The effect of social transfers and social capital on subjetive wellbeing of elderly*

Sunday 1st October, 2017

We investigate the effect of social transfers (especially pension) and social capital (especially volunteering) on subjective wellbeing (SWB) of elderly using the latest (wave 6) Survey of Health, Ageing and Retirement in Europe (SHARE). We find that the effect of volunteering on SWB is not much smaller or even about as large as that of pensions. In general, the most SWB stems from volunteering about every week, but there is already a substantial effect even if one volunteers only about every month. We also find that the poor and the miidle class seem to benefit more from volunteering than the rich. We argue that volunteering can help increase elderly's subjective wellbeing amidst tightening budgets.

Subjective Wellbeing (SWB), Life Satisfaction, Happiness, Aging, Elderly, Volunteering, Social Capital, Survey of Health, Ageing and Retirement in Europe (SHARE)

Population aging will be the key issue in this century, amd perhaps even in the third millennium (Stolnitz 1992). Specifically, there are growing concerns about sustainability of pensions and health care (Jürges and van Soest 2012). The problem of aging is clear in many European countries, for instance in Germany, Europe's most populous country, and there is clearly a need for social science research to address aging as one of the most important challenges of our times (Vaupel and Loichinger 2006). Likewise, there is a problem in Poland, for instance, finances of Polish Social Security (Zaklad Ubezpieczen Spolecznych, ZUS) do not seem sustainable. Amidst growing concerns about sustainability of pensions and health care, we know surprisingly little about effects of various policies on the wellbeing of the elderly.In present study we are especially interested in substitution between economic capital (social transfers) v social capital (volunteering).

Volunteering has been advocated by the United Nations, American and European governments as a way to engage people in their local communities and improve social capital, with the potential for public health benefits such as improving health and overall wellbeing (Jenkinson et al. 2013). Promotion of volunteering could be an alternative strategy to sustained social transfers in an effort to achieve a decent wellbeing (for other strategies see Ferring and Boll (2010, sec. 2.4.5).

There is a need for new knowledge: better understanding of the determinants of SWB enables to evaluate and possibly reform present retirement institutions, such as pension programs, as well as potentially generate new institutions to meet the demands of rapidly increasing retirement population. SWB can serve as a yardstick to evalate substitution and net effect from each factor. In present study we will use SWB to measure net effects of social transfers and social capital.

There is a growing recognition of well-being/quality of life indicators (Okulicz-Kozaryn 2016). Traditional measures of development, such as income, production, or consumption are too simplistic. They do not capture the overall progress of our civilization. For instance, gross domestic product increases when there is traffic congestion, but clearly that is not progress. But even increase in household income does not necessarily create progress if there is growing income inequality. Other important ingredients of overall development and progress such as discretionary time, mental and physical health are not caputured by monetary measures. We will capture overall progress by using SWB yardstick.

There is an abundant literature about the effect of welfare on SWB as recently reviewed in Okulicz-Kozaryn et al. (2014).Political scientists tend to focus on welfare and institutions at country level (Alvarez-Diaz et al. 2009, Pacek and Radcliff 2008a, Radcliff 2013, Pacek and Radcliff 2008b, Radcliff 2001, Bok 2010). A popular measure of welfare is so called "commodification." On the societal

*This study was funded by grant # 2016/21/B/HS4/03058 from Polish National Science Foundation (Narodowe Centrum Nauki).

level, Esping-Andersen (1990, p. 36) argued that "the market becomes to the worker a prison within which it is imperative to behave as a commodity in order to survive." Commodification mostly means lack of or inadequate pensions, sickness benefits, and unemployment compensation (Scruggs and Allan 2006). Our contribution is to zoom in at person level and focus on elderly. There are surprisingly different relationships between SWB and its predictors depending on the level of analysis (Ashkanasy 2011), and implications from research findings can be misguided when taken from only one level of analysis (Klein and Kozlowski 2000).

We start with a general hypothesis about social transfers and social capital, which is multi-dimensional, and we focus on volunteering:

H_1 : The more social transfers and social capital, especially in the form of volunteering, the more happiness.

Studies focusing on elderly and their wellbeing, either miss social transfers or volunteering (they do not examine them simultaneously), and they often measure only specific domains of wellbeing, not overall wellbeing. We hypothesize some tradeoff or substitution between social transfers and social capital:

H_2 : The more social capital, especially in the form of volunteering, the lower the need for social transfers to achieve happiness.

1 Literature

Snyder and Omoto (2008, pp. 3-5) define volunteering as "freely chosen and deliberate helping activities that extend over time, are engaged in without expectation of reward or other compensation and often through formal organizations, and that are performed on behalf of causes or individuals who desire assistance." Verduzco (2010, p. 49): unpaid help given to another person not a member of one's family.

Elderly are often an unused productive potential. The literature agrees that volunteering is a productive aging strategy (e.g., Wilson 2012b, Hank and Erlinghagen 2009).

Anderson et al. (2014) is a recent comprehensive review of benefits of volunteering among seniors: volunteering is associated with reduced symptoms of depression, better self-reported health, fewer functional limitations, and lower mortality. The protective benefits associated with volun-teering are amplified if volunteers feel reciprocity (i.e., their work is appreciated and "matters"), contribute their time for prosocial reasons, and make a moderate but not excessive commitment to volunteering. Indeed, volunteering can have negative effects, especially if done in disaster situations (earthquakes etc) or towards people in very difficult situations (eg HIV positive) (Wilson 2012b).

Wilson (2012b) is another review: many antecedants and few consequences are enumerated: again, volunteers report fewer depression symptoms. Volunteering ealier in life predicts volunteering later in life and increased purpose in life. It helps if one volunteers for extrinsic as opposed to intrinsic reasons. Volunteering is likely to be overstated by respondents and those who respond to surveys are more likely to volunteer, hence, actual volunteering in population is likely to be substantially lower.

There is evidence that reward experienced from helping others may be deeply ingrained in human nature, emerging in diverse cultural and economic contexts (Aknin et al. 2013).

Many studies at person level focused on income and found that personal income increases SWB at least with diminishing returns (Okulicz-Kozaryn and Mazelis 2016, Kahneman and Deaton 2010, Frijters et al. 2004, Kushlev et al. 2015, Dolan et al. 2008, Veenhoven 2012). Yet, this line of happiness research about personal income tends to overlook welfare and social transfers. Notably, there is a recent experimental study (Oswald 2014). Poor British were given additional help from the government (training and money), were followed for several years, and at the end, the ones that received additional welfare were not richer or happier than those who did not,

if anything, they were worse off. Our contribution is that we investigate SWB among elderly across multiple countries and focus on volunteering and social transfers simultaneously.

Studies focusing on elderly and their wellbeing, either miss social transfers or volunteering (they do not examine them simultaneously), and they often measure only specific domains of wellbeing. For instance, Bender (2012) overlooks volunteering and studies retirement satisfaction: "All in all, would you say that your retirement has turned out to be very satisfying, moderately satisfying, or not at all satisfying?" Butrica and Schaner (2005) also study retirement satisfaction, do focus on volunteering (and interestingly suggest that volunteering in excess of 1k hours per year does not help with satisfaction), but miss social transfers. All studies in a recent issue of Social Indicators Research (Jürges and van Soest 2012) dedicated to aging and wellbeing used other dependent variable than SWB, except one (Angelini et al. 2012), which again, did not focus on social transfers and social capital/volunteering. Studies that focus on happiness (SWB) and retirement also either miss social transfers or volunteering (Dingemans and Henkens 2014, 2015, Nikolova and Graham 2014, Angelini et al. 2012). Many of such studies are more than ten years old and carried out in the US (Wheeler et al. 1998, Ferring and Boll 2010). Keep in mind that both volunteering and social transfers are very different in the US as compared to Europe.

