The Road Not Taken. Effects of residential mobility on local electoral turnout

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The Road Not Taken. Effects of residential mobility on local electoral turnout

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ABSTRACT

Although the effects of population stability on electoral turnout rates are relatively well-known, the role of the characteristics of hosting cities in this relationship are largely unexplored. This paper analyzes the moderating effect of city size on the relationship between residential mobility and electoral turnout. Residential mobility is known to depress civic engagement and political participation at the local level. We argue that this relationship is moderated by the characteristics of hosting cities, approached through city size. The main argument is that smaller cities offer better chances to newcomers to reconnect to the political process. Working with census data from more than 5500 different municipalities, we find that city size has a negative moderating effect on the relationship between residential mobility and turnout. On the one hand, residential mobility and city size do have separate negative effects on turnout, but on the other, the expected negative effects of mobility on turnout are actually stronger in larger than in smaller municipalities. Results indicate, therefore, that smaller communities not only provide more favorable conditions for political participation to their life-long residents, but they also seem to offer newcomers better chances to reconnect to the political process than larger cities.

1. Introduction

The impact of residential mobility on local electoral turnout has been researched on the basis of two main approaches. The first one focuses on the individual electoral participation of those who change their residence and shows that mobile citizens are less inclined to participate in local elections (Highton, 2000; Knack, 1992; Rosenstone & Hansen, 1993; Squire, Wolfinger, & Glass, 1987; Wolfinger & Rosenstone, 1980). A first explanation for this pattern of behavior (in contexts such as the United States) are the administrative costs associated with mobility, such as the need to update or renew voter registration (Highton, 2000; Rosenstone & Hansen, 1993). Regardless of the particular context, mobility imposes social costs given that "mobile citizens report fewer social ties to people in their neighborhood, and social connectedness is a powerful predictor of civic-minded activity" (Berry, Portney, & Thomson, 1993; Gay, 2012; Knack, 1992; Marschall & Stolle, 2004; Putnam, 2000). Both "administrative and social costs of moving may be enough to disrupt the habit of voting for the residentially mobile" (Gay, 2012).

By contrast, a second approach, focused on the political impact of the population instability of municipalities resulting from residential mobility on their turnout rates is still underdeveloped (Geys, 2006). A common argument underlying these studies is that the local community is "a complex system of friendship and kinship networks and formal and informal associational ties rooted in family life and ongoing socialization processes" (Kasarda & Janowitz, 1974), and that population instability across local communities affects these processes in an aggregate manner. In a recent study, Magre, Vallbé, and Tomàs (2016) have shown that not only individuals who move present lower levels of local community engagement, but that communities that experience higher rates of population growth offer less chances to mobile individuals to rebuild their social networks than municipalities that grow in small numbers or even lose population. We contribute to this literature showing that population instability is not enough to explain variation in electoral turnout. In particular, we argue that the effect of population instability on turnout is highly dependent on the size of the municipality.

Drawing on both the literature on the effects of residential mobility, and the "small-is-beautiful" *vs.* "bigger-is-better" debate around the effects of city size on civic and political engagement (Denters, Goldsmith, Ladner, Mouritzen, & Rose, 2014; Kelleher & Lowery, 2004, 2009), we present a model that connects these two issues and presents mobility effects on turnout as a function of city size, which shapes the chances that cities offer to engage civically and politically.

The paper is organized as follows. The next section reviews the main theoretical discussion around mobility, city size, and participation, with a specific focus on residential mobility. In section 3 we present the main argument or model behind this paper, and presents its main hypotheses. Section 4 discusses the data, which includes a discussion on why the data used in the paper is an improvement to previous attempts to assess the effects of mobility or size on turnout. Afterwards, section 5 presents the main empirical results. The paper ends with a discussion on the implications of the results and proposes a number of lines for further research.

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2. Mobility, size, and participation

Residential mobility has deep, lasting effects on people's lives. While it certainly can expand mobile individuals' social networks, it changes the structure of friendship and group identification patterns (Oishi, 2010). Most importantly, evidence in psychological science shows that the unrooting-rerooting process involved in mobility may covariate with elements of personality that has lasting effects on mobile people's ability to re-connect their social relationships and, ultimately, on their well-being (Oishi & Schimmack, 2010).

Due to its essential impact on the understanding of the relationship between population and territory, the salience of residential mobility among population geography research has increased notably in the last few years (Coulter, van Ham, & Findlay, 2016; Cresswell, 2010; Tyner, 2013). In this context, evidence from population geography shows a complex relationship between residential mobility and such basic and structural aspects of social and economic life such as life-cycle patterns (Clark, 2013b), as well as its consequences on the economic and social conditions surrounding mobility processes. For instance, Clark (2013a) and Módenes (2010) show that although the U.S. and Spain experienced a similar housing market "bubble" in the beginning of the 2000s, its consequences on the patterns of homeownership and therefore mobility were deeper in Spain, producing structural changes among younger home owners.

Related to this, mobility changes the quality of places and therefore poses relevant challenges to urban planning. In this sense, a well established literature reports that social capital of neighborhoods and local communities are both strong causes and consequences of residential mobility. On the one hand, Kan (2007) and David, Janiak, and Wasmer (2010) model social capital as a cause of mobility and show evidence that higher levels of household or individual social ties deter mobility. On the other, Clark, Deurloo, and Dieleman (2006) show that potential gains in neighborhood and local social capital trigger household mobility.

Mobility also affects the relationship between citizens and politics. Mobility processes combined with economic self-selection and sorting can have relevant effects on electoral outcomes (McKee & Teigen, 2009; Robinson & Noriega, 2010), increase the spatial polarization of the electorate (Bishop, 2009; Johnston et al., 2004) across counties, increase social and political homogeneity within municipal boundaries (Oliver, 2001), and even change the cohort effects on turnout at the local level (Gimpel, Morris, & Armstrong, 2004).

More specifically, mobility also affects local politics. A long and established literature rooted in the sociology of local communities has identified the length of residence as a key factor to allow individuals to develop the necessary level of community attachment that can lead to political engagement (Kasarda & Janowitz, 1974; Theodori, 2004). There is a widespread consensus on the fact that mobile people turn out at lower rates in both national (Highton, 2000; Squire et al., 1987) and local elections (Magre et al., 2016) than people with longer periods in residence, indicating that mobile citizens need time to update their knowledge and form opinions that can trigger their participation.

Parting from this basic rationale, a few studies have assessed how aggregate levels of residential mobility affect aggregate turnout, spurred both by the known complex relationship between individual and contextual phenomena (Magre et al., 2016; Sellers & Walks, 2013), and by the growing availability of local-level, census data (Gimpel et al., 2004). A classic explanation of this relationship (Alford & Lee, 1968) linked aggregate and individual effects: to the extent that mobile citizens vote less, municipalities that experience high levels of population mobility present lower levels of electoral turnout, for they have large sets of "residents who have lost their ties to social groups and political networks which have been their channels of communication of political stimuli". Framing aggregate mobility as population instability, Geys (2006) concludes that "a more stable population appears to positively affect turnout rates due to higher social pressure and lower information costs", and that "higher (out)-migration may indicate higher non-voting as potential voters might live elsewhere in the near future and are unaffected by local policy". In the same vein, Hoffman-Martinot (1994) argues that population stability increases the sense of identity and solidarity of local communities, thus making voting more likely.

Geys (2006) and Hoffman-Martinot (1994) hint at something relevant: at certain levels, residential mobility somehow distorts the mechanism linking citizens and certain conditions provided by their communities that may help either foster (e.g., social pressure, solidarity) or depress (e.g., information costs, loss of social ties) the likelihood of voting.

