# No place like home?

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## RESIDENTIAL MOBILITY AND HOUSING PREFERENCES OF OLDER ADULTS IN THE NETHERLANDS

Petra de Jong

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## RESIDENTIAL MOBILITY AND HOUSING PREFERENCES OF OLDER ADULTS IN THE NETHERLANDS

PhD thesis

to obtain the degree of PhD at the
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the decision by the College of Deans.

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by

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*Voor Aukje*

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Four chapters included in this PhD dissertation are reprinted from the following publications and manuscripts:

**Chapter 2**

De Jong, P.A., Brouwer, A.E., & McCann, P. (2016). Moving up and down the urban hierarchy: age-articulated interregional migration flows in the Netherlands. *The Annals of Regional Science, 57*(1), 145-164. https://doi.org/10.1007/s00168-016-0772-7

**Chapter 3**

De Jong, P.A. (2020). Later-life migration in the Netherlands: propensity to move and residential mobility. *Journal of Aging and Environment* (published online: December 11, 2020). https://doi.org/10.1080/26892618.2020.1858384

**Chapter 4**

De Jong, P.A., Rouwendal, J., & Brouwer, A.E. Staying put out of choice or constraint? The residential choice behaviour of Dutch older adults.
Subject to revisions by an international peer-reviewed journal.

**Chapter 5**

De Jong, P.A., Van Hattum, P., Rouwendal, J., & Brouwer, A.E. (2018). 'The older adult' doesn't exist: using values to differentiate older adults in the Dutch housing market. *Housing Studies, 33*(7), 1014-1037. https://doi.org/10.1080/02673037.2017.1414158

# Chapter 1

## INTRODUCTION

# 1.1. Background

The age structure of the Dutch population is projected to change in the upcoming decades from a pyramid shape to more of a rectangle (see Figure 1.1). The main factor driving this change is the large decline in the fertility rate since the 1960s. Although this rate has stabilized from 1985 on, at between 1.5 and 1.8 children per woman, it is not high enough to stabilize the overall population. Another factor contributing to population ageing is the rising life expectancy. Life expectancy at birth has increased markedly over the past century, to an average of 80.5 years for men and 83.6 years for women in 2019. Statistics Netherlands (2020) forecasts that life expectancy at birth will continue to rise in the coming decades, reaching 86.3 years for men and 90 years for women by 2060.

In general, improvements in health care and increasing prosperity have resulted in a steady rise in the number of older adults over the last 50 years. As a result, older people represent a proportionately larger share of the total population. This trend is expected to be reinforced in the coming decades as the baby boomers approach their retirement years. The increase in birth rates between 1946 and 1955, usually labelled as the 'baby boom generation', is therefore considered to be a third key factor contributing to the ageing of the Dutch population (Van Iersel et al., 2010).

Thus, the population aged 65 and above in the Netherlands is expected to increase, from 2.5 million in 2010 to 4.8 million in 2060. The number of older adults aged 80 and above is projected to triple, rising from 648,000 in 2010 to almost 2 million in 2060 (Statistics Netherlands, 2020). As the number and proportion of older people in our society change, this will have numerous implications (Kim, 2011). The increased number of older adults will place an enormous burden on existing income systems, health care systems, social services and retirement programmes. In addition, older adults are likely to demand a wide array of new services to meet their unique but diverse needs (Choi & Dinse, 1998). The changing age composition is also expected to affect the geographical mobility of populations (Plane & Rogerson, 1991), subsequently shaping the physical environment of society (Kim, 2011).

Over the past three decades, scholars have studied population ageing from the perspective of various disciplines, such as demography, sociology, economics, psychology and gerontology. At the macrolevel, they have investigated the impacts of ageing on the economy and society (e.g. Bloom et al., 2010; Disney, 1996; Clark et al., 1978). At the microlevel, previous studies have focused on the provision of social pension (see e.g. Bonenkamp et al., 2017; Jackson, 1989; Pestieau, 2003), psychological demands and the wellbeing of older adults (e.g. Deeg & Westerdorp-de Serriere, 1994; Resnick et al., 2015),

and their life activities and mobility (e.g. Berg et al., 2015; Horowitz & Vanner, 2010; Schwanen & Páez, 2010; Siren & Haustein, 2016). More recently, housing has become a research focus (e.g. Abramsson & Andersson, 2016; Ewen et al., 2014; Weeks et al., 2013).

One of the challenges in the years ahead is to provide proper housing conditions for older adults. Upon embarking this thesis in 2010, the shortage of houses suitable for older adults in the Netherlands was estimated at 406,000 for the period 2006-2015 (Sogelée & Van Galen, 2007). This estimate was based on the current shortage at that time, the expected extra demand due to the ageing population, as well as the expected additional demand arising from the fact that a growing number older adults preferred to live on an extramural basis (i.e. to 'age in place'). The Dutch government relied primarily on the addition of *nultredenwoningen* (single-storey houses) for the supply of appropriate housing for older adults (Van Iersel et al., 2010).

We know, in 2021, that the proportion of older adults in the Dutch population has continued to grow after 2015. We have also come to know that the predicted demand has failed to match the actual demand for suitable houses for older adults in the Dutch housing market (Leidelmeijer et al., 2017), indicating that the housing policy described above has not been adequate for the long term. This raises the question whether we should continue the current housing policy for older adults, and if not, what policy changes need to be made?

This thesis can help to answer that question by providing insights into the potential future changes in the residential moving behaviour and housing choices of older adults in the Netherlands. The remainder of this chapter provides a background to the research in this thesis by defining concepts and identifying several policy issues with regard to ageing, mobility, and housing. The research aim and outline of the thesis are subsequently addressed.

## 1.2. Defining old age and later-life migration

There is no universal threshold age at which a society becomes 'old' (Atkins, 2018). The most commonly used measure of population ageing is the proportion of the population aged 65 years and over (Moore & Pacey, 2004; Rogerson, 1996), although others have taken a broader approach and included people as young as 55 (Axelson & Penfield, 1983; Moehrle, 1990). What defines an 'older person' is therefore contentious and varies according to situation and context (Davy et al., 2010).

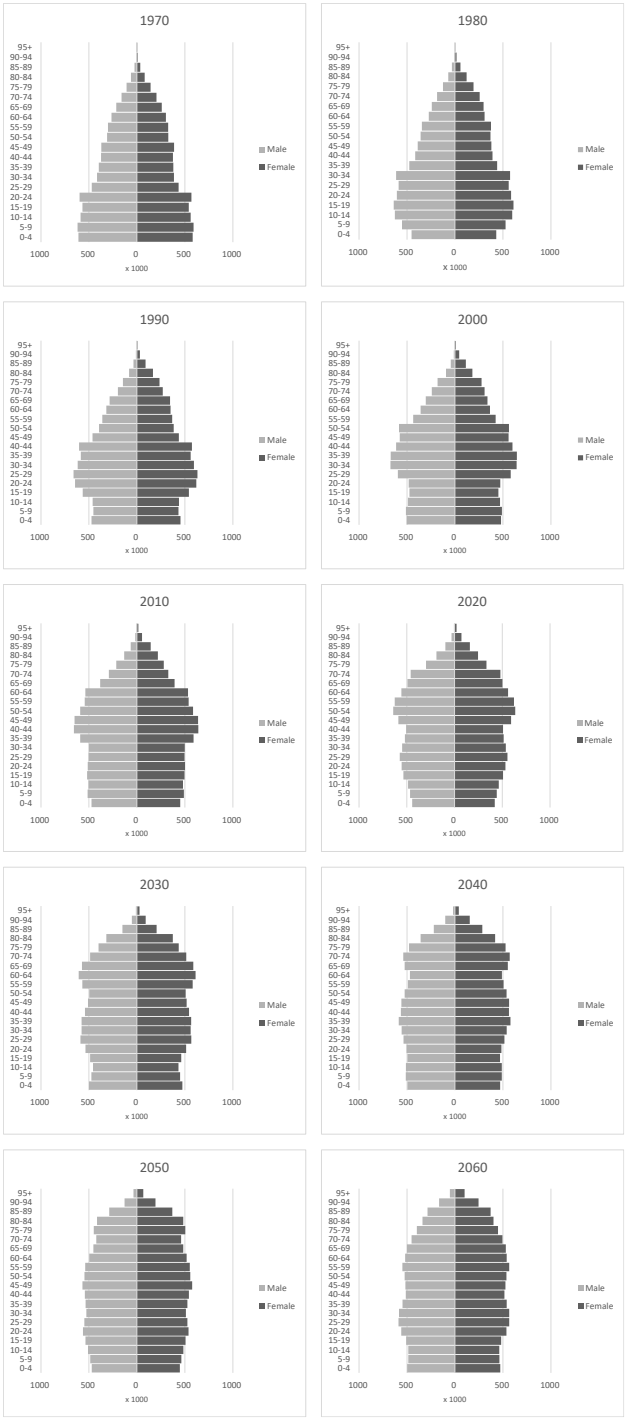



Figure 1.1 Population age structure (Source: Statistics Netherlands, 2020)

While most studies aggregate older adults into one group, which is useful for describing broad patterns of ageing (Atkins, 2018), this can mask significant trends within subgroups (Dennett & Stillwell, 2008; McCracken, 1985; Plane et al., 2005). Thus, several age groups have been distinguished in research (e.g. Abdel-Ghany & Sharpe, 1997; Conway & Houtenville, 2003; Täuber, 1983), although there are no agreed cut-off age ranges (Kim et al., 2003).

Similarly, defining later-life migration is no straightforward matter. In the light of current demographic ageing trends, later-life mobility is an area of growing academic interest (e.g. Andrews et al., 2009; Friedrich & Warnes, 2000; King & Newbold, 2009; King, 2012; Litwak & Longino, 1987; Mulder & Hooimeijer, 1999; Pope & Kang, 2010; Wiseman, 1980; Wulff et al., 2010). As a result, research on later-life migration has been based on a fragmented set of concepts and theories that were developed using a variety of perspectives and disciplinary approaches (Sander et al., 2010). In the absence of a universally agreed operational definition of later-life migration, terms like 'elderly migration', 'later-life migration', and 'retirement migration' are often used interchangeably in the literature (e.g. Conway & Houtenville, 2003; Friedrich & Warnes, 2000; Longino & Bradley, 2003; Stockdale et al., 2013; Walters, 2002). The interchangeable use of terms often results in uncertainty about which type of mobility is the focus of the empirical study.

For the purpose of this thesis, an older adult is defined as a person aged 55 years and over. The age of 55 is also used as a cut-off point, above which movements are classified as later-life moves. Since older adults are not a homogenous group (Atkins, 2018), they are further divided into three age groups: 'pre-elderly' (55-64), 'young- elderly' (65-74), and 'old-elderly' (aged 75 and over). This distinction is deemed relevant in order to capture the potentially divergent migration decisions that older and younger older adults make (e.g. Conway & Houtenville, 2003).

## 1.3. Spatial unevenness of population ageing

Due to complex demographic, economic, social, political, and environmental forces, ageing does not occur evenly across cities and countries (Davies & James, 2011). The spatial unevenness of ageing is particularly affected by migration and 'ageing in place' (Atkins, 2018; Sabater et al., 2017). First, attention is given to the role of migration in changing the spatial concentrations of older people.

In general, residential mobility is seen as the mechanism that brings a family's housing in line with their residential needs (Rossi, 1955). Various social, economic, cultural, and life course factors are understood to produce a housing disequilibrium, 'triggering' the

mobility decision-making process (Mulder & Hooimeijer, 1999). It a complex process, that is place- and time-specific (Clark & Maas, 2015). Migration motives can vary, depending on migration distance and migrant characteristics (Coulter & Van Ham, 2013; Niedomysl, 2011). The spatial mobility pattern of older adults, traditionally ranges from long-distance migration, such as 'snowbird' travel to warmer climates in winter months (Happel & Hogan, 2002; King & Newbold, 2009; King et al., 2000; Mings, 1997), to shorter-distance residential mobility, triggered more often than not by a need to be closer to amenities, services, or family members in the face of declining health and abilities (Joseph & Chalmers, 1996; Pope & Kang, 2010) or changing life course circumstances such as retirement and widowhood (Bonnet et al., 2010; Bures, 1997).

'Ageing in place' highlights an important possible mechanism that is expected to increase age segregation. Ageing in place has been defined as "the desire and tendency of older persons to stay in their current dwelling units for as long as possible"(Pynoos et al., 2007, p. 711). In the Netherlands, as well as in other countries, it is usually viewed as the policy ideal of enabling people to remain in their existing homes while ageing (Cutchin, 2003; Golant, 2011; Löfqvist et al., 2013), hence postponing and decreasing expensive institutionalized care (Wiles et al., 2012; Kendig et al., 2017). As a result, the residential immobility of older adults is expected to increase. While the short-term effect may be to slow the pace of age segregation, in the longer term, as the population ages, this can act as a driver of age segregation in particular places (Sabater et al., 2017).

Whether or not it is older adults who initiate the process of age segregation is yet to be investigated (Sabater et al., 2017). There is, for example, growing evidence that young age has become more important over time as a delineator of high-density living (Moos, 2016), resulting in a higher share of the young adult population living in high-density neighbourhoods than in the past. The pronounced 'youthification' of cities, the result of a young adult population increasingly being 'stuck in place' by the recent housing crisis, suggests that the immobility of younger adults also contributes to age segregation processes (Sabater et al., 2017).

The number of studies on the spatial dimension of ageing has increased in recent years. Some studies have investigated intrametropolitan ageing mobility (Hugo, 2000; Lowdell et al., 2000). Others have focused on smaller spatial scales, which can give a better picture of residential mobility and the localization of ageing in place, such as the township, street or neighbourhood scale (Zhou et al., 2018; Lager, 2015). For the purpose of this thesis, the origin and destination patterns of migrants (of all ages) are analysed in order to understand the flows and magnitudes of interregional migration in the Netherlands.

## 1.4. Housing for an ageing population

There is a growing realization that we need to plan for the ageing population and to provide housing for the aged that caters for their needs. In order to successfully plan housing provision, knowledge about the housing preferences of older adults is crucial (Abramsson & Andersson, 2016). Housing preferences are traditionally predicted on the basis of several socio-demographic characteristics, such as age, income and household composition (Van Diepen & Arnoldus, 2003). This method assumes that social background may both create opportunities and limit choices (Ganzeboom, 1988), and that all persons of a certain age behave in the same way in the housing market (Moschis et al., 2003). However, Hooimeijer (2007) observed that the relationship between age and housing is expected to change for successive cohort due to social-cultural and social-economic dynamics.

As a result, there has been growing academic interest in investigating the mobility behaviour of the baby boomer generation in particular. There is evidence to suggest that this demographic cohort is significantly different economically, socially, and culturally from preceding generations and will have different needs and expectations in their postretirement years (Hugo, 2013; Pinnegar et al., 2012; Wulff et al., 2010). It is likewise expected that they will exhibit "unique migration patterns" that differ from those of previous generations (Bures, 1997, p. 117) and that these will have significant policy and planning implications for matters such as the provision of housing (Han & Corcoran, 2014).

This suggests that prognoses based on averages for the older population will become less and less meaningful. For policy, this might imply that a generalized housing policy of the type described above will become increasingly ineffective and inefficient (Hooimeijer, 2007). This thesis aims to improve the estimation of housing preferences by offering an insight into the relative importance that older adults give to various housing characteristics and by differentiating older adults by age, attitudes, and personality traits.

## 1.5. Research aim and thesis outline

In the context of rapid population ageing and the impending retirement of the baby boomer generation, this thesis aims to shed light on the factors influencing residential mobility and the housing preferences of older adults. In particular, it focuses on the possible differences in residential choice behaviour among (future) older adults.

1.5.1. Thesis outline

From previous research it is known that migration propensities vary greatly over the life course. The passage through the life course results not only in different age-specific propensities to move, but also in shifting likelihoods of residing in larger or smaller settlements. In 2009, Plane and Jurjevich demonstrated that, when interregional migration flows are disaggregated by age, different patterns of net upward and downward population redistributions operate within the urban hierarchy in the USA. By replicating the seminal methodological approach of Plane and Jurjevich, **chapter 2** reflects on the possible repercussions of residential mobility patterns up and down the Dutch urban hierarchy in the light of demographic change and, in particular, the ageing of the Dutch population.

In **chapter 3**, the residential moving behaviour of older adults in the Netherlands is further examined by analysing which factors are likely to influence considerations about moving and actual mobility. Using pooled data from the Housing Research Netherlands (HRN) surveys from 2006 to 2012, a binary logistic regression was performed to assess the impact of a number of factors on the likelihood that older adults would report that they had moved, or had a propensity to move.

While chapter 3 reflects on what makes older people move or consider moving, **chapter 4** is concerned with the residential immobility of older adults. This chapter explores whether the tendency of older Dutch people to stay in their current dwelling is motivated by choice (i.e. the desire to age in place) or by constraint (i.e. the lack of alternatives). The analysis is based on a carefully constructed questionnaire, designed as a conjoint choice experiment. It involves presenting older adults with a choice between their existing home and several (hypothetical) alternative dwellings. Chapter 4 also examines the relative importance that older adults assign to various housing characteristics and explores whether these preferences are stable for different age groups.

**Chapter 5** aims to improve the housing preference estimates found in chapter 4 by recognizing the growing differentiation among older adults (i.e. other than by age). The possible heterogeneity is analysed by differentiating older adults according to lifestyle (operationalized as values), using latent class analysis as a clustering technique. This results in older adults being classified into five segments on the basis of their viewpoints, motivations and attitude. A separate discrete choice model is then estimated for each 'lifestyle segment' (similar to the analysis in chapter 4), showing the relative importance that these segments give to various housing characteristics.

Finally, **chapter 6** presents an overview of the main findings from chapter 2 to 5. It also reflects on policy implications and on other new issues relating to research on the residential mobility of older adults.

# References


Abdel-Ghany, M., & Sharpe, D.L. (1997). Consumption patterns among the young-old and old-old. *The Journal of Consumer Affairs*, *31*(1), 90–112. https://doi.org/10.1111/j.1745-6606.1997.tb00828.x

Abramsson, M., & Andersson, E. (2016). Changing Preferences with Ageing: Housing Choices and Housing Plans of Older People. *Housing, Theory and Society, 33*(2), 217-241. https://doi.org/10.1080/14036096.2015.1104385

Andrews, G.J., Milligan, C., Phillips, D.R., & Skinner, M.W. (2009). Geographical gerontology: Mapping a disciplinary intersection. *Geography Compass, 3*(5), 1641–1659. https://doi.org/10.1111/j.1749-8198.2009.00270.x

Atkins, M.T. (2018). On the move, or staying put? An Analysis of intrametropolitan residential mobility and ageing in place. *Population Space and Place, 24*(3), e2096. https://doi.org/10.1002/psp.2096

Axelson, M.L., & Penfield, M.P. (1983). Factors Associated with Food Expenditure of Elderly Persons Living Alone. *Home Economics Research Journal*, *12*(2), pp. 228–236. https://doi.org/10.1177/1077727X8301200213

Berg, J., Levin, L., Abramsson, M., & Hagberg, J.-E. (2015). "I want complete freedom": car use and everyday mobility among the newly retired. *European Transport Research Review, 7*(4), 1-10. https://doi.org/10.1007/s12544-015-0180-6

Bloom, D.E., Canning, D., & Fink, G. (2010). Implications of population ageing for economic growth. *Oxford Review of Economic Policy, 26*(4), 583–612 https://doi.org/10.1093/oxrep/grq038

Bonenkamp, J, Meijdam, L., Ponds, E., & Westerhout, E. (2017). Ageing-driven pension reforms. *Journal of Population Economics, 30*(3), 953-976. https://doi.org/10.1007/s00148-017-0637-0

Bonnet, C., Gobillon, L., & Laferrère, A. (2010). The effect of widowhood on housing and location choices. *Journal of Housing Economics, 19*(2), 94-108. https://doi.org/10.1016/j.jhe.2010.04.003

Bures, R.M. (1997). Migration and the Life Course: Is there a Retirement Transition? *International Journal of Population Geography, 3*(2), 109-119. https://doi.org/10.1002/(sici)1099-1220(199706)3:2<109::aid-ijpg65>3.0.co;2-i

Choi, N.G., & Dinse, S. (1998). Challenges and opportunities of the ageing population: social work education and practice for productive aging. *Education Gerontology, 24*(2), 159-173. https://doi.org/10.1080/0360127980240205

Clark, R., Kreps, J., & Spengler, J. (1978). Economics of aging: a survey. *Journal of Economic Literature, 16*(3), 919–962. https://www.jstor.org/stable/2723470

Clark, W.A.V., & Maas, R. (2015). Interpreting migration through the prism of reasons for moves. *Population, Space and Place, 21*(1), 54–67. https://doi.org/10.1002/psp.1844

Conway, K.S., & Houtenville, A.J. (2003). Out with the old, in with the old: a closer look at younger versus older elderly migration. *Social Science Quarterly, 84*(2), 309-328. https://doi.org/10.1111/1540-6237.8402006

Coulter, R., & Van Ham, M. (2013). Following people through time: An analysis of individual residential mobility biographies. *Housing Studies, 28*(7), 1037–1055. https://doi.org/10.1080/02673037.2013.783903

Cutchin, M.P. (2003). The process of mediated ageing-in-place: a theoretically and empirically based model. *Social Science and Medicine, 57*(6), 1077-1090. https://doi.org/10.1016/S0277-9536(02)00486-0

Davies, A., & James, A. (2011*). Geographies of ageing: Social processes and the spatial unevenness of population ageing*. Ashgate Publishing.

Davy, L., Bridge, C., Judd, B., Flatau, P., Morris, A., & Phibbs, P. (2010). *Age-specific housing for low to moderate-income older people* (AHURI positioning paper no 134). Australian Housing and Urban Research Institute.

Deeg, D.J.H., & Westerdorp de Serrierre, M.(1994). *Autonomy and Well-being in the Aging Population 1: report from the Longitudinal Ageing Study, Amsterdam 1992-93*. VU University Press.

Dennett, A., & Stillwell, J. (2008). *Internal migration in Great Britain—A district level analysis using 2001 census data* (Working Paper 01/08). University of Leeds.

Disney, R. (1996). *Can we afford to grow older? A perspective on the economics of aging*. MIT Press.

Ewen, H.H., Hahn, S.J., Erickson, M.A., & Krout, J.A. (2014). Ageing in Place or Relocation? Plans of Community-Dwelling Older Adults. *Journal of Housing For the Elderly, 28*(3), 288-309. https://doi.org/10.1080/02763893.2014.930366

Friedrich, K., & Warnes, T. (2000). Understanding contrasts in later life migration patterns: Germany, Britain and the United States. *ERDKUNDE, 54*(2), 108-120. https://doi.org/10.3112/erdkunde.2000.02.02

Ganzeboom, H. (1988). *Leefstijlen in Nederland. Een verkennende studie* [Lifestyles in The Netherlands. An exploratory study] (Cahier no. 60). Sociaal en Cultureel Planbureau.

Golant, S.M. (2011). The quest for residential normalcy by older adults: relocation but one pathway. *Journal of Aging Studies, 25*(3), 193–205. https://doi.org/10.1016/j.jaging.2011.03.003

Han, J.H., & Corcoran, J. (2014). Ageing Australia: Changing location patterns of older people in South East Queensland. *Australian Planner, 51*(1), 2–14. https://doi.org/10.1080/07293682.2013.770769

Happel, S.K., & Hogan, T.D. (2002). Counting snowbirds: The importance of and the problems with estimating seasonal populations. *Population Research and Policy Review*, *21*, 227–240. https://doi.org/10.1023/A:1019560405310

Hooimeijer, P. (2007). *Dynamiek in de derde leeftijd: De consequenties voor het woonbeleid* [Dynamics in life's third act: consequences for housing policy]. Ministerie van VROM.

Horowitz, B.P., & Vanner, E. (2010). Relationships Among Active Engagement in Life Activities and Quality of Life for Assisted-Living Residents. *Journal of Housing For the Elderly, 24*(2), 130-150. https://doi.org/10.1080/02763891003757056

Hugo, G. (2000). South Australia's ageing population and its increasingly multicultural nature. *Australasian Journal of Ageing*, *19*(1), 23–32. https://doi.org/10.1111/j.1741-6612.2000.tb00134.x

Hugo, G. (2013). The changing demographics of Australia over the last 30 years. *Australasian Journal on Ageing, 32*(S2), 18-27. https://doi.org/10.1111/ajag.12113

Jackson, W.A. (1989). Utilitarian Pension and Retirement Policies under Population Ageing. *Journal of Population Economics, 2*(1), 73-78. https://doi.org/10.1007/BF00599181

Joseph, A.E., & Chalmers, A.I. (1996). Restructuring long-term care and the geography of aging: A view from rural New Zealand. *Social Science & Medicine, 42*(6), 887–896. https://doi.org/10.1016/0277-9536(95)00187-5

Kendig, H., Honge Gong, C., Cannon, L., & Browning, C.( 2017). Preferences and Predictors of Aging in Place: Longitudinal Evidence From Melbourne, Australia. *Journal of Housing For the Elderly, 31*(3), 259-271. https://doi.org/10.1080/02763893.2017.1280582

Kim, S. (2011). Intra-regional residential movement of the elderly: testing a suburban-to urban migration hypothesis. *Annals of Regional Science, 46*(1), 1-17. https://doi.org/10.1007/s00168-009-0325-4

Kim, S., Kim, H., & Kim, W.G. (2003). Impacts of senior citizens' lifestyle on their choices of elderly housing. *Journal of Consumer Marketing, 20*(3), 210-226. https://doi.org/10.1108/07363760310472245

King, K.M., & Newbold, K.B. (2009). Later-Life Migrations in Canada in 2001: A Multilevel Approach. *Population Aging, 2*(3), 161-181. https://doi.org/10.1007/s12062-010-9020-6

King, R. (2012). Geography and migration studies: Retrospect and prospect. *Population, Space and Place, 18*(2), 134–153. https://doi.org/10.1002/psp.685

King, R., Warnes, T., & Williams, A. (2000). *Sunset Lives: British Retirement Migration to the Mediterranean*. Berg Publishers.

Lager, D.R. (2015). *Perspectives on ageing in place. Older adults' experiences of everyday life in urban neighbourhoods*. [Doctoral dissertation, University of Groningen].

Leidelmeijer, K., Van Iersel, J., & Leering, D. (2017). *Monitor Investeren in de toekomst. Ouderen en langer zelfstandig wonen* [Monitor Investing for the Future: Older adults and ageing in place]. RIGO.

Litwak, E., & Longino, C.F. (1987). Migration patterns among the elderly: A developmental perspective. *The Gerontologist, 27*(3), 266–272. https://doi.org/10.1093/geront/27.3.266

Löfqvist, C., Granbom, M., Himmelsbach, I., Iwarsson, S., Oswald, F., & Haak, M. (2013). Voices on relocation and ageing in place in very old age – a complex and ambivalent matter. *The Gerontologist, 53*(6), 919–927. https://doi.org/10.1093/geront/gnt034

Longino, C.F., & Bradley, D.E. (2003). A first look at retirement migration trends in 2000. *The Gerontologist, 43*(6), 904-907. https://doi.org/10.1093/geront/43.6.904

Lowdell, C., Evandrou, M., Bardsley, M., Morgan, D., & Soljak, M. (2000). *Health of ethnic minority elders in London*. East London & the City Health Authority.

McCracken, K.W.J. (1985). Disaggregating the elderly. *Australian Geographer, 16*(3), 218–224. https://doi.org/10.1080/00049188508702875

Mings, R.C. (1997). Tracking 'snowbirds' in Australia: Winter sun seekers in far north Queensland. *Australian Geographical Studies, 35*(2), 168–182. https://doi.org/10.1111/1467-8470.00017

Moehrle, T. (1990). Expenditure Patterns of the Elderly: Workers and Nonworkers. *Monthly Labor Review, 113*, 34–41. https://www.jstor.org/stable/41843460

Moore, E.G., & Pacey, M.A. (2004). Geographic dimensions of aging in Canada, 1991–2001. *Canadian Journal on Aging, 23*(5), S5–S21. https://doi.org/10.1353/cja.2005.0037

Moos, M. (2016). From gentrification to youthification? The increasing importance of young age in delineating high-density living. *Urban Studies, 53*(14), 2903-2920. https://doi.org/10.1177/0042098015603292

Moschis, G.P., Bellenger, D., & Folkman Curasi C. (2003, January 25-28). *Housing preferences of older consumers* [Conference presentation]. Annual Conference of the Pacific Rim Rea Estate Society, Bangkok Thailand.

Mulder, C.H., & Hooimeijer, P. (1999). Residential relocations in the lifecourse. In L. van Wissen, & P. Dykstra (Eds.), *Population issues: An interdisciplinary focus*. Springer Science + Business Media.

Niedomysl, T. (2011). How migration motives change over migration distance: Evidence on variation across socio-economic and demographic groups. *Regional Studies, 45*(6), 843–855. https://doi.org/10.1080/00343401003614266

Pestieau, P. (2003). Ageing, retirement and pension reforms. *The World Economy, 26*(10), 1447-1457. https://doi.org/10.1111/j.1467-9701.2003.00581.x

Pinnegar, S., Van den Nouwelant, R., Judd, B., & Randolph, B. (2012). *Understanding housing and location choices of retiring Australians in the 'baby boom' generation*. City Futures Research Centre, UNSW.

Plane, D.A., & Jurjevich, J.R. (2009). Ties That No Longer Bind? The Patterns and Repercussions of Age-Articulated Migration. *The Professional Geographer, 61*(1), 4-20. https://doi.org/10.1080/00330120802577558

Plane, D.A., & Rogerson, P.A. (1991). Tracking the Baby Boom, the Baby Bust, and the Echo Generations: How age composition regulates US migration. *The Professional Geographer, 43*(4), 416-430. https://doi.org/10.1111/j.0033-0124.1991.00416.x

Plane, D.A., Henrie, C.J., & Perry, M.J. (2005). Migration up and down the urban hierarchy and across the life course. *Proceedings of the National Academy of Sciences*, *102*(43), 15313-15318. https://doi.org/10.1073/pnas.0507312102

Pope, N.D., & Kang, B. (2010). Residential Relocation in Later Life: A Comparison of Proactive and Reactive Moves. *Journal of Housing For the Elderly, 24*(2), 193-207. https://doi.org/10.1080/02763891003757122

Pynoos, J., Nishita, C., & Kendig, H. (2007). Housing. In J.E. Birren (Ed.), *Encyclopedia of Gerontology* (2nd ed, Vol. 2, pp.709-719). Elsevier:

Resnick, B., Klinedinst ,N.J., Yerges-Armstrong, L., Choi, E.Y., & Dorsey, S.G. (2015). The impact of genetics on physical resilience and successful aging. *Journal of Aging and Health, 27*(6), 1084–1104. https://doi.org/10.1177/0898264315577586

Rogerson, P.A. (1996). Geographic perspectives on elderly population growth. *Growth and Change, 27*(1), 75–95. https://doi.org/10.1111/j.1468-2257.1996.tb00897.x

Rossi, P. (1955). *Why families move: A study in the social psychology of urban residential mobility*. The Free Press.

Sabater, A., Graham, E., & Finney, N. (2017). The spatialities of ageing: Evidencing increasing spatial polarisation between older and younger adults in England and Wales. *Demographic Research, 36*(25), 731-744. https://doi.org/10.4054/DemRes.2017.36.25

Sander, N., Skirbekk, V., KC., S., & Lundevaller, E. (2010). *Prospects for later-life migration in urban Europe* (PLUREL report D1.2.4. Module 1: Driving forces and global trends).

Schwanen, T., & Páez, A. (2010). The mobility of older people—an introduction. *Journal of Transport Geography, 18*(5), 591–595. https://doi.org/10.1016/j.jtrangeo.2010.06.001

Siren, A., & Haustein, S. (2016). How do baby boomers' mobility patterns change with retirement? *Ageing and Society, 36*(5), 988-1007. https://doi.org/10.1017/S0144686X15000100

Sogolée, G., & Van Galen, J. (2007). *Monitor Investeren voor de Toekomst 2006* [Monitor Investing for the Future 2006]. ABF Research.

Statistics Netherlands. (2020, October). *Statline*. Statistics Netherlands. http://statline.cbs.nl

Stockdale, A., MacLeod, M., & Philip, L. (2013). Connected Life Courses: Influences on and Experiences of 'Midlife' In-Migration to Rural Areas. *Population, Space and Place, 19*(3), 239-257. https://doi.org/10.1002/psp.1709

Täuber, C. (1983). *America in Transition: An Ageing Society*. US Government Printing Office.

Van Diepen, A.M.L., & Arnoldus, M. (2003). *De woonvraag in de vraaggestuurde markt. Bouwstenen uit het woonmilieuanalyse en leefstijlenonderzoek* [Housing demand in the demand-driven market. Building blocks from the living environment analysis and lifestyle research] (Rapport 23). DGW/ Nethur partnership.

Van Iersel, J., Leidelmeijer, K., & Buys, A. (2010). *Senioren op de woningmarkt: nieuwe generaties, andere eisen en wensen* [Seniors in the housing market: new generations, different requirements and preferences]. Ministerie van VROM

Walters, W.A. (2002). Place Characteristics and Later-Life Migration. *Research on Aging, 24*(2), 243-277. https://doi.org/10.1177/0164027502242004

Weeks, L.E., Shiner, D., Stadnyk, R., & MacDonald, D.J. (2013). What should we build when they are ready to come? Developing Evidence-based housing for older adults. *Seniors Housing & Care Journal, 21*(1), 69–85.

Wiles, J.L., Leibing, A., Guberman, N., Reeve, J., & Allen, R.E.S. (2012). The Meaning of "Ageing in Place" to Older People. *The Gerontologist, 52*(3), 357-366. https://doi.org/10.1093/geront/gnr098

Wiseman, R. F. (1980). Why older people move: Theoretical issues. *Research on Aging, 2*(2), 141–154. https://doi.org/10.1177/016402758022003

Wulff, M., Champion, A., & Lobo, M. (2010). Household diversity and migration in Mid-life: Understanding Residential Mobility among 45-64 Year Olds in Melbourne, Australia. *Population, Space and Place, 16*(4), 307-321. https://doi.org/10.1002/psp.553

Zhou, C.S., Tong, X.M., & Wang J.H. (2018). Spatial differentiation and the formation mechanism of population aging in Guangzhou in 2000–2010. *Geographical Research, 37*(1), 103–118. https://doi.org/10.11821/dlyj201801008

# Chapter 2

## MOVING UP AND DOWN THE URBAN HIERARCHY: AGE-ARTICULATED INTERREGIONAL MIGRATION FLOWS IN THE NETHERLANDS

This chapter is reprinted from: De Jong, P.A., Brouwer, A.E., & McCann, P. (2016). Moving up and down the urban hierarchy: age-articulated interregional migration flows in the Netherlands. *The Annals of Regional Science, 57*(1), 145-164. https://doi.org/10.1007/s00168-016-0772-7. Minor editorial changes have been made for a better fit with the style of the thesis.

# Abstract

The 'age schedule of migration' has been studied fairly extensively. Yet, its regional implications have received only limited attention. The highly cited seminal paper of Plane and Jurjevich (2009) demonstrated in a novel manner on the basis of US Census data that, when interregional migration flows are disaggregated by age, radically different patterns of net population redistribution are observable in the sense of upward and downward movements within the urban hierarchy of the USA. This study aims to demonstrate how interregional migration flows play out in a different geographic setting by replicating the methodological approach of Plane and Jurjevich (2009) in the case of The Netherlands, a country with a very different urban system and spatial population pattern to the USA. Our aim is to identify whether the differing geographical context leads to different upward and downward movement. The most notably marked flows or 'demographically effective' flows in the Netherlands are the movements made by young adults and older adults aged 75 and over. We also observe recently emerging differences in the migration patterns of retirees, with the '75 and older' age cohort oriented towards smaller towns and rural areas, while the '65-74' age cohort are increasingly oriented towards urban areas. In addition, we comment on the possible consequences of these differing patterns of age-articulated interregional flows when allied with the emerging demographic changes.



Keywords: internal migration, population distribution, urban hierarchy, ageing, the Netherlands

# 2.1. Introduction

From previous research, it is known that migration propensities vary greatly over the life course (e.g. Rossi, 1955; Warnes, 1992a; Fischer & Malmberg, 2001). As such, migration is regarded as an age-selective process, with young adults being the most mobile group (Bernard et al., 2014). Typically the propensity to move peaks at young age, declining steadily with increasing age, potentially rising again around the age of retirement. The propensities of people to move at different stages in life constitutes such a strong empirical regularity (Rogers et al., 1978; Rogers & Castro, 1981), that it is regarded as an almost universal pattern (Fischer & Malmberg, 2001) – as depicted by the widely-used 'age schedule of migration' (Wilson, 2014). Figure 2.1 shows a stylized pattern of the age schedule of migration.

Underlying the regularities in the age schedule of migration is a collection of life course transitions (Warnes, 1992b; Rowland, 1979; Mulder, 1993). Many of these life course transitions occur at young age, as individuals and couples move for employment, higher education, partnering and so on, making those years 'demographically dense' (Rindfuss, 1991). From previous studies it is known that as adults pass through their thirties and forties, mobility progressively falls (see among others Plane et al., 2005). At this stage, good jobs, mortgages, children settled in school, and social networks act as 'locational anchorages', which reduce mobility (Wilson, 2014). In general, the declining migration intensities of children and teenagers are tied to the declining intensities of their parents (Plane & Jurjevich, 2009).

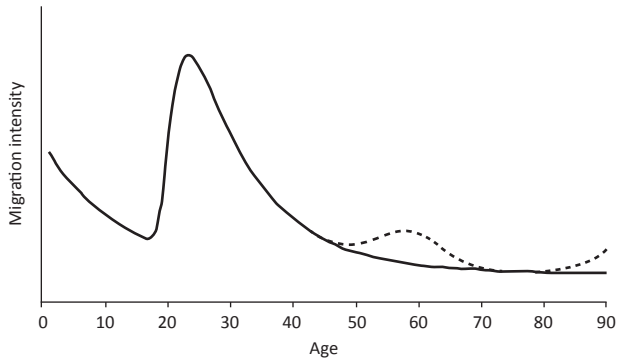



Figure 2.1 Age schedule of migration (with kind permission from Springer Science+Business Media: Applied Spatial Analysis, doi:10.1007/s12061-014-9124-0, 2014, page 2, Wilson T, Figure 1)

A renewed impulse for mobility takes place when the transition into 'empty-nester' status arises (Plane & Jurjevich, 2009). At this stage, some empty-nester couples, freed from the locational ties of employment and their children's schooling, undertake moves to scenic

rural locations, favourite holiday areas, or to be close to family (as shown by the dashed line in Fig. 2.1) (Haas & Serow, 2002; Wilson, 2014). It is often thought that the traditional retirement age of 65 is the peak age of elderly migration, but much of the influx actually seems to occur at an earlier age (e.g. Bloem et al., 2008; Andersson & Abramsson, 2012).

Generally, three types of moves are typical for elderly migration (Litwak & Longino, 1987). The first type of movement (i.e. retirement moves) entails the relocation of older adults after retirement and is motivated by a desire for amenities and comfort. The second type (i.e. comfort moves) centres on older adults moving closer to children or other family members able to help with care when one becomes less able to manage everyday tasks due to increased disability or worsening health (Pope & Kang, 2010). Finally, a rise in mobility is sometimes seen at the highest ages (as shown by the second dashed line in Fig. 2.1). At this stage, older adults might relocate to a nursing home or other institutional setting when care needs increase and institutional care is required because family caregivers are no longer able to provide the appropriate level of support (i.e. care moves) (Litwak & Longino, 1987; Longino et al., 2008).

While the 'age schedule of migration' has been studied fairly extensively, its regional implications have received only limited attention (Plane, 2012). Yet, the passage through the life course not only results in different age-specific propensities to move, but also results in shifting likelihoods of residing in larger or smaller settlements. In 2009, Plane and Jurjevich demonstrated that, when interregional migration flows are disaggregated by age, quite different patterns of net upwards and downwards population redistributions operate within the urban hierarchy in the USA. Following this line of reasoning, interregional migration can therefore be understood and analysed as a phenomena closely linked to the structure of the urban hierarchy (Korpi et al., 2011). Instead, Bell (1995) had previously found distinct variations in interregional migration profiles in Australia depending not only on the distance of movement, but also the direction of flows within the settlement hierarchy. More recently, Bernard et al. (2014) observed considerable cross-national differences in interregional migration profiles among 25 countries around the world, and confirmed distinctive regional geographies.

This study therefore aims to demonstrate the regional implications of the 'age schedule of migration' in the Netherlands. By replicating the highly original methodological approach of Plane and Jurjevich (2009) in a non-American context, we are able to demonstrate how interregional migration flows play out in a different geographic setting. A descriptive overview of the Dutch setting will be presented in the next section; then, the data available will be outlined. Next, we detail how the relative propensity to migrate between Dutch regions systematically varies with age, and report on the interregional migration flows

up and down the Dutch urban hierarchy. In addition, we focus on the likely interactions and possible consequences of these mobility patterns when combined with demographic changes, and in particular the ageing of the Dutch population.



## 2.2. Empirical setting and data

2.2.1. The urban hierarchy in the Netherlands

The Netherlands is a highly urbanised and densely populated country within Europe. Rural regions in the Netherlands are relatively close to an urban centre in geographical terms and are becoming more connected by increased commuting between both regions (Delfmann et al., 2014). The OECD defines those areas with a population density below 150 inhabitants/km$^2$ as rural (OECD, 2008). According to this definition, rural areas do not exist in the Netherlands. This, however, does not correspond to the common perception among the Dutch themselves (Delfmann et al., 2014). The northern part of the county, for example, is generally considered to be a typical rural area (Haartsen, 2002; OECD, 2005, 2008). Therefore, we propose a different approach based on a residential density index, which is frequently used in Dutch policy (e.g. Steenbekker et al., 2008), but also in scientific papers (e.g. De Groot et al., 2011). The residential density index uses the concentration of human activities such as living, working and utilizing amenities as indicators of urbanisation: the lower the concentration of these activities, the lower the level of urbanisation (Haartsen, 2002). The relationship between urban population and residential density is well-known in the urban economics literature (McCann, 2013).

Table 2.1 Five levels of urbanity in the Netherlands, based on the residential density

| Level | Density | Number of municipalities | Total population (2012) |
|---|---|---|---|
| Extremely urbanised | 2,500 surrounding addresses or more | 14 | 3,301,173 |
| Strongly urbanised | 1,500 to 2,500 surrounding addresses | 62 | 4,655,068 |
| Moderately urbanised | 1,000 to 1,500 surrounding addresses | 86 | 3,390,263 |
| Hardly urbanised | 500 to 1,000 surrounding addresses | 145 | 3,571,135 |
| Not urbanised | Fewer than 500 surrounding addresses | 108 | 1,812,709 |

The levels of the Dutch urban hierarchy are based on the residential density in each municipality. For each address within a given municipality, the average number of addresses per squared kilometre within a circle with a radius of one kilometre is calculated (Den Dulk et al., 1992). The five levels of the Dutch urban hierarchy are based on the class limits 2500, 1500, 1000 and 500 addresses per squared kilometre and listed in Table 2.1. Figure 2.2 is a map showing the five-level hierarchy in the Netherlands.

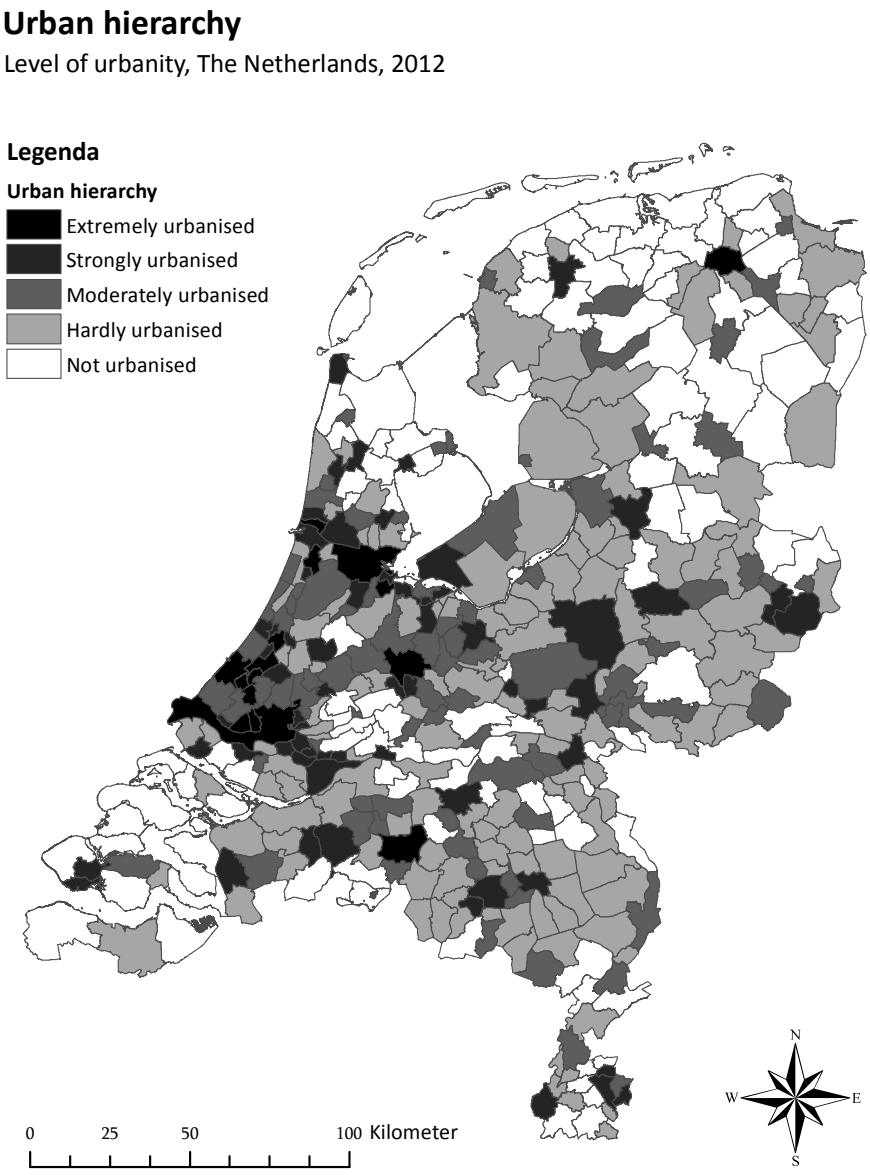



Figure 2.2 Urban hierarchy used in the study

2.2.2. The residential housing market in the Netherlands

Before looking at the interregional migration patterns within the Netherlands, it seems appropriate to look at the main factors determining processes on the residential housing market. The Netherlands has a long history of public involvement in the housing market and of highly interventionist housing policies with the aims of stimulating homeownership

and making good-quality (rental) housing affordable to low income households (Vandevyvere & Zenthöfer, 2012). At the moment, households in both the owner-occupied sector and the rental sector receive substantial explicit or implicit subsidies. Key subsidy instruments at the national level are mortgage relief for homeowners and the income-based housing allowance for renters. In addition, the central government also influences housing through spatial planning and land policy, regulation and supervision of housing associations, rent policy and financial guarantees (Vandevyvere & Zenthöfer, 2012).

In response to public policies, the Dutch housing market has shifted towards higher owner-occupancy over the past three decades (Vandevyvere & Zenthöfer, 2012) of which a majority of the homeownership is in the more rural areas (Statistics Netherlands, 2015). Currently, around 55% of the 7.4 million dwellings are owner-occupied, which is still comparatively low on a European scale. The social housing represents 31% of total housing stock, making it an important player on the Dutch residential housing market. The expansion of the social sector up to the mid-1990s was accompanied by a sharp fall in private renting, which currently accounts for 13% of the total housing stock (Systeem woningvoorraad, 2015).

Various empirical studies have addressed the relationship between the housing market and labour mobility. Micro-studies, using (longitudinal) data of individuals or households, find homeownership to be associated with lower residential mobility and lower job-to-job mobility (Van Leuvesteijn & Koning, 2004). For the Netherlands, Van der Vlist (2001) finds that homeowners are less likely to move to another home and to change jobs. This is in line with the study of Van Ommeren (1996) which concludes that homeowners are less likely to move to another home than tenants are. Herbers et al. (2014) find that this tendency increases with older homeowners, unless changes in the family forces the elderly out of homeownership. In 2011, Hoj demonstrated how housing market regulations, as described above, actually harm the labour market of the Netherlands. Transaction costs, for example, have a negative effect on the labour market flexibility. Transaction costs of owner-occupied housing include property transaction taxes, fees for the registration of property, notary or other legal fees and real estate agency fees. Transaction costs also exist in the rental market. Rules concerning social housing make it unattractive for dwellers of social housing to move to another area for a better-paid job (Vandevyvere & Zenthöfer, 2012). Due to the regionalised waiting-list system, tenants of social housing cannot move to another area without losing their entitlement for social housing. Given the fact that in the Netherlands density is high and urban areas are geographically small units, commuting between them is very feasible. Therefore, in the Netherlands, people often choose to change jobs without changing residence (Van Leuvesteijn & Koning, 2004; Van Ham & Hooimeijer, 2009).

2.2.3. Data and some preliminary results

The interregional migration patterns are analysed by using data from the Housing Research Netherlands (HRN) survey of 2002-2012. This survey is set up to provide more insights into the developments occurring on the Dutch housing market, and is carried out every 3 years by the Ministry of Internal Affairs. The HRN data are based on a large cross sectional survey in which information is gathered about the housing situation of people living in the Netherlands. The research population is representative of the Dutch population aged 18 and older, not living in an institution.

In total there were 42,587 persons (14,9%) in the HRN survey of 2002-2012, who are stated to have moved in the previous two years. Figure 2.3 shows the residential mobility for migrants from 2002 to 2012 broken down by age at time of movement. From Fig. 2.3 it becomes clear that, in occurrence with the 'age schedule of migration', the residential mobility peaks at the age 25-34, after which it steadily decreases with age. It also demonstrates that the majority of residential mobility is intraregional (i.e. a movement within the existing municipality). This is in line with previous research which demonstrated that just one-third of the residential mobility is interregional (i.e. a movement to a different municipality) (Feijten & Visser, 2005). In addition, Feijten and Visser (2005) find that 25% of all interregional mobility occurs within a distance of a mere 10 kilometres.