Volunteering predicts happiness. For recent review see section "3.4.4. Community involvement and volunteering" in Dolan et al. (2008). Cohort studies showed that volunteering had favorable effects on depression, life satisfaction, wellbeing but not on physical health (Jenkinson et al. 2013). There is also some evidence of causal relationship between volunteering and happiness (Meier and Stutzer 2008a). Causality works possibly by offsetting problems of low status (Borgonovi 2008) **TODO elaborate a bit: how! and possibly need to note that there are of cours more pathways possible!**.

What could be the causal pathway, how could volunteering cause SWB? Being a volunteerr transform's one's perceptions of herself, emotions, and knowledge of the world (Wilson 2012b).Volunteering boosts one's self esteem and buffers against stress, and importantly it enhances mastery experiences (Wilson 2012b).

Specifically, volunteering has been found to predict happiness among elderly (in New Zealand) and the effect was moderated by economic resources: poor benefit more from volunteering than rich (Dulin et al. 2012). And elderly benefit more than younger people (Van Willigen 2000).

To advance policy making and administration we should ask how much happiness will policy bring about. There are always limited resources, and there are many competing needs: education, safety, public health, and so forth. One metric to help direct spending is happiness. Key advantage of happiness yardstick is that it overcomes difficulty of measuring utility in social welfare, for instance, it helps to answer a question whether we should invest limited resources in pensions, healthcare, or infrastructure.

It is important to highlight that elderly have greater potential to volunteer as they ahave more time, especially the elderly who are retired. But even those in paid labor, arguably tend to have less harried schedule than younger workers.

and also there may be bigger effect among them as per (Wahrendorf et al. 2006) demonstrate that the association of volunteering with well-being is particularly strong in the group of retired people. This may indicate that acting in a social role beyond employment is beneficial for wellbeing.

starzenie sie: maljacy przyrost naturalny i ludzie zyja dluzej and healthcare costs are increasing. So people live longer and in better shape, and at the same time retirement age increase is opposed, so there is more untapped resources in terms of labor that elderly could perform. we suggest volunteering. FOr instance in western countries many public utility tasks are performed by vulunteers such as helping kids cross the street. In east, on the other hand, these activities are often performed by paid labor that could be used better elesewhere, for instance in poland Straz Miejska helps kids cross the street.

2 SWB

There can be affective momentary happiness and there can be cognitive evaluative life satisfaction (overall satisfaction with life as a whole), although there is arguably some overlap between the two TODO ADD bilierplate say from IsPol. Here we measure and study life satisfacton. Likewise, one could taje volunteer process perspective and approach volunteering as having antecedents, consequences, but also the middle category–the experience of volunteering (Wilson 2012b). Due to the life satisfacton measure we use, we are focused here on consequences of volunteering.

While we specifically precisely mean life satisfaction, we also use a more generic term subjective wellbeing or even happiness. To be clear, we always mean overall life satisfaction, unless indicated otherwhise. For instance, we do not study here community satisfaction.

SWB is our dependent variable. SWB can be defined as people's evaluations of their lives, which include "both cognitive judgments of one's life satisfaction in addition to affective evaluations of mood and emotions" (Steel et al. 2008). In other words, it is "overall judgment of life that draws on two sources of information: cognitive comparison with standards of the good life (contentment) and affective information from how one feels most of the time (hedonic level of affect)" (Veenhoven 2008). Some scholars make a distinction between happiness and life satisfaction. Life satisfaction refers to cognition and happiness refers to affect (Dorahy et al. 1998). In practice, however, it is usually difficult if not impossible to separate the two concepts. Hence, the overall happiness definition by Veenhoven (2008), as quoted above, seems most appropriate and we will use terms "subjective well-being (SWB)," "happiness," and "life satisfaction" interchangeably.

The happiness measure, even though self-reported and subjective, is reliable (precision varies) and valid (Myers 2000, Di Tella and MacCulloch 2006, Diener 2009). The survey-based life satisfaction measure is closely correlated with similar objective measures such as brain activity (Layard 2005). Unhappiness strongly correlates with suicide incidence and mental health problems (Bray and Gunnell 2006). Happiness not only correlates highly with other non-self reported measures, but also does not correlate with measures that are not theoretically related to it: happiness has discriminant validity (Sandvik et al. 1993). Finally, to be clear, we study general/overall happiness, not a domain-specific happiness such as satisfaction with retirement.

We also measure SWB using a scale as explained in next data section.

3 Data

We use the Survey of Health, Aging and Retirement in Europe (SHARE) from `http://www.share-project.org`. SHARE is a multidisciplinary and cross-national panel covering health, socio-economic status, social and family networks of over 50,000 persons aged 50+. Our primary analyses use Wave 6 releaase 6.0 conducted in 2015, which has the largest number of countries of all waves. All data and results are for wave 6 unless indicated otherwhise. For robustness we attmpted pooling waves together in order to use panel data techniques such as fixed effects to account for unobserved personal characteristics that arguably affect volunteering (Meier and Stutzer 2008b). First, there are only few waves available, only 6, as compared to more than a dozen in say the German Socio-Economic Panel (GSOEP) or British Household Panel Survey (BHPS). Second, country coverage varies substantially across waves. More problematically, there is little overalap across persons, unfortunately. Astonishing more than half of respondents from wave 4 does not match wave 5, and about half of respondents from 5 does not match wave 6.[1] Therefore, we conclude that there is little point in using panel techniques. Indeed, this is what the literature argues, too. For instance, "with high attrition rates, however, the number of cases in the panel decreases quickly, thus reducing the base for longitudinal analyses" (Blom and Schröder 2011).

On the other hand, an advantage of SHARE is that not many variables are missing, and there is imputed dataset with imputed values.

[1] This may be also due to the addition of new respondents in subsequent. The study covers the 50+ population, so in each new round SHARE needs to add new observations. In some countries, an attempt was made to try to find more money for research. For example in Poland round 7 will count probably 5000 people, that is, it will increase almost twice.

Especially earlier waves have few countries–SHARE sample grew substantially over time and its country coverage almost doubled. We use wave 6, the latest edition of data. Another advantage of wave 6 is that data were collected in just one year (2015), while in earlier waves data were collected over longer spans–seasonality may be a problem in studies using earlier waves of the dataset.

We use most variables and as many as possible from the imputed module and merge it with other modules when necessary. For instance, social capital including volunteering comes from Activities (AC) module. We also use MN and CF modules to exclude elderly in retirement homes and proxy observations. We drop people who were in nursing homes ($\tilde{1}\%$): such individuals do not have opportunity for volunteering. We also drop proxy respondednts and only retain main participants ($\tilde{5}\%$).

All regressions are survey-weighted using $[pw = cciw_w6]$ syntax in Stata.

All dollar amounts are PPP adjusted. We adjust all money amounts with PPP–arguably what matters for SWB is rather what money buys not its numeric value.

We triangulate measurement of key variables using alternative measures. SHARE contains typical life satisfaction question: "On a scale from 0 to 10 where 0 means completely dissatisfied and 10 means completely satisfied, how satisfied are you with your life?" We also use CASP scale to measure subjective wellbeing, and CASP can be conceptualized as Control, Autonomy, Self-realization, and Pleasure (Hyde et al. 2003). SHARE contains a shortened 12-item version that has desirable psychometric properties (Knesbeck et al. 2005). CASP differs from SWB: it factors in accomplishment and fulfillment, a concept related to Maslow's hierarchy of needs (Maslow [1954] 1987). Such measure is very relevant at older age when accomplishment and fulfillment are more relevant.

CASP contains variables listed in table 1. We will apply factor analysis to CASP items and use Cronbach's alpha to measure its internal consistency reliability: varimax rotation: .82

-0.50	My age prevents me from doing the things I would like to
-0.52	I feel that what happens to me is out of my control
-0.57	I feel left out of things
0.45	I can do the things that I want to do
-0.19	Family responsibilities prevent me from doing what I want to do
-0.38	Shortage of money stops me from doing the things I want to do
0.58	I look forward to each day
0.67	I feel that my life has meaning
0.49	On balance, I look back on my life with a sense of happiness
0.68	I feel full of energy these days
0.72	I feel that life is full of opportunities
0.74	I feel that the future looks good for me

Table 1: Factor loadings for survey items in CASP scale. Cronbach;s alpha is .82, and varimax rotation was used.

