998	4998	4998	4998	4998
R-squared	0.8968	0.6651	0.8192	0.7992	0.8371
<i>Controls</i>					
All controls <sup>(a)</sup>	✓	✓	✓	✓	✓

*Note* Sample of non-hosting municipalities. We report the estimates of the effect of distance to the closest *j* municipality with a refugee centre (in hundreds of km) on the 2013 and 2018 general election. At the time, the centre-right coalition included the following parties: Forza Italia, Lega, Brothers of Italy, and other minor parties. The centre-left comprised the Democratic Party and pro-Europe parties. Since the 2013 general election, a third political block has emerged, namely the 5Star Movement (SSM). The residual category accounts, on average, for 14.9% in 2013 and 6.6% in 2018 of the total votes in municipalities in the sample. For panel A, the observations differ from Table 2 due to the inclusion of 2013-refugee centres fixed effect. For panel B, the observations differ from Table 2 because of 39 municipalities for which information about electoral outcomes is not available (due to this exclusion, 4 other municipalities become singletons). Standard errors are clustered at the level of the closest municipality with a refugee centre. <sup>(a)</sup> considers the same controls as in panel C of Table 2. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

**Table 7**  
Panel estimates for general elections of 2018 and 2013.

	Centre-right	Centre-left	5Stars	No turnout	Other parties and invalid
Distance	0.0019 (0.0062)	0.0710*** (0.0204)	0.0094 (0.0107)	0.0149* (0.0084)	0.0448*** (0.0172)
Observations	11002	11002	11002	11002	11002
R-squared	0.9047	0.7316	0.7320	0.9083	0.7428
<i>Controls</i>					
Municipality FEs	✓	✓	✓	✓	✓
Election Year FEs	✓	✓	✓	✓	✓

*Note* Sample of non-hosting municipalities. We report the estimates of the effect of distance to the closest *j* municipality with a refugee centre (in hundreds of km) on the 2018 and 2013 general elections. In the 2018 general election, the centre-right coalition included Forza Italia, Lega, and Brothers of Italy, and other minor parties. The centre-left comprised the Democratic Party, Left Ecology Freedom, the Italian Socialist Party, and pro-Green parties. The third block is the 5Star Movement (SSM). The residual category accounts, on average, for 8.4% of the total votes in municipalities in the sample. In the 2013 general election, the centre-right coalition included Forza Italia, Lega, Brothers of Italy, and Us with Italy. The centre-left parties comprised the Democratic Party and pro-Europe parties. The third block is the 5Star Movement (SSM). The residual category accounts, on average, for 15% of the total votes in municipalities in the sample. The observations differ from Table 2 because we take only municipalities that do not host refugee centres in both 2013 and 2018. Moreover, within-municipality identification is achieved for the subgroups of municipalities that have registered a change in the composition of surrounding hosting municipalities *j* between 2013 and 2018. Standard errors are clustered at the level of the closest municipality with a refugee centre. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$  <sup>(a)</sup>

**8. Concluding remarks**

This paper provides novel empirical evidence of geographical spillover effects of refugee facilities on voting behaviour in Italy. We exploit a detailed dataset on the location of refugee centres to construct a measure of geographical proximity to municipalities hosting refugees. We depart from the existing literature, analysing how proximity to municipalities that host refugee reception centres influences voting outcomes in neighbouring municipalities. Our analysis, based on the 2016 Constitutional referendum and the 2013 and 2018 general elections, demonstrates that voters in municipalities closer to refugee facilities voted more for populist parties, especially for the 5Star Movement, with consistent less support for the centre-left.

When investigating heterogeneity effects, our analysis uncovers larger geographical spillovers for smaller and poorer municipalities coherent with the perception of the potential effects of refugee reception

2013 and 2018, we obtain that the increase in proximity to refugee centres reduced votes for the centre-left by 1.6 pp.

centres to be more negative in smaller communities and for low-income individuals (e.g., due to competition for welfare resources). Moreover, effects tend to be larger in municipalities that are less centre-left-oriented (according to past general election outcomes). Additionally, we investigate the potential interplay between proximity and media access both in terms of newspaper sales per capita and new media. We observe proximity effects for both higher voter turnout and lower support for the left-wing government (i.e. more populist voting) to be smaller in municipalities covered by broadband internet, which is in line with geographical distance to refugee reception centres reducing its relevance in shaping individuals' attitudes towards refugees when voters have access to wider information.

While most of the current literature investigates the link between the presence of migrants or refugees and voting behaviour in the same location, geographical spillovers in voting are almost always neglected. All in all, our results of geographical spillover patterns in voting suggest relevant avenues for future research. First, our findings suggest that studies that investigate the effect of refugees on voting behaviour should also consider the geographical political spillovers in shaping both the

turnout and the support for populism. Second, future work should elaborate more on the role of the internet and its interactions with proximity to refugees. Importantly, having details on the targeting of political ads on websites might help to clarify the underlying mechanisms of the reduction of the effect of proximity found in this paper.

### Supplementary material

Supplementary material associated with this article can be found, in the online version, at doi:[10.1016/j.jue.2020.103290](https://doi.org/10.1016/j.jue.2020.103290).

### CRediT authorship contribution statement

**Massimiliano Bratti:** Formal analysis, Methodology, Writing - review & editing. **Claudio Deiana:** Formal analysis, Methodology, Writing - review & editing. **Enkelejda Havari:** Formal analysis, Methodology, Writing - review & editing. **Gianluca Mazzarella:** Formal analysis, Methodology, Writing - review & editing. **Elena Claudia Meroni:** Formal analysis, Methodology, Writing - review & editing.

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