

Active Ageing Typologies: A Latent Class Analysis of the Older Europeans

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Abstract

Against the background of population ageing, researchers and policymakers are increasingly interested in the factors that can allow people to age well. We consider different domains in the active ageing framework related to participation in non-kin activities (e.g., voluntary work) and provision of care to kin (e.g., to grandchildren). Our study is organised in two steps. First, by using data from the Survey of Health, Ageing and Retirement in Europe (SHARE) and by applying Latent Class Analysis (LCA) we aim at identifying clusters of older people with similar patterns of engagement in different kin and non-kin oriented activities. We not only consider engagement in different activities but also the intensity of such engagement. Second, we analyse the profiling of the clusters in order to study how individual variables are associated with different active ageing typologies.

Introduction

All countries around the world are nowadays facing rapid demographic changes, population ageing being one of the most important. Population ageing poses several challenges for contemporaneous societies as straining pension and social security systems and increasing need for health care. It becomes crucial to study the conditions that guarantee that people in ageing societies age “well” i.e., that they do not simply live longer but also better, adding “life to years” in the words of the World Health Organization (WHO 2012).

There is wide variation in the terms used to encapsulate the notion of “ageing well.” These include successful ageing, active ageing, healthy ageing, positive ageing, productive ageing, and competent ageing (Foster and Walker 2013). The review by Depp and Jeste (2006) identified 29 different definitions that, however, share the idea to go beyond physical health to define “ageing well” and consider the ageing process as complex and multidimensional.

Rowe and Kahn (1987) introduced the concept of successful ageing to overcome the longstanding focus on pathological aspects of ageing and the traditional division of people into “diseased” and “normal”, that failed to recognise that there is large heterogeneity within these groups and that ageing and illness are distinct processes (Bowling and Dieppe 2005). Successful ageing is a multidimensional model of ageing where an active engagement in life takes on a crucial role.

Along these lines, the WHO defined “active ageing” as “the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age” (WHO 2002: 12), where the word “active” also refers to continuing participation in economic, social, cultural, spiritual and civic affairs and it is not limited to being in good health (Boudiny 2013).

The policy discourse on ageing in Europe is dominated by the framework of active ageing (Foster and Walker 2013). In order to operationalise this multidimensional concept and to promote a more active role for older people, in 2012 the European Commission and UNECE launched the project “Active Ageing Index 2012” (AAI)¹ (Zaidi et al. 2013). The AAI considers four dimensions to measure the contribution older people make to society: 1) Employment; 2) Participation in society; 3) Independent, healthy and secure living; 4) Capacity and enabling environment for active ageing. This paper focuses on the second dimension that comprises voluntary activities, care provided to children and grandchildren, care provided to older adults and political participation.

One important aspect of the AAI is that, in line with the strands of the European year for active ageing², it recognises the important contribution of older people to the society as carers for others both outside and inside the family.

¹ The Active Ageing Index (AAI) is a project managed jointly by the European Commission's Directorate General for Employment, Social Affairs and Inclusion (DG EMPL), and the Population Unit of the United Nations Economic Commission for Europe (UNECE).

² <http://ec.europa.eu/archives/ey2012/ey2012main9ef0.html>

Yet, social participation of older people not only benefits the society, but also older people themselves. Several studies have emphasised the positive effects of participation in social activities on individuals' mental (Engelhardt et al. 2010; Hultsch et al. 1999; Scarmeas and Stern 2003) and physical health (e.g. Pynnönen et al. 2012 on the risk of mortality associated with social activity). It has also been shown that caring for others may have positive effects for the older carers. For example, Arpino and Bordone (2014) found that looking after grandchildren has positive effects on verbal cognitive functioning. However, the effect of care on the carers is not universally found to be positive because it may depend on the context of caring and on the intensity of the care activity. Also the type of care given may have different effects (e.g. caring for a disabled adult or caring for grandchildren may have different effects due to their different nature).

The interdependence of engagement in different types of activities remains not well understood, especially with respect to possible conflicts between kin and non-kin activities. Indeed, little is known on whether engagement in family-related activities interferes with engagement in non-family ones, on whether different types of activities are cumulated, and on the effects of such cumulation on health.

