The Dividends of Ageing: Projections of Older Persons Contributions in Europe

Tom Emery, NIDI, Den Haag, Netherlands

Abstract

Objectives: This paper examines the United Nations Active Ageing Index and considers whether population ageing will lead to an increase in the social participation of older persons and whether such an increase would be attributable to an increasing number of older persons or improvements in health, wealth and income.

Methods: To achieve this, data from five waves of the Survey of Health Ageing and Retirement in Europe are used to provide age profiles for four types of social participation which are used by the United Nations Active Ageing. These include childcare for grandchildren, care for other older persons, volunteering and political participation. These age profiles are then combined with population projections from the United Nations Population database as well as projected increases in health, wealth and income to provide estimates for the period between 2010-2030.

Results: The results suggest that the active ageing index for social participation will decline over the next 20 years unless age specific participation rates are significantly increased. This observation holds even when the most optimistic forecasts for increases in health, wealth and income are incorporated.

Summary: This is because the predominant demographic shift over the next two decades will be an increased proportion of 'oldest old' amongst the population of older persons. Given the barriers to social participation amongst this older age category, national governments face a considerable headwind in trying to raise levels of social participation amongst older people.

Introduction

In 2012, the European Union celebrated the year of active ageing which sought to maximise the dividends of an ageing society (Council of the European Union, 2012). To support this aim, the United Nations produced an Index for Active Ageing designed to measure the degree of activity and participation amongst persons over the age of 55. The index affords national governments and international organisations the opportunity to evaluate their efforts in promoting active ageing.

The social participation domain represents 35% of this index, which makes it the joint largest domain alongside employment. Improvements in this domain are therefore likely to be central to improving performance on the active ageing index. The social participation domain includes four indicators relating to four forms of social participation: Care to children and grandchildren, Care to older adults, Voluntary activities and Political Participation.

This paper examines this social participation component and asks what kinds of increase might be anticipated in this index over the coming 20 years. Despite the large number of unknowns involved in such a question, this paper projects changes in the index for 10 European countries using data from the Survey of Health, Ageing and Retirement in Europe (SHARE), the United Nations Population Estimates and projected increases in the income, wealth and health of older persons.

These projections are simulations and not predictions. They assume that current institutional settings and policy frameworks remain constant and therefore represent a scenario in which no policy action is taken, acting as a benchmark by which future developments in the index can be assessed. The need for such a baseline estimate is due to structural factors which affect the value of the index. For example, the population composition amongst the over 55's who are included in the social participation component of the active ageing index is likely to change, with the oldest old representing an increasing proportion of older people. Given that the oldest old are far less likely to participate in the aforementioned activities, the natural ageing of the population is likely to produce a natural, structural drag on the social participation component of the index.

This paper therefore makes a valuable contribution to the use of the active ageing index by estimating what changes in the index would be evident if there were no changes to the institutional settings and policy framework and where improvements might best be sought. In order to achieve this, the paper proceeds as follows. Firstly, the active ageing agenda is briefly introduced and an overview of the UNECE active ageing index is given. Then evidence of life course effects for volunteering, caring for children and

grandchildren, caring for older adults and voluntary activities are evaluated and considered in the context of societal ageing. The analysis based on data from the Survey of Health, Ageing and Retirement in Europe is then presented and outlines the level of growth expected in contributions under varying scenarios in 10 European countries. The paper is concluded by a discussion of the findings and their implications for both the academic and public debate regarding active ageing.

Active Ageing

The active ageing agenda has been of growing prominence in discussions of population ageing. It is not a singluar agenda but one that covers a number of positions and arguments related to discussions of populations ageing. Broadly speaking, these positions share the assertion that when considering population ageing and its implications for society, it is necessary to take into account the improved capacity of older generations. That is to say that older persons in the coming decades will be healthier, wealthier and generally more able to participate and contribute to society in their advanced years. This position has been outlined in policy, academic research and general representations of population ageing but is always accompanied by an essential caveat. Whilst there is significant potential for greater social activity amongst older generations, this will not be fully realised unless it is supported by an appropriate framework of policies.

