Moving to suburbia?
Effects of residential mobility on community engagement

Jaume Magre[*], Joan-Josep Vallbé[†], Mariona Tomàs[‡]

Department of Constitutional Law and Political Science
University of Barcelona

July 21, 2014

Abstract

Previous research has emphasized that residential mobility is a key factor to understand the social and institutional context that shapes local political dynamics, especially in processes of suburbanization of metropolitan regions. Recent work has already pointed out that local communities with higher rates of recent population growth show lower levels of turnout compared to others with significantly lower levels or even negative growth. However, due to both the aggregate nature of most available data and sample designs, no firm conclusions can be arrived at regarding the specific relationship between residential mobility and the individual and contextual determinants of social and political behavior. In this paper we explore the interaction between individual and contextual features to better understand the problems that suburbanization pose to local community engagement. We use data from a survey specifically designed to comply with the requirements of this kind of study. The sample was designed through strata that take into account the recent population growth of municipalities. Results show the relevance of accounting for both individual- and contextual-level variables to better understand the political and social dimensions of residential mobility and local suburbanization.

1 Introduction

Residential mobility is a relevant factor to understand the social and institutional context that shapes local political dynamics. There is ample and geographically varied evidence of the impact of residential mobility—due to metropolitan suburbanization—on electoral turnout at the local level. Recent work (Magre et al. 2011) shows that at an aggregate level municipalities with higher rates of recent population growth show lower levels of turnout than those with lower or even negative growth. This negative impact of residential mobility on participation, moreover, is in accordance with findings related to municipal scenarios of different countries (Oliver 2001).

However, due to both the aggregate nature of most of the data available and sample designs (Sampson 1988), no firm conclusions have been arrived at on neither the individual effects of mobility nor the interaction between individual and contextual factors accounting for different levels of civic engagement at the local level.

[*] jmagre@ub.edu
[†] vallbe@ub.edu
[‡] marionatomas@ub.edu

In this paper we explore precisely that: the interaction between individual orientations and contextual features to better understand the problem of municipal engagement. To this end we address the combination of contextual and individual bases of civic and political engagement to the municipality within a process of metropolitan suburbanization. To measure the level of engagement to the municipality we build an index of municipal engagement based on individual level data.

To test our hypotheses we use a tailored dataset from an as of yet unpublished survey in the Spanish region of Catalonia. The region proves an adequate test bed as it presents, on one hand, a strong institutionalization of local government (powerful mayor and local assembly, notable levels of electoral turnout), and, on the other, a dramatic increase of inter-municipal, residential mobility in the last 15 years (unprecedented in the country), together with significant changes in its demographic, economic, and social structure. This survey is unique in that its sample takes into account the recent population growth of Catalan municipalities. In particular, the sample was built through a stratified design on different categories of municipalities according to their recent population growth.

Section 2 outlines and discusses the research questions that drive this work and derives the two main hypotheses from them. In section 3.1 we describe and contextualize the recent process of residential mobility and suburbanization in Catalonia, with special focus on the metropolitan area of Barcelona, and data are described in section 3. Section 4 will describe the construction of our index of community engagement, and in section 5 our hypotheses on the relationship between mobility and community engagement will be tested. Finally, the main conclusions and further work are discussed section 6.

2 Residential mobility and local politics

How does residential mobility affect the relationship between citizens and the local political system? The literature on the relationship between contextual features and democracy has not yet reached a general agreement on this. Some sociological literature has pointed out that the length of residence is a key factor to discuss and qualify community attachment (Kasarda and Janowitz 1974, Theodori 2004). In this literature, "the local community is viewed as a complex system of friendship and kinship networks and formal and informal associational ties rooted in family life and on-going socialization processes" (Kasarda and Janowitz 1974), for which minimmum lengthy local settlement is key at the individual level. In addition, Alford and Lee (1968) report data showing that mobility alone accounted for 31 percent of the variation in turnout in a sample of U.S. municipalities, with ethnic composition accounting for 19 percent and other variables such as age, education and city size having minor explanatory power. The authors concluded that high levels of population mobility imply 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" (Alford and Lee 1968).

Other literature, though, points out that contextual features such as city size or the level of homogeneity may have an effect. On one hand, people living in smaller communities tend to show higher levels of electoral turnout, attachment to their municipalities, and stronger levels of civic participation (Dahl and Tufte 1973, Oliver 2001), even within metropolitan scenarios (Oliver 2000, Magre et al. 2011). On the other, economic (Oliver 1999), ethnic (Alesina and La Ferrara 2000), or other types of segregation due to specific urbanization designs have also been found relevant to explain different levels of community attachment and participation, even beyond length of residence. In this sense, stronger attachment to communities might not be explained solely by city size but also by specific aspects and consequences of suburbanization processes, or even by endogenous factors that confound the effect of city size and foster higher

levels of participation and attachment (Verba and Nie 1972). As a result, several opposed models have been proposed to explain the extent to which the length of residence has some effect on people's attachment to their municipality or their levels of participation.

The Southern European, Napoleonic model of local government has produced strong ties with the municipality, and city size is a strong predictor for electoral turnout at every level (Magre et al. 2011). Specifically, as will be detailed later, a large scale process of residence mobility has taken place within and beyond the metropolitan region of Barcelona during the last 15 years, which, among other features, has resulted in an uneven allocation of mobile population, producing an urbanization burst and population growth of smaller communities, specially in the metropolitan region (Otero-Vidal and Serrano 2013).

Moreover, Magre et al. (2011) have already underscored the impact of mobility—due to a metropolitan suburbanization process—on electoral turnout at the local level in Catalonia. Their results show that at an aggregate level, those municipalities with higher rates of recent population growth present lower levels of electoral turnout than those with lower or even negative growth.

However, due to the aggregate nature of their data no conclusion can be reached regarding whether newcomers are those who vote less. In this paper we intend to offer an explanation to this situation: the effects of mobility due to the process of surburbanization (within the demographic evolution) on *individual* civic and political engagement. In order to explore these effects, we will test two different hypotheses.

Our first hypothesis (H_1) is rather simple. It is the individualized version of what Magre et al. (2011) concluded for aggregate data: lower lengths of residence will produce lower levels of community engagement in individuals, for time is a key factor to build the networks and bonding that lead to civic integration. We measure community engagement through the creation of an index of community engagement, further explained later.

On the other hand, some authors (Kasarda and Janowitz 1974) have pointed out that it is not only people's length of residence what affects their level of community attachment, but that distinct features of the receiving communities affect the probability that newcomers develop the "complex system of friendship and kinship networks" required for a successful community attachment to take place. In this sense, our second hypothesis (H_2) states that aggregate levels of population growth or loss may affect the efficiency of length of residence as a factor triggering the community engagemement of the migrant population. Specifically, we hypothesize that migrants arriving in communities with high rates of population growth will present lower levels of community engagement than those arriving in communties with close to zero or negative population growth.

3 Data and methodology

We test our hypotheses with data from a survey carried out between September 6 and 14, 2010 in Catalonia, Spain. The survey was carried out through computer-assisted telephone intierviewing (CATI) on a sample of 1,600 national population, 18 years old or older. Catalonia and specifically the metropolitan area of Barcelona are a good scenario to test the relationship between residential mobility and local politics due to (1) a high level of municipal fragmentation even within the metropolitan area, and (2) a large scale process of citizen residential mobility ocurred in the last 15 years.

3.1 Metropolitan area, institutions, and residential mobility

Catalonia has 947 municipalities and a population of 7.5 milion (only second to the Spanish region of Andalusia), half of which are concentrated in the the metropolitan area of Barcelona, resulting in a highly unbalanced territory in terms of both urban and population density. For instance, the median Catalan municipality is under 1,000 inhabitants, while only 36 municipalities cover the 3.5 milion metropolitan population around Barcelona. Beyond the boundaries of the metropolitan area proper, a larger and surrounding metropolitan region comprises another 1.5 milion people within 128 municipalities, resulting in approximately 66 percent of the Catalan population living in only 17 percent of the municipalities. Therefore, most of Catalan population is urban.

3.1.1 Local and metropolitan institutions

Catalan municipalities present directly elected legislatures which elect their respective executive bodies, but they largely lack fiscal autonomy. The share of local government expenditure in Spain shows that the distribution between levels of government in the last 30 years has evolved mainly with an increase of expenditure at the regional level at the expense of the central level, while the local government share has remained basically constant since then (around 13 percent) (Bosch and Espasa 2006). Part of the municipal revenue comes from direct and indirect taxes (e.g., on property and property transactions), but most of it comes from transfers principally from central government.

