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## **Recent increase of tenancy in young Spanish couples: socio-demographic factors and regional market dynamics**

### **Abstract**

The increase of the proportion of rental-occupied dwellings between 2001 and 2011 is one of the most outstanding results of the 2011 Spanish census. This study aims to explain this increase in tenancy, unveiling the sociodemographic factors behind this pattern at the individual level, and at the regional level clarifying the role of market dynamics in this change. Accordingly, using the microdata from the 2001 and 2011 Spanish censuses, multilevel logistic models are estimated. Two main findings can be drawn from this study: the recent increase in tenancy occurs concurrently with a process of convergence towards a greater acceptance of tenancy among sociodemographic groups, and changes in housing purchase prices have an impact on the likelihood of a young Spanish couple being tenants. The policy implications of these findings are twofold. On the one hand, a more active role in the regulation of housing purchase prices to deter speculative demand is needed. On the other, a greater demand for tenancy requires changes in the tenure composition of Spanish housing stock. Finally, having effective alternatives to homeownership, young adults could rely less upon family networks during the transition to adulthood which could ultimately contribute to a reduction in late parental home-leaving and encourage family formation.

**Keywords:** census data, housing prices, multilevel analysis, renting, Spain.

### **1 Introduction**

The relative increase in rental-occupied dwellings from 11.4% to 13.5% between 2001 and 2011 is an outstanding result of the 2011 Spanish census and a turnaround in the

continuous decline of tenancy since 1950 that was previously anticipated by Pareja-Eastaway (2010). Data from more recent national surveys confirm this upward trend (Housing Europe, 2015). Notwithstanding, this trend is compatible with a significant interregional heterogeneity. According to the 2011 census, in both the Balearic Islands and Catalonia, the rental-occupation rates were approximately 20% whereas, in the Andalusia and the Basque Country the rates were under 10% of the housing stock. Based on the evidence found in the 2011 census, this study is substantiated in three developments. First the increase in renting gained momentum after the outburst of the housing bubble of the 2000s. Second, this change in the housing system has been led by the youngest cohorts and it is connected to housing behaviour changes associated with these ages, involving even the most standard household forms - couples. Third, this process is not homogenous across the Spanish territory and it is related to local and regional factors, such as the local housing market dynamic driven by housing prices.

With this in mind, this study seeks to examine the proliferation of tenancy in Spain to reveal the sociodemographic factors informing the pattern, and at the regional level identifying the role of market dynamics. This study is guided by the hypothesis that changes in housing purchase prices affect the chances of young Spanish couples being tenants by estimating multilevel logistic models for two very distinct contexts, 2001 and 2011. At the individual level, the data is composed of women aged 25-34 years old living with a partner and children, if they have any, without any co-residents in 2001 and 2011. At the regional scale, the 50 Spanish provinces are considered (NUTS 3).

## **2 The boom and bust of the Spanish housing bubble and the rise of tenancy**

The increase of tenancy in Spain falls within two different phases. The first phase is characterised by the Spanish housing boom between 1997 and 2007. It is often associated with the demand “shock” (Módenes and López-Colás, 2014), which was caused by an increase in: the number of new households (mostly young adults and immigrants), the acquisition of new dwellings by middle-aged household heads due to lower mortgage requirements, the acquisition of second homes by national and European citizens, and other components, such as speculative Spanish and foreign investment (Rodríguez López, 2008). These demand factors fed a boom rooted in faulty

financial and planning practices (Naredo, 2010; Romero, 2010). In Spain, the economic prosperity climate that occurred during the bubble was largely stimulated by the construction sector boom (Romero, 2010; Arrazola et al., 2014). Housing prices soared, mortgage access was eased and household indebtedness increased (García-Montalvo, 2007). Even without a Global Financial Crisis (GFC), Spain would most likely experience “a correction due to its extremely overheated housing market” (Yeh-Yun Lin et al., 2012: 14).

In the second phase, after 2007, an especially severe version of the GFC arrived in Spain, accompanied by a real estate crisis. The GFC started at the end of 2007 in the USA (Camarassi et al., 2009) and rapidly became a global event, slowing down the European markets and severely impacting on southern European economies (Yeh-Yun Lin et al., 2012). In Spain, the sudden outburst of the housing bubble was accompanied by a dramatic reduction in housing demand and a sustained fall in housing prices (Rodríguez-López, 2008). Real housing prices in Spain peaked in 2007 and dropped right afterwards.<sup>1</sup> In 2011, prices dropped to the level observed in 2003 (European Mortgage Federation, 2012). The burst of the housing bubble made a prompt impact slowing down the construction sector, leading to the subsequent increase in unemployment rates, the deterioration of public finances (Yeh-Yun Lin et al. 2012; Arrazola et al. 2014) and the crisis and bailout of most of the banking sector (Arrazola et al. 2014).

During the first years of the boom, steady low tenancy and high homeownership rates were compatible with rising house prices. However, at the end of that period, the tide had turned. Tenancy started to grow among less well-off households, such as immigrants and young adults alike (Módenes, 2011). After the bubble burst, a serious fall in housing demand reinforced this process, which ended in a surge of evictions of recent low-income owners with mortgages (Asociación Hipotecaria Española, 2012; CGPJ, 2013) and made homeownership less attractive. Consequently, acknowledging the relationship between economic cycles and tenure preferences (Malmendier and Steiny, 2016; Shiller, 2007), this study assumes that changes in housing purchase prices shape the likelihood of young Spanish couples opting to be tenants.

### 3 Early stages of life in couple and housing tenure dynamics

In 2016, although the overall tenancy rate in Spain was 16.3%, the tenancy rates among younger adult households (household heads aged under 30 years old) reached as high as 52.8% (INE, 2017). Apparently, the increasing costs of housing during the last years of the bubble challenged the pre-existing model of household formation among young Spanish adults. As a result, demographic heterogeneity increased as the youngest cohorts started to move away from the conventional behaviour (Módenes and López Colás, 2014). As put by Myers and Lee (2016), the change of population-housing relationships is normally led by the youngest cohorts, and Spain is not an exception.

Traditionally, southern Europe has been characterized by late patterns of leaving parental home and a direct transition to marriage and parenthood (Fernández Cordón, 1997; Reher, 1998; Iacovou, 2002; Baizán et al., 2003; Sobotka and Toulemon, 2008). Independence from the parental home often overlapped with access to homeownership, which was granted with the aid of the family, or, more recently, through mortgage financing (Holdsworth, 1998; Ahn, 2001; Jurado, 2006; Mínguez, 2016).