Given this, the European Commission notably declared 2012 to be the Year of Active Ageing and Solidarity between the Generations (Council of the European Union, 2012). In this declaration the Commission asserted that policies should be pursued that sought to take advantage of the contribution that older generations could make to society. This position takes an active view on active ageing in that it asserts that whilst there is increasing potential for older generations to make substantial contributions to society in the later stages of life, this needs to be facilitated by a policy environment that enables and facilitates such contributions.

This has been supported by a number of scholars who argue that there is significant potential within ageing generations that is often not taken into consideration within debates about population ageing more generally (Walker, 2002; Avramov & Maskova, 2003). There have been various policy assessments in fields such as active labour market policy (Hartlapp & Schmid, 2008), life-long learning (Davey, 2002), volunteering (Lie, Baines, & Wheelock, 2009) and infrastructure (Beard & Petitot, 2010) which have broadly argued that considerable adjustment is required to facilitate active or productive ageing.

These assessments imply that ageing societies can't simply reap the benefits of older generations that are increasingly healthier and wealthier without investing in significant structural adjustments. What is so far lacking from these analyses is an assessment of what would happen if no structural adjustments occurred. That is to say, what would be the increase in societal contributions of older generations if the current social, economic and policy framework were maintained? This is a valid question as it might be anticipated that the gains from active ageing come automatically from longer and healthier lives. If people are healthier for longer, aren't they more likely to be able to volunteer, take care of their grandchildren and support their families for longer? This paper therefore estimates what increases in societal contributions of older generations might be expected if the current social, economic and policy framework were maintained.

Measuring Active Ageing

To support the policy aims of the European Commission as well as national governments outside of the European Union, the United Nations Economic Commission for Europe developed an index which captures the level of activity within the population of older persons (Zaidi, et al., 2012). This index was developed in collaboration with experts in various fields and from a wide variety of stakeholders and organisations involved in various aspects of active ageing. The resulting index is made up of four areas: employment, social participation, Independent, healthy and secure living, and Capacity and enabling environment for active and healthy ageing. Of the four domains, employment and social participation both contribute 35% to the overall index and they therefore represent the vast majority of the index's overall composition.

The index itself attempts to incorporate broad understandings of active ageing whilst keeping the central ideas of productive ageing and healthy ageing at the centre of its conceptual design (Boudiny, 2013). Its ability to do this has made it a valuable tool for researchers and policy makers attempting to take a broad perspective on an issue that encompasses a large number of policy areas and fields of expertise (Kaprinska & Dykstra, 2014). Public discussions of active ageing often struggle given the breadth, depth and complexity of the issues involved and the index is relatively successful in quantifying these issues and providing 'something to aim at' (Maltese National Commission for Active Ageing, 2014).