The fragmentation of Catalan local government is a common feature to the French type of local government Hesse and Sharpe (1991). According to this typology, the Napoleonic model—which includes Spain, France, Italy, Portugal and Greece—presents high levels of local identity at the expense of local autonomy, making local government essentially political rather than functional. This "political localism" (Page 1991) explains the strong existing incentives to keep the local map fragmented. As a consequence, several proposals from the Catalan government (most recently in 2001) to merge municipalities have failed. Actually, new municipalities have been created as recently as 2010.

Politically the municipal level of government has been deemed relevant by citizens. First, in Catalonia separate elections (usually in different years) are held for national, regional, and local legislatures, and despite national elections have traditionally presented higher levels of turnout (an average of 72.3 percent), participation in local elections has been far from negligible (average of 61% for both).[1] Second, due to the existence of a differentiated Catalan national identification and the strong institutionalization of both regional and local governments in Catalonia, citizens have presented consistently high levels of knowledge and identification with both tiers of government, and showed differentiated voting preferences at each level (Riba 2000).

3.1.2 Residential mobility

In the last 50 years, Catalonia and specially the metropolitan area of Barcelona has experienced an extraordinary demographic change. Briefly, three main phases have been identified (Nel·lo 2004, de Terán 2009, Martí-Costa et al. 2011). From 1960 to 1975, big cities grew with the arrival of migrants from rural Spanish regions. The City of Barcelona experienced an accelerated population growth during the 1960s and the 1970s, reaching 1.9 million inhabitants in 1979, while the Metropolitan Area of Barcelona reached 3 million.

[1] www.idescat.cat

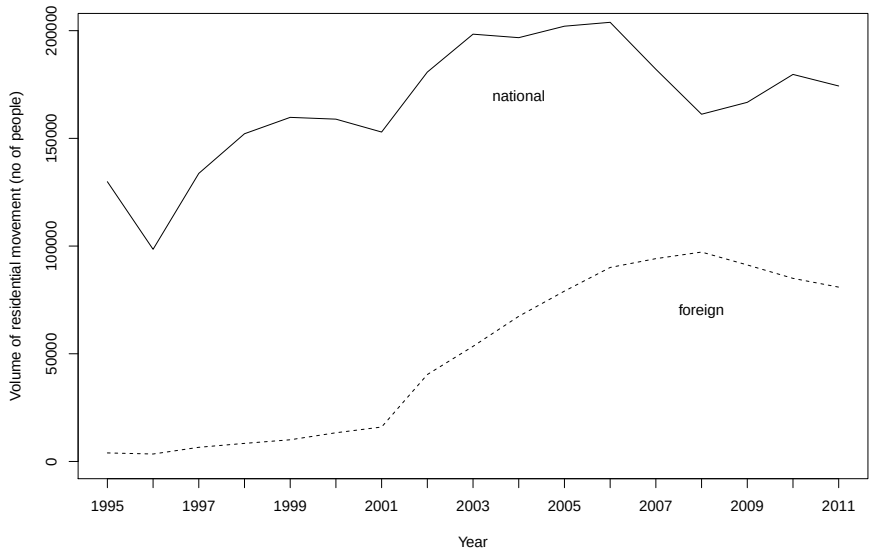

Figure 1: Evolution of the volume of residential variations in Catalonia separating national and foreign citizens, 1995-2011.

From 1975 onwards the growth continued though at a lower pace, eventually evolving into a relative sprawl model. Up until the 1990s the area experienced a process of suburbanization and an increase of inter-municipal metropolitan migrations. In the process, larger cities lost population who moved to smaller surrounding municipalities, thus increasing the population of a metropolitan second ring. This process has been explained mainly through systematic differences in housing prices and supply between the first and secod metropolitan rings, and due to higher levels of motorization and public transportation in the whole metropolitan region that have made commuting increasingly easier.

Starting in 2000, the present trend involves an increasing consumption of land, a loss of population in central municipalities such as Barcelona, and increased growth occurring in metropolitan peripheries with relatively lower density patterns.

This phase is characterized by two simultaneous trends. First, the arrival of foreign population to central cities, reaching 17 percent of total population of the City of Barcelona in 2012. Second, and paradoxically, there has been an increase of intra-metropolitan migration, especially towards the metropolitan region. Figure 1 shows official census data on the changes in volume of residential variations among national citizens and foreign population within Catalonia in the last 15 years.

Before the 1990s, residential mobility was low and stable within Catalan and Spanish societies. This trend began to change in the early 1990s and peaked during the 2000s. In 2007 around 15 percent of Catalan voters lived in a different municipality to that in which they had lived 10 years earlier (Alberich 2010). These migratory flows departed from the city of Barcelona and its first-ring metropolitan area towards the extended metropolitan region (second ring).

3.2 Survey design

In order to ensure that we capture the effect of the context in which inter-municipal migration takes place, the survey sample was produced through a stratified design on six different

categories of municipalities depending on their growth of national citizen population they experienced in the last 10 years, according to census data:

- Municipalities with a growth rate higher than 30 percent
- Municipalities with a growth rate between 20 and 30 percent
- Municipalities with a growth rate between 10 and 20 percent
- Municipalities with a growt rate between 5 and 10 percent
- Municipalities with a growth rate up to 5 percent
- Municipalities with negative population growth
- The city of Barcelona (negative growth)

Once strata were created, each stratus was assigned a minimum of 200 interviews. The last 200 interviews were allocated proportionally among the five categories of communities with positive population growth. On the other hand, in each stratum, interviews were assigned proportionally according to the actual population distribution, depending on city size, except in Barcelona. In Barcelona, interviews were assigned proportionally by city districts, according to their census population distribution.

The final individual selection was carried out through quota crossed by sex and age, according to their actual distribution wihin the population of each of the defined strata. Final results are weighted according to the weight each of the seven strata within the whole Catalan population. The sample error of the survey is $\pm$ 2.9% for a 95% level of confidence and p=q=0.5.

3.3 Methodology

To test the hypotheses we fit OLS regression models and analysis of variance (ANOVA) with the index C of community engagement as the response variable, which shall be described in the next section. Regarding the main predictors of the models, the aggregate measure of residential mobility is the variable used to create the sample strata, just described above. In turn, the length of residence is used as an individual-level measure of residential mobility, with seven different categories.

Additionally, the models include controls for a number of individual and contextual characteristics. The main contextual variable is city size, since we intend to observe differences in community engagement due to changes in length of residence and population growth keeping size constant. Regarding individual-level measures, we first control for individual characteristics that commonly affect participation and engagement: age (continuous measure), education, occupation, and gender. On the other hand, in order to neutralize the effect of potentially confounding variables in the variation of civic engagement, we include additional controls for (1) the frequency at which individuals discuss about politics with other people, (2) which of the multi-tier elections individuals consider to be most important, (3) the value individuals attach to their chance to vote in the next municipal elections (scale from 0 to 10), and (4) individual perceptions of external political efficacy (0-10 scale). Finally, since having children is a trigger for participation and membership in local organizations, we also control for the presence of 6 year-olds or younger children in the respondent's household.

4 Index of community engagement

The inspiration of our index of community engagement are both Kasarda and Janowitz's (1974) measures of community attachment, and different approaches to the link between social networks and the formation of social capital. Unlike Kasarda and Janowitz's (1974) measures of community attachment, our index of community engagement combines variables pointing to the building of social bonding and networks with elements of political interest and knowledge. On the side of social capital research we borrow from its two main approaches (Lin 2004). On one hand, like authors such as Burt (2000), Erickson (1996), Lin (2000) and Lin (2004), we adopt a micro-level strategy and (partly) focus on the way "individuals access and mobilize resources embedded in social networks" (Son and Lin 2008) at a local level, although we do not focus on the way these networks lead to the attainment of personal goals (Burt 2005, 2000). Rather, on the other hand, like Putnam et al. (1993) and Putnam (2000) we are interested in both (1) the mechanisms that lead to different levels of civic engagement, and (2) its political consequences. However, we differ from Putnam et al.'s (1993) and Putnam's (2000) index of social capital in at least three significant ways. First and foremost, as mentioned earlier social capital is usually measured as an aggregate-level indicator, while we build an individual-level indicator of community engagement.

Secondly, Putnam et al. and Putnam's (1993, 2000) index of social capital is mainly based upon measures of the role of organizations in community life, indicators of participation in public affairs such as political affiliation, rates of voluntary work, measures of informal sociability, and finally indicators measuring interpersonal trust. The selection criteria for these constituing elements have not rested unchallenged. Related to our issue, critics have emphasized its dependence on the specific context the index sought to explain (Italy), as emphasized by Boix and Posner (1996), and thus its problems when applied to other scenarios, specifically Spain (Torcal 2000) where, for instance, political affiliation was low from the first moments of the democratic transition to democracy (Montero 1981). Moreover, the inclusion of different forms of trust in the measurement of social capital faces both conceptual and empirical problems (Lin 2004, Cook 2005, Son and Lin 2008).