Following the argument of Plane and Jurjevich (2009), we know that the population size of the locality is of primary interest when we look at the interregional mobility. Figure 2.4 shows the average population of both the origin and the destination municipalities for interregional migrants from 2002 to 2012, broken down by age at time of movement. From Fig. 2.4 it becomes clear that interregional migrants, in general, move towards less populated municipalities. Interestingly, this is also true for those aged 25-34, the most geographically mobile cohort and often the group assumed to be oriented to the largest cities. In fact, only the youngest cohort moves towards the largest cities, and many do so when entering tertiary education. The pattern of movement towards smaller sized urban centres is even more explicit for older adults: the older people are, the more they tend to move away from highly populated municipalities. This is in line with previous research, which has shown that Dutch older adults (55+) are more likely to move away from, rather than towards, highly populated municipalities and urban areas (Fokkema, 1996). Van der Pers et al. (2015) underline the importance for intergenerational proximity for the oldest age groups in relocation. They find that elderly are more likely to move – in the direction of their children – when they lived further away from them. Since our data show that the children are also likely to move to and live in smaller sized urban centres, this could explain the direction of the relocation of the elder age groups.

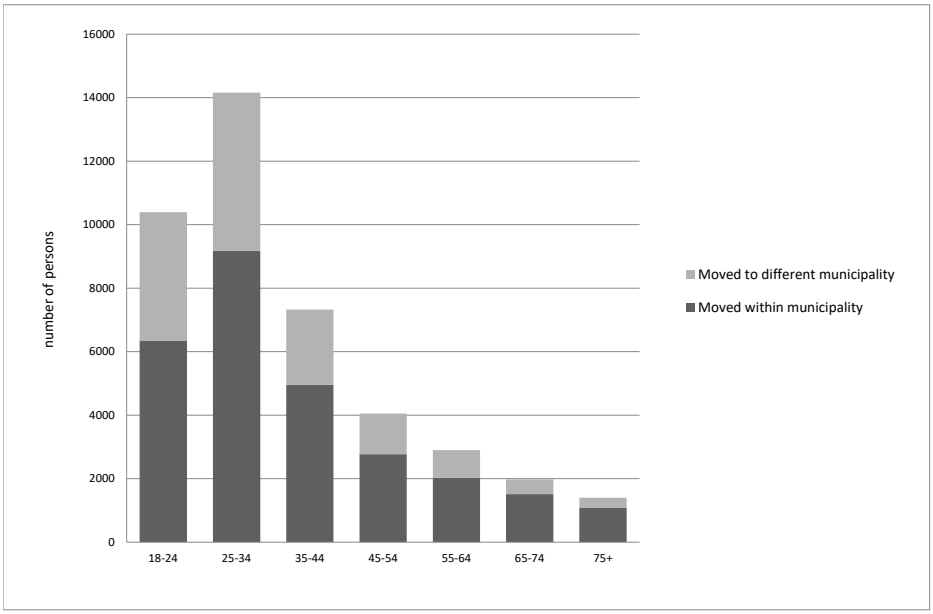



Figure 2.3 Age at time of move (Source: Calculated by the authors from HRN data 2002-2012)

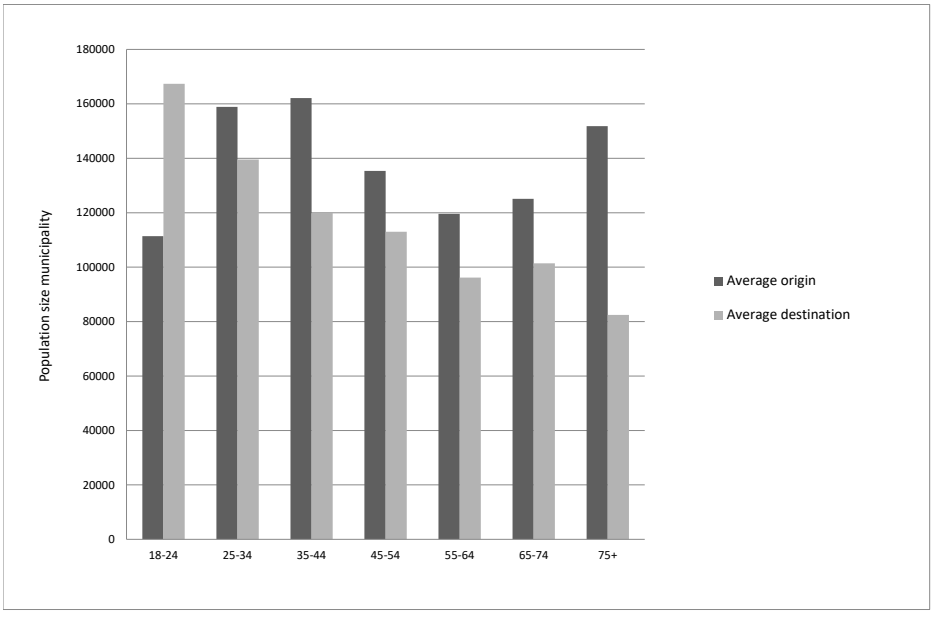



Figure 2.4 Average size of origin and destination by age at time of move (Source: Calculated by the authors from HRN data 2002-2012)

# 2.3. Age-cohorts and mobility within the Dutch Urban hierarchy

2.3.1. Net flows up and down the Dutch urban hierarchy

Following the methodological approach of Plane and Jurjevich (2009), we cross-calculated level-to-level flows of migrants in each of the seven age groups by the level of urbanity of the origin and destination municipality across the five urbanity categories of the Dutch urban hierarchy. Next, we calculated the net exchange of migrants between each pair of levels of the hierarchy. For each age group, there are ten net exchanges. For each net exchange the demographic effectiveness value is calculated, which is also known as the demographic efficiency. Demographic effectiveness is a widely used measure of the unidirectionality of movement within a migration system (Plane et al., 2005). The demographic effectiveness $E_{ij}$ is calculated as follows:

$$E_{ij} = 100\ (N_{ij} / T_{ij})$$

Here $N_{ij}$ is the net exchange of migrants between a lower level of the urban hierarchy $i$ and higher level $j$, and it is calculated as the difference between the gross upward flow $M_{ij}$ and the gross downward flow $M_{ji}$. The total exchange of migrants $T_{ij}$ is found as the sum of the gross upward and downward flows (Plane & Jurjevich, 2009). Hypothetically the demographic effectiveness varies from 0 and 100%, in which the upper limit of 100% would reflect the case where all migrants were moving either up or down the urban hierarchy with nobody going in the opposite direction, while a value of 0% would reflect the situation where exactly the same number of migrants were moving downwards as were moving upwards within the urban hierarchy (Plane & Jurjevich, 2009).

Figure 2.5 shows the demographic effectiveness of each of the various net exchanges in which the widths of the arrows are proportional to the percentage demographic effectiveness of the migration streams and counter streams. Figure 2.5A ($n$ = 14,497) presents a view of the total interregional movement between the different urban levels. Here, it is clear that the lion's share of the total interregional residential migration reflects an upward movement within the urban hierarchy. However, an examination of the total interregional residential migration alone misses the rich and variegated patterns of movements exhibited by persons within the different age cohorts (Plane et al., 2005). In fact, the overall pattern that we have noted in Fig. 2.5A, is being driven by a preponderance of migration of the young adults. Fig. 2.5B ($n$ = 4,043) shows the mobility flows that occur in the young adult years (i.e. 18-24 years of age), for which all but one of the net exchanges point up the hierarchy, a finding which Plane and Jurjevich (2009) similarly found for persons 20-29 years of age. The most effective exchanges are those for movements

towards the extremely urbanised areas, and especially pronounced are the flows upward from lowest two levels of the urban hierarchy to the most densely populated localities. This is most likely to be related to both the pursuit of higher education as Dutch higher educational institutions are mostly located in the larger cities, and also to employment-related migration into cities of university graduates (Venhorst et al., 2011).

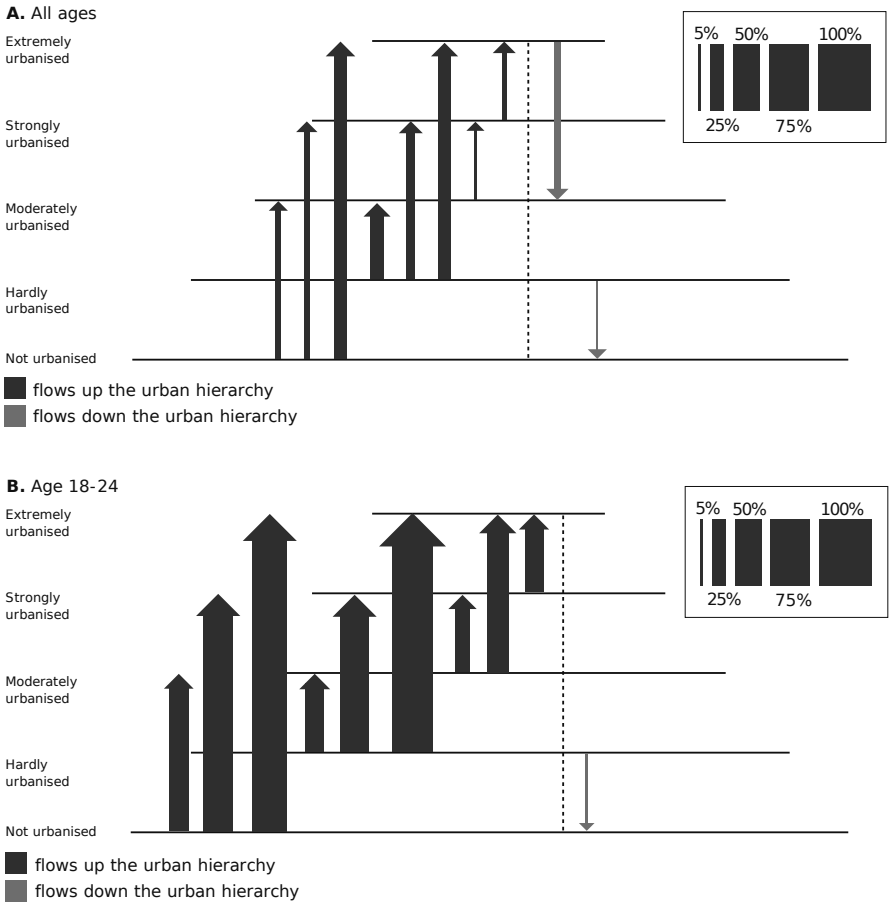
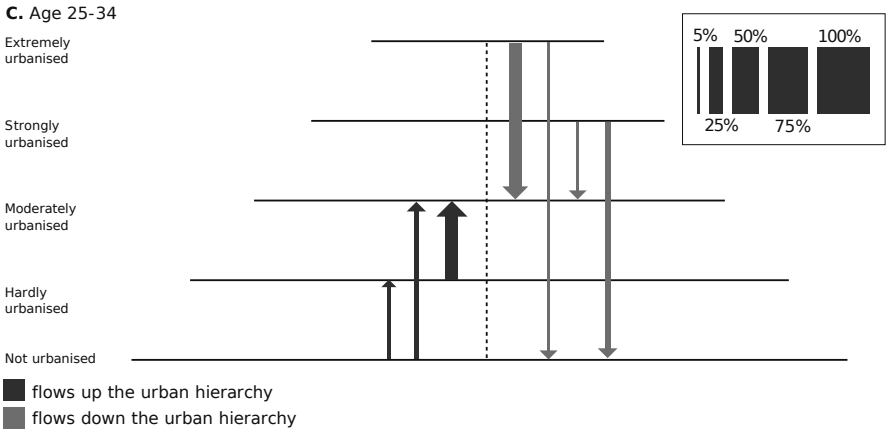
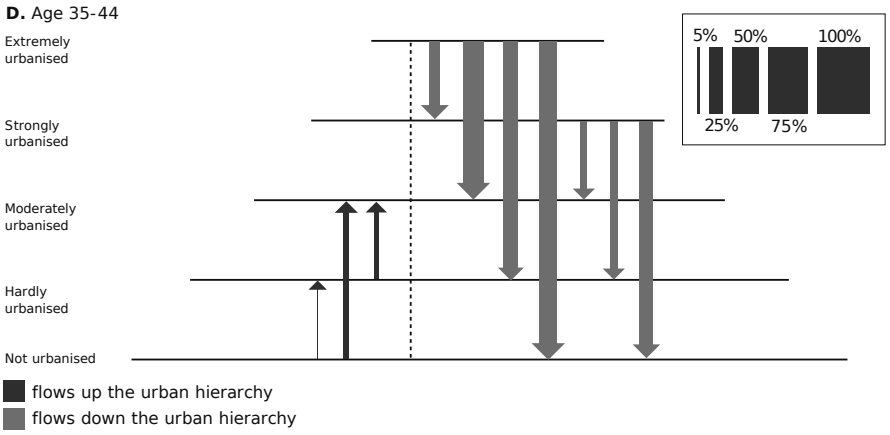



Figure 2.5 Demographic effectiveness percentages for age-specific net migration exchanges between urban hierarchy levels. (Source: Calculated by the authors from HNR data 2002-2012)



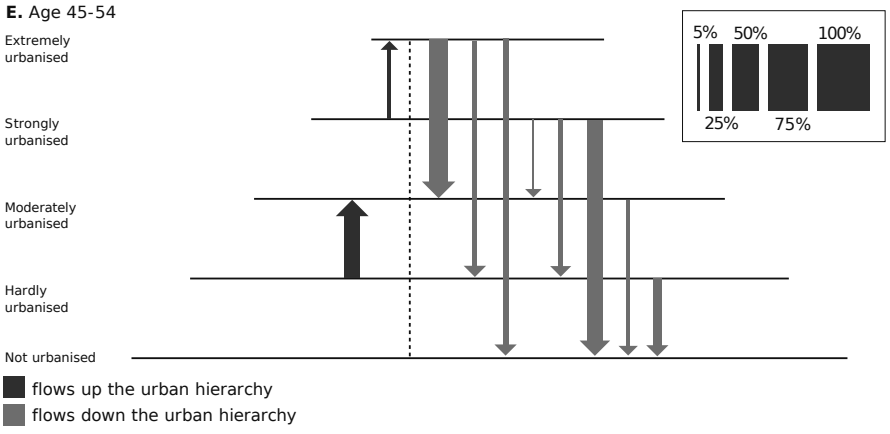
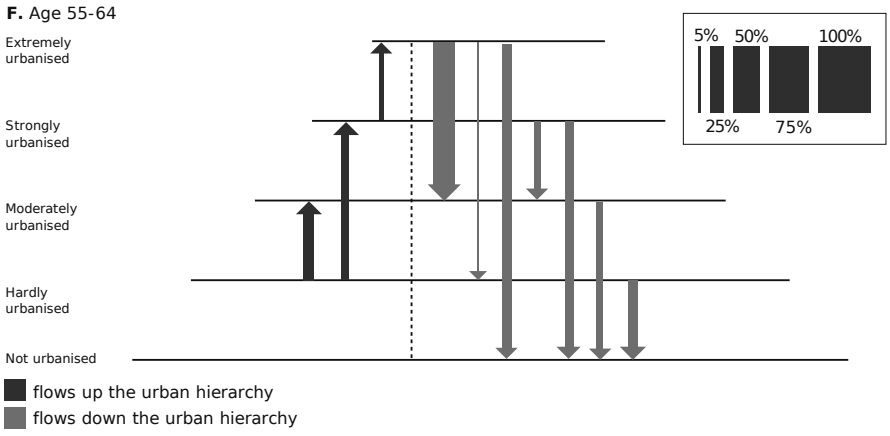
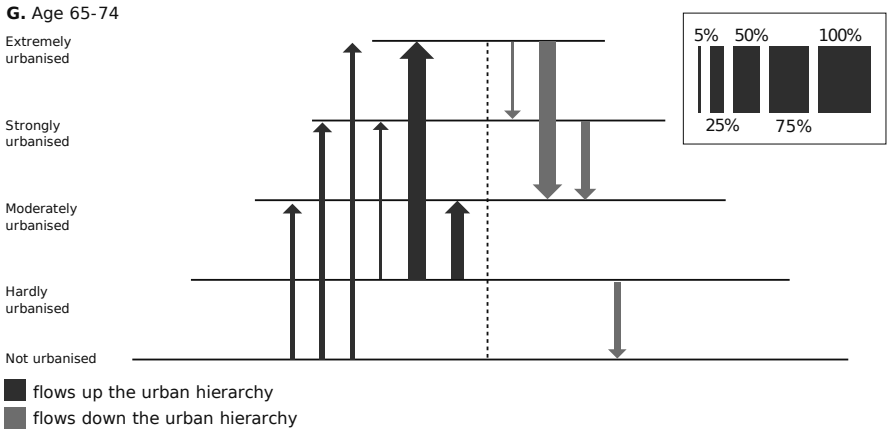




Figure 2.5 Continued



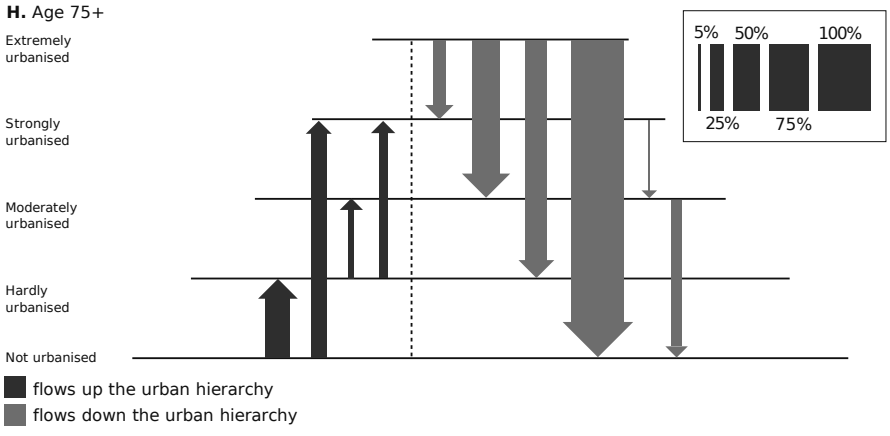




Figure 2.5 Continued

For the age group 25-34 year olds (Fig. 2.5C; $n$ = 4,976), the movement patterns are far less unidirectional than those for 18-24 year-olds. In line with the literature, the absolute mobility rates are the highest among this age group, and this stage contains many of the critical life course events that impel persons to migrate (Rindfuss, 1991; Plane et al., 2005) to various levels in the urban hierarchy. The migration flows display only moderate demographic efficiency at this stage of life, although there are very large numbers of migrants moving in both directions between the different levels of the urban hierarchy. In fact between three pairs of levels of the hierarchy the demographic effectiveness is close to zero (and therefore not shown in Fig. 2.5C), indicating that the flows in both directions between these pairs of levels of the hierarchy are almost equal in size, this could be partly explained by the need for intergenerational proximity (Van der Pers et al., 2015; Bijker et al., 2012).

During the mid-career and childrearing years we observe a pattern away from the most urbanised areas. By the ages 35-44, seven of the ten gross net exchanges point in the direction of net movements to the smaller settlement size classes (Fig. 2.5D; $n$ = 2,362). It has been suggested that during this age span housing costs, school quality and suburban road congestion are becoming major concerns (Plane et al., 2005), which possibly explains the preference for less populated areas. This tendency to move down the urban hierarchy is persistent until retirement ages. Figures 2.5E ($n$ = 1,282) and 2.5F ($n$ = 869) show the interregional movement pattern of migrants in age cohort 45-54 years and the age cohort 55-64 years, respectively. These age groups move, on balance, toward the middle tier of the urban hierarchy. This observation concurs with the findings in many European countries which reveal that the older adults are more likely to leave than to move to the big cities (Fokkema, 1996; Serow et al., 1996).

However, in contrast to much of the literature, for the 65-74 age cohort, we find strong evidence again of upwards movements within the urban hierarchy. As a result, Fig. 2.5G ($n$ = 461) shows two sets of arrows: upward ones from the bottom two levels of the hierarchy, and downward ones from the highest two levels to the moderately urbanised areas. The migrants moving up the urban hierarchy are likely to be those who are moving in anticipation of getting old. As a result the migration patterns of these cohorts appear to be directed towards the places which are large enough to have a range of public services including hospitals with a wide range of (geriatric) specialty care facilities (Plane & Jurjevich, 2009). In addition, it has been suggested (Kresl & Ietri, 2010) that older adults of the baby boom generation are less attracted to the sun and golf retirement locations than has been the case in recent decades. Instead, many of these young retirees may be more interested in the greater locational density and variety of public and private services which are available in cities and in urban functions of intellectual activity and culture and

the arts (also compare Haas & Serow, 2002). As such, the migrants moving down the urban hierarchy appear to reflect more traditional notions of retirement mobility, generally motivated by a desire for amenities and comfort (Pope & Kang, 2010), while the upward flows could represent something of a new phenomenon. This new phenomenon could be explained by the retirement of the baby boom generation, which generates a whole new experience on the housing market – in the USA (Myers & Ryu, 2008) and a need to be close to children/family caused by a strong ageing in place policy in the Netherlands (Van der Pers et al., 2015). Also, the need to be in proximity of friends and family is found in the US migration patterns of elderly as well (Serow et al., 1996), especially when the role of potential support in the vicinity becomes more pressing (Redfoot et al,. 2013)

Figure 2.5H ($n$ = 310) clearly demonstrates the demographic efficiency down the urban hierarchy of migrants aged 75 and over[1]. However, on balance, the age group of 75 and over moves towards the middle tier of the Dutch urban hierarchy, a finding which is broadly consistent with Plane and Jurjevich (2009). Part of the explanation for this observation may relate to the fact that these medium-sized urban areas are also among the most favoured locations for people at the midcareer and child-rearing stage. As such, this suggests that the movements to medium-sized cities in Fig. 2.5G, H are older adults that wish to re-join younger family members in these locations (Plane & Heins, 2003; Plane & Jurjevich, 2009; Van der Pers et al., 2015).

A comparison of all eight panels of Fig. 2.5 reveals how strongly the stage of life affects the settlement size (i.e. urbanity) preferences of migrants. Again, if we look at the total interregional residential migration, this suggests a strong upward movement in the urban hierarchy. However, when we look at the patterns of movements exhibited by persons within different age cohorts, we witness a pattern in which many of the major movements in the system of interregional migration are actually flows down the urban hierarchy. Our results are based on somewhat different age cohorts and a rather different urban classification system to Plane and Jurjevich (2009), but already we see many parallels as well as a quite few differences between the age-related migration flows within the urban hierarchies of the USA and The Netherlands. We now therefore use the second empirical technique employed by Plane and Jurjevich (2009), namely the calculation of the migration-destination odds, to further explore the nature of these flows.

1 The most effective movement is from the very strongly urbanised areas to the non-urbanised areas. The demographic efficiency of this movement is calculated as 100%, indicating that all migrants between these two levels were moving down the urban hierarchy, although this is also a small sample observation ($n$ = 5).

2.3.2. Migration destination odds

In addition to the diagrammatic approach depicted in Fig. 2.5, we use the migration destination odds measure to further illustrate how residential and mobility preferences shift across the life course, and how people situated at one level of the urban hierarchy choose to move to a different level. This measure is calculated as:

$$O_{aij} = P_{aij} / P_{.ij}$$

Where $O_{aij}$ represents the odds of a person of age group *a* living in a municipality at level *i* selecting a destination at level *j*. These odds are calculated as the ratio of two probabilities (Plane & Jurjevich, 2009), namely the probability of a migrant of age group *a* originating from a municipality at hierarchy level *i* selecting a destination at level *j,* divided by the probability of a migrant of any age originating at level *i* choosing a destination at level *j*. The age group probability is calculated as:

$$P_{aij} = M_{aij}/\Sigma_h M_{aih}$$

While the all-age probability is given by:

$$P_{.ij} = \Sigma_a M_{aij}/\Sigma_a \Sigma_h M_{aih}$$

As Plane and Jurjevich (2009) explain, an odds value above 1.0 indicates a greater relative attractiveness of municipalities at hierarchy level *j* to persons in a particular age group than to all people who are living in areas categorised at level *i*. On the other hand, an odds value below 1.0 suggests a relative unattractiveness of level *j* municipalities to those in a particular age group.

Table 2.2 presents the age-specific destination odds for migrants who lived in extremely urbanised municipalities (A); strongly urbanised municipalities (B); moderately urbanised municipalities (C), hardy urbanised municipalities (D); and not urbanised municipalities (E). Boldface highlights the level of origin, whereas the various rows correspond to the level of the destination of the migrants.

Table 2.2 Age-specific migration destination odds for migrants

| | | 18-24 | 25-34 | 35-44 | 45-54 | 55-64 | 65-74 | 75+ |
|---|---|---|---|---|---|---|---|---|
| A. | Origin: extremely urbanised | | | | | | | |
| | **Extremely urbanised** | **1.508** | **1.077** | **0.808** | **0.742** | **0.714** | **0.518** | **0.416** |
| | Strongly urbanised | 1.062 | 0.997 | 0.958 | 0.931 | 0.977 | 1.164 | 0.762 |
| | Moderately urbanised | 0.628 | 0.884 | 1.265 | 1.362 | 1.335 | 1.702 | 2.208 |
| | Hardly urbanised | 0.465 | 1.080 | 1.236 | 1.251 | 1.042 | 1.044 | 1.854 |
| | Not urbanised | 0.884 | 0.924 | 0.981 | 1.201 | 1.638 | 1.158 | 1.298 |
| B. | Origin: strongly urbanised | | | | | | | |
| | Extremely urbanised | 1.636 | 0.930 | 0.585 | 0.852 | 0.734 | 0.666 | 0.511 |
| | **Strongly urbanised** | **1.150** | **1.001** | **0.961** | **0.733** | **0.917** | **0.628** | **1.220** |
| | Moderately urbanised | 0.714 | 1.045 | 1.205 | 1.104 | 1.290 | 1.516 | 1.218 |
| | Hardly urbanised | 0.609 | 1.061 | 1.448 | 1.110 | 1.094 | 1.459 | 1.368 |
| | Not urbanised | 0.543 | 1.002 | 1.291 | 1.759 | 1.282 | 1.340 | 1.058 |
| C. | Origin: moderately urbanised | | | | | | | |
| | Extremely urbanised | 1.653 | 0.887 | 0.806 | 0.649 | 0.445 | 0.697 | 0.581 |
| | Strongly urbanised | 1.274 | 1.025 | 0.787 | 0.831 | 0.716 | 0.721 | 0.606 |
| | **Moderately urbanised** | **0.618** | **1.015** | **1.244** | **1.319** | **1.190** | **1.808** | **1.782** |
| | Hardly urbanised | 0.679 | 1.083 | 1.240 | 1.101 | 1.536 | 0.950 | 1.397 |
| | Not urbanised | 0.477 | 1.033 | 1.234 | 1.569 | 2.087 | 1.308 | 1.356 |
| D. | Origin: hardly urbanised | | | | | | | |
| | Extremely urbanised | 1.505 | 0.907 | 0.579 | 0.585 | 0.384 | 0.903 | 0.501 |
| | Strongly urbanised | 1.411 | 0.870 | 0.770 | 0.572 | 0.816 | 0.788 | 1.167 |
| | Moderately urbanised | 0.765 | 1.173 | 0.990 | 1.432 | 1.286 | 0.826 | 1.359 |
| | **Hardly urbanised** | **0.601** | **1.098** | **1.518** | **1.295** | **1.338** | **1.576** | **1.194** |
| | Not urbanised | 0.677 | 0.978 | 1.494 | 1.558 | 1.434 | 1.179 | 0.599 |
| E. | Origin: not urbanised | | | | | | | |
| | Extremely urbanised | 1.908 | 0.742 | 0.368 | 0.576 | 0.539 | 0.594 | 0.000 |
| | Strongly urbanised | 1.518 | 0.776 | 0.591 | 0.680 | 0.691 | 1.125 | 1.160 |
| | Moderately urbanised | 0.746 | 1.053 | 1.382 | 1.205 | 1.402 | 1.184 | 0.677 |
| | Hardly urbanised | 0.619 | 1.185 | 1.523 | 1.153 | 1.188 | 0.980 | 1.645 |
| | **Not urbanised** | **0.475** | **1.322** | **1.356** | **1.535** | **1.294** | **1.067** | **1.791** |

Note the high 1.508 value for persons aged 18-24 on the top row of Table 2.2A. This indicates that young adults are substantially more likely than persons of all other ages to move from one big city to another. Equally, note the cluster of high values for movement by the 'old-elderly' to the middle tier of the urban hierarchy. In fact, the 2.208 odds for those aged 75 and older migrating from extremely urban areas to

moderately urban areas are the highest odds calculated for any age group and for any pairing of origin and destination levels. This could be indicative for the movement of older adults to be in close proximity to family (Van der Pers et al., 2015).

In contrast, Table 2.2E shows the age-specific migration destination odds of migrants originating from the lowest level in the Dutch urban hierarchy. Here we observe that the age cohort 65-74 is relatively orientated to move from non-urbanised areas to moderately or even strongly urbanised areas, as it to a slightly lesser extent to the age cohort 75 and over. This could be indicative of the move towards amenities (Serow et al., 1996). Yet in Table 2.2D we see that the over 75 cohort living in hardly urbanised areas display a high propensity to move to moderately or even strongly urbanised areas, this might be indicative as the move to a care institutions which are not available at all urban levels and more available on higher urban levels (Van der Pers et al., 2015). As such, these two older age cohorts all show an orientation which is upwards through the urban hierarchy. In Table 2.2E, we also observe a high 1.791 value for persons aged 75 and older on the bottom row of Table 2.2E. 'Old-elderly' are thus more likely than persons of all other ages to move from one non-urban municipality to another, while unsurprisingly, there is a particularly low value of 0.475 for persons ages 18-24, indicating a relative unattractiveness for young people to make such a move.

For the migrants originating from strongly urbanised municipalities (Table 2.2B) - with the exception of persons aged 18-24 - we can observe a relative attractiveness of municipalities placed lower in the urban hierarchy. Note, too, the greater relative attractiveness of medium sized municipalities for persons aged 65-74 in Table 2.2C. They are substantially more likely than persons of all other ages to move between municipalities which are moderately urbanised. Since these interregional migration flows do not entail a change of level in the Dutch urban hierarchy, they do not appear in the diagrammatic approach depicted in Fig. 2.5. The urbanisation categories which most consistently appear to be attractive for most age groups are those defined as moderately urbanised, hardly urbanised and not urbanised, with only the 18-24 age cohort being relatively orientated to either extremely or strongly urbanised areas. Furthermore, the Dutch regions are quite small – especially in comparison to US regions – as such a short distance relocation in the USA would be considered local, while in the Netherlands this might be between regions (compare Serow et al., 1996).

## 2.4. Interactions between age-articulated interregional migration and population ageing

A current and significant demographic event we are faced with is the coming of age of the post-war baby boom generation. In the year 2015, 17.8% of the Dutch population will be aged 65 and older, but by the year 2040 this figure will rise to approximately 26.4% (Statistics Netherlands, 2015). In many Western societies, this increasing proportion of older adults is of special concern for the future (Abramsson & Andersson, 2012; European Union, 2012), and the Netherlands is no exception to this.

Traditionally, the residential mobility patterns among older adults have been assumed to be low, with older adults typically remaining in their current dwelling for as long as possible and with only a small minority relocating (Long, 1992; Lord & Luxembourg, 2007). This is reflected in the pattern revealed in Fig. 2.3. However, the increase in the proportion of older adults within the overall population and the discussion about lifestyle changes among older adults raise questions about possible changing patterns of residential mobility. The next generation of older adults are very different from today's older adults, particularly the baby boomers, who have different expectations and abilities, due to their having experienced expanded education opportunities, as well as significant social, political and economic emancipation and participation (Kramer & Pfaffenbach, 2009; Myers & Ryu, 2008; Redfoot et al., 2013). Therefore, future older adults are expected to develop different lifestyles, which will likely lead them to favour different residential locations than previous generations at that age, not so much moving to sunnier climates, but keeping into mind that family proximity might be necessary and anticipated moves accordingly (Kramer & Pfaffenbach, 2007; Haas & Serow, 2002).

Our data and results reported here, and particularly those results which are related to the younger group of retirees, suggests that these shifts are already well underway[2]. The ageing cohorts approaching retirement not only display greater mobility than in the past, but also display markedly different mobility patterns than has generally been

2 Our data sample contains 14,497 observations of inter-urban movers, but the subsets of inter-urban movers over 65 years old contain just $n$ = 410 for 65-74 year olds and $n$ = 361 for over 75s, which together amount to just over 5% of the total sample moving population. However, the patterns of movers broken down by age cohort (as represented in Figure 2.5 ) in our sample almost perfectly reflects the age-related mobility patterns evident in the UK (see Figure 3.6 on page 33 of Fielding (2012), a country which also has identical aggregate interregional mobility rates to The Netherlands (OECD 2013) at the levels of OECD-TL3 small regions. Our sample data are therefore likely to be highly representative of The Netherlands as a whole.

observed amongst previous generations. Moreover, there are several characteristics of the baby boom generation which suggest that their mobility rates are likely to increase in the near future. Firstly, their higher levels of education and income increase the probability of moving (Clark & Dieleman, 1996; Bureauvijftig, 2015). However, in the USA this trend might change with the decreased chance to sell one's house in the US housing market due to the large group of baby boomers leaving homeownership and a smaller younger cohort that is able to buy their houses (Myers & Ryu, 2008). Secondly, marital status is an important factor influencing residential mobility (Haan & Perks, 2008; Richards & Rankaduwa, 2008) with widowed and divorced elderly being found to have a higher probability of moving (Richards & Rankaduwa, 2008; Herbers et al., 2014). Particularly, among the baby boomers we witness a higher divorce rate than in previous generations, which has distinct effects on the housing market especially for ownership property (Hooimeijer, 2007; Herbers et al., 2014). Thirdly, it is known that previous moves increases the likelihood of moving again (DaVanzo, 1981; Mulder, 1993), and baby boomers, in general, have a higher likelihood of having previously undertaken moves for reasons of study or for jobs (Andersson & Abramsson, 2012). Since older adults are likely to exhibit much lower levels of place attachment than their predecessors (Fischer & Malmberg, 2001), it is argued that mobility amongst older age groups may significantly be easier than in earlier generations (Malmberg et al., 2004, as cited in Abramsson & Andersson, 2012).

Based on the patterns of interregional migration presented in this study, it is possible to argue that the trends revealed here are likely to be harbingers of what is yet to come. In particular, we might expect to witness an intensification of these patterns with more 'young elderly' (i.e. persons aged 65-75) moving up the hierarchy - in particular those originating from the lowest tiers of the urban hierarchy -, and more 'pre-elderly' (i.e. persons aged 55-64) and 'old-elderly' (i.e. persons aged 75 and over) moving down the urban hierarchy.

## 2.5. Conclusion

In order to examine the patterns of age-articulated interregional mobility in the Netherlands several analytical steps were made. Following the methodological approach of Plane and Jurjevich (2009), we first calculated the demographic efficiency and subsequently the age-specific destination migration odds of seven age cohorts. Our findings support many of the age related migration patterns evident from the migration and the life course literature, and they also highlight that the passage through successive life stages not only results in fairly predictable age-specific propensities to move, but also results in fairly-predictable shifting likelihoods of residing in larger or smaller settlements.

In general, as people age through the life course, they move for very different reasons and their choices reflect different considerations and preferences (Warnes, 1992a; Whisler et al., 2008). At some ages, large agglomerations are preferable; at other, sparsely settled environments hold key advantages (Plane & Jurjevich, 2009). As such, academic research needs to move away from modelling 'the migration' and 'the migrant decision', and instead allow more for a more varied and nuanced age-related approach.

The results for the Netherlands are for the most part comparable to the trends of mobility found in the USA by Plane and Jurjevich (2009). Even though the geographical setting and urban hierarchy levels are very different, the overall patterns of movements exhibited by persons within different age cohorts down the urban hierarchy are strikingly similar. However, the upward flows from the lowest tiers of the urban hierarchy of the 'young elderly' are a new and previously-unobserved pattern of mobility for the Netherlands. In the USA, such cultural and amenity seeking relocation behaviour was observed by Serow et al. (1996).

Even though a full explanation of the economic and social factors underlying the interregional patterns of migration in the Netherlands lies outside the scope of the current study, we did reflect on the possible repercussions of these patterns in light of demographic change, and notably on the ageing of the Dutch population. With the coming of age of the baby boomers, the proportion of older adults in the Dutch population will rise to approximately 26.5% of the total population by the year 2040. Simply due to the large numbers that these cohorts represent, their migration decisions are likely to impact spatial structures.

Our data and results, and particularly those results which are related to the 'young elderly', suggest that future older adults display greater mobility than in the past, but also display markedly different mobility patterns than has generally been observed amongst previous generations. The combination of demographic weight and high voting probability among older age cohorts makes that we might expect a significant electoral power of the grey vote and an expanding over-representation of older voters in national (and regional) elections (Goerres, 2007). Such considerations are likely to have major implications for spatial planning, and in particular, for the location, organisation and provision of public facilities and public services, private sector services, as well as the provision and design and spatial layout of housing and infrastructure. Moreover, these impacts are likely to differ markedly between different types of places according to the degree of urbanisation and the specific ageing profile of the local population.

# References


Abramsson, M., & Andersson, E. (2012). Residential Mobility Patterns of Elderly: Leaving the House for an Apartment. *Housing Studies*, *27*(5), 582-604. https://doi.org/10.1080/02673037.2012.697553

Andersson, E., & Abramsson, M. (2012). Changing Residential Mobility Rates of Older People in Sweden. *Ageing & Society*, *32*(6), 963-982. https://doi.org/10.1017/S0144686X11000808

Bell, M (1995). *Internal migration in Australia 1986–1991. Overview Report*. Australian Government Publishing Service.

Bernard, A., Bell, M., & Charles-Edwards, E. (2014). Life course transitions and the age profile of internal migration. *Population and Development Review, 40*(2), 213–239. https://doi.org/10.1111/j.1728-4457.2014.00671.x

Bijker, R.A., Haartsen, T., & Strijker, D. (2012). Migration to less-popular rural areas in the Netherlands: Exploring the motivations. *Journal of Rural Studies, 28*(4), 490-498. https://doi.org/ 10.1016/j.jrurstud.2012.07.003

Bloem, B., Van Tilburg, T.G., & Thomése, F.(2008). Residential Mobility in Older Dutch Adults: Influence of Later Life Events. *International Journal of Ageing and Later Life, 3*(1), 21-44. https://doi.org/10.3384/ijal.1652-8670.083121

Bureauvijftig. (2015). *Woonmonitor 2015: Landelijk onderzoek naar wensen en behoeften van ouderen ten aanzien van wonen* [National research into the wishes and needs of older adults with regard to housing]. Bureauvijftig.

Clark, W.A.V., & Dieleman, F.M. (1996). *Households and Housing: Choice and Outcomes in The Housing Market*. Center for Urban Policy Research.

DaVanzo, J. (1981). Repeat migration, information costs, and location-specific capital. *Population and Environment, 4*(1), 45-73. https://doi.org/10.1007/BF01362575

De Groot, C., Mulder, C.H., & Manting, D. (2011). Intentions to Move and Actual Moving Behaviour in the Netherlands. *Housing Studies, 26*(3), 307-328. https://doi.org/10.1080/02673037.2011.542094

Delfmann, H., Koster, S., McCann, P., & Van Dijk, J. (2014). Population change and new firm formation in urban and rural studies. *Regional Studies, 48*(6), 1034-1050. https://doi.org/10.1080/00343404.2013.867430

Den Dulk, C.J., Van de Stadt, H., & Vliegen, J.M. (1992). Een nieuwe maatstaf voor stedelijkheid: De omgevingsadressendichtheid [A new measure for degree of urbanisation: The address density of the surrounding area]. *Maandstatistiek van de Bevolking, 40,* 14-27.

European Union. (2012). *The 2012 Ageing Report: Economic and budgetary projections for the 27 EU Member States (2010-2060)*. (European Economy 2|2012).

Feijten, P., & Visser, P. (2005). Binnenlandse migratie: verhuismotieven en verhuisafstand. *Bevolkingstrends*, *53*(2e kwartaal), 75-81.

Fielding, T. (2012). *Migration in Britain*. Edward Elgar Publishing.

Fischer, P.A., & Malmberg, G. (2001). Settled people don't move: On life course and (im-) mobility in Sweden. *International Journal of Population Geography, 7*(5), 357-371. https://doi.org/10.1002/ijpg.230

Fokkema, C.M. (1996). *Residential Moving Behaviour of the Elderly: An Explanatory Analysis for the Netherlands* [Doctoral dissertation, VU University Amsterdam].

Goerres, A. (2007). Why are Older People more Likely to Vote? The Impact of Ageing on Electoral Turnout across Europe. *The British Journal of Politics and International Relations, 9*(1), 90-121. https://doi.org/10.1111/j.1467-856x.2006.00243.x

Haan, M., & Perks, T. (2008). The housing careers of older Canadians: An investigation using cycle 16 of the general social survey. *Canadian Studies in Population, 35*(2), 223-242. https://doi.org/10.25336/P6S32X

Haartsen, T. (2002). *Platteland: boerenland, natuurterrein of beleidsveld? Een onderzoek naar veranderingen in functies, eigendom en representaties van het Nederlandse platteland* [Countryside: farmland, nature area or policy field? An investigation into changes in functions, ownership and representations of the Dutch countryside] [Doctoral dissertation, University of Groningen].

Haas, W.H., & Serow, W.J. (2002). The baby boom, amenity retirement migration and retirement communities: Will the golden age of retirement continue? *Research on Aging, 24*(1), 150-164. https://doi.org/10.1177/0164027503024001009

Herbers, D.J., Mulder, C.H., & Mòdenes, J.A. (2014). Moving out of home ownership in later life: The influence of the family and housing careers. *Housing Studies*, *29*(7), 910-936. https://doi.org/10.1080/02673037.2014.923090

Hoj, J. (2011). *Improving the Flexibility of the Dutch Housing Market to Enhance Labour Mobility (*OECD Economics Department Working Papers No 833). OECD Publishing. https://doi.org/10.1787/5kgkdgfkxrr2-en

Hooimeijer, P. (2007). *Dynamiek in de derde leeftijd: De consequenties voor het woonbeleid* [Dynamics in life's third act: consequences for housing policy]. Ministerie van VROM.

Korpi, M., Clark, W.A.V., & Malmberg, B. (2011). The urban hierarchy and domestic migration: the interaction of internal migration, disposable income and the cost of living, Sweden 1993-2002. *Journal of Economic Geography, 11*(6), 1051-1077. https://doi.org/10.1093/jeg/lbq043

Kramer, C., & Pfaffenbach, C. (2009). Persistence preferred- on future residential (im)mobility among the generation 50plus. *ERDKUNDE, 63*(2), 161-172. https://doi.org/10.3112/erdkunde.2009.02.04

Kresl, P.K., & Ietri, D. (2010). *The Aging Population and the Competitiveness of Cities. Benefits to the Urban Economy*. Edward Elgar Publishing.

Litwak, E., & Longino, C.F., Jr. (1987). Migration patterns among the elderly: A developmental perspective. *The Gerontologist, 27*(3), 266–272. https://doi.org/10.1093/geront/27.3.266

Long, L. (1992). Changing residence comparative perspectives on its relationship to age, sex and marital status. *Population Studies, A Journal of Demography, 46*(1), 141-158. https://doi.org/10.1080/0032472031000146056

Longino, C.F., Jr., Bradley, D.E., Stoller, E.P., & Haas, W.H. (2008). Predictors of non-local moves among older adults: A prospective study. *The Journals of Gerontology: Series B, 63*(1), S7–S14. https://doi.org/10.1093/geronb/63.1.S7

Lord, S., & Luxembourg, N. (2007). The mobility of elderly residents living in Suburban Territories: Mobility experiences in Canada and France. *Journal of Housing For the Elderly, 20*(4), 103-121. https://doi.org/10.1300/J081v20n04_07

Malmberg, B., Abramsson, M., Magnusson, L., & Berg, T. (2004). *Från eget småhuss till allmännyttan* [From Owner Occupation to Municipal Rental Housing] (Report #10). Institute for Future Studies.

McCann, P. (2013). *Modern Urban and Regional Economics*. Oxford University Press.

Mulder, C. (1993). *Migration Dynamics. A Life Course Approach* [Doctoral dissertation, University of Amsterdam].

Myers, D., & Ryu, S. (2008). Aging baby boomers and the generational bubble: Foresight and mitigation of an epic transition. *Journal of the American Planning Association, 74*(1), 17-33. https://doi.org/10.1080/01944360701802006

OECD. (2005). *New Approaches to Rural Policy: Lessons from Around the World*. Organisation for Economic Co-Operation and Development. , https://doi.org/10.1787/9789264010130-en

OECD. (2008). *OECD Rural Policy Reviews: Netherlands*. Organisation for Economic Co-Operation and Development. https://doi.org/10.1787/19909284

OECD. (2013). *Regions at a Glance 2013*. Organisation for Economic Co-Operation and Development. https://doi.org/10.1787/19990057

Plane, D.A. (2012). What about aging in regional science? *The Annals of Regional Science, 48*, 469-483. https://doi.org/10.1007/s00168-011-0493-x

Plane, D.A., & Heins, F. (2003). Age articulation of U.S. inter-metropolitan migration. *The Annals of Regional Science, 37*, 107-130. https://doi.org/10.1007/s001680200114

Plane, D.A., Henrie, C.J., & Perry, M.J. (2005). Migration up and down the urban hierarchy and across the life course. *Proceedings of the National Academy of Sciences*, *102*, 15313-15318. https://doi.org/10.1073/pnas.0507312102

Plane, D.A., & Jurjevich, J.R. (2009). Ties That No Longer Bind? The Patterns and Repercussions of Age-Articulated Migration. *The Professional Geographer, 61*(1), 4-20. https://doi.org/10.1080/00330120802577558

Pope, N.D., & Kang, B. (2010). Residential Relocation in Later Life: A Comparison of Proactive and Reactive Moves. *Journal of Housing For the Elderly, 24*(2), 193-207 https://doi.org/10.1080/02763891003757122

Redfoot, D., Fienberg, L., & Houser, A. (2013). *The aging of the baby boom and the growing care gap: A look at future declines in the availability of family caregivers*. AARP Public Policy Institute.

Richards, J.L., & Rankaduwa, W. (2008). Housing Canada's Oldest-Old: Correlates of their residential status. *Journal of Housing For the Elderly, 22*(4), 376-403. https://doi.org/10.1080/02763890802458478

Rindfuss, R.R. (1991). The young adult years: Diversity, structural change, and fertility. *Demography, 28*(4), 493–512. https://doi.org/10.2307/2061419

Rogers, A., & Castro, L. (1981). Age patterns of migration: cause specific profiles. In A. Rogers (ed), *Advances in Multiregional Demography. International Institute for Applied Systems Analysis* (pp 125-159). International Institute for Applied Systems Analysis.

Rogers, A., Raquillet, R., & Castro, L.J. (1978). Model migration schedules and their applications. *Environment and Planning A: Economy and Space, 10*(5), 475-502 https://doi.org/10.1068/a100475

Rossi, P. (1955). *Why families move: A study in the social psychology of urban residential mobility*. The Free Press.

Rowland, D.T. (1979). *Internal Migration in Australia*. Australian Bureau of Statistics.

Serow, W.J., Friedrich, K., & Haas, W.H. (1996). Residential relocation and regional redistribution of elderly in the USA and Germany. *Journal of Cross-Cultural Gerontology, 11*, 293-306. https://doi.org/10.1007/BF00115797

Statistics Netherlands. (2015, November). *Statline*. Statistics Netherlands. http://statline.cbs.nl

Steenbekker, A., Simon, C., Vermeij, L., & Spreeuwers, W.J. (2008). *Het platteland van alle Nederlanders. Hoe Nederlanders het platteland zien en gebruiken* [The countryside of all Dutch people. How the Dutch see and use the countryside]. Sociaal en Cultureel Planbureau.

Systeem woningvoorraad. (2015, November). *Stand woningvoorraad 2015*. Ministerie van Binnenlandse Zaken en Koninkrijksrelaties. https://syswov.datawonen.nl/

Van Ham, M., & Hooimeijer, P. (2009). Regional Differences in Spatial Flexibility: Long Commutes and Job Related Migration Intentions in the Netherlands. *Applied Spatial Analysis and Policy, 2*(2), 129-146. https://doi.org/10.1007/s12061-008-9016-2

Van Leuvesteijn, M., & Koning, P. (2004). The effect of home-ownership on labor mobility in the Netherlands. *Journal of Urban Economics, 55*(3), 580-596. https://doi.org/10.1016/j.jue.2003.12.001

Van Ommeren, J.N. (1996). *Commuting and relocation of jobs and residences* [Doctoral dissertation, VU University Amsterdam].

Van der Pers, M., Kibele E., & Mulder, C.H. (2015). Intergenerational proximity and the residential relocation of older people to care institutions and elsewhere. *Ageing & Society, 35*(7), 1429-1456. https://doi.org/10.1017/S0144686X14000300

Van der Vlist, A.J. (2001). *Residential mobility and commuting* [Doctoral dissertation, VU University Amsterdam].

Vandevyvere, W., & Zenthöfer, A. (2012). *The housing market in the Netherlands* (Economic Papers No. 457). European Commission.

Venhorst, V.A., Van Dijk, J., & Van Wissen, J.L.G. (2011). An analysis of trends in spatial mobility of Dutch graduates. *Spatial Economic Analysis, 6*(1), 57-82. https://doi.org/10.1080/17421772.2010.540033

Warnes, A.M. (1992a). Migration and the life course. In A.G. Champion & A.J. Fielding (eds), *Migration processes and patterns, Vol. 1: research progress and prospects* (pp 175-187). Belhaven Press.

Warnes, A.M. (1992b). Age-related variation and temporal change in elderly migration. In A. Rogers (ed), *Elderly Migration and Population Redistribution* (pp 35–57). Belhaven Press.

Whisler, R.L., Waldorf, B.S., Mulligan, G.F., & Plane, D.A. (2008). Quality of life and the migration of the college educated: A life-course approach. *Growth and Change, 39*(10), 59–94. https://doi.org/10.1111/j.1468-2257.2007.00405.x

Wilson, T. (2014). The impact of education-bound mobility on inter-regional migration age profiles in Australia. *Applied Spatial Analysis and Policy, 8*, 371-391. https://doi.org 10.1007/s12061-014-9124-0

# Chapter 3

## LATER-LIFE MIGRATION IN THE NETHERLANDS: PROPENSITY TO MOVE AND RESIDENTIAL MOBILITY

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# Abstract

As the populations age, there is a growing potential for later-life migration. In this study, the residential moving behaviour of older adults in the Netherlands is examined. On the basis of pooled data from the Housing Research Netherlands (HRN) survey, we were able to reveal which factors are likely to influence considerations about moving and actual mobility. The results support the premise that residential mobility decreases with age. The strongest predictors of residential mobility were factors associated with the dwelling, while the neighbourhood, particularly the extent of social cohesiveness, played an substantial role in explaining the older adults' propensity to move.