These contextual, local conditions shape a geography of 'places' in the sense of "the settings in which people find themselves on a regular basis in their daily lives where many contexts come together and with which they may identify" (Agnew, 2007), from which political behavior may be better understood. In the study of political participation at the local level, the size of local communities has provided a useful measure to capture distinct local contexts, which in turn has led to a "size argument"—i.e., whether the size of local communities has an effect on turnout. Two main positions have shaped the debate—"small-is-beautiful" as opposed to "bigger-is-better" (Kelleher & Lowery, 2004).[1] Overall, empirical evidence has supported the hypothesis that smaller communities foster attachment, civic participation, and electoral turnout, while larger communities tend to depress it (Blais, 2000; Dahl & Tufte, 1973; Denters et al., 2014; Geys, 2006; Oliver, 2001; Verba & Nie, 1972). These results seem to support the idea that network density works in favor of civic engagement and participation, and therefore that small cities are a better scenario for the mechanisms that lead to electoral turnout to work successfully than larger communities (what Oliver (2001) calls *civic capacity*[2]), although the positive effects of "smallness" may be sensitive to the influence of other contextual (Kelleher & Lowery, 2004; Tavares & Carr, 2013; Carr & Tavares, 2014; Alesina & La Ferrara, 2000; Costa & Kahn, 2003; Oliver, 1999, 2000) or individual (Magre et al., 2016) factors.

A really thorough, recent cross-country research on the matter (Denters et al., 2014) reports that when other factors are considered, the positive effects of "smallness" are, if significant, actually small themselves, or at least declining with time.

However relevant these size effects seem to be, though, the extent to which they are able to smooth out (or aggravate) the negative effects of residential mobility has been largely unexplored.

3. The argument

The main argument of this paper is that the effects of residential mobility on turnout are moderated by the chances hosting municipalities offer to newcomers to reproduce the conditions that help them re-

[1] In a recent work, Denters et al. (2014) update these labels and call them the "Lilliput argument" (small is beautiful) and the "Brobdingnag argument" (bitter is better).

[2] Oliver (2001) referred to civic capacity as "the extent to which a communityís residents are voluntarily engaged and connected with the public realm through both political and civic activities", which he observed in smaller cities.

connect to the political process, and that these chances are a function of the size of the municipality.

Let us imagine two individuals *A* and *B* living in the very same neighborhood of a city. Both are identical in all relevant factors that affect their likelihood of turning out to vote in local elections: same level of education, age, income, knowledge about politics, interest in politics. They even support the same football (i.e., soccer) team. They always vote in their home city's local elections.

These two individuals, however, leave their home and move to two different places. We know from past research (discussed above) that for the mere fact of changing their residence, both *A* and *B* have now less chances to turn out to vote in local elections.

Let us suppose, in addition, that these two individuals move and end up living in two very different cities. *A*'s new home is in a very large city, *B*'s is in a small village. According to the literature, large cities such as *A*'s have very likely suffered from a progressive erosion in social relations leading to a decline in essential community elements (Oliver, 2001; Putnam, 2000), such as "social cohesion, […] willingness to engage in political action, both in terms of electoral and non-electoral political participation" (Denters et al., 2014). In contrast, *B*'s new small village is likely to enjoy higher levels of social cohesion (through tighter social networks), lower costs of voter mobilization (Blais, 2000), stronger levels of civic participation and attachment to the municipality, leading to high levels of electoral and non-electoral participation (Dahl & Tufte, 1973; Oliver, 2001; Verba & Nie, 1972).

Therefore, although by the only fact of moving *A* and *B* have *equally* less chances to vote in their new host municipalities, their new local communities in fact present them with very different sets of opportunities to reactivate their role in the local political process. If city size effects are effective mechanisms that shape individual and aggregate political behavior—as a considerable amount of research so far indicates—, then we could expect that these mechanisms may influence the effect that residential mobility has on voter turnout. In other words, if smaller cities offer better chances to participation, these fostering conditions could help mobile citizens to reconnect to the political process. In contrast, if larger cities depress turnout, newly arriving people in large cities may take a longer time to rebuild the conditions under which they will participate again, if they ever do.

We provide a *contextual* understanding of the "mediating role of social and political milieux such as […] residential and other living arrangements" (Agnew, 2007) on electoral behavior, where context is approached in terms of size and residential mobility.

Following the argument, our first expectation is that mobility should depress turnout—i.e., municipalities receiving higher levels of mobile population will present lower levels of electoral turnout (H_1). Our second hypothesis (H_2) is that the negative effect of residential mobility on turnout should get stronger as city size increases. We thus intend to contribute to the "contextual effects" literature providing a model and explanation of *how* context affects political behavior (Burbank, 1997).

4. Data and method

4.1. Data

We analyze the combined effect of residential mobility and size on turnout in local elections using census data from Spanish municipalities during the 1999–2007 period. The use of data from Spain entails an advantage compared to previous research on the effects of city size.

Most research on the matter traditionally has been carried out on data from the United States (Caren, 2007; Highton, 2000; Oliver, 2000) or central/northern Europe (Denters et al., 2014). Actually in the latter case, Denters et al. (2014), using data from Norway, Switzerland, the Netherlands, and Denmark, conclude that size effects (significant though small) might be declining with time. The authors offer a number of factors that might explain why, including changes in both local governments (public policy and the level of professionalization, leading to certain homogenization across municipalities), and in people's lives (larger amount of commuting that also leads to homogenization). As strong as these change factors might be (for which no strong evidence is provided), an additional factor behind the weakness of the size effect might be explained by the sample of countries used in their analysis. Three of these four countries have carried out—since the end of World War II—one or multiple large-scale municipal merger processes that, obviously, have dramatically changed the size of municipalities.[3] This (non-voluntary, in most cases) change of the size of municipalities might therefore blur any size effects that could have existed before such exogenous shock.

Unlike these and other northern-Europe countries, Spain has never experienced a process of municipal amalgamation, and thus its local government structure is highly fragmented, which is common in the Napoleonic model of local government (Hesse & Sharpe, 1991). This fragmentation has allowed previous research to successfully test relevant hypotheses on the relationship between scale and democracy, such as civic engagement (Magre, Vallbé, & Tomàs, 2013), electoral behavior (Navarro, 2013) and party system (Tapiador & Mezo, 2009).

With a population of 46.8 million, Spain has 8114 municipalities (yielding a density of 5764 people per municipality). For the sake of comparison, the population of The Netherlands (16.8M) is distributed along just 390 municipalities (43,076 people per municipality).[4] This model—which includes Spain, France, Italy, Portugal and Greece—is more political than functional, where local governments enjoy full political identity but lack actual financial autonomy. This gives local elections a high political relevance. The Spanish municipal scenario is, therefore, an optimal testbed for the assessment of city size effects on turnout.

An additional reason has led us to use data from Spain. Starting in the mid-nineties, intra-regional mobility has become the most intense migratory phenomenon in Spain in recent history (Feria-Toribio and Andújar-Llosa, 2015; Feria-Toribio & Susino, 2006; Pujadas, 2009). As shown in Fig. 1, this trend has been especially accentuated along the Mediterranean regions of Andalusia, the Valencian Community and Catalonia, as well as in Madrid. Yet, Andalusia and Catalonia experienced the higher volume of residential mobility throughout, with more than one million movements each (see Fig. 2).