Main independent variables of interest are social transfers and social capital, especially volunteering. We measure social transfers more directly as money amounts . Pension is measured as a sum of three variables:

- Annual old age, early retirement pensions, survivor and war pension (ypen1).
- Annual old age, early retirement pensions, survivor and war pension (ypen2).
- Other regular payments from private pernsions (yreg1).

All variables are listed in table **??**.

In addtion we control separeately for disability and unemplyment benefits and social assistance. It is important to separate these variables because while old age pensions should increae SWB, disability and unemplyment benefits and social assistance may decrease it as they indicate disadvantaged status.

Volunteering is measured using AC module in two ways: "Please look at card 34: which of the activities listed on this card - if any - have you done in the past twelve months?" "Done voluntary or charity work" coded as 0='no' or 1='yes' (ac035d1).

The second item reads: "How often in the past twelve months did you [do voluntary or charity work/cared for a sick or disabled adult/provided help to friends or neighbors/attended an educational or training course/go to a sport, social or other kind of club/taken part in the activities of a religious organization (church, synagogue, mosque etc.)/taken part in a political or community-related organization/read books, magazines or newspapers/do word or number games such as crossword puzzles or Sudoku/play cards or games such as chess]?" on scale from 1='less often' to 4='almost daily' (ac036_1). We will also control for other forms of social capital such as relationships with other people: family members, friends, neighbors, or other acquaintances.

It is also important to think about what predicts volunteering–these may be confounders, and failure to control for them may result in bias on volnteering. Predictors are : age, lack of resources (free time), gender, race/immigrant status, education, labor force status, income, family of origin Wilson (2012a), Haski-Leventhal (2009). We will control for all of them, except race/immigrant status–European elderly are still a fairly homogenous group.

One important missing variable, however, is voluntariness of retirement, which affects retirement satisfaction substantially (Bender 2012). While SHARE contains 2 sets of variables that could be used (EP064*, EP069*), they are missing for vast majority of respondents. Still, we are interested here in overall SWB, not retirement satisfaction, it is arguably less affected by voluntariness of retirement. Further, income and other variables should proxy some of the voluntariness.

The key predictors of happiness that we will use as controls include income and unemployment (Di Tella et al. 2001b,a, Di Tella and MacCulloch 2006), broadly understood social capital and health (Blanchflower and Oswald 2011, Dolan et al. 2008, Bonsang and van Soest 2012). We will also control for other predictors of happiness as suggested in the literature. In the context of present study we think that the following variables are especially important: marital status (e.g., Myers 2000, Diener and Seligman 2004), and age (Ferring and Boll 2010). We also follow literature focusing on elderly in our choice of controls (e.g., Meier and Stutzer 2008a, Bonsang and van Soest 2012, Bender 2012, Ferring and Boll 2010), and control for two key variables: retirement voluntariness and disability.

Finally, at country level, we use fixed effects to account for country-level hetrogeneity. European countries are quite differet and so volunteering (and other variables) means something different across countries. This is why we include a dummy for each country–it would pick up everything that is specific about given country. This study's focus is overall relationship between social capital, social transfers and SWB. In a followup paper, we will focus on cross-country differences in these relationships.

Distributions of all variables are shown in appendix.

In order to test our hypotheses, we will analyze data in regression framework. Happiness is an ordinal variable, and hence, it should be modeled using ordinal models. We will use ordinal logit, but also ordinary least squares (OLS). We know that in case of happiness, OLS performs very well and results tend to be substantively the same as those from discrete models (Ferrer-i-Carbonell and Frijters 2004, Blanchflower and Oswald 2011), and OLS estimates are easier to interpret. We will perform multiple robustness checks including but not limited to: model elaboration, use of alternative estimation techniques and model specifications. We will also use clustered robust standard errors to adjust for within country clustering.

4 Results

We expect to find, as stated in the hypotheses earlier, that social transfers, volunteering and other forms of social capital predict greater happiness. We also expect to find that there is a certain substitutioin between economic capital (transfers) and social capital (volunteering). Perhaps, volunteering is not only cheaper but also more effective way of increasing elderly happiness. Volunteering is also likely to have positive spillover effects. If an elderly volunteers to help another elderly, both are likely to become happier, and perhaps more people may follow the example and volunteer as well. Social transfers, on the other hand, may have negative externalities. We know that people compare and income is relative: the more money others have, the more relatively deprived I am (Michalos 1985, Luttmer 2005, Bender 2012). Social transfers may have similar negative effects.

We start with bivariate on transfers (+inc, wealth) and volunteering (+soc capital) separately and elaborate models in tables ref A B.

Results are shown in table 2. A typical way to support oneself is labor income. We start with this basic relationship in column a1. For elderly, however, another typical way to support oneself is pension–added in b2–both have substantial and statistically sigificant effect on SWB. One of the key or indeed the most major way that european societies support wellbeing of elderly is through social transfers. There are also other types of replacement income–unemployment, social assistance, and disabilty/sickness benefits–added in a3. They all predict negative SWB–not unexpected–because they not only add income but also proxy some considerable misforturne, otherwhise one would not be eligible for them. Correlations among social transfers are low, below .1. About two thirds of sample receive pensions, and out of sample of about 65k, only about 1.2k receive unemployment benefits, about 1k receive social assistance and about 4.5k receive disability. Column a4 adds household net worth, and as expected, it attenuates effect of labor income and pension–one needs less of them if one has a stock of wealth. We have also tried nonlinera effects of pensions, labor income, and household net worth, **TODO: check again**, but we did not find much of a curvilinear relatioonship–in general for teh european elderly, the more money the better.

Finally, column a5 adds adds other predictors of SWB as controls and the effect of labor income drops by about half and is as large as that of pension in this fullest specification. Estimates on controls are mostly as expected with health being the key factor. The effect of age may seem surprising–it is positive–but in fact SWB mostly increases with age and only at the very end it drops (Gwozdz and Sousa-Poza 2010).

Table 2: OLS of life satisfaction on volunteerring and pensions. Beta (fully standarized) coefficients reported.

	a1	a2	a3	a4	a5	a6	a7
labor income	0.10***	0.10***	0.11***	0.11***	0.08***	0.04***	0.04***
pension			0.07***	0.07***	0.05**	0.03**	0.04**
unemployment benefits				-0.03*	-0.03*	-0.02	-0.02
social assistance				-0.05***	-0.04***	-0.02	-0.01
disability/sickness benefits				-0.05***	-0.05***	-0.01*	-0.02**
household net worth					0.11***	0.05***	0.05***
male						-0.01	-0.01
married and living together						0.15***	0.15***
employed						0.05***	0.03*
age						0.17***	0.15***
years of education						0.05***	0.03***
number of children						0.01	0.01
self reported health						0.32***	0.32***
country dummies	no	no	no	no	no	no	yes
constant	***	***	***	***	***	***	***
N	63299	63299	63299	63299	63299	63299	63299

+p<0.10 *p<0.05 **p<0.01 ***p<0.001, robust std err

In sum, as expected, both labor income and replacement income in form of pension have both significant and considerable effect on SWB. Hence, increasing pensions, could lead to increased SWB. But from public policy standpoint such solution is not sustainable–European budgets are already in red, and societies aging, so can we increase wellbeing in other ways than social transfers? Yes we can! We turn to social capital in table 3.

We start with volunteering only in b1. The base case is no volunteering and already volunteering almost very month affects SWB significantly. There is not much increase for almost every week and the effect actually decreases fro almost every day. This pattern persists when adding more controls. B2 adds other forms of social capitals, and their addition cuts effect of volunteering by half. Next in b2 we include a range of various social capitals, and they . Interestingly, least social activity, read books, magazines or newspapers ha largest effect on SWB. The seconsd largest, sprot, social or other club is expected–social engagement is key for SWB.

