

Determinants of housing preferences in old age in Spain

Dr. Oscar Mascarilla-Miró ¹

Dra. Montse Crespi-Vallbona ²;

Abstract

Ageing and disability at old age give rise to new housing needs that can influence individual choice of living environment and preference to undertake housing improvements. Empirical evidence on housing preferences in old age is essential for policy design (especially in Spain with low coverage for long-term care and culture of property). In this study we undertake an empirical analysis of the underlying behavioural determinants of housing preferences in old age in the event of dependency and physical impairment. It draws upon a new representative database of the Spanish population in order to estimate the extent to which preferences for housing characteristics are likely to change in old age, and the nature of those preferences. The study finds that old age, prefer to live at home even in the case of old-age dependency and this is so the older they become. People with less wealth but more savings and/or greater dependency needs are more likely to opt for institutional care, whilst people with lesser education, affluence and care (not cure) needs would prefer to live with their relatives.

Key words: house ownership, ‘ageing in place’, housing characteristics, willingness to undertake housing reforms.

1. Introduction

The growth of the dependent old age population in all European countries raises a number of issues, including the development of suitable housing and a network of community services. As dependency and physical impairment increase with age, ageing

¹ Departamento de Teoría Económica de la Universidad de Barcelona, Diagonal nº 690 08034 Barcelona omascarilla@ub.edu - [Dr Oscar Mascarilla knows the financial support of the Spanish Ministry of Science and Technology provided by the project CICYT ECO2008-04997](#)".

² Departamento Organización de Empresas de la Universidad de Barcelona, Diagonal nº 690 - 08034 Barcelona m Crespi@ub.edu

in Western societies could be expected to lead to an expansion of residential care (e.g., nursing home settings). However, preference for individual independence in old age counteracts this trend. Roughly 5.5% of older people rely upon residential care in countries belonging to the Organisation for Economic Cooperation and Development (OECD, 2010)³. Now and in the future old age people are likely to live in the community and to depend less on institutional or family care. Besides frustrating individual demands for autonomy, institutional care involves a significant financial outlay for families⁴. In countries where individuals are expected to co-pay for institutional care, cost sharing acts as a deterrent for some unnecessary so access takes place when it is ‘unavoidably needed’ due to severe dependency. Welfare state rationalisation policies have given rise to mechanisms that cut government social care expenditure by ‘deinstitutionalising’ services. ‘Ageing in place’ means keeping old age people with milder dependency levels in their own homes and only resorting to residential care when it becomes absolutely necessary (Houben, 2001)⁵. In return, the public sector becomes responsible for developing a network of community care services, providing home care and day care.

With ‘ageing in place’ policies, an increase in the number of people suffering from some form of dependency, such as not being able to eat, bathe, or get up on their own, does not necessarily imply a significant change in ‘housing conditions’; it simply involves reorganising care so that it can be deployed at home (OECD, 2002). Here, the type of care and services required are determined by the *suitability of housing conditions for the old age*. *This is an important issue, given that housing influences individual well-being through a variety of psychosocial mechanisms affected by building type, floor level, and the ‘sense of financial and personal security’ associated with some forms of housing tenure* (e.g., ownership). Furthermore, housing affects living space, individual safety, the quality of health and social care and mental health conditions (Wilkinson, 1999). Indeed,

3 In the United States, Bishop (2005) reported that in 1995 the percentage of old age people living in nursing homes dropped from 4.5% to 4.2%, and residents were older and more severely impaired.

4 In the United Kingdom, there is evidence suggesting an increasing transfer of financial responsibility from the state to older people in the lower to middle income range, which may be struggling to afford to purchase care and are often deterred by payments (Deeming and Keen, 2002).

there is unambiguous evidence suggesting that people living in poor households suffer many kinds of health deprivation (Wilkinson, 1999). Some studies (Thomson *et al*, 2002) have already documented the fact that housing is a significant factor in the occurrence of injuries causing hospitalisation and death (e.g., falls). Such accidents could be prevented by modifying people's physical environment⁶.

1.1 Approaches to housing at old age

Demand for housing services can be expected to change in the course of a person's life and the specific combination of housing characteristics required may shift with age. The 'person in person' approach suggests that environmental satisfaction depends on individual mental and physical abilities (Sherman, 1988), and that the old age are relatively more exposed to housing "inappropriateness or unsuitability" since they spend more time at home and are more likely to be disabled or suffer health-related conditions that dampen their current and potential well-being⁷ (Houben, 2001, 2000). With the development of community care, an increasing share of the old age population will be dependent on the suitability of their own housing conditions. Previous research endorses the view that old age people who have lived in their dwelling for some time prefer not to move elsewhere (Feinstein, 1996), and mobility rates are low among the old age. Accordingly, *one might expect old age people to show significant unwillingness to move house, due to emotional attachment to their homes and to the financial and health costs of moving, which increase with age* (Feinstein, 1996; Venti and Wise 1989, Sheiner and Weil, 1992). Some research indicates that willingness to pay for constant-quality housing decreases with age (Greene and Hendershott, 1996; Mankiew and Weil, 1989). The question of whether, under current housing conditions, old age people will be willing and able to 'age in place' is open to scientific research.

⁵ This is considered a crucial issue. In the United States, nursing-home expenditure represents 75% of total long-term care expenditure (Feldstein, 1994).

⁶ Housing stressors such as overcrowding, damp, and difficulties with heating the home have been associated with mental health outcomes such as depression, and aspects of the perceived local environment such as the existence of amenities and neighbourhood reputation have been associated with anxiety (Ellaway and Macintyre, 1998).

⁷ Empirical evidence indicates that disability increases with age. Therefore the old age are more likely to suffer from chronic conditions leading to dependency and disability.