The increase of the residentially mobile population during this period is intertwined with the so-called "prodigious decade" of Spanish urban development between the second half of the 1990s and 2008 (Módenes, 2010; Pujadas, 2009), when the economy collapsed. The strong interdependence between urban growth and residential mobility in regions such as Catalonia was instead attenuated in other regions of the Mediterranean such as the Valencian Community, or Madrid, where tourism or housing market speculation were more intense (Rullan, 2011). During this era of neoliberal territorial gover-

[3] Norway (1960s), Denmark (1970, 2007) and the Netherlands (1950s, 2000). Unlike these countries, Switzerland has carried out voluntary merger processes, especially during the 1990s and 2000s (Strebel, 2016).

[4] Even considering the number of Dutch municipalities in 1950 (1015), before the major mergers ocurred, the ratio between population and municipalities would be still larger than in Spain (16,551 people per municipality).

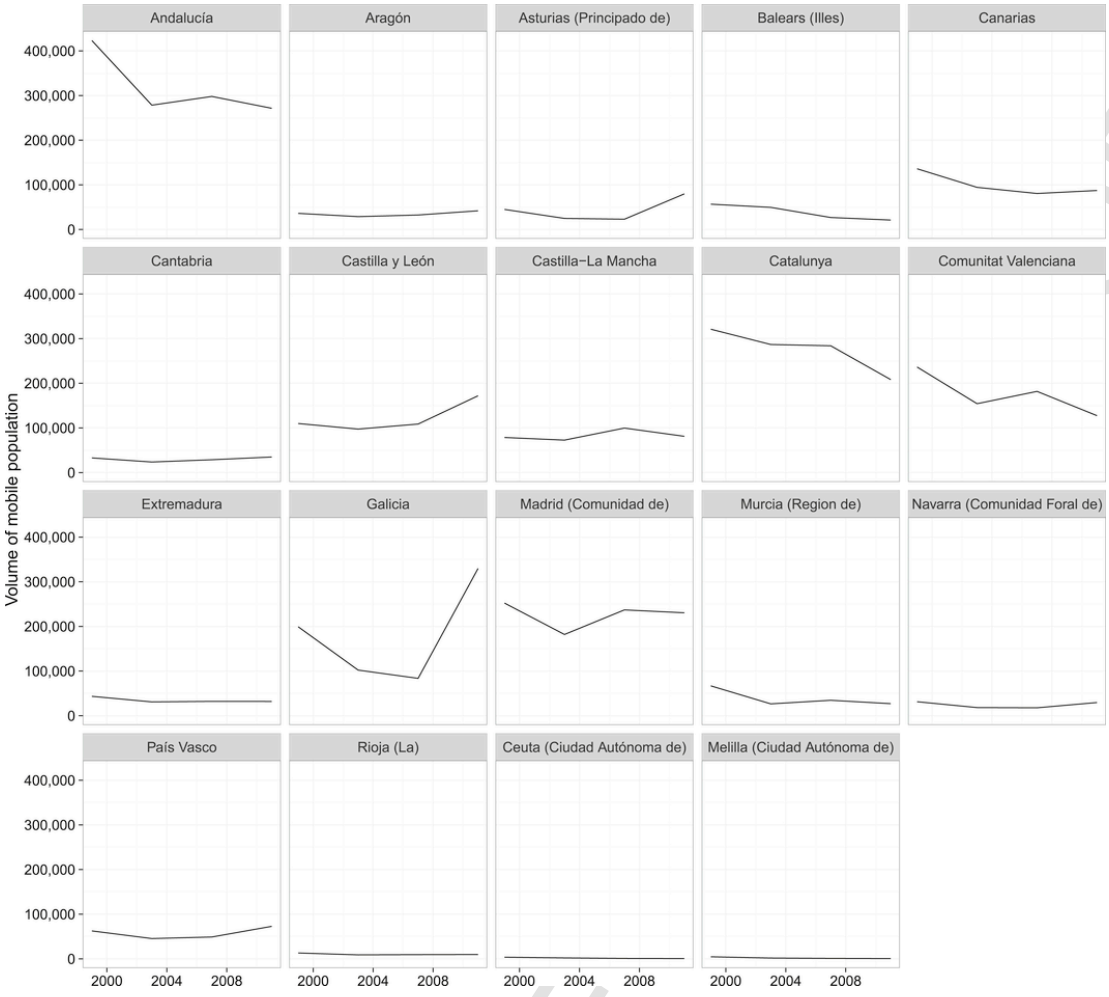

Fig. 1. Evolution of population mobility in Spanish regions (1999–2011).

nance, therefore, Spanish municipalities experienced an unprecedented process of expansion of housing market and land use deregulation that contributed to the housing bubble, which eventually triggered the financial crisis.

Due to the marked existing differences between the economic, urban and demographic structure of Spanish regions, it is difficult to establish common patterns of mobility during this period. However, unlike classical mobility, historically triggered by changes in the labor market, the recent intensification of the residential mobility in areas such as Catalonia, the Valencian Community and Madrid respond to (1) the importance of peoples life cycles and families residential strategies, and (2) the evolution of both the labor and the housing markets, as occurs in other European countries (Caldera & Andrews, 2011).

4.2. Variables

Our dependent variable is the difference in local electoral turnout between 1999-2003 and 2003–2007 periods. Turnout is measured as the percentage of a municipality's electoral register that voted in the local elections, and difference in turnout is expressed as the percentage point difference of turnout between elections. Our analysis does not include all 8114 Spanish municipalities each year. We exclude all municipalities with a population below 250, given that these present significant differences in both the electoral system used to elect their representatives, and their system of government. This leaves us with 5616 in 2003 and 5557 in 2007, a total of 11,173 municipality-year observations.

The electoral dynamics of the included municipalities is sufficiently homogeneous to ensure their comparability: first, all the municipalities studied hold local elections on the very same day, every four years; second, all of them share the same proportional electoral system, with the number of elected representatives changing with population size; finally, they all share the prevalence of "partisan elections". This institutional homogeneity ensures the avoidance of problems associated with the collection and treatment of local electoral data that might render the study infeasible (Marschall, Shah, & Ruhil, 2011).

The average rate of turnout is 76.5%, but as shown in Table 1, there is notable variation in turnout across municipalities, ranging from 30% to 100%. Difference in electoral turnout for the period also shows a large level of variation (ranging from − 52 p.p. to 91 p.p.), and its average is − 0.01 p.p.

Our main independent variables are related to municipal size. On the one hand, we measure municipal size as the number of residents to official census data on December 31st of the year immediately before each of the electoral years (2002 and 2006, respectively). On the other hand, municipal population growth measures the extent to which municipalities have increased or decreased their census population in the four years previous to each election. This is measured

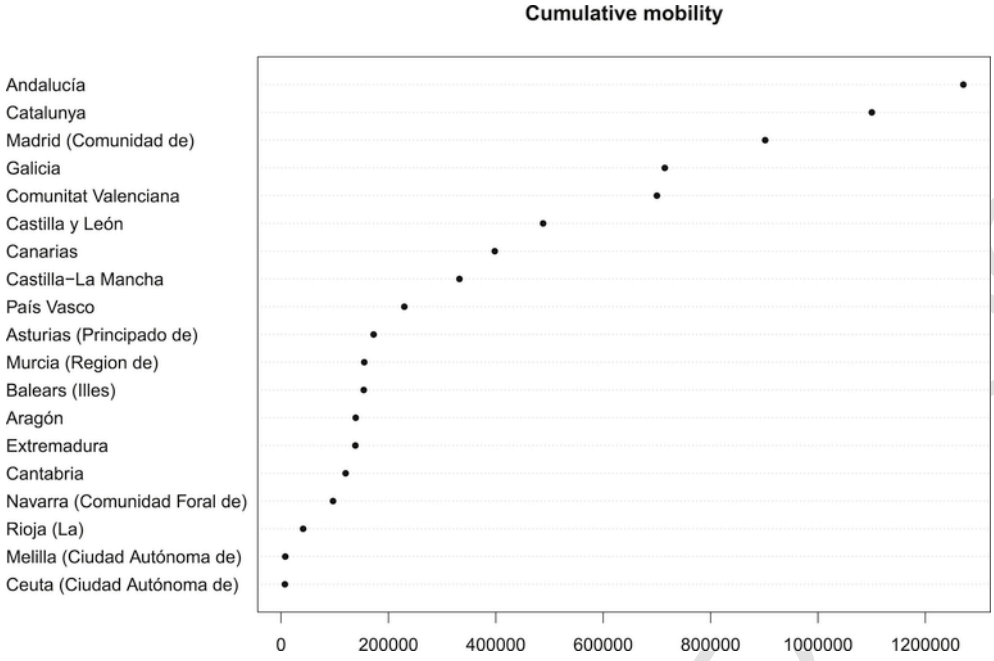

Fig. 2. Absolute volume of mobility in Spanish regions (1999–2011).