Next in b3 we add a control fro employment–an important factor to consider when volunteering–beacuse those who are employed have less time and higher opportunity cost of volunteering. Surprisingly, estimates on volunteering remain unchanged. We will return to employment in next section. Addition of usual controls in b4 attenuates effect of volunteering but it remains significant.

Table 3: OLS of life satisfaction on volunteerring and pensions. Beta (fully standarized) coefficients reported.

	b1	b2	b3	b4
voluntary or charity work:				
less often	0.02	-0.00	-0.00	-0.01
almost every month	0.06***	0.02***	0.02***	0.01+
almost every week	0.07***	0.03***	0.03***	0.02**
almost every day	0.04***	0.02**	0.02**	0.02*
attended an educational or training course		0.04***	0.02**	0.01
gone to a sport, social or other kind of club		0.10***	0.09***	0.04***
taken part in a political or community-related organization		0.00	-0.00	-0.00
read books, magazines or newspapers		0.12***	0.11***	0.08***
did word or number games (crossword puzzles/Sudoku...)		0.02*	0.02*	0.02+
played cards or games such as chess		0.04***	0.04***	0.03**
employed			0.05***	0.04***
male				0.01
married and living together				0.15***
age				0.16***
years of education				0.01+
number of children				0.01
self reported health				0.32***
country dummies	no	no	no	yes
constant	***	***	***	***
N	62959	62959	62959	62959

+p<0.10 *p<0.05 **p<0.01 ***p<0.001, robust std err

Comparison of social transfer effects from table 2 with effect of social capital in 3 reveals that pension (and labor income) are strongher predictor of SWB, even by about two fold, than social capital, notably volunteering.

Then in table c we include both to see how they substitute/complement when both included in the same model–we are interested in what is the net effect of each.

Table 4 repeats base estimate b1 from table 3 in c1W6 and adds pension. For robustness, we also report an analogous model from wave 4 in c1W4–resuls are similar: for both waves volnteering and pensions matter about the same for SWB, if anything volunteering can have larger effect. Columns c2W6 and c2W4 add full set of controls and estimates are much attenuated on both volunteering and pension, but they remain about the same, now pension being slightly stronger. As a robustness check we consider CASP scale which corelates at about .6 with swb. **TODO check again**. Results for CASP are more statistically significant and have stronger effect sizes–arguably CASP captures SWB better than life satsfaction as it uses multiple items. The very comforting result is that CASP models show the same patterns as in previous life satisfaction models. The effect of pension is slightly larger than effect of volunteering.

Again, a result worth noting is that volunteering only alomost a month already contribute significantly to SWB. Almost about a week contributes most to SWB, more than volunteering almost about every day. A curvilinear relationship is common in the literatue–there may be excessive overcommitment and "emphatic overarousal" (Wilson 2012b).

Table 4: OLS of SWB (life satisfaction and CASP) on volunteerring and pensions. Beta (fully standarized) coefficients reported.

	Life satisfaction				CASP			
	c1W6	c1W4	c2W6	c2W4	c3W6	c3W4	c4W6	c4W4
voluntary or charity work:								
less often	0.02	0.04***	-0.01	0.01+	0.07***	0.06***	0.01	0.01
almost every month	0.06***	0.05***	0.01	0.01+	0.11***	0.09***	0.03***	0.02*
almost every week	0.07***	0.07***	0.02*	0.02*	0.12***	0.13***	0.03***	0.04***
almost every day	0.04***	0.03***	0.02*	0.01	0.08***	0.07***	0.04***	0.02**
pension	0.05***	0.05***	0.03**	0.02***	0.04***	0.04***	0.04**	0.06***
attended an educational or training course			0.01	0.01			0.02*	0.00
gone to a sport, social or other kind of club			0.04***	0.03***			0.06***	0.06***
taken part in a political or community-related organization			-0.00	0.01			0.01+	0.01
read books, magazines or newspapers			0.08***	0.08***			0.11***	0.11***
did word or number games (crossword puzzles/Sudoku...)			0.02*	0.03***			0.04***	0.04***
played cards or games such as chess			0.03***	0.01			0.03***	0.02*
labor income			0.04***	0.02+			0.02*	-0.00
unemployment benefits			-0.02	-0.01*			-0.01	-0.01+
social assistance			-0.01	-0.00			-0.03***	-0.00
disability benefits			-0.02**	0.00			-0.02**	-0.01
household net worth			0.04***	0.02			0.05***	0.04***
male			0.00	-0.00			0.04***	0.02**
married and living together			0.15***	0.14***			0.09***	0.09***
employed			0.03*	0.03*			0.04**	0.05***
age			0.14***	0.13***			-0.01	-0.06***
years of education			0.00	-0.01			0.03***	0.04***
number of children			0.01	0.01			-0.01	0.01
self reported health			0.31***	0.34***			0.39***	0.40***
country dummies	no	no	yes	yes	no	no	yes	yes
country dummies	yes	yes	yes	yes	yes	yes	yes	yes
constant	***	***	***	***	***	***	***	***
N	62959	54623	62959	54623	61487	52372	61487	52372

+p<0.10 *p<0.05 **p<0.01 ***p<0.001, robust std err

5 More Volunteering, More SWB, But For Whom?

Employed or low income elderly may have less opportunity for volunteering than those not working full time and with enough income to make a living. Arguably, for volunteering you have to have basic income. Only then you can satisfy higher needs Maslow pyramid such as the need to belong (Maslow [1954] 1987).

Earlier, to see an effect from each, we have separated streams of income and focused on pensions. Now we use total household income measure to capture it's entriety–we would like to know the effect of volunteering by different total household income levels. We will also using walth stock measure: household net worth. What matters for one's SWB is not only how much she makes but how much household makes.

In this last part of the analysis we try to answer a question whether volunteering can be more useful for certain socio demographic groups. In particluar we are interested in effect of total income or wealth–is there substitution? And is there social class effect?

We find that indeed there is some evidence for that–the poor and the middle class seem to benefit more from volunteering than the rich. Results are shown in table 5, but when it ocmes to interactions, it is probably easier to interpret predicted values in graph 1. 60k 600k for swb and at about total income of 100k or 1m tot net worth volunterrer and non-volnteers are about same happy as seen from panels A and B. How can these results be explained?

TODO drop these rows with base cases

Table 5: OLS of SWB (life satisfaction and CASP) on volunteerring and pensions. Unstandarized coefficients reported.

	Life satisfaction				CASP			
	d1	d2	d3	d4	d5	d6	d7	d8
no volunteering/charity	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
volunteering/charity	0.3278***	0.1448*	0.4092***	0.1488**	0.3505***	0.1836***	0.3923***	0.1688***
total hh income PPP '000	0.0071**	0.0025**		0.0023**	0.0049**	0.0013*		0.0011**
no volunteering/charity × total hh income PPP '000	0.0000	0.0000			0.0000	0.0000		
volunteering/charity × total hh income PPP '000	0.0000	-0.0024+			-0.0004	-0.0020**		
Total household expenditure PPP '000		0.0033		0.0031		0.0072***		0.0071***
household net worth PPP '000		0.0003***	0.0008***	0.0003***		0.0002***	0.0005***	0.0002**
attended an educational or training course		0.0393		0.0365		0.0482*		0.0461*
gone to a sport, social or other kind of club		0.1648***		0.1638***		0.1298***		0.1286***
taken part in a political or community-related organization		-0.0054		-0.0062		0.0534*		0.0517*
read books, magazines or newspapers		0.2993***		0.2986***		0.2152***		0.2151***
did word or number games (crossword puzzles/Sudoku...)		0.0671*		0.0678*		0.0792***		0.0797***
played cards or games such as chess		0.1008**		0.1006**		0.0572***		0.0572***
male		0.0301		0.0296		0.0781***		0.0776***
married and living together		0.5374***		0.5351***		0.1615***		0.1599***
employed		0.1422**		0.1396**		0.0767***		0.0749***
age		0.0264***		0.0263***		0.0001		0.0001
years of education		0.0022		0.0020		0.0069***		0.0068***
number of children		0.0119		0.0121		-0.0089		-0.0088
self reported health		0.5477***		0.5474***		0.3595***		0.3594***
no volunteering/charity × household net worth PPP '000			0.0000	0.0000			0.0000	0.0000
volunteering/charity × household net worth PPP '000			-0.0004+	-0.0003+			-0.0003*	-0.0002**
country dummies	yes	yes	yes	yes	yes	yes	yes	yes
constant	7.9950***	3.8238***	7.9917***	3.8281***	0.1733***	-1.4095***	0.1807***	-1.4039***
N	62967	62967	62967	62967	61492	61492	61492	61492