An economic approach to the demand to ‘age in place’ involves empirically disentangling the costs and benefits of remaining at home in the event of longevity and disability. Old age people’s preferences for ageing in place could be explained by the increase in age-related barriers to physical mobility and by their growing tendency to associate benefits with lower uncertainty. Indeed, *even when housing quality falls short, the old age might still prefer to cope with the costs of a mismatch between their own dwellings and their needs than to move elsewhere*, because people’s homes represent ‘a combination of personal and financial security, family memories and a sense of place and well-being’ (Stimson and McGovern, 2002). Research in the United Kingdom indicates that people increasingly prefer to live in their own homes when possible (Warburton, 1994). However, if the old age are to live at home, the adequacy of housing conditions (e.g., mobility/accessibility), is essential for individual quality of life and certain aspects of individual well-being. The only study found on preferences for housing in old age in the United Kingdom (Parker and Clarke, 1996) indicated that relatives were the first care preference (59%) and that while use of the family home was seen as a valid option when the value of the house was relatively high, support for state help increased as the value of the house diminished. Some studies (Greene and Ondrich, 1990) provide evidence that old age homeowners are less likely to go into a nursing home and more likely to leave nursing facilities. Conversely, given the cost of nursing homes, homeowners are more likely to be able to afford residential care (Netten and Darton, 2003). Whether one effect prevails is a question for scientific research.

1.2 Old Age housing in Southern Europe: the case of Spain

Among European countries, Spain is an interesting case because of its rapidly ageing population⁸ (see Figure 1). By 2030, it is estimated that 24% of the Spanish population will be over 65, and 6.5% will be over 80. By 2050, the number of people over 65 is expected to have increased to 31% and the proportion of individuals over 80 is estimated at about 10%. Moreover, Spanish society relies heavily on families for caring

purposes⁹ and government services traditionally play a subsidiary role, only assuming responsibility in the event of lack of economic means or family support. This implies that compared to other countries a relatively larger share of the old age may wish to “age in place”. 82% of the old age are homeowners (Spanish Institute of Migrations and Social Services), about 88% of the old age live in their own homes – alone or in couple- and barely 12% live with their children’s place¹⁰ though expect for old age that have never been married public data suggests that more that 50% have offspring living close to them (IMSERSO, 2004).

Furthermore, Eurostat data suggests that Spain in 2005 was the country exhibiting lesser concentration of lonely elderly¹¹ (EUROSTAT, 2005). Most institutional care is privately funded and the average number of beds per 100 old age people is 2.8 in sharp contrast with the European Union average of 6.0. . Indeed, the consolidation of the welfare state in Spain has encompassed an expansion of social care services in the last decade, especially community care services. For instance, the number of users of home help per population over 65 has expanded from 3.94 in 1991 to 10.8 in 2004 (IMSERSO, 2004).

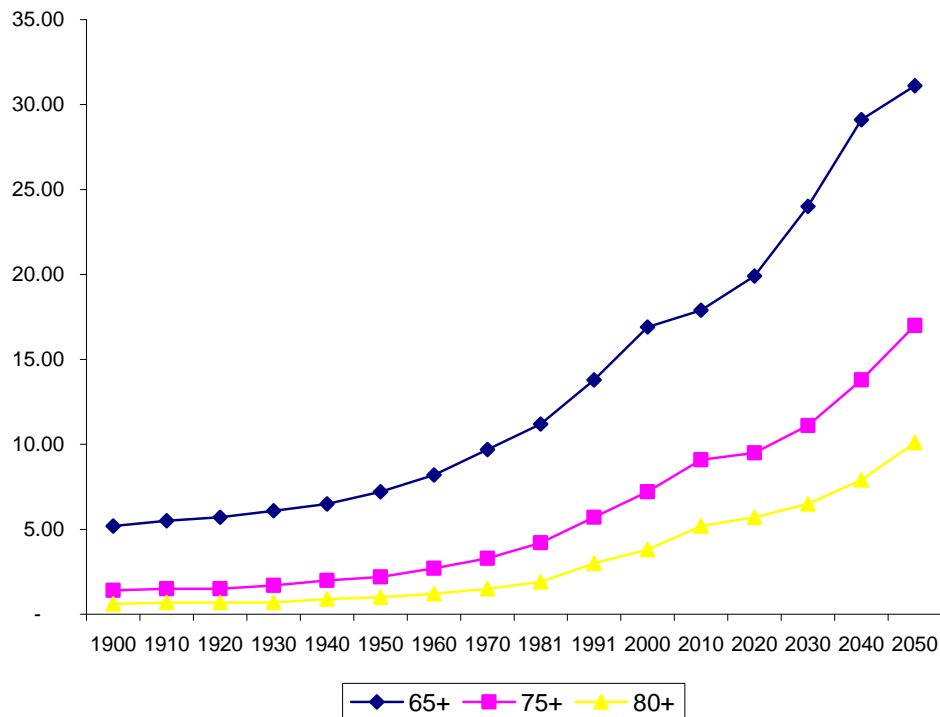
Figure 1. Projections of Population Ageing in Spain (1900-2050)

8 Demographic forecasts for Spain indicate a 52% rise in the old age population from 2000 to 2030 and a 102% rise between 2000 and 2050 (Costa-Font and Patxot, 2005)).

9 As in other southern European countries, the family has traditionally provided long-term care. Indeed, Spain with roughly 3 members per family still has the largest average family size in EU-15.

10 Official data from IMSERSO in 2004 suggests that roughly 14.6% of those 65 and older live with their offspring, though significant gender differences coexist: 20.5% of men and 10.1% of women.