Key words: Older adults, Residential mobility, Propensity to move

# 3.1. Introduction



In the upcoming decades, the age structure of the EU population is projected to change dramatically. The population aged 65 years and above will increase markedly, from 87.5 million in 2010 to 152.6 million in 2060 in the EU. The number of older adults aged 80 and above is expected to almost triple, rising from 23.7 million in 2010 to 62.4 million in 2060 (European Union, 2012). Even though population ageing is a well-known phenomenon and challenge in the EU, it is not exclusive to Europe. Similar demographic trends, to varying degrees, are occurring in other parts of the world (e.g. Conway & Houtenville, 2003; King & Newbold, 2009).

As the populations of western societies age, there is a growing potential for later-life migration, which is defined here as the residential mobility of persons aged 55 or over. From previous research it is known that migration propensities vary greatly over the life course (see: De Groot et al., 2011; Geist & McManus, 2008; Michielin & Mulder, 2008; Millington, 2000; Mulder, 2007). Young adults, for example, contribute to a large share of all migration. Older adults, on the other hand, are known to reside in the same place for long periods of time. Even though the migration propensity of older people is considered to be relatively low, the large absolute numbers that these cohorts represent indicate that their migration decisions are likely to have an impact on spatial structures (Andersson & Abramsson, 2012; Kramer & Pfaffenbach, 2009).

Many of the key mechanisms influencing why younger people decide to move cannot be applied to older adults (Sommers & Rowell, 1992). It has been argued that the wish to improve one's housing situation is less strong for older people and that some reasons for relocating, such as family growth or career opportunities, simply occur less frequently in comparison with younger adults (Hansen & Gottschalk, 2006). Not only motives but also destinations vary with age. Young people typically migrate to urban destinations, while counter-urban migration streams often have a overrepresentation of older adults (Plane & Jurjevich, 2009). This mobility pattern has not only been found in the USA but also in various studies in Europe (see: De Jong et al., 2016; Friedrich & Warnes, 2000; Lindgren, 2003; Lundholm, 2012; Stockdale, 2006; Vollet et al., 2005).

In this study, the residential moving behaviour of older adults in the Netherlands is examined by analysing which factors are likely to influence considerations about moving and actual mobility. This paper will first discuss the theoretical frameworks which have been applied to the residential mobility of older adults. Next, several models concerning the behaviour of the Dutch older adults are presented and the paper will conclude with some suggestions for future research.

## 3.2. Residential mobility

In general, two of the most influential theoretical perspectives on residential mobility are the life-cycle and life course models (Atkins, 2018). In the life-cycle model residential mobility is a functional response to major life transitions, particularly family transitions (Clark & Withers, 2002), such as cohabitation, the transition to parenthood, and changes in household size. Residential mobility is seen as the mechanism that brings families' housing in line with their residential needs (Rossi, 1955). From a life-cycle perspective, the motivations for relocation are broadly applicable and predictable, suggesting a uniform trajectory of residential mobility rates throughout adulthood (Geist & McManus, 2008). As opposed to the life-cycle approach, the life course model has been used to explain the dynamic nature of many households transitions (Bailey, 2009; Mulder & Hooimeijer, 1999), and emphasizes the variation in the timing and sequencing of life events (Geist & McManus, 2008).

According to the Press-Competence model by Lawton & Nahemow (1973), there is a need for a fit between the personal competences and environmental conditions. While this assumption holds true for every age group, it gains importance in older age since older adults are particularly sensitive to the interchange between person and environment. From this perspective, deteriorating competencies can lead to incompatibility between the individual and their living arrangement (Pope & Kang, 2010), possibly resulting in extreme stress and burden.

Influenced by the Press-Competence Model, Wiseman (1980), developed the Behavioural Model of Elderly Migration. This framework argues that older people are triggered by various factors whereby they evaluate their residential satisfaction and consider a possible move (Smetcoren et al., 2017). Triggering events can be either push or pull factors that encourage older adults to consider relocation. While push factors can trigger a disconnect between the older person and their current living arrangement, pull factors include apparent benefits of relocating (Weeks et al., 2013).

Lastly, the lifespan developmental framework of migration of Litwak and Longino (1987) identifies a three-stage classification of mobility associated with later life. The first stage is motivated by a desire for amenities and comfort and tends to occur in early retirement (Clark et al., 2003; Haas & Serow, 1993). Here, amenity migration is not just associated with the assets of the natural environment, but also includes quality of housing, transport, and social services (Davies & James, 2011). The second stage occurs with more advanced age and the onset of disabilities and/or worsening health. When older adults become less able to manage everyday tasks, older adults often move closer to children or other family

members able to help with care (Pope & Kang, 2010). Finally, when family caregivers are no longer able to provide the appropriate level of support, a third move is seen into institutional care (Duncombe et al., 2003).

3.2.1. Literature review

Within the literature, the residential mobility of older adults is an established field of enquiry, attracting more interest in light of rapid population ageing. Many studies of residential moving behaviour of older adults adopt a life course approach, emphasizing that life events create disequilibrium and hence motivate relocation (see: Bloem et al., 2008; Clark, 2013). Such events are often considered to constitute mobility triggers since an individual has to move to resolve the sudden occurrence of disequilibrium (Michielin & Mulder, 2008). For instance, retirement (Bures, 1997; King et al., 2000), an 'empty nest' (Bures, 2009; Wulff et al., 2010), widowhood (Bonnet et al., 2010), and the worsening of health (Pope & Kang, 2010) are all known to trigger residential mobility in old age.



With regard to the person-environment fit, several studies have demonstrated an increasing preference for relocation due to a poor housing conditions. For example, two Australian studies found that older people consider changing residence due to a desire to downsize their housing (Stimson & McCrea, 2004, Judd et al., 2014). Other possible stress-inducing factors include: stairs and steps inside and outside the dwelling, and difficulties with housekeeping (e.g. cleaning) and/or maintenance (e.g. Erickson et al., 2006; Han & Kim, 2017; Hansen & Gottschalk, 2006; Tyvimaa & Kemp 2011; Weeks et al., 2012). Equally, a study by Hillcoat-Nallétamby and Ogg (2014) revealed that dislikes concerning the dwelling and neighbourhood environments lead to a higher probability of older adults wishing to move. Additionally, neighbourhoods with a poor physical environment or high rates of crime are found to contribute to feelings of insecurity in old age (De Donder, 2001; Smith, 2009). In 2011 Byrnes found that moving to a pleasant neighbourhood can be an escape from harsh (urban) living conditions that do not match the needs of older residents. Lastly, a lack of services counts for a relocation trigger among older adults, especially if public transportation is poorly organized (Tyvimaa & Kemp, 2011).

While most studies cite a move for amities as an important pull factor, data on geographical patterns of internal elderly migration have shown that older adults are more likely to leave rather than to move to big cities (Fokkema et al., 1996). Moreover, Walters (2002) demonstrated that larger places and those with high population density have low in-migration rates for older adults. Walters (2002) speculates that older adults may not place as much value on the type of retail and service opportunities available in the larger, more urbanised municipalities, or the preference for amenities are simply outweighed by their dislike of the traffic, congestion, pollution, and other unattractive

characteristics often associated with large cities. Though cities can be disabling and threatening environments at any age, older adults may experience a variety of pressures reflecting physiological and cognitive vulnerabilities; changing patterns of spatial use; and reliance upon community and neighbourhoods relationships for support (e.g. Buffel et al., 2012; Mitchell et al., 2003; Wight et al., 2009).

So far, much research of the literature discussed before has focused either on older adults' motives for considering moving or on motives for having moved. The purpose of this paper is to reveal which factors influence considerations about moving and actual mobility both. This is achieved through two separate analyses: one on residential mobility, and one the propensity to move.

## 3.3. Methods

### 3.3.1. Data

The data basis of the analyses has been the Housing Research Netherlands (HRN) survey. The survey is set up to provide more insights into the housing situation of the Dutch population and their living requirements and needs. Elements covered include the composition of households, the dwelling and living environment, housing costs, living requirements, and residential mobility. The survey is carried out every 3 years and is a joint co-operation between the Ministry of the Interior and Kingdom Relations (BZK) and Statistics Netherlands.

The HRN survey is a sample survey. The sample is taken from all non-institutionalized Dutch residents who are 18 years or older and registered with their local municipality. From this group, a stratified sample is taken according to the design of the survey, with nationwide coverage of municipalities. The survey is conducted according to a 'mixed mode' design (i.e. web, telephone, and personal interviewing).

In the HRN survey residential mobility is a relatively rare event, particularly among older adults. For the purpose of this study, we pooled cross-section data of the HRN survey from 2006 to 2012. Pooling multiple waves of survey data, provided us with enough data to investigate the relocation behaviour of Dutch older adults. The residential mobility of older adults is modelled by means of a binary logit model. Logit analysis is the appropriate multivariate technique if the single dependent variable is dichotomous and therefore nonmetric.

3.3.2. Dependent and independent variables

The first dependent variable in the analysis is 'residential mobility'. This variable is dichotomous: equal to one in the event of a move in the last two years and zero otherwise. In total 6.7% of our sample of older adults indicated to have moved. The second dependent variable is 'propensity to move', and was based on the question whether the respondent wants to move in the upcoming two years. For statistical reasons, we merged four categories into two categories. This dependent variable is equal to one when there is a tendency to move in the upcoming two years and zero otherwise. In our sample 14.8% of the respondents aged 55 years or older reported a desire to move.

The independent variables were chosen on the basis of former research studying migration and residential mobility. Inspired by Speare (1974), Fokkema et al. (1996), and Hanssen and Gottschalk (2006), the independent variables of the analyses are classified into three categories:

- individual characteristics
- dwelling characteristics
- neighbourhood characteristics

We controlled for most of the standard demographic and socio-economic factors known to affect migration: age (categorical), gender (dichotomous), the presence of a partner (dichotomous), educational level (categorical), health (categorical), and retired (dichotomous). We rescaled the continuous variable 'age' to three categories: the 'pre-elderly' (age: 55-64), the 'young-elderly' (age: 65-74), and the 'old-elderly' (age: 75 years and older). This distinction is relevant in order to capture the potentially divergent migration decisions older and younger older adults make (e.g. Conway & Houtenville, 2003). The respondents' educational level refers to the highest completed level of education, categorised into the three categories: high, middle and low. Instead of one high school system, like for example, the USA, the Dutch educational system has different levels of high school. This is why Dutch research in the social sciences often refers to levels rather than years of education (e.g. Bolt et al., 2008; Bolt & Van Kempen, 2003; Schaake et al., 2010). The category 'high education' comprises higher vocational training (in Dutch 'HBO') and university education (in Dutch 'WO'). The category 'middle education' is a combination of middle vocational training (in Dutch 'MBO') and higher levels of high school (in Dutch 'HAVO' or 'VWO'). The category of 'low education' comprises (un)completed elementary school and lower levels of high school. Health is self-assessed measure, categorised into three categories: positive evaluation, moderate evaluation and a negative evaluation.

We added two factors: car-ownership (dichotomous) and self-reliance (categorical). Car-ownership is used as an indicator of unimpeded mobility. The factor self-reliance is based on several questions concerning Activities of Daily Living (ADLs) and Instrumental Activities of Daily Living (IADLs). Basic ADLs are necessary for fundamental functioning, such as bathing and moving around the house. While IADLs are not necessary for fundamental functioning, they do let an individual live independently in a community. Examples of IADLs are shopping and maintaining the house. The respondents were asked to rate their competence in eight activities, such as the ability to stand for 30 min, to climb stairs, and bathing.

Dwelling properties include ownership (dichotomous), type of dwelling (dichotomous), residential crowding (i.e. number of persons per room; categorical), internal accessibility of the dwelling (dichotomous), external accessibility of the dwelling (dichotomous), the presence of a garden (dichotomous), whether the dwelling is designated towards older adults only (i.e. purpose-built accommodation; dichotomous), and whether the individual stated to be attached to the dwelling (dichotomous). Residential crowding is used as an indicator for the size of the dwelling. Internal access is based on the location of the living room, the kitchen, the toilet, the bathroom, and at least one bedroom. The internal access is deemed suitable when these so-called 'primary spaces' are located on a single floor (as opposed to multiple floors). The external access is considered suitable when the front door of the dwelling is accessible without having to climb any stairs.

Characteristics of the neighbourhood are the level of deprivation (categorical), level of nuisance (categorical), the level of cohesion (categorical), attachment to the neighbourhood (dichotomous), satisfaction with the amount of shops (dichotomous), and satisfaction with the amount of public transport (dichotomous). The levels of deprivation and nuisance are based on several questions concerning problems that could arise as the result of, for example, noise pollution and vandalism. The level of cohesion is measured on the basis of several propositions, such as: "People hardly know each other in this neighbourhood" and "I feel at home in this neighbourhood". The original continuous variables are rescaled to three levels: low, intermediate, and high.

We also included an indicator of the residential density to account for possible effects of degree of urbanisation. Residential density measures the concentration of dwellings in a given land area. In our dataset the average number of addresses per squared kilometre within a circle with a radius of one kilometre for each address within a given municipality is calculated (Den Dulk et al., 1992). Based on the class limits 2500, 1500, 1000 and 500 addresses per squared kilometre, the five levels of the Dutch urban hierarchy are depicted. Finally, we added a time dummy, 'Sample', to capture change over time and a region dummy to control for possible geographical effects.

Simple linear regressions were used to examine possible correlations between the explanatory variables. The results of these analyses were taken as a basis for including the variables in the binary logistic regression. In order to analyse the possible heterogeneity in factors likely to influence considerations about moving and actual mobility, we ran separate models for the three age categories.



# 3.4. Results

3.4.1. Residential mobility

A binary logistic regression was performed to assess the impact of a number of factors on the likelihood that respondents would report that they had moved in the last two years. The model contained forty independent variables, ranging from individual characteristics to characteristics of the living environment. The full model containing all independent variables was statistically significant, $\chi^2$ (40, $n$ = 49,943) = 3582.18, $p$ < 0.001, indicating that the model was able to distinguish between respondents who reported and did not report a move in the last two years. The model as a whole explained between 6.9% (Cox & Snell R square) and 19% (Nagelkerke R squared) of the variance in residential mobility, and correctly classified 99.9% of the cases. As shown in Table 3.1, the strongest predictor of having moved was 'senior housing', recording an odds ratio of 2.74. This indicated that respondents who are currently living in a dwelling assigned to older adults only were 2.7 times more likely to have moved in the last two years than those who did not move, controlling for all other factors in the model.

The odds ratio for older adults aged 75 and over was less than 1, indicating that they were in fact 0.36 times less likely to report having moved in the last two years than those who did not move, controlling for all other factors in the model. In addition, older adults aged 65 years or older are also found to be less likely to have moved than older adults aged between 55 and 64. As expected, higher educated older adults are more likely to have moved within the last two years. The ownership of a car has a negative effect on the likelihood of having moved. Lastly, older adults with moderate limitations, are more likely to have moved.

All characteristics related to the dwelling are found to be statistically significant. Aside from the strongest predictor, that is, 'senior housing', the second strongest predictor is 'apartment'. Recording an odds ratio of 2.19, indicating that respondents who are currently living in an apartment, were 2.2 times more likely to have moved in the last two years than those who did not move, controlling for all other factors in the model. In addition, those living in accessible homes (both internal as external) are more likely to have moved. The presence of a garden has a negative effect on the likelihood of having moved.

Table 3.1 The likelihood that respondents would report that they had moved in the last two years

| | Whole sample | | | Pre-elderly | |
|---|---|---|---|---|---|
| | B | Sig. | Exp(B) | B | Sig. |
| **Individual characteristics** | | | | | |
| Age | | | | | |
| 55-64 | ref. | | | - | |
| 65-74 | -0.392 | *** | 0.676 | - | |
| 75+ | -1.022 | *** | 0.360 | - | |
| Gender | | | | | |
| Female | ref. | | | ref. | |
| Male | -0.047 | | 0.954 | -0.046 | |
| Partner | | | | | |
| No partner | ref. | | | ref. | |
| Partner | -0.060 | | 0.941 | -0.212 | *** |
| Educational level | | | | | |
| Low | ref. | | | ref. | |
| Middle | 0.175 | *** | 1.191 | 0.169 | ** |
| High | 0.390 | *** | 1.477 | 0.405 | *** |
| Car ownership | | | | | |
| No | ref. | | | ref. | |
| Yes | -0.082 | *** | 0.921 | -0.081 | ** |
| Self-reliance | | | | | |
| No limitations | ref. | | | ref. | |
| Slight limitations | -0.074 | | 0.928 | 0.191 | |
| Moderate limitations | 0.134 | ** | 1.144 | 0.174 | |
| Severe limitations | 0.017 | | 1.018 | 0.107 | |
| Subjective health | | | | | |
| Positive evaluation | ref. | | | ref. | |
| Moderate evaluation | -0.042 | | 0.959 | 0.008 | |
| Negative evaluation | -0.157 | | 0.855 | 0.019 | |
| Retired | | | | | |
| No | ref. | | | ref. | |
| Yes | -0.043 | | 0.958 | 0.017 | |
| **Dwelling characteristics** | | | | | |
| Tenure | | | | | |
| Rental | ref. | | | ref. | |
| Owner occupied | -0.421 | *** | 0.656 | -0.367 | *** |

| Pre-elderly | | | Young-elderly | | | Old-elderly | |
|---|---|---|---|---|---|---|---|
| Exp(B) | B | Sig. | Exp(B) | B | Sig. | Exp(B) |
| | | | | | | |
| | - | | | - | | |
| | - | | | - | | |
| | - | | | - | | |
| | ref. | | | ref. | | |
| 0.955 | -0.076 | | 0.927 | -0.045 | | 0.956 |
| | ref. | | | ref. | | |
| 0.809 | -0.032 | | 0.968 | 0.115 | | 1.122 |
| | ref. | | | ref. | | |
| 1.184 | 0.133 | | 1.142 | 0.253 | ** | 1.287 |
| 1.500 | 0.309 | *** | 1.362 | 0.470 | *** | 1.600 |
| | ref. | | | ref. | | |
| 0.922 | -0.102 | ** | 0.903 | -0.030 | | 0.970 |
| | ref. | | | ref. | | |
| 1.210 | -0.043 | | 0.957 | -0.500 | *** | 0.606 |
| 1.190 | 0.182 | | 1.199 | 0.004 | | 1.004 |
| 1.113 | 0.285 | | 1.330 | -0.145 | | 0.865 |
| | ref. | | | ref. | | |
| 1.008 | -0.015 | | 0.985 | -0.212 | ** | 0.809 |
| 1.020 | -0.302 | | 0.739 | -0.487 | ** | 0.614 |
| | ref. | | | ref. | | |
| 1.017 | -0.209 | * | 0.811 | 0.045 | | 1.046 |
| | | | | | | |
| | ref. | | | ref. | | |
| 0.693 | -0.385 | *** | 0.680 | -0.607 | *** | 0.545 |

Table 3.1 Continued

| | Whole sample | | | Pre-elderly | |
|---|---|---|---|---|---|
| | B | Sig. | Exp(B) | B | Sig. |
| Type | | | | | |
| House | ref. | | | ref. | |
| Apartment | 0.786 | *** | 2.194 | 0.653 | *** |
| Crowding | | | | | |
| Crowded | 0.424 | | 1.527 | 0.435 | |
| Not crowded | 0.425 | *** | 1.530 | 0.419 | *** |
| Spacious | ref. | | | ref. | |
| Internal accessibility | | | | | |
| Not suitable | ref. | | | ref. | |
| Suitable | 0.603 | *** | 1.828 | 0.515 | *** |
| External accessibility | | | | | |
| Not suitable | ref. | | | ref. | |
| Suitable | 0.227 | *** | 1.255 | 0.235 | *** |
| Garden | | | | | |
| No garden | ref. | | | ref. | |
| Garden | -0.442 | *** | 0.643 | -0.482 | *** |
| Senior housing | | | | | |
| No Senior housing | ref. | | | ref. | |
| Senior housing | 1.007 | *** | 2.737 | 1.050 | *** |
| Attachment | | | | | |
| No attachment | ref. | | | ref. | |
| Attachment | -0.320 | *** | 0.726 | -0.336 | *** |
| **Neighbourhood characteristics** | | | | | |
| Deprivation | | | | | |
| Low | 0.697 | *** | 2.007 | 0.748 | *** |
| Intermediate | 0.247 | ** | 1.280 | 0.273 | ** |
| High | ref. | | | ref. | |
| Nuisance | | | | | |
| Low | 0.370 | *** | 1.448 | 0.493 | *** |
| Intermediate | 0.000 | | 1.000 | 0.219 | |
| High | ref. | | | ref. | |
| Cohesion | | | | | |
| Low | -0.201 | | 0.818 | -0.058 | |
| Intermediate | -0.184 | *** | 0.832 | -0.239 | *** |
| High | ref. | | | ref. | |

| Pre-elderly | | | Young-elderly | | | Old-elderly | |
|---|---|---|---|---|---|---|---|
| Exp(B) | B | Sig. | Exp(B) | B | Sig. | Exp(B) |
| | ref. | | | ref. | | |
| 1.921 | 0.781 | *** | 2.184 | 0.947 | *** | 2.578 |
| 1.545 | 0.336 | | 1.399 | 0.434 | | 1.543 |
| 1.520 | 0.492 | *** | 1.636 | 0.343 | *** | 1.410 |
| | ref. | | | ref. | | |
| | ref. | | | ref. | | |
| 1.673 | 0.686 | *** | 1.985 | 0.964 | *** | 2.621 |
| | ref. | | | ref. | | |
| 1.265 | 0.289 | *** | 1.335 | 0.131 | | 1.140 |
| | ref. | | | ref. | | |
| 0.618 | -0.485 | *** | 0.616 | -0.340 | *** | 0.712 |
| | ref. | | | ref. | | |
| 2.858 | 0.955 | *** | 2.599 | 0.976 | *** | 2.655 |
| | ref. | | | ref. | | |
| 0.715 | -0.200 | * | 0.819 | -0.440 | *** | 0.644 |
| | | | | | | |
| 2.113 | 0.697 | *** | 2.007 | 0.610 | ** | 1.841 |
| 1.314 | 0.108 | | 1.115 | 0.437 | | 1.548 |
| | ref. | | | ref. | | |
| 1.637 | 0.039 | | 1.040 | 0.651 | | 1.918 |
| 1.245 | -0.329 | | 0.720 | -0.153 | | 0.858 |
| | ref. | | | ref. | | |
| 0.943 | -0.358 | | 0.699 | -0.370 | | 0.691 |
| 0.787 | -0.178 | ** | 0.837 | -0.051 | | 0.950 |
| | ref. | | | ref. | | |

Table 3.1 Continued

| | Whole sample | | | Pre-elderly | |
|---|---|---|---|---|---|
| | B | Sig. | Exp(B) | B | Sig. |
| Attachment | | | | | |
| Not attached | ref. | | | ref. | |
| Attached | -0.602 | *** | 0.547 | -0.534 | *** |
| Satisfaction shops | | | | | |
| Not satisfied | ref. | | | ref. | |
| Satisfied | 0.147 | *** | 1.158 | 0.034 | |
| Satisfaction public transport | | | | | |
| Not satisfied | ref. | | | ref. | |
| Satisfied | 0.039 | | 1.040 | -0.040 | |
| Urban hierarchy | | | | | |
| Extremely urbanised | ref. | | | ref. | |
| Strongly urbanised | 0.236 | *** | 1.266 | 0.162 | * |
| Moderately urbanised | 0.450 | *** | 1.569 | 0.291 | *** |
| Hardly urbanised | 0.464 | *** | 1.591 | 0.227 | * |
| Not urbanised | 0.583 | *** | 1.791 | 0.358 | *** |
| Region | | | | | |
| North | 0.045 | | 1.046 | 0.126 | |
| East | -0.037 | | 0.964 | 0.037 | |
| West | -0.024 | | 0.976 | -0.033 | |
| South | ref. | | | ref. | |
| Sample | | | | | |
| WoON2006 | 0.252 | *** | 1.286 | 0.283 | *** |
| WoON2009 | 0.385 | *** | 1.470 | 0.418 | *** |
| WoON2012 | ref. | | | ref. | |
| Constant | -4.067 | *** | 0.017 | -3.881 | *** |
| Valid *n* | 49,943 | | | 21,594 | |
| -2 Log likelihood | 18,981 | | | 8,523 | |
| Nagelkerke R Squared | 0.190 | | | 0.165 | |

***Significant at 0.01 level; **significant at 0.05 level; *significant at 0.1 level.

| Pre-elderly | | | Young-elderly | | | Old-elderly |
|---|---|---|---|---|---|---|
| Exp(B) | B | Sig. | Exp(B) | B | Sig. | Exp(B) |
| | ref. | | | ref. | | |
| 0.586 | -0.662 | *** | 0.516 | -0.676 | *** | 0.508 |
| | ref. | | | ref. | | |
| 1.034 | 0.226 | ** | 1.254 | 0.265 | ** | 1.303 |
| | ref. | | | ref. | | |
| 0.960 | 0.078 | | 1.081 | 0.130 | | 1.139 |
| | ref. | | | ref. | | |
| 1.176 | 0.237 | ** | 1.268 | 0.353 | *** | 1.424 |
| 1.337 | 0.549 | *** | 1.732 | 0.591 | *** | 1.806 |
| 1.255 | 0.590 | *** | 1.803 | 0.748 | *** | 2.112 |
| 1.431 | 0.726 | *** | 2.066 | 0.775 | *** | 2.170 |
| 1.134 | 0.094 | | 1.098 | -0.246 | | 0.782 |
| 1.038 | -0.070 | | 0.933 | -0.162 | | 0.851 |
| 0.967 | 0.033 | | 1.034 | -0.100 | | 0.905 |
| | ref. | | | ref. | | |
| 1.326 | 0.238 | ** | 1.269 | 0.213 | ** | 1.237 |
| 1.519 | 0.391 | *** | 1.479 | 0.296 | *** | 1.345 |
| | ref. | | | ref. | | |
| 0.021 | -4.303 | *** | 0.014 | -5.780 | *** | 0.003 |
| | 15,770 | | | 12,579 | | |
| | 5,816 | | | 4,544 | | |
| | 0.215 | | | 0.224 | | |

Older adults currently living in a non-urbanised municipality are more likely to have moved in the last two years than older adults currently living in a more urbanised municipality. The results further illustrate that older adults are more likely to have moved to areas with little deprivation, little nuisance, and a high level of cohesion. Older adults who have moved in the last two years, are less likely to be attached to their current dwelling and neighbourhood. The results further indicate that migrants are more likely to be satisfied with the shops available.

3.4.2. Age- articulated differences in residential mobility

To evaluate the possible differences between of older adults, we ran separate models for the 'pre-elderly', the 'young-elderly', and the 'old-elderly'. Here, we will only discuss the results that differ among the different age groups and/or differ from the results of the whole sample. Several factors on the likelihood that respondents would report that they had moved in the last two years, are more pronounced for the oldest age group. Particularly, when compared to the youngest age group in the model. The estimates on 'internal access' and 'apartment' are good examples of this.

Compared to those with a positive evaluation of their health, old-elderly with a moderate or negative evaluation of their health, are less likely to have moved. Note, that institutionalized older adults, that is, those living either in health care institutions or retirement and nursing homes, are excluded in the HRN survey. For the pre-elderly and young-elderly, on the other hand, (subjective) health is not a statistically significant factor explaining the likelihood of residential mobility.

Pre-elderly are more likely to have moved to areas with little deprivation, little nuisance, and a high level of social cohesion. For the young- and old-elderly nuisance and social cohesion do not seem to play a significant role in explaining their likelihood to have moved. However, they are more likely to be satisfied with shops available to them.

3.4.3. Propensity to move

A second binary logistic regression was performed to assess the impact of a number of factors on the likelihood that respondents would report that they would like to move in the upcoming two years. With the addition of the factor 'moved in the last two years', the model contained 41 independent variables, ranging from individual characteristics, to characteristics of the living environment. The full model containing all independent variables was statistically significant, $\chi^2$ (41, $n$ = 49,943) = 5259.45, p < 0.001, indicating that the model was able to distinguish between respondents who have a propensity to move and those who do not. The model as a whole correctly classified 98.7% of the cases, and explained between 10% (Cox & Snell R square) and 17.8% (Nagelkerke R squared) of

the variance in the propensity to move. As shown in Table 3.2, the strongest predictor of wanting to move was 'low cohesion', recording an odds ratio of 2.89. In other words: respondents who are currently living in a neighbourhood with a low levels of social cohesiveness were almost 3 times more likely to have a desire to move in the upcoming two years than those who do not, controlling for all other factors in the model.



With an odd ratio of 0.79 older adults aged 75 years or older are less likely to have a propensity to move, than people aged between 55 and 64. As expected, higher educated elderly are more likely to have a propensity to move. Older adults who experience health limitations, both from an objective and subjective point of view, are more likely to move in the upcoming years than elderly without any health limitations.

Not surprisingly, older adults who are currently living in a 'suitable dwelling' are less likely to have a propensity to move. This illustrated by the odds ratios for type, crowding, accessibility, and senior housing, which are all less than 1. The variables measuring a number of neighbourhood characteristics showed negative B-values. Indicating that neighbourhoods with (perceived) low levels of deprivation, low levels of nuisance, and high levels of cohesion are important keep factors for older adults. We observe that older adults originating from the Randstad, that is, the urbanised western part of the Netherlands, are slightly more likely to report a propensity to move. This is further illustrated by the positive B value for extremely urbanised areas within the urban hierarchy[1].

To capture possible changes over time, we included a time dummy in the model. Here we observe that, compared to cross-section data of the HRN survey 2006-2009, respondents in the sample of 2012 are more likely to report a wish to move. While this could be the result of a period effect, which arises because mobility is susceptible to the influence of external forces such as economic growth, it could also hint towards a possible cohort effect.

### 3.4.4. Age- articulated differences in the propensity to move

The effect of having a partner differs among the different age groups. Pre-elderly living with a partner are significantly less likely to report a propensity to move. Education does not have a significant effect for the older age groups, while self-reliance and subjective health have a higher impact on the likelihood that respondents report that they would like to move in the upcoming two years.

1 Note that we have changed the reference case for 'urban hierarchy' in the second model.

Table 3.2 The likelihood that respondents would report that they would like to move in the upcoming two years

| | Whole sample | | | Pre-elderly | |
|---|---|---|---|---|---|
| | B | Sig. | Exp(B) | B | Sig. |
| **Individual characteristics** | | | | | |
| Age | | | | | |
| 55-64 | ref. | | | - | |
| 65-74 | -0.032 | | 0.969 | - | |
| 75+ | -0.242 | *** | 0.785 | - | |
| Gender | | | | | |
| Female | ref. | | | ref. | |
| Male | 0.017 | | 1.018 | -0.009 | |
| Partner | | | | | |
| No partner | ref. | | | ref. | |
| Partner | -0.010 | | 0.990 | -0.136 | *** |
| Educational level | | | | | |
| Low | ref. | | | ref. | |
| Middle | 0.023 | | 1.024 | 0.095 | * |
| High | 0.121 | *** | 1.129 | 0.182 | *** |
| Car ownership | | | | | |
| No | ref. | | | ref. | |
| Yes | -0.025 | | 0.975 | 0.006 | |
| Self-reliance | | | | | |
| No limitations | ref. | | | ref. | |
| Slight limitations | 0.099 | | 1.105 | 0.116 | |
| Moderate limitations | 0.226 | *** | 1.253 | 0.239 | *** |
| Severe limitations | 0.386 | *** | 1.472 | 0.166 | |
| Subjective health | | | | | |
| Positive evaluation | ref. | | | ref. | |
| Moderate evaluation | 0.193 | *** | 1.213 | 0.073 | |
| Negative evaluation | 0.478 | *** | 1.613 | 0.282 | ** |
| Retired | | | | | |
| No | ref. | | | ref. | |
| Yes | 0.017 | | 1.017 | 0.018 | |
| Moved in last two years | | | | | |
| No | ref. | | | ref. | |
| Yes | -0.657 | *** | 0.518 | -0.573 | *** |

| Pre-elderly | | | Young-elderly | | | Old-elderly | |
|---|---|---|---|---|---|---|---|
| Exp(B) | B | Sig. | Exp(B) | B | Sig. | Exp(B) | |
| | - | | | - | | | |
| | - | | | - | | | |
| | - | | | - | | | |
| | ref. | | | ref. | | | |
| 0.991 | 0.088 | * | 1.092 | -0.163 | ** | 0.849 | |
| | ref. | | | ref. | | | |
| 0.873 | 0.021 | | 1.021 | 0.448 | *** | 1.564 | |
| | ref. | | | ref. | | | |
| 1.100 | 0.003 | | 1.003 | -0.138 | | 0.871 | |
| 1.199 | 0.052 | | 1.053 | 0.073 | | 1.076 | |
| | ref. | | | ref. | | | |
| 1.006 | -0.050 | | 0.951 | -0.038 | | 0.963 | |
| | ref. | | | ref. | | | |
| 1.123 | 0.056 | | 1.058 | 0.244 | ** | 1.277 | |
| 1.269 | 0.256 | *** | 1.292 | 0.265 | *** | 1.304 | |
| 1.181 | 0.244 | * | 1.276 | 0.529 | *** | 1.697 | |
| | ref. | | | ref. | | | |
| 1.076 | 0.174 | *** | 1.190 | 0.416 | *** | 1.516 | |
| 1.326 | 0.525 | *** | 1.690 | 0.798 | *** | 2.221 | |
| | ref. | | | ref. | | | |
| 1.019 | 0.042 | | 1.043 | 0.267 | | 1.306 | |
| | ref. | | | ref. | | | |
| 0.564 | -0.798 | *** | 0.450 | -0.950 | *** | 0.387 | |

Table 3.2 Continued

| | Whole sample | | | Pre-elderly | |
|---|---|---|---|---|---|
| | B | Sig. | Exp(B) | B | Sig. |
| **Dwelling characteristics** | | | | | |
| Tenure | | | | | |
| Rental | ref. | | | ref. | |
| Owner occupied | -0.055 | | 0.947 | 0.021 | |
| Type | | | | | |
| House | ref. | | | ref. | |
| Apartment | -0.186 | *** | 0.831 | -0.026 | |
| Crowding | | | | | |
| Crowded | 0.184 | | 1.202 | 0.206 | |
| Not crowded | -0.176 | *** | 0.838 | -0.129 | *** |
| Spacious | ref. | | | ref. | |
| Internal accessibility | | | | | |
| Not suitable | ref. | | | ref. | |
| Suitable | -0.218 | *** | 0.804 | -0.130 | ** |
| External accessibility | | | | | |
| Not suitable | ref. | | | ref. | |
| Suitable | -0.222 | *** | 0.801 | -0.185 | *** |
| Garden | | | | | |
| No garden | ref. | | | ref. | |
| Garden | 0.074 | | 1.077 | -0.017 | |
| Senior housing | | | | | |
| No Senior housing | ref. | | | ref. | |
| Senior housing | -0.662 | *** | 0.516 | -0.498 | *** |
| Attachment | | | | | |
| No attachment | ref. | | | ref. | |
| Attachment | -1.007 | *** | 0.365 | -1.086 | *** |
| **Neighbourhood characteristics** | | | | | |
| Deprivation | | | | | |
| Low | -0.207 | *** | 0.813 | -0.106 | |
| Intermediate | -0.052 | | 0.949 | -0.027 | |
| High | ref. | | | ref. | |
| Nuisance | | | | | |
| Low | -0.644 | *** | 0.525 | -0.675 | *** |
| Intermediate | -0.311 | *** | 0.733 | -0.260 | *** |
| High | ref. | | | ref. | |

| Pre-elderly | Young-elderly | | | Old-elderly | | |
|---|---|---|---|---|---|---|
| Exp(B) | B | Sig. | Exp(B) | B | Sig. | Exp(B) |
| | | | | | | |
| | ref. | | | ref. | | |
| 1.021 | -0.082 | | 0.921 | -0.142 | * | 0.867 |
| | ref. | | | ref. | | |
| 0.974 | -0.212 | ** | 0.809 | -0.324 | *** | 0.723 |
| 1.228 | -0.033 | | 0.967 | 0.712 | | 2.037 |
| 0.879 | -0.230 | *** | 0.794 | -0.290 | *** | 0.748 |
| | ref. | | | ref. | | |
| | ref. | | | ref. | | |
| 0.878 | -0.323 | *** | 0.724 | -0.301 | *** | 0.740 |
| | ref. | | | ref. | | |
| 0.831 | -0.266 | *** | 0.767 | -0.100 | | 0.905 |
| | ref. | | | ref. | | |
| 0.983 | 0.063 | | 1.065 | 0.234 | ** | 1.263 |
| | ref. | | | ref. | | |
| 0.608 | -0.690 | *** | 0.502 | -0.529 | *** | 0.589 |
| | ref. | | | ref. | | |
| 0.337 | -1.017 | *** | 0.362 | -0.802 | *** | 0.448 |
| | | | | | | |
| 0.900 | -0.305 | *** | 0.737 | -0.248 | * | 0.780 |
| 0.973 | -0.090 | | 0.914 | 0.014 | | 1.014 |
| | ref. | | | ref. | | |
| 0.509 | -0.547 | *** | 0.579 | -0.715 | *** | 0.489 |
| 0.771 | -0.359 | *** | 0.698 | -0.374 | * | 0.688 |
| | ref. | | | ref. | | |

Table 3.2 Continued

| | Whole sample | | | Pre-elderly | |
|---|---|---|---|---|---|
| | B | Sig. | Exp(B) | B | Sig. |
| Cohesion | | | | | |
| Low | 1.060 | *** | 2.886 | 1.021 | *** |
| Intermediate | 0.326 | *** | 1.386 | 0.293 | *** |
| High | ref. | | | ref. | |
| Attachment | | | | | |
| Not attached | ref. | | | ref. | |
| Attached | -0.712 | *** | 0.491 | -0.812 | *** |
| Satisfaction shops | | | | | |
| Not satisfied | ref. | | | ref. | |
| Satisfied | -0.104 | *** | 0.901 | -0.079 | |
| Satisfaction public transport | | | | | |
| Not satisfied | ref. | | | ref. | |
| Satisfied | -0.040 | | 0.961 | -0.073 | * |
| Urban hierarchy | | | | | |
| Extremely urbanised | 0.109 | * | 1.115 | 0.243 | *** |
| Strongly urbanised | 0.018 | | 1.019 | 0.135 | * |
| Moderately urbanised | 0.087 | | 1.091 | 0.207 | *** |
| Hardly urbanised | 0.036 | | 1.036 | 0.106 | |
| Not urbanised | ref. | | | ref. | |
| Region | | | | | |
| North | 0.038 | | 1.039 | 0.092 | |
| East | 0.105 | ** | 1.110 | 0.188 | *** |
| West | 0.158 | *** | 1.171 | 0.207 | *** |
| South | ref. | | | ref. | |
| Sample | | | | | |
| WoON2006 | -0.221 | *** | 0.802 | -0.253 | *** |
| WoON2009 | -0.145 | *** | 0.865 | -0.154 | *** |
| WoON2012 | ref. | | | ref. | |
| Constant | 0.500 | *** | 1.649 | 0.374 | ** |
| Valid *n* | 49,943 | | | 21,594 | |
| -2 Log likelihood | 35,882 | | | 16,683 | |
| Nagelkerke R Squared | 0.178 | | | 0.205 | |

***Significant at 0.01 level; **significant at 0.05 level; *significant at 0.1 level.

| Pre-elderly | Young-elderly | | | Old-elderly | | |
|---|---|---|---|---|---|---|
| Exp(B) | B | Sig. | Exp(B) | B | Sig. | Exp(B) |
| 2.777 | 1.046 | *** | 2.848 | 1.176 | *** | 3.241 |
| 1.340 | 0.352 | *** | 1.422 | 0.352 | *** | 1.422 |
| | ref. | | | ref. | | |
| | ref. | | | ref. | | |
| 0.444 | -0.647 | *** | 0.524 | -0.587 | *** | 0.556 |
| | ref. | | | ref. | | |
| 0.924 | -0.101 | | 0.904 | -0.160 | ** | 0.852 |
| | ref. | | | ref. | | |
| 0.930 | 0.004 | | 1.004 | -0.064 | | 0.938 |
| 1.275 | -0.054 | | 0.947 | 0.014 | | 1.015 |
| 1.144 | -0.125 | | 0.882 | -0.048 | | 0.954 |
| 1.229 | -0.088 | | 0.916 | 0.096 | | 1.101 |
| 1.112 | -0.093 | | 0.911 | 0.084 | | 1.087 |
| | ref. | | | ref. | | |
| 1.096 | -0.132 | | 0.876 | 0.186 | | 1.205 |
| 1.207 | -0.039 | | 0.962 | 0.141 | | 1.151 |
| 1.230 | 0.055 | | 1.056 | 0.201 | ** | 1.222 |
| | ref. | | | ref. | | |
| 0.777 | -0.305 | *** | 0.737 | -0.037 | | 0.964 |
| 0.857 | -0.137 | ** | 0.872 | -0.103 | | 0.902 |
| | ref. | | | ref. | | |
| 1.454 | 0.772 | *** | 2.165 | -0.427 | | 0.653 |
| | 15,770 | | | 12,579 | | |
| | 11,416 | | | 7,490 | | |
| | 0.166 | | | 0.149 | | |

Features of the dwelling and/or neighbourhoods have more or less the same impact among the different age groups. With the exception that pre-elderly are now the only age-group to be more likely to have a propensity to move when originating from an urbanised area. In addition, old-elderly are slightly, yet statistically significant, more likely to report a wish to move when they have a garden and/ or are not homeowners.

## 3.5. Discussion

In line with literature, the results presented in Table 3.1 confirm that mobility decreases with age (e.g. Bonnet et al., 2010; De Jong & Brouwer, 2012; Geist & McManus, 2008). It is interesting to observe that the factor 'retired' has no effect on the likelihood that older adults considering moving or an actual mobility. It is often thought that the traditional retirement age of 65 years is the peak age of elderly migration. As people approach their retirement age, they are potentially freer to choose their place of residence as they are 'freed' by labour market considerations and family constraints as children will have reached adulthood and personal independence from their parents (Bures, 2009). Yet, much of the late-life mobility actually seems to occur at an earlier age (e.g. Andersson & Abramsson, 2012; Bloem et al., 2008), making the event of retirement less meaningful in explaining the probability of moving and actual mobility.

The results further reveal that older adults who do not own a car, are more likely to have moved. Based on the literature you would expect that those who do not drive or own a car, are more likely to experience constrained mobility (e.g. Yen et al., 2012). In general, travel activity and daily activities outside the home tend to decrease with increasing age (e.g. Páez et al., 2007). However, people aged 60 years and older, make more trips today by car than comparable age-groups did 20-25 years ago (Hjorthol et al., 2010). Being able to drive has been described as enabling an active life, as it allows older adults to maintain their activities and participate in society (Berg et al., 2015). As such, not being able to drive, confines the activities of older adults and emphasizes the importance of the features and resources within the neighbourhoods (Berg et al., 2015). Therefore, those older people who do not own a car, could be motivated to move to a neighbourhood with the amenities desired. The results presented in Table 3.1 confirm that migrants are more likely to be satisfied with the shops available to them.

Corresponding to the Press-Competence Model, the results demonstrate that older adults relocate to a dwelling that better fits their (future) physical abilities, such as a dwelling designated to older adults only, an apartment, and/or a dwelling without a garden. This also holds true for the living environment, as older adults are more likely to have moved

to areas with little deprivation, little nuisance, and a high level of cohesion. Additionally, older adults are becoming more likely to shift from urbanised areas to less urbanised/ more rural environments. We suspect that this movement down the urban hierarchy may reflect the presence of urban disamenities, that offset the value of population-related amenities, as found previously by Walters (2002).

Previous research indicates that one of the strongest influences on place attachment is the length of residence in an area (Bonaiuto et al., 1999), explaining why the migrants experience a lower level of neighbourhoods attachment. It could also demonstrate that elderly migrants are not moving towards areas they have lived before and have positive sentiments (e.g. attachment) towards (as demonstrated by Lundholm, 2010; Stockdale et al., 2013).

Health limitations, both from an objective and subjective point of view, hardly play a role in the probability of an actual move migration. With the exception that old-elderly with a moderate or negative evaluation of their health, are less likely to have moved. Yet, older adults who experience health limitations, are more likely to report a propensity to move than older adults without any health limitations. It is not obvious whether good health prevents older adults from moving, or whether poor health makes older people move (Hansen & Gottschalk, 2006). Still, it seems that (the start of) health problems could strengthen the motivation to move.

Old-elderly pairs are more likely to have a desire to move. This is contrary to previous research, in which widowed and divorced older adults are found to have a higher probability of moving, especially at older ages (Bonnet et al., 2010; Herbers et al., 2014; Richards & Rankaduwa, 2008).

## 3.6. Conclusion

Using data from the Housing Research Netherlands (HRN) survey we examined the factors likely to influence considerations about moving and actual mobility. Our study affirms the familiar pattern of declining geographical mobility by age, first described by the life-cycle theory. The mobility decline for older adults is true for both the propensity to move and actual residential mobility.

Among our key findings, we show that later-life migrants seek the most suitable home-environments, while older adults with a propensity to move are more often motivated by unsatisfactory conditions in the current neighbourhood. This illustrated by the fact that those currently living in a purpose-built accommodation (senior housing), an apartment,

and/or accessible homes are more likely to have moved. The results further illustrate that older adults, particularly pre-elderly, are more likely to have moved to areas with little deprivation, little nuisance and a high level of cohesion. On the other hand, respondents who are currently living in a neighbourhood with a low levels of social cohesiveness, were almost 3 times more likely to have a desire to move in the upcoming two years than those who do not, controlling for all other factors in the model. The observations in our study also confirm that, with age older adults are more likely to shift from urbanised areas to less urbanised/ more rural environments.

Our study should be considered in the light of the following limitations, which could be addressed in further research. An important limitation is the cross-sectional nature of our dataset. Since we pooled cross-sectional waves of the HRN survey we were unable to disentangle possible age, period, or cohort effects. Both cohort and period effects are interwoven with the effects of age, which has long been recognized as having a systematic relationship with migration (Rogers & Castro, 1981). Age influences migration because of certain events in the life course that trigger mobility. A period effect is said to characterise migration if, as it changes over time, the change uniformly affects all age groups and cohorts. An economic recession which impacted housing decisions among all age groups, is an example of an effect which is obviously associated with a time period rather than with a particular cohort or with the process of ageing. A cohort effect is present if mobility differs systematically between cohorts over time after all ageing effects have been considered (Blanchard et al., 1977), such as the mobility behaviour of the 'baby boomer generation'. This is interesting from a policy point of view since there is evidence to suggest that this particular demographic cohort is significantly different economically, socially, and culturally from the preceding generations and will have different needs and expectations in their post-retirement years (Hugo, 2013; Pinnegar et al., 2012). It is likewise expected that they will exhibit 'unique migration patterns' that differ from previous generations (Bures, 1997).

Comparing existing and future cross-sectional waves of the HRN survey could potentially shed more light on housing decisions among different generations of older adults, though we strongly recommend performing an longitudinal study. Longitudinal data, in which older adults' housing decisions could be followed over time, could also demonstrate whether older adults' considerations about moving are good predictors of actual mobility (as previously demonstrated by De Groot et al., 2011; Hansen & Gottschalk, 2006)

Despite study limitations, findings from this study add to the literature on residential relocation in later life. The results of this study are useful in identifying factors associated with both considerations about moving and actual mobility. Moreover, these factors can

be divided into push and pull factors related to the dwelling and neighbourhood. Hence, helping to identify predictors of relocation. However, since it is well-known that older adults do not change residence to a large extent (Geist & McManus, 2008; Tatsiramos, 2006; Walters & Owen, 2000), further research into the factors differentiating later-life movers and non-movers would be beneficial in estimating the future housing needs within the context of an ageing population.

# References


Andersson, E., & Abramsson, M. (2012). Changing Residential Mobility Rates of Older People in Sweden. *Ageing and Society, 32*(6), 963–982. https://doi.org/10.1017/S0144686X11000808

Atkins, M.T. (2018). On the move, or staying put? An analysis of intrametropolitan residential mobility and ageing in place. *Population Space and Place, 24*(3), e2096. https://doi.org/10.1002/psp.2096

Bailey, A.J. (2009). Population geography: lifecourse matters. *Progress in Human Geography, 33*(3), 407-418. https://doi.org/10.1177/0309132508096355

Berg, J., Levin, L., Abramsson, M., & Hagberg, J.-E. (2015). "I want complete freedom": car use and everyday mobility among the newly retired. *European Transport Research Review, 7*(4), 1-10. https://doi.org/10.1007/s12544-015-0180-6

Blanchard, R.D., Bunker, J.B., & Wachs, M. (1977). Distinguishing aging, period and cohort effects in longitudinal studies of elderly populations. *Socio-Economic Planning Sciences, 11*(3), 137-146. https://doi.org/10.1016/0038-0121(77)90032-5

Bloem, B.A., Van Tilburg, T.G., & Thomése, G.C.F. (2008). Residential Mobility in Older Dutch Adults: Influence of Later Life Events. *International Journal of Ageing and Later Life, 3*(1), 21-44. https://doi.org/10.3384/ijal.1652-8670.083121

Bolt, G., & Van Kempen., R. (2003). Escaping Poverty Neighbourhoods in the Netherlands. *Housing, Theory and Society, 20*(4), 209–222. doi:10.1080/14036090310018941

Bolt, G., Van Kempen, R., & Van Ham, M. (2008). Minority Ethnic Groups in the Dutch Housing Market: Spatial Segregation, Relocation Dynamics and Housing Policy. *Urban Studies, 45*(7), 1359–1384. doi:10.1177/0042098008090678

Bonaiuto, M., Aiello, A., Perugini, M., Bonnes, M., & Ercolana, A.P. (1999). Multidimensional perception of residential environment quality and neighbourhood attachment in the urban environment. *Journal of Environmental Psychology, 19*(4), 331-352. https://doi.org/10.1006/jevp.1999.0138

Bonnet, C., Gobillon, L., & Laferrère, A. (2010). The effect of widowhood on housing and location choices. *Journal of Housing Economics, 19*(2), 94-108. https://doi.org/10.1016/j.jhe.2010.04.003

Buffel, T., Phillipson, C., & Scharf, T. (2012). Ageing in urban environments: Developing 'age-friendly' cities. *Critical Social Policy, 32*(4), 597-617. https://doi.org/10.1177/0261018311430457

Bures, R.M. (1997). Migration and the Life Course: Is there a Retirement Transition? *International Journal of Population Geography, 3*(2), 109-119. https://doi.org/10.1002/(sici)1099-1220(199706)3:2<109::aid-ijpg65>3.0.co;2-i

Bures, R.M. (2009). Moving the Nest: The Impact of Coresidential Children on Mobility in Later Midlife. *Journal of Family Issues, 30*(6), 837-851. https://doi.org/10.1177/0192513X09332349

Byrnes, M.E. (2011). Moving behaviours of very low-income inner-city older adults. *Senior Housing & Care Journal*, *19*(1), 35-47.