+p<0.10 *p<0.05 **p<0.01 ***p<0.001, robust std err

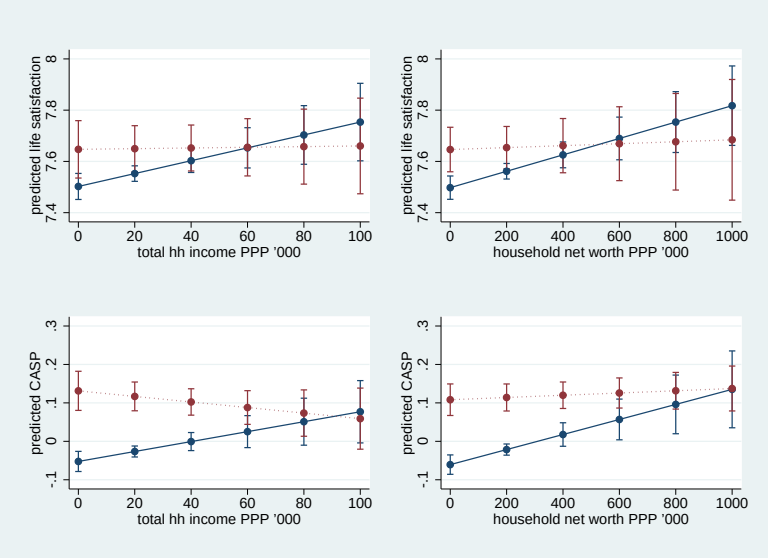

Figure 1: dsfsadfsdaf

Neighborhood support groups have always played a key role in helping the poor survive (Saegert et al. 2002), and so do individual persons play a key role helping other poor (Mazelis 2017). Most countries experience rising inequality (Piketty and Saez 2003, Mackintosh 2013, OECD 2008, Verbeek 2015)–the middle class is diminishing[2], and it is becoming two classes: the rich and the rest. Volunteering may not be the viable strategy for the rich, but it is for the rest.

Interestingly, additional results (see supplementary material) show that the relationship with pension is opposite to that of total income–the higher the pension, the stronger the effect from volunteering.[3] One explanation is that pensions do not require time (as opposed to labor income), and provide peace of mind and let one engage in volunteering as opposed to paid labor. Likewise, additional results (see supplementary material) indicate that elders who are retired derive more wellveing from volunteering. This

[2]For the world as a whole, the inequality is decreasing due to the poor countries, notably China, catching up–in many poor countries, middle class is actually increasing.

[3]although results are statistically insiginificant for life staistafction and only significant for CASP

makes sense–they have more time and lower opportunity cost.

6 conclusion and discussion

This study adds another piece of evidence to a line of research arguing that volunteering is a productive aging strategy (e.g., Wilson 2012b, Hank and Erlinghagen 2009). It is especially important given that the burden of aging is increasing–all European countries are aging–and younger generations will have to increasingly pay more for the elderly.

Volunteering (or anything else for that matter) cannot be a complete alternative or a substitute to social transfers–one needs to be able to afford necessities. But it can be a significant complement and it can tradeoff some of the decrease in transfers.

These are very rich data and tehre can be much more done in terms of narrowing doen and mersuring pensions and volunteering. The goal of this study was hovewer to focus on the general relationship and the tadeoff between the two.

Futre research could look at earlier life experiences effect on successful againg. For instance, in the US **?** found that incarceration marital, work, and volunteer statuses, as well as moderate alcohol consumption affect succesful again–such approach could be replicated in Europe using SHARELIFE, SHARE module focused on people's life histories. In particular, it would be interesting to examine effect of earlier volunteering in life on succesful aging later in life–perhaps, not only volunteering later in life, but also earlier has a positive effect.

in this study we focused on overal patterns (controling for country level fixed effects). furture research can explore differences across countries.

As any correlational study, causality cannot be established

TODO: have separate som-r.tex as opposed to having it below; and in paper say see supplemetary material as opposed to see appendix!

References

Aknin, L. B., C. P. Barrington-Leigh, E. W. Dunn, J. F. Helliwell, J. Burns, R. Biswas-Diener, I. Kemeza, P. Nyende, C. E. Ashton-James, and M. I. Norton (2013): "Prosocial spending and well-being: Cross-cultural evidence for a psychological universal." *Journal of Personality and Social Psychology*, 104, 635.

Alvarez-Diaz, A., L. Gonzalez, and B. Radcliff (2009): "The politics of happiness: On the political determinants of quality of life in the American States," *Unpublished Manuscript*.

Anderson, N. D., T. Damianakis, E. Kröger, L. M. Wagner, D. R. Dawson, M. A. Binns, S. Bernstein, E. Caspi, and S. L. Cook (2014): "The benefits associated with volunteering among seniors: a critical review and recommendations for future research." *Psychological bulletin*, 140, 1505.

Angelini, V., D. Cavapozzi, L. Corazzini, and O. Paccagnella (2012): "Age, health and life satisfaction among older Europeans," *Social indicators research*, 105, 293–308.

Ashkanasy, N. M. (2011): "International Happiness: A Multilevel Perspective," *The Academy of Management Perspectives*, 25, 23–29.

Bender, K. A. (2012): "An analysis of well-being in retirement: The role of pensions, health, of retirement," *The Journal of Socio-Economics*, 41, 424–433.

Blanchflower, D. G. and A. J. Oswald (2011): "International happiness: A new view on the measure of performance," *The Academy of Management Perspectives*, 25, 6–22.

Blom, A. G. and M. Schröder (2011): "Sample composition 4 years on: retention in SHARE Wave 3," *Retrospective data collection in the Survey of Health, Ageing and Retirement in Europe*, 55–61.

Bok, D. (2010): *The politics of happiness: What government can learn from the new research on well-being*, Princeton University Press, Princeton NJ.

Bonsang, E. and A. van Soest (2012): "Satisfaction with social contacts of older Europeans," *Social indicators research*, 105, 273–292.

Borgonovi, F. (2008): "Doing well by doing good. The relationship between formal volunteering and self-reported health and happiness," *Social science & medicine*, 66, 2321–2334.

Bray, I. and D. Gunnell (2006): "Suicide rates, life satisfaction and happiness as markers for population mental health," *Social Psychiatry and Psychiatric Epidemiology*, 41, 333–337.

Butrica, B. A. and S. G. Schaner (2005): "Satisfaction and engagement in retirement," .

Di Tella, R. and R. MacCulloch (2006): "Some Uses of Happiness Data in Economics," *The Journal of Economic Perspectives*, 20, 25–46.

Di Tella, R., R. J. MacCulloch, and A. J. Oswald (2001a): "The macroeconomics of happiness," Warwick Economic Research Papers No 615.

——— (2001b): "Preferences over inflation and unemployment: Evidence from surveys of happiness," *American Economic Review*, 91, 335–341.

Diener, E. (2009): *Well-being for public policy*, Oxford University Press, New York NY.

Diener, E. and M. E. P. Seligman (2004): "Beyond Money: Toward an Economy of Well-being," *Psychological Science*, 5, 1–31.

Dingemans, E. and K. Henkens (2014): "Involuntary retirement, bridge employment, and satisfaction with life: A longitudinal investigation," *Journal of Organizational Behavior*, 35, 575–591.