Finally, some of Putnam's critics emphasized that despite his efforts to separate the notion of social capital from the political and civic culture tradition (Almond and Verba 1963), "the model of causation, which goes from civic capacity to political behavior, is in the line of political culture research from the pioneering studies of Almond and Verba onward [...] and picks up on crucial arguments of that superb culturalist, Alexis de Tocqueville" (Tarrow 1996). In order to emphasize the link between both traditions, we have added variables explicitly related to political culture in our index, such as the knowledge of the Mayor's name.

In sum, due to its aggregate nature, Putnam's index allows the measurement of the civic capital of a given community or society or, at most, of a given human group. Our index, in contrast, intends to measure the engagement of individuals to their community.

4.1 Construction of the index

The variables combined to build the index of community engagement intend to represent three different dimensions of community engagement. They are briefly described in Table **??**.

First, a set of variables, which we label *Identity*, relates to the level of satisfaction and identification of individuals to their city (ARR1 to ARR3), and which also links to Kasarda and Janowitz's (1974) measure of community attitudes and sentiments. The second component of our index (*Participation*) combines variables that measure the level of participation in various activities within the respondents' municipality (ARR4 to ARR10). This second component

intends to capture "resources embedded in social networks accessed and used by actors for actions" (Lin 2004), and correspond to Putnam's concepts of informal sociability, voluntarism and participation in public affairs. These include the extent to which people keep their social ties within their current municipality, their level of social activity measured through the membership to civic organizations with different purposes (sports, culture, etc.) and their trust on local commerce, or their level of social informal interaction with other neighbors.

Finally, our third dimension (*Knowledge*) tackles the level of knowledge, information, and interest regarding municipal activity (ARR 11 to ARR16), which are related to political culture (Almond and Verba 1963).

Table 1: Dimensions, components and variables used to create the index of community engagement (C). The fifth column shows the variable values used to classify each component as TRUE.

Dimensions	Component	Variable	Measurement	True values (=1)
Identity	ARR01	Level of satisfaction about living in the municipality	Very satisfied, somewhat satisfied, not very satisfied, not satisfied at all	Very satisfied
	ARR02	How sorry would you be should you have to leave your current municipality and move to another one?	Very sorry, somewhat sorry, not very sorry, not sorry at all	Very sorry
	ARR03	Level of identification with the municipality	0-10 scale	9-10
Participation	ARR04	Where do you keep most of your relations?	Current municipality, another municipality, both equal/everywhere	Current municipality
	ARR05	Do you participate in any sports-related organization of your current municipality?	Yes/No	Yes
	ARR06	Have you attended to some event of the local fair in the last 2 years?	Yes/No	Yes
	ARR07	Do you participate in some culture-related organization in the municipality?	Yes/No	Yes
	ARR08	Do you have your most trustworthy shopkeepers in the municipality?	Yes/No	Yes
	ARR09	Do you go to some local venue where you meet other people you already know in the municipality?	Yes/No	Yes
	ARR10	Are you a member in a neighbor association in your current municipality?	Yes/No	Yes
Knowledge	ARR11	Would you please tell me what party or parties are currently in power in the municipal council?	Absolutely correct, partially correct, incorrect	Absolutely correct
	ARR12	Would you please tell me the Mayor's name?	Correct/Incorrect	Correct
	ARR13	How informed are you on the affairs of your *neighborhood*?	Very informed, somewhat informed, not very informed, not informed at all	Very informed
	ARR14	How informed are you on the affairs of your *municipality*?	Very informed, somewhat informed, not very informed, not informed at all	Very informed
	ARR15	How interested are you in the public affairs of your neighborhood?	Very interested, somewhat interested, not very interested, not interested at all	Very interested
	ARR16	How interested are you in the public affairs of your municipality?	Very interested, somewhat interested, not very interested, not interested at all	Very interested

Table 1 contains detailed information about the levels of measurement of each original variable and the values used to classify each component as true—i.e., the set of scores that would make a respondent score 1 in our index. Each of these 16 components was coded as a binary variable (true=1, false=0), according to a narrow criterion. For instance, the

component ARR03, based upon a variable measuring the level of identification of respondents toward their own municipality on a 0 to 10 scale of identication, takes value 1 (i.e., TRUE) only when a respondent scores 9 or 10, and 0 otherwise. Other components such as ARR01 and ARR13 to ARR16 take value 1 when the variables take the highest score on a four-point scale. Other components such as ARR05, ARR07, and ARR12 were based upon already dichotomous variables.

This extreme classification criterion is a double-edged sword, though. On the one hand, central tendency bias (Choi and Pak 2005) in scale-type responses reduces the overall contribution of the true values of the components on the index, since the extreme original values tend to have lower frequency. This in turn tends to reduce the explanatory power of subsequent models when the index is used as the response variable. Yet, on the other hand, should these models be able to uncover significant effects of the main predictors on a index designed under such strict rules, then the interpretation of results becomes less ambiguous.

Table 2 shows the distribution of each component of the index among our sample in terms of percentage of individuals with both categories true and false. Note that the four last components are based on Likert scales where, as commented above, the true cases present low frequencies. The lowest percentage of true cases in the table is 10.3 (ARR14, the individual considers herself very informed about what happens in her town), and the highest true case has 82.9 frequency (ARR08, the individual affirms to have her most trustworthy grocery stores in her current municipality).

Table 2: Distribution of the 16 components of the index of community engagement in the sample.

	False	True
ARR01	56.65	43.35
ARR02	61.37	38.63
ARR03	61.47	38.53
ARR04	30.92	69.08
ARR05	74.38	25.62
ARR06	24.51	75.49
ARR07	70.60	29.40
ARR08	17.07	82.93
ARR09	42.82	57.18
ARR10	82.27	17.73
ARR11	71.85	28.15
ARR12	30.81	69.19
ARR13	88.99	11.01
ARR14	89.68	10.32
ARR15	81.15	18.85
ARR16	79.27	20.73

4.2 Index of community engagement

The index of community engagement presents the following formula:

$$C_i = \left(\sum_{k=1}^{N} ARR_{ki} == 1 \right) / N,$$

which is the sum, for each individual i, of the values of the $N = 16$ variables selected as true ($ARR_{ki} == 1$), and divided by the highest possible number of true responses (N) so that it is standardized to have a range $[0,1]$. In Figure 2 we may observe the distribution

of the values of the new index of community engagement (C). The new variable is highly concentraded around the 39.76 percent value of the index—i.e., the population presents an average of 6.24 true values out of the 16 variables included in the index. Furthermore, the value distribution is positively skewed, and there is no evidence of possible subgroups that may lead us to think of outlier behavior that could ultimately lead to divided distributions such as bimodal ones.

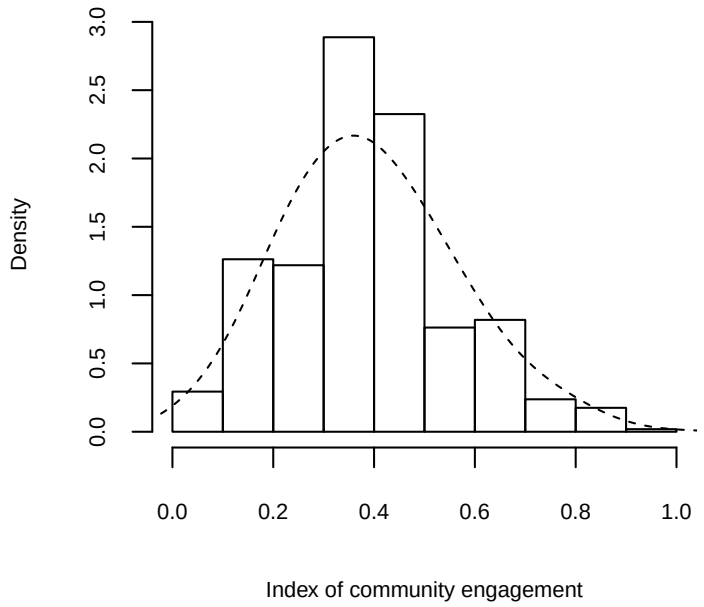

Figure 2: Distribution of the values of the newly created index of community engagement (C)

4.3 Check of the index

In order to assess the relative weight of each variable ARR_k on the index, we have carried out three different procedures. First, we have checked, for each variable, the mean value of the index when that variable is true and when it is false, which shows that in all cases the mean value of the index changes significantly when that variable is true or false. In other words, all variables seem to have an independent contribution to the construction of the index.[2]

Secondly, we have fitted a multivariate lineal regression model with the new index as the response variable, and the 16 components of the index as predictors (ARR01 to ARR16). Our aim here is to check for anomalies in the relationship between those variables. The results show that, due to its tautological nature, naturally R^2 is equal to 1, since C is a perfect combination of the 16 predictors. Moreover, all regression coefficients for all 16 predictors have identical value, exactly 1/16, and the intercept is 0.[3]

[2]Data not showed here, but available upon request.