Clark, W.A.V. (2013). Life course events and residential change: Unpacking age effects on the probability of moving. *Journal of Population Research*, *30*(4), 319–334. https://doi.org/10.1007/s12546-013-9116-y

Clark, W.A.V., Deurloo, M.C., & Dieleman, F.M. (2003). Housing careers in the United States, 1969-93: Modelling the sequencing of housing states. *Urban Studies*, *40*(1), 143-160. https://doi.org/10.1080/0042098032000080211

Clark, W.A.V., & Withers, S.D. (2002). Disentangling the interaction of migration, mobility, and labor-force participation. *Environment and Planning A: Economy and Space, 34*(5), 923–945. https://doi.org/10.1068/a34216

Conway, K.S., & Houtenville, A.J. (2003). Out with the old, in with the old: a closer look at younger versus older elderly migration. *Social Science Quarterly, 84*(2), 309-328. https://doi.org/10.1111/1540-6237.8402006

Davies, A., & James, A. (2011). *Geographies of ageing: Social processes and the spatial unevenness of population ageing*. Ashgate Publishing.

De Donder, L. (2011). *Feelings of Unsafety in Later Life*. VUBpress.

De Groot, C., Mulder, C.H., & Manting, D. (2011). Intentions to Move and Actual Moving Behaviour in the Netherlands. *Housing Studies, 26*(3), 307-328. https://doi.org/10.1080/02673037.2011.542094

De Jong, P.A., & Brouwer, A.E. (2012). Residential mobility of older adults in the Dutch housing market: Do individual characteristics and housing attributes have an effect on mobility? *European Spatial Research and Policy, 19*(1), 33–47. https://doi.org/10.2478/v10105-012-0004-9

De Jong, P.A., Brouwer, A.E., & McCann, P. (2016). Moving up and down the urban hierarchy: Age-articulated interregional migration flows in the Netherlands. *Annals of Regional Science, 57*(1), 145-164. https://doi.org/10.1007/s00168-016-0772-7

Den Dulk C.J., Van de Stadt, H., & Vliegen J.M. (1992). Een nieuwe maatstaf voor stedelijkheid: De omgevingsadressendichtheid [A new measure for degree of urbanisation: The address density of the surrounding area]. *Maandstatistiek van de Bevolking, 40*,14-27.

Duncombe, W., Robbins, M., & Wolf, D.A. (2003). Place Characteristics and Residential Location Choice Among the Retirement-Age Population. *Journal of Gerontology, 58*(4), S244-52. https://doi.org//10.1093/geronb/58.4.s244

Erickson, M.A., Krout, J., Ewen, H., & Robison, J. (2006). Should I stay or should I go? Moving plans of older adults. *Journal of Housing for the Elderly, 20*(3), 5-22. https://doi.org/ 10.1300/J081v20n03_02

European Union. (2012). *The 2012 Ageing Report: Economic and budgetary projections for the 27 EU Member States (2010-2060)*. European Economy 2|2012.

Fokkema, T., Gierveld, K., & Nijkamp, P. (1996). Big cities, big problems: reasons for the elderly to move? *Urban Studies, 33*(2), 353-377. https://doi.org/10.1080/00420989650012059

Friedrich, K., & Warnes, T. (2000). Understanding contrasts in later life migration patterns: Germany, Britain and the United States. *ERDKUNDE, 54*(2), 108-120. https://doi.org/10.3112/erdkunde.2000.02.02

Geist C., & McManus, P.A. (2008). Geographical mobility over the life course: motivations and Implications. *Population, Space and Place, 14*(4), 283-303. https://doi.org/10.1002/psp.508

Haas, W.H., & Serow, W.J. (1993). Amenity retirement migration process: A model and preliminary evidence. *The Gerontologist, 33*(2), 212-220. https://doi.org/10.1093/geront/33.2.212

Han, J.H., & Kim, J.H. (2017). Variations in ageing in home and ageing in neighbourhood. *Australian Geographer, 48*(2), 255-272. https://doi.org/10.1080/00049182.2016.1240021

Hansen, E.B., & Gottschalk, G. (2006). What Makes Older People Consider Moving House and What Makes Them Move? *Housing Theory and Society, 23*(1), 35-54. https://doi.org/10.1080/14036090600587521

Herbers, D.J., Mulder, C.H., & Mòdenes, J.A. (2014). Moving out of home ownership in later life: The influence of the family and housing careers. *Housing Studies, 29*(7), 910-936. https://doi.org/10.1080/02673037.2014.923090

Hillcoat-Nallétamby, S., & Ogg, J.I.M. (2014). Moving beyond 'ageing in place': older people's dislikes about their home and neighbourhood environments as a motive for wishing to move. *Aging & Society, 34*(10), 1771-1796. https://doi.org/10.1017/S0144686X13000482

Hjorthol, R.J., Levin, L., & Sirin, A. (2010). Mobility in different generations of older persons: the development of daily travel in different cohorts in Denmark, Norway and Sweden. *Journal of Transport Geography, 18*(5), 624-633. https://doi.org/10.1016/j.jtrangeo.2010.03.011

Hugo, G. (2013). The changing demographics of Australia over the last 30 years. *Australasian Journal on Ageing, 32*(S2), 18-27. https://doi.org/10.1111/ajag.12113

Judd, B., Liu, E., Easthope, H., & Bridge, C. (2014). *Downsizing amongst older Australians* (Final Report No. 214). Australian Housing and Urban Research Institute.

King, K.M., & Newbold, K.B. (2009). Later-Life Migrations in Canada in 2001: A Multilevel Approach. *Population Aging, 2*(3-4), 161-181. https://doi.org/10.1007/s12062-010-9020-6

King, R., Warnes, T., & Williams, A. (2000). *Sunset Lives: British Retirement Migration to the Mediterranean*. Berg Publishers.

Kramer, C., & Pfaffenbach, C. (2009). Persistence preferred- on future residential (im)mobility among the generation 50plus. *ERDKUNDE, 63*(2), 161-172. https://doi.org/10.3112/erdkunde.2009.02.04

Lawton, M.P., & Nahemow, L. (1973). Ecology and the aging process. In C. Eisdorfer & M.P. Lawton (Eds.), *The psychology of adult development and aging* (pp. 619-674). American Physchological Association.

Lindgren, U. (2003). Who is the Counter-Urban Mover? Evidence from the Swedish Urban System. *International Journal of Population Geography, 9*(5), 399-418. https://doi.org/10.1002/ijpg.296

Litwak, E., & Longino, C.F., Jr. (1987). Migration Patterns Among the Elderly: A Developmental Perspective. *The Gerontological Society of America, 27*(3), 266-272. https://doi.org/10.1093/geront/27.3.266

Lundholm, E. (2012). Returning Home? Migration to Birthplace among Migrants after Age 55. *Population, Space and Place, 18*(1), 74-84. https://doi.org/10.1002/psp.645.

Michielin, F., & Mulder, C.H. (2008). Family events and the residential mobility of couples. *Environment and Planning A: Economy and Space, 40*(11), 2770-2790. https://doi.org/10.1068/a39374

Millington, J. (2000). Migration and age: the effect of age on sensitivity to migration stimuli. *Regional Studies, 34*(6), 521-533. https://doi.org/10.1080/00343400050085648

Mitchell, L., Burton, E., Raman, S., Blackman, T., Jenks, M., & Williams, K. (2003). Making the Outside World Dementia-Friendly: Design Issues and Considerations. *Environment and Planning B: Planning and Design, 30*(4), 605–632. https://doi.org/10.1068/b29100

Mulder, C.H. (2007). The family context and residential choice: a challenge for new research. *Population, Space and Place*, *13*(4), 265-278. https://doi.org/10.1002/psp.456

Mulder, C.H., & Hooimeijer, P. (1999). Residential relocations in the life course. In L. van Wissen, & P. Dykstra (Eds.), *Population issues: An interdisciplinary focus*. Springer Science.

Páez, A., Scott, D., Potoglou, P., & Newbold, K.B. (2007). Elderly mobility: demographic and spatial analysis of trip making in the Hamilton CMA, Canada. *Urban Studies, 44*(1), 123-146. https://doi.org/10.1080/00420980601023885

Pinnegar, S., Van den Nouwelant, R., Judd, B., & Randolph, B. (2012). *Understanding housing and location choices of retiring Australians in the 'baby boom' generation*. City Futures Research Centre, UNSW.

Plane, D.A., & Jurjevich, J.R. (2009). Ties That No Longer Bind? The Patterns and Repercussions of Age-Articulated Migration. *The Professional Geographer, 61*(1), 4-20. https://doi.org/10.1080/00330120802577558

Pope, N.D., & Kang, B. (2010). Residential Relocation in Later Life: A Comparison of Proactive and Reactive Moves. *Journal of Housing For the Elderly, 24*(2), 193-207. https://doi.org/10.1080/02763891003757122

Richards, J.L., & Rankaduwa, W. (2008). Housing Canada's Oldest-Old: Correlates of their residential status. *Journal of Housing For the Elderly, 22*(4), 376-403. https://doi.org/10.1080/02763890802458478

Rogers, A., & Castro, L.J. (1981). *Model Migration Schedules* (Vol. RR81-30). International Institute for Applied Systems Analysis.

Rossi, P.H. (1955). *Why Families Move: A Study in the Social Psychology of Urban Residential Mobility*. The Free Press.

Schaake, K., Burgers, J., & Mulder, C.H. (2010). Ethnicity at the Individual and Neighborhood Level as an Explanation for Moving Out of the Neighborhood. *Population Research and Policy Review, 29*(4), 593–608. https://doi.org/10.1007/s11113-009-9166-1.

Smetcoren, A.S., De Donder, L., Dury, S., De Witte, N., Kardol, T., & Verté, D. (2017). Refining the push and pull framework: identifying inequalities in residential relocation among older adults. *Ageing & Society, 37*(1), 90-112. https://doi.org/10.1017/S0144686X15001026

Smith, A. (2009). *Ageing in Urban Neighbourhoods*. Policy Press.

Sommers, D.G., & Rowell, K.R. (1992). Factors differentiating elderly residential movers and nonmovers: A longitudinal analysis. *Population Research and Policy Reviews, 11*(3), 249-262. https://doi.org/10.1007/BF00124940

Speare, A. Jr. (1974). Residential satisfaction as an intervening variable in residential mobility. *Demography, 11*(2), 173-188. https://doi.org/10.2307/2060556

Stimson, R.J., & McCrea, R. (2004). A Push-Pull Framework for Modelling the Relocation of retirees to a Retirement Village: The Australian experience. *Environment and Planning A: Economy and Space, 36*(8), 1451-1470. https://doi.org/10.1068/a36206

Stockdale, A. (2006). The Role of a 'Retirement Transition' in the Repopulation of Rural Areas. *Population, Space and Place, 12*(1), 1-13. https://doi.org/10.1002/psp.380

Stockdale, A., MacLeod, M., & Philip, L. (2013). Connected Life Courses: Influences on and Experiences of 'Midlife' In-Migration to Rural Areas. *Population, Space and Place, 19*(3), 239-257. https://doi.org/10.1002/psp.1709

Tatsiramos, K. (2006). *Residential mobility and housing adjustment of older households in Europe* (IZA Discussion Paper No. 2435). Institute for the Study of Labor.

Tyvimaa, T., & Kemp, C.L. (2011). Finnish Seniors' Move to a Senior House: Examining the Push and Pull Factors. *Journal of Housing for the Elderly, 25*(1), 50–71. https://doi.org/10.1080/02763893.2011.545742

Vollet, D., Callois, J.-M., & Roussel, V. (2005). Impact of Retirees on Rural Development: Some Observations from the South of France. *Journal of Regional Analysis & Policy, 35*(2), 1-15. https://doi.org/10.22004/ag.econ.132309

Walters, W.H. (2002). Place Characteristics and Later-Life Migration, *Research on Aging, 24(2)*, 243-277. https://doi.org/10.1177/0164027502242004

Walters, W.H., & Owen, D. (2000). Types and patterns of later-life migration. *Geografiska Annaler Series B, 82*(3), 129-147. https://doi.org/10.1111/j.0435-3684.2000.00079.x

Weeks, L.E., Keefe, J., & Macdonald, D.J. (2012). Factors Predicting Relocation Among Older Adults. *Journal of Housing For the Elderly, 26*(4), 355-371. https://doi.org/10.1080/02763893.2011.653099

Weeks, L.E., Shiner, D., Stadnyk, R., & MacDonald, D.J. (2013). What should we build when they are ready to come? Developing Evidence-based housing for older adults. *Seniors Housing & Care Journal, 21*(1), 69–85.

Wight, R.G., Cummings, J.R., Karlamangla, A.S., & Aneshensel, C.S. (2009). Urban Context and Change in Depressive Symptoms in Later Life. *Journal of Gerontology: Psychological Sciences, 64B*(2), 247–251. https://doi.org/10.1093/geronb/gbn016

Wiseman, F.F. (1980). Why Older People Move: Theoretical Issues. *Research on Aging, 2*(2), 141-154. https://doi.org/10.1177/016402758022003

Wulff, M., Champion, A., & Lobo, M. (2010). Household Diversity and Migration in Mid-life: Understanding Residential Mobility among 45-64 years olds in Melbourne, Australia *Population Space and Place, 16*(4), 307-321. https://doi.org/10.1002/psp.553

Yen, I.H., Shim, J.K., Martinez, A.D., & Barker, J.C. (2012). Older People and Social Connectedness: How Place and Activities Keep People Engaged. *Journal of Aging Research*, Article ID 139523, 1-10. https://doi.org/10.1155/2012/139523

# Chapter 4

## STAYING PUT OUT OF CHOICE OR CONSTRAINT? THE RESIDENTIAL CHOICE BEHAVIOUR OF DUTCH OLDER ADULTS.

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# Abstract

Mobility on the housing market strongly declines with age. In contrast to younger age groups, older adults show a tendency to 'stay put'. There is little evidence whether this immobility of older adults is due to choice (i.e. the wish to age in place) or to constraint (i.e. the lack of alternatives). This study makes an empirical analysis of the underlying preferences for housing of Dutch older adults by reporting the stated preferences of Dutch older adults for bundles of housing characteristics. It offers insight in the relative importance of various aspects of housing and explores whether these preferences are stable for different age groups. The study finds a strong preference for the current dwelling, especially for the older age groups. Running separate models for different age groups results in an improvement of the log likelihood, indicating the presence of heterogeneity in housing preferences among Dutch older adults.



Keywords: ageing in place, housing preferences, stated preferences, conjoint analyses, older adults

# 4.1. Introduction

Residential mobility varies considerably depending on age (Kramer & Pfaffenbach, 2009). From previous studies it is known that older adults do not change residence to a large extent, especially compared to younger age groups (Geist & McManus, 2008; Tatsiramos, 2006; Walters & Owen, 2000). Rather, they have a tendency to 'stay put' where they have lived for a long time (Andersson & Abramsson, 2012; Feinstein, 1996). Previous studies also demonstrate that this tendency to stay put increases with age (Andersson & Abramsson, 2012; Costa-Font et al., 2009; Robison & Moen, 2000).



In recent years, the concept of 'ageing in place' has been attracting a growing academic interest (Atkins, 2018; Smetcoren et al., 2017). Ageing in place has been defined as "the desire and tendency of older persons to stay in their current dwelling units for as long as possible" (Pynoos, Nishita & Kendig, 2007, p. 711). In the Netherlands, as well as in other countries, it is usually viewed as the policy ideal of enabling people to remain in their existing home while ageing (Cutchin, 2003; Golant, 2011; Löfqvist et al., 2013), hence postponing and decreasing expensive institutionalized care (Wiles et al., 2012; Kendig et al., 2017). These policies are encouraged by emphasizing that growing old in one's own home and neighbourhood is in the best interest of older adults, as they can then age within a familiar and predictable environment that is supportive of their social, emotional and instrumental needs (Davies & James, 2011; Milligan, 2009; Lager, 2015).

Indeed, there has been, and continues to be, a strong desire of older adults themselves to age in place (Wahl et al., 2012). This desire may reflect an optimization strategy critical to late life, as it affords continuity and control over important aspects of daily life, including routines, self-care and other potentially meaningful and self-defining activities (Rowles et al., 2004). As such, it has been argued that ageing in place can enhance a sense of independence, identity, autonomy, security and emotional attachment with the dwelling and neighbourhood (e.g. Kendig et al., 2012; Pynoos et al., 2007; Wiles et al., 2012). However, some long-cherished home environments may ultimately become unsuitable for the needs of older adults (Han & Kim, 2016; Judd et al., 2014; Atkins, 2018). Several studies have demonstrated possible hazards and negative outcomes for the independence, health and wellbeing of older people when living in inadequate housing (Golant, 2011; Lord et al., 2006; Oswald et al., 2007; Sixsmith & Sixsmith, 2008; Wagner et al., 2010). So, depending on the circumstances, staying put can be both positive and negative (Atkins, 2018). It can be a desired choice, or a response to restrictions and constraints (Hanson, 2005), such as a lack of alternative dwellings (Hansen & Gottschalk, 2006). To meet the demands of older

adults over time, it is often recommended that a wide variety of housing options are available in the future (see e.g. Robinson & Moen, 2000; Weeks et al., 2005). However, there is little evidence to provide guidance for specific types of housing that should be developed (Weeks et al., 2013).

In this study the housing preferences of Dutch older adults is analysed by means of a conjoint choice experiment. It involves presenting older adults with a choice between their existing home and several (hypothetical) alternative dwellings. This provides us with more insight into the tendency of Dutch older people to stay in the current dwelling, and whether this is caused by choice (i.e. the desire to age in place) or by constraint (i.e. the lack of alternatives). In doing so, we are also able to offer insight in the relative importance older adults give to various housing characteristics. The findings will enable researchers, housing professionals, and policy makers to refine predictions of housing and design more effectively for the diverse needs of older adults.

## 4.2. Housing preferences

Although the concepts of preference and choice are widely used in housing research these terms are sometimes mistaken for each other. According to Jansen et al. (2011) preference refers to the relative attractiveness of an object, while choice refers to actual behaviour. As such, preference may guide choice, but the evaluation involved in preference may take place whether or not a choice has to be made. Another important difference between housing preference and housing choice is that preference is a relatively unconstrained evaluation of attractiveness (Jansen et al., 2011). Whereas housing choice will always reflect the joint influences of preference, regulations, market conditions, availability, and internal and external personal factors such as lifestyle, financial means and social class.

The study of housing preferences and housing choice has been, and still is, attracting the interest of researchers from a variety of disciplines such as environmental psychology, geography, urban planning, urban sociology and regional economics (Timmermans et al., 1992). As a result, housing preferences have been studied from different theoretical perspectives and with a great variety of methodological approaches (e.g. Sabagh et al., 1969; Ritchey, 1976; Priemus, 1984; Fawcett, 1986; Musterd, 1989; Smid & Priemus, 1994; Timmermans et al., 1994; Mulder, 1996).

Even though there is a large variety in methodology, the studies for housing preferences have many commonalities. According to Timmermans et al. (1994) all studies assume that houses can be described and qualified in terms of a set of attribute levels. Furthermore,

they assume that individuals or households obtain some utility from each of these attribute levels, and combine their part-worth utility according to some rule to arrive at an overall preference or choice. Nevertheless, many differences appear in the specification of these rules (i.e. the assumptions made about the underlying decision-making process) (Timmermans et al., 1994).

Differences in data collection procedures also exist: does it concern choices that have actually been made in the 'real world' (i.e. revealed preferences) or choices in response to survey questions (i.e. stated preferences)? Revealed preferences are based on observed choices in real markets and they are assumed to reflect people's preferences (Timmermans et al., 1994). Observational choice data are interpreted in terms of utility-maximizing behaviour and a utility function is derived from such data. This provides an indication of the 'worth' (the preference) of the various housing attributes (Jansen et al., 2011). Observed choices will always reflect the influence of market conditions and availability. The model used by a researcher to interpret these data does not always include all factors that are relevant in reality and may therefore be biased. According to Timmermans et al. (1994) it is therefore difficult, if not impossible, to interpret observed choices in terms of utilities and preferences.



On the other hand, stated preferences combines observations of elicited preferences and hypothetical choices with assumptions about the underlying processes of preference formation to yield predictions (Jansen et al., 2011). They are based on individuals' and households' expressed preferences and choices in an environment that can, to some extent, be controlled by the researcher. In some situations stated choice information is therefore more informative than observed choices (Timmermans et al., 1994). In this study the main concern is with measuring the stated housing preferences of older adults. By measuring preferences based on their expressed preferences, this study aims to expose whether the revealed preference of older adults (i.e. 'stay put') is caused by choice or by constraint.

## 4.3. Methods

### 4.3.1. Experimental design

In this paper the stated housing preferences of older adults are analysed based on a carefully constructed questionnaire, designed as a conjoint choice experiment. It involved presenting the respondents with a choice between several alternatives. In the present context, an alternative is a bundle of housing characteristics. A general characteristic is called an attribute and a specific value of the characteristic is called an attribute level.

An example of an attribute is the type of dwelling, with a possible attribute level being an apartment. In conjoint choice experiments, respondents indicate their preference by choosing the most preferred housing alternative, or by rank ordering the housing alternatives from the most preferred to least preferred. The choices made reflect the preferences for certain characteristics of dwellings.

By design, all respondents in our sample made a sequence of such choices. In our experiment, each choice set refers to three alternative combinations of housing characteristics, one among them being the respondent's current dwelling. The inclusion of the current dwelling as a choice option meant that older adults were able the choose to 'stay put'. The respondents were asked to indicate the first and the second most preferred alternative, thereby revealing their complete preference orderings of the three.

*Number of attributes*

To avoid complicating the task of the respondents too much, the number of attributes that may describe an alternative should not be too large. Therefore, the task for the respondents was simplified by taking their existing dwelling as the starting point. All characteristics of their current housing situation remained equal to their current values in the hypothetical alternatives, except for five attributes on which the specific choice focused (see Figure 4.1). Therefore, by definition, the remaining (unspecified) attributes were the same for all three alternatives.

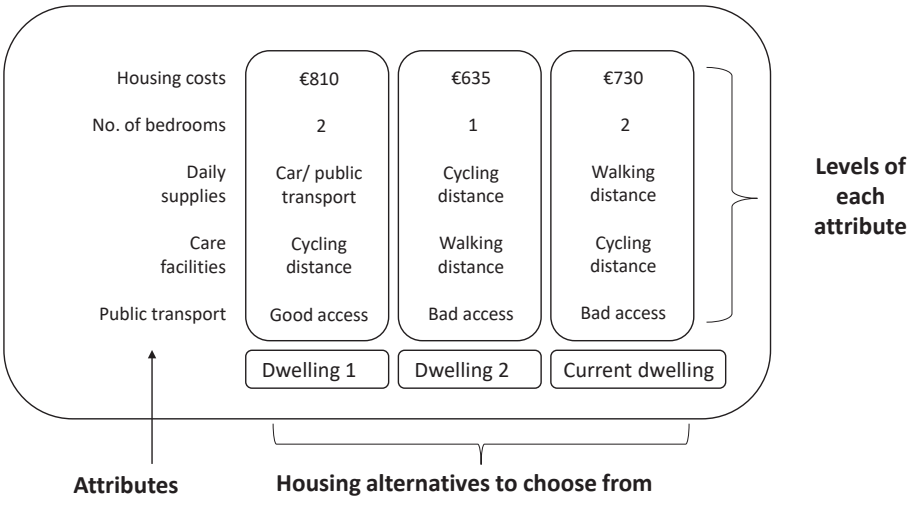


Figure 4.1 Example of a choice set

Since we were interested in more than five attributes, the conjoint choice experiment was subdivided into four games. In each game, the levels of at most five attributes were varied. The monthly cost of housing and the size of the dwelling (i.e. the number of bedrooms) were an attribute in each game, because these two dwelling characteristics are assumed to be key aspects in explaining the trade-offs older adults make (see Figure 4.2). The resulting overlap in the attributes of the different games makes it possible to estimate a model for all sequential choices jointly.



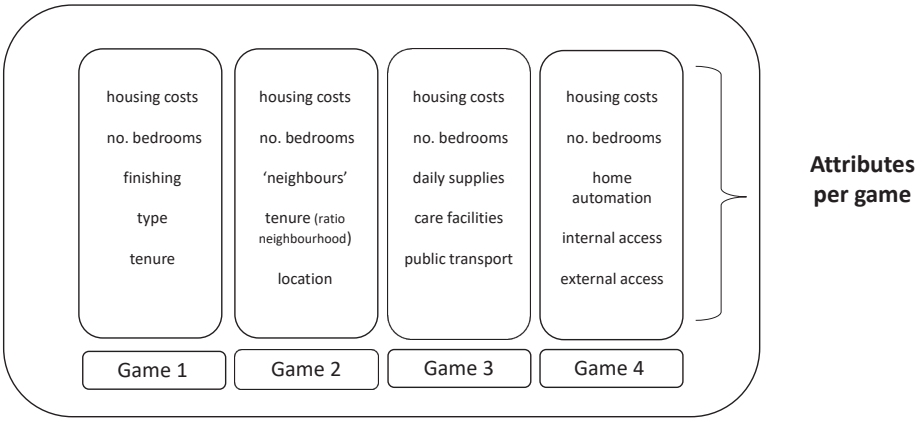


Figure 4.2 Housing games

*Realistic housing alternatives*

For each game, eight housing alternatives were pre-defined. The eight alternatives were chosen such that there was sufficient variation in their attribute levels and there were no obvious attractive and unattractive housing alternatives, in order to avoid trivial uninformative choices. The housing alternatives presented to the respondents had to be as clear and as realistic as possible. Therefore, some of the attribute levels were chosen on the basis of the current housing situation of the respondent (following Fowkes & Wardman, 1988). In this way we ensure that the monthly housing costs of the alternatives were not too far removed from the respondent's current situation. The same holds for the type of dwelling and the number of rooms. Since the attribute levels of the housing alternatives depended on the current dwelling of the respondent, they had to be generated by computer, based on answers given prior in the questionnaire (see: Appendix 4.1). This also implied that the alternatives could not be presented on physical cards.

*Number of comparisons*
On the basis of earlier experiences with conjoint choice experiments, it was expected that the respondents could be asked to do twenty-four such comparisons without increasing the cognitive burden too much (see e.g. Hensher et al., 2005; Louviere et al., 2000). Although the number of comparisons may seem large, nevertheless, its consequence is that only a small fraction of all possible combinations of alternatives could be presented to the respondents. Therefore, the respondents were also randomly assigned to one of six groups. Each group evaluated different combinations of alternatives of different games (see: Appendix 4.2).

### 4.3.2. Data collection
The data were collected in the summer of 2011 in cooperation with a housing association in Groningen, the Netherlands. The respondents were drawn from the directory of the housing association. Since this sample consisted solely out of tenants, the sample was extended with owner-occupiers. The total sample consisted of 6,684 respondents, aged 55 years or older, all living in the municipality of Groningen. In total 1,010 respondents participated in the research (response rate of 15%). Cases missing substantial data were filtered out prior to analysis, making a final sample of 952 respondents.

We determined the representativeness of our sample by comparing our dataset to the Housing Research Netherlands (HRN) dataset of 2009. The HRN survey is a large cross sectional survey in which information is gathered about the housing situation of people living in the Netherlands. The HRN dataset is representative of the Dutch population aged 18 and above, not living in an institution. The dataset of 2009 includes 78,071 observations, of which 29,129 persons are aged 55 years or older. Compared to the HRN dataset, the 'pre-elderly' (i.e. 55-64 years) and higher educated older adults are overrepresented in our sample (see Table 4.1).

The design of the experiment implied that the questionnaire was highly individual and could not be presented on paper. As a consequence 'old-elderly' (i.e. 75+ years) and lower educated respondents are underrepresented in our dataset.

### 4.3.3. Discrete choice model
In the housing games the respondents indicated a sequence of preference orderings, each of them referring to three housing alternatives (one of them being their current dwelling). The small number of alternatives suggests the use of a discrete choice model as a suitable tool for analysis. Among such models the conditional logit model is the easiest to handle because of its closed form expression for the choice probabilities. The logit model is the standard model for the analysis of the type of data at hand (see e.g. De Dios Ortúzar & Willumsen, 1994).

Table 4.1 Descriptive statistics sample

| Variable | Mean sample | Mean Groningen (HRN) | Mean the Netherlands (HRN) |
|---|---|---|---|
| Age | | | |
| 55-64 | 66.10% | 43.70% | 44.70% |
| 65-74 | 24.30% | 27.70% | 31.90% |
| 75+ | 9.60% | 28.60% | 23.40% |
| Gender | | | |
| Male | 53.90% | 36.90% | 42.80% |
| Female | 46.10% | 63.10% | 57.20% |
| Educational level | | | |
| Low | 33.00% | 53.40% | 53.70% |
| Middle | 23.90% | 20.90% | 23.00% |
| High | 43.10% | 25.70% | 23.30% |
| Children (living at home) | 8.90% | 5.80% | 9.30% |
| *n* | 952 | 206 | 29,129 |



*Model specifications*

The standard logit model has choice probabilities $p_i$ that can be written in closed form:

$$p_i = \frac{e^{v_i}}{\sum_{j=1}^{I} e^{v_j}}$$

Here $p_i$ denotes the probability that housing alternative $i$ is ranked first among $I$ housing alternatives (see for example Ben-Akiva & Lerman, 1985 for an elaborate discussion of the model) and $v_i$ is the deterministic part of the utility that the consumer attaches to alternative $i$. It is conventional to assume that $v_i$ is a linear function of a vector of explanatory variables $\mathbf{x}$, that is, $v_i = \beta \mathbf{x}_i$, with $\beta$ a vector of the parameters. Total utility $u_i$ is the sum of the deterministic part $v_i$ and a random variable $\varepsilon_i$.

The probability that housing alternative $i'$ is ranked second in the preference ordering of an individual, given that housing alternative $i$ is ranked first, can be written as:

$$p_{i'|i} = \frac{e^{v_{i'}}}{\sum_{j \neq i} e^{v_j}}$$

Here $p_{i'|i}$ denotes the probability that $i'$ is ranked second among the $I$ housing alternatives, given that $i$ is ranked first. Clearly $p_{i'|i}$ is identical to the probability that $i'$ is ranked highest among the $I$-1 alternatives that remain if the most preferred housing alternative $i$ is deleted from the choice set.[1]

1 See Beggs, Cardell, & Hausman (1980) for discussion.

We then consider the choices made by an arbitrary respondent $j$, $j = 1, \ldots, J$ in our sample. This respondent has repeatedly indicated his or her first and second choice among groups of three housing alternatives. The model explains these choices, as well as possible by finding the optimal values of the regression coefficients β. Therefore, the dependent variables are the observed choices and the parameters are the elements of β. These will be estimated by maximum likelihood.

The choice set offered to individual $j$ can be denoted as $A_{jk}$, $k = 1, \ldots, K$, with $K = 24$ being the total number of choice sets from which the respondent had to choose. Let $A_{jk} = \{a,b,c\}$ and suppose that alternative $c$ was ranked first, alternative $b$ second and (hence) alternative $a$ third. Given the logit assumptions made above, the probability that the respondent indicates this ranking equals:

$$P_{jk} = \frac{e^{v_c}}{e^{v_a} + e^{v_b} + e^{v_c}} \frac{e^{v_b}}{e^{v_a} + e^{v_b}}$$

Thus $P_{jk}$ is the probability that alternative $c$ is ranked first among the three alternative $\{a,b,c\}$, multiplied by the probability that $b$ is ranked first among the remaining alternatives $\{a,b\}$. The probability of the ranking indicated by the respondent can be written in this way for each choice set $A_{jk}$. The probability that respondent $j$ would make the particular sequence of rankings he or she indicated will be denoted as $P_j$ and is the product of the probabilities $P_{jk}$ over all $k$

$$P_j = \prod_{k=1}^{K} P_{jk}$$

This formulation reflects our assumption that a single preference ordering over all relevant attributes of the possible housing combinations governs the choices of our respondents. Each choice made by the respondents adds to our information about the preference ordering, and all information is used to estimate the parameters of the utility function representing that ordering simultaneously. The likelihood of the sequences of rankings indicated by all respondents is the product of all $P_j$s over $j$ and from this expression the log likelihood can be easily derived by taking logarithms. The maximum likelihood estimators are then obtained by maximizing log $L$ over the parameters.

$$L = \prod_{j=1}^{J} P_j$$

*Explanatory variables*

Housing decisions of older adults are influenced by many factors, and more often than not, older adults move for a combination of reasons (Oswald et al., 2002). The explanatory variables in our model were chosen on the basis of former research studying the residential

mobility of older adults. Our review of the literature indicates that factors related to income and housing costs are of particular importance (see among others: Weeks et al., 2013). For the remaining housing attributes we primarily focused on in the push and pull factors related to the immediate environment of older adults.

According to Lawton & Nahemow (1973), the fit between older adults and their environment determines the extent to which a person will be able to age in place. In other words: there is a need for a fit between the personal competences and environmental conditions. Deteriorating competencies can lead to mismatch between the individual and his or her living arrangement (Pope & Kang, 2010). For example, two Australian studies have demonstrated older adults' desire to downsize their housing due to a poor housing fit (Stimson & McCrea, 2004, Judd et al., 2014). Stairs and steps inside and outside the dwelling, and difficulties with housekeeping (e.g. cleaning) and/or maintenance are found to increase the preference for relocation (Hansen & Gottschalk, 2006, Erickson et al., 2006, Tyvimaa & Kemp, 2011; Weeks et al., 2012; Han & Kim, 2016).



Attributes for the dwelling included the number of rooms, housing type (including the presence of a garden), tenure, and accessibility of the dwelling (both internal and external). We also included a dummy for the current dwelling (irrespective of the characteristics of that particular dwelling, which were also included in the model). Among the places to which people develop attachment bonds, one of the most prominent in an individual's life is typically the place of residence (see among others: Fornara et al., 2019; Bonaiuto et al., 2006; Bonaiuto & Alves, 2012). With the inclusion of the variable 'current dwelling' we are able to recognize possible affective or emotional attachments to the current place of residence. Lastly, we added two attributes which were deemed to be relevant for policy purposes by the cooperating housing association: having a say in the finishing of the kitchen and bathroom (as opposed to as more standardised finishing) and the presence of home automation.

Aside from the dwelling, neighbourhood features are also factors for relocation (Smetcoren et al., 2017). Byrnes (2011) investigated the living conditions among older adults in a poor, age-segregated urban environment. The study found that a move to age-segregated housing can be an escape from harsh living conditions that do not match the needs of older residents. Additionally, the predominance of owner-occupiers can act as a pull factor as they are considered to be more involved in the safety and maintenance of their residential area (Parkes et al., 2002). Lastly, a lack of daily supplies and care facilities nearby counts for an important relocation trigger among older adults (see e.g. Kim et al., 2003), especially if public transportation is poorly organised (Tyvimaa & Kemp, 2011).

Neighbourhood attributes included tenure (ratio in the neighbourhood), household composition of the neighbourhood, location, distance to daily supplies and care facilities, and access by public transport. All explanatory variables are listed in Table 4.2, including an indication of the expected sign for the coefficient referring to a variable. The last column describes the current housing situation of the respondents (in percentages), and is given as a preliminary indication of the 'suitability' of the current living arrangement to age in place.

Table 4.2 Explanatory variables in the discrete choice model

| Variable | Type | Expected sign of coefficient | Current housing situation |
|---|---|---|---|
| **General** | | | |
| Disposable income | Continuous | + | |
| Current dwelling | Dummy | + | |
| **Dwelling attributes** | | | |
| Number of bedrooms | Continuous | - | 2.78 (mean) |
| Finishing | Dummy | + | |
| Home automation | Dummy | + | |
| Type | Categorical | | |
| Detached | | - | 6.2% |
| Non-detached, with garden | | - | 41.3% |
| Non-detached, without garden | | - | 3.8% |
| Apartment | | ref. | 48.8% |
| Tenure | Categorical | | |
| Rental | | - | 51.6% |
| Owner occupied | | ref. | 48.4% |
| Internal access | Categorical | | |
| Multiple floors | | - | 48.0% |
| One floor | | ref. | 52.0% |
| External access | Categorical | | |
| Elevator | | - | 28.8% |
| Staircase | | - | 23.0% |
| No staircase and/or elevator needed | | ref. | 48.2% |
| **Neighbourhood attributes** | | | |
| Tenure | Categorical | | |
| Mixture of owner occupied and rental dwellings | | - | 54.1% |
| Mainly rental dwellings | | - | 13.5% |
| Mainly owner-occupied | | ref. | 32.4% |

Table 4.2 Continued

| Variable | Type | Expected sign of coefficient | Current housing situation |
|---|---|---|---|
| Neighbours | Categorical | | |
| Mixture of single households, families and older adults | | - | 73.2% |
| Mainly older adults | | + | 8.9% |
| Mainly families | | ref. | 17.9% |
| Location | Categorical | | |
| Edge of the city | | - | 52.6% |
| Around inner city | | + | 34.3% |
| Inner city | | ref. | 13.2% |
| Daily supplies | Categorical | | |
| Walking distance | | + | 69.0% |
| Cycling distance | | + | 27.1% |
| Driving distance | | ref. | 4.0% |
| Care facilities | Categorical | | |
| Walking distance | | + | 47.6% |
| Cycling distance | | + | 43.9% |
| Driving distance | | ref. | 8.5% |
| Public transport | Categorical | | |
| Good access | | + | 93.0% |
| Poor access | | ref. | 7.0% |

Apart from factors related to the immediate environment of older adults, we also consider some individual characteristics into the model. Mainly, because we expect that people with different characteristics also give different weights to various attributes of choice alternatives. It is possible to take into account this influence of individual characteristics by means of additional variables $x$ in the utility function that are products of individual characteristics and attributes of the alternatives (i.e. interaction effects). As mentioned before, higher educated older adults are overrepresented in our sample and could potentially show a different preference pattern than lower educated older adults. Therefore, an interaction effect is included to correct for possible education effects. Lastly, it is conceivable that households with children living at home have other preferences with respect to their residential location than household without children (living at home).

## 4.4. Results

The estimation results are listed in Table 4.3. Model 1 has attributes of the alternatives as the only determinants of the utility function. Model 2 also incorporates the effects of some individual characteristics. A log likelihood ratio test reveals that adding individual characteristics (i.e. interaction effects) results in a statistically significant improvement of the fit of the model.

The estimated coefficient of the variable disposable income is, as expected, highly significant. With this estimate we can compute the estimated willingness-to-pay for a particular housing attribute. The willingness-to-pay is the amount of money by which the disposable income can be reduced after including a particular housing attribute, while keeping the consumer at the same utility level. The willingness-to-pay is calculated as the ratio of the coefficients of the particular housing attribute and disposable income. For example, for model 1 the willingness to pay for an extra room equals (0.081/0.325) = 0.2492, implying that an addition of one room would be worth 25 euro per month. The willingness to pay for the presence of home automation on the other hand, equals (-0,124/0.325) = -0.3815 implying that the absence of home automation designed to increase the comfort and safety of the dwelling would be worth 38 euro per month.

The respondents show a very strong preference for the current dwelling. The estimated coefficient for this variable is positive and highly significant. This strong will to stay put, is further illustrated by the fact that among the three presented alternatives, the current dwelling is chosen first 75% of the time by the respondents. In other words: when given a choice (albeit a hypothetical one), the majority of older adults would choose their current dwelling as the most preferred housing option. The number of rooms has a small significant effect on the evaluation of choice alternatives. We already demonstrated that the respondents would be willing to pay 25 euro per month for a dwelling larger in size. This is contrary to our expectation that older adults would prefer a smaller dwelling when they age. However, when this attribute is interacted with the household composition the coefficient is not significant anymore.

Having a say in the finishing of the kitchen and bathroom is a moderately desirable attribute. When this dummy is interacted with the level of education, it becomes clear that this attribute is strongly preferred by respondents with a high educational level. Respondents with a relatively low educational level, on the other hand, would rather not have a say in the finishing of the kitchen and bathroom and in return pay a lower housing cost.

The housing type is an important attribute. Model 1 shows that apartments are preferred to non-detached houses either with or without a garden. This corresponds with our expectation that older adults express a preference for dwellings that require less maintenance. However, it also shows a rather large difference between the current and desired housing type, since 40% of our sample is currently living in a non-detached house with a garden.

In model 1, tenure does not seem to have an effect on the evaluation of the choice alternatives. However in model 2, which also incorporates the effects of some individual characteristics, it does. Then, home ownership is preferred to renting a home. In the last few decades, the rise in home ownership among older adults in the Netherlands has been spectacular. During the late 1990s, about 30% aged 65 and over were home owners; this share rose to 45% in 2008 and by 2015, around half of all aged 65 and over owned a house (Statistics Netherlands, 2017).



The location of the living room, kitchen, bathroom and at least one bedroom on the same floor is preferred to having these located on multiple floors. This is in accordance with our expectations. The estimation results for model 2 show that the inclusion of the educational level does not affect the significance of this attribute. Though, model 2 also reveals that higher educated older adults do seem to prefer a house with multiple floors.

The external access of the dwelling is a significant housing attribute. Model 1 shows that access by elevator is strongly preferred to a dwelling with an entrance on street level (i.e. the reference case). The latter is preferred to a dwelling in which the respondent has to climb stairs in order to enter his or her dwelling. These results are partially according to our expectations. Previous studies have shown that deteriorating competencies can lead to incompatibility between the individual and his or her housing (Pope & Kang, 2010). As a preventative measure, older adults might be more prone to relocate to an environment that better fits their physical abilities, such as an apartment with no stairs. This might explain the overall preference for a dwelling which is accessible by an elevator, which can be found in an apartment building. It does, however, not explain why access by elevator is preferred to a dwelling with an entrance on street level. The results of model 2 demonstrate that higher educated do have strong preference for a dwelling which is accessible on street level. Knowing they also show a preference for a house with multiple floors, this result could potentially illustrate the desire for a single family home.

Table 4.3 Estimation results housing preferences by age

| | Whole sample | | | | | | Pre- elderly (55-64) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Model 1 | | | Model 2 | | | Model 3 | | |
| | B | Sig. | S.E. | B | Sig. | S.E. | B | Sig. | S.E. |
| Disposable income (x100) | 0.325 | *** | 0.010 | 0.338 | *** | 0.010 | 0.303 | *** | 0.011 |
| Current dwelling | 1.750 | *** | 0.021 | 1.752 | *** | 0.021 | 1.574 | *** | 0.025 |
| **Dwelling attributes** | | | | | | | | | |
| Number of rooms | 0.081 | * | 0.042 | 0.069 | | 0.130 | 0.151 | *** | 0.050 |
| Number of rooms x no children living at home | | | | 0.033 | | 0.133 | | | |
| Finishing | 0.060 | * | 0.034 | 0.104 | * | 0.057 | 0.030 | | 0.041 |
| Finishing x low educational level | | | | -0.322 | *** | 0.073 | | | |
| Finishing x high educational level | | | | 0.191 | *** | 0.067 | | | |
| Home automation | -0.124 | *** | 0.034 | -0.133 | ** | 0.059 | -0.238 | *** | 0.041 |
| Home automation x low educational level | | | | -0.226 | *** | 0.075 | | | |
| Home automation x high educational level | | | | 0.219 | *** | 0.069 | | | |
| Type | | | | | | | | | |
| Detached | 0.080 | | 0.063 | 0.070 | | 0.063 | 0.284 | *** | 0.075 |
| Non-detached, with garden | -0.490 | *** | 0.043 | -0.505 | *** | 0.043 | -0.244 | *** | 0.054 |
| Non-detached, without garden | -0.917 | *** | 0.051 | -0.948 | *** | 0.051 | -0.835 | *** | 0.063 |
| Apartment | ref. | | | | | | ref. | | |
| Tenure | | | | | | | | | |
| Rental dwelling | -0.046 | | 0.031 | -0.064 | ** | 0.031 | -0.147 | *** | 0.036 |
| Owner-occupied | ref. | | | | | | ref. | | |
| Internal access | | | | | | | | | |
| Multiple floors | -0.761 | *** | 0.029 | -0.863 | *** | 0.059 | -0.647 | *** | 0.035 |
| Multiple floors x low educational level | | | | 0.064 | | 0.080 | | | |
| Multiple floors x high educational level | | | | 0.194 | *** | 0.074 | | | |
| One floor | ref. | | | | | | ref. | | |
| External access | | | | | | | | | |
| Elevator | 0.132 | *** | 0.035 | 0.394 | *** | 0.066 | -0.016 | | 0.043 |
| Elevator x low educational level | | | | -0.069 | | 0.089 | | | |
| Elevator x high educational level | | | | -0.540 | *** | 0.082 | | | |
| Staircase | -0.956 | *** | 0.040 | -0.954 | *** | 0.041 | -1.002 | *** | 0.048 |
| Staircase x low educational level | | | | 0.082 | ** | 0.036 | | | |
| Staircase x high educational level | | | | -0.085 | ** | 0.033 | | | |
| No staircase and/or elevator needed | ref. | | | | | | ref. | | |
| **Neighbourhood attributes** | | | | | | | | | |
| Tenure | | | | | | | | | |
| Mixture of owner-occupied and rental dwellings | 0.057 | | 0.045 | 0.044 | | 0.045 | 0.012 | | 0.054 |
| Mainly rental dwellings | -0.147 | *** | 0.049 | -0.171 | *** | 0.049 | -0.183 | *** | 0.059 |
| Mainly owner-occupied | ref. | | | | | | ref. | | |
| Neighbours | | | | | | | | | |
| Mixture of single households, families and older adults | 0.420 | *** | 0.041 | 0.437 | *** | 0.041 | 0.361 | *** | 0.050 |
| Mainly older adults | 0.089 | * | 0.047 | 0.113 | ** | 0.047 | -0.044 | | 0.057 |
| Mainly families | ref. | | | | | | ref. | | |

| Pre- elderly (55-64) | | | Young-elderly (65-74) | | | | | | Old-elderly (75+) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model 4 | | | Model 5 | | | Model 6 | | | Model 7 | | | Model 8 | | |
| B | Sig. | S.E. | B | Sig. | S.E. | B | Sig. | S.E. | B | Sig. | S.E. | B | Sig. | S.E. |
| 0.317 | *** | 0.011 | 0.397 | *** | 0.025 | 0.399 | *** | 0.026 | 0.500 | *** | 0.043 | 0.507 | *** | 0.046 |
| 1.571 | *** | 0.025 | 2.135 | *** | 0.048 | 2.140 | *** | 0.048 | 2.181 | *** | 0.085 | 2.190 | *** | 0.088 |
| | | | | | | | | | | | | | | |
| -0.084 | | 0.143 | 0.003 | | 0.093 | -0.302 | | 0.428 | -0.238 | | 0.159 | 1.419 | * | 0.729 |
| 0.282 | * | 0.146 | | | | 0.335 | | 0.431 | | | | -1.717 | ** | 0.737 |
| | | | | | | | | | | | | | | |
| 0.065 | | 0.068 | 0.198 | *** | 0.072 | 0.400 | *** | 0.121 | 0.037 | | 0.131 | -0.492 | * | 0.252 |
| -0.401 | *** | 0.095 | | | | -0.370 | *** | 0.141 | | | | 0.483 | * | 0.268 |
| 0.180 | ** | 0.079 | | | | -0.100 | | 0.144 | | | | 1.268 | *** | 0.309 |
| -0.258 | *** | 0.070 | 0.161 | ** | 0.072 | 0.085 | | 0.123 | 0.345 | *** | 0.131 | 0.383 | | 0.248 |
| -0.283 | *** | 0.096 | | | | -0.115 | | 0.145 | | | | -0.239 | | 0.270 |
| | | | | | | | | | | | | | | |
| 0.178 | ** | 0.081 | | | | 0.350 | ** | 0.149 | | | | 0.554 | * | 0.311 |
| | | | | | | | | | | | | | | |
| 0.272 | *** | 0.075 | -0.022 | | 0.140 | -0.019 | | 0.141 | -0.879 | *** | 0.278 | -0.907 | *** | 0.288 |
| -0.258 | *** | 0.054 | -0.655 | *** | 0.087 | -0.662 | *** | 0.088 | -1.476 | *** | 0.152 | -1.522 | *** | 0.157 |
| -0.868 | *** | 0.063 | -0.866 | *** | 0.106 | -0.881 | *** | 0.107 | -1.197 | *** | 0.190 | -1.248 | *** | 0.192 |
| | | | ref. | | | | | | ref. | | | | | |
| | | | | | | | | | | | | | | |
| -0.164 | *** | 0.036 | 0.104 | | 0.071 | 0.098 | | 0.072 | 0.561 | *** | 0.123 | 0.536 | *** | 0.123 |
| | | | ref. | | | | | | ref. | | | | | |
| | | | | | | | | | | | | | | |
| -0.816 | *** | 0.071 | -0.910 | *** | 0.062 | -0.927 | *** | 0.123 | -1.165 | *** | 0.116 | -1.013 | *** | 0.253 |
| 0.239 | ** | 0.101 | | | | 0.079 | | 0.159 | | | | -0.300 | | 0.298 |
| 0.289 | *** | 0.086 | | | | -0.124 | | 0.162 | | | | -0.073 | | 0.359 |
| | | | ref. | | | | | | ref. | | | | | |
| | | | | | | | | | | | | | | |
| 0.307 | *** | 0.078 | 0.351 | *** | 0.077 | 0.610 | *** | 0.142 | 0.520 | *** | 0.127 | 0.337 | | 0.288 |
| -0.062 | | 0.114 | | | | -0.150 | | 0.185 | | | | 0.248 | | 0.322 |
| -0.490 | *** | 0.096 | | | | -0.664 | *** | 0.184 | | | | -0.057 | | 0.374 |
| -0.987 | *** | 0.049 | -0.826 | *** | 0.088 | -0.845 | *** | 0.089 | -0.823 | *** | 0.157 | -0.865 | *** | 0.160 |
| -0.089 | | 0.055 | | | | 0.227 | *** | 0.061 | | | | 0.072 | | 0.093 |
| -0.165 | *** | 0.039 | | | | -0.041 | | 0.075 | | | | 0.113 | | 0.131 |
| | | | ref. | | | | | | ref. | | | | | |
| | | | | | | | | | | | | | | |
| 0.001 | | 0.055 | 0.007 | | 0.098 | -0.009 | | 0.098 | 0.051 | | 0.160 | 0.023 | | 0.162 |
| | | | | | | | | | | | | | | |
| -0.212 | *** | 0.059 | -0.155 | | 0.103 | -0.166 | | 0.103 | -0.077 | | 0.185 | -0.130 | | 0.187 |
| | | | ref. | | | | | | ref. | | | | | |
| | | | | | | | | | | | | | | |
| 0.380 | *** | 0.050 | 0.502 | *** | 0.092 | 0.508 | *** | 0.092 | 0.467 | *** | 0.148 | 0.478 | *** | 0.150 |
| | | | | | | | | | | | | | | |
| -0.013 | | 0.057 | 0.308 | *** | 0.101 | 0.320 | *** | 0.102 | 0.454 | *** | 0.171 | 0.491 | *** | 0.174 |
| | | | ref. | | | | | | ref. | | | | | |

Table 4.3 Estimation results housing preferences by age

| | Whole sample | | | | | | Pre- elderly (55-64) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Model 1 | | | Model 2 | | | Model 3 | | |
| | B | Sig. | S.E. | B | Sig. | S.E. | B | Sig. | S.E. |
| Location | | | | | | | | | |
| Edge of the city | -0.186 | *** | 0.048 | -0.182 | *** | 0.048 | -0.240 | *** | 0.061 |
| Around inner city | 0.020 | | 0.041 | 0.018 | | 0.042 | 0.054 | | 0.051 |
| Inner city | ref. | | | | | | ref. | | |
| Daily supplies | | | | | | | | | |
| Walking distance | 0.790 | *** | 0.050 | 0.518 | *** | 0.095 | 0.873 | *** | 0.059 |
| Walking distance x low educational level | | | | 0.211 | | 0.130 | | | |
| Walking distance x high educational level | | | | 0.467 | *** | 0.119 | | | |
| Cycling distance | 0.199 | *** | 0.053 | -0.055 | | 0.099 | 0.363 | *** | 0.062 |
| Cycling distance x low educational level | | | | -0.056 | | 0.140 | | | |
| Cycling distance x high educational level | | | | 0.621 | *** | 0.122 | | | |
| Driving distance | ref. | | | | | | ref. | | |
| Care facilities | | | | | | | | | |
| Walking distance | 0.375 | *** | 0.050 | 0.124 | | 0.093 | 0.430 | *** | 0.059 |
| Walking distance x low educational level | | | | 0.388 | *** | 0.128 | | | |
| Walking distance x high educational level | | | | 0.292 | ** | 0.117 | | | |
| Cycling distance | -0.051 | | 0.049 | -0.247 | *** | 0.091 | 0.064 | | 0.057 |
| Cycling distance x low educational level | | | | 0.093 | | 0.131 | | | |
| Cycling distance x high educational level | | | | 0.376 | *** | 0.112 | | | |
| Driving distance | ref. | | | | | | ref. | | |
| Public transport | | | | | | | | | |
| Good access | 0.997 | *** | 0.044 | 0.880 | *** | 0.082 | 0.957 | *** | 0.052 |
| Good access x low educational level | | | | 0.185 | | 0.113 | | | |
| Good access x high educational level | | | | 0.159 | | 0.102 | | | |
| Poor access | ref. | | | | | | ref. | | |
| Log likelihood | -27705.62 | | | -27552.09 | | | -19037.93 | | |
| *n* | 952 | | | 952 | | | 625 | | |

***Significant at 0.01 level; **significant at 0.05 level; *significant at 0.1 level.

| Pre- elderly (55-64) | | | Young-elderly (65-74) | | | Old-elderly (75+) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Model 4 | | | Model 5 | | | Model 6 | | | Model 7 | | | Model 8 | | |
| B | Sig. | S.E. | B | Sig. | S.E. | B | Sig. | S.E. | B | Sig. | S.E. | B | Sig. | S.E. |
| -0.234 | *** | 0.061 | -0.276 | *** | 0.096 | -0.280 | *** | 0.096 | 0.215 | | 0.150 | 0.199 | | 0.152 |
| 0.055 | | 0.051 | -0.129 | | 0.086 | -0.131 | | 0.086 | 0.123 | | 0.147 | 0.107 | | 0.148 |
| | | | ref. | | | | | | ref. | | | | | |
| 0.696 | *** | 0.111 | 0.665 | *** | 0.121 | 0.379 | | 0.232 | 0.520 | *** | 0.199 | 0.129 | | 0.472 |
| 0.030 | | 0.160 | | | | 0.308 | | 0.296 | | | | 0.228 | | 0.521 |
| 0.338 | ** | 0.136 | | | | 0.499 | | 0.304 | | | | 2.120 | ** | 0.992 |
| 0.203 | * | 0.117 | -0.147 | | 0.124 | -0.681 | *** | 0.225 | -0.180 | | 0.253 | -0.009 | | 0.533 |
| -0.307 | * | 0.175 | | | | 0.700 | ** | 0.300 | | | | -0.466 | | 0.616 |
| 0.473 | *** | 0.142 | | | | 0.816 | *** | 0.304 | | | | 1.467 | | 1.011 |
| | | | ref. | | | | | | ref. | | | | | |
| 0.190 | * | 0.107 | 0.326 | *** | 0.120 | 0.256 | | 0.226 | 0.104 | | 0.197 | -0.156 | | 0.503 |
| 0.376 | ** | 0.162 | | | | 0.171 | | 0.285 | | | | 0.223 | | 0.541 |
| 0.284 | ** | 0.133 | | | | 0.076 | | 0.306 | | | | 1.278 | | 0.932 |
| -0.103 | | 0.107 | -0.305 | *** | 0.116 | -0.485 | ** | 0.202 | -0.226 | | 0.234 | -0.278 | | 0.531 |
| -0.022 | | 0.161 | | | | 0.414 | | 0.280 | | | | -0.231 | | 0.602 |
| 0.333 | ** | 0.130 | | | | 0.177 | | 0.280 | | | | 1.732 | * | 0.911 |
| | | | ref. | | | | | | ref. | | | | | |
| 0.914 | *** | 0.096 | 1.079 | *** | 0.107 | 1.084 | *** | 0.197 | 1.325 | *** | 0.182 | 0.879 | ** | 0.411 |
| -0.039 | | 0.140 | | | | 0.166 | | 0.260 | | | | 0.288 | | 0.453 |
| 0.119 | | 0.117 | | | | -0.059 | | 0.264 | | | | 2.451 | *** | 0.856 |
| | | | ref. | | | | | | ref. | | | | | |
| -18930.51 | | | -6040.07 | | | -5991.33 | | | -2117.38 | | | -2085.35 | | |
| 625 | | | 229 | | | 229 | | | 89 | | | 89 | | |

With respect to the neighbourhood we find that a neighbourhood with a mixture of single households, families and elderly is most preferred and a neighbourhood with predominantly families is least preferred. As expected, older adults show a preference for neighbourhoods with predominantly owner-occupied dwellings. For the location of the neighbourhood we find that neighbourhoods located at the edge of the city are least preferred. We expected older adults to prefer to have their daily supplies and care facilities nearby; that is within walking or cycling distance of their homes. The estimation results of both model 1 and 2 confirm this expectation. Model 2 also demonstrates that this is particularly true for higher educated older adults. Public transport is, as expected, regarded as an attractive attribute.