——— (2015): "How do retirement dynamics influence mental well-being in later life? A 10-year panel study," *Scand J Work Environ Health*, 41, 16–23.

Dolan, P., T. Peasgood, and M. White (2008): "Do We Really Know What Makes Us Happy A Review of the Economic Literature on the Factors Associated with Subjective Well-being," *Journal of Economic Psychology*, 29, 94–122.

Dorahy, M. J., C. A. Lewis, J. F. Schumaker, R. Akuamoah-Boateng, M. Duze, and T. E. Sibiya (1998): "A cross-cultural analysis of religion and life satisfaction." *Mental Health, Religion & Culture*, 1, 37–43.

Dulin, P. L., J. Gavala, C. Stephens, M. Kostick, and J. McDonald (2012): "Volunteering predicts happiness among older Māori and non-Māori in the New Zealand health, work, and retirement longitudinal study," *Aging & mental health*, 16, 617–624.

Esping-Andersen, G. (1990): *The three worlds of welfare capitalism*, Polity Pr.

Ferrer-i-Carbonell, A. and P. Frijters (2004): "How Important is Methodology for the Estimates of the Determinants of Happiness?" *Economic Journal*, 114, 641–659.

Ferring, D. and T. Boll (2010): "Subjective wellbeing in older adults: Current state and gaps of research," in *Ageing, health and pensions in Europe*, ed. by A. Z. Lans Bovenberg, Arthur van Soest, Springer, 173–212.

Frijters, P., J. P. Haisken-Denew, and M. a. Shields (2004): "Money does matter! evidence from increasing real income and life satisfaction in east germany following reunification," *American Economic Review*, 94, 730–740.

Gwozdz, W. and A. Sousa-Poza (2010): "Ageing, health and life satisfaction of the oldest old: An analysis for Germany," *Social Indicators Research*, 97, 397–417.

Hank, K. and M. Erlinghagen (2009): "Dynamics of volunteering in older Europeans," *The Gerontologist*, 50, 170–178.

Haski-Leventhal, D. (2009): "Elderly volunteering and well-being: A cross-European comparison based on SHARE data," *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, 20, 388–404.

Hyde, M., R. D. Wiggins, P. Higgs, and D. B. Blane (2003): "A measure of quality of life in early old age: the theory, development and properties of a needs satisfaction model (CASP-19)," *Aging & mental health*, 7, 186–194.

Jenkinson, C. E., A. P. Dickens, K. Jones, J. Thompson-Coon, R. S. Taylor, M. Rogers, C. L. Bambra, I. Lang, and S. H. Richards (2013): "Is volunteering a public health intervention? A systematic review and meta-analysis of the health and survival of volunteers," *BMC public health*, 13, 773.

Jürges, H. and A. van Soest (2012): "Comparing the well-being of older europeans: Introduction," *Social indicators research*, 105, 187–190.

Kahneman, D. and A. Deaton (2010): "High income improves evaluation of life but not emotional well-being," *Proceedings of the National Academy of Sciences*, 107, 16489–16493.

Klein, K. J. and S. W. Kozlowski (2000): "From micro to meso: Critical steps in conceptualizing and conducting multilevel research," *Organizational Research Methods*, 3, 211–236.

Knesbeck, O., M. Hyde, P. Higgs, R. Kurlan, and J. Siegrist (2005): "Quality of life and well-being," .

Kushlev, K., E. W. Dunn, and R. E. Lucas (2015): "Higher Income Is Associated With Less Daily Sadness but not More Daily Happiness," *Social Psychological and Personality Science*, 6, 483–489.

Layard, R. (2005): *Happiness. Lessons from a new science.*, The Penguin Press, New York NY.

Luttmer, E. F. P. (2005): "Neighbors as Negatives: Relative Earnings and Well-Being," *Quarterly Journal of Economics*, 120, 963–02.

Mackintosh, E. (2013): "Report: Income Inequality Rising in Most Developed Countries," *Washington Post*.

Maslow, A. ([1954] 1987): *Motivation and personality*, Longman, 3 ed.

Mazelis, J. M. (2017): *Surviving Poverty: Creating Sustainable Ties Among the Poor*, NYU Press.

Meier, S. and A. Stutzer (2008a): "Is volunteering rewarding in itself?" *Economica*, 75, 39–59.

——— (2008b): "Is volunteering rewarding in itself?" *Economica*, 75, 39–59.

MICHALOS, A. (1985): "Multiple discrepancies theory (MDT)," *Social Indicators Research*, 16, 347–413.

MYERS, D. G. (2000): "The Funds, Friends, and Faith of Happy People," *American Psychologist*, 55, 56–67.

NIKOLOVA, M. AND C. GRAHAM (2014): "Employment, late-life work, retirement, and well-being in Europe and the United States," *IZA Journal of European Labor Studies*, 3, 1–30.

OECD (2008): "Income inequality and poverty rising in most OECD countries," *OECD Press Release: http://www.oecd.org/general/incomeinequalityandpovertyrisinginmostoecdcountries.htm*.

OKULICZ-KOZARYN, A. (2016): "Happiness Research for Public Policy and Administration," *Transforming Government: People, Process and Policy*.

OKULICZ-KOZARYN, A., O. HOLMES IV, AND D. R. AVERY (2014): "The Subjective Well-Being Political Paradox: Happy Welfare States and Unhappy Liberals." *Journal of Applied Psychology*, 99, 1300–1308.

OKULICZ-KOZARYN, A. AND J. M. MAZELIS (2016): "More Unequal In Income, More Unequal in Wellbeing," *Social Indicators Research*.

OSWALD, A. (2014): "Keynote II," *2014 Wellbeing and Public Policy Conference at Hamilton College*.

PACEK, A. AND B. RADCLIFF (2008a): "Assessing the welfare state: The politics of happiness," *Perspectives on Politics*, 6, 267–277.

——— (2008b): "Welfare Policy and Subjective Well-Being Across Nations: An Individual-Level Assessment." *Social Indicators Research*, 89, 179 – 191.

PIKETTY, T. AND E. SAEZ (2003): "Income inequality in the United States, 1913–1998," *The Quarterly Journal of Economics*, 118, 1–41.

RADCLIFF, B. (2001): "Politics, Markets, and Life Satisfaction: The Political Economy of Human Happiness," *American Political Science Review*, 95, 939–952.

——— (2013): *The Political Economy of Human Happiness: How Voters' Choices Determine the Quality of Life*, Cambridge University Press, New York NY.

SAEGERT, S., J. P. THOMPSON, AND M. R. WARREN (2002): *Social capital and poor communities*, Russell Sage Foundation.

SANDVIK, E., E. DIENER, AND L. SEIDLITZ (1993): "Subjective Well-Being: The Convergence and Stability of Self-Report and Non-Self-Report Measures." *Journal of Personality*, 61, 317–342.

SCRUGGS, L. AND J. ALLAN (2006): "Welfare-state decommodification in 18 OECD countries: A replication and revision," *Journal of European Social Policy*, 16, 55–72.

STEEL, P., J. SCHMIDT, AND J. SHULTZ (2008): "Refining the relationship between personality and subjective well-being." *Psychological bulletin*, 134, 138–161.

STOLNITZ, G. J. (1992): "Demographic causes and economic consequences of population aging: Europe and North America." .

VAN WILLIGEN, M. (2000): "Differential benefits of volunteering across the life course," *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 55, S308–S318.

VAUPEL, J. W. AND E. LOICHINGER (2006): "Redistributing work in aging Europe," *Science*, 312, 1911–1913.

VEENHOVEN, R. (2008): "Sociological theories of subjective well-being," in *The Science of Subjective Well-being: A tribute to Ed Diener*, ed. by M. Eid and R. Larsen, The Guilford Press, New York NY, 44–61.

——— (2012): "Evidence-based pursuit of happiness: What we should know, what we do know and what we can get to know," Tech. rep., EHERO.