Table 1
Descriptive statistics of the variables.

Variable	N	Mean	St. Dev.	Min	Max
Turnout (%)	11,143	76.52	9.55	30.27	100
Difference in turnout (p.p.)	11,122	− 0.01	7.79	− 51.81	90.73
Population growth (%)	11,173	3.07	13.74	− 83.43	204.76
Population size	11,173	7260.56	51,969.32	251	3,016,788
65 + Population (%)	11,143	27.94	8.80	4.39	65.65
Non-EU foreigners (%)	11,173	2.86	4.06	0.00	67.18
Unemployment (%)	11,173	9.63	3.95	3.03	23.25

through a continuous variable representing the percentage change in population from one election year to another. In Table 1 population growth presents notable variation across municipalities, but 98% of the cases lie within the [− 16%,55%] interval, and the median municipality had a population growth of − 0.38% in 2003 and 1.7% in 2007.

4.3. Method

We fit two different multilevel linear regression models with varying intercepts by province and year. We include provinces instead of regions as the second level of measurement given that these administrative levels are smaller than regions and thus constitute better clusters for the contextual factors that might explain variation in turnout. Fig. 3 shows these differences of turnout in local elections across provinces, with a 20 percentual difference between the province with highest and lowest average turnout. Thus using the province as the varying-intercept unit allows also to account for the existing systematic differences of average local turnout across provinces.[5]

In the first model we just test the existence of size effects on turnout, in which we expect to find that turnout is significantly higher in smaller cities. In the second model we test the combined effect of size and residential mobility on turnout using the difference of turnout between elections at the municipal level as our response variable. In the first specification of the latter model, we include population growth as our main independent variable.

In further specifications, the model includes municipal population size, from which we expect a negative effect on both turnout and turnout chance. Our second hypothesis introduces a conditional effect: apart from the reduction in turnout produced by mobility itself, those mobile citizens who move to larger cities should have even less chances to turn out to vote than those who move to smaller communities. To test the moderating effect of population growth on the relationship between size and turnout we introduce a multiplicative interaction between these two predictors, keeping all controls constant. Control variables are included with the intent to account for contextual effects that previous research has reported to absorb all or part of the effect of size on turnout or influence political behavior (Books & Prysby, 1988; Burbank, 1997; Gallego, Buscha, Sturgis, & Oberski, 2016; Pattie & Johnston, 2000). First, a quadratic term for size is included in the model to account for potential non-linear effects of municipal size on turnout.

Second, due to previous and consistent evidence reporting a depressive effect of metropolitan suburbanization on municipal growth (Foster, 1993) and on local electoral turnout in several contexts (Kelleher & Lowery, 2004, 2009; Oliver, 2001) including Spain (Magre et al., 2016; Navarro, 2013), we use a dummy variable indicating whether a municipality is part of a metropolitan area (Feria-Toribio, 2013). Third, we control for the percentage of immigrant population as a proxy for ethnic fragmentation, in order to measure municipal heterogeneity, though the expected direction of its effect is not clear from the literature (Alesina & La Ferrara, 2000; Costa & Kahn, 2003; Geys, 2006; Oliver, 1999). Specifically, given that local residents who are citizens from other EU member states do have the right to vote in local elections, we use a variable measuring the percentage of non-EU immigrant population in each municipality. On the other hand, there is no clear expectation regarding the effect of the economic context on turnout. Although early studies found that economic hardship tends to depress turnout (Rosenstone, 1982) at the

[5] The data yield a 7 percentual difference between the province with highest and lowest turnout change between elections.

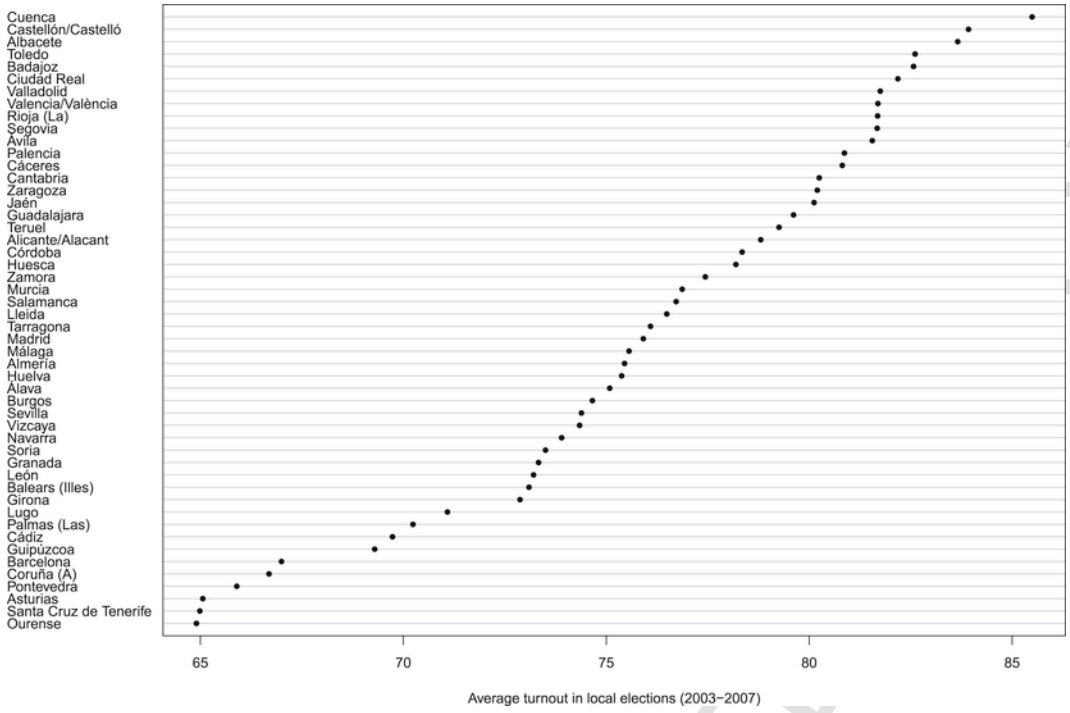

Fig. 3. Average turnout in local elections by province in Spain (2003–2007).

individual level, the mechanism linking contextual economic conditions and turnout is still unclear. As Blais (2006) put it, "economic hardship may induce people to mobilize to redress grievances, but it may also lead them to withdraw entirely from the political process", from which one could expect that "the most likely outcome is a nil overall effect". Economic data at the municipal level in Spain are either unavailable or rather incomplete. Due to this, we use unemployment rates for the 52 Spanish provinces (the administrative level between the municipality and the region), which we use as a proxy for contextual factors that might affect (or not) turnout at the local level. Finally, we use the percentage of population above 65 years old to control for each municipality's age structure and natural increase, given a strong negative correlation between the share of 65 + population and municipal rates of natural increase ($r = -0.71,\ p<0.01$).