4.4.1. Results by age

To correct for the overrepresentation of young older adults in our sample, we ran separate models for the 'pre-elderly' (55-64 years), the 'young-elderly' (65-74 years) and the 'old-elderly' (aged 75 and above). In doing so, it was also possible to shed some light on the possible heterogeneity in preferences by age. Here, we will only discuss the preferences that differ from the results of the whole sample and/or differ among the different age groups. Judging by model 5 and model 7 the numbers of rooms does not seem to have a significant effect on the evaluation of the choice alternatives for older adults aged 65 and above. Yet, when this attribute is interacted with the household composition (model 8) it becomes clear that for respondents aged 75 years or older without any children living at home, the estimate has the expected negative sign. Indicating that 'old-elderly' do prefer a smaller dwelling. From the age of 65, the presence of home automation does appear to be a desirable housing attribute, especially for the higher educated in these age-groups. For the 'young-elderly' (aged 65-74) both the presence of home automation and having a say in the finishing have a significant effect on the evaluation of the choice alternatives. Their willingness to pay for these 'luxuries' are respectively 40,55 euro and 49,87 euro per month.

With regard to the type of dwelling we find a clear hierarchy for the 'pre-elderly': non-detached houses with or without a garden are the least preferred, and detached houses are the most preferred type of dwellings. If we look at the oldest age group(s) we find further evidence for older adults' desire for houses that require less maintenance and better fit their physical abilities. Where 'pre-elderly' show a strong preference for owner-occupied dwelling, 'old-elderly' show an even stronger preference for rental dwellings, compared to the other age-groups. Note, that the birth dates of the 'pre-elderly' in our sample correspond with the so-called Dutch 'baby boom generation'. In 2010, a study by the Netherlands Institute for Social Research has shown that, as a result of increasing prosperity and their active life-cycle stage, the baby boom

generation was able to benefit from the extensive supply of new homes offered for sale on very favourable terms. From this starting point, they were able to move up the housing ladder in the course of time to ever better and larger homes. This is further illustrated by the fact that, by 2009, the majority of baby boom households (i.e. two out of three) owned their home (Van der Bie & Latten, 2012). Previous generations, on the other hand, are for more likely to rent their homes. It seems reasonable that the observed difference in opportunities (both economically and socially), have shaped the preference for tenure in old age.



With respect to the neighbourhood characteristics, it becomes clear that these play a more important role for the younger age groups than the oldest age group. For the 'old-elderly', compared to the other age-groups, the characteristics of the dwelling play a more significant role in the evaluation of the choice alternatives. We do, however, find that the desire to live among people of the same age becomes stronger by age. In fact, only 'pre-elderly' have a negative coefficient for predominantly living with older adults (although this result is not significant). From the age of 65 we find that older adults have preference for their daily supplies and care facilities within walking distance. From this age on, cycling is also not considered to be attractive anymore (although not all results suggesting this pattern are significant).

## 4.5. Discussion

Ageing in place seems to be the preferred residential strategy of most older adults (Smetcoren et al., 2017). Nonetheless, studies have demonstrated that, in time, certain home environments can create threats preventing older adults from ageing well (Golant, 2011; Lord et al., 2006; Oswald et al., 2007; Sixsmith & Sixsmith, 2008; Wagner et al., 2010). Several coping mechanisms can be applied in order to handle this incongruence (Golant, 2011, 2015; Peace et al., 2011), such as moving to a new environment. The research presented in this paper analysed evidence from a self-designed survey to examine the residential choice behaviour of Dutch older adults. Distinguishing between different age groups made it possible to scrutinise whether age affected the preference for staying put (i.e. age in place) or for moving to a new living environment.

When given a choice (albeit a hypothetical one) a vast majority of the respondents prefer to stay put. The preference to age in place becomes stronger by age. We, therefore, conclude that the tendency of Dutch older people to stay put is mainly caused by choice rather than by constraint. Interestingly, the estimation results demonstrate that certain desirable housing characteristics do not necessarily correspond with the existing living

arrangement (on average). The location of the neighbourhood, dwelling type, and the access (both internal and external) to their current dwelling are good examples of this. Therefore, we cannot conclude that the desire to stay put is due to the suitability of the current dwelling to age in place.

Instead, older adults might prefer to cope with the costs of a mismatch between their dwelling and their needs rather than move elsewhere (Costa-Font et al., 2009; Ewen et al., 2014). The attachment to place has often been cited as an important factor in explaining the low mobility of older adults (see among others: Birch, 1973; Butler, 1975; Ferraro, 1981; Golant, 1972; Lawton, 1978, 1986; Newman, 1976). The estimation results of this study seem to confirm that the preference to stay put is affected by factors such as residential place attachment.

In general, the older adults in our sample have a preference for apartments, which is also illustrated by the fact that they prefer houses accessible by an elevator in which the living room, kitchen, bathroom, and at least one bedroom is located on one floor. With regard the living environment the results indicate that older adults do not want to live in a neighbourhood which is located at the edge of the city. This is re-emphasized by their desire to have amenities, such as to have daily supplies, care facilities and public transport, in the vicinity of their homes. They would also like to be surrounded by mixture of single households, families and older adults, although most older adults would not mind living with predominantly older adults as well.

In addition, the estimation results of this study demonstrate the presence of heterogeneity among Dutch older adults. The next generation of older adults (the 'pre-elderly') is different from today's older adults. They have different expectations and abilities, due to having experienced expanded education opportunities, emancipation and participation (Kramer & Pfaffenbach, 2009). Therefore, future older adults can be expected to develop different lifestyles, which will likely lead them to favour different (residential) locations (Kramer & Pfaffenbach, 2009). In order to adequately take the heterogeneity among Dutch older adults into account, we need to further explore the relation the spatial context, on the one hand, and individual characteristics and lifestyles, on the other.

The analysis reported here does have limitations. The sample is from one municipality in one country and may not be representative of older adults living in other areas. In particular, our sample has a overrepresentation of 'pre-elderly' (i.e. 55-64 years) and higher-educated, as a likely result of the interactive design of the experiment. This may have increased the desirability of several attributes, such as the presence of home automation. However, the study's advantage also lies is this interactive design, which allows us to

incorporate the default living arrangement as a conscious choice, as well as presenting our respondents with realistic alternatives relative to the current living arrangement. Hopefully, other researchers will also consider the issues raised in this article by including the current living arrangement when analysing the residential choice behaviour of older adults.

In general, the housing choices of future older adults are likely to have an impact on spatial structures, simply due to the large numbers this generation represents (e.g. Andersson & Abramsson, 2012; Kramer & Pfaffenbach, 2009). This illustrates that the housing of an ageing society requires timely and adequate reactions in (housing) policy. The results of this study are helpful for informing decisions about housing options to support older adults who wish to remain in their homes and neighbourhoods, and to create types of housing that best meet the diverse preferences of the Dutch older population.



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# References


Andersson, E., & Abramsson, M. (2012). Changing Residential Mobility Rates of Older People in Sweden. *Ageing and Society, 32*(6), 963–982. https://doi.org/10.1017/S0144686X11000808

Atkins, M.T. (2018). On the move, or staying put? An analysis of intrametropolitan residential mobility and ageing in place. *Population Space and Place, 24*(3), e2096. https://doi.org/10.1002/psp.2096

Beggs, S., Cardell, S., & Hausman, J. (1980). Assessing the Potential Demand for Electric Cars. *Journal of Econometrics, 17*(1), 1-19. https://doi.org/10.1016/0304-4076(81)90056-7

Ben-Akiva M., & Lerman, S.R. (1985). *Discrete Choice Analysis: Theory and application to Travel Demand*. MIT Press.

Birch, D.L. (1973). *America's Housing Needs: 1970 to 1980*. MIT and Harvard Press.

Bonaiuto, M., & Alves, S. (2012). Residential places and neighbourhoods: toward healthy life, social integration, and reputable residence. In S.D. Clayton (Ed.), *The Oxford Handbook of Environmental and Conservation Psychology* (pp. 221–247). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780199733026.013.0013

Bonaiuto, M., Fornara, F., & Bonnes, M. (2006). Perceived residential environment quality in middle- and low-extension Italian cities. *European Review of Applied Psychology, 56*(1), 23–34. https://doi.org/10.1016/j.erap.2005.02.011

Butler, R.N. (1975). *Why Survive? Being Old in America*. Harper and Row.

Byrnes, M.E. (2011). Moving behaviours of very low-income inner-city older adults. *Senior Housing & Care Journal, 19*(1), 35–47.

Costa-Font, J., Elivar, D., & Mascarillo-Miró, O. (2009). 'Ageing in Place'? Exploring Elderly People's Housing Preferences in Spain. *Urban Studies, 46*(2), 295-316. https://doi.org/10.1177/00420098008099356

Cutchin, M.P. (2003). The process of mediated ageing-in-place: a theoretically and empirically based model. *Social Science and Medicine, 57*(6), 1077-1090. https://doi.org/10.1016/S0277-9536(02)00486-0

Davies, A., & James, A. (2011). *Geographies of ageing: Social processes and the spatial unevenness of population ageing*. Ashgate Publishing.

De Dios Ortúzar, J., & Willumsen, L.G. (1994). *Modelling Transport*. Wiley.

Erickson, M.A., Krout, J., Ewen, H., & Robison, J. (2006). Should I stay or should I go? Moving plans of older adults. *Journal of Housing for the Elderly*, *20*(3), 5-22. https://doi.org/ 10.1300/J081v20n03_02

Ewen, H.H., Hahn, S.J., Erickson, M.A., & Krout, J.A. (2014). Ageing in Place or Relocation? Plans of Community-Dwelling Older Adults. *Journal of Housing For the Elderly, 28*(3), 288-309. https://doi.org/10.1080/02763893.2014.930366

Fawcett, J.T. (1986). Migration pyschology: New behavioral models. *Population and Environment, 8*(1&2), 5–14. https://doi.org/10.1007/BF01263014

Feinstein, J.S. (1996). Elderly health, housing and mobility. In D.A. Wise (Ed.), *Advances in the Economics of Aging* (pp. 275-316). Chicago University press. https://doi.org/10.3386/w4572

Fornara, F., Lai, A.E., Bonaiuto, M., & Pazzaglia, F. (2019). Residential Place Attachment as an Adaptive Strategy for Coping With the Reduction of Spatial Abilities in Old Age. *Frontiers in Psychology, 10*, article 856. https://doi.org/10.3389/fpsyg.2019.00856

Ferraro, K.F. (1981). Relocation Desires and Outcomes Among the Elderly. *Research on Aging, 3*(2), 166-181. https://doi.org/10.1177/016402758132003

Fowkes, T., & Wardman, M. (1988). The Design of Stated Preference Travel Choice Experiments, with Special Reference to Interpersonal Taste Variations. *Journal of Transport Economics and Policy, 22*(1), 27-44. https://www.jstor.org/stable/20052833

Geist, C., & McManus, P.A. (2008). Geographical mobility over the life course: motivations and Implications. *Population, Space and Place, 14*(4), 283-303. https://doi.org/10.1002/psp.508

Golant, S.M. (1972). *The Residential Location and Spatial Behavior of the Elderly: A Canadian example*. University of Chicago Geography Research Papers.

Golant, S.M. (2011). The quest for residential normalcy by older adults: relocation but one pathway. *Journal of Aging Studies, 25*(3), 193–205. https://doi.org/10.1016/j.jaging.2011.03.003

Golant, S.M. (2015). Residential Normalcy and the Enriched Coping Repertoires of Successfully Aging Older Adults. *The Gerontologist, 55*(1), 70-82. https://doi.org/10.1093/geront/gnu036

Han, J.H., & Kim, J.H. (2016). Variations in ageing in home and ageing in neighbourhood. *Australian Geographer, 48*(2), 255-272. https://doi.org/10.1080/00049182.2016.1240021

Hansen, E.B., & Gottschalk, G. (2006). What Makes Older People Consider Moving House and What Makes Them Move? *Housing, Theory and Society, 23*(1), 34-54. https://doi.org/1080/14036090600587521

Hanson, S. (2005). Perspectives on the geographic stability and mobility of people in cities. *Proceedings of the National Academy of Sciences of the United States of America, 102(*43), 15301-15306. https://doi.org/10.1073/pnas.0507309102

Hensher, D.A., Rose, J.M., & Greene, W.H. (2005). *Applied Choice Analysis; A Primer*. Cambridge University Press.

Jansen, S.J.T., Coolen, H.C.C.H., & Goetgeluk, R.W. (Eds.) (2011). *The Measurement and Analysis of Housing Preference and Choice*. Springer.

Judd, B., Liu, E., Easthope, H., & Bridge, C. (2014*). Downsizing amongst older Australians* (Vol. Final Report No. 214). Australian Housing and Urban Research Institute.

Kendig, H., Clemson, L., & Mackenzie, L. (2012). Older People: Well-being, housing and neighborhoods. In S. Smith, M. Elsinga, L. Fox O'Mahony, O. Seow Eng, S. Wachter, C. Hamnett (Eds.). *International encyclopedia of housing and home* (1st ed., Vol.5, pp. 150-155). Elsevier.

Kendig, H., Honge Gong, C., Cannon, L., & Browning, C. (2017). Preferences and Predictors of Aging in Place: Longitudinal Evidence From Melbourne, Australia. *Journal of Housing For the Elderly, 31*(3), 259- 271. https://doi.org/10.1080/02763893.2017.1280582

Kim, S., Kim, H., & Kim, W.G. (2003). Impacts of senior citizens' lifestyle on their choices of elderly housing. *Journal of Consumer Marketing, 20*(3), 210-226. https://doi.org/10.1108/07363760310472245

Kramer, C., & Pfaffenbach, C. (2009). Persistence preferred- on future residential (im)mobility among the generation 50plus. *ERDKUNDE, 63*(2), 161-172. https://doi.org/10.3112/erdkunde.2009.02.04

Lager, D.R. (2015). *Perspectives on ageing in place. Older adults' experiences of everyday life in urban neighbourhoods*. [Doctoral dissertation, University of Groningen].

Lawton, M.P. (1978). The Housing Problems of Community-Resident Elderly. *Occasional Papers in Housing and Community Affairs, 1*, 39-74.

Lawton, M.P. (1986). Housing Preferences and Choices: Implications. In R.J. Newcomer, M.P. Lawton, & T.O. Byers (Eds.), *Housing an Ageing Society: Issues, Alternatives, and Policy* (pp. 42-52). Van Nostrand Reinhold.

Lawton, M.P., & Nahemow, L. (1973). Ecology and the aging process. In C. Eisdorfer & M P. Lawton (Eds.), *The psychology of adult development and aging* (pp. 619-674). https://doi.org/10.1037/10044-020

Löfqvist, C., Granbom, M., Himmelsbach, I., Iwarsson, S., Oswald, F., & Haak, M. (2013). Voices on relocation and ageing in place in very old age – a complex and ambivalent matter. *The Gerontologist, 53*(6), 919–927. https://doi.org/10.1093/geront/gnt034

Lord, S.R., Menz, H.B., & Sherrington, C. (2006). Home environment risk factors for falls in older people and the efficacy of home modifications. *Age and Ageing, 35*(2), ii55–ii59. https://doi.org/10.1093/ageing/afl088

Louviere, J.J., Hensher, D.A., & Swait, J.D. (2000). *Stated Choice Methods; Analysis and Application*. Cambridge University Press.

Milligan, C. (2009). *There's No Place Like Home: Place and Care in an Ageing Society*. Ashgate.

Mulder, C.H. (1996). Housing choice: Assumptions and approaches. *Netherlands Journal of Housing and the Built Environment, 11*(3), 209–232. https://doi.org/10.1007/BF02496589

Musterd, S. (Ed.) (1989). Methoden voor woning- en woonmilieubehoefte onderzoek [Methods for housing and living environmental needs resesarch]. SISWO.

Netherlands Institute for Social Research. (2010). Wisseling van de wacht: generaties in Nederland [Changing of the guard: generations in the Netherlands]. Sociaal en Cultureel Planbureau.

Newman, S.J. (1976). *Housing Adjustments of Older people: A Report of Findings From the Second Phase*. Institute for Social Research.

Oswald, F., Schilling, O., Wahl, H-W., & Gäng, K. (2002). Trouble in paradise? Reasons to relocate and objective environmental changes among well-off older adults. *Journal of Environmental Psychology, 22*(3), 273-288. https://doi.org/10.1006/jevp.2002.0255

Oswald, F., Wahl, H-W., Schilling, O., Nygren, C., Fänge, A., Sixsmith, A., Sixsmith, J., Széman, Z., Tomsone, S., & Iwarsson, S. (2007). Relationships between housing and healthy aging in very old age. *The Gerontologist, 47*(1), 96–107. https://doi.org/10.1093/geront/47.1.96

Parkes, A, Kears, A., & Atkinson, R. (2002). What Makes People Dissatisfied with their Neighbourhoods? *Urban studies, 39*(13), 2413-2438. https://doi.org/10.1080/0042098022000027031

Peace, S., Holland, C., & Kellaher, L. (2011). 'Option recognition' in later life: variations in ageing in place. *Ageing & Society, 31*(5), 734–757. https://doi.org/10.1017/S0144686X10001157

Pope, N.D., & Kang, B. (2010). Residential Relocation in Later Life: A Comparison of Proactive and Reactive Moves. *Journal of Housing For the Elderly, 24*(2),193-207. https://doi.org/10.1080/02763891003757122

Priemus, H. (1984). *Nederlandse woontheorieën. Volkshuisvesting in theorie en praktijk* [Dutch housing theories. Public housing in theory and practice]. Delftse Universitaire Pers.

Pynoos, J., Nishita, C., & Kendig, H. (2007). Housing. In J.E. Birren (ed.), *Encyclopedia of Gerontology* (2nd ed, Vol. 2, pp.709-719). Elsevier.

Ritchey, P.N. (1976). Explanations of Migration. *Annual Review of Sociology, 2*, 363–404. https://doi.org/10.1146/annurev.so.02.080176.002051

Robison, J.T., & Moen, P. (2000). A life-course perspectives on housing expectations and shifts in late life. *Research on Aging, 22*(5), 499-532. https://doi.org/10.1177/0164027500225003

Rowles, G.D., Oswald, F., & Hunter, E.G. (2004). Interior living environments in old age. In H.-W. Wahl, R. Scheidt, & P.G. Windley (Eds.), *Ageing in context: Socio-physical environments* (Annual Review of Gerontology and Geriatrics, 2003)(pp.167-193). Springer.

Sabagh, G., Van Arsdol, M.D., & Butler, E.W. (1969). Some Determinants of Intrametropolitan Residential Mobility: Conceptual Considerations. *Social Forces, 48*(1), 88–98. https://doi.org/10.1093/sf/48.1.88

Sixsmith, A., & Sixsmith, J. (2008). Ageing in place in the United Kingdom. *Ageing International, 32*(3), 219–235. https://doi.org/10.1007/s12126-008-9019-y

Smetcoren, A-S., De Donder, L., Dury, S., De Witte, N., Kardol, T, & Verté, D. (2017). Refining the push and pull framework: identifying inequalities in residential relocation among older adults. *Ageing & Society, 37*(1), 90-112. https://doi.org/10.1017/S0144686X15001026

Smid, I., & Priemus, H. (1994). *Bewonerspreferenties: Richtsnoer voor investeringen in nieuwbouw en de woningvoorraad* [Resident preferences: Guideline for investments in new construction and the housing stock]. Delftse Universitaire Pers.

Statistics Netherlands. (2017). *Trends in the Netherlands*. Statistics Netherlands.

Stimson, R.J., & McCrea, R. (2004). A Push-Pull Framework for Modelling the Relocation of retirees to a Retirement Village: The Australian experience. *Environment and Planning A: Economy and Space, 36*(8), 1451-1470. https://doi.org/10.1068/a36206

Tatsiramos, K. (2006). *Residential mobility and housing adjustment of older households in Europe* (IZA Discussion Paper No. 2435). Institute for the Study of Labor.

Timmermans, H., Borgers, A., Van Dijk, J., & Oppewal, H. (1992). Residential Choice Behaviour of Dual-Earner Households: A Decompositional Joint Choice Model. *Environment and Planning A: Economy and Space, 24*(4), 517-533. https://doi.org/10.1068/a245017

Timmermans, H., Molin, E., & Van Noortwijk, L. (1994). Housing Choice Processes: Stated versus Revealed Modeling Approaches. *Netherlands Journal of Housing and the Built Environment, 9*, 215-227. https://doi.org/10.1007/BF02496997

Tyvimaa, T., & Kemp, C.L. (2011). Finnish Seniors' Move to a Senior House: Examining the Push and Pull Factors. *Journal of Housing for the Elderly, 25*(1), 50–71. https://doi.org/10.1080/02763893.2011.545742

Van der Bie, R., & Latten, J. (2012). Babyboomers, indrukken vanuit de statistiek [Baby boomers, impressions from statistics]. Statistics Netherlands.

Wagner, S., Shubair, M.M., & Michalos, A.C. (2010). Surveying older adults' opinions on housing: recommendations for policy. *Social Indicators Research, 99*(3), 405-412. https://doi.org/10.1007/s11205-010-9588-5

Wahl, H-W., Iwarsson, S., & Oswald, F. (2012). Ageing Well and the Environment: Toward an Integrative Model and Research Agenda for the Future. *The Gerontologist, 52*(3), 306-3016. https://doi.org/10.1093/geront/gnr154

Walters, W.H., & Owen, D. (2000). Types and patterns of later-life migration. *Geografiska Annaler Series B, 82*(3), 129-147. https://doi.org/10.1111/j.0435-3684.2000.00079.x

Weeks, L., Branton, O., & Nilsson, T. (2005). The influence of the family on the future housing preferences of seniors in Canada. *Housing, Care and Support, 8*(2), 29-34. https://doi.org/10.1108/14608790200500015

Weeks, L.E., Keefe, J., & Macdonald, D. J. (2012). Factors Predicting Relocation Among Older Adults. *Journal of Housing For the Elderly, 26*(4), 355-371. https://doi.org/10.1080/02763893.2011.653099

Weeks, L.E., Shiner, D., Stadnyk, R., & MacDonald, D.J. (2013). What should we build when they are ready to come? Evidence-based housing for older adults. *Seniors Housing & Care Journal, 21*(1), 69–85.

Wiles, J.L., Leibing, A., Guberman, N., Reeve, J., & Allen, R.E.S. (2012). The meaning of "ageing in place" to older people. *The Gerontologist, 52*(3), 357-366. https://doi.org/10.1093/geront/gnr098

# Appendices

Appendix 4.1 Questionnaire current housing situation [translated from Dutch]

**Current dwelling**

Question 1: What kind of house do you live in?

- Apartment
- Non-detached, without garden
- Non-detached, with garden
- Detached

Question 2: How many bedrooms are there (guest bedrooms included) in your home?

Question 3: Including yourself, how many people currently live in your household?

Question 4: Do you live in a rental or owner-occupied home?

- Rental
- Owner-occupied

Question 5: How much is the housing cost per month? This concerns the total amount that you pay per month in rent or mortgage, plus the amount that you spend monthly on gas, water, electricity and any service costs.

**Current neighbourhood**

Question 6: What is the location of your home? Please indicate which of the three options below is most applicable to your neighbourhood:

- Inner city area
- Around inner city
- Edge of the city

Question 7: How would you characterize the households in your neighbourhood? Please indicate which of the three options below is most applicable to your neighbourhood:

- Primarily (young) families
- Primarily older adults
- Mixture of single households, families and older adults

Question 8: How would you characterize the form of ownership of homes in your neighbourhood? Please indicate which of the three options below is most applicable to your neighbourhood:

- Primarily owner-occupied
- Primarily rental dwellings
- Mixture of owner occupied and rental dwellings

### Services in the neighbourhood

Question 9: How would you characterize the location of your daily supplies (e.g. the supermarket)?

- Within walking distance of my home
- Within cycling distance of my home
- Outside cycling distance of my home, but easily accessible by car

Question 10: How would you characterize the location of your care facilities (e.g. the general practitioner and the pharmacy)?

- Within walking distance of my home
- Within cycling distance of my home
- Outside cycling distance of my home, but easily accessible by car

Question 11: How would you characterize the accessibility of your home by public transport (e.g. the bus stop)?

- My home is easy to reach by public transport
- My home is difficult to reach by public transport

### Accessibility of your home

Question 12: How would you characterize the location of the primary areas (i.e. living room, bedroom, kitchen and sanitary areas) in your home :?

- These are located on one floor
- These are located on different floors

Question 13: How would you characterize access to your home (i.e. front door)?

- My home is accessible without the usage of stairs and/or a lift
- My home is accessible by stairs
- My home is accessible by elevator

Appendix 4.2 Combinations of alternatives and games per group

| Choice set | Group 1 | Group 2 | Group 3 |
|---|---|---|---|
| 1 | Game 1: alternative 1 & 3 | Game 1: alternative 1 & 4 | Game 1: alternative 1 & 8 |
| 2 | Game 1: alternative 2 & 4 | Game 1: alternative 2 & 3 | Game 1: alternative 2 & 7 |
| 3 | Game 1: alternative 5 & 8 | Game 1: alternative 5 & 7 | Game 1: alternative 3 & 6 |
| 4 | Game 1: alternative 6 & 7 | Game 1: alternative 6 & 8 | Game 1: alternative 4 & 5 |
| 5 | Game 1: alternative 1 & 8 | Game 1: alternative 1 & 7 | Game 1: alternative 1 & 3 |
| 6 | Game 1: alternative 2 & 7 | Game 1: alternative 2 & 8 | Game 1: alternative 2 & 4 |
| 7 | Game 1: alternative 3 & 6 | Game 1: alternative 3 & 5 | Game 1: alternative 5 & 8 |
| 8 | Game 1: alternative 4 & 5 | Game 1: alternative 4 & 6 | Game 1: alternative 6 & 7 |
| 9 | Game 2: alternative 1 & 8 | Game 2: alternative 1 & 7 | Game 2: alternative 1 & 3 |
| 10 | Game 2: alternative 2 & 7 | Game 2: alternative 2 & 8 | Game 2: alternative 2 & 4 |
| 11 | Game 2: alternative 3 & 6 | Game 2: alternative 3 & 5 | Game 2: alternative 5 & 8 |
| 12 | Game 2: alternative 4 & 5 | Game 2: alternative 4 & 6 | Game 2: alternative 6 & 7 |
| 13 | Game 2: alternative 1 & 4 | Game 3: alternative 1 & 7 | Game 3: alternative 1 & 8 |
| 14 | Game 2: alternative 2 & 3 | Game 3: alternative 2 & 8 | Game 3: alternative 2 & 7 |
| 15 | Game 2: alternative 5 & 7 | Game 3: alternative 3 & 5 | Game 3: alternative 3 & 6 |
| 16 | Game 2: alternative 6 & 8 | Game 3: alternative 4 & 6 | Game 3: alternative 4 & 5 |
| 17 | Game 3: alternative 1 & 4 | Game 3: alternative 1 & 3 | Game 4: alternative 1 & 8 |
| 18 | Game 3: alternative 2 & 3 | Game 3: alternative 2 & 4 | Game 4: alternative 2 & 7 |
| 19 | Game 3: alternative 5 & 7 | Game 3: alternative 5 & 8 | Game 4: alternative 3 & 6 |
| 20 | Game 3: alternative 6 & 8 | Game 3: alternative 6 & 7 | Game 4: alternative 4 & 5 |
| 21 | Game 4: alternative 1 & 7 | Game 4: alternative 1 & 3 | Game 4: alternative 1 & 4 |
| 22 | Game 4: alternative 2 & 8 | Game 4: alternative 2 & 4 | Game 4: alternative 2 & 3 |
| 23 | Game 4: alternative 3 & 5 | Game 4: alternative 5 & 8 | Game 4: alternative 5 & 7 |
| 24 | Game 4: alternative 4 & 6 | Game 4: alternative 6 & 7 | Game 4: alternative 6 & 8 |

| Group 4 | Group 5 | Group 6 |
|---|---|---|
| Game 1: alternative 1 & 7 | Game 1: alternative 1 & 4 | Game 1: alternative 1 & 3 |
| Game 1: alternative 2 & 8 | Game 1: alternative 2 & 3 | Game 1: alternative 2 & 4 |
| Game 1: alternative 3 & 5 | Game 1: alternative 5 & 7 | Game 1: alternative 5 & 8 |
| Game 1: alternative 4 & 6 | Game 1: alternative 6 & 8 | Game 1: alternative 6 & 7 |
| Game 2: alternative 1 & 8 | Game 2: alternative 1 & 7 | Game 2: alternative 1 & 8 |
| Game 2: alternative 2 & 7 | Game 2: alternative 2 & 8 | Game 2: alternative 2 & 7 |
| Game 2: alternative 3 & 6 | Game 2: alternative 3 & 5 | Game 2: alternative 3 & 6 |
| Game 2: alternative 4 & 5 | Game 2: alternative 4 & 6 | Game 2: alternative 4 & 5 |
| Game 2: alternative 1 & 4 | Game 2: alternative 1 & 3 | Game 3: alternative 1 & 8 |
| Game 2: alternative 2 & 3 | Game 2: alternative 2 & 4 | Game 3: alternative 2 & 7 |
| Game 2: alternative 5 & 7 | Game 2: alternative 5 & 8 | Game 3: alternative 3 & 6 |
| Game 2: alternative 6 & 8 | Game 2: alternative 6 & 7 | Game 3: alternative 4 & 5 |
| Game 3: alternative 1 & 4 | Game 3: alternative 1 & 3 | Game 3: alternative 1 & 4 |
| Game 3: alternative 2 & 3 | Game 3: alternative 2 & 4 | Game 3: alternative 2 & 3 |
| Game 3: alternative 5 & 7 | Game 3: alternative 5 & 8 | Game 3: alternative 5 & 7 |
| Game 3: alternative 6 & 8 | Game 3: alternative 6 & 7 | Game 3: alternative 6 & 8 |
| Game 3: alternative 1 & 7 | Game 4: alternative 1 & 3 | Game 4: alternative 1 & 4 |
| Game 3: alternative 2 & 8 | Game 4: alternative 2 & 4 | Game 4: alternative 2 & 3 |
| Game 3: alternative 3 & 5 | Game 4: alternative 5 & 8 | Game 4: alternative 5 & 7 |
| Game 3: alternative 4 & 6 | Game 4: alternative 6 & 7 | Game 4: alternative 6 & 8 |
| Game 4: alternative 1 & 7 | Game 4: alternative 1 & 8 | Game 4: alternative 1 & 7 |
| Game 4: alternative 2 & 8 | Game 4: alternative 2 & 7 | Game 4: alternative 2 & 8 |
| Game 4: alternative 3 & 5 | Game 4: alternative 3 & 6 | Game 4: alternative 3 & 5 |
| Game 4: alternative 4 & 6 | Game 4: alternative 4 & 5 | Game 4: alternative 4 & 6 |

# Chapter 5

## 'THE OLDER ADULT' DOESN'T EXIST. USING VALUES TO DIFFERENTIATE OLDER ADULTS IN THE DUTCH HOUSING MARKET.

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# Abstract

To date most prognoses of older adults in the housing market have been based on average housing preferences and average housing market behaviour of all persons in a certain age cohort. Due to social-cultural and social-economic dynamics, the relationship between age and housing is expected to change for successive cohorts. This study sets out to improve housing preferences estimates by recognizing the growing differentiation among older adults. This heterogeneity is analysed by differentiating older adults on their lifestyles (operationalized as values), using latent class analysis as a clustering technique. These analyses result in older adults being classified into five segments on the basis of their viewpoints, motivations and attitude. Next, for each lifestyle segment a separate discrete choice model is estimated, offering insight in the relative importance that these segments give to various housing attributes. The findings demonstrate advantages over a traditional, single model approach and can be helpful in formulating contemporary housing policy.



Keywords: Housing choice; housing and environment; housing market; housing preferences; lifestyle; older adults

# 5.1. Introduction

Like many in other Western countries, the Dutch population is ageing rapidly (Christensen et al., 2009). The related changes in the number and proportion of older adults in our population have numerous implications (Kim, 2011). One associated issue is the provision of (suitable) housing for older adults. In order to plan housing provision successfully, knowledge about the housing preferences of older adults is crucial (Abramsson & Andersson, 2016). Housing preferences are traditionally predicted on the basis of several socio-demographic characteristics such as, for example, age (Van Diepen & Arnoldus, 2003). This method assumes that social background may both create opportunities and limit choices (Ganzeboom, 1988) and also that all persons of a certain age behave the same on the housing market (Moschis et al., 2003). However, people who share the same social background may have totally different preferences and behavioural patterns, whereas people with different backgrounds can share the same preferences and behavioural patterns (see e.g. Gunter & Furnman, 1992, Michelson & Reed, 1975; Pinkster & Van Kempen, 2002; Wells, 1974). Due to social-cultural and social-economic structures, the relationship between age and housing is expected to be different for successive cohorts (Hooimeijer, 2007; Wulff et al., 2010). In other words, the next generation of older adults is expected to behave differently on the housing market than what is considered to be common for the existing generation of older adults. As a result, it has been argued that socio-demographic characteristics alone are no longer sufficient to predict the housing preferences of (older) consumers (see e.g. Heijs et al., 2009, 2011; Jansen, 2012).

In marketing, it has become common to use lifestyle variables as a supplement to socio-demographic characteristics in the prediction of preferences (Jansen, 2012). The concept of lifestyle was introduced in the 1950s to better understand, explain and predict consumer behaviour in order to focus marketing strategies (Anderson & Golden, 1984). Since every product could have its own lifestyle typology, numerous lifestyle typologies were developed. Typically, studies included up to 200 or 300 different items on activities, interests and opinions (Jansen, 2012). A data reduction technique, such as factor analysis, would then be used to obtain a smaller number of psychographic dimensions (Wedel & Kamakura, 2000).

The purpose of the current study is to identify heterogeneity among older adults by differentiating segments of older adults who have (more or less) the same viewpoints, motivations and attitude with respect to housing. Subsequently, we intend to improve the understanding of older adults' housing preferences by offering insight in the relative importance these segments of older adults give to various housing attributes. In doing so, we aim to contribute to a better grounding of housing policy with respect to the

apparent diversity within the older population. From the beginning of the twenty-first century, the Dutch government has focussed on ageing in place-policies and living independently as long as possible to keep costs for care maintainable (Van Dijk et al., 2013). As such, much attention is given to solving the shortage of suitable housing (Van Galen & Faessen, 2014) and this is the perfect time to make sure heterogeneous demands are met by differentiated supply.

## 5.2. Segmentation of older adults

Several approaches have been used for segmenting the senior market (Weijters & Geuens, 2003). Dividing the older population by age is the easiest way to segment the senior market into subgroups (see e.g. Tréguer, 1998). The prevailing criticism of the age approach stresses the arbitrariness of age boundaries and the relativity of age (Gunter, 1998; Wilkes, 1992; Wulff et al., 2010). Alternatives to the age approach are lifestyle segmentation (see e.g. Hesse, 1991), and 'Gerontographics' (Moschis, 1993, 1996).

Lifestyle segmentation uses psychographic[1] instruments to differentiate the senior market. Among the psychographic instruments, the Values And Lifestyles (VALS) and the List of Values (LOV) scales have received a lot of attention (Wedel & Kamakura, 2000). The VALS survey was initially based on Maslow's need hierarchy (Weijters & Geuens, 2003), and identifies four groups: need-driven, outer-directed, inner-directed and integrated. The LOV survey (Beatty et al., 1985) contains nine values: self-respect, self-fulfilment, accomplishment, being well respected, fun and enjoyment, excitement, warm relationship with others, a sense of belonging, and security. Even though psychographic instruments have been criticized (see e.g. Heijs et al., 2009, 2011; Jansen, 2012), they have proven their value in market segmentation when they are combined with more product-specific variables such as media usage (Wedel & Kamakura, 2000).

Criticism on senior market segmentation emphasizes the use of generally applicable lifestyles scales and, therefore, the lack of adaptation to older adults (Weijters & Geuens, 2003). However, applications specifically adapted to older adults can be found in the literature (see for e.g. Day et al., 1988; Fox & French, 1985; Gollub & Javitz, 1989; Sorce et al., 1989). These studies developed lifestyle segments by differentiating the market segments using four to six classifications. The LAVOA-segmentation (Lifestyles and Values of Older Adults), for example, identifies six distinct psychographic segments of older adults: Explorers, Adapters, Pragmatists, Attainers, Martyrs, and Preservers (Gollub & Javitz, 1989).

1 Such as personality traits, lifestyles, attitudes, expectations and activities.

Another alternative to the age approach can be found in Moschis' Gerontographics (1993, 1996). Moschis divides the senior market into life stage groups based on two dimensions: psycho-social ageing and biological ageing. This results in the following four groups: healthy indulgers (young on both dimensions), ailing outgoers (older adults only on the biological dimension), healthy hermits (older adults only on the psycho-social dimension) and frail recluses (older adults on both dimensions). Criticism of this approach stresses the lack of clarity and transparency (Weijters & Geuens, 2003). Clear instructions for measurement are missing, as are indications concerning the location of cut-off points on both dimensions. Moreover, since both dimensions refer to a process of gradual decline, Gerontographics reduces older adults to an ageing subject. Although ageing and its effects are real, and should not be ignored, researchers and practitioners should not be biased towards a one-sided focus on ageing phenomena (Weijters & Geuens, 2003). The idea that older adults should not be seen just as aged people with capability constraints is gaining importance. Most older adults are active, mobile, healthy and productive, even if they are not gainfully employed. The experience of daily living focused more narrowly on people's homes and immediate environments tends to occur in the later stages of old age (Droogleever Fortuijn et al., 2006).



## 5.3. Methods

In this study, we use a lifestyle segmenting approach to determine meaningful segments in the Dutch senior market. Lifestyle can be operationalized in various ways. The most frequently occurring operationalisations of lifestyle are based on the following: (1) behaviour only; (2) latent variables only (e.g. attitudes, opinions); (3) a mix of behavioural and latent variables; (4) a combination of socio-demographic characteristics; and (5) a combination of socio-demographic characteristics and other variables (Jansen, 2011).

This study operationalizes the concept of lifestyle on the basis of latent variables (2), in the form of values. Since values are known to be relatively stable, lifestyle segments based on values are likely to be more stable over time than those based solely on activities, interests and opinions (Weijters & Geuens, 2003). Values play an important role in explaining people's behaviour in general (Rokeach, 1973), and their choice behaviour in particular (Bettman, 1979). Values can thus be seen as objectives that – either consciously or unconsciously - influence all human actions. In this way the consumer is approached as a goal oriented being, who chooses a particular house in order to satisfy values that are important to him or her (Bijker et al., 2012).

In order to explore the influence of values on housing preferences we use Brand Strategy Research (BSR) (Brethouwer et al., 1995; Oppenhuisen, 2000), which is a theoretical framework that identifies motivational groups or clusters based on Adler's social-psychology theory (for more information see Callebaut et al., 1999). As such, it gives knowledge of consumers' fears, beliefs and values, thus providing an understanding of the fundamental motivations that drive people's (future) housing decisions (Van Hattum & Hoijtink, 2009). The BSR framework consists of a strategic map in which 148 psychographic items (see Appendix 5.1) are presented. Two axes divide the map. The first (horizontal) axis is called the 'sociological' axis and indicates how a person relates to their social environment (Van Hattum & Hoijtink, 2009): the right side indicates involvement (belonging); the left side indicates independence (affirmation). The second (vertical) axis is called the 'psychological' axis and indicates how a person handles 'tensions' (Van Hattum & Hoijtink, 2009): the top side indicates an expression of 'tensions' (extravert) and the bottom side indicates a suppression or ignorance of 'tensions' (introvert). The result is a four-quadrant strategic map as shown in Figure 5.1.

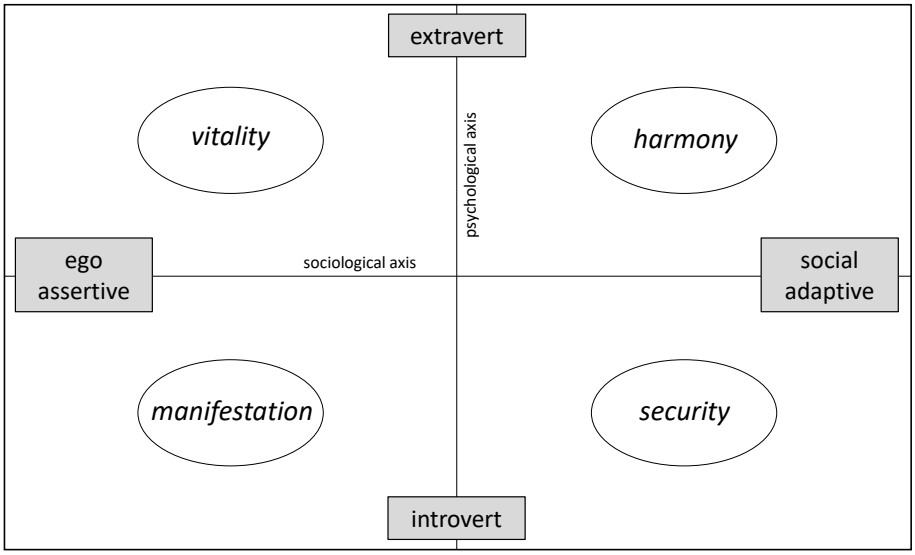


Figure 5.1 BSR Strategic Map (with kind permission from Springer Nature: Journal of Classification, doi:10.1007/s00357-009-9040-1, 2009, page 4, Van Hattum & Hoijtink, Figure 1)

The idea behind BSR is that the four quadrants in the strategic map represent four main motivational clusters which can be found in each researched domain; in this case housing. Each of these clusters demonstrates unique needs, motivations and products or services

and communication requirements (Van Hattum & Hoijtink, 2009). In a given domain it is also possible that mixtures of these four main clusters are found. The four main motivational clusters in BSR are:

*Cluster 1*. In the upper left quadrant, a cluster that is described with the word 'Vitality'. Persons from this cluster are self-conscious, self-confident in their attitude towards (choices in) life and energetic, vital and passionate in their behaviour.

*Cluster 2*. In the lower left quadrant, a cluster that is described with the word 'Manifestation'. Persons from this cluster are career oriented and aspire to have a certain (high) status in life in connection with certain status symbols and conspicuous consumption.



*Cluster 3*. In the upper right quadrant, a cluster that is described with the word 'Harmony'. Persons from this cluster strive for harmony in every aspect of life and harmonious relations with all people they meet in daily life.

*Cluster 4*. In the lower right quadrant, a cluster that is described with the word 'Security'. Persons from this cluster are mainly oriented on their peer group and the rules and values of this group.

The respondents are asked to choose items which describe themselves best from the list of 148 psychographic items in the BSR framework. From previous research it is known that the psychographic items in the BSR framework can be presented in the strategic map in more or less the same way in each researched domain (Brethouwer et al., 1995; Oppenhuisen, 2000). For example, persons who are assigned to the main motivational cluster that can be described by the word 'Manifestation' are more likely to pick psychographic items like: 'Self-assured', 'Build a successful career', 'Manager'. Within each motivational cluster, not only the individual items are more likely to be picked, but also pairs of items. For example, persons who pick item 'Manager' are more likely to also pick item 'Success in life'. Likewise all other items within the BSR framework can be pre-assigned to one of the four main motivational clusters. Consequently, previous research using the BSR framework provides us with a substantial amount of prior knowledge about which combinations of items are more likely to be picked (Van Hattum & Hoijtink, 2009). This prior knowledge is used in our model based clustering approach, to determine which interaction effects are included on our model in order to find the four main motivational clusters (for more information see: Van Hattum & Hoijtink, 2009). The model based clustering approach will be discussed in more detail in the next section.