VERBEEK, J. (2015): "Increasingly, inequality within, not across, countries is rising," *The World bank Development Talk* *http://blogs.worldbank.org/developmenttalk/increasingly-inequality-within-not-across-countries-rising*.

WAHRENDORF, M., O. VON DEM KNESEBECK, AND J. SIEGRIST (2006): "Social productivity and well-being of older people: baseline results from the SHARE study," *European Journal of Ageing*, 3, 67–73.

WHEELER, J. A., K. M. GOREY, AND B. GREENBLATT (1998): "The beneficial effects of volunteering for older volunteers and the people they serve: A meta-analysis," *The International Journal of Aging and Human Development*, 47, 69–79.

WILSON, E. O. (2012a): *On human nature*, Harvard University Press.

WILSON, J. (2012b): "Volunteerism research: A review essay," *Nonprofit and Voluntary Sector Quarterly*, 41, 176–212.

Supplementary Online Material

7 appendix: additional descriptive statistics

Table 6: Variable definitions.

name	description
swb	"On a scale from 0 to 10 where 0 means completely dissatisfied and 10 means completely satisfied, how satisfied are you with your life?" [imputed]
casp	casp scale: see table
refcasp [ac]	

[imputed], [ac], and [sp] pertain to SHARE modules.

Table 7: Variable definitions.

name	description
voluntary or charity work	"Please look at card 38: which of the activities listed on this card - if any - have you done in the past twelve months?" "Done voluntary or charity work" [ac]
how often done voluntary or charity work	"How often in the past twelve months did you [do voluntary or charity work/cared for a sick or disabled adult/provided help to friends or neighbors/attended an educational or training course/go to a sport, social or other kind of club/taken part in the activities of a religious organization (church, synagogue, mosque etc.)/taken part in a political or community-related organization/read books, magazines or newspapers/do word or number games such as cross-word puzzles or Sudoku/play cards or games such as chess]?" [ac]
attended an educational or training course	"Please look at card 38: which of the activities listed on this card - if any - have you done in the past twelve months?" "Done voluntary or charity work" [ac] [ac]
gone to a sport, social or other kind of club	"Please look at card 38: which of the activities listed on this card - if any - have you done in the past twelve months?" "Done voluntary or charity work" [ac] [ac]
taken part in a political or community-related organization	"Please look at card 38: which of the activities listed on this card - if any - have you done in the past twelve months?" "Done voluntary or charity work" [ac] [ac]
read books, magazines or newspapers	"Please look at card 38: which of the activities listed on this card - if any - have you done in the past twelve months?" "Done voluntary or charity work" [ac] [ac]
did word or number games (crossword puzzles/Sudoku...)	"Please look at card 38: which of the activities listed on this card - if any - have you done in the past twelve months?" "Done voluntary or charity work" [ac] [ac]
played cards or games such as chess	"Please look at card 38: which of the activities listed on this card - if any - have you done in the past twelve months?" "Done voluntary or charity work" [ac] [ac]

[imputed], [ac], and [sp] pertain to SHARE modules.

Table 8: Variable definitions.

name	description
annual old age, early retirement pensions, survivor and war pension	EP078_1-2-3-7-8-9 (1-2-3-9-10-11 in w6) "After taxes, about how large was a typical payment of [your public old age pension/ your public old age supplementary pension or public old age second pension/ your public early retirement or pre-retirement pension/ your main public sickness benefits/ your main public disability insurance pension/ your secondary public disability insurance pension/ your Secondary public sickness benefits/ your public unemployment benefit or insurance/ your main public survivor pension from your spouse or partner/ your secondary public survivor pension from your spouse or partner/ your public war pension/ your public long-term care insurance/ your social assistance] in [STR (Year - 1)]?" [imputed]
annual private occupational pensions	"After taxes, what was the approximate annual amount received from all your occupational pensions in [STR (Year - 1)]?" [imputed]
other regular payments from private pernsions	"After any taxes and contributions, about how large was the average payment of [you life insurance payments from a private insurance company/ your private annuity or private personal pension payments/ your alimony/ your regular payments from charities/ your long-term care insurance payments] in [STR (Year - 1)]?" [imputed]
pension	EP078_1-2-3-7-8-9 (1-2-3-9-10-11 in w6) from annual old age, early retirement pensions, survivor and war pension AND from annual private occupational pensions AND other regular payments from private pernsions [imputed]
disability/sickness benefits	EP078_5-6 and EP078_3_6_10 (4-7 in w6) [from question in "annual old age, early retirement pensions, survivor and war pension"] [imputed]
unemployment benefits	EP078_6 (8 in w6) [from question in "annual old age, early retirement pensions, survivor and war pension"] [imputed]
social assistance	EP078_10 (12-13 in w6) [from question in "annual old age, early retirement pensions, survivor and war pension"] [imputed]

[imputed], [ac], and [sp] pertain to SHARE modules.

Table 9: Variable definitions.

name	description
labor income	"After any taxes and contributions, what was your approximate annual income from employment in the year [STR (Year - 1)]? Please include any additional or extra or lump sum payment, such as bonuses, 13 month, Christmas or Summer pays." AND "After any taxes and contributions and after paying for any materials, equipment or goods that you use in your work, what was your approximate annual income from self-employment in the year [STR (Year - 1)]?" [imputed]
household net worth	calculated variable–see Release Guide 6.0.0 [imputed]
years of education	"How many years have you been in full-time education?" full-time education * includes: receiving tuition, engaging in practical work or supervised study or taking examinations * excludes: full-time working, home schooling, distance learning, special on-the-job training, evening classes, part-time private vocational training, flexible or part-time higher education studies, etc [imputed]
age	Age of respondent (based on interview year) "In which month and @byear@b were you born?" [imputed]
male	OBSERVATION Note sex of respondent from observation (ask if unsure)
self reported health	"Would you say your health is..." "Poor"..."Excellent" [imputed]
married and living together	"What is your marital status?" [imputed]
employed	The following questions are about your current main job. "In this job were you a private-sector employee, a public sector employee or self-employed?" [imputed]
number of children	"Now I will ask some questions about your children. How many children do you have that are still alive? Please count all natural children, fostered, adopted and stepchildren [, including those of/ , including those of/ , including those of/ , including those of] [your husband/ your wife/ your partner/ your partner] [Name of partner/spouse]." [imputed]

[imputed], [ac], and [sp] pertain to SHARE modules.

PEr historgams note: Because we mostly use imputed dataset some values are not integers even when base question does not include fraction such as dummy variable for being married.

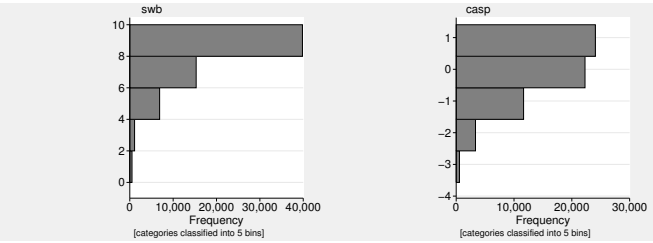

Figure 2: Variables' distribution.