In fact, the residential behaviour of young Southern European households has been affected by inadequate housing and fiscal policies. In Greece, Italy, Portugal and Spain, the low proportions of social housing and private renting stock are closely related to the high age of leaving the parental home (Iacovou, 2002). More recently, in Spain, the repeal of the tax deduction for new home purchases and the increase in the related Value Added Tax, in 2012, probably have had a positive impact on tenancy rates (Ortega, Rubio and Thomas, 2011; Mora-Sanguinetti and Rubio, 2014).

In order to promote residential emancipation, in 2008, Spanish policymakers implemented the *Renta Basica de Emancipación*, which consisted in a subsidy for young adults aged 25-29 years old. In 2012, this benefit was discontinued for new beneficiaries. It was the first measure in Spain that aimed to promote tenancy, by clearly going against the pro-homeownership policy agenda (Gentile, 2016). Aparicio-Fenoll and Oppedisano (2012) found that this measure had two major impacts: it significantly helped young Spanish individuals leave their parental homes; and it

increased the likelihood of living with a partner or having a child. However, a similar research carried out by Ahn and Sánchez-Marcos (2017) did not find any significant effects. Broadly, it seems demonstrated that the growth of the tenancy stock and the preference for this type of housing was mostly influenced by the GFC (Mínguez, 2016).

#### **4 Spatial heterogeneity of the housing tenure patterns**

The growth of the proportion of tenancy in Spain is not a geographically homogeneous process. Main urban and touristic areas have a significant rental-occupied stock while in others, predominantly rural areas, the size of rental stocks is negligible. It is to be expected that regional contexts have an effect on tenure behaviour (Lerbs and Oberst, 2014), however, the factors involved differ according to the characteristics of the housing system. Thus, in a liberal, capitalist country like the USA, the divergence of tenure structure at regional and metropolitan scale is based mostly on housing market factors: patterns of housing prices, local economic conditions or housing stock structures (Lee and Myers, 2003). In Germany, capital requirements needed to afford homeownership play an important role in understanding the regional variations in homeownership rates (Lerbs and Oberst, 2014). On the other hand, in non-capitalist or transition societies, such as China, where public control of the housing market is strong enough, factors like the degree of implementation of housing public policies or the density of relations between private and public spheres take the lead (Huang and Clark, 2002).

In the Spanish case, both market and policy factors are at play. Etxezarreta et al. (2013) pointed to place-based institutional factors (specific housing policies at European, national or regional scales) to explain divergent regional trends. Cancelo and Espasa (2000) identified the territorial heterogeneity of housing prices. Due to their dynamic nature, local or regional housing prices are appropriate to explain the historical evolution of geographical differences in tenure choice. Regional diversity has also been a key dimension in the interrelationship between household formation and housing integration of the young Spanish population (Holdsworth and Irazoqui, 2002).

## **5 Assessing the changes in the likelihood of being a tenant. Research questions for a multilevel approach**

The uneven regional increase in rental-occupation between the 2001 and the 2011 censuses illustrates the way the GFC and the housing bubble burst affected households.

In relation to the Spanish context, some research questions arise at two levels.

1. At the individual level, has the increase in tenancy been driven by:
  - 1.1. Convergence (increase in the least likely categories)?
  - 1.2. Divergence (increase in most likely categories)?
  - 1.3. A uniform increase in all categories?
  
2. At the regional level:
  - 2.1. Is regional diversity solely the effect of different population structures?
  - 2.2. Have the regional patterns of housing prices influenced the tenure behaviour of households?
  - 2.3. Are there other important contextual factors?
  - 2.4. Has the influence of the regional level changed over time?
  - 2.5. Is it possible to identify a regional typology?

Thus, the regional dynamics of the Spanish housing system are worth to explore at the regional/provincial level (50 units, NUTS 3 level), while preserving the impact of regional factors that stay constant over time and have an impact on tenure status choice. This disaggregation will enable a better insight of the contextual differences in socioeconomic and territorial dynamics, searching for a regionalization of this heterogeneity, while preserving the impact of regional unobserved heterogeneity. Therefore, this study uses the microdata of the Census of Population and Housing (2001 and 2011) conducted by the Spanish National Statistics Institute (INE) <sup>2</sup> to compute multilevel logistic models of random intercepts. To assess the effect of housing prices, the models use the price of private housing from the data series offered by the Spanish Ministry of Public Works based on the housing market rating throughout the

territory.<sup>3</sup> This study uses the series of prices of private housing purchase during the first quarter of every year of two periods: 1998-2001 and 2008-2011.

To avoid selection bias due to cohort and household type differences, the sample is constrained at the individual level to young women living with their partner and children – if they have any – without other co-residents. The focus on women attributes is justified by a greater representativeness of the stage of the household life cycle than men. Only women living in couple and without other co-residents are selected to ensure that the housing tenure status is related with life in couple and unbiased by influence of other household type such as living in couple in parental home which are not insignificant in the context of the Spanish housing system. The age group 25-34 years is chosen to increase the chances that the residential decisions have been taken shortly before each census and were directly influenced by the geographic and chronological contexts of the study. Additionally, future changes can be anticipated throughout cohort inertia propensity. Therefore, the sample comprises 194,756 women aged 25-34 years old living with their partner and children – if they have any – without other co-residents (72,830 and 121,926 cases, in 2001 and 2011, respectively).

Since this study acknowledges the effect of individual and contextual variables on the preference for tenancy and recognizes the regional heterogeneity of the Spanish housing system, the empirical analysis is structured on two levels. Accordingly, multilevel logistic regression models compute the relative risk of women aged 25-34 years old living with a partner in a rented-occupied dwelling against other forms of housing tenure (mostly owned-occupation with or without outstanding payments). This risk is determined by independent variables at the individual and the regional levels. At the individual level, the independent variables cover three dimensions:

*Demographic.* This dimension includes the age of the woman and the combined citizenship of both partners. Age is grouped in five two-year age-groups. Citizenship is considered in four alternatives: both partners are foreigners, the woman is Spanish and the partner is a foreigner, the woman is foreign and the partner is Spanish, and both partners are Spanish.



*Social.* This dimension covers the educational level and the type of partnership. As with age, the model considers the education of the woman. Three levels are considered: lower than secondary, secondary, and tertiary level.<sup>4</sup> Unfortunately, the Spanish census does not collect income variables. For that reason, in the model, the educational level controlled by age also acts as a proxy of socioeconomic status. Finally, the type of partnership distinguishes married from cohabiting couples.