The nature of our data does not allow for a control of the age of the mobile population under study, and therefore we cannot provide a direct test for the potential self-selection bias in case mobile population is younger than the average and therefore less likely to turnout to vote. However, a recently published paper by Magre et al. (2016) based on survey data specifically designed to capture mobile citizens' preferences and behavior related to residential mobility shows that mobile population during this period was slightly better educated than the mean and around 60% of that population fell into the [30,60] age interval, when the probability of electoral turnout is at higher levels. This leaves little room for self-selection bias. The results of that study are limited because they refer only to Catalonia, but actually this Spanish region is the one that experienced highest levels of residential mobility in the period under study. On the other hand, what strictly demographic and geographic studies made by Módenes (2010), Pujadas (2009) and Pujadas and Prats (2008) show is that the process of mobility during the years under study was almost exclusively driven by the expansion of the housing market, which attracted a cross-section of mobile citizens (45–60 of age) from larger cities (such as Barcelona, València and Madrid) to small-to-medium metropolitan cities.

Finally, given the similarity of mobility processes across regions, we have tested for spatial autocorrelation in our dependent variable (electoral turnout). To that effect, we have carried out two different tests: Moran's I (Gittleman & Kot, 1990; Paradis, Claude, & Strimmer, 2004) and the Mantel test (Dray & Dufour, 2007; Mantel, 1967). In both cases, autocorrelation is very low: Moran's I is 0.026 (2003) and 0.043 (2007), while the Mantel test (with 99 replicates and simulated p-value of 0.01) yields very similar low levels of correlation: 0.043 (2003) and 0.033 (2007). As an additional check, autocorrelation has also been tested on our basic model's residuals and results are the same. Therefore, although these tests suggest that there might be certain "neighboring effects" in our dependent variable, autocorrelation does not pose a challenge to our models.

5. Main empirical results

Fig. 4 shows that in Spain municipal size is still a strong predictor of electoral turnout in local elections. In a multilevel linear regression model including all control variables, we find that people living in smaller cities turn out to vote at significantly higher rates than those living in larger ones.[6] Moreover, the model also shows that in coherence with what Oliver (2001) found in the U.S., cities within metropolitan areas also present a significantly lower turnout rate than the rest, controlling for size and growth. Fig. 5 shows striking differences in predicted turnout accross increasing municipal size cutpoints. For instance, while the average turnout for a city of 400 is around 80%, the one in cities around 160,000 is 20 points lower.

The effect of municipal size in Spain contrasts with that reported by Denters et al. (2014) in multiple models using data from Switzerland, Norway, Denmark and the Netherlands, which was also negative and significant, but small and declining with time. In our case, size alone explains almost half of the variation in the data. In addi-

[6] Tabular results of these models may be seen in Table 3 of the Appendix.

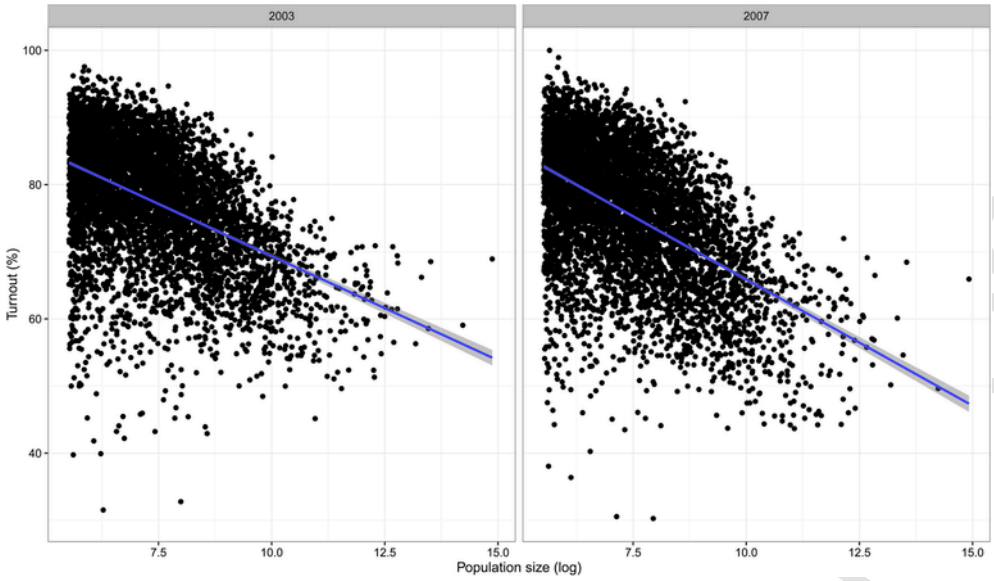

Fig. 4. Relationship between municipal population size and turnout.

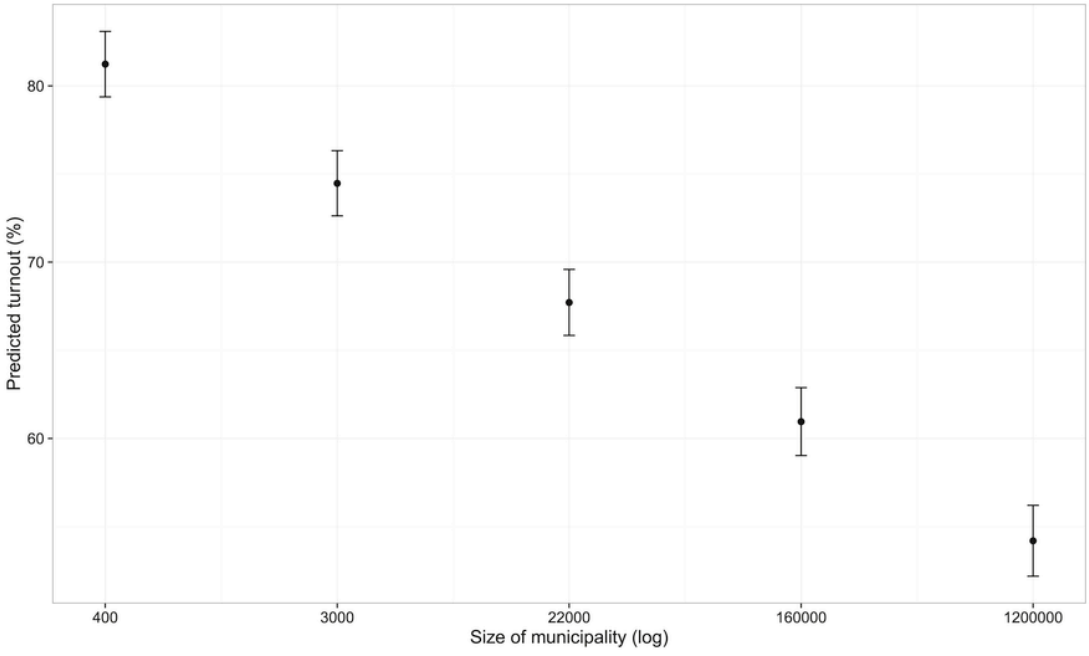

Fig. 5. Predicted rates of turnout at different municipal sizes.

tion, the analysis of size effects in the five Spanish local elections from 1995 to 2011 shows that the effect of size in local electoral turnout has actually increased with time, being now twice as large as in the 1990s.[7]

We now turn to the main argument of the paper: the effects of population growth on the change in turnout between elections. Table 2 shows the results of the four different specifications of our main model. The first one shows that, as expected, population growth due to residential mobility depresses turnout—i.e., municipalities that experience population growth during the four years between elections also experience a decrease in voter turnout in local elections. The coefficient is not large (− 0.089), which indicates that population growth alone only accounts for small changes in municipal turnout, keeping municipal size constant. Again, results show that cities within metropolitan areas experience significant losses in turnout, controling for population growth and unemployment, and for systematic differences across provinces and time. Regarding the economic context, the level of unemployment at the provincial level also does have a depressive effect on turnout accross all specifications of our model, although the effects are not large: a municipality within a

[7] For each election year, we have estimated a linear regression model of turnout on municipal size (log), with fixed effects for province. Results may be shown on request.