11 (EUROSTAT, 2005): New Chronos, Population and Social Conditions, <http://epp.eurostat.cec.eu.int/portal.EUROSTAT> 2004.



Source: Spanish National Statistics Institute (INE): Annual statistics, population census figures and INEBASE.

As in other southern European countries (Houben 2001) the vast majority of old age people in Spain live in large urban areas, and compared to the younger age groups they live in relatively old dwellings, some of which need improvements. However, for a variety of reasons, the old age might not be willing to make such improvements, and this raises the question of “dwelling suitability or appropriateness”. Furthermore, in heterogeneous countries like Spain there are significant regional differences in people’s preferences and values, due to variations in purchasing power and in social environment (IMSERSO, 2004)¹². Little is known about the determinants of old age people’s preferences for housing and their willingness to change dwelling when they become older, or whether individuals perceive their home as adapted to their desired characteristics, or the extent to which they are willing to make improvements.

Recent social and demographic changes in Spain have increased the demand for community care services for the old age, highlighting the urgent need for a policy debate on how best to provide and fund long-term care. The aim of this study is primarily to examine *individual preferences for housing in old age and its suitability*, given individual needs and characteristics. Drawing upon data retrieved from a survey of the Spanish population made in 2004, it explores three main research questions:

1.3 Research Questions

RQ1. Do people wish to “age in place”?

.On the basis of previous evidence, data retrieved from other European Union countries, and the “familistic values” (Costa-Font and Patxot, 2005) of Spanish society one would expect individuals to prefer ageing at home. However, this might not be homogenous throughout the country and, one might well hypothesize that other variables besides social values – that are relatively unobservable- namely individuals’ needs and wealth might be behind the preferences for “aging in place”.

RQ2. Are people willing to make improvements on their homes to adapt them to the future requirements of old age dependency?

The suitability of housing conditions is a primary factor in individual decisions to ‘age in place’, and accordingly dwelling changes or alterations on existing homes would be expected to occur. However, as e explain below a distinction should be made between structural and aesthetic improvements; the former are those of specific interest for policy purposes. If the fist is the main factor behind people attitudes towards housing reforms, then one might hypothesize that individuals are able to foresee and prevent potential needs at older ages.

RQ3. Which characteristics explain individual decisions to move house in the event of old age dependency?

12 Less than 1% of the over-70s are in the labour market (this figure is less than 0.2% for women). Variations in the age composition of a population may determine variations in national savings rates over time and across countries, other things being equal.

Old age dependency leads to both health and social care needs along with financial needs to pay for them. Hence, one would expect that individual needs and household characteristics are likely to be behind people's preferences for moving into institutional homes or going to live with relatives rather than staying in their own home.

The study's findings were the following. First, the old age were willing to remain at home in old age, thus confirming the so-called 'ageing in place hypothesis'. However, significant regional variations in individual preferences were found. , Second, more than 60% of old age people and people approaching retiring age were not keen to move house, and this preference for maintaining the 'status quo' increased with age. Also, most people were not willing to undertake (or to pay for) significant structural alterations in their dwelling after 65 and their willingness to make improvements declined with age. Third, the results of multivariate analysis suggest that those with better health and relatively more affluent are less likely to prefer to live in a nursing home in the event of old age dependency, though income and house size display an opposite effect. Finally, people with lower educational attainment levels, with lesser disabilities or with lower income generally preferred to live with their relatives in old age.

The structure of the study is as follows: Section 2 contains a conceptual framework for dealing with housing preferences in old age, with specific emphasis on the Spanish setting; Section 3 describes the data and the methods employed; Section 4 reports the main results; and Section 5 is the conclusion.

2. Preferences for housing and housing characteristics in old age

2.1 Aging and Housing characteristics

People's dwellings can be conceptualised as a "package of attributes", each providing a response to a specific need, and also as a way of accumulating wealth for the future, especially in old age. Therefore, people's decisions as to the suitability of their housing are the result of their evaluation of both aspects. In addition, individual

preferences for certain housing characteristics are considered to be dependent on the stage people have reached in their life. In other words, ideal housing conditions differ with individual needs, which in turn differ with age. For example, *the old age may spend more time at home and be more exposed to damp conditions and they may also need a home that can be adapted to cater for possible disabilities*. Indeed, the problem affronted by old age and not-so-old age individuals is how to find an optimal combination of housing attributes to meet their housing needs throughout their life (Greene and Ortuzar, 2002). Increased use of supportive housing arrangements and home help has been observed along with an expansion in home help provision (Feder et al, 2000).

‘Ageing in place’ policies, whereby older people are housed in their own home or in sheltered housing as opposed to institutional settings, need to be supported by the construction of new or adapted housing. There has been some debate on whether it is advisable for the old age to live in the community (Sherman, 1988)¹³. Individual preferences for housing in old age are highly heterogeneous; some people do not wish to move from their home, whilst others do (Robison and Moen, 2000). There are a number of reasons for this: social and lifestyle conditions (including mobility upon retirement or after offspring leave home); changes in location preference due to improved access to amenities (e.g., distance to shopping centres, access to transport or recreation); and the desire to live nearer to relatives. These suggest the existence of some intergenerational support as mentioned, although it is likely that many old age people will continue living in their own homes with a fair degree of independence¹⁴.