*Territorial.* This dimension comprises the size of the municipality of residence in seven categories: two for the rural environment (up to 2,000 and from more than 2,000 up to 10,000 inhabitants), two representing small cities (from more than 10,000 up to 20,000 and from more than 20,000 up to 50,000 inhabitants), two representing average size and big cities (from more than 50,000 up to 100,000 and from more than 100,000 up to 500,000 inhabitants), and one category representing metropolitan centres (more than 500,000 inhabitants). The size of the municipality is included in the modelling as a control variable since it is thought to represent the individual lifestyle of households and housing preferences.<sup>5</sup>

When implementing the 2001 model, the following contextual variables at the provincial level are used: the cumulative annual growth rate (CAGR) of private housing price by square meter observed between 1998 and 2001, the percentage of households living in buildings with four or more floors above ground level in 2001, and the mean age of the population in 2001. For the 2011 version, the model comprises the CAGR of the private housing price by square meter observed between 2008 and 2011, the percentage of households living in buildings with four or more floors above ground level in 2011, and the mean age of the population in 2011.<sup>6</sup> As a result, three contextual dimensions are analysed: housing market fluctuations (housing prices), housing and planning policy outcomes (physical housing environment) and sociodemographic context (population age structure). All three contextual dimensions are key factors of any national-level housing system (Boelhouwer and Van der Heijden, 1992).

The variation of the average price of housing purchases documents the effect of the market in the likelihood of living as a tenant and represents the primary independent

variable in this analysis. Since this study covers two contrasting periods, two data series of prices based on the historical series of the Ministry of Public Works have been selected. These periods logically precede the two census moments. The first period covers the residential boom years before 2001 (1998-2001) when prices were increasing. Similarly, the second period captures the strong decline prior to 2011 (2008-2011). Price changes are summarized in the form of a cumulative annual rate of growth of private housing prices per square meter. Understandably, the CAGR for 1998-2001 will be used in the multilevel model for 2001 and the CAGR for 2008-2011 in 2011.

By recognizing hierarchical structures, multilevel models can differentiate contextual and individual effects. Since the interest is in a binary response – if women aged 25-34 years old with a partner live in a rented dwelling or not – a logistic regression model of random intercepts is used where level 1 relates to the individual ( $i$ ) and level 2 to the province ( $j$ ). In the model of random intercepts, the residual variance is divided into the corresponding components in each hierarchy ( $i, j$ ).

$$f(\pi_{ij}) = \beta_{0j} + \beta_1 x_{1ij}$$

$$\beta_{0j} = \beta_0 + \mu_{0j}$$

where  $f(\pi_i)$  is the transformed logit of  $\pi_i$ , which is the probability of  $y_i=1$  (the binary response for individual  $i$ );  $\beta_{0j}$  is the intercept;  $\beta_1$  measures the effect of variable  $x_1$ . In this model, the intercept consists of two components: one fixed,  $\beta_0$ , and one random at the level  $j$  (province),  $\mu_{0j}$ . The model assumes that deviations from the overall mean ( $\mu_{0j}$ ) are normally distributed with zero mean and variance  $\sigma_{0j}^2$ . Thus, the provinces are not introduced into the model with fixed effects (i.e., including dummy variables for each of the 50 Spanish provinces). Instead, the parameter  $\sigma_{0j}^2$  is used to measure the variance between provinces.

## 6 Results and discussion

### 6.1 *The geography of renter-occupation in Spain*

In order to unfold a first overview of the sociodemographic factors and the regional market dynamics behind the increase in tenancy between 2001 and 2011, in Spain, the descriptive results were examined. The results show that the proportion of women aged 25-34 years old living with a partner in a rented-occupied dwelling increased from 11.1% in 2001, to 17.5% in 2011 (Table A.1 in Appendix). However, these proportions are very heterogeneous at the province level. Figure 1 shows that, in 2001, thirteen provinces were below the 8% threshold, and none was above 25%. Nevertheless, in 2011, no province had less than 8% of renter-occupied dwellings and eighteen provinces exceeded 25%. A geographic pattern has started to appear: while in 2001 there appears to be no clear pattern, in 2011 one area of high proportions is clearly drawn. This area includes some of the more economically dynamic regions from Barcelona to Madrid with the centre in Zaragoza covering the north-east quadrant of Spain.<sup>7</sup>

An initial exploration of the relationship between regional configuration of housing prices and the other regional indicators considered shows that north-east regions where higher tenancy rates are, in 2011, tended to have more stable housing prices (Fig. A.2 in Appendix), to be dense and urbanized (Fig. A.3 in Appendix) and to be characterized by a medium or older populations than the average (Fig. A.4 in Appendix). However, since there are no clear-cut geographical patterns, the multilevel analysis will shed more light on these relationships.

### 6.2 *Individual variables: the younger and more urban, the likelier to be tenants*

A Model 0 has been modelled without any independent variable to quantify the effect of the predictors as they are introduced later into the model (Table 1). If the variance of this empty model was 0, the probability of women aged 25-34 years old living with a partner in a rented-occupied dwelling would be the same in all provinces. Since the actual variances of Model 0, for 2001 and 2011, are different from 0, the models suggest that tenancy levels vary across provinces in both moments. Additionally, when the variances obtained in Model 5, which includes all individual variables, are compared

with Model 0, it is found that such variables explain 38% of the differences in tenancy levels in 2001, and 25% in 2011.

**Table 1** Odds ratios for women aged 25-34 years old living with a partner in a rented-occupied dwelling, results at the individual level from multilevel logistic regression models, Spain, 2001 and 2011

Predictors	2001			2011		
	Mod. 0	Mod. 4	Mod. 5	Mod. 0	Mod. 4	Mod. 5
<b>Individual level</b>						
<b>Citizenship of the partners (ref. native)</b>						
Foreigners		25.86 (0.017)	26.01 (0.017)	24.29 (0.008)	23.33 (0.008)	
Native-foreigner		4.12 (0.015)	3.99 (0.015)	4.32 (0.007)	4.00 (0.007)	
Foreigner-native		3.57 (0.014)	3.45 (0.014)	3.20 (0.005)	3.03 (0.005)	
<b>Marital status (ref. married)</b>						
Cohabiting		2.98 (0.006)	2.83 (0.007)	2.46 (0.004)	2.37 (0.004)	
<b>Educational attainment level female (ref. tertiary)</b>						
Lower than secondary		1.86 (0.008)	2.11 (0.009)	1.02 (0.007)	1.15 (0.007)	
Secondary		0.88 (0.007)	0.96 (0.007)	0.76 (0.004)	0.85 (0.004)	
<b>Age (in years) of the female (ref. 33-34)</b>						
25-26		1.34 (0.009)	1.38 (0.009)	2.30 (0.007)	2.38 (0.007)	
27-28		1.14 (0.008)	1.17 (0.008)	1.96 (0.006)	2.00 (0.006)	
29-30		1.08 (0.008)	1.10 (0.008)	1.45 (0.006)	1.46 (0.006)	
31-32		1.03 (0.008)	1.04 (0.008)	1.23 (0.005)	1.24 (0.006)	
<b>Size of municipality (in inhabitants) (ref. up to 2,000)</b>						
Over than 500,000			2.14 (0.016)		3.53 (0.012)	
100,001-500,000			1.03* (0.014)		1.71 (0.011)	
50,001-100,000			0.88 (0.016)		1.65 (0.012)	
20,001-50,000			0.83 (0.015)		1.29 (0.012)	
10,001-20,000			0.77 (0.015)		1.07 (0.012)	
2,001-10,000			0.80 (0.015)		1.03** (0.012)	
<b>Variance between provinces</b>	0.143 (0.028)	0.162 (0.032)	0.198 (0.040)	0.164 (0.033)	0.096 (0.019)	0.123 (0.025)
<b>Constant</b>	-2.119 (0.053)	-2.552 (0.057)	-2.561 (0.064)	-1.211 (0.057)	-2.600 (0.044)	-2.969 (0.051)