[3]Additional checks on the tolerance of the variables, showing no stricking results, but that the latter two variables, related to interest in public affairs of the municipality are those that add less information to the model.

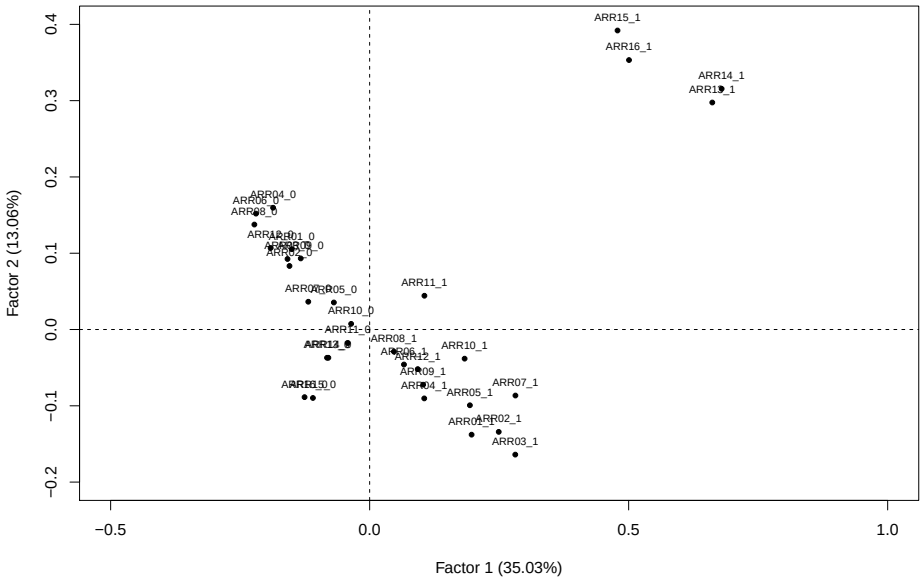

Figure 3: Distribution of all the index components' categories along the two first factors resulting from Multiple Correspondence Analysis on the index components.

All that said, all the variables seem to contribute individually to the index. Therefore, we may conclude that all the variables considered have a relevant impact to the index.

Finally, a last check was carried out applying Multiple Correspondence Analysis (MCA) to the index components in order to check whether they can be summarized in a very few number of latent unobserved variables (factors). The results show, first, that the two first components account fot almost 50 percent of variance among the components (reaching almost 60 percent with the third one). Because of the very nature of the MCA method, which deals with categorical variables and therefore "embeds data in a much higher-dimensional space" (Greenacre 2006), the relevance of the amount of explained inertia should not be overemphasized. Multiple Correspondence Analysis, compared to principal components analysis, typically underestimates the measure of fit in terms of explained variance (Greenacre 2006, Abdi and Valentin 2007, Aşan and Greenacre 2011), and therefore "the percentages of variance are misleading measures of information" (Lebart 2006).

What MCA does significanly show, though, is that the distribution of the components' categories along the factor that accounts for most of the variance (x axis of Figure 3) captures the logic of our index: all components' categories with value zero take negative coordinate values (left-hand side), and the ones with value 1 take positive coordinates (right-hand side). The extreme position of the components related to political interest (upper-right part of the plot) responds to the overweighting MCA gives to categories with low marginal frequency in the data (Hoffman and de Leeuw 1992), which is the case of the last four components in Table 2, as commented above.

5 Evidence

In order to explore the relationship between residential mobility and community engagement, we begin testing our new index C against the population growth strata upon which our data

are based. To do so, we calculate the average value of the index of community engagement for each stratum or subgroup of cities according to the evolution of their national population. Secondly, we carry out an analysis of variance (ANOVA) to compare the differences among means.

Table 3: Mean and standard deviation of the index of community engagement (C) for each stratum of population growth.

		C index	
	Population growth	mean	std. dev.
1	>30%	0.357	0.179
2	20 to 30%	0.378	0.171
3	10 to 20%	0.410	0.184
4	5 to 10%	0.385	0.172
5	0 to 5%	0.399	0.176
6	Decreases	0.414	0.161
7	Barcelona	0.397	0.146

Table 3 shows the average value and the standard deviation of the C index of community engagement for each stratum of population growth, and Table 4 shows the results of the ANOVA. We may first observe that the variable does not present highly relevant variations among the different categories of city. Its mean value ranges from 0.357 to 0.413. Considering that the mean value for all the sample is 0.397 with 95 percent confidence intervals [0.389,0.406], the group of cities that experience population growths higher than 30 percent present values significantly different from the mean value among the whole sample. Moreover, the ANOVA results report significant differences of means.

This supports that, in effect, differences in community engagement may be partly explained by recent rates of population growth. Yet, this effect seems to be only significant for those cities with important population gains (more than 30 percent). This is confirmed in Figure 4, which presents the visualization of the average values of C for each population stratum with 95 confidence intervals and including the intervals for the total mean.

Table 4: Results of the analysis of variance between the type of city in terms of percentage of population growth, and the index of community engagement.

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
Pop. growth	6.000	0.413	0.069	2.498	0.021
Residuals	1593.000	43.856	0.028		

5.1 Individual factors of community engagement

But, how is individual residential mobility related to community engagement? In our first hypothesis (H_1) we want to test whether individual residential mobility affects community engagement. To do so, we have fitted a linear model regressing the C index on the length of residence. Additionally, in order to test whether individual-level variables such as length of residence have a special effect on any of the dimensions of civig engagement measured by the index, our empirical stragegy below will include separate models for each dimension.

Table 5 shows that, as expected, the length of residence is a relevant factor to explain the level of community engagement of individuals. In particular, the first column shows that compared to those who have been living in their municipality less than 2 years, average community engagement increases as individuals live longer in their local communities. Moreover, results for the separate models indicate that the effect of time is especially significant regarding the

Table 5: OLS regression model of the *C* index of community engagement on individual residential mobility.

		Index components		
	Index	Identity	Participation	Knowledge
	(1)	(2)	(3)	(4)
Length of residence [Ref. < 2 years]				
2 to 5 years	0.105	0.181	0.120	0.050
	(0.075)	(0.169)	(0.097)	(0.098)
6 to 10 years	0.156**	0.254	0.176*	0.084
	(0.074)	(0.167)	(0.096)	(0.097)
11 to 15 years	0.154**	0.218	0.186*	0.084
	(0.075)	(0.169)	(0.097)	(0.098)
16 to 20 years	0.165**	0.183	0.171*	0.150
	(0.075)	(0.171)	(0.098)	(0.099)
20+ years	0.212***	0.231	0.252***	0.156
	(0.073)	(0.166)	(0.095)	(0.097)
Whole life	0.230***	0.336**	0.255***	0.148
	(0.073)	(0.165)	(0.095)	(0.096)
Age	0.0005	0.002**	−0.0003	0.0003
	(0.0005)	(0.001)	(0.001)	(0.001)
City size [Ref. < 10K]				
10K to 100K	−0.028**	−0.050*	0.017	−0.071***
	(0.012)	(0.027)	(0.015)	(0.016)
100K to 500K	−0.012	−0.012	0.008	−0.037**
	(0.014)	(0.031)	(0.018)	(0.018)
500K +	−0.034**	−0.015	0.010	−0.096***
	(0.014)	(0.032)	(0.018)	(0.019)
Education [Ref. Less than elementary]				
Elementary	0.068	0.213*	0.009	0.065
	(0.053)	(0.120)	(0.069)	(0.070)
Middle	0.030	0.066	−0.001	0.048
	(0.048)	(0.108)	(0.062)	(0.063)
Junior High School	0.046	0.056	0.016	0.078
	(0.048)	(0.108)	(0.062)	(0.063)
Senior High / Vocational	0.061	0.038	0.058	0.076
	(0.048)	(0.109)	(0.062)	(0.063)
Undergraduate	0.073	−0.016	0.077	0.114*
	(0.050)	(0.112)	(0.064)	(0.065)
Postgraduate	0.041	−0.047	0.042	0.085
	(0.049)	(0.111)	(0.063)	(0.064)
No children at home (6 y.o. or less)	−0.024**	−0.018	−0.033**	−0.017
	(0.012)	(0.026)	(0.015)	(0.015)
Occupation [Ref. Service employee]				
Liberal profession	0.025	−0.043	0.041	0.041
	(0.024)	(0.055)	(0.032)	(0.032)
Employer	0.094***	0.082	0.095**	0.100**
	(0.035)	(0.080)	(0.046)	(0.047)
Self-employed	0.059**	0.079	0.097***	0.004
	(0.023)	(0.052)	(0.030)	(0.030)
Farmer	0.050	0.130	0.179	−0.140
	(0.087)	(0.196)	(0.112)	(0.114)
Middle-management	0.028*	0.028	0.050**	0.003
	(0.015)	(0.035)	(0.020)	(0.020)
Worker	0.032*	0.028	0.063***	−0.003
	(0.016)	(0.037)	(0.021)	(0.022)
Homemaker	0.044**	0.105**	0.063**	−0.009
	(0.021)	(0.049)	(0.028)	(0.028)
Retiree/Pensioner	0.049***	0.054	0.052**	0.042*
	(0.019)	(0.042)	(0.024)	(0.024)
Unemployed	−0.002	−0.047	0.050**	−0.041*
	(0.017)	(0.039)	(0.023)	(0.023)
Student	−0.007	−0.027	0.031	−0.040
	(0.022)	(0.050)	(0.029)	(0.029)
Gender Female	−0.012	0.013	−0.010	−0.027**
	(0.009)	(0.020)	(0.012)	(0.012)
Frequency discuss about politics [Ref. Usually]				
Sometimes	−0.034***	0.004	−0.003	−0.089***
	(0.010)	(0.023)	(0.013)	(0.014)
Rarely	−0.045***	−0.004	−0.021	−0.095***
	(0.012)	(0.027)	(0.016)	(0.016)
Never	−0.060***	0.035	−0.048**	−0.122***
	(0.015)	(0.034)	(0.019)	(0.020)
Most important elections [Ref. Regional]				
National	−0.035***	−0.077***	−0.015	−0.037***
	(0.011)	(0.024)	(0.014)	(0.014)
Municipal	0.057***	0.093***	0.042**	0.057***
	(0.013)	(0.029)	(0.016)	(0.017)
European	−0.003	−0.144***	0.034	0.025
	(0.021)	(0.048)	(0.027)	(0.028)
All equal	−0.041**	−0.067*	−0.045**	−0.023
	(0.016)	(0.036)	(0.021)	(0.021)
None	0.041*	0.071	0.069**	−0.006
	(0.023)	(0.053)	(0.030)	(0.031)
Probability to vote next local elections [0-10]	0.007***	0.010***	0.007***	0.006***
	(0.001)	(0.003)	(0.002)	(0.002)
External efficacy (Municipality) [0-10]	0.007***	0.012***	0.007***	0.005**
	(0.001)	(0.003)	(0.002)	(0.002)
Constant	0.075	−0.156	0.142	0.113
	(0.092)	(0.208)	(0.119)	(0.121)
Observations	1,327	1,327	1,327	1,327
R^2	0.222	0.160	0.125	0.190
Residual Std. Error (df = 1288)	0.150	0.338	0.194	0.197
Note:				*p<0.1; **p<0.05; ***p<0.01