Increasing longevity has created, on the one hand, more opportunities for intergenerational relationships within the family and on the other hand, together with an improvement in the health status of older individuals, the potential for carrying out social activities until later in life.

Despite some research has shown that older people tend to reallocate their time from participation in non-kin activities to kin activities (Lubben & Gironde 2003), Hank and Stuck (2008) found support for the so-called *cumulation* hypothesis (see Arpino and Bordone 2015 for a definition). Their results point to a positive association between engaging in volunteer work, providing informal help, and caring for older adults, even when controlling for a series of individual characteristics. They interpreted this correlation as the result of a general (unobservable) motivation for being active.

Similarly, Kohli, Hank, and Künemund (2009) found that the relationship between various dimensions of social connectedness is cumulative rather than competitive (i.e., older people that are involved in one type of relation also tend to be more engaged in other types). An exception was the relationship between informal social relations (i.e., having received or given practical help from/to friends, neighbours, colleagues) and family relations (a broad measure that included having at least one cohabiting child

and/or having received or given practical help primarily from/to a family member from outside the household including grandchild care).

Yet, Kohli et al. (2009) were interested in social connectedness per se and therefore did not distinguish whether the individual was the provider or the recipient of care. Arpino and Bordone (2015), instead, focussed on regular grandchild care as an important type of help given by grandparents and studied whether or not grandchild care interferes with participation in social activities. They found that regular provision of childcare has a significant negative effect on engagement in educational or training courses for both grandfathers and grandmothers, while a negative effect on volunteering and participating in political or community-related organization is additionally found only for grandmothers.

Our contribution to this literature is twofold. First, we investigate the interrelationship between engagement in various activities using a different approach from the ones used before. Using Latent Class Analysis (LCA) we are able to identify clusters of older people with homogeneous patterns of engagement in different activities without imposing any a-priori classification. We consider several activities within the domain of participation in society in the active ageing framework. In particular, we consider some important non-kin activities (voluntary work, enrolment in educational courses, participation in religious and political organisations) and provision of care (to grandchildren, relatives, and older adults). We not only study whether older people engage in each of these activities, but we also keep into account the frequency of such engagement.

Second, we study the characteristics of the different groups of older people both in terms of their patterns of engagement and relative to their socio-demographic characteristics.

Data and methods

Our analyses are based on the Survey of Health, Ageing and Retirement in Europe (SHARE). SHARE is a multidisciplinary longitudinal survey, representative of the non-institutionalised population aged 50 and over (Börsch-Supan et al. 2005; 2008). All persons aged at least 50 in the selected households were interviewed. Although the partners of eligible persons living in the same household were also surveyed independently of the age, we retained the sample aged 50 or above.

We use data from the first (2004) and second wave (2006). Wave 3, the so-called SHARELIFE, only contains a retrospective survey. Data from wave 4 have been excluded because the way of collecting information on participation in social activities differs from the previous waves.

We use Latent Class Analysis (LCA) to identify clusters of older people with similar engagement patterns. LCA allows us to extract clusters of individuals that are homogenous with respect to the observed variables (i.e. “manifest variables”) enabling identification of typologies of active ageing. In a second step, we will analyse the profiling of the clusters in order to identify how individual characteristics are associated with the different active ageing typologies.

As manifest variables we consider engagement in different activities and the intensity of engagement. The SHARE questionnaire asks: “Have you done any of these activities in the last four weeks?” Respondents can tick several activities from a list including: voluntary or charity work; educational or training course; a sport, social or other kind of club; taken part in a religious organisation (church, synagogue, mosque etc.); a political or community-related organisation; caring for a disabled adult; providing help to a relative, friend or neighbour. For each activity in which respondents are engaged, the frequency of participation is reported (“almost daily; almost every week; less often”).

We also consider engagement in grandparental childcare. In this case, SHARE first asks “During the last twelve months, have you regularly or occasionally looked after your grandchild without the presence of the parents?” If the answer is “yes”, a second question asks for each respondent’s child: “During the last twelve months, on average, how often did you look after the child(ren) of {child name}, without the presence of the parents?” The possible answers are “Almost daily; Almost every week; Almost every month; Less often”.