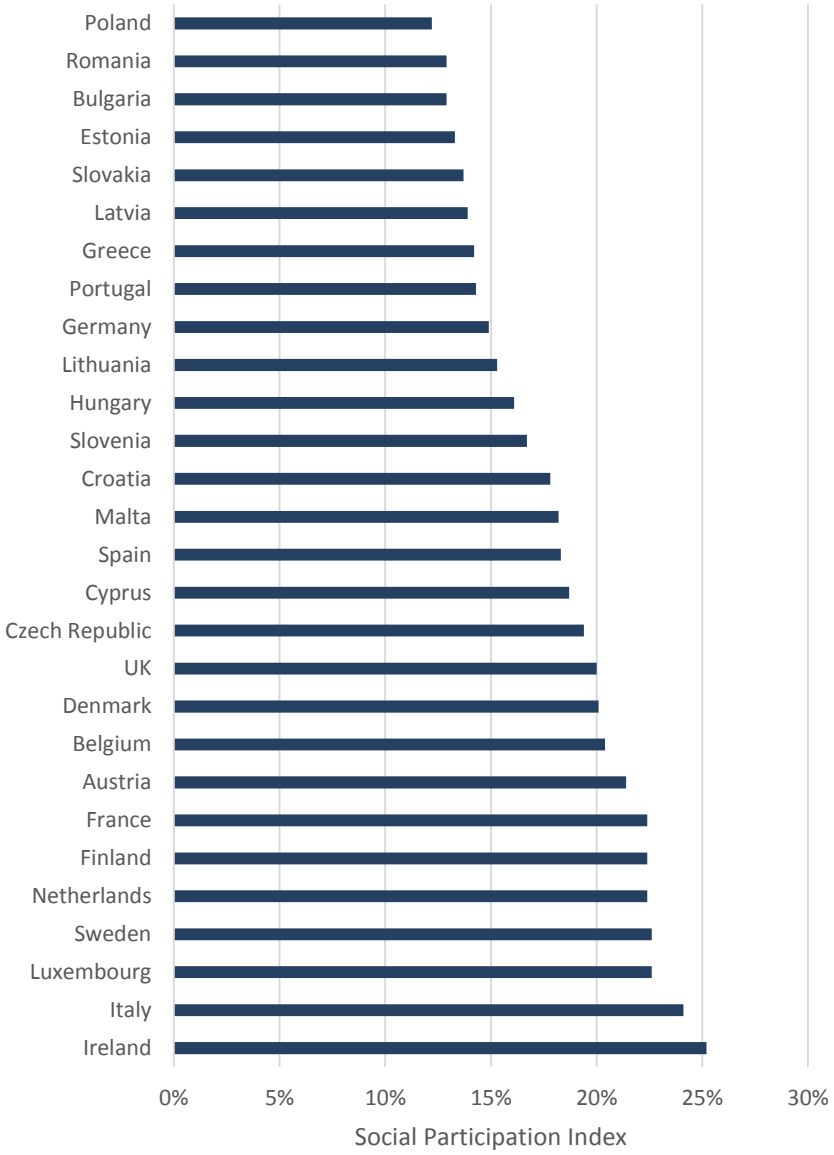

Figure 1- UNECE Active Ageing Index, Second Domain on Social Participation (2014)

The general policy aim, laid out by the UNECE and the European Commission is to increase this index through improvements in its composite indicators. Yet to do so it is first important to understand the complex demographic, economic and societal context in which the index sits. Policy makers are generally acutely aware of the limited capacity of policy in affecting indicators such as those found within the active ageing index. Underlying structural trends develop and progress largely independent of government intervention or policy influence and so given this it is of interest to try to establish the impact of underlying, projected structural changes net of any developments in the institutional settings or policy framework.

To achieve this for the whole index would require a degree of expertise and diversity of estimation techniques as to not be achievable within this single paper. This paper therefore focuses on the social participation elements of the index which are a large component of the index. The decision to focus on this part of the index is also influenced by the nature of the indicators used. In this domain, all indicators refer to the population over 55 where as in other domains such as employment specific age ranges are referred to. The breadth of the age brackets in the social participation domain therefore make it particularly sensitive to structural changes in the nature of the entire population over 55. This is a very diverse age band and one that is anticipated to change dramatically in composition over the next 20 years. To understand the effect of such structural changes it is therefore helpful to focus on a domain in which they are particularly prevalent.

The Social Participation of Older Generations

It is commonly accepted that the older persons of tomorrow will be healthier and wealthier and therefore more capable of contributing to society in various ways. This section of the paper is dedicated to exploring the impact that socio-economic variables such as health, wealth & income have been shown to have on the social participation indicators in existing research. This will then enable models to be constructed which will estimate the gains to societal contributions from increases in health, longevity and wealth.