Table 2
Linear multilevel regression model of difference of municipal turnout on population growth and size in Spain (1999–2007). Standard errors in parentheses.

	Difference in turnout			
	(1)	(2)	(3)	(4)
First-level variables				
Population Growth (%)	−0.089***	−0.084***	−0.094***	0.009
	(0.006)	(0.006)	(0.007)	(0.034)
Population size (log)		−2.459***	−2.676***	−2.692***
		(0.438)	(0.449)	(0.449)
Population size (log) squared		0.144***	0.152***	0.157***
		(0.027)	(0.027)	(0.027)
Metro area	−0.475**	−0.360*	−0.386*	−0.293
	(0.193)	(0.206)	(0.211)	(0.213)
Non-EU foreigners (%)			0.045**	0.058***
			(0.022)	(0.023)
+65 population (%)			−0.022	−0.019
			(0.012)	(0.012)
Pop. Growth x Pop. size				−0.015***
				(0.005)
Second-level variables				
Unemployment (%)	−0.111***	−0.097**	−0.093**	−0.094**
	(0.041)	(0.041)	(0.041)	(0.041)
Constant	1.369	11.233***	12.863***	12.641***
	(2.482)	(3.015)	(3.122)	(3.112)
Observations	11,122	11,122	11,122	11,122
Log Likelihood	−37,830.1	−37,818.5	−37,821.4	−37,821.0
Akaike Inf. Crit.	75,674.2	75,654.9	75,664.8	75,666.0
Conditional R^2	0.227	0.227	0.224	0.223
Marginal R^2	0.026	0.029	0.028	0.029

Note: p< 0.1; **p< 0.05; ***p< 0.01.

province having an unemployment of 10% will present on average a decrease of 1 percentage point in turnout.

The second and third specifications include population size in the equation. This inclusion faces a potential problem in the fact that population size and population growth are not completely independent variables. The data show that during the period under study larger municipalities received slightly larger proportions of mobile population. However, the correlation between both variables is low ($r = 0.21$, $p<0.001$), and it does not affect the sign of the coefficients.[8]

In the models, the magnitude of the effect of population growth remains almost unchanged and significant despite first-level and second-level controls. On the other hand, population size has the expected negative effect on turnout change, and it captures some of the effect of metropolitan suburbanization, indicating that when municipal size is accounted for, the effects of metropolitan areas are less clear. The results regarding size show that, controling for population growth, larger cities suffer greater losses in turnout than smaller ones. The model predicts, for instance, that keeping population growth and the other factors constant, the average turnout change experienced by a small village of 400 is not statistically different from zero (although the coefficient is positive), while the average loss in turnout suffered by a city of around 22,000 is around 7 points, and a city of 160,000 would lose almost 10 points in turnout between elections. The coefficient for the quadratic term of population size is positive and significant, which points to a marginal increasing effect at the higher end of the size scale. Finally, the model yields a positive effect of foreign immigration on turnout, while the municipal age structure does not seem to have any significant effect. If instead of the share of 65+ year-olds we use the municipal rate of natural increase (births minus deaths per thousand), the results are exactly the same, thus ruling out the possibility that population growth is a consequence of distinct levels of fertility across municipalities.

Although the specification of the model just commented above gives some support to our second hypothesis (H_2), we further test it in our fourth specification through an interaction term between population growth and population size. The constitutive term for population size has the expected sign, indicating that size would still matter even for municipalities with zero population growth.[9]

The interaction term has the expected negative sign, pointing to a negative moderating effect of population growth on the relationship between size and turnout. In other words, the sign indicates that, as predicted, the negative effect of mobility on turnout will be stronger in larger municipalities than in smaller communities. This is better depicted in Fig. 6, where we plot the change in the coefficient of population growth on turnout as population size increases. The plot shows that for very small villages an increase in growth has a mild negative effect (around -0.07), but when villages get larger, the increase in their population has a stronger negative effect on electoral turnout (up to -0.2). Given the uneven distribution of population among municipalities in Spain, it could be argued that this effect is caused by a strong negative change in turnout experienced by the very few large cities present in the dataset. For instance, turnout decreased 9.5 points in Barcelona between the 2003 and 2007 elections, as did in other large Spanish cities such as Málaga or Zaragoza. However, as Fig. 7 shows, when we replicate the analysis using only smaller municipalities (around 20,000 or less), the moderating effect of size, though smaller, is still negative and significant.

Finally, Fig. 8 shows the predicted effect of population growth on turnout at different municipal size cutpoints. Each panel represents a set of municipalities within a size interval. The *x-axis* of each panel has been scaled to cover 90% of the population growth distribution within that municipal size interval. In all municipalities, small or large, population growth has a depressing effect on turnout between elections. However, the slope of the line indicating the strength of the effect of mobility on turnout gets steeper as cities are larger, except for the largest size interval (municipalities larger than 160,000, which represent only 0.7% of Spanish municipalities), where the effect becomes smoother.

In smaller municipalities the model predicts that sufficiently large negative growth rates could even boost turnout, while in larger cities negative growth has no significant effect whatsoever. However, these results seem a matter of the statistical model. To test for the potential effect of negative growth, the dataset has been split in two groups: one containing only municipalities with positive population growth ($n = 5,843$), another including those that experienced negative growth ($n = 5,330$). The results are almost identical when the model is fitted on the "positive growth" dataset, while Fig. 9 shows that among municipalities with negative growth, the negative effect of growth is only significant for smaller municipalities, and there is no size effect whatsoever.

For smaller municipalities to experience a significant negative effect of growth on turnout, their population should have grown at 125% or beyond, but there are only two cases in the data that comply with these conditions. In municipalities up to 3000 inhabitants, the

[8] The variance inflation factor (VIF) for neither of the predictors is over 1.3.

[9] On the other hand, the coefficient of the constitutive term for population growth is of little use here. It indicates the effect of population growth on municipalities with size equal to the natural logarithm of zero, which is 1. There are no one-single-person municipalities in the data.