We code all manifest variables as follows: 1 = engaged in the activity daily; 2 = engaged weekly; 3 = engaged monthly or less often; 4 = not engaged.

It is well known that participation in social activities and care are gendered (Arpino and Bordone 2015; Hank and Buber 2009). Therefore, we include gender as control variable (man is the reference). Additionally, participation in society may be substantially influenced by working status (e.g., Hank and Buber 2009). Retirement can on the one side influence the time available to older people and on the other side it can also be associated with a change in preferences for allocation of time from non-family

to family activities. Therefore, we control for activity status (retired –reference-, working, other). We also control for age (50-55; 56-60; 61-65; 66-70; 71-75; 76-80; 81-85).

We restrict our sample to respondents aged 50-85 who did not declare to be disabled. We exclude cases with missing values on any of the considered manifest variables. After application of the aforementioned selection criteria, our sample includes 41,782 persons (18,788 men and 22,994 women; 19,680 retirees, 13, 878 working).

Results

Descriptive results

Table 1 shows descriptive statistics on all the manifest variables we consider by gender. In the first two columns we report the percentage of respondents who declared to be engaged in each activity (irrespective of the frequency). In the last two columns we report the percentage of respondents engaged in each activity at least weekly. There are important differences by the type of activity considered and gender of the respondent. As it is well-known, grandparenting is a common activity especially among women (Hank and Buber 2009). Also caring for a sick or disabled adult and engagement in religious organisations are more common among women than men (see also Arpino and Bordone 2015). Engagement in other types of activities is more common among men (e.g. sport or social clubs, political organisations).

Table 1 – Descriptive statistics on manifest variables by gender.

Manifest variables	% activity was mentioned		% daily or weekly	
	Men	Women	Men	Women
Voluntary or charity	12.5	11.3	8.2	7.2
Education	6.1	6.9	2.7	3.8
Sport or social club	22.0	17.4	16.2	13.6
Religious organizations	10.1	14.1	6.6	9.7
Political organizations	6.3	3.2	2.8	1.1
Care to disabled	5.3	8.1	4.2	6.7
Help to family or friends	19.3	18.4	10.8	12.1
Grandparenting	29.7	37.4	15.6	21.7

When considering the percentage of older people engaged in each activity on an at least weekly basis (last two columns of Table 1), we notice that in general the percentages are not dramatically lower than those ignoring the frequency of engagement as presented before. This means that when older people engage in a given activity, they tend to do so often rather than sporadically. Two exceptions are education and political participation. Grandparenting and participation in sport clubs are the activities where women and men, respectively, are more often engaged with at least weekly frequency.

In Table 2 we report similar descriptive statistics for the subsamples of retired and working older people³. Patterns of participation in society for older workers and retired persons are substantially different. Retired persons show lower prevalence of engagement for most of the considered activities. In particular, enrolment in educational or training courses is considerably higher among working respondents. On the contrary, grandparenting is more common among retirees also because of an age effect (retirees are, on average, older than working people and therefore it is more likely that they have grandchildren).

Table 2 – Descriptive statistics on manifest variables by activity status.

Manifest variables	% activity was mentioned		% daily or weekly	
	Working	Retired	Working	Retired
Voluntary or charity	13.6	11.5	8.0	7.9
Education	12.1	3.8	4.9	2.5
Sport or social club	24.3	19.0	18.5	14.4
Religious organizations	10.1	11.9	6.2	8.2
Political organizations	6.7	4.0	2.8	1.7
Care to disabled	7.9	5.8	6.2	4.8
Help to family or friends	24.2	16.3	14.0	10.1
Grandparenting	29.3	35.6	14.6	19.6