The first contribution to be considered is volunteering. Within the active ageing agenda many researchers and policy makers have argued that there will be an increased absolute number in volunteers participating in activities that help society generally (Walker, 2002; Council of the European Union, 2012). Research on volunteering is however not conclusive on the relationship between health and volunteering which this assertion depends upon. First there is mixed evidence as to whether there is a positive association between health and volunteering as those in poor health are sometimes seen to be more likely to volunteer given that they are in close contact with organisations and are restricted in other activities (Onyx, 2003; Li & Ferraro, 2006). Second, there is also doubt as to the direction of any effect in that volunteering has been consistently shown to help improve individuals' physical and mental health. (Lum & Lightfoot, 2005; Borgonovi, 2008). Given this, it is challenging to accurately model the extent to which volunteering might increase with improvements in health. The role of income and wealth in shaping volunteering activity could suffer from similar issues of endogeneity but the relationship between income and volunteering in old age is far less researched. What is clear from existing research is that volunteering activity declines with age after an initial rise proceeding retirement.

The second contribution considered in this research is care for children and grandchildren. Research has suggested that older people enable their adult children to work or have additional children by taking care of grandchildren and providing increased flexibility in child care coverage (Aassve, Arpino, & Goisis, 2012; Fleur & Liefbroer, 2013). By doing so, older persons are therefore providing a vital role in modern societies, hence why it is included in the UNECE Active Ageing Index. Existing research suggests that healthier individuals are more likely to provide childcare for their grandchildren (Fuller-Thomson, 2001; Wheelock, 2002; Gray, 2005). Yet, again we encounter a potential source of endogeneity that complicates the production of projections in that several studies have examined the long term impact of grandparenting on health and found that it can help boost both mental and physical health (Arpino & Bordone, 2014; Grundy, et al., 2012). Whilst there is little evidence or reason to expect that the same endogeneity applies to income and wealth. Regarding age, grandparenting activies are largely determined by two key factors; the age at which the individual themselves gave birth and the age at which their child gave birth. The age of childbearing does vary considerably across time and across countries with a general trend in later births observable in all of the countries in this study (Lesthaeghe, 2014). Furthermore, these patterns are highly associated with resource and social stratification variables such as wealth and income. Fortunately, values of age at first birth are known to a relatively high degree of certainty and thus age of first birth of the individual and their child can be estimated with a considerable degree of accuracy.

The third indicator of social participation used in the index is caring for older adults. As with volunteering and childcare, there is endogeneity with health. Whilst those who are healthier are more able and more likely to care for other older adults, care itself has been shown to have negative consequences for the care-givers health (Schulz & Beach, 1999; Bookwala & Schulz, 2000; Richardson, Lee, Berg-Weger, & Grossberg, 2013). Those with more economic resources are often observed to be more likely to provide care to another older adult which seems to conflict with crowding out theories depicting care giving as a form of last resort (Hosseinpoor, Reza, Bergen, & Chatterji, 2013; Brandt, Haberkern, & Szydlik, 2009). This makes the projection complex as the empirical evidence indicates that lower resources are associated with less predominant but more intense forms of care where as high resources are associated with more common but less intense forms of care. This could therefore imply a strong interaction between resources and the endogeneity of health and caregiving as the feedback mechanism is likely to be intensified when resources are scarce. Adding to this there are large cohort and cross national differences in healthy life expectancy which are likely to shape the demand for such caregiving and alter projections for future caregiving (Salomon, et al., 2013).

The final indicator that is included in the index is for political participation. There has been considerable discussion on this given the large differentials in voter turnout by age groups. However a key issue within this discussion is the disentanglement of age and cohort effects with cohort effects appearing to play a substantial role in shaping the nature and extent of political participation (Goerres, 2007; Bhatti & Hansen, 2012). The vast majority of research however focuses on voting behaviour itself and political preferences rather than the active political participation and membership that are captured by the UNECE active ageing index. This type of political participation is a similar measure to the volunteering indicator that measures activities specifically associated with political activity. What the indicator therefore reveals is a very similar set of patterns and issues as with volunteering. The main distinction between the two is however the timing of the peak of activity. Whereas volunteering peaks post-retirement, political activity peaks pre-retirement and potentially reflects the extent to which political activity is associated with work related groups such trade unions, guilds or business groups.