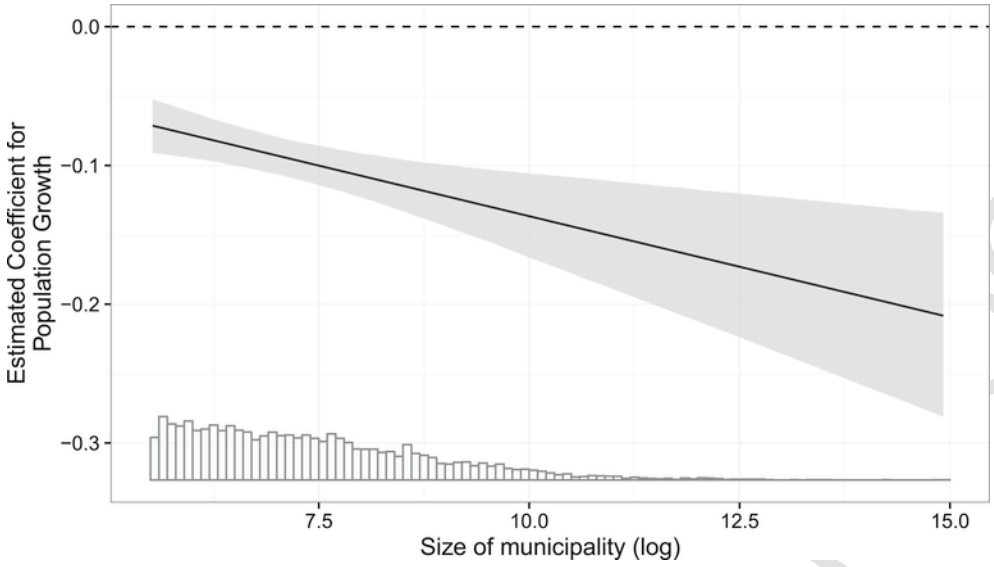

Fig. 6. Marginal effect of municipal population growth on turnout at different levels of population size.

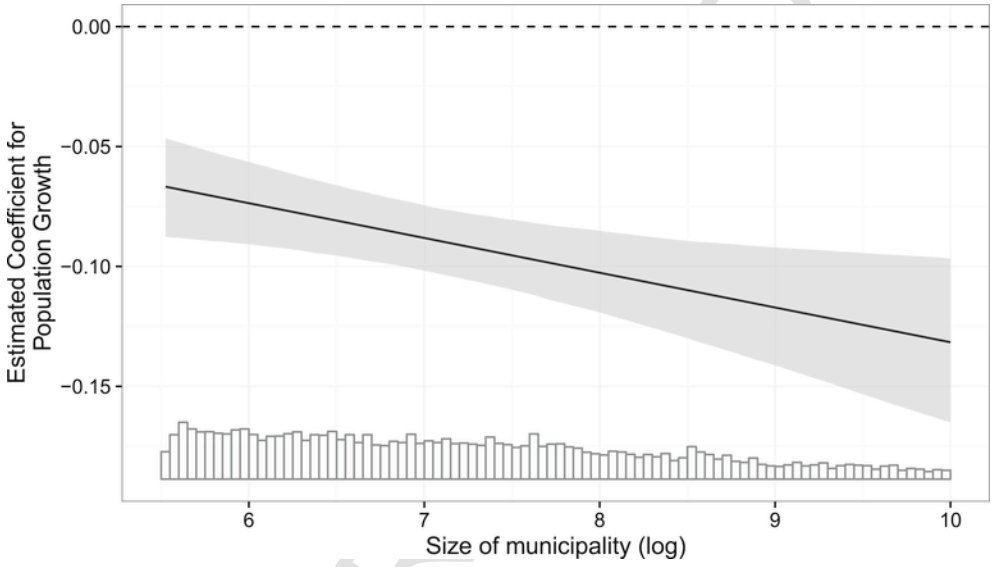

Fig. 7. Marginal effect of municipal population growth on turnout at different levels of population size, including only smaller municipalities.

effect of growth starts at a much more realistic threshold of 30%, for which our data yields 275 observations. In cities of 3,000, a growth of 10% in four years is associated with a decrease of turnout of almost 2.5 points, while if population grows 50% turnout will plummet 7 points. In cities larger than that, any rate of population growth will exert a strong negative effect on their aggregate levels of turnout. More importantly, results show that the larger the municipality the stronger the effect of growth on turnout. For instance, a modest increase of 10% in population will make turnout fall by almost 2.5 points in a small city of 3,000, 8 points in medium city of 22,000, almost 14 in a city of 162,000, and turnout will plummet 19.4 points if the city is among the largest (1,200,000).

The effects of both population growth and size are robust to a number of further tests. On the one hand, we fit a more demanding specification of the multilevel model where we let intercepts vary by municipality instead of province, so that variation is modeled purely at the municipality level. Given that the number of observations per group is always small, the group-level intercepts are not estimated with high precision, but the estimation of the coefficients of interest can be still reliable (Gelman & Hill, 2007). In this case, as shown in Table 4 of the Appendix, all coefficients have the same sign than in the main model, and most importantly, the interaction between growth and municipal size holds and predicts significant turnout loss under the same conditions than our model. On the other hand, we get very similar results when we fit a new model using the percentage of turnout as a dependent variable instead of the difference in turnout between elections.

6. Discussion

This paper analyzed the impact of population growth on municipal electoral turnout and how city size can smooth out or aggravate this effect. Although the effects of population stability on electoral

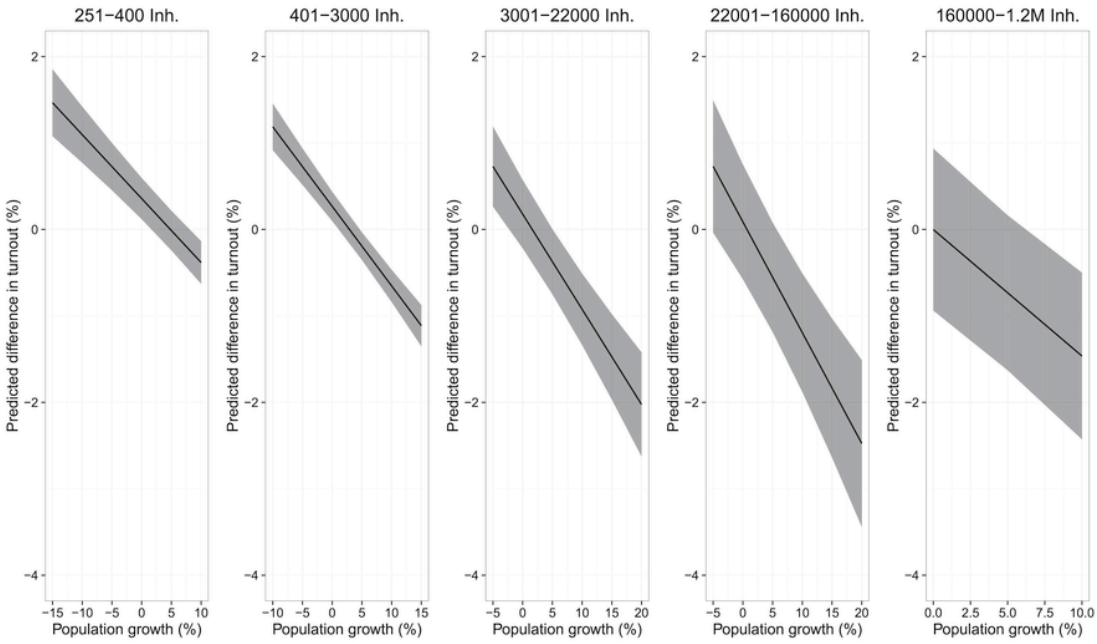

Fig. 8. Predicted effect of population growth on difference in turnout at different levels of municipal size.