The old age population is the one that suffers most severely from the consequences of ‘inappropriate’ housing conditions, mainly due to its reduced mobility compared with younger population cohorts (Sommers and Rowell, 1992) and possibly because of higher preference for maintaining the environmental “home status quo” for

13 Some argue in favour of age-segregated housing – assuming that the social interactions of the old age take place with other old age people – while others argue that old age people need some contact with younger generations.

safety, mobility and personal-comfort reasons (Pynoos and Liebig, 1995). Furthermore, non-dependent old age people are more likely to live in urban areas, given the greater availability of services to satisfy their needs and the fact that in some countries they are less likely to participate in counter-urbanisation processes. In many countries, residential conditions have deteriorated in city centres, where a large proportion of old age people can be found; many houses in city centres lack basic conveniences such as lifts and heating systems. Differences in health across geographical areas are often explained by a combination of ‘contextual effects’ linked to the area of residence and ‘compositional effects’ resulting from the different characteristics of individuals (Stafford et al, 2001). Contextual effects include local availability of health and social care and transport services (Macintyre *et al*, 1993) as well as local housing conditions, and are not totally independent of individual socioeconomic position. However, although both the value of living in a familiar neighbourhood and the costs of switching to a new home increase with age, the fact is that urban areas have become dynamic spaces that are subject to technological change. Indeed some areas may change in such a way that old age cohorts have to move out or adapt to new circumstances which make their life more difficult.

Government services are more highly developed in large urban areas, and in several countries the old age receive benefits, such as discounts in the use of public transport and other services. Given that some old age people do not wish to become a burden on their children, ‘ageing in place’ is only possible if it is accompanied by an adequate extension of community services for old-age dependency. The relation between people and their dwellings is understood as a continuing process of adaptation, or individual-residence cycle. Individual needs vary with social circumstances (e.g., having close relatives) and the stage reached in life. Thus, in an ‘ageing in place’ model, care is tailored to the specific needs of old age adults, although “spatially disconnected” from residential facilities (Houben, 2001).

14 Some studies have shown the impact of housing size and quality and of amenities on mortality indicators (Takeuchi, S and Takano, T, 1995). More recently Tanaka et al, (1996) found a number of residential condition indicators, including housing, land use and local economic activity, to be related to the adjusted death rate and to self-perceived health.

2.2 Home ownership among the old age

Home ownership provides obvious ways of saving for old age, and this is borne out by findings suggesting that a significant number of old age people are “income poor but housing rich” (Hancock, 1998) so that home ownership becomes a nature of social class. Several studies have already provided evidence that housing ownership is a key variable in influences on individual health (Macintyre et al, 1998) and especially on the health of the old age (Jones, 1997).

Part of the old age population is likely to be affected by socio-economic exclusion, which is increasing in many urban areas. However, initiatives to combat social exclusion often fail to focus on older people¹⁵. Single old age women, minority groups and low-income rent-payers (OECD, 2002) are at high risk of suffering unsuitable housing conditions. Public long term care is financed mainly through taxes, but individuals are assigned a co-payment rate that varies according to their needs, income, and (recently) according to housing tenure, as explained later in the study. Payments take the form of user charges and when individuals are excluded by means testing, they are asked to pay for their care as they would in a private home. Means and needs testing applies in the case of home care services, nursing home services and day care centres, which are the responsibility of local authorities, although regulated at regional level

As is to be expected, savings rates decline with age in spite of the uncertainty of individual lifetime risks and the desire of the old age to leave a bequest to their heirs (Browning and Lusardi, 1996)¹⁶. Hence, ‘ageing in place’ could be a way for old age people to ensure the maintenance of their own home for their children. Therefore, home ownership is an important determinant of individual preferences for certain long-term

¹⁵ Older people are increasingly pressured to walk to maintain their health but find the traffic environment physically demanding and difficult to negotiate. Some anecdotal evidence indicates that most old people want to remain in their own homes for as long as possible so home care is very important to their quality of life. Support mechanisms for ‘ageing in place’ must be strictly tailored to changing circumstances and take into account the gradual loss of physical and mental capabilities that sets in with age.

¹⁶ The study “Ageing, Housing and Urban Development” (OECD, 2003) highlights the significant housing condition challenges thrown up by ageing and suggests that housing policies should be sensitive to the new situation resulting from the presence of a higher proportion of old age people in the population.

care service alternatives and specific funding methods¹⁷. Interestingly, southern European countries have a relatively large percentage of owner occupation, often linked to an apparent trade-off between home ownership and welfare state improvements, especially the expansion of the pension system. Indeed, government policies in such countries as Spain provide incentives for home ownership (e.g., tax relief on mortgage payments), but hardly any social housing (Castles and Ferrera, 1996). However, the limited development of community services in Spain largely reflects the low visibility of the ageing process at the time when the current Spanish welfare state system was designed.

2.4 A simple model for the study of special housing characteristics and wealth in old age

Several studies have been made on the demand for special housing characteristics (Follain and Jimenez, 1985; Gross, 1988). Some studies indicate that the location of old age people is a significant factor given that public care services differ across regions or states and also because any valuation of housing components depends on the residential situation of the individual (Greene and Ortuzar, 2002). The attributes of housing in old age determine the *ith* individual utility as follows:

$$u_i(h_i) = u_i(h, y) \quad (1)$$

containing a vector of different forms of housing (h_i) and a measure of individual wealth and income (y). However, wealth and income constitute the so-called “budget constraint” determining the potential use of residential care in the event of dependency besides other goods. Each form of housing can be represented by a set of characteristics:

$$h_i = h(x_i) = \frac{\partial h}{\partial x_i} x_i \quad (2)$$

where x_i refers to the different characteristics of the dwelling, so that the utility function of each sort of housing parameter can be estimated as:

¹⁷ As home-owners already have the means to fund their care needs, they would be less likely to support increased public funding of long-term-care services unless they had a specific preference for leaving wealth to their relatives.

$$u_j(h_i) = \beta_0 + x_{ij}\beta_1 + y_j\beta_2 + \varepsilon_{ij} \quad (3)$$

where β_i refers to the model parameters and ε is the random error term, so that an individual's housing preference $u_j(h_i)$ is assumed to be a combination of income restrictions and other characteristics, such as individual health status, that are likely to determine individual needs. Hence, housing preferences are determined budget restrictions along with state dependent utility for several alternatives so that ill health is expected to increase the probability of certain forms of housing.