Overall, research into these four indicators has demonstrated the complex nature of their determinants and highlight several issues that any projection should aim to resolve. The first issue is that there are strong cohort effects regarding a number of the indicators. Rapid social change over the past 50 years is reflected in large differences between cohorts and this should be incorporated within this analysis. The second issue is that the four indicators differ in the way in which they relate to specific variables. For example, each indicator has a very specific age profile. This suggests that the projection for the social participation index should be conducted on each indicator separately and only aggregated post hoc so as to allow this variation to be captured. The final issue is the endogenous nature of health and social participation and its complex relationship with socio-economic status and resource variables. Assuming that improvements in health are exogenous may well be insufficient.

The Hypotheses

The question this aims to address is to what extent are the volunteering, caring for children and grandchildren, caring for older adults and political participation expected to increase in European countries between 2010-2030 if the current social, economic and policy frameworks are maintained. As the previous section has shown, the literature on older persons has been productive in recent years in examining many of the complex dynamics that the ageing process involves. Yet there exists a substantive interest in understanding how this new knowledge may inform our expectations about future intergenerational relations. To this end, this paper puts forward three hypotheses which are not mutually exclusive but that address the core question of this paper.

The first hypothesis is what we call the 'grey boom' hypothesis. This hypothesis broadly states that the increase in the number of older people will be amongst those who are more likely to participate in society and lead to substantial increases in the societal contributions of these age groups.

The second hypothesis is more pessimistic and we refer to it as the 'high dependency' hypothesis. This states that whilst there will be more older people in future years, the largest increases in number will be those in later years who are less able to make social contributions.

The first hypothesis we call the 'Automatic Active Ageing' hypothesis. This states that older people will be healthier and wealthier than previous generations and will therefore be able to make more social contributions than current cohorts. In statistical parlance, this is a compositional effect where tomorrow's population is different in character to today's population. It affectively argues that no structural changes are needed for an active ageing dividend to be realised and that these gains will therefore be *automatic*.

These three hypotheses are not exclusive and it is expected that all three will play a role in shaping intergenerational relationships in future years. The aim of this analysis is to consider which will be most prominent in the next 20 years, based on our existing knowledge of older persons' social contributions.

Data and Methods

The data for the analysis is taken from five waves of the Survey for Health, Ageing and Retirement in Europe (SHARE) which was collected between 2004 and 2014. This is a representative sample of the population aged over 50. This includes 10 countries which had the necessary data available[1]. To estimate the four contributions made by older generations which are the focus of this analysis, the yes/no answers to four questions regarding whether an individual participated in the activity were used. These questions are as follows:

1. Have you done voluntary or charity work in the past month?
2. During the last twelve months, have you regularly or occasionally looked after your grandchildren without the presence of the parents?
3. In the last twelve months, have you personally given help to a family member from outside the household, friend or neighbor? (or) Is there someone living in this household whom you have

[1] Austria, Belgium, Denmark, France, Germany, Italy, Netherlands, Spain, Sweden, Switzerland.

helped regularly during the last twelve months with personal care, such as washing, getting out of bed, or dressing?

4. Have you taken part in a political or community-related organization in the past month?

Multi-level random intercept probit models of these outcomes where then estimated using health, income, wealth, birth cohort and age as independent variables[2] for each of the 10 countries separately, with sample weights applied to ensure cross-sectional representativeness. This model nests individual observations within individuals allowing for within individual comparisons to be estimated. The results of these models are displayed in table 1 in the annex. From these results, age profiles of each contribution could be extracted using marginal effects at the mean. The age profiles for each dependent variable from a pooled version of these models are presented in figures 1-4. The results from the country specific models are shown in tables 2-5 in the annex and were used to estimate the age profiles at 5 year intervals between 2010 and 2030.