Note: Tables A.2 and A.3 in Appendix provide the results for all models. The odd ratios are statistically significant at  $p < 0.001$ , except \* at  $p < 0.05$  and \*\* at  $p < 0.01$ . Standard errors in parentheses.

Source: Census 2001 and 2011, INE. Own calculations.

Model 5, in 2011, highlights the impact of citizenship of the couple. The effect on the likelihood of living in a rented-occupied dwelling is 23.33 higher when both partners

are foreigners than the reference category – native couples. This points to the fact that young foreign households use tenancy as the leading way to enter the housing market. With regards to mixed couples, results suggest that the likelihood of being a tenant is significantly higher if the foreign partner is a man rather than a woman. There is a slight convergence of the coefficients between 2001 and 2011, except for mixed couples in which women are Spanish.

Regarding the type of partnership, and in line with Módenes and López-Colás (2007), cohabiting couples are 2.37 times more likely to be tenants than married couples. Being married positively discriminates in the access to homeownership, as well as in other features related to family formation (Jurado, 2003). Additionally, as observed by Cabré and Módenes (2004), tenancy may also be a temporary option until the partners gather the necessary socioeconomic resources to marry and become homeowners. Heterogeneity is decreasing softly with time, meaning that the type of couple is less decisive on the choice of housing.

The differences between the educational categories are smaller. In general, less educated women are more likely to be tenants. The exception is women with a secondary education level, as they have a lower likelihood than the reference category (0.85). These results are in line with the work of Ahn (2001) and Forrest and Murie (2013), which found a positive relationship between social position, wealth, income, and homeownership. There is an important historical convergence among education categories, as tenancy is spreading to less vulnerable categories.

Age shows the expected effects since the likelihood to live in a rented-occupied dwelling decreases along the life cycle (Speare, 1970; Mulder and Wagner, 1998; Cabré and Módenes, 2004). When the female partner is 25-26 years old, the risk is 2.38 times higher than when she is 33-34 years old, the reference category. Women aged 27-28 years old are 2 times more likely to be a tenant, while those aged 29-30 and 31-32 years old have a risk of being tenants of 1.46 and 1.24, respectively. With regards to change over time, the coefficients of the youngest households in 2011 are higher than those in 2001 for the same category. Additionally, the increases of the coefficients of the age-groups 29-30 and 31-32 are more modest, hence the heterogeneity by age has increased.

As for the urban character of the household, the more urban the household the more likely to be a tenant; a pattern previously mentioned by Módenes (2011). Households living in municipalities with over 20,000 inhabitants, especially those with more than 500,000, recorded relative risks 3.53 times greater than the households living in rural municipalities of less than 2,000 inhabitants. The likelihood for tenancy of urban households increased between 2001 and 2011, especially for those living in municipalities between 50,001 and 100,000 inhabitants. Overall, the likelihood of being a tenant has increased among households situated in intermediate cities, whereas the most rural category is the least likely to live in a rented occupied dwelling nowadays.

The overall hierarchy of the variables has not changed between 2001 and 2011. But there are subtle changes towards convergence and divergence at the individual level. In this regard, two groups of variables stand out when comparing the models 5 for 2001 and 2011. In a first group, heterogeneity has decreased between the two moments. This group is composed of social status variables, such as citizenship, legal status of the couple and education level. The second group shows a higher degree of heterogeneity, in 2011 when compared to 2001, and is formed by the age of the woman and the size of the municipality.

### ***6.3 Contextual variables: housing purchase prices have an impact on the propensity to tenancy***

The contextual variables have been added to the individual models so that two multilevel models are obtained. The variance between provinces tends to decrease (Table 2), meaning that regional context matters on housing decisions. The greatest decrease occurs when the CAGRs and the mean age of the population are introduced. The CAGRs influence is noteworthy as it explains 19% and approximately 16% of the differences between the provinces in 2001 and 2011, respectively.<sup>8</sup> The proportion of households in high-rise buildings in 2001 is also particularly explanatory. Finally, the variation explained by the individual (Model 5) and contextual (Model 8) dimensions considered are 19.8% and 14.6% in 2001, and 12.3% and 9.5% in the 2011 model, respectively.

**Table 2** Odds ratios of the multilevel logistic regression models for women aged 25-34 years old in a partnership live in a rented-occupied dwelling according to individual and contextual characteristics of the province of residence, Spain, 2001 and 2011

Predictors		2001			Predictors		2011		
Contextual		Mod. 6	Mod. 7	Mod. 8	Contextual	Mod. 6	Mod. 7	Mod. 8	
<b>CAGR price by m2 of private housing, 1998-2001</b> (ref. Q1 lower increase in price)				<b>CAGR price by m2 of private housing 2008-2011 (ref. Q4 lower drop in price)</b>					
Q4		0.63 (0.161)	0.76** (0.181)	0.85** (0.211)	Q1	0.64 (0.128)	0.65 (0.134)	0.76 (0.157)	
Q3		0.60** (0.164)	0.62** (0.166)	0.71** (0.195)	Q2	0.75** (0.126)	0.75** (0.136)	0.92* (0.151)	
Q2		0.87* (0.161)	1.10* (0.161)	1.25* (0.171)	Q3	0.80* (0.128)	0.79* (0.146)	0.89* (0.147)	
<b>Proportion of households living in buildings with four or more floors above the ground level (ref. Q1 lower proportion)</b>				<b>Proportion of households living in buildings with four or more floors above the ground level (ref. Q1 lower proportion)</b>					
Q4			0.78** (0.181)	0.76* (0.207)	Q4		1.02* (0.143)	0.94* (0.142)	
Q3			1.02* (0.165)	1.00* (0.165)	Q3		1.11* (0.138)	1.03* (0.136)	
Q2			1.21 (0.162)	1.20* (0.160)	Q2		1.10* (0.146)	1.06* (0.141)	
<b>Mean age of the population</b> (ref. Q1 younger age)				<b>Mean age of the population</b> (ref. Q1 younger age)					
Q4				1.25* (0.192)	Q4			1.34 (0.169)	
Q3				1.16* (0.193)	Q3			1.09* (0.158)	
Q2				0.92* (0.183)	Q2			0.89* (0.143)	
<b>Variance between provinces</b>		0.161 (0.033)	0.150 (0.032)	0.146 (0.032)	<b>Variance between provinces</b>	0.103 (0.021)	0.108 (0.023)	0.095 (0.021)	
<b>Constant</b>		-2.282 (0.117)	-2.341 (0.141)	-2.486 (0.212)	<b>Constant</b>	-2.729 (0.089)	-2.785 (0.118)	-2.935 (0.174)	