5.3.1. Latent class analysis

The respondents are clustered according to psychographic items they selected by conducting a latent class analysis. A latent class analysis is appropriate because our hypotheses are that discrete lifestyle preferences exist, that these lifestyles are not directly identifiable from the data, and that older adults with different lifestyles will exhibit different housing preferences. An important difference between standard clustering (Hair et al., 1984) and latent class analysis (Banfield & Raftery, 1993; Bensmail et al., 1997; Fraley & Raftery, 1998; Newcomb, 1886; Pearson, 1894; Vermunt & Magidson, 2000) is that in the latter it is assumed that the data are generated by a certain mixture of underlying probability distributions. An advantage of this probabilistic approach is that the cluster criterion (Hair et al., 1984; Wedel & Kamakura, 2000), which is usually difficult to define and calculate for complex models, is not needed. A further advantage of this approach is that uncertainty about a respondent's cluster membership is taken into account (Van Hattum & Hoijtink, 2009).

In recent years latent class analysis (e.g. model based clustering) has become a popular clustering technique, resulting in numerous papers with specific latent class analysis approaches and their applications (see e.g. Fraley & Raftery, 1998; Hoijtink & Notenboom, 2004; Ter Braak et al., 2003; Van Hattum & Hoijtink, 2009; Vermunt & Magidson, 2000; Wedel & Kamakura, 2000).

*Model specifications*

Let $x_{ij}$ represent the response of respondent $i = 1, \ldots, N$, to item $j = 1, \ldots, J$, $x_{ij} \varepsilon\{0,1\}$, where 1 indicates that respondent $i$ picked item $j$ and 0 indicates that respondent $i$ did not pick item $j$. The $N$ x $J$ matrix $X$ contains the item responses. The $J$ vector $x_i$ is defined as a vector containing the response pattern or item responses of respondent $i$. The $N$ vector $x_j$ is defined as a vector containing the responses of the respondents to item $j$.

Each of the $J$ items is characterized by a parameter $\pi_{j|q}$, that is the probability of responding 1 to item $j$ in cluster $q$. Note that, $\pi = \{\pi_1, \ldots, \pi_q, \ldots, \pi_Q\}$ and $\pi_q = \{\pi_{1|q}, \ldots, \pi_{j|q}, \ldots, \pi_{J|q}\}$.

Let $\omega = \{\omega_1, \ldots, \omega_q, \ldots, \omega_Q\}$ be the $Q$ vector containing the cluster weights, that is, the proportion of persons allocated to each cluster and let $\omega_{q|i}$ denotes the probability that respondent $i$ belongs to latent cluster $q$. The $N$ vector $\tau$ contains the unobserved cluster memberships for each person $\tau = \{\tau_1, \ldots, \tau_i, \ldots, \tau_N\}$, where $\tau_i \varepsilon\{1, \ldots, Q\}$.

The general form of the data likelihood of the model based cluster model is given by

$$L(X|\pi, \lambda, \omega) = \prod_{i=1}^{N} \sum_{q=1}^{Q} \omega_q P(x_i|\tau_i = q).$$

The probability $P(x_i|\tau_i = q)$ is defined as follows

$$P(x_i|\tau_i = q) = \prod_{j=1}^{J} P(x_{ij}|\tau_i = q),$$

with

$$P(x_{ij}|\tau_i = q) = \pi_{j|q}^{x_{ij}}(1 - \pi_{j|q})^{1-x_{ij}}.$$

A commonly used criterion for estimating the parameters cluster specific probabilities ($\pi$) and cluster weights ($\omega$) is maximum likelihood (ML). In order to find the ML estimaters we used two well-known algorithms: EM (Dempster et al., 1977) and Newton-Raphson (Haberman, 1988). The EM algorithm is an iterative algorithm that contains the following steps: In the very first iteration of the EM-algorithm the respondents are randomly divided into $Q$ clusters.



E-step

1. $\omega_{q|i} = \frac{\omega_q P(x_i|\tau_i=q)}{\sum_{q'=1}^{Q} \omega_{q'} P(x_i|\tau_i=q')}$, for $q = 1, \ldots, Q$ and $i = 1, \ldots, N$

M-step

1. $N_q = \sum_{i=1}^{N} \omega_{q|i}$, for $q = 1, \ldots, Q$

2. $\omega_q = \frac{N_q}{N}$, for $q = 1, \ldots, Q$

3. $\pi_{j|q} = \frac{\sum_{i=1}^{N} \omega_{q|i} x_{ij}}{\sum_{i=1}^{N} x_{ij}}$, for $j = 1, \ldots, J$ and $q = 1, \ldots, Q$

A problem with the EM algorithm is when to stop. The EM algorithm stops when the parameters hardly change from one iteration to the next. However, Wedel and Kamakura (2000) describe that this is a lack of progress, rather than a measure of convergence and that there is evidence that the EM-algorithm is often stopped too early. In order to avoid this problem, the speed of convergence of the Newton-Raphson method is used when close to the optimal solution. The software Latent GOLD by Statistical Innovations Inc. is used for estimation.

*Number of clusters*

The remaining aspect of the model specification is to determine the number of clusters. The problem of identifying the number of latent clusters is still without a satisfactory statistical solution and one of the main research topics in model-based clustering (Wedel & Kamakura, 2000). When selecting the number of segments a trade-off needs to be

made. The more clusters one has, the greater the extent to which the analysis reflects the diversity observed in the data (Van Hattum & Hoijtink, 2010). This suggests that having a large number of clusters is desirable. But the more clusters one has, the greater the risk that the diversity that is identified is meaningless: only reflecting the properties of the specific data used in the analysis rather than the diversity observable in the world at large (Van Hattum & Hoijtink, 2010). This suggests it is preferable to have fewer clusters. The most widely used method of determining the number of latent clusters is by using the Bayesian Information Criterion (BIC) and Consistent Akaike Information Criterion (Wedel & Kamakura, 2000). In general, the cluster solution with the lowest value of the information criterion is preferred.

In this study the number of clusters is determined through a combination of statistical information (e.g. the BIC) and interpretation of the model results. Successive models are estimated with varying numbers of clusters and statistics are used to compare different models. Besides looking at the information criteria the cluster solutions are also tested against several criteria of segmentation, such as 'identifiability'. This means that the respondents allocated to each segment are similar in some relevant way. In addition we checked whether each segment of respondents is relatively unique, compared to the other segments that have been constructed. In examining the estimation results, we have selected the six-cluster solution model because it provides the most satisfying behavioural interpretation in terms of resulting lifestyle segments and subsequent segment-specific choice models (primarily lack of anti-intuitive signs and interpretability of clusters). The results of the six-cluster solution model are discussed in detail in the 'results' section.

*Data*

The data were collected in the summer of 2011 in cooperation with a housing association in the city of Groningen in the Netherlands. The respondents were drawn initially from the directory of the housing association. Since this sample consisted solely of tenants, the sample was extended with owner-occupiers[2]. The total sample consisted of 6,684 people, aged 55 years or older, all living in the municipality of Groningen. In total 1,010 respondents participated in the research (a response rate of 15%). Based on the six-cluster solution model, we were able to determine the lifestyle of 996 respondents. Subsequently, for each lifestyle segment a separate discrete choice model was estimated, offering insight in the relative importance these segments give

2 In 2015, around 56% of the 7.6 million dwellings the Dutch housing market are owner-occupied. The social housing represents 30% of total housing stock, making it an important player on the Dutch residential housing market. Private renting, which is not included in this study, accounts for 13% of the total housing stock (Systeem woningvoorraad, 2016).

to various housing attributes. Ultimately 952 of the 1,010 data records (i.e. respondents) were completed and therefore suitable for further analyses. Of these records, we were able to determine the lifestyle of 934 respondents.

This study is not free of limitations. Although this study provides empirical results for the Dutch elderly market in general, and the older adults in Groningen in particular, the study may have limitations in generalizing to other markets. There might be some differences between the Dutch way of thinking, cultural environment, traditions and lifestyle and those of other nations. Another limitation is the data collection method. The quality of the data used in this research may be affected by the fact that we used a computer assisted questionnaire. Compared to, for example, the data of the Housing Research Netherlands (HRN) survey[3], higher educated older adults are overrepresented in our sample, most probably due to the use of the a computer assisted questionnaire. Consequently, we correct for a potential education effect in our analysis.



## 5.4. Results

Taking into account both the statistical information criteria, and several criteria of good segmentation as discussed above, it turns out that with the dataset at hand the number of clusters should be $Q = 6$.

The row '$\omega_q$' in Table 5.1 displays the cluster weights for the Q = 6 solutions. From the row '$\omega_q$' it can be seen that Clusters 1 ($\omega_1 = 0.240$), 2 ($\omega_2 = 0.211$), 3 ($\omega_3 = 0.200$), 4 ($\omega_4 = 0.172$) and 5 ($\omega_5 = 0.168$) have relatively large cluster weights and are supposed to be substantial. Cluster 6 ($\omega_6 = 0.010$) has a relatively small cluster weight, representing only 10 respondents from the data set. Due to this small cluster weight this cluster is considered to be an outlier and not substantial. Therefore we focus on the five remaining clusters, which according to their cluster weights are large enough to consider in the analysis. Table 5.1 shows the item probability per cluster for the items concerning several character traits. These item probabilities $P(x_{ij} = 1|\tau_i = q)$, for $j = 1,\ldots,148$) are used in the cluster descriptions, and can be calculated as follows:

$$P(x_{ij} = 1|\tau_i = q) = P(x_{ij} = 1|x_i, \pi_q, \tau_1 = q) = \pi_{j|q}$$

3 The Housing Research Netherlands (HRN) survey is a large cross sectional survey in which information is gathered about the housing situation of people living in the Netherlands. The HRN dataset is representative of the Dutch population aged 18 and above, not living in an institution.

Table 5.1 Cluster Specific Item Probabilities for the Q = 6 Solution. $P_1 = P(x_{i1}=1|\tau_i=q)$ ,..., $P_{35}(x_{i35}=1|\tau_i=q)$

| $q$ | | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| $\omega_q$ | | 0.240 | 0.211 | 0.200 | 0.172 | 0.168 | 0.010 |
| P1 | A little bit shy | 0.130 | 0.057 | 0.271 | 0.082 | 0.042 | 0.200 |
| P2 | Adventurous | 0.004 | 0.057 | 0.050 | 0.281 | 0.114 | 0.100 |
| P3 | Capable | 0.029 | 0.000 | 0.050 | 0.135 | 0.150 | 0.200 |
| P4 | Cosy | 0.410 | 0.405 | 0.040 | 0.158 | 0.108 | 0.000 |
| P5 | Energetic | 0.113 | 0.138 | 0.030 | 0.222 | 0.168 | 0.200 |
| P6 | A little imprudent | 0.000 | 0.024 | 0.020 | 0.023 | 0.012 | 0.000 |
| P7 | Honest | 0.611 | 0.490 | 0.407 | 0.421 | 0.497 | 0.600 |
| P8 | Jovial | 0.033 | 0.076 | 0.015 | 0.023 | 0.036 | 0.000 |
| P9 | Opinionated | 0.100 | 0.110 | 0.161 | 0.216 | 0.138 | 0.400 |
| P10 | Self-assured | 0.151 | 0.100 | 0.131 | 0.292 | 0.198 | 0.300 |
| P11 | Serious | 0.322 | 0.276 | 0.392 | 0.251 | 0.317 | 0.500 |
| P12 | Spontaneous | 0.209 | 0.276 | 0.035 | 0.164 | 0.108 | 0.200 |
| P13 | A little bit impatient | 0.134 | 0.138 | 0.196 | 0.135 | 0.186 | 0.200 |
| P14 | Assertive | 0.151 | 0.067 | 0.055 | 0.123 | 0.162 | 0.000 |
| P15 | Cheerful | 0.218 | 0.295 | 0.045 | 0.135 | 0.114 | 0.100 |
| P16 | Critical | 0.238 | 0.114 | 0.347 | 0.450 | 0.359 | 0.500 |
| P17 | Enthusiastic | 0.230 | 0.171 | 0.015 | 0.205 | 0.204 | 0.000 |
| P18 | Gentle | 0.205 | 0.181 | 0.206 | 0.216 | 0.024 | 0.300 |
| P19 | Intelligent | 0.167 | 0.048 | 0.196 | 0.520 | 0.389 | 0.300 |
| P20 | Sympathetic | 0.188 | 0.210 | 0.126 | 0.211 | 0.138 | 0.000 |
| P21 | Ordinary | 0.251 | 0.381 | 0.427 | 0.041 | 0.138 | 0.400 |
| P22 | Self-confident | 0.092 | 0.148 | 0.075 | 0.123 | 0.251 | 0.100 |
| P23 | Down-to-earth | 0.272 | 0.386 | 0.427 | 0.234 | 0.353 | 0.400 |
| P24 | Strong character | 0.138 | 0.124 | 0.055 | 0.216 | 0.156 | 0.400 |
| P25 | Easy going | 0.096 | 0.110 | 0.020 | 0.058 | 0.018 | 0.100 |
| P26 | Balanced | 0.176 | 0.152 | 0.136 | 0.222 | 0.317 | 0.000 |
| P27 | Classy | 0.029 | 0.019 | 0.015 | 0.041 | 0.054 | 0.000 |
| P28 | Deliberate | 0.130 | 0.152 | 0.332 | 0.129 | 0.174 | 0.400 |
| P29 | Leader | 0.054 | 0.124 | 0.025 | 0.170 | 0.413 | 0.100 |
| P30 | Helpful | 0.607 | 0.671 | 0.322 | 0.433 | 0.341 | 0.300 |
| P31 | Interested in others | 0.569 | 0.433 | 0.080 | 0.561 | 0.281 | 0.100 |
| P32 | Neat | 0.305 | 0.262 | 0.196 | 0.035 | 0.108 | 0.000 |
| P33 | Passionate | 0.000 | 0.043 | 0.015 | 0.047 | 0.024 | 0.000 |
| P34 | Serene | 0.130 | 0.243 | 0.377 | 0.105 | 0.198 | 0.000 |
| P35 | Commercial | 0.063 | 0.090 | 0.136 | 0.041 | 0.216 | 0.100 |

5.4.1. Describing the motivational clusters

Using the item probabilities from Table 5.1 each of the five remaining latent clusters can be described in terms of probabilities. As illustrated in Fig. 5.1, the idea behind the BSR framework is that there are four main motivational clusters, which has been found useful in marketing (Brethouwer et al., 1995). All other clusters are considered to be combinations in terms of description of these four main clusters.

Cluster 1, with higher cluster-specific probabilities on the items 'Honest' ($P(x_{i7} = 1|\tau_i = 1) = 0.611$), 'Helpful' ($P(x_{i30} = 1|\tau_i = 1) = 0.607$), and 'Neat' ($P(x_{i32} = 1|\tau_i = 1) = 0.305$), is a combination of the two main motivational clusters that can be described with the words 'Harmony' and 'Security' in Fig. 5.1. Cluster 2 corresponds with the cluster in the upper right quadrant in the BSR strategic map (see Fig. 5.1). This cluster is described with the word 'Harmony'. Looking at Table 5.1, it can be seen that, for example, the items 'Cosy' ($P(x_{i4} = 1|\tau_i = 2) = 0.405$), 'Spontaneous' ($P(x_{i12} = 1|\tau_i = 2) = 0.276$), and 'Helpful' ($P(x_{i30} = 1|\tau_i = 2) = 0.671$) have higher cluster-specific probabilities for Cluster 2, which corresponds with the description of this main motivational cluster in Fig. 5.1. Likewise, the items 'A little bit shy' ($P(x_{i1} = 1|\tau_i = 3) = 0.271$), 'Ordinary' ($P(x_{i21} = 1|\tau_i = 3) = 0.427$), and 'Down-to-earth' ($P(x_{i23} = 1|\tau_i = 3) = 0.427$) have higher cluster-specific probabilities for Cluster 3, which corresponds with the description of the main motivational cluster that can be described with the word 'Security' in Fig. 5.1. The items 'Adventurous' ($P(x_{i2} = 1|\tau_i = 4) = 0.281$), 'Energetic' ($P(x_{i5} = 1|\tau_i = 4) = 0.222$), and 'Opinionated' ($P(x_{i9} = 1|\tau_i = 4) = 0.216$) have higher cluster-specific probabilities for Cluster 4, which corresponds with the description of the main motivational cluster that can be described with the word 'Vitality' in Fig. 5.1. The items 'Critical' ($P(x_{i16} = 1|\tau_i = 5) = 0.359$), 'Leader' ($P(x_{i29} = 1|\tau_i = 5) = 0.413$), and 'Commercial' ($P(x_{i35} = 1|\tau_i = 5) = 0.216$) have higher cluster specific probabilities for Cluster 5, which corresponds with the description of the main motivational cluster that can be described with the word 'Manifestation' in Fig. 5.1. The cluster specific probabilities for the items of the other 113 psychographic items (see Appendix 5.2) can be interpreted and used for identifying and describing the motivational clusters in a similar manner.

In addition, we can further describe the motivational clusters by relating the five motivational clusters to several socio-demographic characteristics and several characteristics of the current housing situation of the respondents.

Table 5.2 Socio demographics and current housing attributes for the Q = 6 Solution

| | Whole sample | Cluster 1 | Cluster 2 | Cluster 3 | Cluster 4 | Cluster 5 |
|---|---|---|---|---|---|---|
| **Socio-demographics in %** | | | | | | |
| Gender | | | | | | |
| Male | 53.7 | 10.5 | 80.5 | 76.4 | 40.9 | 68.9 |
| Female | 46.3 | 89.5 | 19.5 | 23.6 | 59.1 | 31.1 |
| Age | | | | | | |
| 55-64 | 65.2 | 58.6 | 61.0 | 66.8 | 79.5 | 67.7 |
| 65-74 | 23.8 | 30.1 | 26.7 | 21.1 | 17.0 | 24.0 |
| 75+ | 9.6 | 11.3 | 12.4 | 12.1 | 3.5 | 8.4 |
| Household composition | | | | | | |
| Single | 45.8 | 63.2 | 18.1 | 54.3 | 62.6 | 31.1 |
| Couple, no children living at home | 44.1 | 28.9 | 70.5 | 36.7 | 27.5 | 58.1 |
| Single parent | 2.9 | 3.8 | 1.4 | 1.5 | 5.3 | 1.8 |
| Couple, with children living at home | 5.9 | 2.5 | 9.5 | 7.0 | 4.1 | 6.6 |
| Other composition | 1.3 | 1.7 | 0.5 | 0.5 | 0.6 | 2.4 |
| Educational level | | | | | | |
| Low | 31.3 | 50.6 | 44.3 | 31.7 | 5.8 | 10.9 |
| Middle | 23.3 | 23.8 | 28.1 | 25.6 | 15.2 | 24.0 |
| High | 41.9 | 21.3 | 23.3 | 37.2 | 77.8 | 64.1 |
| **Current dwelling attributes in %** | | | | | | |
| Tenure | | | | | | |
| Rental | 52.3 | 59.8 | 53.8 | 64.8 | 46.2 | 29.9 |
| Owner-occupied | 47.7 | 40.2 | 46.2 | 35.2 | 53.8 | 70.1 |
| Type | | | | | | |
| Detached | 5.8 | 2.9 | 5.7 | 3.0 | 5.8 | 12.6 |
| Non-detached, with garden | 41.8 | 37.7 | 45.2 | 36.2 | 52.0 | 38.3 |
| Non-detached, without garden | 3.7 | 4.6 | 1.9 | 5.5 | 1.8 | 3.6 |
| Apartment | 49.1 | 54.8 | 47.1 | 55.3 | 40.4 | 45.5 |
| Internal access | | | | | | |
| Multiple floors | 47.3 | 41.8 | 47.6 | 44.2 | 59.6 | 47.9 |
| One floor | 52.7 | 58.2 | 52.4 | 55.8 | 40.4 | 52.1 |
| External access | | | | | | |
| Elevator | 28.8 | 33.5 | 31.4 | 32.2 | 17.5 | 26.3 |
| Staircase | 23.0 | 23.4 | 16.2 | 28.6 | 23.4 | 25.1 |
| No elevator and/or staircase needed | 48.2 | 43.1 | 52.4 | 39.2 | 59.1 | 48.5 |

Table 5.2 Socio demographics and current housing attributes for the Q = 6 Solution

| | Whole sample | Cluster 1 | Cluster 2 | Cluster 3 | Cluster 4 | Cluster 5 |
|---|---|---|---|---|---|---|
| **Current neighbourhood attributes in %** | | | | | | |
| Tenure | | | | | | |
| Mixture of owner-occupied and rental dwellings | 54.4 | 57.7 | 56.2 | 59.3 | 51.5 | 42.5 |
| Mainly rental dwellings | 13.8 | 15.5 | 11.9 | 20.1 | 13.5 | 5.4 |
| Mainly owner-occupied | 31.9 | 26.8 | 31.9 | 20.6 | 35.1 | 52.1 |
| Neighbours | | | | | | |
| Mixture of single households, families and older adults | 73.2 | 78.2 | 65.2 | 74.4 | 80.1 | 67.7 |
| Mainly older adults | 9.3 | 9.2 | 10.5 | 10.6 | 3.5 | 11. 4 |
| Mainly families | 17.5 | 12.6 | 24.3 | 15.1 | 16.4 | 21.0 |
| Location | | | | | | |
| Edge of the city | 52.2 | 52.7 | 57.6 | 54.3 | 43.3 | 51.5 |
| Around inner city | 34.7 | 32.2 | 32.4 | 33.7 | 41.5 | 35.9 |
| Inner city | 13.2 | 15.1 | 10.0 | 12.1 | 15.2 | 12.6 |
| Daily supplies | | | | | | |
| Walking distance | 68.6 | 71.1 | 65.7 | 74.4 | 66.7 | 63.5 |
| Cycling distance | 27.2 | 25.1 | 29.0 | 21.6 | 30.4 | 31.7 |
| Driving distance | 4.2 | 3.8 | 5.2 | 4.0 | 2.9 | 4.8 |
| Care facilities | | | | | | |
| Walking distance | 47.8 | 51.5 | 48.6 | 44.2 | 44.4 | 49.7 |
| Cycling distance | 43.5 | 39.7 | 44.8 | 46.2 | 48.5 | 38.3 |
| Driving distance | 8.7 | 8.8 | 6.7 | 9.5 | 7.0 | 12.0 |
| Public transport | | | | | | |
| Good access | 93.2 | 95.4 | 91.0 | 93.0 | 94.2 | 91.0 |
| Poor access | 6.8 | 4.6 | 9.0 | 7.0 | 5.8 | 9.0 |
| *n* | 1010 | 239 | 210 | 199 | 171 | 167 |

Table 5.2 reveals that cluster 1 (i.e. Harmony and Security) is characterized by a relatively large portion of females, 'old-elderly' (e.g. 75+), and a relatively low educational level. Respondents in this cluster are often living in rental apartments situated in neighbourhoods with a mixture of single households, families and older adults. Cluster 2 (i.e. Harmony) has a relatively large share of couples without children (living at home). A relatively large portion of respondents in this cluster tend to live in neighbourhoods with predominantly (other) families. The majority of respondents in cluster 3 (i.e. Security) are males. They tend to live alone in rental apartments (with a relatively large portion accessible by a staircase) in a neighbourhood

with predominantly other rental dwellings. Cluster 4 (i.e. Vitality) is characterized by a relatively large group of females, 'pre-elderly' (e.g. 55-64), and highly educated older adults. Non-detached dwellings with a garden (e.g. single family houses) are overrepresented in this cluster. These dwellings tend to be situated in neighbourhoods with a mixture of single households, families and older adults, relatively often located around the inner city area. The respondents in cluster 5 (i.e. Manifestation) can be characterized as highly educated couples without children (living at home). They tend to be owner-occupiers and tend to live in neighbourhoods where the other dwellings are also owner-occupied. Respondents living in detached dwellings are overrepresented in this cluster.

5.4.2. Housing preferences by motivational cluster

The housing preferences of older adults are analysed based on a carefully constructed questionnaire, which is designed as conjoint choice experiment. It involves confronting the respondents with a choice between several alternatives. In the present context, an alternative is a bundle of housing characteristics. A general characteristic is called an attribute and specific value of the characteristic is called an attribute level. An example of an attribute is the type of dwelling, with a possible attribute level being an apartment. In conjoint choice experiments, respondents indicate their preference by choosing the most preferred alternative or by ranking the alternatives from the most preferred to least preferred. The choices made reflect the preferences for certain characteristics of dwellings.

All respondents in our sample made a sequence of such choices. In our experiment, each choice refers to three alternative combinations of housing characteristics, one among them being the respondent's current dwelling. The respondents were asked to indicate the first and the second most preferred alternative, thereby revealing their complete preference orderings of the three. The small number of alternatives suggests the use of a discrete choice model as a suitable tool for analysis. Among such models the conditional logit model is the easiest to handle because of its closed form expression for the choice probabilities. The estimate results for the discrete choice models by motivational cluster are listed in Table 5.3.

Many of the explanatory variables listed in Table 5.3 are simply housing attributes that differ among the alternatives presented to the respondents. These variables are grouped into variables referring to housing characteristics and variables referring to the neighbourhood (i.e. living environment) characteristics. The choice of attributes is based on two criteria: importance and policy relevance, and reflects the agendas of housing associations in the Netherlands. Previous research, using these attributes, already revealed the presence of heterogeneity among Dutch older adults when stratifying the respondents by age (De Jong et al., 2012). The study demonstrated that the next generation of older adults is different from today's older adults. Future older adults have different expectations and abilities due to having

experienced expanded education opportunities, emancipation and participation (Kramer & Pfaffenbach, 2009). Therefore, they can be expected to have developed different lifestyles, which will likely lead them to favour different (residential) locations and different types of dwellings (Kramer & Pfaffenbach, 2009). The current study will reveal whether older adults not only differentiate themselves by age, but by motivational cluster as well.

For each motivational cluster we run two models. In the first model we use the attributes of the housing alternatives as the only determinants of the utility function. In the second model we also incorporate the effects of some of the individual characteristics. We predominately included education, in order to correct for a potential education effect. In addition we included an interaction effect regarding the presence of children, because it is conceivable that households with children living at home have other preferences with respect to the size of the dwelling than households without children. A log likelihood ratio test reveals that adding individual characteristics (i.e. interaction effects) results in a statistically significant improvement of the fit of the model.



*Cluster 1*: The estimated coefficient of the variable disposable income is highly significant. With this estimate we can compute the estimated willingness to pay for a particular housing attribute. The willingness to pay is the amount of money by which the disposable income can be reduced after including a particular housing attribute while keeping the consumer at the same utility level. The willingness to pay is the ratio of the coefficients of the particular housing attribute and disposable income. For example for model 1 the willingness to pay for having a say in the finishing of the dwelling equals 0.266/0.445 = 0.598. This implies that a having a say in the finishing would be worth approximately 60 euro per month. However, after controlling for a possible education effect, it becomes clear that the lower educated in this cluster do not share this preference. Since this cluster is characterized by a relatively large proportion of lower educated (women), the preference for having a say in the finishing of the dwelling of this cluster is therefore limited. The estimate results further reveal that the respondents in cluster 1 have the strongest preference for their current dwelling. Their inclination to their current type of dwelling is illustrated by their preference for (rental) apartments and for a dwelling in which the living room, kitchen, bathroom and at least one bedroom are located on the same floor. They also show a preference for dwellings accessible by elevator. Model 2, again, demonstrates that the lower educated in this model have a divergent preference pattern. The estimate results reveal that, when given a choice, the older adults in cluster 1 would prefer to live in a neighbourhood with a mixture of single households, families and older adults. Living with predominantly (other) older adults also has a significant effect on the evaluation of choice alternatives. This preference is strong compared to the other motivational clusters.

Table 5.3 Estimation results housing preferences by motivational cluster

| | Cluster 1 | | | | | | Cluster 2 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Model 1 | | | Model 2 | | | Model 3 | | | Model 4 | | |
| | B | Sig. | S.E. | B | Sig. | S.E. | B | Sig. | S.E. | B | Sig. | S.E. |
| Disposable income (x100) | 0.445 | *** | 0.025 | 0.460 | *** | 0.026 | 0.350 | *** | 0.022 | 0.376 | *** | 0.023 |
| Current dwelling | 1.993 | *** | 0.049 | 2.015 | *** | 0.050 | 1.896 | *** | 0.050 | 1.916 | *** | 0.051 |
| **Dwelling attributes** | | | | | | | | | | | | |
| Number of rooms | 0.124 | | 0.091 | 0.279 | | 0.382 | 0.045 | | 0.100 | -0.730 | *** | 0.253 |
| Number of rooms x no children living at home | | | | -0.135 | | 0.381 | | | | 0.914 | *** | 0.266 |
| Finishing | 0.266 | *** | 0.076 | 0.523 | *** | 0.114 | -0.056 | | 0.078 | 0.160 | | 0.122 |
| Finishing x low educational level | | | | -0.435 | *** | 0.131 | | | | -0.453 | *** | 0.149 |
| Finishing x high educational level | | | | -0.056 | | 0.161 | | | | 0.243 | | 0.169 |
| Home automation | 0.072 | | 0.075 | -0.129 | | 0.132 | -0.140 | * | 0.078 | 0.031 | | 0.123 |
| Home automation x low educational level | | | | 0.080 | | 0.146 | | | | -0.499 | *** | 0.150 |
| Home automation x high educational level | | | | 0.675 | *** | 0.171 | | | | 0.345 | ** | 0.165 |
| Type | | | | | | | | | | | | |
| Detached | -0.279 | ** | 0.139 | -0.274 | ** | 0.140 | -0.102 | | 0.143 | -0.119 | | 0.146 |
| Non-detached, with garden | -0.529 | *** | 0.089 | -0.539 | *** | 0.090 | -0.816 | *** | 0.103 | -0.849 | *** | 0.105 |
| Non-detached, without garden | -0.978 | *** | 0.107 | -0.999 | *** | 0.108 | -1.095 | *** | 0.127 | -1.158 | *** | 0.129 |
| Apartment | ref. | | | | | | ref. | | | | | |
| Tenure | | | | | | | | | | | | |
| Rental dwelling | 0.112 | * | 0.067 | 0.096 | | 0.067 | 0.083 | | 0.075 | 0.059 | | 0.075 |
| Owner-occupied | ref. | | | | | | ref. | | | | | |
| Internal access | | | | | | | | | | | | |
| Multiple floors | -0.908 | *** | 0.062 | -1.287 | *** | 0.127 | -0.844 | *** | 0.066 | -0.680 | *** | 0.120 |
| Multiple floors x low educational level | | | | 0.571 | *** | 0.157 | | | | -0.306 | ** | 0.156 |
| Multiple floors x high educational level | | | | 0.334 | * | 0.182 | | | | -0.291 | | 0.180 |
| One floor | ref. | | | | | | ref. | | | | | |
| External access | | | | | | | | | | | | |
| Elevator | 0.382 | *** | 0.077 | 0.786 | *** | 0.145 | 0.310 | *** | 0.078 | 0.311 | ** | 0.130 |
| Elevator x low educational level | | | | -0.451 | *** | 0.173 | | | | 0.063 | | 0.174 |
| Elevator x high educational level | | | | -0.812 | *** | 0.204 | | | | -0.382 | ** | 0.192 |
| Staircase | -1.025 | *** | 0.087 | -1.063 | *** | 0.090 | -0.843 | *** | 0.091 | -0.864 | *** | 0.093 |
| Staircase x low educational level | | | | -0.087 | | 0.057 | | | | 0.329 | *** | 0.073 |
| Staircase x high educational level | | | | 0.234 | ** | 0.109 | | | | -0.119 | | 0.104 |
| No elevator and/or staircase needed | ref. | | | | | | ref. | | | | | |
| **Neighbourhood attributes** | | | | | | | | | | | | |
| Tenure | | | | | | | | | | | | |
| Mixture of owner-occupied and rental dwellings | 0.023 | | 0.098 | 0.011 | | 0.099 | 0.228 | ** | 0.099 | 0.185 | * | 0.100 |
| Mainly rental dwellings | -0.063 | | 0.105 | -0.073 | | 0.105 | 0.166 | | 0.110 | 0.103 | | 0.112 |
| Mainly owner-occupied | ref. | | | | | | ref. | | | | | |
| Neighbours | | | | | | | | | | | | |
| Mixture of single households, families and older adults | 0.410 | *** | 0.092 | 0.410 | *** | 0.092 | 0.475 | *** | 0.094 | 0.507 | *** | 0.094 |
| Mainly older adults | 0.263 | ** | 0.105 | 0.276 | *** | 0.105 | -0.076 | | 0.105 | -0.012 | | 0.106 |
| Mainly families | ref. | | | | | | ref. | | | | | |
| Location | | | | | | | | | | | | |
| Around inner city | 0.000 | | 0.090 | 0.001 | | 0.090 | 0.064 | | 0.097 | 0.057 | | 0.098 |
| Edge of the city | -0.352 | *** | 0.099 | -0.356 | *** | 0.099 | -0.185 | * | 0.112 | -0.193 | * | 0.113 |
| Inner city | ref. | | | | | | ref. | | | | | |

| Cluster 3 | | | | | | Cluster 4 | | | | | | Cluster 5 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model 5 | | | Model 6 | | | Model 7 | | | Model 8 | | | Model 9 | | | Model 10 | | |
| B | Sig. | S.E. | B | Sig. | S.E. | B | Sig. | S.E. | B | Sig. | S.E. | B | Sig. | S.E. | B | Sig. | S.E. |
| 0.395 | *** | 0.025 | 0.407 | *** | 0.026 | 0.397 | *** | 0.023 | 0.394 | *** | 0.023 | 0.233 | *** | 0.019 | 0.249 | *** | 0.019 |
| 1.454 | *** | 0.046 | 1.463 | *** | 0.048 | 1.603 | *** | 0.050 | 1.579 | *** | 0.050 | 1.894 | *** | 0.049 | 1.918 | *** | 0.050 |
| | | | | | | | | | | | | | | | | | |
| -0.120 | | 0.090 | 0.175 | | 0.258 | 0.273 | *** | 0.092 | -1.124 | ** | 0.469 | 0.142 | | 0.108 | 1.548 | *** | 0.304 |
| | | | -0.317 | | 0.268 | | | | 1.470 | *** | 0.470 | | | | -1.466 | *** | 0.310 |
| -0.032 | | 0.078 | -0.044 | | 0.130 | 0.216 | *** | 0.080 | -0.006 | | 0.183 | 0.175 | ** | 0.080 | 0.102 | | 0.133 |
| | | | -0.169 | | 0.161 | | | | 0.215 | | 0.301 | | | | -0.546 | ** | 0.238 |
| | | | 0.218 | | 0.150 | | | | 0.282 | | 0.191 | | | | 0.258 | * | 0.151 |
| -0.283 | *** | 0.080 | -0.116 | | 0.125 | -0.106 | | 0.082 | -0.248 | | 0.168 | 0.078 | | 0.080 | -0.015 | | 0.141 |
| | | | -0.482 | *** | 0.168 | | | | 0.756 | * | 0.393 | | | | -0.358 | | 0.264 |
| | | | | | | | | | | | | | | | | | |
| | | | 0.011 | | 0.153 | | | | 0.085 | | 0.177 | | | | 0.210 | | 0.157 |
| | | | | | | | | | | | | | | | | | |
| 0.170 | | 0.139 | 0.170 | | 0.140 | 0.580 | *** | 0.144 | 0.563 | *** | 0.145 | 0.026 | | 0.164 | 0.011 | | 0.166 |
| -0.434 | *** | 0.089 | -0.440 | *** | 0.089 | -0.009 | | 0.102 | -0.013 | | 0.103 | -0.673 | *** | 0.116 | -0.703 | *** | 0.117 |
| -0.731 | *** | 0.104 | -0.743 | *** | 0.104 | -0.751 | *** | 0.125 | -0.769 | *** | 0.125 | -1.056 | *** | 0.135 | -1.093 | *** | 0.135 |
| ref. | | | | | | ref. | | | | | | ref. | | | | | |
| | | | | | | | | | | | | | | | | | |
| 0.173 | *** | 0.064 | 0.162 | ** | 0.065 | -0.083 | | 0.071 | -0.081 | | 0.071 | -0.564 | *** | 0.076 | -0.578 | *** | 0.077 |
| ref. | | | | | | ref. | | | | | | ref. | | | | | |
| | | | | | | | | | | | | | | | | | |
| -0.807 | *** | 0.069 | -0.948 | *** | 0.127 | -0.500 | *** | 0.066 | -0.579 | *** | 0.171 | -0.742 | *** | 0.071 | -0.831 | *** | 0.153 |
| | | | 0.118 | | 0.180 | | | | -0.456 | | 0.417 | | | | 0.261 | | 0.261 |
| | | | 0.262 | | 0.167 | | | | 0.164 | | 0.187 | | | | 0.129 | | 0.176 |
| ref. | | | | | | ref. | | | | | | ref. | | | | | |
| | | | | | | | | | | | | | | | | | |
| -0.035 | | 0.076 | 0.063 | | 0.137 | -0.292 | *** | 0.090 | 0.292 | | 0.211 | 0.083 | | 0.084 | 0.499 | *** | 0.153 |
| | | | 0.114 | | 0.187 | | | | -0.881 | * | 0.527 | | | | 0.338 | | 0.344 |
| | | | -0.318 | * | 0.177 | | | | -0.544 | ** | 0.230 | | | | -0.593 | *** | 0.181 |
| -0.963 | *** | 0.088 | -0.960 | *** | 0.089 | -1.196 | *** | 0.097 | -1.179 | *** | 0.098 | -0.900 | *** | 0.096 | -0.887 | *** | 0.098 |
| | | | 0.051 | | 0.078 | | | | 0.674 | *** | 0.237 | | | | -0.332 | ** | 0.163 |
| | | | -0.091 | | 0.074 | | | | -0.247 | *** | 0.064 | | | | -0.054 | | 0.062 |
| ref. | | | | | | ref. | | | | | | ref. | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| 0.197 | ** | 0.095 | 0.180 | * | 0.095 | -0.011 | | 0.111 | -0.003 | | 0.111 | -0.260 | *** | 0.119 | -0.279 | ** | 0.120 |
| 0.031 | | 0.107 | 0.007 | | 0.107 | -0.457 | *** | 0.120 | -0.472 | *** | 0.121 | -0.670 | *** | 0.121 | -0.705 | *** | 0.122 |
| ref. | | | | | | ref. | | | | | | ref. | | | | | |
| | | | | | | | | | | | | | | | | | |
| 0.380 | *** | 0.090 | 0.390 | *** | 0.090 | 0.631 | *** | 0.100 | 0.650 | *** | 0.101 | 0.327 | *** | 0.104 | 0.352 | *** | 0.105 |
| 0.194 | * | 0.103 | 0.216 | ** | 0.104 | 0.056 | | 0.117 | 0.085 | | 0.118 | 0.148 | | 0.112 | 0.185 | * | 0.112 |
| ref. | | | | | | ref. | | | | | | ref. | | | | | |
| | | | | | | | | | | | | | | | | | |
| -0.104 | | 0.093 | -0.108 | | 0.093 | 0.146 | | 0.098 | 0.148 | | 0.098 | 0.034 | | 0.100 | 0.032 | | 0.100 |
| 0.040 | | 0.098 | 0.042 | | 0.099 | -0.203 | * | 0.120 | -0.201 | * | 0.120 | -0.256 | * | 0.130 | -0.249 | * | 0.132 |
| ref. | | | | | | ref. | | | | | | ref. | | | | | |

Table 5.3 Continued

| | Cluster 1 | | | | | | Cluster 2 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Model 1 | | | Model 2 | | | Model 3 | | | Model 4 | | |
| | B | Sig. | S.E. | B | Sig. | S.E. | B | Sig. | S.E. | B | Sig. | S.E. |
| Daily supplies | | | | | | | | | | | | |
| Walking distance | 0.805 | *** | 0.117 | 0.952 | *** | 0.214 | 0.857 | *** | 0.116 | 1.066 | *** | 0.212 |
| Walking distance x low educational level | | | | -0.212 | | 0.271 | | | | -0.194 | | 0.273 |
| Walking distance x high educational level | | | | -0.134 | | 0.309 | | | | -0.361 | | 0.306 |
| Cycling distance | 0.219 | * | 0.119 | 0.205 | | 0.200 | 0.105 | | 0.117 | 0.217 | | 0.187 |
| Cycling distance x low educational level | | | | -0.104 | | 0.270 | | | | -0.377 | | 0.262 |
| Cycling distance x high educational level | | | | 0.298 | | 0.293 | | | | 0.276 | | 0.301 |
| Driving distance | ref. | | | | | | ref. | | | | | |
| Care facilities | | | | | | | | | | | | |
| Walking distance | 0.457 | *** | 0.119 | 0.436 | ** | 0.208 | 0.431 | *** | 0.114 | 0.676 | *** | 0.207 |
| Walking distance x low educational level | | | | 0.302 | | 0.264 | | | | -0.325 | | 0.263 |
| Walking distance x high educational level | | | | -0.557 | * | 0.320 | | | | -0.372 | | 0.303 |
| Cycling distance | 0.000 | | 0.112 | -0.069 | | 0.195 | -0.151 | | 0.110 | -0.123 | | 0.172 |
| Cycling distance x low educational level | | | | 0.227 | | 0.257 | | | | -0.190 | | 0.247 |
| Cycling distance x high educational level | | | | -0.156 | | 0.290 | | | | 0.177 | | 0.288 |
| Driving distance | ref. | | | | | | ref. | | | | | |
| Public transport | | | | | | | | | | | | |
| Good access | 1.245 | *** | 0.106 | 1.148 | *** | 0.184 | 0.929 | *** | 0.103 | 1.046 | *** | 0.170 |
| Good access x low educational level | | | | 0.218 | | 0.235 | | | | 0.059 | | 0.235 |
| Good access x high educational level | | | | -0.004 | | 0.272 | | | | -0.348 | | 0.267 |
| Poor access | ref. | | | | | | ref. | | | | | |
| Log likelihood | -6027.74 | | | -5988.34 | | | -5410.62 | | | -5334.10 | | |
| *n* | 222 | | | 222 | | | 197 | | | 197 | | |

***Significant at 0.01 level; **significant at 0.05 level; *significant at 0.1 level.

*Cluster 2*: The estimate results of model 4 reveal that the older adults without children (living at home) within this cluster show a preference for a larger dwelling. Considering this cluster has a relatively large share of couples without children (living at home), the preference for a larger dwelling is a noteworthy result. Model 4 further demonstrates that the lower educated in this cluster dislike having to pay for 'luxuries' such as having a say in this finishing and the presence of home automation designed to increase the comfort and safety of the dwelling (which makes it possible for older people or people with disabilities to remain at home, safe and comfortable). In general, they show a strong disliking towards non-detached houses. Given a choice, they would prefer to live in an apartment. This preference is further illustrated by their desire to live in a dwelling in which the living room, kitchen, bathroom and at least one bedroom are located on the same floor (no education effect in this cluster). The majority of respondents in this cluster are presently living in neighbourhoods with predominantly (other) families, when given a choice they would rather live in a neighbourhood with a mixture of single households, families and older adults.

| | Cluster 3 | | | | | | Cluster 4 | | | | | | Cluster 5 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Model 5 | | | Model 6 | | | Model 7 | | | Model 8 | | | Model 9 | | | Model 10 | | |
| | B | Sig. | S.E. | B | Sig. | S.E. | B | Sig. | S.E. | B | Sig. | S.E. | B | Sig. | S.E. | B | Sig. | S.E. |
| | 0.612 | *** | 0.100 | 0.019 | | 0.180 | 1.021 | *** | 0.126 | 0.937 | ** | 0.397 | 0.747 | *** | 0.126 | 0.341 | | 0.266 |
| | | | | 0.641 | ** | 0.257 | | | | 0.164 | | 0.595 | | | | 0.103 | | 0.496 |
| | | | | 1.227 | *** | 0.242 | | | | 0.139 | | 0.419 | | | | 0.616 | ** | 0.304 |
| | 0.223 | * | 0.116 | -0.007 | | 0.216 | 0.485 | *** | 0.124 | -0.283 | | 0.388 | 0.091 | | 0.130 | -0.375 | | 0.295 |
| | | | | -0.121 | | 0.298 | | | | 1.531 | ** | 0.741 | | | | -0.336 | | 0.575 |
| | | | | 0.881 | *** | 0.282 | | | | 0.877 | ** | 0.409 | | | | 0.765 | ** | 0.328 |
| | ref. | | | | | | ref. | | | | | | ref. | | | | | |
| | 0.222 | ** | 0.104 | -0.450 | ** | 0.181 | 0.494 | *** | 0.119 | 0.798 | ** | 0.349 | 0.291 | *** | 0.123 | -0.024 | | 0.259 |
| | | | | 1.000 | *** | 0.268 | | | | -0.597 | | 0.564 | | | | 0.132 | | 0.454 |
| | | | | 1.154 | *** | 0.251 | | | | -0.291 | | 0.371 | | | | 0.481 | | 0.295 |
| | 0.027 | | 0.104 | -0.367 | * | 0.196 | 0.065 | | 0.116 | -0.095 | | 0.313 | -0.080 | | 0.116 | -0.344 | | 0.248 |
| | | | | 0.289 | | 0.281 | | | | 0.332 | | 0.831 | | | | -0.215 | | 0.518 |
| | | | | 0.954 | *** | 0.252 | | | | 0.195 | | 0.334 | | | | 0.425 | | 0.280 |
| | ref. | | | | | | ref. | | | | | | ref. | | | | | |
| | 0.908 | *** | 0.090 | 0.828 | *** | 0.163 | 1.026 | *** | 0.103 | 1.225 | *** | 0.274 | 0.965 | *** | 0.114 | 0.791 | *** | 0.249 |
| | | | | 0.181 | | 0.228 | | | | -0.275 | | 0.560 | | | | -0.487 | | 0.443 |
| | | | | 0.246 | | 0.214 | | | | -0.174 | | 0.294 | | | | 0.364 | | 0.281 |
| | ref. | | | | | | ref. | | | | | | ref. | | | | | |
| | -5900.82 | | | -5846.67 | | | -4836.52 | | | -4797.75 | | | -4596.33 | | | -4555.31 | | |
| | 192 | | | 192 | | | 162 | | | 162 | | | 161 | | | 161 | | |

*Cluster 3*: The estimate results of this cluster reveal that the respondents in this group have a strong dislike towards the presence of home automation in their dwelling. The results of model 6 illustrate that, when controlled for education, this inclination is not significant anymore. The coefficient is, however, very significant (and negative) for the lower educated in this group. This illustrates that home automation is not considered to be an attractive housing attribute for a rather large group of older adults in this cluster. At present, the respondents in this cluster tend to live in rental apartments, with a relatively large portion accessible by a staircase. When given a choice, the respondents in this cluster would prefer to live in a rental apartment again, but they would not choose a dwelling which requires access by a staircase.

*Cluster 4*: The estimate results of model 7 and 8 show that, in contrast to the other clusters, the respondents in this cluster prefer to live in a detached dwelling. The estimate results further reveal that they have a preference for dwellings in which the living room, kitchen, bathroom and at least one bedroom are located on the same floor, with access at street level. Based on these findings, it is conceivable that the respondents in cluster 4 show a

preference for dwellings which are considered to be more accessible than their current type of dwelling (i.e. single family homes are overrepresented in this cluster), such as a bungalow. This does, however, not necessarily imply that they prefer a smaller dwelling.

*Cluster 5*: The estimate results for this cluster demonstrate that the respondents in cluster 5 are willing to pay the most for having a say in the finishing of their dwelling. Based on the ratio of the coefficients of finishing and disposable income, the willingness to pay equals (0.175/0.233) = 0.7510. This implies that a having a say in the finishing would be worth 75 euro per month. This is in accordance to the fact that this is the most affluent cluster, in terms of their average net monthly income. The estimate results of model 9 and 10 further show a strong preference for owner-occupied dwellings. When given a choice, the respondents in this cluster would prefer an apartment over a detached dwelling. In contrast to the other clusters, the estimate results for cluster 5 reveal a strong preference for neighbourhoods with predominantly (other) owner-occupied dwellings.

Even though the estimate results for the different motivational clusters reveal heterogeneous preference patterns, we do find some strong similarities. All clusters show a strong preference for their current dwelling (i.e. not moving). In addition, all dislike non-detached dwellings (either with or without a garden) and dwellings in which the living room, kitchen, bathroom, and at least one bedroom are located on multiple floors. With regard to their living environment, all clusters show a strong preference for neighbourhoods with a mixture of single households, families and older adults. This neighbourhood should not be located at the edge of the city. All clusters prefer to have amenities (i.e. daily supplies, care facilities and public transport) in the vicinity (i.e. walking distance) of their home. Clearly, the preference for these particular housing attributes is generic among the older adults in our sample and not dependent on their lifestyle.

## 5.5. Conclusion

In recent decades, Western society has become increasingly complex due to demographic, socio-economic and socio-cultural shifts (Jansen, 2012). Most probably as a result, residential preferences have become more dynamic and differentiated (Heijs et al., 2009). For this reason, researchers and local governments have argued that traditional, socio-demographic variables no longer suffice as a basis for policy and planning in the housing sector. In search of alternative procedures to match supply and demand, several approaches that are derived from marketing have been introduced. One of these is the concept of lifestyles. Over the last decades the development and use of lifestyle

typologies in housing research has grown tremendously and lifestyle typologies are given widespread attention in the domain of housing research (Jansen, 2011). It has been argued that lifestyles supplement traditional variables by adding to a better description and prediction of demand and of relations with the supply side (De Jong, 1996; Floor & Van Kempen, 1994; Hooimeijer, 1994; Van Diepen & Musterd, 2001).

The matching of housing demand and housing supply for older adults is of particular interest since it has been estimated that in the Netherlands there is a shortage of 373,000 houses suitable for older adults for the period 2012 to 2021 (Van Galen & Faessen, 2014). This estimate is based on the current shortage, the expected extra demand due the ageing of the Dutch population, as well as the expected extra demand due to the fact that more and more older adults prefer to 'age in place' (e.g. on an extramural basis). For the supply of appropriate housing for older adults, the Dutch government relies on the construction of so-called 'zero-steps dwellings' (i.e. single-storey houses) (Van Iersel et al., 2010), without paying much attention to the specific wishes for housing that might vary widely within the age group these houses are built for.