These predicted age profiles were based on assumed changes in the population over the next 20 years and were estimated using marginal effects at specified levels of the independent variables; health, income, wealth and age. For Income it was assumed that household income would increase at 1.7% per year which was based on OECD estimates (Johansson, et al., 2012). Wealth was assumed to grow at a rate of 3.2 % per year based on estimates by Credit Suisse (Credit Suisse, 2013). Estimates for improvements in health were harder to obtain. It was anticipated that health would improve substantially in line with the active ageing Hypothesis and that to test the validity of this theory an optimistic estimate would be desirable. Given this it was assumed that the probability of being without a medical complaint would increase by one percentage point per year. That is to say if a 70 year old has a 60% chance of being without medical complaint in 2010, this figure is assumed to increase to 80% by 2030. Once an age profile was constructed for every 5 years, the age specific rates were multiplied by the population estimates for each age group for each time period. These population estimates were obtained from the United Nations Population Division[3]. These were taken to be an estimated number of people in that age group in that time period

[2] Age was measured using five year age categories. Wealth was measured using the total assets of the household at the time of the interview (hnfass). Income was measured as the household income at the time of the interview (thinc). Health was measure using a self-reported indicator of whether the person was limited in their ability to undertake everyday activities and these responses were collapsed into a dichotomous variable with 1 indicating the respondent was not constrained and 0 indicating that they were somewhat or severely constrained by their health.

[3] These estimates can be downloaded here: http://esa.un.org/unpd/wpp/Excel-Data/EXCEL_FILES/1_Population/WPP2012_POP_F07_1_POPULATION_BY_AGE_BOTH_SEXES.XLS .

who engaged in that activity and used to derive percentages participating for the total population aged over 55. To create the social participation component of the index itself, the four indicators were weighted in line with the UNECE active ageing index (volunteering - 25%, caring for children – 25% caring for older adults – 30%, political activity – 20%).

Results

[Results and Conclusion to be presented]

Acknowledgments

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Table 1 – Probit model of Financial Transfers by Country – SHARE Wave 4 (2010)

	Austria		Belgium		Czech Rep		Sweden		Germany		Denmark		Spain		France	
Age	0.020		0.015		0.005		0.048		0.007		0.062	*	0.107	**	0.063	**
	[0.020]		[0.021]		[0.020]		[0.025]		[0.052]		[0.031]		[0.039]		[0.020]	
Age Squared	0.000		0.000		0.000		0.000	*	0.000		0.000	*	-0.001	**	0.000	***
	[0.000]		[0.000]		[0.000]		[0.000]		[0.000]		[0.000]		[0.000]		[0.000]	
Health (Ref: Bad Health)	0.072		0.072		0.058		0.010		0.059		0.109		0.084		0.112	**
	[0.040]		[0.041]		[0.039]		[0.051]		[0.073]		[0.062]		[0.070]		[0.041]	
Household Income (€ per annum, PPP)	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	**	0.000	***	0.000	*
	[0.000]		[0.000]		[0.000]		[0.000]		[0.000]		[0.000]		[0.000]		[0.000]	
Household Wealth (€, PPP)	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***
	[0.000]		[0.000]		[0.000]		[0.000]		[0.000]		[0.000]		[0.000]		[0.000]	
Constant	-1.584	*	-1.253		-1.221		-2.284	**	-1.222		-2.977	**	-4.763	***	-3.017	***
	[0.672]		[0.696]		[0.675]		[0.818]		[1.811]		[1.018]		[1.280]		[0.666]	
N	5286		5300		6118		3750		1572		2276		3570		5857	
ll	-2774		-2537		-2993		-1885		-839		-1265		-921		-2713	