Note: The relative risks for individual variables are similar in Model 5 (see tables A.2 and A.3 in Appendix). The odd ratios are statistically significant at  $p < 0.001$ , except \* at  $p < 0.05$  and \*\* at  $p < 0.01$ . Standard errors in parentheses.

Source: Census 2001 and 2011, INE. Own calculations.

Regarding the results of Model 8 (2001) and focusing on the effect of the CAGRs, the couples that lived in the provinces with the highest price increase (Q3 and Q4) were the least likely to live in renter-occupied dwellings, with odds ratios of 0.71 and 0.85, respectively, versus the reference category (Q1, the lowest increase of prices). However, this relationship is not perfectly linear, as couples in Q2 are 1.25 times more likely to live in renter-occupation than those in Q1.

The results for 2011 show differences worth mentioning when compared to 2001. The first, quite evident since the sign of the CAGRs is the opposite in all provinces, is that the couples living in the provinces where the prices in the period 2008-2011 dropped less (Q4, reference category) are the most likely to be tenants.

Regarding the proportion of high-rise buildings, in 2001, the risk of tenancy in provinces with a high or medium-low proportion of high-rise buildings was lower (0.76) and higher (1.20) than in the remaining provinces (Q1 and Q3). In 2011, in the same categories, the relative risks are 0.06 below and above the reference category (Q1, low proportion of high-rise buildings).

Finally, the mean age of the population was quite homogeneous in 2001, although a higher likelihood to be a tenant in the most aged provinces (Q3 and Q4), perhaps due to the existence of a greater supply of second-hand housing and to an older housing stock. In 2011 this relationship becomes more evident. The odds ratio of being a tenant in the oldest provinces (Q4) was 1.34 times higher than those in the reference category (Q1).

To sum up, the analysis shows that housing purchase prices have an impact on the likelihood of a young Spanish couple being a tenant, thus confirming the main hypothesis of this study. Additionally, although less substantive, residing in less urbanized regions where heterogeneity has decreased or in more demographically aged structures where divergence has increased were also associated with a higher tendency for tenancy.

## **7 Conclusions**

This study highlights the role of the place of residence in understanding the housing dynamics in Spain. Moreover, that the regional heterogeneity in tenancy is explained mainly by contextual factors and not only by the differences in population structures (Research question 2.1). While preserving the impact of unobserved regional factors that stay constant over time and impact on tenure status choice, the risk of women aged 25-34 years old living with a partner to be a tenant is triggered mostly by the relative change of the regional housing prices (Research question 2.2). Additionally, population age structure and urbanisation level are relevant drivers as well (Research question 2.3).



Between 2001 and 2011, some traits of the Spanish housing system have shown to remain constant over time. In both moments propensity to tenancy varies across regions. Additionally, the sensitivity of the likelihood to become a tenant to the main sociodemographic characteristics also remains constant, which confirms the importance of the life course for the new housing paths in Spain. The particular use of the renting stock to accommodate the immigrant population has been confirmed in both periods.

However, not all traits have remained constant between 2001 and 2011. The explanatory power of the model for 2011 is lower, perhaps due to a higher complexity of individuals and contextual factors influencing housing options. Contrary to what could be expected due to the uncertainty brought by the GFC, it seems that the regional dimension is less efficient now than before to explain the Spanish housing processes (Research question 2.4). These traits are worth to monitor in the future through more in-depth research. Moreover, our analysis has not been able to identify solid regional typologies (Research question 2.5).

In spite of that, according to the 2011 model, demographic variables are more explanatory at both levels of analysis. At the individual level, younger households display a higher propensity for tenancy, which means that a divergence process by age group has been developing over time (Research question 1.2). Whether this is a cohort long-term innovation or simply a period effect restrained to a specific age range is something that will be verifiable in the 2021 Spanish census data. On the other hand, there is a convergence process regarding other social dimensions, toward a greater acceptance of tenancy regardless of citizenship, type of partnership or educational attainment of the young couple (Research question 1.1). A uniform increase across all categories is dismissed (Research question 1.3). At the contextual level, the propensity to tenancy is positively associated with provinces more affected by demographic ageing (Research question 2.3). More dynamic rental housing markets should be developed in those areas where housing markets became more diverse as a consequence of the demographic change.

The results suggest that there has been a process of cohort and territorial innovation in Spain. This surge in tenancy is being led primarily by very young households looking for independent housing options. This trend seems to be stronger in metropolitan settings, also in old residential contexts and, certainly, in regions with more stable housing prices.

Assuming that a trend towards higher tenancy rates is positive for the Spanish housing system, and for young Spanish couples, two main policy implications can be drawn from this study. First, given the relationship between housing purchase prices and the demand for tenancy, a more active role in the regulation of purchase prices to deter speculative demand is required. This regulation would need to operate at the monetary, fiscal, and land-use levels to increase effectiveness. Second, a greater demand for tenancy would require changes in the tenure composition of Spanish housing stock, making the case for non-speculative investment, and an increase in the social housing stock. In this matter, a sustainable policy for regeneration and urban rehabilitation would be particularly regionally sensitive.

Finally, the trend in tenancy rates is a clear sign of a decrease in the statutory meaning of ownership in Spain that can ease the transitions between life-course events among young Spanish couples, especially parental home-leaving and family formation, but also fertility, alleviating the stress on family networks in housing provision.

## Appendix

Fig. A.1 Map of Spanish provinces (NUTS3). Source: <http://mapsof.net/spain/spain-provinces>.