LCA analysis

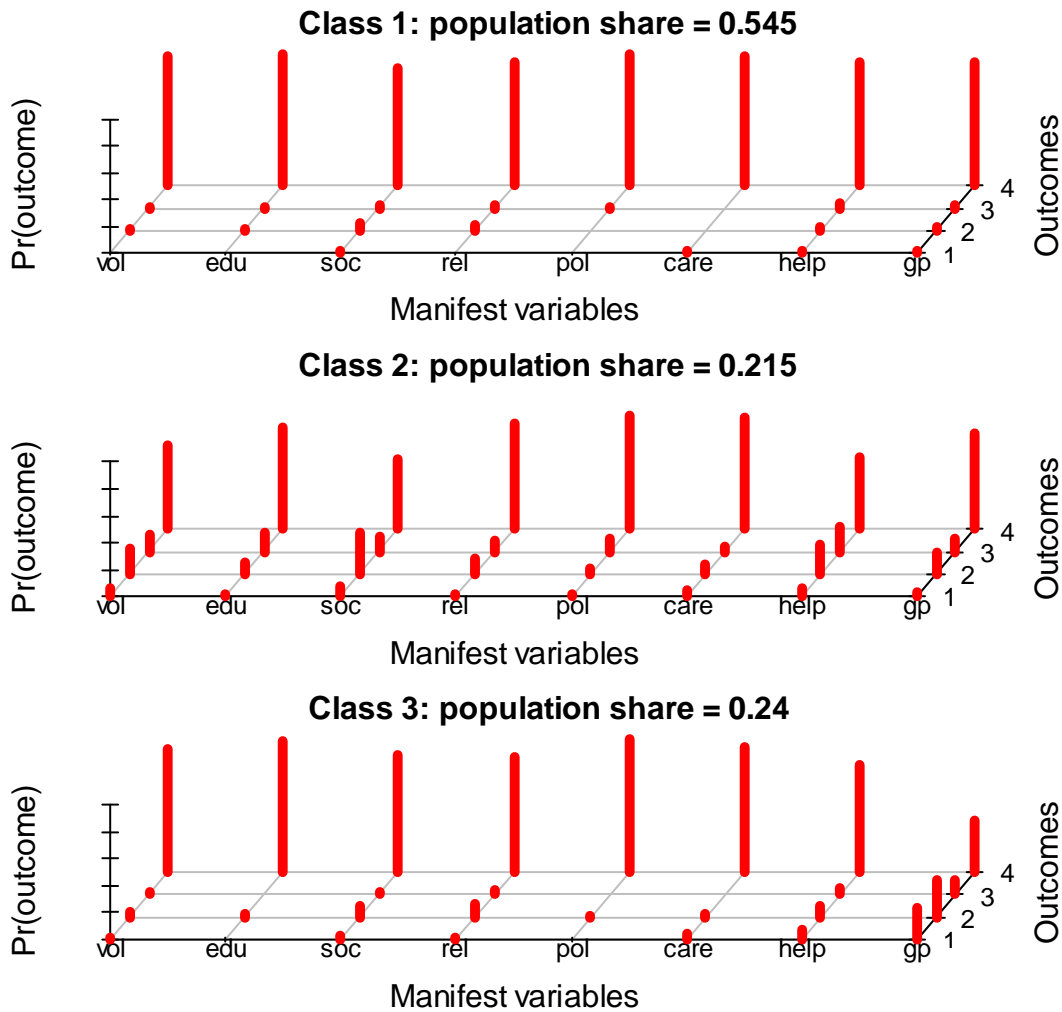
Previous descriptive statistics are informative but they are limited to univariate distributions for each activity considered separately. In order to simultaneously analyse

³ Here we exclude persons reporting other activity statuses (e.g., unemployment or housekeeping) because of the relatively small sample sizes of these groups, but they will be included among the controls in the LCA analysis.

possible engagement in one or more activity and its frequency we use LCA on all manifest categorical variables described above.

Figure 1 shows the results of the LCA without covariates. We tried different solutions by changing the number of classes specified and we chose the solution that guaranteed the best fit⁴. This solution is characterised by 3 classes⁵.

Figure 1 – Profile of latent classes with respect to manifest variables.