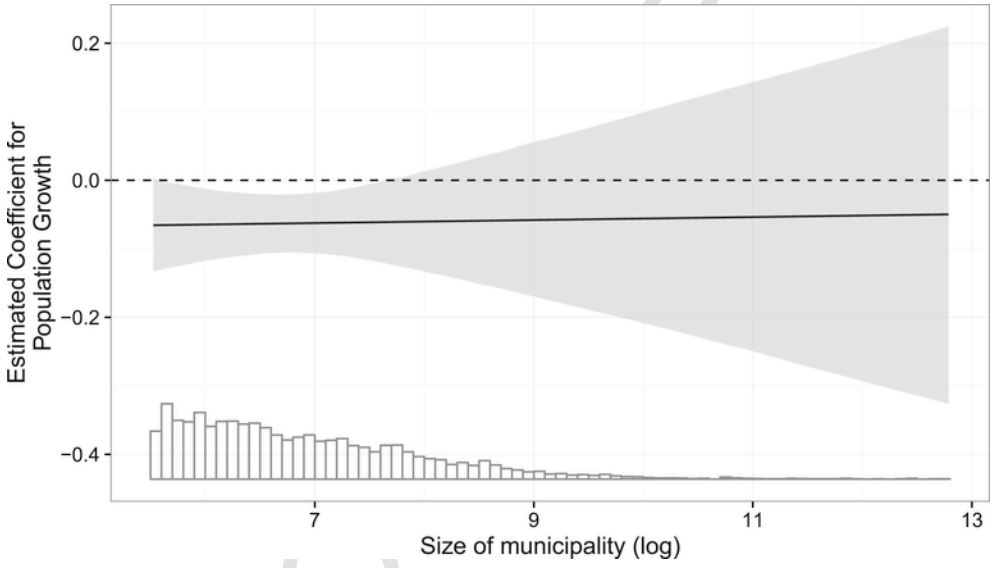

Fig. 9. Marginal effect of municipal population growth on turnout at different levels of population size, including only those municipalities that experienced negative growth.

turnout rates are relatively well-known, the role the characteristics of hosting cities had in this relationship remained largely unexplored.

Parting from two different strands of literature (the one linking residential mobility and turnout, and the one linking city size and turnout), we set up a simple model that states that once people have changed their residence, their chances to vote again in their new hosting cities are highly dependent on the characteristics of these hosting cities. In a nutshell, if city size effects are active mechanisms shaping turnout, then our model predicted that these mechanisms should be also at work for the recently arrived residents. If smaller cities offer overall better chances to participation from long-term residents, these fostering conditions should smooth out the difficulties newcomers do have to restart the processes that may lead them to vote. On the contrary, if larger cities depress turnout, these depressing effects should affect mobile citizens even more, thus even reducing their chances to vote.

Using data from more than 5500 different municipalities from Spain in the span of two local elections, our main finding is that city size has a negative moderating effect on the relationship between residential mobility and turnout. This means not only that residential mobility and city size do have separate negative effects on turnout, but that when they combine, these effects are even stronger. In particular, we found that the expected negative effects of mobility on turnout are actually stronger in larger municipalities than in smaller communities.

This gives support to the "small-is-beautiful" (Kelleher & Lowery, 2009) or "Lilliput" (Denters et al., 2014) argument, but it adds a distinct element into the debate. According to our results,

smaller communities not only help building the conditions for higher levels of political participation from their life-long residents, but they also seem more prepared to offer newcomers better chances to reconnect to the political process than larger cities. In a way, the larger "civic capacity" (Oliver, 2001) that smaller communities enjoy seems to be also an effective mechanism to smooth out the potentially negative effects that high levels of mobility do have on turnout. In this sense, results show that at similar levels of mobility, the loss of turnout rates will be significantly smoother in smaller municipalities than in larger cities. As in Robert Frost's poem, from which this paper's title is borrowed, the road *taken* seems to make all the difference.[10]

This entails, however, a conception of *smallness* "where specificity (local uniqueness, a sense of place) derives not from some mythical internal roots nor from a history of isolation […] but precisely from the absolute particularity of the mixture of influences found together there." (Massey, 1999).[11] But these influences—what makes for the kind of local uniqueness only partially identified here—are in need of further exploration.

First, although the study of the effect of size on turnout has devoted considerable effort to explore the mechanisms at work that lead to higher levels of civic engagement in smaller communities, which correlates strongly with turnout, we know very little about the relationship between city size and the notion of representation at the local level. This is especially relevant in those local government systems where local elections are markedly *political* rather than managerial.

On the other hand, our results also hint at the need to further explore the so far unnoticed effects that former and ongoing processes of municipal amalgamation may have on the conditions that local communities present to their residents to engage civically and politically. If city size effects may be blurred by large-scale and continuous mergers, so can be the identification patterns that citizens develop with their local communities. Given that identification with one's local community is a common gate that leads to civic engagement and turnout (Magre et al., 2016; Vallbé, Magre, & Tomàs, 2015), the potentially disruptive effects of municipal rescaling should be further assessed.

Finally, another of the main avenues for future research following this paper entails the need to gather more in-depth knowledge of the democratic consequences of the housing bubble that triggered the financial crisis, especially in southern European countries, where local government has a strong political dimension. The local democratic implications of the territorial governance deregulation that paced the path to a fast-speed growth based on massive suburban development remain understudied, and still need to be included in the analysis of the spatial determinants of political behavior.

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Appendix.

A. Municipal size and electoral turnout

Table 3 Relationship between municipal size and electoral turnout at the municipal level in Spain (1999–2007). Multilevel model with varying intercepts by province and year. Standard errors in parentheses.

	Dependent variable:		
	Electoral turnout (% eligible voters)		
	(1)	**(2)**	**(3)**
Population size (log)	−3.436***	−3.332***	−3.334***
	(0.055)	(0.066)	(0.066)
Population growth		−0.074***	−0.074***
		(0.006)	(0.006)
Metro area		−1.051***	−1.048***
		(0.200)	(0.200)
Non-EU foreigners (%)		−0.026	−0.025
		(0.021)	(0.021)
65 + population (%)		−0.053***	−0.053***
		(0.012)	(0.012)
Unemployment			0.082
			(0.055)
Constant	101.942***	103.171***	102.389***
	(1.180)	(1.236)	(1.268)
Observations	11,143	11,143	11,143
Log Likelihood	−37,325.5	−37,231.2	−37,232.1
Akaike Inf. Crit.	74,661.0	74,480.4	74,484.2
Conditional R^2	0.250	0.262	0.262
Marginal R^2	0.493	0.507	0.502

Note: *p< 0.1; **p< 0.05; ***p< 0.01.

B. Robustness check

Table 4 Linear multilevel regression model of difference of municipal turnout on population growth and size in Spain (1999–2007). Intercepts vary at the municipal level. Standard errors in parentheses.

	Difference in turnout			
	(1)	**(2)**	**(3)**	**(4)**
Population Growth (%)	−0.090***	−0.083***	−0.117***	0.051
	(0.006)	(0.006)	(0.007)	(0.034)
Population size (log)		−2.954***	−3.223***	−3.333***
		(0.443)	(0.452)	(0.452)
Population size squared		0.165***	0.168***	0.181***
		(0.027)	(0.027)	(0.028)
Metro area	−0.429**	−0.069	0.030	0.165
	(0.186)	(0.202)	(0.209)	(0.211)
Unemployment (%)	0.139***	0.167***	0.194***	0.193***
	(0.019)	(0.019)	(0.019)	(0.019)
Non-EU foreigners (%)			0.205***	0.228***
			(0.021)	(0.022)
+65 population (%)			−0.031***	−0.027**
			(0.012)	(0.012)
Growth x Pop. size				−0.024***
				(0.005)
Constant	−0.978***	11.145***	13.061***	13.056***
	(0.198)	(1.744)	(1.943)	(1.941)
Observations	11,122	11,122	11,122	11,122
Log Likelihood	−38,429.900	−38,404.360	−38,362.730	−38,354.780
Akaike Inf. Crit.	76,871.800	76,824.730	76,745.460	76,731.560

Note: *p< 0.1; **p< 0.05; ***p< 0.01.

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[10] *The Road Not Taken* (Frost, 2013): "[…] Two roads diverged in a wood, and I— | I took the one less traveled by, | And that has made all the difference."

[11] Cited by Agnew (2011).

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