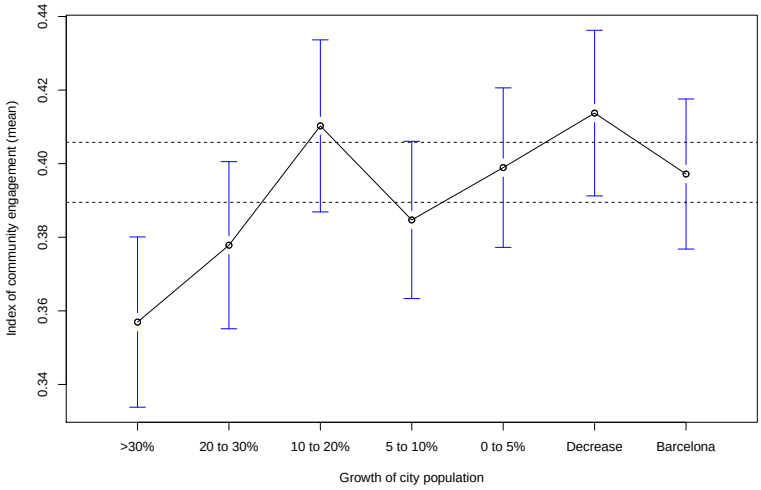

Figure 4: Visualization of the mean value (ANOVA) of the index of community engagement for each group of city regarding their population growth. Error bars for each point represent 95 percent confidence intervals. Dotted lines represent the 95 percent confidence intervals of the total mean.

participatory dimension of civic engagement, which presents significant increases with time compared to newcomers. In other words, while length of residence seeems not to produce significant differences in local identity and knowledge and information about local affairs, it is a strong predictor of the extent to which individuals participate in local activities and organizations. Although as commented above goodness of fit was expected to be low, the whole model presents better fit than any of the three separate models. The effect of the length of residence on engagement is better visualized in Figure 5, which plots the predicted values of the index of community engagement for each category of lenght of residence. The results point out that significant increases of community engagement can be produced within the first 5 years of residence.

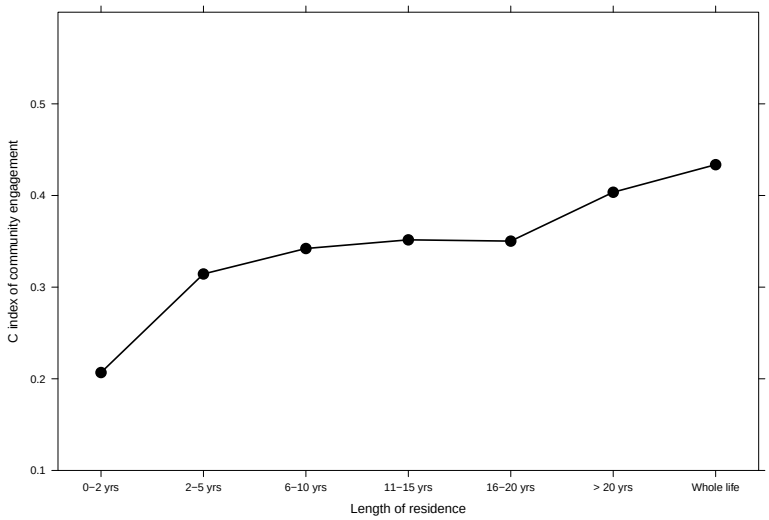

Figure 5: Predicted effect of the length of residence on the level of civic engagement.

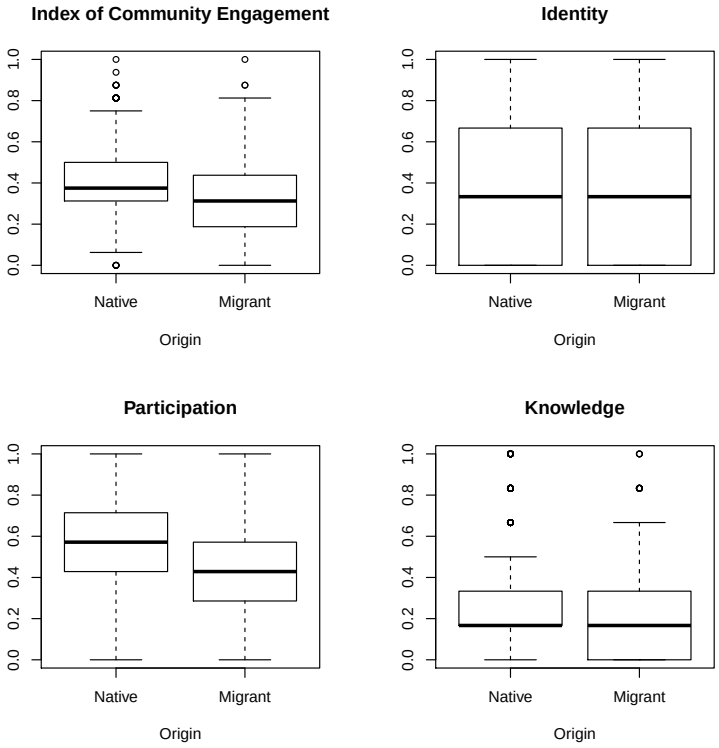

Figure 6: Boxplot summarizing the distribution of the index of community engagement and its dimensions for the group of natives and intermunicipal migrants.

On the other hand, the coefficients are robust to further strong predictors of local attachment such as age, education, city size, and the rest of controls, which show some noteworthy patterns. First, once we control fo everything else, age has no significant effect on the composite index of civic engagement, but presents a significant effect on the separate dimension of local identity. Second, while length of residence seems not to affect the level of knowledge and information about local politics, the effect of city size and gender do, and in the direction pointed out by previous literature: individuals in larger cities (especially women) present lower levels of knowledge and information about local political than individuals in smaller communities. In turn, neither city size nor gender present a solid effect on the other dimensions of civic engagement. Finally, as expected having children in the household boosts civic engagement, especially participation in local organizations.

5.2 Different engagement in different types of communities

Our second hypothesis tests whether the level of mobility experienced by a community affects the level of community engagement of intermunicipal migrants. Note that the variable indicating the different levels of population growth experienced by communities is endogenously related to the length of residence. In other words, the sample has no respondents with a length of residence lower than 2 years living in cities that have decreased in population (except Barcelona). On the contrary, most of the population that affirms to have lived in town all their lives live in cities with negative growth (including Barcelona).