Fig. A.2 Proportion of women aged 25–34 years old living with a partner in a renter-occupied dwelling (%), Spain, 2001 and 2011. Source: Census 2001 and 2011, NSI

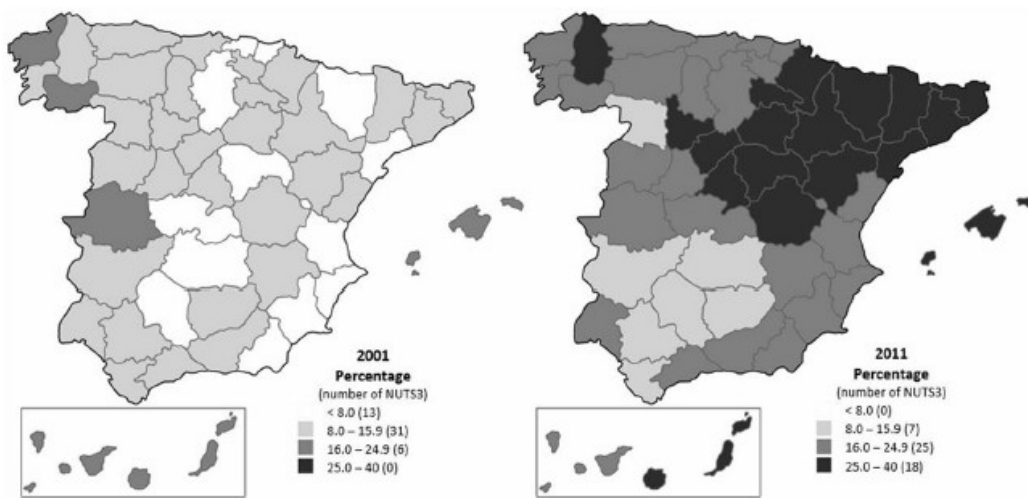


Fig. A.3 Cumulative annual growth rate of the price of private housing by square meter (%), Spain, 2001–2011. Source: Ministry of Public Works

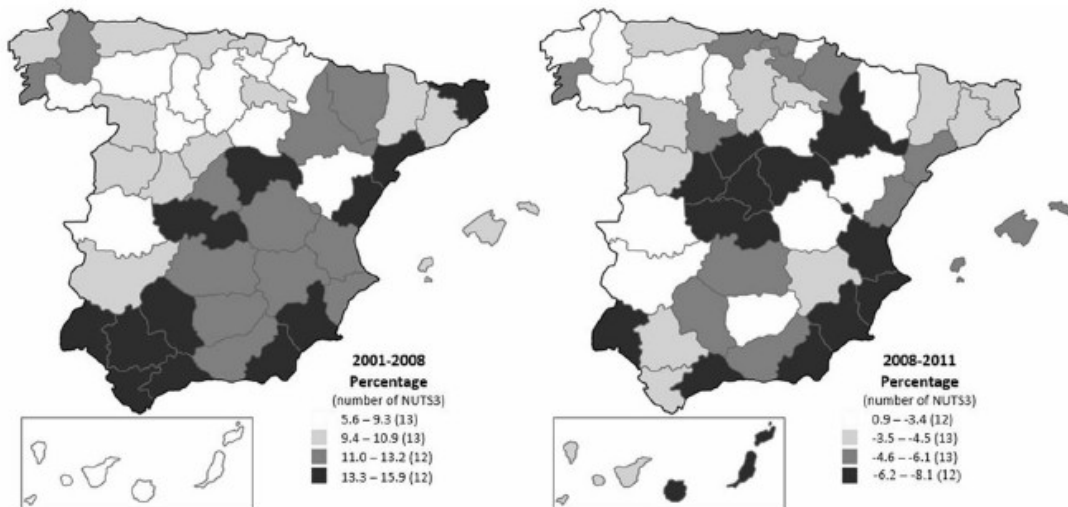


Fig. A.4 Households living in buildings with four floors or more above the ground level, Spain, 2001 and 2011. Source: Census 2001 and 2011, NSI

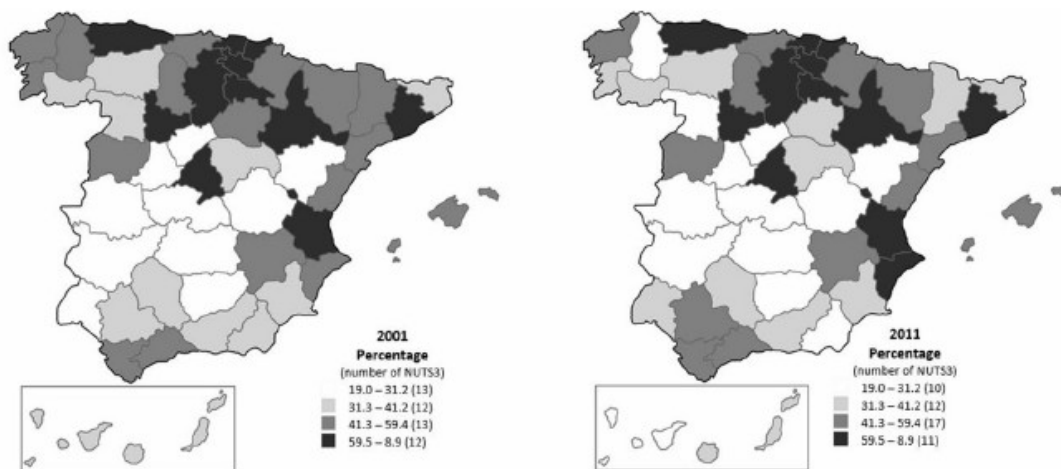


Fig. A.5 Mean age of the population, Spain, 2001 and 2011. Source: Census 2001 and 2011, NSI

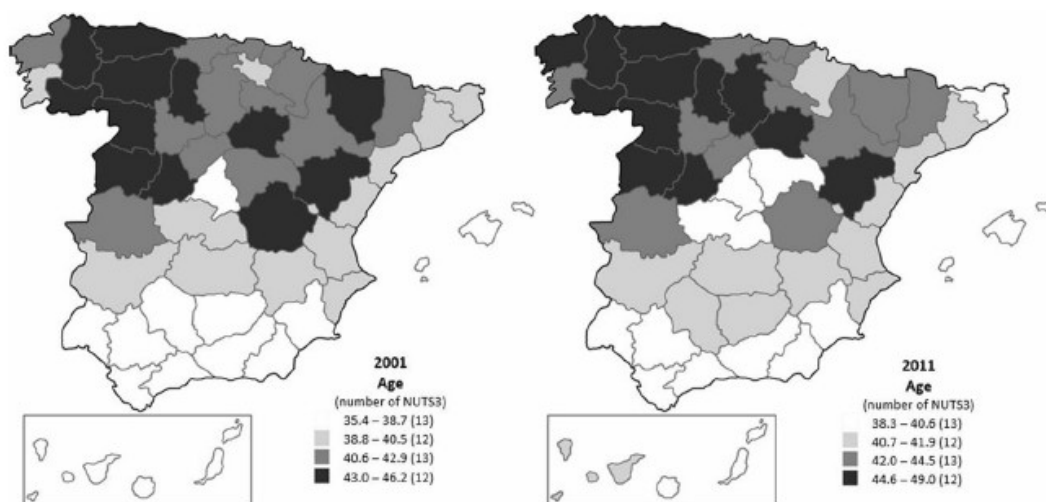


Table A.1 Characteristics of individual variables included in the multilevel logistic regression model for women aged 25-34 years old living with a partner in a rented-occupied dwelling, Spain, 2001 and 2011