	Italy		Netherlands		Poland		Switzerland		Hungary		Portugal		Slovenia		Estonia	
Age	0.037		-0.049		-0.054		-0.025		0.068	*	0.126	**	0.003		0.092	***
	[0.028]		[0.031]		[0.051]		[0.039]		[0.034]		[0.046]		[0.037]		[0.023]	
Age Squared	0.000		0.000		0.000		0.000		0.000		-0.001	*	0.000		-0.001	***
	[0.000]		[0.000]		[0.000]		[0.000]		[0.000]		[0.000]		[0.000]		[0.000]	
Health (Ref: Bad Health)	0.168	**	-0.001		-0.045		0.011		0.165	**	0.222	**	0.140	*	0.150	***
	[0.053]		[0.056]		[0.080]		[0.064]		[0.061]		[0.077]		[0.062]		[0.039]	
Household Income (€ per annum, PPP)	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	**	0.000		0.000	***
	[0.000]		[0.000]		[0.000]		[0.000]		[0.000]		[0.000]		[0.000]		[0.000]	
Household Wealth (€, PPP)	0.000		0.000	***	0.000	*	0.000		0.000	***	0.000	*	0.000	***	0.000	**
	[0.000]		[0.000]		[0.000]		[0.000]		[0.000]		[0.000]		[0.000]		[0.000]	
Constant	-2.462	**	0.654		0.485		0.393		-3.861	***	-5.786	***	-1.032		-4.164	***
	[0.942]		[1.057]		[1.785]		[1.368]		[1.137]		[1.523]		[1.228]		[0.753]	
N	3583		2762		1724		1951		3076		2080		2756		6828	
ll	-1779		-1330		-714		-1105		-1134		-718		-1132		-2938	

Table 2 – Probit model of Caring for Grandchildren by Country – SHARE Wave 4 (2010)

	Austria	Belgium	Czech Rep	Sweden	Germany	Denmark	Spain	France
Age	0.338 ***	0.530 ***	0.332 ***	0.473 ***	0.324 ***	0.545 ***	0.504 ***	0.433 ***
	[0.031]	[0.030]	[0.027]	[0.038]	[0.069]	[0.046]	[0.043]	[0.027]
Age Squared	-0.003 ***	-0.004 ***	-0.003 ***	-0.003 ***	-0.002 ***	-0.004 ***	-0.004 ***	-0.003 ***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.001]	[0.000]	[0.000]	[0.000]
Health (Ref: Bad Health)	0.039	0.093 *	-0.033	0.017	0.003	0.114	0.118 *	0.068
	[0.043]	[0.040]	[0.038]	[0.054]	[0.076]	[0.064]	[0.057]	[0.039]
Household Income (€ per annum, PPP)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Household Wealth (€, PPP)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Constant	-11.955 ***	-17.761 ***	-10.967 ***	-16.955 ***	-11.444 ***	-18.563 ***	-17.835 ***	-14.682 ***
	[0.996]	[0.985]	[0.870]	[1.271]	[2.357]	[1.510]	[1.436]	[0.874]
N	5286	5300	6118	3750	1572	2276	3570	5857
ll	-2293	-2717	-3212	-1634	-745	-1160	-1400	-2930