In order to test our hypothesis, we first distinguish between those who have migrated to other cities from those who have not. To this end, we have recoded the length of residence

to have only two values: 1 for those who we consider native—i.e., that have lived in town their whole life or at least for 20 years—, and 0 for migrants, however lengthy. Our aim is to test, first, whether these two groups present significantly different levels of community engagement, and second, whether the volume of mobility experienced by the community affects community engagement differently for both groups of citizens.

Figure 6 shows that differences exist between the two groups in the distribution of the index of community engagement. In particular, as reported earlier, those who have moved to other cities present lower average (0.33) levels of community engagement (and in all of its dimensions) than those who have not (0.42). On the other hand, a linear model with interactions has been fitted in order to test whether the type of community affects differently the community engagement of natives and inter-municipal migrants.

Results in Table 6 give support to our hypothesis. Again, the whole model is better fitted than the three separate models. The first column shows the effect of including both the type of community and the migration status, and results indicate that controlling for migration status, municipalities with higher levels of population growth depress civic engagement compared to those that have negative growth, except Barcelona. On the other hand, controlling for type of community, being a migrant also depresses civic engagement compared to natives. Moreover, when we condition the effect of the type of community to migration status (through an interaction term, on the second column), results show that being a migrant in municipalities with positive growth makes a difference in civic engagement compared to both being a native and arriving to a municipality with negative growth. The aggregate level of population growth of a community, then, seems to have a different effect on the levels of community engagement of natives and migrants.

This may be observed in Figure 7, that plots the average values of community engagement for each group of citizens and type of community. Notice how the model predicts lower levels of community engagement for migrants in communities with higher levels of population growth. In the next section we test whether lower levels of community engagement produce also lower levels of electoral turnout. Firt it should be noted that the effect of the type of community among natives is almost absent. Only those cities that have experienced a 10-20 percent of population growth seem to foster higher levels of community engagement among natives than those communities that have lost population. However, we observe an entirely different picture for those who have migrated. In this sense, compared to the levels of community engagement that migrants achieve on average when they live in communities that have lost population, communities that have experienced higher levels of population growth seem to depress migrants' levels chances to engage to their communities. The difference, moreover, increases with the rate at which these communities have gained population, with a peak in those communities with increases of population above 30 percent.

This lower level of engagement with one's new city of residence has some derivatives that, though obvious, seem relevant to us. First, it points to the fact that the length of residence is a key factor in providing chances to weave the social networks required to build what Kasarda and Janowitz (1974) called "the social fabric of communities". In this sense, our data also show that the higher the number of years people spend living in a local community the higher the chances that our social relationships are kept mainly in that place. In effect, Table 7 shows that only 11 percent of those who have lived in a local community for less than two years happen to have their social ties within its boundaries, while almost three out of four of those who have lived there for more than 20 years do so. Similar patterns hold for variables regarding people's knowledge of the local political life, such as the name of the parties governing the local community, or the name of the mayor. Moreover, the level of community engagement proves a quite good predictor for voting in local elections, even

Table 6: Results of the OLS regression model of the index of community engagement on the type of community, with interactions for individual migration.

		Components		
	Index	Identity	Participation	Knowledge
	(1)	(2)	(3)	(4)
Population growth [Ref. > 30%]				
20 to 30%	−0.003	−0.076	0.005	0.025
	(0.034)	(0.078)	(0.044)	(0.045)
10 to 20%	0.053*	−0.056	0.086**	0.067*
	(0.030)	(0.069)	(0.039)	(0.040)
5 to 10%	0.007	−0.086	0.042	0.013
	(0.029)	(0.065)	(0.037)	(0.038)
0 to 5%	0.013	−0.088	0.063*	0.005
	(0.028)	(0.064)	(0.036)	(0.037)
Decrease	0.006	−0.100	0.015	0.049
	(0.027)	(0.061)	(0.035)	(0.035)
Barcelona	−0.033	−0.075	0.026	−0.081**
	(0.027)	(0.062)	(0.035)	(0.036)
Migrant [Yes]	−0.099***	−0.196***	−0.088**	−0.062
	(0.031)	(0.070)	(0.039)	(0.040)
20 to 30% x Migrant	0.018	0.064	0.006	0.010
	(0.048)	(0.109)	(0.061)	(0.063)
10 to 20% x Migrant	−0.031	0.151	−0.100*	−0.043
	(0.040)	(0.092)	(0.052)	(0.053)
5 to 10% x Migrant	−0.005	0.066	−0.048	0.009
	(0.040)	(0.090)	(0.051)	(0.052)
0 to 5% x Migrant	0.001	0.103	−0.028	−0.017
	(0.041)	(0.094)	(0.053)	(0.054)
Decrase x Migrant	0.061*	0.187**	0.070	−0.013
	(0.037)	(0.084)	(0.047)	(0.048)
Barcelona x Migrant	0.105**	0.060	0.123**	0.107*
	(0.045)	(0.102)	(0.058)	(0.059)
Age	0.0005	0.001	−0.00004	0.001
	(0.0004)	(0.001)	(0.001)	(0.001)
City size [Ref. < 10K]				
10K to 100K	−0.030**	−0.052*	0.014	−0.070***
	(0.012)	(0.028)	(0.016)	(0.016)
100K to 500K	−0.015	−0.002	0.003	−0.044**
	(0.015)	(0.034)	(0.019)	(0.020)
No children at home (6 y.o. or less)	−0.029**	−0.029	−0.038***	−0.019
	(0.012)	(0.026)	(0.015)	(0.015)
Occupation [Ref. Service employee]				
Liberal profession	0.026	−0.062	0.046	0.048
	(0.024)	(0.056)	(0.031)	(0.032)
Employer	0.103***	0.089	0.108**	0.104**
	(0.036)	(0.081)	(0.046)	(0.047)
Self-employed	0.059**	0.084	0.096***	0.004
	(0.023)	(0.053)	(0.030)	(0.030)
Farmer	0.047	0.123	0.155	−0.117
	(0.087)	(0.199)	(0.112)	(0.115)
Middle-management	0.027*	0.023	0.048**	0.004
	(0.015)	(0.035)	(0.020)	(0.020)
Worker	0.031*	0.025	0.061***	−0.001
	(0.016)	(0.037)	(0.021)	(0.022)
Homemaker	0.040*	0.102**	0.058**	−0.012
	(0.021)	(0.049)	(0.028)	(0.028)
Retiree/Pensioner	0.048***	0.056	0.050**	0.041*
	(0.019)	(0.042)	(0.024)	(0.024)
Unemployed	−0.004	−0.050	0.046**	−0.040*
	(0.017)	(0.040)	(0.022)	(0.023)
Student	−0.0002	−0.033	0.040	−0.031
	(0.022)	(0.050)	(0.028)	(0.029)
Gender [Female]	−0.011	0.013	−0.010	−0.026**
	(0.009)	(0.021)	(0.012)	(0.012)
Frequency discuss about politics [Ref. Usually]				
Sometimes	−0.033***	0.010	−0.006	−0.088***
	(0.010)	(0.024)	(0.013)	(0.014)
Rarely	−0.045***	0.001	−0.022	−0.094***
	(0.012)	(0.028)	(0.016)	(0.016)
Never	−0.062***	0.036	−0.051***	−0.124***
	(0.015)	(0.034)	(0.019)	(0.020)
Most important elections [Ref. Regional]				
National	−0.038***	−0.086***	−0.017	−0.038***
	(0.011)	(0.024)	(0.014)	(0.014)
Municipal	0.055***	0.092***	0.037**	0.057***
	(0.013)	(0.029)	(0.016)	(0.017)
European	0.006	−0.123**	0.046*	0.024
	(0.021)	(0.048)	(0.027)	(0.028)
All equal	−0.041**	−0.068*	−0.046**	−0.021
	(0.016)	(0.036)	(0.021)	(0.021)
None	0.044*	0.075	0.077**	−0.009
	(0.023)	(0.053)	(0.030)	(0.031)
Probability to vote next local elections [0-10]	0.007***	0.011***	0.007***	0.006***
	(0.001)	(0.003)	(0.002)	(0.002)
External efficacy (Municipality) [0-10]	0.007***	0.012***	0.007***	0.005**
	(0.001)	(0.003)	(0.002)	(0.002)
Constant	0.292***	0.246*	0.357***	0.239***
	(0.061)	(0.140)	(0.079)	(0.081)
Observations	1,327	1,327	1,327	1,327
R^2	0.228	0.152	0.142	0.196
Residual Std. Error	0.149 (df = 1282)	0.341 (df = 1282)	0.192 (df = 1282)	0.197 (df = 1282)