	2001 (%)	2011 (%)
<b>Dependent variable</b>		
<b>Women aged 25-34 living with a partner</b>		
Other	88.9	82.5
Tenant	11.1	17.5
<b>Individual variables</b>		
<b>Citizenship of the partners</b>		
Foreigners	1.9	9.5

Native-foreigner	1.2	2.6
Foreigner-native	1.5	5.5
Native	95.4	82.4
<b>Marital status</b>		
Cohabiting	12.4	34.0
Married	87.6	66.0
<b>Educational attainment female</b>		
Lower than secondary	14.3	7.4
Secondary	64.7	61.1
Tertiary	20.9	31.5
<b>Age of the female</b>		
25-26	10.4	8.2
27-28	16	13.4
29-30	21.2	19.9
31-32	24.7	26.5
33-34	27.7	31.9
<b>Size of municipality (in inhabitants)</b>		
Over than 500,000	14.4	10.9
100,001-500,000	22.4	17.5
50,001-100,000	10.9	10.3
20,001-50,000	17.3	13.1
10,001-20,000	12.9	10.2
2,001-10,000	17	22.2
Up to 2,000	5	15.8
<b>Number of observations</b>	72,830	121,926

Note: Due to rounding, values may not total 100%.

Source: Census 2001 and 2011, INE. Own calculations.

**Table A.2** Odds ratios for women aged 25-34 years old living with a partner in a rented-occupied dwelling, revised from the multilevel logistic regression models, Spain, 2001

Predictors	Mod. 0	Mod. 1	Mod. 2	Mod. 3	Mod. 4	Mod. 5	Mod. 6	Mod. 7	Mod. 8
<b>INDIVIDUAL VARIABLES</b>									
<b>Citizenship of the partners (ref. native)</b>									
Foreigners	27.30 (0.016)	28.23 (0.017)	26.27 (0.017)	25.86 (0.017)	26.01 (0.017)	26.01 (0.017)	26.01 (0.017)	26.01 (0.017)	26.01 (0.017)
Native-foreigner	4.74 (0.015)	4.02 (0.015)	4.13 (0.015)	4.12 (0.015)	3.99 (0.015)	3.99 (0.016)	3.99 (0.016)	3.99 (0.016)	3.99 (0.016)
Foreigner-native	4.48 (0.014)	3.65 (0.014)	3.60 (0.014)	3.57 (0.014)	3.45 (0.014)	3.45 (0.015)	3.45 (0.015)	3.45 (0.015)	3.45 (0.015)
<b>Marital status (ref. married)</b>									
Cohabiting		3.07 (0.006)	3.09 (0.006)	2.98 (0.006)	2.83 (0.007)	2.83 (0.007)	2.83 (0.007)	2.83 (0.007)	2.83 (0.007)
<b>Educational attainment level female (ref. tertiary)</b>									
Lower than secondary			1.87 (0.008)	1.86 (0.008)	2.11 (0.009)	2.11 (0.009)	2.11 (0.009)	2.11 (0.009)	2.11 (0.009)
Secondary			0.89	0.88	0.96	0.96	0.96	0.96	0.96

Predictors	Mod. 0	Mod. 1	Mod. 2	Mod. 3	Mod. 4	Mod. 5	Mod. 6	Mod. 7	Mod. 8
				(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
<b>Age (in years) of the female (ref. 33-34)</b>									
25-26					1.34 (0.009)	1.38 (0.010)	1.38 (0.010)	1.38 (0.010)	1.38 (0.010)
27-28					1.14 (0.009)	1.17 (0.009)	1.17 (0.009)	1.17 (0.009)	1.17 (0.009)
29-30					1.08 (0.008)	1.10 (0.008)	1.10 (0.008)	1.10 (0.008)	1.10 (0.008)
31-32					1.03 (0.008)	1.04 (0.008)	1.04 (0.008)	1.04 (0.008)	1.04 (0.008)
<b>Size of municipality (in inhabitants) (ref. up to 2,000)</b>									
Over than 500,000						2.14 (0.016)	2.14 (0.016)	2.14 (0.016)	2.14 (0.016)
100,001-500,000						1.03* (0.014)	1.03* (0.015)	1.03* (0.015)	1.03* (0.015)
50,001-100,000						0.88 (0.016)	0.88 (0.016)	0.88 (0.016)	0.88 (0.016)
20,001-50,000						0.83 (0.015)	0.83 (0.015)	0.83 (0.015)	0.83 (0.015)
10,001-20,000						0.77 (0.015)	0.77 (0.015)	0.77 (0.016)	0.77 (0.016)
2,001-10,000						0.80 (0.015)	0.80 (0.015)	0.80 (0.015)	0.80 (0.015)
<b>CONTEXTUAL VARIABLES</b>									
<b>CAGR price by m2 of private housing, 1998-2001 (ref. Q1 lower increase in price)</b>									
Q4							0.63 (0.161)	0.76** (0.182)	0.85** (0.211)
Q3							0.60** (0.161)	0.62** (0.167)	0.71** (0.195)
Q2							0.87* (0.161)	1.10* (0.162)	1.25* (0.171)
<b>Proportion of households living in buildings with four or more floors above the ground level (ref. Q1 lower proportion)</b>									
Q4								0.78** (0.182)	0.76* (0.207)
Q3								1.02* (0.167)	1.00* (0.165)
Q2								1.21 (0.162)	1.20* (0.161)
<b>Mean age of the population (ref. Q1 younger age)</b>									
Q4									1.25* (0.192)
Q3									1.16* (0.193)
Q2									0.92* (0.183)
<b>Variance between provinces</b>	0.143 (0.028)	0.155 (0.031)	0.160 (0.232)	0.161 (0.032)	0.162 (0.032)	0.198 (0.040)	0.161 (0.034)	0.150 (0.032)	0.146 (0.033)
<b>Constant</b>	-2.119 (0.053)	-2.288 (0.055)	-2.452 (0.056)	-2.491 (0.057)	-2.552 (0.057)	-2.561 (0.064)	-2.382 (0.117)	-2.341 (0.141)	-2.486 (0.212)

Note: The odd ratios are statistically significant at  $p < 0.001$ , except \* at  $p < 0.05$  and \*\* at  $p < 0.01$ . Standard errors in parentheses.