	Italy	Netherlands	Poland	Switzerland	Hungary	Portugal	Slovenia	Estonia
Age	0.440 ***	0.605 ***	0.320 ***	0.609 ***	0.408 ***	0.334 ***	0.448 ***	0.292 ***
	[0.042]	[0.046]	[0.067]	[0.068]	[0.046]	[0.050]	[0.045]	[0.028]
Age Squared	-0.003 ***	-0.004 ***	-0.003 ***	-0.005 ***	-0.003 ***	-0.003 ***	-0.004 ***	-0.002 ***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Health (Ref: Bad Health)	0.064	0.049	-0.040	0.214 ***	0.014	-0.096	0.204 ***	0.078 *
	[0.054]	[0.054]	[0.073]	[0.065]	[0.054]	[0.068]	[0.056]	[0.038]
Household Income (€ per annum, PPP)	0.000	0.000	0.000	0.000	0.000	0.000 *	0.000	0.000 **
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Household Wealth (€, PPP)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Constant	-15.827 ***	-20.716 ***	-10.627 ***	-20.893 ***	-13.424 ***	-11.653 ***	-14.869 ***	-9.697 ***
	[1.418]	[1.530]	[2.280]	[2.351]	[1.471]	[1.625]	[1.458]	[0.910]
N	3583	2762	1724	1951	3076	2080	2756	6828
ll	-1575	-1476	-842	-1081	-1480	-903	-1427	-3054

Table 3 – Probit model of Volunteering by Country – SHARE Wave 4 (2010)

	Austria	Belgium	Czech Rep	Sweden	Germany	Denmark	Spain	France
Age	0.160 ***	0.189 ***	0.046	0.176 ***	0.222 ***	0.089 **	0.146 **	0.199 ***
	[0.025]	[0.023]	[0.029]	[0.026]	[0.063]	[0.030]	[0.049]	[0.022]
Age Squared	-0.001 ***	-0.001 ***	0.000	-0.001 ***	-0.002 ***	-0.001 **	-0.001 **	-0.002 ***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Health (Ref: Bad Health)	0.123 **	0.157 ***	0.026	0.088	-0.005	0.271 ***	0.155	0.174 ***
	[0.042]	[0.039]	[0.053]	[0.048]	[0.076]	[0.061]	[0.083]	[0.039]
Household Income (€ per annum, PPP)	0.000 **	0.000	0.000	0.000 *	0.000 ***	0.000	0.000 ***	0.000 *
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Household Wealth (€, PPP)	0.000 ***	0.000	0.000 ***	0.000 ***	0.000 ***	0.000	0.000 ***	0.000 **
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Constant	-6.032 ***	-6.648 ***	-3.228 ***	-6.345 ***	-8.482 ***	-3.378 ***	-6.482 ***	-7.087 ***
	[0.826]	[0.738]	[0.970]	[0.840]	[2.172]	[0.982]	[1.612]	[0.719]
N	5286	5300	6118	3750	1572	2276	3570	5857
ll	-2384	-2847	-1465	-2170	-760	-1340	-653	-2927

	Italy	Netherlands	Poland	Switzerland	Hungary	Portugal	Slovenia	Estonia
Age	0.153 ***	0.148 ***	0.087	0.275 ***	0.073	0.117 *	0.170 ***	0.012
	[0.038]	[0.030]	[0.136]	[0.060]	[0.040]	[0.055]	[0.045]	[0.028]
Age Squared	-0.001 ***	-0.001 ***	-0.001	-0.002 ***	-0.001 *	-0.001 *	-0.001 ***	0.000
	[0.000]	[0.000]	[0.001]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Health (Ref: Bad Health)	0.234 ***	0.075	-0.148	0.079	0.238 ***	0.234 **	0.191 **	0.130 **
	[0.061]	[0.049]	[0.153]	[0.072]	[0.067]	[0.087]	[0.065]	[0.048]
Household Income (€ per annum, PPP)	0.000 **	0.000	0.000	0.000	0.000 *	0.000	0.000	0.000 **
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Household Wealth (€, PPP)	0.000 ***	0.000 ***	0.000	0.000	0.000	0.000	0.000	0.000 ***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Constant	-6.012 ***	-4.841 ***	-4.345	-10.803 ***	-3.303 *	-5.235 **	-6.334 ***	-1.467
	[1.250]	[1.006]	[4.536]	[2.124]	[1.303]	[1.774]	[1.466]	[0.903]
N	3583	2762	1724	1951	3076	2080	2756	6828
ll	-1316	-1800	-155	-823	-883	-532	-992	-1675