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

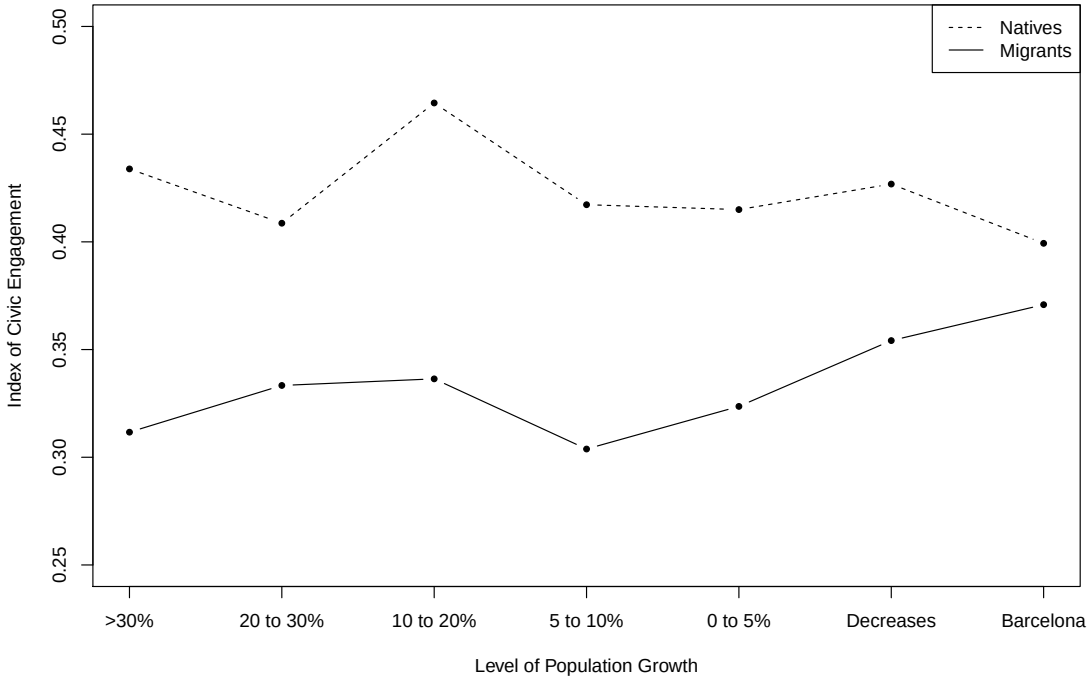

Figure 7: Comparison of the average level of community engagement by the various levels of municipal population growth for native and migrant population.

controlling for other usual factors, including city size.

Table 7: Percentage of people who keep their main social relationships in their current municipality, by length of residence.

Length of residence	Social relationships in town
< 2 years	11.17
2 to 5 years	35.38
6 to 10 yeaers	42.22
11 to 15 years	50.86
16 to 20 years	51.07
> 20 years	73.53
Whole life	79.78

Specifically, Table 8 shows the results of fitting a logistic regression model where the binary response variable indicates whether a respondent voted in the former municipal elections, with value 1 if she did so, and 0 otherwise. Recall that, as pointed out earlier, the southern European model of local government is characterized by a strong political structure and a low functional autonomy, which has helped explain why citizens tend to present fairly high (though lower than upper-tier elections) levels of politial turnout at the local level. Therefore, higher rates of turnout are expected at higher levels of civic engagement.

The results in Table 8 show that actually the level of community engagement proves a quite good predictor of voting in local elections, keeping control variables constant. Figure 8 plots the predicted probabilities of voting in local elections according to the level of community

Table 8: Results of the logistic regression model of voting in local elections on the index of community engagement.

	Dependent variable:			
	record.vot			
	(1)	(2)	(3)	(4)
Index of C. Engagement	1.805***			
	(0.456)			
Identity		−0.005		
		(0.202)		
Participation			1.353***	
			(0.353)	
Knowledge				1.505***
				(0.382)
Age	0.058***	0.061***	0.061***	0.058***
	(0.005)	(0.005)	(0.005)	(0.005)
City size [Ref. < 10K]				
10K to 100K	−0.284	−0.312	−0.376*	−0.208
	(0.206)	(0.204)	(0.206)	(0.207)
100K to 500K	−0.293	−0.297	−0.348	−0.234
	(0.231)	(0.228)	(0.231)	(0.230)
500K +	−0.630***	−0.629***	−0.707***	−0.501**
	(0.231)	(0.229)	(0.232)	(0.232)
Education [Ref. Less than elementary]				
Elementary	0.229	0.346	0.308	0.242
	(0.909)	(0.906)	(0.908)	(0.906)
Middle	−0.044	0.042	0.019	−0.066
	(0.802)	(0.798)	(0.802)	(0.797)
Junior High School	0.657	0.757	0.726	0.587
	(0.807)	(0.803)	(0.807)	(0.803)
Senior High /Vocational	0.623	0.753	0.695	0.534
	(0.808)	(0.803)	(0.807)	(0.803)
Undergraduate	1.608*	1.738**	1.676**	1.510*
	(0.851)	(0.846)	(0.850)	(0.847)
Postgraduate	1.318	1.400*	1.377*	1.182
	(0.819)	(0.815)	(0.819)	(0.815)
Constant	−2.146**	−1.673*	−2.257***	−1.789**
	(0.867)	(0.854)	(0.871)	(0.854)
Observations	1,563	1,563	1,563	1,563
Log Likelihood	−715.088	−725.330	−716.945	−714.093
Akaike Inf. Crit.	1,454.176	1,474.661	1,457.891	1,452.186

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

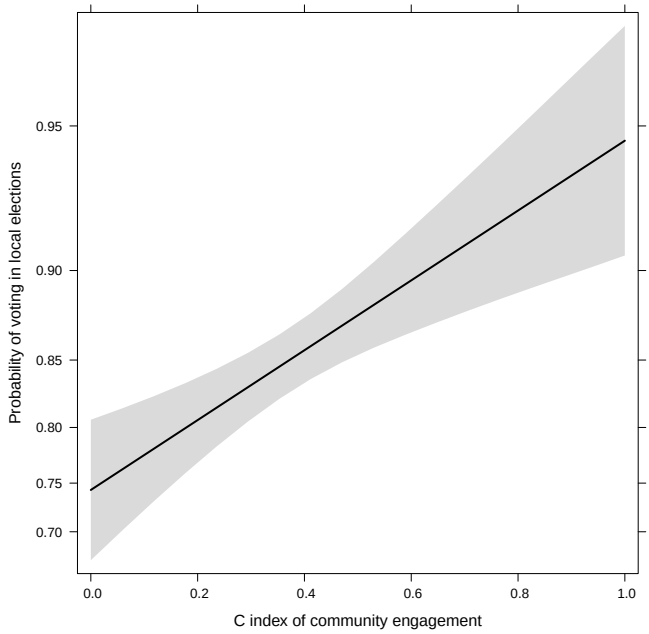

Figure 8: Predicted probability of voting in local elections according to the level of community engagement. Dotted lines report 95 percent confidence intervals.

engagement.

Results also show that, as usual, chances of voting also grow with age and education. The effect of city size is worth commenting. In general, community engagement and turnout tend to be higher among people living in small towns than in larger cities. A number of explanations for this phenomenon have been offered (Dahl and Tufte 1973, Oliver 2000), such as that the density of social networks are higher in smaller communities (Kasarda and Janowitz 1974, Sampson 1988). It is also argued that people in smaller communities see their vote as more decisive (Dahl and Tufte 1973), or even that smaller cities, which naturally have lower numbers of citizens and voters, are easier scenarios for parties to mobilize voters (Blais 2000). Our data, though, show that when community engagement is taken into account the effect of city size in voting almost disspates, being only significant for the city of Barcelona. Finally, when separate models are fitted for each of the three dimensions of our index, only the *Participation* and *Knowledge* dimensions present strong and significant effects on the chances of voting in municipal elections.

6 Discussion and further work

In this paper we have explored the interaction between individual and contextual factors accounting for different levels of civic and political engagement at the local level. The literature on this question has proved relatively unpeaceful in the identification and analysis of the contextual factors that affect individual attitudes and behavior, yielding a number of different models that allow only for contradictory conclusions.

In particular, the paper addresses the question of how residential mobility affects citizens' ability to strengthen ties to their local communities, both at the social and political level. In order to measure community engagement we have built and presented the individual-level, composite index C of community engagement. Moreover, we use survey data specifically

designed to comply with the needs of the study, in so far as its sample was built according to census-based data on aggregate volume of residential movements occurred in each municipality.

Results support our hypotheses. Our first hypothesis finds support in the data both at the individual and aggregate level. On the one hand, data show lower average levels of community engagement in local communities that present higher volume of residential mobility than those that have gained less population or even have lost it. On the other, individual mobility proves relevant to predict the level of community engagement, too. In particular, community engagement also tends to grow significantly with the length of residence. Our second hypothesis sought to make one step further. According to past research, the length of residence alone would not be sufficient to explain variation in social and civic engagement at the local level, but other features of the receiving communities should also be taken into account.