Often, an accurate understanding of the senior market is lacking, which increases the risk of ageism and stereotyping (Carrigan & Szmigin, 2000). 'The older adult' as such does not exist, making segmentation in more or less homogeneous groups essential. The current study uses a lifestyle segmenting approach to determine meaningful segments in the Dutch senior market. The concept of lifestyle is operationalized in terms of values, using the BSR framework. This results in the identification of five psychographic segments of older adults (i.e. motivational clusters) who have (more or less) the same viewpoints, motivations and attitude with respect to housing. The finding of these segments captures well the difference in aspirations, feelings, perception and motivations among older adults. It demonstrates both the existence of a generic housing preference as well as the existence of significant differences, particularly with regard to the desired dwelling attributes.

Although lifestyles do not represent clear-cut categories of people, but analytically derived ideal types (Gustafson, 2001), the results of the conditional logit model do support the premise that lifestyle has a significant influence on preferred housing attributes. For policy, this implies that generalized housing policies for older adults (such as ascribed above) will become more and more ineffective and inefficient (Hooimeijer, 2007). For housing research, the heterogeneity in housing preferences among older adults clearly indicates that prognoses based on averages per age cohort will become less and less meaningful for the whole population of older adults. Since the study finds clear evidence for heterogeneity of Dutch older adults, future researchers may compare the results of this study with those of different countries.

The exposed heterogeneity among older adults and the associated differences in housing preferences, are relevant for a wide range of institutions and actors. Policy makers, for example, would benefit from studies further detailing the heterogeneity of older adults on the housing market. Aside from the apparent differences in housing preferences, one could assume older adults in the housing market are also differentiated when looking at their willingness to make use of housing equity, residential moving behaviour, social support needs and so on. Furthermore, with taking heterogeneous housing preferences as a starting point in developing differentiated housing supply, the ageing in place concept might be more successful. Policy should focus more on participatory decision-making, where the heterogeneous preferences and demands from older adults can help in co-creating the policies concerning the provision of (suitable) housing, both for the short and the long term.

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# References


Abramsson, M., & Andersson, E. (2016). Changing Preferences with Ageing: Housing Choices and Housing Plans of Older People. *Housing, Theory and Society, 33*(2), 217-241. https://doi.org/10.1080/14036096.2015.1104385

Anderson, W.T., & Golden, L.L. ( 1984). Lifestyle and psychographics: A critical review and recommendation. In T.C. Kinnear (Ed.), *Advances in consumer research* (pp. 405-411). Association for Consumer Research.

Banfield, J.D., & Raftery, A.E. (1993). Model Based Gaussian and Non-Gaussian Clustering. *Biometrics, 49*(3), 803-821. https://doi.org/10.2307/2532201

Beatty, S.E., Kahle, L.R., Homer, P., & Misra, S. (1985). Alternative measurement approaches to consumer values: the List of Values and the Rokeach Value Survey. *Psychology & Marketing*, *2*(3), 181-200. https://doi.org/10.1002/mar.4220020305

Bensmail, H., Celeux, G., Raftery, A.E., & Robert, C.P. (1997). Inference in Model Based Clustering. *Statistics and Computing, 7*(1), 1-10. https://doi.org/10.1023/A:1018510926151

Bettman, J.R. (1979). *An Information Processing Theory of Consumer Choice.* Addison-Wesley.

Bijker, R.A., Haartsen, T., & Strijker, D. (2012). Different Areas, Different People? Migration to Popular and less-Popular Rural Areas in the Netherlands. *Population, Space and Place, 19*(5), pp. 580–593. https://doi.org/10.1002/psp.1741

Brethouwer, W., Lamme, A., Rodenburg, J., Du Chatinier, H., & Smit, M. (1995). *Quality Planning toegepast* [Quality Planning applied]. Janssen Offset.

Callebaut, J., Janssens, M., Op de Beeck, D., Lorré, D., Hendrickx, H., & Gaus, H. (1999). *Motivational Marketing Research Revisted.* Garant Publishers.

Carrigan, M., & Szmigin, I. (2000). Advertising in an ageing society. *Ageing and Society, 20*(2), 217-233. https://doi.org/10.1017/S0144686X99007709

Christensen, K., Doblhammer, G., Rau, R., & Vaupel, J.W. (2009). Ageing populations: the challenges ahead. *The Lancet, 374*(9696), 1196-1208. https://doi.org/10.1016/S0140-6736(09)61460-4

Day, E., Davis, B., Dove, R., & French, W. (1988). Reaching the senior citizen market(s). *Journal of Advertising Research, 27*(6), 23-30.

De Jong, F. (1996). *Woonvoorkeuronderzoek: Theorie, Empirie en Relevantie voor de Praktijk. Woonconsument en Woningkwaliteit 5* [Housing preferences research: theory, empirics, and relevance for practice]. Technische Universiteit Delft, Faculteit Bouwkunde.

De Jong, P.A., Rouwendal, J., Van Hattum, P., & Brouwer A.E. (2012). *Housing Preferences of an Ageing Population. Investigation in the Diversity Among Dutch Older Adults* (Netspar Discussion Papers 07/2012-024). Network for Studies on Pensions, Aging and Retirement.

Dempster, A.P., Laird, N.M., & Rubin, D.B. (1977). Maximum Likelihood from Incomplete Data via the EM Algorithm. *Journal of the Royal Statistical Society, Series B, 39*(1), 1-38. https://www.jstor.org/stable/2984875

Droogleever Fortuijn, J., Van der Meer, M., Burholt, V., Ferring, D., Quattrini, S., Rahm Hallberg, I., Weber, G., & Wenger, G.C. (2006). The Activity Patterns of older Adults: A Cross-Sectional Study in Six European Countries. *Population, Space and Place, 12*(5), 353-369. https://doi.org/10.1002/psp.422

Floor, H., & Van Kempen, R. (1994). *Wonen op Maat: Een Onderzoek naar de Voorkeuren en Motieven van Woonconsumenten en te Verwachten Ontwikkelingen daarin. Deel 1: Theoretische Uitgangspunten en Probleemstelling* [Custom-made housing: a research on the preferences and motives of housing consumers and expected future developments]. Faculteit Ruimtelijke Wetenschappen, Universiteit Utrecht.

Fox, R., & French, W.A.(1985). Segmenting the Senior Citizen Market. *The Journal of Consumer Marketing, 2*(1), 61-74. https://doi.org/10.1108/eb038822

Fraley, C., & Raftery, A.E. (1998). *How Many Clusters? Which Clustering Method? Answers via Model Based Cluster Analysis* (Technical Report No. 329). University of Washington, Department of Statistics.

Ganzeboom, H. (1988). *Leefstijlen in Nederland. Een verkennende studie* [Lifestyles in The Netherlands. An exploratory study] (Cahier no. 60). Sociaal en Cultureel Planbureau.

Gollub, J., & Javitz, H. (1989). Six ways to age. *American Demographics, 11*(6), 28-57.

Gunter, B. (1998). *Understanding the older consumer*. Routledge.

Gunter, B., & Furnman, A. (1992). *Consumer profiles. An introduction to psychographics.* Routledge.

Gustafson, P. (2001). Retirement migration and transnational lifestyles. *Ageing and Society, 21*(4), 371-394. https://doi.org/10.1017/S0144686X01008327

Haberman, S.J. (1988). A Stabilized Newton-Raphson Algorithm for Log-Linear Models for Frequency Tables derived by Indirect Observations. *Sociological Methodology, 18*, 193-221. https://doi.org/10.2307/271049

Hair, J.F., Anderson, R.E., Tatham, R.L., & Black, W.C. (1984). *Multivariate Data Analysis* Prentice-Hall International.

Heijs, W., Carton, M., Smeets, J,. & Van Gemert, A. (2009). Labyrinth of life-styles. *Journal of housing and the Built Environment, 24*(3), 347-356. https://doi.org/10.1007/s10901-009-9147-z

Heijs, W., Van Deursen, A.M., Leussink, M., & Smeets, J. (2011). Re-searching the labyrinth of life-styles. *Journal of Housing and the Built Environment, 26*(4), 411-425. https://doi.org/10.1007/s10901-011-9237-6

Hesse, W. (1991). *Changes with the over 50's lead to changes in society and economy in the next three decades*. ESOMAR: Papers on the Over 50's in the 90's: Factors for Successful Marketing of Products and Services.

Hoijtink, H., & Notenboom, A. (2004). Model Based Clustering of Large Data Sets: Tracing the Development of Spelling Ability. *Psychometrika, 69*(3), 481-498. https://doi.org/10.1007/BF02295648

Hooimeijer, P. (1994). Hoe meet je woonwensen? Methodologische haken en ogen [How to measure housing preferences? Methodological complications]. In I. Smid, & H. Priemus (Eds.), *Bewonerspreferenties: Richtsnoer voor Investeringen in Nieuwbouw en de Woningvoorraad* (pp. 3-12). Delftse Universitaire Pers.

Hooimeijer, P. (2007). *Dynamiek in de derde leeftijd: de consequenties voor het woonbeleid* [Dynamics in life's third act: consequences for housing policy]. Ministerie van VROM.

Jansen, S.J.T. (2011). Lifestyle Method. In S.J.T. Jansen, H.C.C.H Coolen, & R.W. Goetgeluk (Eds.), *The Measurement and Analysis of Housing Preference and Choice* (pp 177-202). Springer.

Jansen, S.J.T. (2012). What is the worth of values in guiding residential preferences and choices? *Journal of Housing and the Built Environment, 27*(3), 273-300. https://doi.org/10.1007/s10901-012-9270-0

Kim, S. (2011). Intra-regional residential movement of the elderly: testing a suburban-to-urban migration hypothesis. *Annals of Regional Science, 46*(1), 1-17. https://doi.org/10.1007/s00168-009-0325-4

Kramer, C., & Pfaffenbach, C. (2009). Persistence preferred- on future residential (im)mobility among the generation 50plus, *ERDKUNDE, 63*(2), 161-172. https://doi.org/10.3112/erdkunde.2009.02.04

Michelson, W., & Reed, P. (1975). Lifestyle in environmental research. In C. Beattie & S. Crysdale (Eds.), *Sociology Canada: Readings* (pp. 406-419). Butterworths.

Moschis, G.P. (1993). Gerontographics: A scientific approach to analysing and targeting the mature market, *The Journal of Consumer Marketing, 10*(3), 43-54.

Moschis, G.P. (1996). *Gerontographics, Life-stage segmentation for marketing strategy development*. Quorum Books.

Moschis, G.P., Bellenger, D., & Folkman Curasi, C. (2003, January 25-28). *Housing preferences of older consumers* [Conference presentation]. Annual Conference of the Pacific Rim Rea Estate Society, Bangkok Thailand.

Newcomb, S. (1886). A Generalized Theory of the Combination of Observations So As To Obtain the Best Result. *American Journal of Mathematics, 8*(4) 343-366. https://doi.org/10.2307/2369392

Oppenhuisen, J. (2000). *Een schaap in de bus? Een onderzoek naar waarden van de Nederlander* [A sheep on a bus? A research on the values of the Dutch] [Doctoral dissertation, University of Amsterdam].

Pearson, K. (1894). Contributions to the Mathematical Theory of Evolution. *Philosophical Transactions of the Royal Society of London A, 185*(1894), 71-110. https://doi.org/10.1098/rsta.1894.0003

Pinkster, F., & Van Kempen, R. (2002). *Leefstijlen en Woonmilieuvoorkeuren* [Lifestyles and living environment preferences]. University of Utrecht, Urban and Regional Research Centre.

Rokeach, M.J. (1973). *The Nature of Human Values*. Free Press.

Sorce, P., Tyler, P.R., & Loomis, L.M. (1989). Lifestyles of Older Americans. *Journal of Consumer Marketing, 6*(3), 53-63. https://doi.org/10.1108/EUM0000000002555

Systeem woningvoorraad. (2016). *Stand woningvoorraad 2015*. Ministerie van Binnenlandse Zaken en Koninkrijksrelaties. https://syswov.datawonen.nl/

Ter Braak, C.J.F., Hoijtink, H., Akkermans, W., & Verdonschot, P.F.M. (2003). Bayesian Model Based Cluster Analysis for Predicting Macrofaunal Communities. *Ecological Modeling, 160*(3), 235-248. https://doi.org/10.1016/S0304-3800(02)00256-9

Tréguer, J.P. (1998). *Le senior marketing* (2nd ed.). Dunod.

Van Diepen, A.M.L., & Arnoldus, M. (2003). *De woonvraag in de vraaggestuurde markt. Bouwstenen uit het woonmilieuanalyse en leefstijlenonderzoek* [Housing demand in the demand-driven market. Building blocks from the living environment analysis and lifestyle research] (Rapport 23). DGW/ Nethur partnership.

Van Diepen, A.M.L., & Musterd, S. (2001). *Stedelijke Leefstijlen en Woonmilieus in Amsterdam* [Urban Lifestyles and Living Environments in Amsterdam]. Amsterdam Study Centre for the Metropolitan Environment.

Van Dijk, H.M., Cramm, J.M., Lötters, F., & Nieboer, A. (2013). *Even buurten: een wijkgerichte aanpak voor thuiswonende ouderen in Rotterdam* [a neighborhood approach for older adults ageing in place in Rotterdam] (SMW 2013-10). Erasmus Universiteit Rotterdam.

Van Galen, J., & Faessen, W. (2014). *Herziening Monitor Investeren voor de Toekomst* [Review of the Monitor Investing for the Future]. ABF Research.

Van Hattum, P., & Hoijtink H. (2009). Market Segmentation using Brand Strategy Research: Bayesian Inference with respect to Mixtures of Log-Linear Models, *Journal of Classification, 26*(3), 297–328. https://doi.org/10.1007/s00357-009-9040-1

Van Hattum, P., & Hoijtink H. (2010). Reducing the optimal to a useful number of clusters for model-based clustering. *Journal of Targeting Measurement and Analysis for Marketing, 18*(2), 139-154. https://doi.org/10.1057/jt.2010.6

Van Iersel, J., Leidelmeijer, K., & Buys, A. (2010). *Senioren op de woningmarkt: nieuwe generaties, andere eisen en wensen* [Seniors in the housing market: new generations, different requirements and preferences]. Ministerie van VROM.

Vermunt, J.K., & Magidson, J. (2000). *Latent Gold*. Statistical Innovations Inc.

Wedel, M., & Kamakura, W.A. (2000). *Market Segmentation: Conceptual and Methodological Foundations*. Kluwer Academic Publishers.

Weijters, B., & Geuens, M. (2003). *Segmenting the Senior Market: Professional and Social Activity Level* (Vlerick Working Papers 2003/03). Vlerick Leuven Gent Management School.

Wells, W. (1974). *Life-style and psychographics*. American Marketing Association.

Wilkes, R.E. (1992). A Structural Modelling Approach to The Measurement and Meaning of Cognitive Age. *Journal of Consumer Research, 19*(2), 292-301. https://doi.org/10.1086/209303

Wulff, M., Champion, A., & Lobo, M. (2010). Household diversity and migration in Mid-life: Understanding Residential Mobility among 45-64 Year Olds in Melbourne, Australia. *Population, Space and Place, 16*(4), 307-321. https://doi.org/10.1002/psp.553

# Appendices

Appendix 5.1 BSR questionnaire [translated from Dutch]

Question 1: Which character traits fit you best? (Max. 7 picks)

- A little bit shy
- Adventurous
- Capable
- Cosy
- Energetic
- A little bit imprudent
- Honest
- Jovial
- Opinionated
- Self-assured
- Serious
- Spontaneous
- A Little impatient
- Assertive
- Cheerful
- Critical
- Enthusiastic
- Gentle
- Intelligent
- Sympathetic
- Ordinary
- Self-confident
- Down-to-earth
- Strong character
- Easy going
- Balanced
- Classy
- Deliberate
- Leader
- Helpful
- Interested in others
- Neat
- Passionate
- Serene
- Commercial

Question 2: Which family or household types fit you best? (Max. 3 picks)

- A family where everyone goes their own way
- Bachelor
- Busy, dynamic family
- Happy family
- Ideal family
- Not suited for family life
- Peaceful family
- Single
- Stable family
- Striving for a family
- Artistic household
- Broad-minded family
- Cosy old-fashioned family
- Harmonious family
- Isolated family
- Perfect family
- Rigid family
- Sportive family
- Dignified household
- Warm family

Question 3: Which occupations appeal to you most? Mind: you do not have to practice the occupation(s) that you pick (anymore). (Max. 7 picks)

- Account manager
- Member of the board
- Commercial assistant
- E-Business
- Freelancer
- Journalist
- No occupation
- Photographer
- Programmer
- Secretary
- Shop assistant
- Sports teacher
- Temporary employee
- Activity guide
- Businessman/-woman
- Commissioner
- Entrepreneur
- Fulltime housewife
- Male nurse
- Nurse
- Artist
- Project manager
- Scientist
- Shopkeeper
- Student
- Truck driver
- Volunteer
- Beautician
- Social worker
- Designer
- Financial planner
- Househusband
- Manager
- Part-time housewife/-husband
- Anchor man
- Public servant
- Vets assistant
- Relief worker
- Stylist
- Unemployed

Question 4: Which hobbies, interests and/or leisure activities fit you best? (Max 5 picks)

- A sociable evening with friends
- Turning in a top-notch achievement
- Build a successful career
- Classy parties
- Doing odd jobs around the house
- Going to a discothèque
- Making dreams come true
- Playing chess
- Visiting friends and relatives
- Watching TV
- Active sports
- Astrology
- Camping
- Going on an outing
- Gardening
- Golf
- Religious matters
- Reading (magazines)
- Squashing
- Team sports
- Adventurous holidays
- Being at home quietly
- Cars/ motorbikes
- Dining out together
- Going out together

- Investing in stocks
- Swimming
- Shopping
- Surfing the internet
- Visiting a pub
- Snowboarding

Question 5: Which values fit you best? (Max. 6 picks)

- Anonymity
- Enthusiasm
- Heroism, glory
- Passion
- Recognition of performances
- Self-belief
- Social harmony
- Success in life
- Challenge, stimulation
- Expression, uniqueness
- Independence
- Privacy, tranquillity
- Respect
- Self-fulfilment, growth
- Solidarity
- Enjoyable life
- Friendship
- Intimacy
- Rationality
- Security
- Social alliance
- Status

Appendix 5.2 Remaining Cluster Specific Item Probabilities for the $Q = 6$ Solution. P36=$P36(x_{i36}=1|\tau_i=q)$ ,..., $P148(x_{i148}=1|\tau_i=q)$.

| $q$ | | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| $\omega_q$ | | 0.240 | 0.211 | 0.200 | 0.172 | 0.168 | 0.010 |
| P36 | A family where everyone goes their own way | 0.054 | 0.086 | 0.085 | 0.146 | 0.096 | 0.100 |
| P37 | Bachelor | 0.142 | 0.033 | 0.231 | 0.170 | 0.066 | 0.500 |
| P38 | Busy, dynamic family | 0.033 | 0.057 | 0.025 | 0.140 | 0.102 | 0.100 |
| P39 | Happy family | 0.134 | 0.424 | 0.101 | 0.064 | 0.293 | 0.100 |
| P40 | Ideal family | 0.013 | 0.019 | 0.005 | 0.000 | 0.042 | 0.000 |
| P41 | Not suited for family life | 0.029 | 0.000 | 0.136 | 0.082 | 0.018 | 0.200 |
| P42 | Peaceful family | 0.255 | 0.324 | 0.372 | 0.088 | 0.323 | 0.100 |
| P43 | Single | 0.494 | 0.086 | 0.432 | 0.497 | 0.210 | 0.400 |
| P44 | Stable family | 0.360 | 0.310 | 0.271 | 0.152 | 0.395 | 0.100 |
| P45 | Striving for a family | 0.004 | 0.000 | 0.015 | 0.006 | 0.006 | 0.000 |
| P46 | Artistic household | 0.017 | 0.029 | 0.045 | 0.374 | 0.024 | 0.000 |
| P47 | Broad-minded family | 0.192 | 0.252 | 0.131 | 0.374 | 0.329 | 0.500 |
| P48 | Cosy old-fashioned family | 0.126 | 0.233 | 0.055 | 0.029 | 0.078 | 0.000 |
| P49 | Harmonious family | 0.134 | 0.224 | 0.116 | 0.129 | 0.246 | 0.200 |
| P50 | Isolated family | 0.004 | 0.000 | 0.045 | 0.012 | 0.000 | 0.000 |
| P51 | Perfect family | 0.004 | 0.024 | 0.025 | 0.000 | 0.030 | 0.000 |
| P52 | Rigid family | 0.000 | 0.000 | 0.005 | 0.006 | 0.000 | 0.000 |
| P53 | Sportive family | 0.063 | 0.267 | 0.035 | 0.076 | 0.180 | 0.100 |
| P54 | Dignified household | 0.008 | 0.000 | 0.010 | 0.000 | 0.012 | 0.000 |
| P55 | Warm family | 0.280 | 0.438 | 0.050 | 0.146 | 0.174 | 0.100 |
| P56 | Account manager | 0.008 | 0.100 | 0.020 | 0.012 | 0.126 | 0.000 |
| P57 | Member of the board | 0.008 | 0.033 | 0.005 | 0.070 | 0.269 | 0.000 |
| P58 | Commercial assistant | 0.029 | 0.138 | 0.025 | 0.023 | 0.138 | 0.200 |
| P59 | E-Business | 0.000 | 0.014 | 0.030 | 0.064 | 0.036 | 0.000 |
| P60 | Freelancer | 0.042 | 0.043 | 0.146 | 0.228 | 0.180 | 0.100 |
| P61 | Journalist | 0.042 | 0.033 | 0.116 | 0.257 | 0.096 | 0.100 |
| P62 | No occupation | 0.075 | 0.029 | 0.166 | 0.029 | 0.030 | 0.000 |
| P63 | Photographer | 0.109 | 0.105 | 0.186 | 0.310 | 0.054 | 0.700 |
| P64 | Programmer | 0.025 | 0.057 | 0.101 | 0.053 | 0.042 | 0.000 |
| P65 | Secretary | 0.159 | 0.024 | 0.015 | 0.018 | 0.042 | 0.100 |
| P66 | Shop assistant | 0.100 | 0.067 | 0.045 | 0.012 | 0.006 | 0.000 |
| P67 | Sports teacher | 0.025 | 0.205 | 0.015 | 0.099 | 0.054 | 0.100 |
| P68 | Temporary employee | 0.033 | 0.024 | 0.065 | 0.012 | 0.030 | 0.000 |
| P69 | Activity guide | 0.197 | 0.195 | 0.030 | 0.076 | 0.036 | 0.500 |
| P70 | Businessman/-woman | 0.063 | 0.100 | 0.040 | 0.070 | 0.299 | 0.000 |

Appendix 5.2 Continued

| $q$ | | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| $\omega_q$ | | 0.240 | 0.211 | 0.200 | 0.172 | 0.168 | 0.010 |
| P71 | Commissioner | 0.000 | 0.000 | 0.010 | 0.006 | 0.084 | 0.000 |
| P72 | Entrepreneur | 0.025 | 0.219 | 0.065 | 0.181 | 0.323 | 0.000 |
| P73 | Fulltime housewife | 0.326 | 0.048 | 0.065 | 0.006 | 0.006 | 0.000 |
| P74 | Male nurse | 0.054 | 0.110 | 0.040 | 0.012 | 0.018 | 0.000 |
| P75 | Nurse | 0.301 | 0.081 | 0.045 | 0.058 | 0.018 | 0.000 |
| P76 | Artist | 0.092 | 0.043 | 0.126 | 0.526 | 0.042 | 0.400 |
| P77 | Project manager | 0.013 | 0.186 | 0.080 | 0.170 | 0.299 | 0.100 |
| P78 | Scientist | 0.029 | 0.071 | 0.161 | 0.316 | 0.269 | 0.100 |
| P79 | Shopkeeper | 0.071 | 0.148 | 0.035 | 0.000 | 0.108 | 0.000 |
| P80 | Student | 0.000 | 0.005 | 0.015 | 0.041 | 0.054 | 0.100 |
| P81 | Truck driver | 0.021 | 0.129 | 0.075 | 0.018 | 0.030 | 0.100 |
| P82 | Volunteer | 0.322 | 0.314 | 0.191 | 0.234 | 0.078 | 0.100 |
| P83 | Beautician | 0.109 | 0.019 | 0.005 | 0.006 | 0.012 | 0.100 |
| P84 | Social worker | 0.343 | 0.271 | 0.030 | 0.199 | 0.060 | 0.100 |
| P85 | Designer | 0.109 | 0.090 | 0.080 | 0.316 | 0.060 | 0.400 |
| P86 | Financial planner | 0.004 | 0.100 | 0.055 | 0.000 | 0.120 | 0.000 |
| P87 | Househusband | 0.004 | 0.248 | 0.151 | 0.088 | 0.012 | 0.200 |
| P88 | Manager | 0.033 | 0.181 | 0.085 | 0.146 | 0.605 | 0.000 |
| P89 | Part-time housewife/-husband | 0.209 | 0.138 | 0.111 | 0.146 | 0.102 | 0.000 |
| P90 | Anchor man | 0.021 | 0.024 | 0.005 | 0.111 | 0.120 | 0.100 |
| P91 | Public servant | 0.096 | 0.152 | 0.211 | 0.076 | 0.180 | 0.000 |
| P92 | Vets assistant | 0.117 | 0.010 | 0.035 | 0.023 | 0.006 | 0.000 |
| P93 | Relief worker | 0.372 | 0.286 | 0.085 | 0.316 | 0.120 | 0.600 |
| P94 | Stylist | 0.130 | 0.010 | 0.005 | 0.070 | 0.000 | 0.400 |
| P95 | Unemployed | 0.025 | 0.014 | 0.080 | 0.035 | 0.006 | 0.100 |
| P96 | A sociable evening with friends | 0.343 | 0.305 | 0.075 | 0.339 | 0.317 | 0.200 |
| P97 | Turning in a top-notch achievement | 0.000 | 0.005 | 0.005 | 0.018 | 0.048 | 0.000 |
| P98 | Build a successful career | 0.000 | 0.000 | 0.000 | 0.012 | 0.084 | 0.200 |
| P99 | Classy parties | 0.000 | 0.005 | 0.000 | 0.000 | 0.036 | 0.000 |
| P100 | Doing odd jobs around the house | 0.126 | 0.310 | 0.201 | 0.140 | 0.228 | 0.200 |
| P101 | Going to a discothèque | 0.000 | 0.005 | 0.005 | 0.000 | 0.000 | 0.000 |
| P102 | Making dreams come true | 0.050 | 0.024 | 0.020 | 0.187 | 0.054 | 0.200 |
| P103 | Playing chess | 0.004 | 0.048 | 0.050 | 0.029 | 0.054 | 0.000 |
| P104 | Visiting friends and relatives | 0.251 | 0.114 | 0.075 | 0.053 | 0.084 | 0.000 |
| P105 | Watching TV | 0.456 | 0.419 | 0.503 | 0.211 | 0.246 | 0.200 |
| P106 | Active sports | 0.079 | 0.195 | 0.070 | 0.193 | 0.353 | 0.100 |

Appendix 5.2 Continued

| $q$ | | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| $\omega_q$ | | 0.240 | 0.211 | 0.200 | 0.172 | 0.168 | 0.010 |
| P107 | Astrology | 0.054 | 0.005 | 0.010 | 0.070 | 0.000 | 0.200 |
| P108 | Camping | 0.046 | 0.229 | 0.131 | 0.246 | 0.156 | 0.000 |
| P109 | Going on an outing | 0.423 | 0.319 | 0.211 | 0.234 | 0.228 | 0.400 |
| P110 | Gardening | 0.276 | 0.281 | 0.161 | 0.339 | 0.144 | 0.200 |
| P111 | Golf | 0.008 | 0.024 | 0.005 | 0.023 | 0.126 | 0.100 |
| P112 | Religious matters | 0.113 | 0.005 | 0.070 | 0.094 | 0.048 | 0.000 |
| P113 | Reading (magazines) | 0.435 | 0.129 | 0.332 | 0.544 | 0.317 | 0.000 |
| P114 | Squashing | 0.000 | 0.014 | 0.005 | 0.000 | 0.000 | 0.000 |
| P115 | Team sports | 0.004 | 0.129 | 0.030 | 0.058 | 0.042 | 0.000 |
| P116 | Adventurous holidays | 0.075 | 0.190 | 0.116 | 0.327 | 0.216 | 0.300 |
| P117 | Being at home quietly | 0.498 | 0.305 | 0.573 | 0.392 | 0.365 | 1.000 |
| P118 | Cars/ motorbikes | 0.008 | 0.114 | 0.060 | 0.012 | 0.132 | 0.100 |
| P119 | Dining out together | 0.456 | 0.433 | 0.201 | 0.339 | 0.437 | 0.700 |
| P120 | Going out together | 0.138 | 0.205 | 0.070 | 0.193 | 0.174 | 0.200 |
| P121 | Investing in stocks | 0.004 | 0.029 | 0.030 | 0.000 | 0.060 | 0.000 |
| P122 | Swimming | 0.151 | 0.157 | 0.111 | 0.164 | 0.048 | 0.000 |
| P123 | Shopping | 0.335 | 0.105 | 0.090 | 0.076 | 0.108 | 0.200 |
| P124 | Surfing the internet | 0.255 | 0.324 | 0.477 | 0.175 | 0.317 | 0.200 |
| P125 | Visiting a pub | 0.025 | 0.043 | 0.075 | 0.082 | 0.084 | 0.000 |
| P126 | Snowboarding | 0.000 | 0.014 | 0.000 | 0.012 | 0.006 | 0.000 |
| P127 | Anonymity | 0.017 | 0.024 | 0.191 | 0.006 | 0.030 | 0.200 |
| P128 | Enthusiasm | 0.201 | 0.190 | 0.055 | 0.246 | 0.269 | 0.100 |
| P129 | Heroism, glory | 0.000 | 0.000 | 0.005 | 0.000 | 0.000 | 0.000 |
| P130 | Passion | 0.008 | 0.095 | 0.030 | 0.088 | 0.078 | 0.200 |
| P131 | Recognition of performances | 0.079 | 0.086 | 0.070 | 0.135 | 0.132 | 0.400 |
| P132 | Self-belief | 0.397 | 0.238 | 0.176 | 0.216 | 0.293 | 0.400 |
| P133 | Social harmony | 0.331 | 0.300 | 0.236 | 0.263 | 0.234 | 0.200 |
| P134 | Success in life | 0.038 | 0.086 | 0.045 | 0.006 | 0.150 | 0.000 |
| P135 | Challenge, stimulation | 0.038 | 0.100 | 0.040 | 0.175 | 0.228 | 0.100 |
| P136 | Expression, uniqueness | 0.025 | 0.010 | 0.035 | 0.181 | 0.024 | 0.000 |
| P137 | Independence | 0.540 | 0.243 | 0.518 | 0.538 | 0.635 | 0.400 |
| P138 | Privacy, tranquility | 0.452 | 0.400 | 0.673 | 0.263 | 0.395 | 0.800 |
| P139 | Respect | 0.607 | 0.486 | 0.402 | 0.398 | 0.521 | 1.000 |
| P140 | Self-fulfilment, growth | 0.247 | 0.095 | 0.126 | 0.567 | 0.311 | 0.500 |
| P141 | Solidarity | 0.167 | 0.314 | 0.201 | 0.327 | 0.234 | 0.100 |
| P142 | Enjoyable life | 0.510 | 0.681 | 0.291 | 0.497 | 0.539 | 0.600 |

Appendix 5.2 Continued

| $q$ | | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| $\omega_q$ | | 0.240 | 0.211 | 0.200 | 0.172 | 0.168 | 0.010 |
| P143 | Friendship | 0.762 | 0.781 | 0.382 | 0.591 | 0.563 | 0.000 |
| P144 | Intimacy | 0.084 | 0.124 | 0.095 | 0.246 | 0.060 | 0.000 |
| P145 | Rationality | 0.017 | 0.038 | 0.146 | 0.135 | 0.192 | 0.200 |
| P146 | Security | 0.347 | 0.224 | 0.296 | 0.170 | 0.120 | 0.000 |
| P147 | Social alliance | 0.276 | 0.381 | 0.141 | 0.392 | 0.311 | 0.300 |
| P148 | Status | 0.013 | 0.000 | 0.010 | 0.006 | 0.030 | 0.000 |

# Chapter 6

## CONCLUSIONS

# 6.1. Introduction

This thesis is set against a background of rapid population ageing and the impending retirement of the baby boomer generation. The aim of this thesis has been to provide an understanding of the factors influencing residential mobility and housing preferences of older adults. In particular, it has focused on the possible differences in residential choice behaviour among (future) older adults. To gain an understanding of the residential moving behaviour, the age-articulated interregional migration flows in the Netherlands and the factors likely to influence considerations about moving and actual mobility were analysed using pooled data from Housing Research Netherlands (HRN) surveys from 2006 to 2012. In order to assess the relative importance that older adults give to various housing characteristics, a conjoint choice experiment was set up in Groningen, The Netherlands in 2011. Lastly, a lifestyle segmenting approach was used to determine meaningful segments of older adults with (more or less) the same viewpoints, motivations and attitude with respect to housing.



The remainder of this chapter provides an overview of the key findings for the three main themes: residential mobility, housing preferences, and heterogeneity. This is followed by reflections on policy implications and future research directions.

# 6.2. Residential mobility

6.2.1. Age articulated interregional migration flows

Previous research has shown that migration propensities vary greatly over the life course (e.g. Rossi, 1955; Warnes, 1992; Fischer & Malmberg, 2001). Typically, the propensity to move peaks at a young age, declining steadily with increasing age, and potentially rising again around the age of retirement. The passage through the life course also results in shifting likelihoods of residing in larger or smaller settlements. In 2009, Plane and Jurjevich demonstrated that, when interregional migration flows are disaggregated by age, different patterns of net upwards and downwards population redistributions operate within the urban hierarchy in the USA. As such, interregional migration can be understood as a phenomenon closely linked to the structure of the urban hierarchy (Korpi et al., 2011).

Chapter 2 aimed to demonstrate how interregional migration flows play out in a different geographic setting, by replicating the methodological approach that Plane and Jurjevich applied to the USA in the Netherlands. Even though the geographical setting and urban hierarchy levels differ greatly, the overall patterns of movements exhibited by persons within different age cohorts up and down the urban hierarchy are for the most part similar to the mobility trends found by Plane and Jurjevich in 2009.

One of the key findings is that an examination of the total interregional residential migration alone misses the variegated patterns of movements exhibited by persons within the different age cohorts. While the total interregional residential migration suggests a strong upward movement, the patterns of movements exhibited by persons within different age cohorts suggest major movements down the urban hierarchy. In fact, the upward movement within the urban hierarchy reflected in the total interregional migration flows is predominantly driven by the migration of young adults alone. This finding adds to the growing evidence that young age has become more important over time in defining urban living (see e.g. Moos, 2016; Sabater et al., 2017). Therefore, the 'youthification' of cities contributes to age segregation processes.

Older adults, on the other hand, are known to display a downward movement within the urban hierarchy (see e.g. Fokkema et al., 1996; Serow et al., 1996, Plane & Jurjevich, 2009). In accordance with much of the literature, we find evidence of a downward movement within the urban hierarchy of older adults, in particular for those aged 55-64 years, and for persons aged 75 and over. Yet, we also find evidence of upward movement within the urban hierarchy for the 65-74 age cohort. This previously unobserved pattern of mobility could represent something of a new phenomenon, which might be present in other countries as well. We would like to speculate that this is a harbinger of the retirement of the baby boom generation, a generation who might be more interested in the greater locational density and variety of public and private services that are available in cities than previous generations. However, due to the pooling of cross-sectional waves of the HRN survey, we were unable to disentangle possible cohort effects.

### 6.2.2. Factors likely to influence mobility

Chapter 3 provided more information on the factors likely to influence considerations about moving and the actual mobility of older adults. Two binary logistic regressions were performed to assess the impact of factors relating to characteristics of both the individual and the environment (i.e. the dwelling and the neighbourhood). While the 'migration model' reveals which factors are likely to have attracted migrants to their current place of residence (e.g. pull factors), the 'propensity model' reveals which factors are likely to influence considerations about wanting to leave their current place of residence (e.g. push factors). Based on the results of both models, this thesis has demonstrated that a suitable home environment acts as the most important pull factor, while a deteriorating living environment acts as an important push factor for older adults.

The results of both chapters 2 and 3 seem to suggest that older adults are more likely to shift from urbanised areas to less urbanised/ more rural environments. Given the role that migration plays in influencing the spatial unevenness of population ageing,

the downward movements within the urban hierarchy are expected to increase age segregation in the Netherlands. Simultaneously, residential stability (i.e. 'ageing in place') is expected to play an important role in explaining the spatial concentrations of older people.

6.2.3. Residential stability

Previous research has shown that older adults do not change residence to a large extent (Geist & McManus, 2008; Tatsiramos, 2006; Walters & Owen, 2000). There has been little evidence to determine whether the immobility of older adults is a desired choice, or a response to restrictions and constraints (Hanson, 2005), such as a lack of alternative dwellings (Hansen & Gottschalk, 2006).

In chapter 4, we were able to contribute to the existing literature by providing more insight into the residential choice behaviour of Dutch older adults. That chapter analysed the housing choices of older adults based on a carefully constructed questionnaire, which was designed as a conjoint choice experiment. In general, a conjoint choice experiment involves presenting the respondents with a choice between several alternatives. In our experiment, each choice refers to three alternative combinations of housing characteristics, one of them being the respondent's existing dwelling. The inclusion of the current dwelling as a choice option meant that older adults were able to choose to 'stay put'.

The results revealed that, when given a choice (albeit a hypothetical one), the vast majority of respondents preferred to stay put. We therefore conclude that the tendency of Dutch older adults to stay put is mainly motivated by choice rather than a lack of alternative dwellings. Interestingly, the estimation results also demonstrate that certain favoured housing characteristics do not necessarily correspond to the existing living arrangements (on average). The neighbourhood location, dwelling type, and the accessibility (both internal and external) of the current dwelling are good examples of this. Therefore, we cannot conclude that the desire to stay put is due to the suitability of the current dwelling, suggesting that some long-cherished home environments may ultimately become unsuitable for people's needs. In fact, in order to be a successful *long-term* living arrangement, 'ageing in place' requires not only a suitable home, but also a variety of services and support (see e.g. Dobner et al., 2016; Wilkinson-Meyers et al., 2014), which we were unable to reflect upon in chapter 4.

## 6.3. Housing preferences

One could say that older adults reveal their housing preferences by 'voting with their feet'. Based on the results of the 'migration model' in chapter 3, we concluded that older adults who had recently moved were more likely to reside in housing 'fit for their age'. We find a greater likelihood not only of senior housing, but also of apartments, accessible houses, and houses without gardens. The results further indicate that older adults were more likely to have moved to non-urbanised municipalities and to neighbourhoods with little deprivation, little nuisance, a high level of cohesion, and a satisfactory number of amenities.

However, it is important to note that the residential choices made in chapter 3 may have been dictated to a greater extent by housing market restrictions than by respondents' actual preferences. In other words, the *observed* choices in the HRN dataset are bound to be limited by the existing disequilibria in the housing market. Therefore, results based on such data could give a biased picture of the preferences, unless the disequilibria are appropriately taken into account (Rouwendal & Meijer, 2001). *Stated* preferences, on the other hand, are able to reveal information about choice behaviour that is not biased by the limited availability of some type of housing (and the necessity to opt for a second-best alternative). As such, the results of the conjoint choice experiment demonstrated in chapter 4 can be used to construct a more unbiased picture of the preference of older adults (while avoiding the necessity to model the disequilibrium situation). We do, however, have to bear in mind that the sample in chapter 4 is from one municipality (i.e. Groningen) and may not be representative of older adults living elsewhere in the Netherlands.

Nevertheless, the stated preferences in chapter 4 re-affirm most of the observed choices found in chapter 3, particularly those relating to the dwelling. Based on the relative importance that older adults give to various housing characteristics, we again conclude that older adults have a preference for 'age-friendly' houses as demonstrated by the positive evaluation of apartments, houses in which the living room, kitchen, bathroom, and at least on bedroom is located on the same floor, and houses with an elevator. With regard to the living environment, the results indicate that older adults do not want to live in a neighbourhood that is located at the edge of the city. This is re-emphasized by their desire to have amenities, such as daily supplies, care facilities and public transport, in the vicinity of their homes. They would also like to be surrounded by a mixture of single households, families, and older adults.

## 6.4. Heterogeneity

Thus far, the analysis of older adults in this thesis was based on either the average housing preferences of older adults as a whole (chapter 4) or the residential moving behaviour of all persons in a certain age group (chapters 2 and 3). However, due to social-cultural and social-economic structures, the relationship between age and housing is expected to change for successive cohorts (Hooimeijer, 2007, Wulff et al., 2010). In other words, the next generation of older adults is expected to behave differently in the housing market than what is considered common for the pre-existing generation of older adults.

In the remainder of chapter 4, we estimated the stated housing preferences by age. In doing so, we were able to demonstrate possible heterogeneity of preference by age cohort. For example, we found that older adults in the 'pre-elderly' age cohort (i.e. 55-64) showed a strong preference for owner-occupied dwellings, while the 'old-elderly' (i.e. 75+) showed an even stronger preference for rental dwellings. Note that the birth dates of the 'pre-elderly' in our sample correspond to the Dutch 'baby boom generation'. We would like to speculate that differences in opportunities (both economic and social) between generations have shaped the preference for tenure in old age. With respect to neighbourhood characteristics, it is clear that these play a more important role for the younger age groups than for the oldest age group. For the 'old-elderly', dwelling characteristics play a more significant role in the evaluation of choice alternatives.



It has also been argued that socio-demographic characteristics alone, such as age, are no longer sufficient to predict the housing preferences of (older) consumers (see e.g. Heijs et al., 2009, 2011; Jansen, 2012). In other words: there is no such thing as '*the* older adult', which makes segmentation into more or less homogeneous groups essential. Chapter 5 used a lifestyle segmenting approach to determine meaningful segments in the Dutch senior housing market. The concept of lifestyle was operationalized in terms of values. This resulted in the identification of five segments of older adults who had (more or less) the same viewpoints, motivations and attitudes with respect to housing, ranging from a preference for (rental) apartments in a neighbourhood with a mixture of single households, families, and older adults, to a strong preference for owner-occupied dwellings in neighbourhoods with predominantly (other) owner-occupied dwellings. Living with predominantly (other) older adults was evaluated as being significantly more positive by one of the segments. The estimates also indicated that some segments did not necessarily prefer a smaller dwelling, as is often assumed in literature and policy.

The estimation results in both chapters 4 and 5 confirmed that older adults are not all the same. Rather, they are differentiated by age, as well as by lifestyle. These differences obviously relate to income and education, but this does not explain all the variance.

## 6.5. Implications for policy and future research

The introduction to this thesis stated that one of the challenges in the coming years is to provide proper housing conditions for older adults. While this thesis provides helpful insights into potential future changes in the residential moving behaviour and housing choices of older adults in the Netherlands, it also raises several new questions. In this section, I will reflect on some implications for policy and some promising directions for future research.

### 6.5.1. A refocus on 'staying' as a field of interest

In the context of rapid population ageing and the impending retirement of the baby boomer generation, scholars have studied population ageing proceeding from various disciplines. This has resulted, among other things, in a greater emphasis on the residential moving behaviour of older adults: who moves and what is the underlying decision-making process that leads to a move? The theories that scholars most rely on to explain the residential moving behaviours of older adults tend to focus on either the 'pressures' of developmental events (Litwak & Longino, 1987), or on 'triggering mechanisms' (Wiseman, 1980) (as discussed in more detail in chapter 3). Consequently, residential stability is seen as the absence of the event, rather than as an occurrence in its own right (Atkins, 2018; Coulter et al., 2016; Hanson, 2005).

Yet, in researching the spatial implications of an ageing population, one could argue that later-life migration is likely to play a secondary role compared to other demographic processes, such as 'ageing in place'. This thesis has clearly demonstrated that later-life movers typically make up a minority of the older population. Also, if older adults do decide to move, they often do so within the same municipality. Therefore, the impact of the residential mobility of older adults on the spatial unevenness of ageing should not be overstated. Instead, the 'staying put' of older adults is likely to exercise a much greater influence on spatial structures, which makes the question of what explains their *immobility* socially and economically more important.

Since migration theories focus on why older adults move, rather than on why they remain in their current dwellings, they do not seem to fully account for older adults' decisions to stay put. In other words, the explanatory factors underlying the moving decisions of

older persons are not necessarily inversely correlated with the factors underlying their decision to age in place (Golant, 2020). Recently, there have been a few promising theories that could improve our understanding of why older adults choose to stay put, such as 'the prospect theory' and the 'socioemotional selectivity theory' (for more information, see: Clark & Lisowski, 2017; Golant, 2020). Both theories question the more neo-classical economic equilibrium approach to migration and state that older adults might not necessarily choose the highest expected utility because they are more concerned about losing what they have than about what they might gain. Empirical research is required to determine the extent to which the propositions offered in these theories influence ageing in place decisions, and how older persons resolve possible conflicting incentives and disincentives to move.

6.5.2. A refocus on ageing in the 'right' place

This thesis has shown that a vast majority of older adults prefer to stay put by choice. This finding is supported by extensive literature demonstrating older people's preference for staying in familiar surroundings for as long as possible (see e.g. Means, 2007; Rowles et al., 2003; Scharf et al., 2005). Due to a reduced action range and an increased risk of competence loss, housing and the immediate home environment becomes more important to people as they age (see e.g. Haacke et al., 2019; Oswald et al., 2005). Ageing in place policies are therefore encouraged by emphasizing that growing old in one's own home and neighbourhood is in the best interests of older adults, as they can then age within a familiar and predictable environment that supports their social, emotional, and instrumental needs (Davies & James, 2011; Milligan, 2009; Lager, 2015).



With policy and empirical evidence pointing in apparently similar directions, it has become difficult to challenge the view that ageing in place in one's own home could be anything but a desirable outcome (Hillcoat-Nallétamby & Ogg, 2014). However, some scholars have begun to raise critical concerns, pointing out the limitations and possible disadvantages of ageing in place (Dobner et al., 2016). These concerns relate to the suitability of the home and neighbourhood (Golant, 2011; Lord et al., 2006; Oswald et al., 2007; Sixsmith & Sixsmith, 2008; Wagner et al., 2010), as well as the increased risk of loneliness and lack of social support in the home and community (Howden-Chapman et al., 1999; Means, 2007), demonstrating that ageing in place is not a one-size-fits-all concept (Dobner et al., 2016; Pani-Harreman et al., 2020).

Thus, it is not clear from research -including this thesis- that 'staying put' is always best for older adults (see e.g. Abramsson & Andersson, 2016; Forsyth & Molinsky, 2021, Golant, 2008). Instead, research might benefit from a refocus on ageing in the 'right' place. This may involve moving, while still remaining in the same neighbourhood, town, or general

area (Thomas & Blanchard, 2009). This definition allows people to move into a variety of housing forms that may better suit their evolving needs, while still retaining a sense of familiarity (Forsyth & Molinsky, 2021). With regard to policy, supporting ageing in the same vicinity requires the provision of additional housing options close to where older adults already live (Forsyth et al., 2019; Jones et al., 2008).

6.5.3. Ageing and the provision of housing: lessons learned?

As mentioned in the introduction to this thesis, it was previously estimated that an additional 36,000 to 40,000 suitable homes are needed annually to make up for the existing shortage of suitable housing (Van Galen & Willems, 2011; BZK, 2011). At the time, such estimations were easily translated into a need to build more *nultredenwoningen* (single-storey houses), on the assumption that the provision of more suitable housing would inevitably lead to older adults moving into them. However, it soon became apparent that the predicted demand failed to match the actual demand of suitable housing in the Dutch housing market. As a result, the newly-built housing intended for older adults did not rent or sell as well as expected (Leidelmeijer et al., 2017).

Instead, the vast majority of older adults live independently in 'ordinary' dwellings. In the Netherlands, for example, 75% of persons aged 75 and over lived independently in their home in 1975. By 2017, the percentage of persons aged 75 and over living independently had risen to approximately 92% (Daalhuizen et al., 2019). This raises the question: what does it mean if older adults choose to stay put? Firstly, when frail older adults age in place, they are more likely to rely on assistance from informal caregivers and paid homecare providers to maintain their independence, rather than on the support services offered by senior group housing facilities, such as assisted living (Golant, 2004). Secondly, since more and more older adults are homeowners, they are likely to demand more home modification/maintenance services and financial products and services (e.g. mortgage refinancing and property tax deferrals) (Golant, 2020; Schilder et al., 2018). Thirdly, the growing number of older adults ageing in place implies that older adults are 'tying up' homes more suitable for larger family households (Forsyth & Molinsky, 2021), thereby affecting the supply and condition of housing available to other age groups seeking housing opportunities (Chan & Ellen, 2017; Golant, 2008; Oswald et al., 2002).

With that said, I cannot write this conclusion without addressing the current housing crisis in the Netherlands. In the last few years, we have witnessed increasing pressure on the Dutch housing market as a result of a shortage of housing. The current housing shortfall is estimated at 331,000 homes, rising to 418,000 homes by 2025 (Groenemeijer et al., 2020). In addition to building new homes, other solutions are needed. Encouraging older adults to move is often seen as part of the solution. I would like to argue here that

knowledge about the heterogeneity of housing preferences among older adults is crucial in 'tempting' older adults to relocate. As this thesis clearly demonstrates, there is no such thing as '*the* older adult', and their housing wishes (and needs) vary considerably. Policy makers should therefore move away from generic housing solutions for older adults. Instead, policy should focus more on participatory decision-making, in which the diverse preferences and demands of older adults can help to co-create policies on the local provision of (suitable) housing. The revival of *hofjes* (modern homes situated around a courtyards), such as *Knarrenhofjes*[1], are good examples of this in the Netherlands.

In addition, a more proactive approach to planning future housing could support older adults in being better prepared and informed, and help them to retain control of their situation and the relocation process (Granbom et al., 2020). Related, promising policy instruments include counselling services, such as *seniorenmakelaars* (mediators who advise and support older adults in their search for suitable housing) or *wooncoaches* (housing coaches). I should point out, however, that most of these services are aimed at older adults who are already actively seeking help (i.e. older adults who have already decided to look into alternative housing solutions). In view of the need for a more proactive approach to support older adults in making informed decisions and planning for the future, a counselling service should also target older adults who are at earlier stages of the decision-making process.



1 A small-scale, clustered form of housing. The design of this particular housing type is tailored to the wishes of a community of like-minded people and is the result of a participatory decision-making process.