2.3 The Spanish institutional setting

To better understand the individual's decision, it is important to consider institutional and environmental determinants. Home ownership is the most common form of house tenure in Spain: 74% of the old age own their dwelling, 7% are still paying for it, 16% rent their flat and 3% have other arrangements. Hence, the percentage of the old age who own their flat is even higher, at about 85%. Housing conditions are heterogeneous between households, and old age people often do not have adequate living conditions in the event of old age dependency. Indeed, about 37% of the old age live in flats without a lift (Spanish National Statistics Institute [INE], 2004). *High percentage of homeownership result from the wealth accumulation mechanism; investing in housing property is culturally accepted and is the most frequent form of saving for old age.* This has, in part, led to a situation in which care for old age disabled people often takes place informally within households. (Family care does not necessarily take place in the relatives' home; it is more likely to occur in the dependent's home.) Means-tested government assistance is provided by the public sector covering 27% of total long term care delivered, so that public services play a subsidiary role¹⁸. Caring for old age people

18 According to the latest Spanish official survey data (INE, 1999), caregiving to male old age dependents was carried out by their wives (44,6%), their daughters (21,3%) and others (12%). Female old age dependents were cared for by their daughters (36,7%), others (19,7%), their husbands (14,9%), their sons (6,3%) and domestic staff (3,7%). Only 13% received formal long-term care services.

living in the existing housing stock is a major issue since most prefer to remain in their current homes for as long as possible. Addressing this problem involves removing physical barriers to independent living, and helping people to meet their health and financial needs. An increasing share of the old age population is concentrated in urban areas. As well as having an impact on individual health, housing conditions (e. g., living in top floors without lifts, with other family members, or in areas with high access to health care) affect people's capacity to benefit from health services. The characteristics of the neighbourhood may also affect access to institutional health and social care, as well as access to food etc. The proximity of care services may reduce the consequences of old-age disability and improve health and well-being.

In Spain there are 17.1 million dwellings, so that 11.7 million are occupied, 2.4 million are empty and the rest are second residences. Age explains a large part of the growth of housing property assets in Spain; over the last ten years housing property has increased in value by more than 15% every year. In 1991 the price of housing per square meter was about 650€ and by 2005 this figure had risen to 1,800€ per square meter. Therefore, property-owners' assets have considerably increased, compared with those of people owning other types of asset. This is especially relevant for older homeowners as it might make the selling option more advantageous than before¹⁹, although the psychological determinants of 'ageing in place' remain. However, due to property taxes and maintenance costs, and the fact that certain properties can be a relatively illiquid asset in the short run, home selling is not necessarily a valid option. Nonetheless, in line with other countries, 'reverse mortgages' (Chen, 2001) are becoming more common in Spain²⁰.

3. Data and methods

¹⁹ Home equity, measured as the market value of the house minus the mortgage debt, represents a sizeable part of old age people's net wealth.

²⁰ This is a contract whereby the lender pays cash periodically to the homeowner without any repayment until the end of the loan, ideally after house sale, when a lump-sum repayment is due.

3.1 Data description

Between September and November 2005, the Institute *Edad & Vida* carried out a survey on people that are close enough in age to have a reasoned preference for old-age housing. The survey collected data from a representative Spanish population sample of 729 individuals over 55 years old, recording the preferences of people who were old age at the time or who would become old age within the next twenty years. The data was collected using a feature-laden computer toolkit and random systematic sampling and is fully representative of the different Spanish provinces.

Differences across locations provide evidence on regional variations; Spain is remarkably heterogeneous both in values and government policy responsibilities. Furthermore, the examination of data from different age groups is expected to provide insight on changes in housing preferences over time and on generation-specific effects. The mean age of respondents was 67.6 years; 28% of them were in the 55-60 age group and 11% were 80 or older. Their socioeconomic characteristics were similar to those publicised by IMSERSO in 2004, which confirms the representative nature of the data. 65.3% of those interviewed were female and 34.7% men; 64.6% were married and the rest were single, widowed, separated or divorced; 43.6% had received primary education, 39.1% had either 'A' levels or university studies, and 17.3% had no studies at all.

The survey contained a large number of questions on housing characteristics including tenure. 85% of those interviewed lived in a flat and the rest in houses. 84.3% stated that they owned their dwelling, 3.4% lived in someone else's property, and 12.1% lived in a rented flat which can be explained by rent control policies endorsed during the eighties; some old age people still live in flats subject to previous rent legislation. The mean size of dwellings was 102.3 square meters, with 3.3 bedrooms. 55% of those interviewed stated they were not willing to move house and the mean satisfaction index was 7.9 (on a scale from 1 to 10). Among the characteristics people valued in their home were the neighbourhood (42%), the infrastructures (22%), the neighbours (14%) and the

community (7%). 33% responded that they would be willing to pay something for housing improvements.

Furthermore, the results indicated that about 83% of the old age owned their property and that the vast majority (88%) thought that their dwelling was medium-sized or large. Average housing price was calculated using the area of the dwelling in square meters and the average price of housing in the locality. Interestingly, the survey collected information on individual income and on whether the household had managed to save some money. The survey also contained demographic information and records of respondents' educational attainment that could be thought of as a measure of the information that was attainable as well as a variable providing information on the individual's socioeconomic position.