Source: Census 2001 and 2011, INE. Own calculations.

**Table A.3** Odds ratios for women aged 25-34 years old living with a partner in a rented-occupied dwelling, revised from the multilevel logistic regression models, Spain, 2011

Predictors	Mod. 0	Mod. 1	Mod. 2	Mod. 3	Mod. 4	Mod. 5	Mod. 6	Mod. 7	Mod. 8
<b>INDIVIDUAL VARIABLES</b>									
<b>Citizenship of the partners (ref. native)</b>									
Foreigners		19.37 (0.008)	24.84 (0.008)	24.92 (0.008)	24.29 (0.008)	23.33 (0.008)	23.33 (0.008)	23.33 (0.008)	23.33 (0.009)
Native-foreigner		4.47 (0.007)	4.38 (0.007)	4.38 (0.007)	4.32 (0.007)	4.00 (0.007)	4.00 (0.007)	4.00 (0.007)	4.01 (0.007)
Foreigner-native		3.31 (0.005)	3.31 (0.005)	3.30 (0.005)	3.20 (0.005)	3.03 (0.005)	3.03 (0.005)	3.03 (0.005)	3.03 (0.005)
<b>Marital status (ref. married)</b>									
Cohabiting			2.75 (0.004)	2.76 (0.004)	2.46 (0.004)	2.37 (0.004)	2.37 (0.004)	2.37 (0.004)	2.37 (0.004)
<b>Educational attainment level female (ref. tertiary)</b>									
Lower than secondary				1.10 (0.008)	1.02 (0.008)	1.15 (0.008)	1.15 (0.008)	1.15 (0.007)	1.15 (0.008)
Secondary				0.80 (0.004)	0.76 (0.004)	0.85 (0.005)	0.85 (0.005)	0.85 (0.005)	0.85 (0.005)
<b>Age (in years) of the female (ref. 33-34)</b>									
25-26					2.30 (0.007)	2.38 (0.007)	2.38 (0.007)	2.38 (0.007)	2.38 (0.007)
27-28					1.96 (0.006)	2.00 (0.006)	2.00 (0.006)	2.00 (0.006)	2.00 (0.006)
29-30					1.45 (0.006)	1.46 (0.006)	1.46 (0.006)	1.46 (0.006)	1.46 (0.006)
31-32					1.23 (0.006)	1.24 (0.006)	1.24 (0.006)	1.24 (0.006)	1.24 (0.006)
<b>Size of municipality (in inhabitants) (ref. up to 2,000)</b>									
Over than 500,000						3.53 (0.012)	3.53 (0.012)	3.53 (0.012)	3.53 (0.012)
100,001-500,000						1.71 (0.012)	1.71 (0.012)	1.71 (0.012)	1.71 (0.012)
50,001-100,000						1.65 (0.012)	1.65 (0.012)	1.65 (0.012)	1.65 (0.012)
20,001-50,000						1.29 (0.012)	1.29 (0.012)	1.29 (0.012)	1.29 (0.013)
10,001-20,000						1.07 (0.012)	1.07 (0.013)	1.07 (0.012)	1.07 (0.012)
2,001-10,000						1.03* (0.012)	1.03* (0.012)	1.03* (0.012)	1.03* (0.012)
<b>CONTEXTUAL VARIABLES</b>									
<b>CAGR price by m2 of private housing 2008-2011 (ref. Q4 lower drop in price)</b>									
Q1							0.64 (0.128)	0.65 (0.134)	0.76 (0.157)
Q2							0.75* (0.126)	0.75* (0.136)	0.92** (0.151)
Q3							0.80** (0.128)	0.79* (0.146)	0.89** (0.147)
<b>Proportion of households living in buildings with four or more floors above the ground level (ref. Q1 lower proportion)</b>									
Q4								1.02**	0.94**



Predictors	Mod. 0	Mod. 1	Mod. 2	Mod. 3	Mod. 4	Mod. 5	Mod. 6	Mod. 7	Mod. 8
								(0.143)	(0.143)
Q3								1.11**	1.02**
								(0.138)	(0.136)
Q2								1.10**	1.06**
								(0.146)	(0.141)
<b>Mean age of the population (ref. Q1 younger age)</b>									
Q4									1.34
									(0.169)
Q3									1.09**
									(0.158)
Q2									0.89**
									(0.143)
<b>Variance between provinces</b>	0,164 (0.033)	0,108 (0.022)	0,090 (0.018)	0,090 (0.019)	0,096 (0.019)	0,123 (0.025)	0,103 (0.021)	0,108 (0.023)	0,095 (0.021)
<b>Constant</b>	-1,211 (0.057)	-2,009 (0.046)	-2,344 (0.043)	-2,348 (0.044)	-2,600 (0.044)	-2,969 (0.051)	-2,729 (0.089)	-2,785 (0.118)	-2,935 (0.174)

Note: The odd ratios are statistically significant at  $p < 0.001$ , except \* at  $p < 0.05$  and \*\* at  $p < 0.01$ . Standard errors in parentheses.

Source: Census 2001 and 2011, INE. Own calculations.

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1 In Spain, the analysis of the evolution of rental prices is limited by the lack of official data sources (BBVA, 2009). However, some provinces produce official statistics, as the case of Catalonia. In this province, rental prices followed a trend similar to housing purchase prices in the period 2001-2011 (IDESCAT, 2018).

2 The size of the sample is 5% of the resident population in Spain in 2001, and 10% in 2011. Data available at: [http://www.ine.es/censos2011\\_datos/cen11\\_datos\\_microdatos.htm](http://www.ine.es/censos2011_datos/cen11_datos_microdatos.htm).

3 Data available at:

[http://www.fomento.gob.es/contraste/MFOM/LANG\\_CASTELLANO/ATENCION\\_CIUDADANO/INFORMACION\\_ESTADISTICA/EstadisticaSintesis/default.aspx](http://www.fomento.gob.es/contraste/MFOM/LANG_CASTELLANO/ATENCION_CIUDADANO/INFORMACION_ESTADISTICA/EstadisticaSintesis/default.aspx).

4 Tests have been performed considering the educational attainment of the male partner and of both partners simultaneously. The differences are not relevant and the model becomes less parsimonious.

5 For information on the distribution of dependent and independent variables, see Table A.1 in Appendix.

6 In the exploratory analysis that lead to the final analytical model, several sociodemographic and residential variables from the census 2001 and 2011 were tested. At the end, those variables were excluded due to collinearity or insignificant explanation gain.

7 For a complete overview of Spanish provinces, see Figure A.1 in Appendix.

8 These percentages relate the variances of the Model 6 with the Model 5, which includes individual variables (0.198 in 2001 and 0.123 in 2011).