In this line, our second hypothesis tested whether a municipality's aggregate volume of residential mobility has a distinct effect on the levels of community engagement. In particular, we sought to test whether newcomers arriving to communities that have experienced extraordinary rates of population growth present lower levels of integration than those arriving to more stabilized places.

Our findings indicate precisely that: while the rate of the community's population growth does not seem to have any clear effect on the patterns of engagement of the people who have lived permanently in their current municipality, migrants arriving in cities with higher levels of growth present significantly lower levels of community engagement than those arriving in communities with recent population loss.

At this point, it might be argued that the effects of length of residence and population growth are in fact confounded by a self-selection bias, and that the relationship between length and place of residence, and civic engagement suffers from endogeneity. According to this argument, people who move to other municipalities might be less civically engaged with their original local communities in the first place, therefore making them less likely to engage in the new communities. Although we lack information on the levels of civic engagement of our migrant subjects in their prior communities, the argument for endogeneity presents two main drawbacks.

On the one hand, should there be a self-selection process in play, we should observe no effect whatsoever of the type of municipality on the civic engagement among inter-municipal migrants, unless we accept the implausible idea that self-selection takes place both at the individual level and at the level of the type of municipality—i.e., that those who are less engaged in the first place are more likely (1) to move to a different municipality and (2) to choose a municipality with lower aggregate levels of civic engagement.

On the other hand, the indirect assessment of the likelihood that inter-municipal migrants should be less engaged in their prior communities seems to point to the opposite direction. If we compare the distribution of relevant predictors of civic engagement and participation such as age and education, inter-municipal migrants are slightly better educated and with higher proportions of citizens at the 45-60 age interval (when participation and engagement should be at its peak) than non-migrants.

Our findings, moreover, provide support to previous researchers' systemic models on the complex relationship between contextual factors and individual attitudes and behavior in that city size per se is not sufficient to explain the determinants of political behavior (e.g. voting in local elections), and that the length of residence should be taken into account.

In conclusion, we believe the results of the paper underscore the need to better understand the dynamic elements that affect the determinants of social and political behavior, in

particular considering the critical demographic, economic, and social changes produced by suburbanization within the sprawl of big cities into extensive metropolitan regions.

References

Abdi, H. and Valentin, D. (2007). Multiple correspondence analysis. In Salkind, N., editor, *Encyclopedia of Measurement and Statistics*. Sage.

Aşan, Z. and Greenacre, M. (2011). Biplots of fuzzy coded data. *Fuzzy sets and Systems*, 183:57–71.

Alberich, J. (2010). L'ús de l'espai. *Revista Papers*, 51:28–43.

Alesina, A. and La Ferrara, E. (2000). Participation in heterogeneous communities. *The Quarterly Journal of Economics*, 115(3):3.

Alford, R. R. and Lee, E. C. (1968). Voting turnout in American cities. *The American Political Science Review*, 62(3):796–813.

Almond, G. A. and Verba, S. (1963). *The Civic Culture: Political Attitudes and Democracy in Five Nations*. Princeton: Princeton University Press.

Blais, A. (2000). *To vote or not to vote: The merits and limits of rational choice theory*. University of Pittsburgh Press, Pittsburgh, PA.

Boix, C. and Posner, D. N. (1996). Making social capital work: A review of robert Putnam's *making democracy work: civic traditions in modern italy*. Paper 96-4, The Weatherhead Center for International Affairs, Harvard University, Cambridge, MA.

Bosch, N. and Espasa, M. (2006). *La hisenda local a la Unió europea (UE-15)*. Diputació de Barcelona, Barcelona.

Burt, R. S. (2000). The network structure of social capital. *Research in Organizational Behaviour*, 22:345–423.

Burt, R. S. (2005). *Brokerage and Closure. An Introduction to Social Capital*. Oxford University Press, Oxford, UK.

Choi, B. and Pak, A. (2005). A catalog of biases in questionnaires. *Preventing Chronic Disease*, 2(1):1–13.

Cook, K. S. (2005). Networks, norms, and trust: the Social Psychology of Social Capital: 2004 Cooley Mead Award Address. *Social Psychology Quarterly*, 68(1):4–14.

Dahl, R. A. and Tufte, E. R. (1973). *Size and Democracy*. Stanford University Press, Stanford, CA.

de Terán, F. (2009). La explosión de las ciudades y la arquitectura. In Rico, F., Gracia, J., and Bonet, A., editors, *Literatura y bellas artes. España siglo XXI*, pages 375–409. Biblioteca Nueva, Madrid.

Erickson, B. H. (1996). Culture, class, and connections. *American Journal of Sociology*, 102(1):217–251.

Greenacre, M. (2006). From simple to multiple correspondence analysis. In Greenacre, M. and Blasius, J., editors, *Multiple Correspondence Analysis and Related Methods*, pages 41–76. Chapman and Hall/CRC, Boca Raton, FL / London, UK.

Hesse, J. J. and Sharpe, L. J. (1991). *Local government in international perspective: some comparative observations*. Nomos, Baden-Baden.

Hoffman, D. L. and de Leeuw, J. (1992). Interpreting multiple correspondence analysis as a mulltidimensional scaling method. *Marketting Letters*, 3(3):259–272.

Kasarda, J. D. and Janowitz, M. (1974). Community attachment in mass society. *American Sociological Review*, 39(3):328–339.

Lebart, L. (2006). Validation techniques in multiple correspondence analysis. In Greenacre, M. and Blasius, J., editors, *Multiple Correspondence Analysis and Related Methods*, page 179:195. Chapman and Hall/CRC.

Lin, N. (2000). Inequality in social capital. *Contemporary Sociology*, 29(6):785–795.

Lin, N. (2004). *Social Capital. A Theory of Social Structure and Action*. Cambridge University Press, Cambridge, UK.

Magre, T., Tomàs, M., and Bertrana, X. (2011). Determining the respective impact of municipal size and residential mobility on political participation. In *MPSA 69th Annual Congress*, Chicago, IL.

Martí-Costa, M., Iglesias, M., Subirats, J., and Tomàs, M. (2011). Barcelona. In Iglesias, M., Martí-Costa, M., , Subirats, J., and Tomàs, M., editors, *Políticas urbanas en España. Grandes ciudades, actores y gobiernos locales*. Icària, Barcelona.

Montero, J. R. (1981). Parttidos y participación política: algunas notas sobre la afiliación política en la etapa inicial de la transición política española. *Revista de Estudios Políticos*, (23):33–72.

Nel·lo, O. (2004). ¿cambio de siglo, cambio de ciclo? las grandes ciudades españolas en el umbral del siglo xxi. *Ciudad y territorio*, XXXVI:523–542.

Oliver, J. E. (1999). The effects of metropolitan economic segregation on local civic participation. *American Journal of Political Science*, 43(1):186–212.

Oliver, J. E. (2000). City size and civic involvement in metropolitan America. *American Political Science Review*, 94(2):361–373.

Oliver, J. E. (2001). *Democracy in Suburbia*. Princeton University Press, Princeton, N.J.

Otero-Vidal, M. and Serrano, M. (2013). *Municipis metrooplitans en xifres*. Direcció de Serveis d'Urbanisme, Àrea Metrooplitana de Barcelona, Barcelona.

Page, E. (1991). *Localism and centralism in Europe*. Oxford University Press, Oxford.

Putnam, R. D. (2000). *Bowling Alone: The Collapse and Revival of American Community*. Simon and Schuster, New York, NY.

Putnam, R. D., Leonardi, R., and Nonetti, R. Y. (1993). *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton University Press, Princeton, NJ.

Riba, C. (2000). Voto dual y abstención diferencial: un estudio sobre el comportamiento electoral en cataluña. *Revista Española de Investigaciones Sociológicas*, (91):59–88.

Sampson, R. J. (1988). Local friendship ties and community attachment in mass society: A multilevel systemic model. *American Sociological Review*, 53(5):766–779.

Son, J. and Lin, N. (2008). Social capital and civic action: A network-based approach. *Social Science Research*, 37:330–349.

Tarrow, S. (1996). Making social science work accross space and time: A critical reflection on Robert Putnam's Making Democracy Work. *American Journal of Political Science*, 90(2):389–397.

Theodori, G. L. (2004). Exploring the association between length of residence and community attachment: A research note. *Southern Rural Sociology*, 20(1):107–122.

Torcal, M. (2000). La formación y consecuencias del capital social en españa. *Revista Española de Ciencia Política*, 1(2):79–121.

Verba, S. and Nie, N. H. (1972). *Participation in America. Political Democracy adn Social Equality*. The University of Chicago Press, Chicago, IL.