3.2 Empirical Methods

Given the nature of the decision-making process and the variety of housing alternatives in old age, the study used a multinomial logit model (Greene, 2000) to examine equation (3) (see previous section). The probability of each of the i th housing alternatives (y_i) takes the value of 0 for own home, 1 for a nursing home and 2 for a relatives home. x_k is a vector of explanatory variables and β_j is a vector of parameters for housing class j . Thus the probability that any individual be willing to live in a housing class j is:

$$\Pr(y_i = j) = \frac{\exp(\beta_j x_k)}{\sum_{j=0}^2 \exp(\beta_j x_k)} \text{ for } j = 0,1,2 \quad (4)$$

Given that the housing alternatives are mutually exclusive, the sum of the associated probabilities must be 1. Furthermore, the study adopted the conventional normalisation that $\beta_0 = 0$ and therefore:

$$\Pr(y_i = j) = \frac{\exp(\beta_j x_k)}{1 + \sum_{j=1}^2 \exp(\beta_j x_k)} \text{ for } j = 1, 2 \quad (5)$$

and thus, by estimating the maximum likelihood parameters, the parameters for β_1 and β_2 can be obtained. The variables included in the model are described in Table 1. They were classified as health status variables measuring individual needs, wealth and income variables, and other socioeconomic and individual parameters. Variables included the following: health and dependency (daily living activities that individuals cannot perform, such as answering the telephone); housing conditions, such as the value of the dwelling (conditioned on ownership); people's subjective assessment of the quality of their dwelling; and income and reported savings.

Finally, the study controlled for age, gender and education. These controls were useful in determining whether relative preferences for different housing conditions were explained by need or by known economic and demand-side determinants of individual housing choices.

Table 1. Descriptive statistics*

	Variable Definition	Type	Mean	s.e
Alone	Lives on his own	D	0.205	0.015
Health	Health status 0-10	C	7.320	0.068
Adltel	ADL Telephone=1	D	0.087	0.015
Adltra	ADL Transport=1	D	0.189	0.015
Adlcomp	IADL Shopping=1	D	0.093	0.011
Adlmed	IADL Medicines=1	D	0.095	0.011
Adlbanc	IADL Banking=1	D	0.099	0.011
Adlescal	IADL Steps=1	D	0.130	0.012
Adlbany	IADL Bath=1	D	0.036	0.007
Addorm	IADL Sleep=1	D	0.180	0.014
Size1	Self-perceived large flat	D	0.408	0.018
Size2	Self-perceived medium-sized flat	D	0.471	0.019
Houseprice	House price (€)	C	125,212	4388
Income	Income (logs)	C	10.252	0.158
Savings	Saves en month=1	D	0.412	0.018
Gender	Male=1	D	0.346	0.018
Age2	Age 61-65	D	0.176	0.014
Age3	Age 66-70	D	0.198	0.015
Age4	Age 71-79	D	0.124	0.012
Age5	Age >80	D	0.113	0.012
Educ1	No studies	D	0.032	0.007
Educ2	Primary school	D	0.141	0.013
Educ3	Secondary school	D	0.436	0.018
Educ4	Higher education studies	D	0.154	0.013

*ADL = activities of daily living; IADL = instrumental activities of daily living

4. Results

In this section we report the results from the survey analysis undertaken. The first issue examined was the *suitability of the individual's dwelling*. Table 2 contains information on individual willingness to move in the future and in the next five years. Interestingly, the results indicated that 63% of those aged between 55 and 60 years of age did not want to change their dwelling and this figure rose to 85% for the over eighties. If the same question referred only to the next five years, the results were even more clear-cut; 89%-98% did not want to change their dwelling. These results lead to the conclusion

that the old age want to ‘age in place’ (**RQ1**), and this is consistent with findings in other countries (Warburton, 1994). Furthermore, the older the individuals, the less likely they are to wish to change their dwelling, which indicates that, once a certain age is reached, the old age wish to stay in the same dwelling permanently.

Table 2. Willingness to move house or make alterations to the home

Age groups	55-60	61-65	66-70	71-75	76-80	>80
N	204	128	144	90	82	80
% Sample	28.02	17.58	19.78	12.36	11.26	10.99
Would you like to move house in the future? (WCD)						
Yes	34.83	30.47	22.92	16.67	16.05	15
No	62.69	68.75	75.69	82.22	82.72	85
DK	2.49	0.78	1.39	1.11	1.23	0
Will you move house in the next five years? (WCD5)						
Yes	10.64	10.16	10.64	2.22	2.5	1.25
No	89.36	89.84	89.36	97.78	97.5	98.75
What sort of home improvements would you be prepared to make?						
Structural	50.79	41.13	37.12	33.71	27.85	17.57
Aesthetic	9.42	6.45	6.06	3.37	7.59	8.11
None	39.79	52.42	56.82	62.92	64.56	74.32
Will you be willing to pay to improve your housing conditions? (DI)						
Yes	51.31	27.78	30.99	25	17.5	24.36
No	48.69	72.22	69.01	75	82.5	75.64

Another research question tested the reliability of the “ageing in place approach”; if individuals stay in their homes, one might expect that because ageing brings new needs some structural reforms would be required in the future to make the old age comfortable. Results in Table 2 were somewhat counterintuitive, in that housing suitability changes with age, but they provide evidence that, although people become settled in their flats with age, their willingness to perform housing alterations to address the needs of old age is limited (**RQ2**). While 51% of the 55-60 age group said they were prepared to carry out structural changes on their dwelling, this percentage declined for the 76-80 age group, and dropped to 18% for the over-eighties. A constancy question was introduced asking respondents to elicit their degree of willingness to pay to improve their dwelling conditions. Interestingly, although their responses were similar to the previous ones, they followed a different age pattern. Hence, the older the individual the higher their

dependence on known – possibly less uncertain – housing conditions. Therefore, it can be concluded that mobility in old age is lower among the old age due to demand-side constraints.