# References


Abramsson, M., & Andersson, E. (2016). Changing Preferences with Ageing: Housing Choices and Housing Plans of Older People. *Housing, Theory and Society, 33*(2), 217-241. https://doi.org/10.1080/14036096.2015.1104385

Atkins, M.T. (2018). On the move, or staying put? An analysis of intrametropolitan residential mobility and ageing in place. *Population Space and Place, 24*(3), e2096. https://doi.org/10.1002/psp.2096

BZK. (2011). *Woonvisie* [housing vision]. Ministerie van Binnenlandse Zaken en Koninkrijksrelaties.

Chan, S., & Ellen, I.G. (2017). Housing for an aging population. *Housing Policy Debate, 27*(2), 167–192. https://doi.org/10.1080/10511482.2016.1184696

Clark, W.A.V., & Lisowski, W. (2017). Prospect theory and the decision to move or stay. *Proceedings of the National Academy of Sciences, 114*(36), E7432-E7440. https://doi.org/10.1073/pnas.1708505114

Coulter, R, Van Ham, M., & Findlay, A.M. (2016). Re-thinking residential mobility. Linking lives through time and place. *Progress in Human Geography, 40*(3), 352-374 https://doi.org/10.1177/0309132515575417

Daalhuizen, F., Van Dam, F., De Groot, C., Schilder, F., & Van der Staak, M. (2019). *Zelfstandig thuis op hoge leeftijd. Verkenning van knelpunten en handelingsperspectieven in beleid en praktijk* [Independent at home in old age. Exploration of bottlenecks and perspectives for action in policy and practice] (PBL publicatienummer 2599). Planbureau voor de Leefomgeving.

Davies, A., & James, A. (2011*). Geographies of ageing: Social processes and the spatial unevenness of population ageing*. Ashgate Publishing.

Dobner, S., Musterd, S., & Droogleever Fortuijn, J. (2016). 'Ageing in place': experiences of older adults in Amsterdam and Portland. *GeoJournal: Spatially Integrated Social Sciences and Humanities, 81*, 197–209. https://doi.org/10.1 007/s 1 0708-0 1 4-96 13-3

Fischer, P.A., & Malmberg, G. (2001). Settled people don't move: On life course and (im-) mobility in Sweden. *International Journal of Population Geography, 7*(5), 357-371. https://doi.org/10.1002/ijpg.230

Fokkema, T., Gierveld, K., & Nijkamp, P. (1996). Big cities, big problems: reasons for the elderly to move? *Urban Studies, 33*(2), 353-377. https://doi.org/10.1080/00420989650012059

Forsyth, A., & Molinsky, J. (2021). What Is Aging in Place? Confusions and Contradictions. *Housing Policy Debate, 31*(2), 181-196, https://doi.org/10.1080/10511482.2020.1793795

Forsyth, A., Molinsky, J., & Kan, H.Y. (2019). Improving housing and neighborhoods for the vulnerable: Older people, small households, urban design, and planning. *Urban Design International, 24*(3), 171–186. https://doi.org/10.1057/s41289-019-00081-x

Geist C., & McManus, P.A. (2008). Geographical mobility over the life course: motivations and Implications. *Population, Space and Place, 14*(4), 283-303. https://doi.org/10.1002/psp.508

Golant, S.M. (2004). Do impaired older persons with health care needs occupy U.S. assisted living facilities? An analysis of six national studies. *The Journals of Gerontology: Series B, 59*(2), S68-s79. https://doi.org 10.1093/geronb/59.2.s68

Golant, S.M. (2008). Commentary: Irrational exuberance for the aging in place of vulnerable low-income older homeowners. *Journal of Aging & Social Policy, 20*(4), 379–397. https://doi.org/10.1080/08959420802131437

Golant, S.M. (2011). The quest for residential normalcy by older adults: relocation but one pathway. *Journal of Aging Studies, 25*(3), 193–205. https://doi.org/10.1016/j.jaging.2011.03.003

Golant, S.M. (2020). The distance to death perceptions of older adults explain why they age in place: a theoretical examination. *Journal of Aging Studies, 54*, 100863. https://doi.org/10.1016/j.jaging.2020.100863

Granbom, M., Szanton, S., Gitlin, L.N., Paulsson, U., & Zingmark, M. (2020). Ageing in the right place – a prototype of a web—based housing counselling intervention for later life. *Scandinavian Journal of Occupational Therapy, 27*(4), 289-297. https://doi.org/10.1080/11038128.2019.1634756

Groenemeijer, L., Gopal, K., Omtzigt, D., & Van Leeuwen, G. (2020). *Vooruitzichten bevolking, huishoudens en woningmarkt: prognoses en scenario's 2020-2035* [population, households and housing market expectations] (Report r2020-0060LG). ABF Research.

Haacke, H.C., Enβle, F., Haase, D., Helbrecht, I., & Lakes, T. (2019). Why Do(n't) People Move When They Get Older? Estimating the Willingness to Relocate in Diverse Ageing Cities. *Urban Planning, 4*(2), 53-69. https://doi.org/10.17645/up.v4i2.1901

Hansen, E.B., & Gottschalk, G. (2006). What Makes Older People Consider Moving House and What Makes Them Move? *Housing Theory and Society, 23*(1), 35-54. https://doi.org/10.1080/14036090600587521

Hanson, S. (2005). Perspectives on the geographic stability and mobility of people in cities. *Proceedings of the National Academy of Sciences of the United States of America, 102*(43), 15301-15306. https://doi.org/10.1073/pnas.0507309102

Heijs, W., Carton, M., Smeets, J., & Van Gemert, A. (2009). Labyrinth of life-styles. *Journal of housing and the Built Environment, 24*(3), 347-356. https://doi.org/10.1007/s10901-009-9147-z

Heijs, W., Van Deursen, A.M., Leussink, M., & Smeets, J. (2011). Re-searching the labyrinth of life-styles. *Journal of Housing and the Built Environment, 26*(4), 411-425. https://doi.org/10.1007/s10901-011-9237-6

Hilcoat-Nallétamby, S., & Ogg, J.I.M. (2014). Moving beyond 'ageing in place': older people's dislikes about their home and neighbourhood environments as a motive for wishing to move. *Aging & Society, 34*(10), 1771-1796. https://doi.org/10.1017/S0144686X13000482

Hooimeijer, P. (2007). *Dynamiek in de derde leeftijd: De consequenties voor het woonbeleid* [Dynamics in life's third act: consequences for housing policy]. Ministerie van VROM.

Howden-Chapman, P., Signal, L., & Crane, J. (1999). Housing and health in older people: Ageing in Place. *Social Policy Journal of New Zealand, 1*(3), 14-30.

Jansen, S.J.T. (2012). What is the worth of values in guiding residential preferences and choices? *Journal of Housing and the Built Environment, 27*(3), 273-300. https://doi.org/10.1007/s10901-012-9270-0

Jones, A., Tilse, C., Bartlett, H., & Stimson, R. (2008). *Integrated support and care for people in later life (*Positioning Paper No. 108). Australian Housing and Urban Research Institute.

Korpi, M., Clark, W.A.V., & Malmberg, B. (2011). The urban hierarchy and domestic migration: the interaction of internal migration, disposable income and the cost of living, Sweden 1993-2002. *Journal of Economic Geography, 11*(6), 1051-1077. https://doi.org/10.1093/jeg/lbq043

Lager, D.R. (2015). *Perspectives on ageing in place. Older adults' experiences of everyday life in urban neighbourhoods*. [Doctoral dissertation, University of Groningen].

Leidelmeijer, K., Van Iersel, J, & Leering, D. (2017). *Monitor Investeren in de toekomst. Ouderen en langer zelfstandig wonen* [Monitor Investing for the Future: Older adults and ageing in place]. RIGO.

Litwak, E., & Longino, C.F. (1987). Migration patterns among the elderly: A developmental perspective. *The Gerontologist, 27*(3), 266–272. https://doi.org/10.1093/geront/27.3.266

Lord, S.R., Menz, H.B., & Sherrington, C. (2006). Home environment risk factors for falls in older people and the efficacy of home modifications. *Age and Ageing, 35*(2), ii55–ii59. https://doi.org/10.1093/ageing/afl088

Means, R. (2007). Safe as Houses? Ageing in Place and Vulnerable Older People in the UK. *Social Policy & Administration, 41*(1), 65-85. https://doi.org/10.1111/j.1467-9515.2007.00539.x

Milligan, C. (2009). *There's No Place Like Home: Place and Care in an Ageing Society*. Ashgate.

Moos, M. (2016). From gentrification to youthification? The increasing importance of young age in delineating high-density living. *Urban Studies, 53*(14), 2903-2920. https://doi.org/10.1177/0042098015603292

Oswald, F., Schilling, O., Wahl, H-W., & Gäng, K. (2002). Trouble in paradise? Reasons to relocate and objective environmental changes among well-off older adults. *Journal of Environmental Psychology, 22*(3), 273-288. https://doi.org/10.1006/jevp.2002.0255

Oswald, F., Hieber, A., Wahl, H-W., & Mollenkopf, H. (2005). Ageing and person-environment fit in different urban neighbourhoods. *European Journal of Ageing, 2*, 88-97. https://doi.org/10.1007/s10433-005-0026-5

Oswald, F., Wahl, H-W., Schilling, O., Nygren, C., Fänge, A., Sixsmith, A., Sixsmith, J., Széman, Z., Tomsone, S., & Iwarsson, S. (2007). Relationships between housing and healthy aging in very old age. *The Gerontologist, 47*(1), 96–107. https://doi.org/10.1093/geront/47.1.96

Pani-Harreman, K.E., Bours, G.J.J.W., Zander, I., Kempen, G.I.J.M., & Van Duren, J.M.A. (2020). Definitions, key themes and aspects of 'ageing in place': a scoping review. *Ageing & Society*, First View, 1-34. https://doi.org/10.1017/S0144686X20000094

Plane, D.A., & Jurjevich, J.R. (2009). Ties That No Longer Bind? The Patterns and Repercussions of Age-Articulated Migration. *The Professional Geographer, 61*(1), 4-20. https://doi.org/10.1080/00330120802577558

Rossi, P. (1955). *Why families move: A study in the social psychology of urban residential mobility*. The Free Press.

Rouwendal, J., & Meijer E. (2001). Preferences for housing, jobs and commuting: a mixed logit analysis. *Journal of regional science, 41*(3), 475-505. https://doi.org/10.1111/0022-4146.00227

Rowles, G.D., Oswald, F., & Hunter, E.G. (2003). Interior living environments in old age. *Annual Review of Gerontology and Geriatrics, 23*(1), 167–194.

Sabater, A., Graham, E., & Finney, N. (2017). The spatialities of ageing: Evidencing increasing spatial polarisation between older and younger adults in England and Wales. *Demographic Research, 36*(25), 731-744. https://doi.org/10.4054/DemRes.2017.36.25

Scharf, T., Phillipson, C., & Smith, A.E. (2005). Social exclusion of older people in deprived urban communities of England. *European Journal of Ageing, 2*(2), 76–87 https://doi.org/10.1007/s10433-005-0025-6

Schilder, F., Daalhuizen, F., & De Groot, C. (2018). *Krasse knarren kúnnen kraken. Over hoe het stapelen van verschillende beleidsdoelen ouderen onder druk kan zetten* [About how stacking different policy goals can put pressure on older adults] (PBL-publicatienummer 3301). Planbureau voor de Leefomgeving.

Serow, W.J., Friedrich, K., & Haas, W.H. (1996). Residential relocation and regional redistribution of elderly in the USA and Germany. *Journal of Cross-Cultural Gerontology, 11*, 293-306. https://doi.org/10.1007/BF00115797

Sixsmith, A., & Sixsmith, J. (2008). Ageing in place in the United Kingdom. *Ageing International, 32*(3), 219–235. https://doi.org/10.1007/s12126-008-9019-y

Tatsiramos, K. (2006). *Residential mobility and housing adjustment of older households in Europe* (Paper No. 2435). IZA Institute of Labor Economics.

Thomas, W.H., & Blanchard, J.M. (2009). Moving beyond place: Aging in community. Generations. *Journal of the American Society on Aging, 33*(2), 12–17.

Van Galen, J., & Willems, J. (2011). *Monitor investeren voor de toekomst 2009* [Monitor Investing for the Future 2009] ABF Research.

Wagner, S., Shubair, M.M., & Michalos, A.C. (2010). Surveying older adults' opinions on housing: recommendations for policy. *Social Indicators Research, 99*(3), 405-412. https://doi.org/10.1007/s11205-010-9588-5

Walters, W.H., & Owen, D. (2000). Types and patterns of later-life migration. *Geografiska Annaler Series B, 82*(3), 129-147. https://doi.org/10.1111/j.0435-3684.2000.00079.x

Warnes, A.M. (1992). Migration and the life course. In A.G. Champion & A.J. Fielding (eds), *Migration processes and patterns, Vol. 1: research progress and prospects* (pp 175-187). Belhaven Press.

Wilkinson-Meyers, L., Brown, P., McLean, C., & Kerse, N. (2014). Met and unmet need for personal assistance among community dwelling New Zealanders 75 years and over. *Health & Social Care in the Community, 22*, 317–327.

Wiseman, R.F. (1980). Why older people move: Theoretical issues. *Research on Aging, 2*(2), 141–154. https://doi.org/10.1177/016402758022003

Wulff, M., Champion, A., & Lobo, M. (2010). Household Diversity and Migration in Mid-life: Understanding Residential Mobility among 45-64 years olds in Melbourne, Australia. *Population Space and Place, 16*(4), 307-321. https://doi.org/10.1002/psp.553

# Addendum

NEDERLANDSE SAMENVATTING

DANKWOORD

CURRICULUM VITAE

# Nederlandse samenvatting

Dankzij verbeteringen in de gezondheidszorg en toenemende welvaart is het aantal ouderen in de afgelopen vijftig jaar continu gestegen. Ouderen gaan zo verhoudingsgewijs een steeds groter deel uitmaken van de totale bevolking. Naar verwachting zet deze trend zich de komende decennia sterker door naarmate de babyboomers hun pensioengerechtigde leeftijd naderen. Het grote aantal mensen dat is geboren tussen 1946 en 1955, meestal aangeduid als de 'babyboomgeneratie', wordt daarom beschouwd als een derde belangrijke factor die bijdraagt aan de vergrijzing van de Nederlandse bevolking.

Zo groeit naar verwachting de bevolking van 65 jaar en ouder in Nederland van 2,5 miljoen in 2010 tot 4,8 miljoen in 2060. Het aantal ouderen van 80 jaar en ouder zal naar verwachting verdrievoudigen, van 648.000 in 2010 tot bijna 2 miljoen in 2060. Verandering van het aantal ouderen in absolute cijfers en het aandeel dat zij hebben in onze samenleving heeft tal van implicaties.



Een van de uitdagingen voor de komende jaren is zorgen voor goede huisvesting voor ouderen. Bij aanvang van dit proefschrift in 2010 werd het tekort aan woningen geschikt voor ouderen in Nederland voor de periode 2006-2015 geschat op 406.000. Dit geschatte tekort was gebaseerd op het bestaande tekort in 2006, plus de verwachte extra vraag door de verwachte demografische ontwikkeling gedurende de periode 2006-2015 en de extramuralisering in dezelfde periode. Hieruit volgde een omvangrijke investeringsopgave om 'nultredenwoningen' (gelijkvloerse woningen) te realiseren, zowel door nieuwbouw als door aanpassing van de bestaande woningvoorraad.

Anno 2021 weten we dat het aandeel ouderen in de Nederlandse bevolking na 2015 is blijven groeien. Ook weten we dat de daadwerkelijke vraag naar geschikte woningen is achtergebleven op de voorspelde vraag in de Nederlandse woningmarkt. Dit roept de vraag op of een dergelijk (generiek) woonbeleid voor ouderen moeten worden voortgezet. En zo niet, welke beleidswijzigingen moeten dan worden doorgevoerd? Dit proefschrift kan helpen om die vraag te beantwoorden, omdat het inzicht geeft in de mogelijke toekomstige veranderingen in de verhuismobiliteit en woonvoorkeuren van ouderen in Nederland. In het bijzonder is gekeken naar de mogelijke verschillen in woonkeuzegedrag onder ouderen.

# Definities en methoden

Er is geen universele leeftijd waarop een samenleving 'oud' wordt. De meest gebruikte maatstaf voor de vergrijzing is het aantal 65-plussers op de totale bevolking. In dit proefschrift hanteren we een bredere benadering en zijn ook de 55- tot 65-jarigen meegenomen. De woonsituatie en het (anticiperend) verhuisgedrag van deze leeftijdsgroep is namelijk bepalend voor de woonsituatie van toekomstige ouderen. De leeftijd van 55 jaar wordt ook gebruikt om verhuizingen op latere leeftijd te classificeren. Aangezien we veronderstellen dat ouderen geen homogene groep vormen, maken we onderscheid in drie leeftijdsgroepen, te weten: *pre-elderly* (55-64 jaar), *young-elderly* (65-74 jaar) en *old-elderly* (75 jaar en ouder).

Om inzicht te krijgen in de verhuismobiliteit in Nederland, zijn met behulp van gegevens uit het WoonOnderzoek (WoON) van 2006 tot 2012 de interregionale verhuisbewegingen naar leeftijd geanalyseerd. Met dezelfde gegevens is eveneens onderzoek gedaan naar de factoren die van invloed kunnen zijn op overwegingen van ouderen om te verhuizen. Om de woonvoorkeuren van ouderen te onderzoeken is, in samenwerking met woningcorporatie Nijestee in 2011 in de gemeente Groningen een conjunct keuze-experiment opgezet. Ten slotte is een leefstijlsegmentiemethode gebruikt om verschillende categorieën ouderen te onderscheiden met (min of meer) dezelfde standpunten, motivaties en houding ten aanzien van huisvesting.

De rest van de samenvatting geeft een overzicht van de belangrijkste bevindingen voor de volgende drie hoofdthema's:

- Verhuismobiliteit
- Woonvoorkeuren
- Diversiteit

# Verhuismobiliteit

*Interregionale verhuisbewegingen naar leeftijd*

Eerder onderzoek heeft aangetoond dat de verhuismobiliteit van personen gedurende hun leven sterk varieert. De verhuismobiliteit is het hoogst bij jongvolwassenen, daalt daarna snel met ouder worden en neemt mogelijk rond de pensioengerechtigde leeftijd (tijdelijk) weer wat toe. De geneigdheid om te verhuizen in verschillende fasen van het leven vertoont zo'n sterke empirische regelmaat, dat het een bijna universeel patroon laat zien. Aan de basis van dit patroon ligt een verzameling levensloopovergangen. Veel van deze overgangen doen zich voor op jonge leeftijd. Zo verhuizen jongvolwassenen om

op zichzelf te gaan wonen, een studie te volgen, aan een relatie te beginnen of om van baan te veranderen. Voor ouderen geldt dat pensionering een belangrijke aanleiding kan zijn om te verhuizen, net als het uit-huis-gaan van het laatste kind, verweduwing of een slechter wordende gezondheid.

Deze levensloopovergangen tonen ook verschillen in hoe waarschijnlijk het is of men in een grotere of kleinere plaats gaat wonen. Zo verhuizen jongvolwassenen overwegend naar (studenten-)steden en naar regio's waar veel banen te vinden zijn, zoals de Randstad. Terwijl in veel landen ouderen een voorkeur laten zien voor minder dichtbevolkte gebieden, een zachter klimaat, goede recreatievoorzieningen of een aantrekkelijke natuur. Naast verandering van leefomgeving kan het verkleinen van de afstand tot familieleden ook een belangrijk motief zijn om te verhuizen.

In 2009 toonden Plane en Jurjevich aan dat, wanneer verhuisbewegingen worden uitgesplitst naar leeftijd, er verschillende patronen van op- en neerwaartse stromen binnen de stedelijke hiërarchie van de Verenigde Staten (hierna: VS) plaatsvinden. In hoofdstuk 2 herhalen we deze methodologische benadering voor Nederland. Hoewel de geografische omgeving en de mate van stedelijkheid in Nederland (zie tekstkader voor meer informatie) sterk verschillen van die van de VS, blijken de verhuispatronen van personen binnen verschillende leeftijdsgroepen grotendeels vergelijkbaar met de verhuispatronen die Plane en Jurjevich in 2009 in de VS vonden.



Een van de belangrijkste bevindingen is dat de *totale* interregionale verhuismobiliteit van een bevolking de gevarieerde verhuispatronen van personen binnen verschillende leeftijdsgroepen maskeert. Zo laat de totale interregionale verhuismobiliteit in Nederland een sterk stedelijke oriëntatie zien, terwijl deze voornamelijk wordt aangedreven door de verhuizingen van jongvolwassenen. Voor de oudere leeftijdsgroepen zien we voornamelijk neerwaartse bewegingen binnen de stedelijke hiërarchie, in het bijzonder voor personen van 55-64 jaar, en voor personen van 75 jaar en ouder.

Voor de leeftijdsgroep 65-74 jaar signaleren we echter ook een opwaartse beweging binnen de stedelijke hiërarchie. Dit is een potentieel nieuw verhuispatroon, dat ook in andere landen voor zou kunnen komen. We vermoeden dat dit een voorbode is van de pensionering van de babyboomgeneratie, een generatie die wellicht meer dan eerdere generaties geïnteresseerd is in de grotere locatiedichtheid en verscheidenheid aan diensten die beschikbaar zijn in steden. Omdat de gegevens uit verschillende WoON-onderzoeken zijn samengevoegd, zijn we echter niet in staat om dergelijke cohorteffecten te onderscheiden.

*Factoren die de verhuismobiliteit kunnen beïnvloeden*

Hoofdstuk 3 geeft meer informatie over de factoren die van invloed zijn op de neiging om te verhuizen en de feitelijke verhuismobiliteit van ouderen. Hierbij is gekeken naar kenmerken van zowel het individu als de omgeving (de woning en de leefomgeving). Er zijn twee binaire logistische regressies uitgevoerd: een 'migratiemodel' en een 'verhuisgeneigdheidmodel'. Terwijl het migratiemodel laat zien op basis van welke factoren verhuizers waarschijnlijk hun huidige verblijfplaats hebben gekozen, laat het verhuisgeneigdheidmodel zien welke factoren van invloed zijn op overwegingen om de huidige verblijfplaats te willen verlaten. Op basis van de resultaten van beide modellen toont dit proefschrift aan dat een geschikte woning de belangrijkste aantrekkende factor is, terwijl een achteruitgaande leefomgeving voor ouderen juist een belangrijke afstotende factor is.

**Stedelijke hiërarchie in Nederland**

De indeling van gemeenten naar stedelijkheid is gebaseerd op de omgevingsadressendichtheid van de gemeente, zoals vastgesteld door het CBS.

Voor ieder adres binnen een gemeente is de adressendichtheid bepaald van een gebied met een straal van 1 km rondom dat adres. De omgevingsadressendichtheid van een gemeente is de gemiddelde waarde hiervan voor alle adressen binnen die gemeente.

De volgende stedelijksheidsklassen worden onderscheiden:

- Zeer sterk stedelijk (omgevingsadressendichtheid van 2.500 of meer per km$^2$);
- Sterk stedelijk (omgevingsadressendichtheid van 1.500 tot 2.500 per km$^2$);
- Matig stedelijk (omgevingsadressendichtheid van 1.000 tot 1.500 per km$^2$);
- Weinig stedelijk (omgevingsadressendichtheid van 500 tot 1.000 per km$^2$);
- Niet-stedelijk (omgevingsadressendichtheid van minder dan 500 per km$^2$).

Bovendien lijken de bevindingen van hoofdstuk 2 en 3 te suggereren dat ouderen geneigd zijn om te verhuizen van verstedelijkte gebieden naar minder verstedelijkte/meer landelijke omgevingen. Hoewel oudere huishoudens duidelijk minder verhuizen dan jongere huishoudens, gaat het – omdat het om een steeds groter wordende subpopulatie gaat – uiteindelijk wel om een flink aantal verhuisbewegingen. De verhuismobiliteit van ouderen kan zodoende van invloed zijn op de ruimtelijke spreiding van de vergrijzing.

*Immobiliteit*
Eerder onderzoek liet zien dat ouderen over het algemeen zeer weinig verhuizen. Er is echter weinig bewijs voor dat de geringe verhuismobiliteit van ouderen wordt bepaald door een eigen keuze of dat die een reactie is op beperkingen, zoals het ontbreken van mogelijkheden op de woningmarkt. In hoofdstuk 4 wordt verslag gedaan van een 'conjunct keuze-experiment' onder 55-plussers in de gemeente Groningen. Dit is een onderzoeksbenadering waarbij de woonvoorkeuren geanalyseerd worden aan de hand van de keuzes die respondenten maakten toen zij een aantal hypothetische alternatieven voor hun huidige woonsituatie kregen voorgehouden.

In ons keuze-experiment kregen respondenten 24 keer een keuzeset voorgelegd die bestond uit de huidige woonsituatie en twee alternatieven daarvoor. De twee alternatieve woonsituaties verschilden op maximaal vijf duidelijk aangegeven kenmerken van de huidige woonsituatie. Voor het overige werden de alternatieven geacht gelijk te zijn aan de huidige woonsituatie. Door middel van literatuuronderzoek is eerst vastgesteld welke kenmerken voor ouderen relevant zijn bij het maken van een woonkeuze, zoals de toegankelijkheid van de woning en de afstand tot voorzieningen. Deze zijn aangevuld met kenmerken die van belang werden geacht voor (woningcorporatie-)beleid, zoals de aanwezigheid van 'domotica' en de mate van inspraak in de inrichting van de woning.



Voor iedere keuzeset werd de respondent gevraagd een keuze te maken tussen de twee alternatieven en de huidige woonsituatie. Indien de geboden alternatieven niet aan zijn of haar woonwensen voldeden, kon de respondent een voorkeur uitspreken voor (het continueren van) de huidige woonsituatie. Daarnaast werd de respondent in iedere keuzesituatie gevraagd een tweede keus aan te geven. Uit de gemaakte keuzes kon met behulp van een probabilistisch keuzemodel vervolgens achterhaald worden welke kenmerken van de woning en leefomgeving het meest bepalend zijn bij het maken van een woonkeuze op latere leeftijd.

De resultaten lieten zien dat wanneer ouderen een keuze kregen (zij het een hypothetische), de overgrote meerderheid van de respondenten de voorkeur gaf aan (het continueren van) de huidige woonsituatie. We concluderen daarom dat de immobiliteit van Nederlandse ouderen vooral wordt ingegeven door vrije wil en niet zozeer door het ontbreken van alternatieve woningen.

Desalniettemin laten de resultaten ook zien dat bepaalde kenmerken van de huidige woonsituatie niet per se overeenkomen met een aantal zeer gewaardeerde kenmerken van de woningen en de leefomgeving in het keuze-experiment. De locatie van de

buurt, het woningtype en de toegankelijkheid (zowel intern als extern) van de woning zijn hiervan goede voorbeelden. De respondenten waren dus geneigd veel vaker voor de bestaande woonsituatie te kiezen dan men zou verwachten op grond van een vergelijking tussen de kenmerken van de huidige en de alternatieve woonsituaties. We kunnen zodoende niet concluderen dat de keuze om de huidige woonsituatie te continueren te danken is aan de geschiktheid van deze woning en/of leefomgeving. Dit betekent ook dat de bestaande woonsituatie uiteindelijk ongeschikt kan worden om te blijven wonen.

## Woonvoorkeuren

Je zou kunnen zeggen dat ouderen hun woonvoorkeuren kenbaar maken door 'met hun voeten te stemmen'. Op basis van de resultaten van het migratiemodel in hoofdstuk 3 concludeerden we al dat onlangs verhuisde ouderen meer geneigd waren om in een huis te wonen die 'geschikt voor hun leeftijd' wordt geacht. We vinden niet alleen een grotere waarschijnlijkheid voor seniorenwoningen, maar ook voor appartementen, toegankelijke woningen en voor woningen zonder tuin. De resultaten tonen verder aan dat ouderen vaker zijn verhuisd naar niet-verstedelijkte gemeenten en naar wijken met weinig overlast, een hoge mate van cohesie en voldoende voorzieningen.

Het is echter goed om op te merken dat de woonkeuzes in hoofdstuk 3 mogelijk meer zijn ingegeven door beperkingen op de huizenmarkt dan door de werkelijke voorkeuren van de respondenten. Met andere woorden: de *revealed preferences* in de WoON-dataset zijn beperkt door een onevenwichtige Nederlandse woningmarkt. Resultaten op basis van dergelijke gegevens kunnen daarom een vertekend beeld geven van de woonvoorkeuren van ouderen. *Stated preferences,* daarentegen, kunnen informatie over keuzegedrag onthullen die niet wordt beïnvloed door de beperkte beschikbaarheid van een bepaald type woning (en de noodzaak om te kiezen voor een second-best alternatief). De resultaten van het conjunct keuze-experiment in hoofdstuk 4 kunnen zodoende gebruikt worden om een meer onbevooroordeeld beeld te krijgen van de woonvoorkeuren van ouderen (terwijl er dan geen noodzaak is om een onevenwichtige situatie te modelleren).

Desalniettemin bevestigen de opgegeven voorkeuren in hoofdstuk 4 de meeste geobserveerde keuzes uit hoofdstuk 3, met name die met betrekking tot de woning. Op basis van de voorkeur die ouderen uitspreken over diverse kenmerken van de woning, concluderen we wederom dat ouderen 'leeftijdsvriendelijke' woningen prefereren. Deze voorkeur blijkt uit de positieve waardering voor appartementen, woningen waarbij de primaire ruimtes (woonkamer, keuken, badkamer en tenminste één slaapkamer) zich op

dezelfde verdieping bevinden, en woningen met een lift. Voor wat betreft de leefomgeving tonen de resultaten aan dat ouderen niet willen wonen in een buurt die aan de rand van een stad ligt. Dit wordt onderstreept door de voorkeur om voorzieningen, zoals dagelijkse voorzieningen, zorgvoorzieningen en openbaar vervoer, in de nabijheid van de woning te hebben. Ten slotte wonen ouderen het liefste in een gemêleerde wijk met een mix van eenpersoonshuishoudens, gezinnen en ouderen.

## Diversiteit

Van de volgende generatie ouderen wordt verwacht dat zij zich anders zal gedragen op de woningmarkt dan wat voor de reeds bestaande generaties ouderen als gebruikelijk wordt beschouwd. Om de mogelijke diversiteit in woonkeuzes per leeftijdscohort aan te tonen, meten we in hoofdstuk 4 de woonvoorkeuren tevens naar leeftijd. Zo ontdekten we dat de voorkeur voor (het continueren van) de huidige woonsituatie sterker wordt naarmate de respondent tot een oudere leeftijdsgroep behoort. De resultaten lieten verder zien dat ouderen in het *pre-elderly*-leeftijdscohort een sterke voorkeur hebben voor koopwoningen, terwijl de *old-elderly* een nog sterkere voorkeur voor huurwoningen laten zien. Hierbij merken we op dat de geboortedata van de *pre-elderly* in onze steekproef overeenkomen met de Nederlandse 'babyboomgeneratie'. We vermoeden dat verschillen in mogelijkheden - zowel in economische als sociale zin - tussen generaties de voorkeur voor een eigen woning op oudere leeftijd hebben gevormd. Kenmerken van de buurt spelen voor de jongere leeftijdsgroepen een belangrijkere rol dan voor de oudste leeftijdsgroep. Voor *old-elderly* spelen kenmerken van de woning juist een grotere rol bij de beoordeling van de keuzesets.

In de literatuur over ouderenhuisvesting wordt echter ook gesuggereerd dat socio-demografische kenmerken alleen, zoals leeftijd, niet langer voldoende zijn om de woonwensen van oudere (woon-)consumenten goed te kunnen voorspellen. Om die reden is in hoofdstuk 5 een leefstijlsegmentatiemethode toegepast om segmenten in de Nederlandse woningmarkt voor ouderen te bepalen. Het concept leefstijl werd geoperationaliseerd aan de hand van 'waardeoriëntaties' van de respondenten. Hieruit kwamen vijf categorieën ouderen die (min of meer) dezelfde standpunten, motivaties en attitudes hadden met betrekking tot huisvesting, variërend van een voorkeur voor (huur-)appartementen in een gemêleerde wijk met een mix van eenpersoonshuishoudens, gezinnen en ouderen, tot een sterke voorkeur voor koopwoningen in wijken met overwegend andere koopwoningen. In een buurt wonen met alleen leeftijdsgenoten, wordt niet door alle categorieën als positief gewaardeerd. De resultaten toonden ook aan dat sommige categorieën niet per se de voorkeur gaven aan een kleinere woning, zoals vaak wordt aangenomen in literatuur en beleid.

De resultaten in zowel hoofdstuk 4 als 5, bevestigden dat ouderen niet over één kam te scheren zijn, het is een zeer heterogene doelgroep. In andere woorden: *de* oudere bestaat niet, in plaats daarvan zijn ouderen niet alleen te differentiëren naar leeftijd, maar ook naar leefstijl. Deze verschillen hebben uiteraard betrekking op inkomen en opleiding, maar dit verklaart niet alle variantie.

## Implicaties voor beleid en suggesties voor vervolgonderzoek

Hoewel dit proefschrift bruikbare inzichten biedt in mogelijke toekomstige veranderingen in het verhuisgedrag en woonvoorkeuren van ouderen in Nederland, roept het ook nieuwe vragen op. In deze laatste paragraaf sta ik stil bij enkele implicaties voor beleid en enkele veelbelovende richtingen voor toekomstig onderzoek.

*Aandacht voor blijvers*
Wetenschappers hebben, tegen de achtergrond van een snelle vergrijzing en de aanstaande pensionering van de babyboomgeneratie, vanuit verschillende disciplines de consequenties van een steeds ouder wordende bevolking bestudeerd. Dit heeft onder meer geresulteerd in meer aandacht voor het verhuisgedrag van ouderen: wie verhuist en wat is het achterliggende besluitvormingsproces dat tot een verhuizing leidt? De theorieën waarop wetenschappers zich het meest baseren om het verhuisgedrag van ouderen te verklaren, hebben de neiging zich te concentreren op ofwel de 'druk' van levensloopovergangen (zoals pensionering, verweduwing en de empty-nest fase), of op 'triggermechanismen' (zoals een achteruitgaande gezondheid, maar ook een veranderende buurt of een woning die niet langer aan de wensen voldoet). Als gevolg daarvan wordt immobiliteit gezien als de afwezigheid van de gebeurtenis, in plaats van als een gebeurtenis op zichzelf.

Bij het onderzoeken van de ruimtelijke implicaties van een vergrijzende bevolking zou men echter kunnen stellen dat verhuizingen op latere leeftijd waarschijnlijk een ondergeschikte rol spelen in vergelijking met andere demografische processen, zoals 'langer zelfstandig wonen'. Dit proefschrift heeft duidelijk aangetoond dat een minderheid van de oudere bevolking op latere leeftijd verhuist. Zelfs als oudere huishoudens besluiten te verhuizen, verhuist men doorgaans over kleine afstanden (binnen dezelfde gemeente). Om die reden moet de impact van de verhuisbewegingen van ouderen op de ruimtelijke spreiding van de vergrijzing niet worden overschat. In plaats daarvan heeft 'langer zelfstandig wonen' waarschijnlijk een veel grotere invloed op de ruimtelijke concentratie van ouderen. Dit maakt de vraag wat hun immobiliteit verklaart, sociaal en economisch gezien, misschien wel belangrijker.

Aangezien migratietheorieën zich richten op de redenen waarom ouderen verhuizen, in plaats van waarom ze in hun huidige woning blijven, lijken ze de beslissing van ouderen om op hun plek te blijven niet volledig te verklaren. Met andere woorden: de verklarende factoren die ten grondslag liggen aan de verhuisbeslissingen van ouderen zijn niet noodzakelijk omgekeerd gecorreleerd met de factoren die ten grondslag liggen aan hun beslissing om te blijven. Onlangs zijn twee veelbelovende theorieën gepresenteerd waarmee we de immobiliteit van ouderen beter zouden kunnen begrijpen: *the prospect theory* en de *socioemotional selectivity theory*. Beide theorieën zetten vraagtekens bij de meer neoklassieke (economische) benadering van migratie en stellen dat ouderen misschien niet per se het hoogst verwachte 'nut' kiezen, omdat ze meer oog hebben voor wat ze te verliezen hebben dan voor wat ze zouden kunnen krijgen. Verder empirisch onderzoek is nodig om te bepalen in hoeverre de mogelijke verklaringen die in deze theorieën worden geschetst inderdaad van invloed zijn op beslissingen over 'langer zelfstandig wonen', en hoe ouderen eventuele tegenstrijdige prikkels (en/of belemmeringen) om te verhuizen oplossen.

*Langer zelfstandig wonen op de 'juiste' plek*

Dit proefschrift toont aan dat een overgrote meerderheid van de ouderen ervoor kiest om 'op hun plek te blijven'. Deze bevinding wordt ondersteund door uitgebreide literatuur over 'langer zelfstandig wonen', welke aantoont dat ouderen zolang mogelijk op een plek van eigen keuze willen blijven wonen. Vanwege een kleinere actieradius en een verhoogd risico op competentieverlies, worden de woning en de directe leefomgeving met het ouder worden belangrijker. Beleidsmatig wordt 'langer zelfstandig wonen' eveneens aangemoedigd, voornamelijk door te benadrukken dat oud worden in eigen huis en buurt in het belang is van de ouderen, aangezien ze dan ouder kunnen worden in een vertrouwde en voorspelbare omgeving die hun sociale, emotionele en instrumentele behoeften ondersteunt.

Als beleid en onderzoek schijnbaar vergelijkbare richtingen uit wijzen, is de opvatting dat 'langer zelfstandig wonen' enkel wenselijke uitkomsten oplevert, moeilijk te weerleggen. Toch zijn wetenschappers hun zorgen gaan uiten, waarbij ze wijzen op de beperkingen en de ongeschiktheid van de woning en/of de buurt, evenals het verhoogde risico van eenzaamheid en gebrek aan sociale steun thuis en/of in de gemeenschap. Dit suggereert dat 'langer zelfstandig wonen' niet voor iedereen de meest optimale woonoplossing is.

Ook dit proefschrift plaatst vraagtekens bij de geschiktheid van de bestaande woonsituatie om lang(er) zelfstandig thuis te wonen. In plaats daarvan zou onderzoek kunnen profiteren van een heroriëntatie op langer zelfstandig wonen op de *juiste* plek. Dit kan een verhuizing inhouden, terwijl men toch in dezelfde buurt, stad of algemeen

gebied blijft. Deze ruimere definitie stelt ouderen in staat om te verhuizen naar een verscheidenheid aan woonvormen die beter past bij hun behoeften, terwijl ze toch een gevoel van vertrouwdheid behouden. Wat beleid betreft, vereist het ondersteunen van ouder worden in een vertrouwde omgeving dat aanvullende woonopties worden geboden in de nabijheid van waar ouderen al wonen.

*Vergrijzing en huisvesting: lessen uit het (recente) verleden*
Zoals vermeld in de inleiding, werd eerder geschat dat er jaarlijks 36.000 tot 40.000 extra geschikte woningen nodig zijn om het bestaande tekort aan geschikte woningen op te vangen. Dergelijke schattingen werden destijds vrij eenvoudig vertaald in een (nieuw-) bouwopgave van meer nultredenwoningen, in de veronderstelling dat het aanbod van geschikte(re) woningen er onvermijdelijk toe zou leiden dat ouderen er willen wonen. Al snel bleek echter dat de voorspelde vraag niet overeenkwam met de daadwerkelijke vraag naar geschikte woningen op de Nederlandse woningmarkt. De woningen bestemd voor ouderen werden hierdoor minder goed verhuurd of verkocht dan verwacht.

In plaats daarvan woont de overgrote meerderheid van de ouderen zelfstandig in 'gewone' woningen. Zo woonde in Nederland in 1975 75 procent van de 75-plussers zelfstandig in een woning. In 2017 was het percentage zelfstandig wonende 75-plussers gestegen tot ongeveer 92 procent. Wat betekent het als ouderen ervoor kiezen om te blijven zitten? Ten eerste zijn kwetsbare ouderen, om hun onafhankelijkheid te behouden, eerder geneigd te vertrouwen op de hulp van informele zorgverleners en betaalde thuiszorgverleners dan op de ondersteunende diensten die worden aangeboden in een beschutte of beschermde woonomgeving. Ten tweede, aangezien steeds meer ouderen huiseigenaar zijn, ontstaat er waarschijnlijk meer vraag naar diensten voor woningaanpassing en onderhoud, en financiële diensten (herfinanciering hypotheek of verzilverproducten). Ten derde impliceert het groeiende aantal ouderenhuishoudens dat de woningen waarin ouderen wonen - en dit zijn steeds vaker eengezinswoningen - (voorlopig) niet beschikbaar zijn voor andere doelgroepen die op zoek zijn naar huisvesting.

Dat gezegd hebbende, kan ik deze samenvatting niet schrijven zonder de huidige woningcrisis in Nederland te adresseren. De afgelopen jaren zien we als gevolg van een woningtekort een toenemende druk op de Nederlandse woningmarkt. Het huidige woningtekort wordt geschat op 331.000 woningen, oplopend tot 418.000 woningen in 2025. Naast het bouwen van nieuwe woningen zijn er andere oplossingen nodig. Ouderen aanmoedigen om te verhuizen om zo doorstroming op gang te brengen, wordt vaak als deel van de oplossing gezien. Ik zou hier willen stellen dat kennis over de heterogeniteit van woonvoorkeuren bij ouderen cruciaal is om ouderen te 'verleiden' om te verhuizen. Zoals dit proefschrift duidelijk aantoont bestaat *de* oudere niet en lopen hun woonwensen

(en behoeften) aanzienlijk uiteen. Beleidsmakers zouden daarom af moeten stappen van generieke woonoplossingen voor ouderen. In plaats daarvan zou het beleid meer gericht moeten zijn op participatieve besluitvorming, waarbij de diverse voorkeuren en eisen van ouderen kunnen helpen het beleid voor (passende) huisvesting gezamenlijk te formuleren. De heropleving van hofjes, zoals de 'Knarrenhofjes', is daarvan een mooi voorbeeld in Nederland.

Bovendien kan een meer proactieve benadering bij het plannen van toekomstige huisvesting, ouderen helpen om beter voorbereid en geïnformeerd te zijn, en hen helpen controle te houden over hun situatie en het verhuisproces. Aanverwante, veelbelovende beleidsinstrumenten zijn bijvoorbeeld begeleidingsdiensten als seniorenmakelaars (bemiddelaars die ouderen adviseren en ondersteunen bij het zoeken naar geschikte woonruimte) of wooncoaches. Ik moet er echter op wijzen dat de meeste van deze diensten gericht zijn op ouderen die al actief hulp zoeken (ouderen die al hebben besloten naar alternatieve woonoplossingen te kijken). Gezien de behoefte aan een meer proactieve benadering om ouderen te ondersteunen bij het nemen van geïnformeerde beslissingen en het plannen voor de toekomst, moet een adviesdienst zich idealiter ook richten op ouderen die zich in een eerder stadium van het besluitvormingsproces bevinden.

# Dankwoord

Wat ben ik blij dit dankwoord te kunnen schrijven! Het markeert het einde van mijn promotietraject. Een traject dat vele hoge pieken en diepe dalen heeft gekend, zowel professioneel als persoonlijk. In deze periode van bijna 11 jaar(!) ben ik getrouwd met de allerliefste, 2x moeder geworden, 2x verhuisd, 3x van baan gewisseld, is mijn moeder overleden en bleek onze zoon een zeldzame ziekte te hebben. Gebeurtenissen als deze hebben ervoor gezorgd dat het proefschrift, met enige regelmaat, onderaan het 'prioriteitenlijstje' kwam te staan. Zo'n vijf jaar geleden heb ik zelfs besloten dat het beter was om met het proefschrift te stoppen (hoewel ik dit nooit officieel heb doorgegeven of wel, Jouke?). Des te mooier dat het proefschrift nu toch is afgerond! Met veel plezier wil ik de mensen bedanken die hebben bijgedragen aan dit proefschrift en aan mijn tijd als promovenda.

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Aleid, ik ben blij dat jij gedurende het promotietraject bent toegetreden als dagelijks begeleider. Met onze gezamenlijke interesse in ouderen vond ik in jou niet alleen een sparringpartner, maar ook een maatje om samen naar congressen te gaan op het gebied van *'Housing and Living Conditions of Ageing Populations'*. Over de jaren is een hechte vriendschap ontstaan en heb je altijd feilloos kunnen aanvoelen wanneer ik een schop onder mijn kont nodig had en wanneer je er juist even geen druk op moest zetten. Dank daarvoor, je bent een fijn mens!

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was het leerzaam om met jullie samen te werken! Pascal, ik ken je nog van de tijd bij 'The SmartAgent Company', waar ik - koud uit de college banken - mijn loopbaan in 2006 ben gestart. Destijds was jij bezig met een promotietraject en het plezier dat jij daarbij uitstraalde, heeft mij mede doen besluiten om ook op zoek te gaan naar een promotieplek. Jan, ik heb jou in de loop van 2010 benaderd om meer te weten te komen over het conjunct meten van voorkeuren. Gedurende het gesprek, bleek jij minstens zo enthousiast over het onderwerp ouderenhuisvesting als ik! Het was het begin van een fijne samenwerking, dat naast twee hoofdstukken in dit proefschrift, ook heeft geresulteerd in het succesvol aanvragen van een Research Grant bij Netspar.

Het onderzoek was niet mogelijk geweest zonder de medewerking van woningcorporatie Nijestee. Niet alleen hebben ze een huurdersbestand beschikbaar gesteld voor het benaderen van respondenten, ze hebben ook een bijdrage geleverd aan het (her-) formuleren van de vragenlijst zodat deze voor de doelgroep begrijpelijk was. Met als resultaat dat er bijna 1.000 respondenten hebben deelgenomen aan het veldwerk. Ook aan hen, die de tijd en moeite hebben genomen om de vragenlijst in te vullen, ben ik dank verschuldigd.

Ik bewaar mooie herinneringen aan mijn tijd als promovenda aan de faculteit Ruimtelijke Wetenschappen. Fijne oud-collega's, bovenal Rixt, Sierdjan, Billie en 'de Bitterballenclub', ik kijk met veel plezier terug op alle lunches, cursussen, congressen, borrels, concerten en/of festivals die we met elkaar hebben bezocht. Bedankt voor alle inzichten en reflecties, maar vooral ook voor de levendige discussies over onderzoek, muziek en andere randzaken die het leven mooi maken. Graag wil ik mijn twee paranimfen, Heike en Viktor, in het bijzonder bedanken. Heike, de afgelopen jaren heb jij mij vanaf de zijlijn aangemoedigd bij het afronden van dit proefschrift. Ik kijk ernaar uit jou als mijn 'persoonlijke cheerleader' naast me te hebben op de grote dag! Viktor met jouw kennis over statistiek was je met enige regelmaat mijn hulplijn bij 'gekke' uitkomsten en/of ingewikkelde vragen van reviewers. Bedankt voor alle ruggespraak!

Na het aflopen van mijn contract bij de universiteit, ben ik buiten 'de academische wereld' gaan werken. In de eerste jaren - waarin ik behoorlijk heimwee naar de faculteit heb gehad én heb geworsteld met het verlies van mijn identiteit als wetenschapper - heeft Philip mij op het hart gedrukt dat het voor een 'housing researcher' essentieel is om praktijkervaring op te doen. Hij heeft - *as always* - gelijk gekregen: het werken voor de woningcorporatiesector heeft mij meer gebracht dan ik van te voren had verwacht. Het heeft mij in staat gesteld om met een andere bril naar mijn eigen onderzoek te kijken en mijn resultaten in een breder perspectief te plaatsen. Bovenal, heeft het mijn volkshuisvestelijke hart nog harder laten kloppen. Ik had het voor geen goud willen

missen! Hierbij heb ik het geluk gehad altijd te mogen werken voor organisaties die de meerwaarde van mijn proefschrift inzagen en mij altijd hebben gestimuleerd om het proefschrift af te ronden. In het bijzonder ben ik Ingrid van de Vegte van het FSP dankbaar voor de kans om in deeltijd aan mijn proefschrift te kunnen werken. Tijdens deze periode heb ik, met behulp van de coaching van Arjenne Louter, eindelijk meters kunnen maken!

Ook wil ik mijn (schoon-)familie bedanken voor hun steun en betrokkenheid. Johanna, mijn grote zus, je bent als een tweede moeder voor me. Bij jou kan ik altijd terecht met mijn twijfels en verdriet, maar ook successen hebben we samen gevierd. Ronald, je betekent meer voor me dan je zelf weet en ik hecht veel waarde aan je advies. Sterker nog, zonder jou weet ik niet of ik ooit Sociale Geografie was gaan studeren! Pap, je had af en toe volgens mij geen idee waarom het allemaal zo lang moest duren, maar jij hebt me geleerd om altijd door te zetten. Mam, wat had ik het je gegund om dit nog mee te maken! Jarenlang heb je trouw allerhande artikelen over ouderenhuisvesting uit kranten geknipt en voor mij bewaard. Ik ga je missen op de eerste rij, maar ik weet dat je trots op me zou zijn geweest.

Lieve Jort en Elke, mama was de afgelopen jaren regelmatig 'even' aan haar boekje aan het werken. Hierdoor hebben jullie mij in weekenden en tijdens vakanties vaker moeten missen dan ik prettig vond. Gelukkig is het boekje nu echt klaar en zijn de weekenden weer voor jullie!

*Last but not least* Arjan, ik weet het zeker, zonder jou was dit proefschrift er niet geweest. Het combineren van een reguliere baan met een jong gezin en het afronden van een proefschrift, bleek vaak moeilijker dan gedacht. Je hebt me gesteund in de tijd dat het voor mij beter was om met het proefschrift te stoppen én in de tijd dat de drang om het af te maken toch te groot werd. Je hebt me werkelijk in alle stadia meegemaakt: van zelfverzekerd naar volledige staat van verwarring; van enthousiast naar het niet meer zien zitten (en weer terug). Als ik dacht dat ik tekortschoot, was jij er om me erop te wijzen dat ik toch progressie had gemaakt. Het is goed gekomen, het proefschrift ligt er, dus...

*'Lief, trek iets moois aan. Dan gaan we dansen, dansen, dansen!'*

Eelderwolde, juni 2021

# Curriculum Vitae

Petra de Jong was born on September 6, 1982 in Emmeloord, The Netherlands. She completed her pre-university education (VWO) at the Zuyderzee College in Emmeloord in 2001. She holds an MSc in Economic Geography, obtained from the Faculty of Spatial Sciences, University of Groningen, The Netherlands. She conducted the research for this dissertation at the department of Economic Geography at the same Faculty. For the last six years she has worked - in addition to her dissertation - as a housing research professional. From September 2021 Petra will be working as a lecturer/researcher at the Hanze University of Applied Sciences in Groningen, the Netherlands.