Most of the older European belong to the first latent class (55% of the population is estimated to be part of this group). This class is characterised by high probabilities of not being engaged in the considered activities. It has to be noticed that this cluster is not necessarily composed of people that are not engaged in any of the considered activities,

⁴ This corresponds to the lowest value assumed by the Bayesian Information Criterion (BIC).

⁵ The order of classes is arbitrary.

but it includes people for whom the probability of being engaged in at least one activity, especially with a high intensity, is low.

A second latent class is composed of older persons (22% of the population) that show relatively high probabilities of engagement, especially on a moderate level of intensity, for several activities.

Finally, the third latent class is characterised by relatively high probability of engagement in care activities (i.e. care for a disabled, help to relatives or friends, and grandparenting). In particular, the probabilities of being engaged in these activities on a daily basis are high compared to other groups.

Table 3 reports the effects of the covariates on the probability of belonging to the latent classes. The reference latent class is the first one.

Consistently with the descriptive evidence discussed above, women show a considerably higher probability than men to belong to the third group. Also, retired persons are more likely to belong to this group than their counterparts still in the labour market.

Somewhat contrary to the descriptive statistics, women are found to be more likely than men to belong to the second class, while there is no significant difference between workers and retirees in respect to belonging to the second rather than to the first latent class. Older persons with “other” activity statuses (i.e., unemployed and housekeepers) are more likely to be in the second group.

Therefore, we can think that age and working status mainly explain the gap between men and women observed in Table 2. However, we have to keep in mind that the information provided by the LCA also accounts for possible interdependence among activities; while descriptive statistics in Table 2 were based on univariate distributions.

Importantly, we notice an inverse U-shaped gradient of age for the probability of belonging to the second class versus the first one: such probability increases for older adults aged between 56 and 70 but then it sharply decreases.

Table 3 – Effect of covariates on the probability of belonging to latent classes.

Latent classes	Coefficient	Std. error	P-value
<i>Second versus first class</i>			
Female	0.20	0.04	0.00
Working	0.11	0.25	0.64
Other	-0.91	0.25	0.00
Age 56-60	0.55	0.06	0.00
Age 61-65	0.63	0.06	0.00
Age 66-70	0.37	0.06	0.00
Age 71-75	-0.18	0.07	0.01
Age 76-80	-1.00	0.09	0.00
Age 81-85	-1.72	0.13	0.00
Intercept	-1.01	0.22	0.00
<i>Third versus first class</i>			
Female	0.82	0.06	0.00
Working	-0.63	0.31	0.04
Other	0.23	0.31	0.46
Age 56-60	1.15	1.24	0.35
Age 61-65	1.53	1.24	0.22
Age 66-70	1.33	1.24	0.29
Age 71-75	0.45	1.24	0.72
Age 76-80	-0.69	1.22	0.57
Age 81-85	-5.80	8.67	0.50
Intercept	-1.93	1.30	0.14

Conclusion

In this paper we studied participation in society in middle and later life, an important pillar of the active ageing framework. We focused on understanding to what extent older adults participate in different types of activities. By using LCA we identified three groups, characterised by different patterns of participation in society.

Two important results for policy making in the area of promoting active ageing can be highlighted. First, one of the groups we identify shows very low probabilities of engagement. The oldest persons in our sample (aged 76+) are more likely to belong to this group. Second, another group is characterised by intensive engagement in care

activities and low probability of engagement in social activities (e.g., social groups, volunteering). Women are more likely to belong to this group.

Therefore, it seems that there are two target populations that require incentives to social participation and on which policies to promote active ageing need to focus: the oldest old, that are very likely to be excluded from participation in society, and women, which are rather likely to be “trapped” in intensive care activities.

While there are studies showing that providing care can be beneficial for the carer, based on the finding that being needed by others increase the feeling of control over one’s life (Weiss 1968), it has to be considered that the effect of caring depends on the context of caregiving and on its intensity. Negative effects on health can be produced as consequence of a too high demand of care (Krause 1987).

We plan to further extend the current analyses by testing whether the patterns of participation in society that we identified based on the first two waves of SHARE are associated with health outcomes measured at future points in time. We also plan to refine the analyses by including additional control variables.

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