Table 3 Preferred residence in the case of old-age dependency (%) by age and gender

Age groups	Total	55-60	61-65	66-70	71-75	76-80	>80
<i>Total</i>							
In my own home with home-help assistance	78.1	78.5	79.37	75.52	76.4	81.48	78.21
In a nursing home or similar	16.32	18.5	17.46	19.58	16.85	8.64	10.26
In a relative's home	5.58	3	3.17	4.9	6.74	9.88	11.54
<i>Men</i>							
In my own home with home-help assistance	78.71	73.85	82.05	69.49	78.57	83.33	97.06
In a nursing home or similar	17.67	23.08	12.82	27.12	21.43	8.33	-
In a relative's home	3.61	3.08	5.13	3.39	-	8.33	2.94
<i>Women</i>							
In my own home with home-help assistance	77.78	80.74	78.16	79.76	75.41	80.7	63.64
In a nursing home or similar	15.6	16.3	19.54	14.29	14.75	8.77	18.18
In a relative's home	6.62	2.96	2.3	5.95	9.84	10.53	18.18

Question: If in the future you were to suffer a restriction of some activities of daily living such as walking, bathing, taking medication, or using the telephone, where would you prefer to live?

The next question was individual preference for different housing settings. The survey examined in this study contained three different options: 'ageing in place', ageing in a nursing home and ageing in a relative's home. The difference between them turns on the higher degree of autonomy individuals have in their own home as compared to nursing homes, where individuals rely on professional care, or to relatives' homes. Overall, 76-80% of the old age preferred to stay at home, though age-related effects seemed to be non-systematic. When results were disaggregated by gender there was a clear drop in the male preference for housing at home and an increase in the preference for nursing homes between 60 and 75 years of age. However, the preference for living in a relative's home increased with individual age. When disaggregated by gender, the study found a systematically higher preference for nursing homes among men and a higher preference for relatives' homes among women.

As mentioned above, Spain is a heterogeneous country, and this takes the form of differences in results across provinces or autonomous regions. Indeed, in regions such as

Navarre and Castilla-Leon, which traditionally have more conservative values and show the highest levels of support for conservative political parties, a relatively larger share of the population preferred ageing in relatives' homes. In all regions except Navarre, more than two thirds of respondents preferred 'ageing in place'. In Extremadura, Madrid and Navarre a higher percentage of respondents preferred ageing in a nursing home. Overall, there was wide individual and regional heterogeneity in preferences for housing in old age. Recently published data from IMSRSO suggests that whilst in Galicia 16% of old age live on their own this percentage rises to 23 in the Balearics (IMSERSO; 2004). The next question is what is behind such preferences²¹.

Table 4. Preferred residence in the case of old age dependency by Autonomous Regions

	My home*	Nursing home*	Relative's home*
Andalusia	83.01	12.42	4.58
Aragon	75	18.75	6.25
Asturias	85	15	-
The Balearic Islands	78.95	15.79	5.26
The Canary Islands	83.78	10.81	5.41
Cantabria	66.67	25	8.33
Castile-Leon	77.78	7.41	14.81
Castile-La Mancha	85.71	14.29	-
Catalonia	79.37	11.9	8.73
Valencia	79.59	12.24	8.16
Extremadura	65.22	30.43	4.35
Galicia	86.67	13.33	-
Madrid	70.91	26.36	2.73
Murcia	76	20	4
Navarre	40	40	20
The Basque Country	80.43	17.39	2.17
La Rioja	71.43	14.29	14.29

Question: If in the future you have difficulty walking, bathing, phoning, and taking medication etc., where would you like to live?

Table 5. The determinants of preferences for future housing in the case of old age dependency (multinomial logit model)†

21 It is important to mention that we are not specifically interested in drawing regional comparisons which would be more suitable with larger and possible more representative databases

	In a nursing home			Relative's home		
	coeff	s.e	t-value	coeff	s.e	t-value
<i>Health Controls</i>						
Alone	0.231	0.551	0.420	-0.564	1.339	-0.420
Health	-0.166*	0.084	-1.970	0.224	0.340	0.660
adltel	0.687	0.804	0.850	-3.320*	1.628	-1.970
adltra	0.012	0.512	0.020	0.937	1.222	0.770
adlcomp	0.338	1.163	0.290	-1.124	2.814	-0.400
adlmed	0.150	0.564	0.270	2.878*	1.300	2.210
adlbanc	-1.119	1.179	-0.950	0.054	2.113	0.030
adlescal	-0.765	0.777	-0.980	-1.225	1.678	-0.730
adlbany	-0.347	0.28	0.000	0.798	2.422	0.330
addorm	0.229	0.514	0.450	-1.092	1.402	-0.780
<i>House and income controls</i>						
Size1	1.545*	0.797	1.98	-1.632	2.322	-0.700
Size2	1.184	0.869	1.360	-2.263	1.736	-1.300
Houseprice	-0.015*	0.006	-2.55	-0.006	0.022	-0.260
Income	0.142	0.084	1.690	-0.113	0.142	-0.800
Saving	0.864*	0.401	2.15	-1.007	1.137	-0.890
<i>Individual and socio-economic controls</i>						
gender	-0.290	0.482	-0.600	1.243	1.216	1.020
age2	1.163	1.356	0.860	-0.348	4.37E+07	0.000
age3	0.362	0.615	0.590	-0.629	1.484	-0.420
age4	0.311	0.620	0.500	-1.271	1.778	-0.710
age5	-0.529	0.780	-0.680	0.983	1.438	0.680
educ1	-0.368	0.637	0.000	5.00*	2.511	1.991
educ2	-0.845	0.912	-0.930	2.899*	1.409	2.06
educ3	-0.108	0.560	-0.190	1.243	1.562	0.800
educ4	-0.340	0.649	-0.520	-34.061	1.99E+07	0.000
Intercept	-1.980	1.801	-1.100	-3.240	3.690	-0.880
Regional controls				Yes		
Pseudo R ²	0.22					
Likelihood						
Ratio Test	57.89					

Note: The variable 'preference for one's own home' has been excluded.

* Mean significance at the 5% level.

†See variable definitions in Table 1

Table 5 reports the results of a multinomial logit model that examined relative preferences for two alternative options to 'ageing in place', namely living in a nursing home or in a relatives' home (**RQ3**). Even when controlling for regional heterogeneity and obtaining a reasonably good fit, the study found that nursing homes were a preferred option for those with lower health status, though dependency levels were significant. It was also a more common option amongst people with lower priced flats (even when they

were perceived to be in good condition) and people with a higher capacity to save for their future. Therefore, preferences for 'ageing in place' appeared to be partly the result of need, and partly due to insufficient wealth to self-insure against care expenses, though there is some financial planning of ex-ante care. Those revealed a preference for staying with relatives tended to suffer a lesser degree of dependency, at least in communication skills, though they were in need of someone to assist with their medication. They were also less likely to have large flats or savings and had a relatively lower educational level.

5. Discussion

This study provides some survey-based evidence on individual preferences for housing in old age. The evidence suggests that *old age Spanish people prefer to stay at home, confirming the 'ageing in place' hypothesis (RQ1)*. On the other hand, our study reveals that *people become increasingly unwilling to move house or to make improvements on the home as they become older (RQ2)*. This is consistent with the hypothesis that the perceived costs of house improvements increase with individual's age after the age of seventy as suggested by the dummy variable coefficient. Yet, even though three quarters of the Spanish population would prefer to stay in their home in old age, there are marked regional differences not only in personal preferences but also in values concerning the role of the family that could be interpreted in political terms. These differences are perhaps confirming that those government policies to promote suitable housing need to be regionally decentralised and may adapt to regional specific social values (Costa-Font et al, 2006). On the other hand, theoretically confirms that preferences for future events are likely to be endogenous (Bowles, 1998), namely dependent on the specific setting that each individual lives. Finally, the study shows that people with less wealth but more savings and/or greater dependency needs are more likely to opt for institutional care, whilst people with lesser education, affluence and care (not cure) needs would prefer to live with relatives (RQ3). This finding indicates would be consistent with the view that people form expectations on the basis of their current position and act upon them in determining their housing at old age. For instance, people that foresee the need of care and existing assets to pay prefer to rely on professional care whilst those less affluent and with less care prefer informal care.

The finding that nursing home care is preferred among those with less housing assets indicates that people who have less to pass on to their relatives and are in need can be expected to find a permanent source of care rather than staying at home or relying on their relatives²². One caveat to the findings is that some housing characteristics, such as dwelling shape or form, are not directly observable. One more tangible aspect of this is dwelling type (Hoekstra, 2005) for which information is not available in the data. For instance, in southern Europe there is a relatively higher proportion of flats as opposed to houses, and this could lead to lower contact with the external environment for old age occupants. Also city-centre housing is not necessarily in good condition (e.g., lifts might not be always operative), which could help explain housing dissatisfaction in the older age groups. Another issue when examining preferences for housing refers to the influence of information sources. Whilst those with higher levels of dependency might be better informed about available professional long-term care services, those with no dependency condition might not gather information and exhibit a preference for the status quo.

6. Concluding remarks and policy implications

The results of this study indicate that government policies for promoting home ownership not only have a potentially positive effect on health but also have a non-neutral effect on the funding of care in old age, possibly leading to a higher (or lesser) probability of ‘ageing in place’ solutions and lower use of institutional care. Given the costs of institutional care to society as whole, this feature is a potential social of welfare policy development. However, some effort should be made to design financial instruments that increase the liquidity of housing assets. By promoting home ownership, the government reduces pressures to reform the social protection of long-term care and the provision of social care in old age, and in turn can concentrate in those individuals that are more in economic and health need. Given that ‘ageing in place’ seems to be preferred by the vast

²² The bequest motive would suggest that higher wealth would lead to greater support from offspring. Indeed, some studies find that in the United Kingdom inheritances from homeowners are passed down to middle-aged homeowners (Munro, 1988). Therefore, care given to the old age could be seen as payment for intergenerational wealth distribution.

majority of the population, we conclude that there is a clear-cut demand for financing instruments for care at old age that are anchored to housing assets . However, one of the main drawbacks of the ‘ageing in place’ approach is that in promoting the old age to stay at their dwelling, the suitability of housing for the old age is not guaranteed. On the other hand, aging in place might still remain the preferred option because of the psychosocial benefits of remaining in the same, less uncertain, environment.

One of the limitations of the study is the way housing tenure is measured. Although the study goes beyond simple ‘renters vs. home owners’ measurements, it should acknowledge that there is some heterogeneity in housing models. There are neighbourhood-specific effects which may not be included in housing-value measurements, and the measurements do not reflect the extent to which renting conditions might be affected by the rent-control policies widespread in Spain. Finally, it is important to bear in mind that some alternatives that have not yet developed in Spain, especially specific housing for the old age, such as accessory apartments (Chapman and Howe, 2001)²³. For this reasons the range of option of the survey employed in this study is limited but in future studies possibly a wider range of options might need to be taken into account.

²³ Not only these options are not yet developed but still the information on these alternatives in the hands of individuals is small and it appears as an option that implies a change from the aging in place option.

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