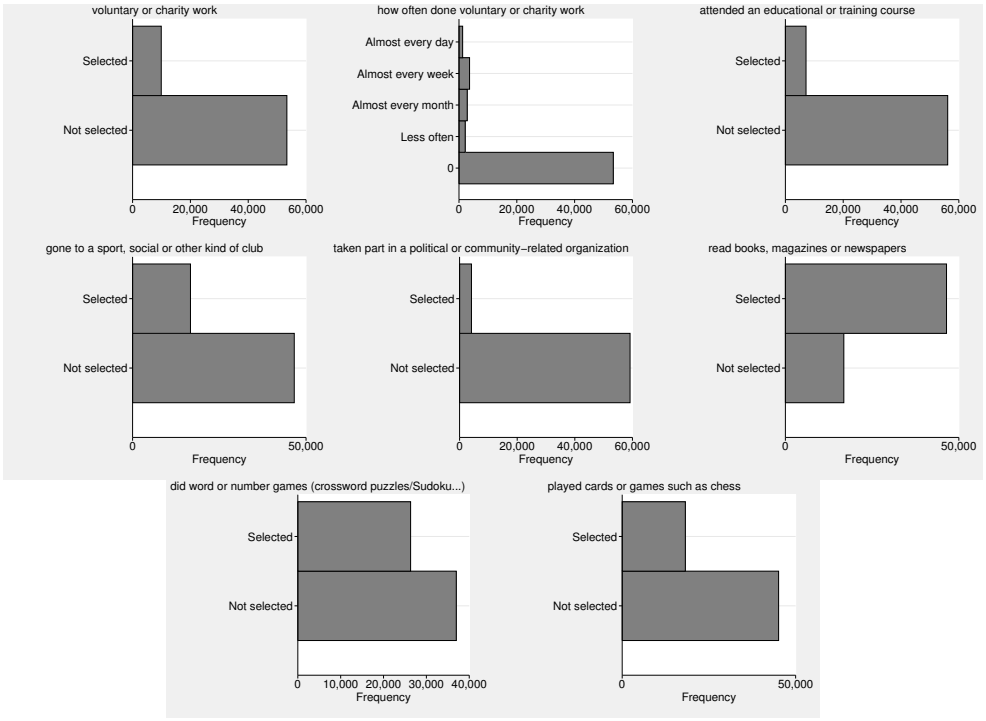

Figure 3: Variables' distribution.

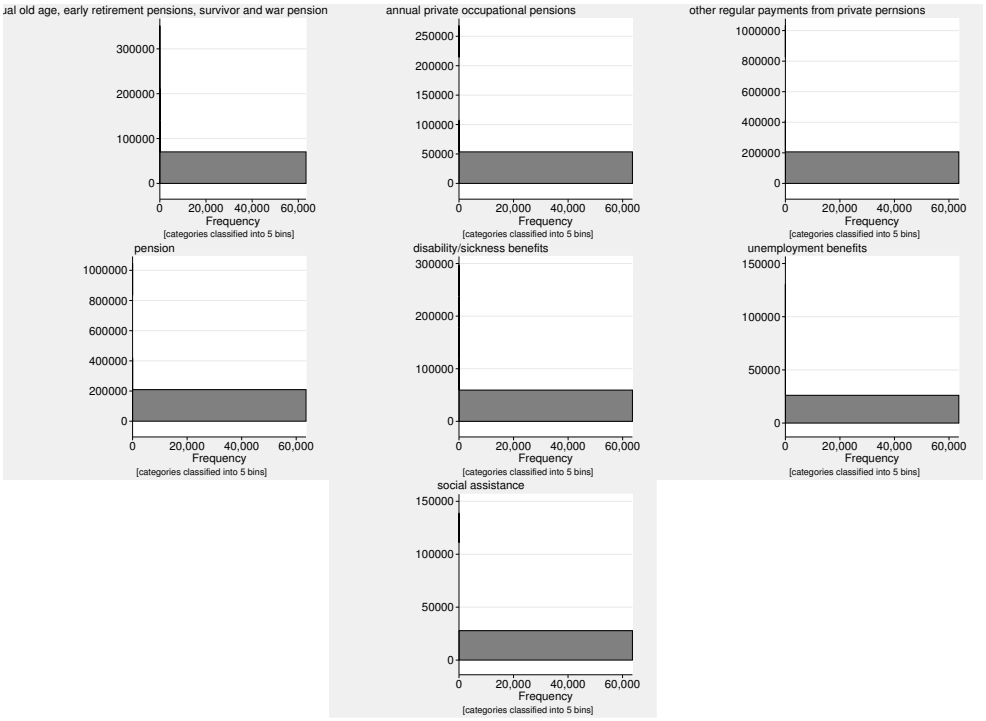

Figure 4: Variables' distribution.

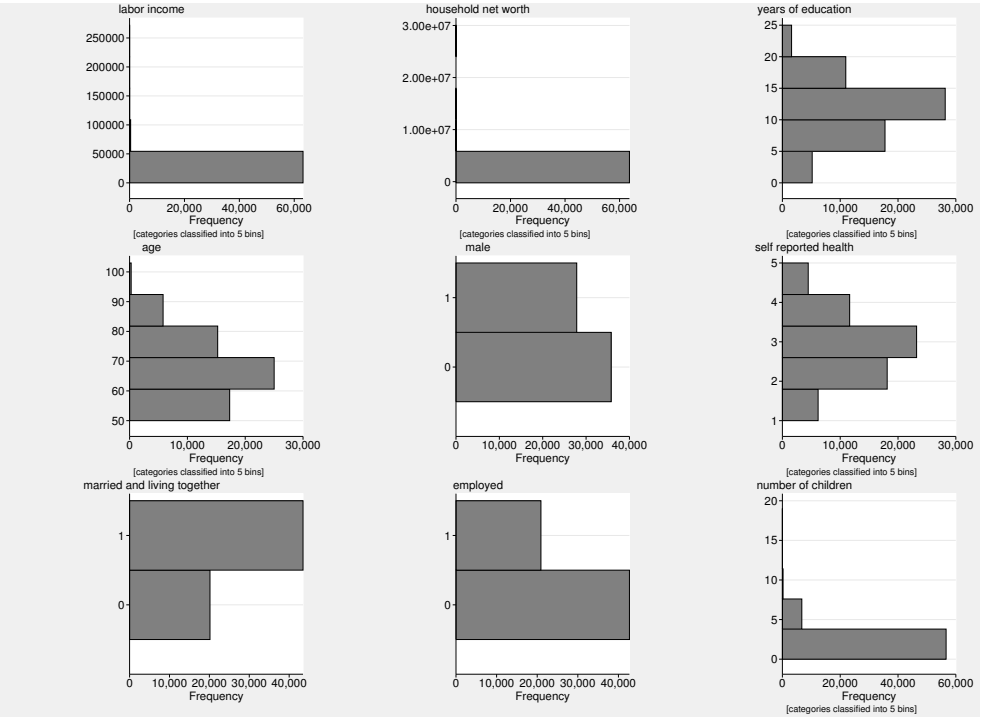

Figure 5: Variables' distribution.

Table 10: OLS of SWB (life satisfaction and CASP) on volunteerring and pensions. Unstandarized coefficients reported.

	Life satisfaction				CASP			
	e1	e2	e3	e4	e5	e6	e7	e8
no volunteering/charity	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
volunteering/charity	0.4611***	0.1433**	0.3380***	0.0629	0.4497***	0.1860***	0.3544***	0.1140***
employed=0	0.0000	0.0000						
employed=1	0.2869***	0.1681***						
no volunteering/charity × employed=0	0.0000	0.0000						
no volunteering/charity × employed=1	0.0000	0.0000						
volunteering/charity × employed=0	0.0000	0.0000						
volunteering/charity × employed=1	-0.2571**	-0.1472+						
employed				0.1460**	0.4270***	0.0000		0.0894***
total hh income PPP '000		0.0023**		0.0028***				0.0009*
Total household expenditure PPP '000		0.0030		0.0021		0.0078***		0.0066***
household net worth PPP '000		0.0003***				0.0002***		
attended an educational or training course		0.0432		0.0446		0.0567**		0.0548**
gone to a sport, social or other kind of club		0.1619***		0.1711***		0.1284***		0.1326***
taken part in a political or community-related organization		-0.0081		-0.0050		0.0534*		0.0535*
read books, magazines or newspapers		0.2992***		0.3075***		0.2162***		0.2201***
did word or number games (crossword puzzles/Sudoku...)		0.0664*		0.0649+		0.0787***		0.0769***
played cards or games such as chess		0.1018**		0.1013**		0.0585***		0.0576***
male		0.0289		0.0286		0.0783***		0.0732***
married and living together		0.5362***		0.5511***		0.1677***		0.1744***
age		0.0265***		0.0269***		0.0003		0.0000
years of education		0.0020		0.0038		0.0073***		0.0079***
number of children		0.0122		0.0115		-0.0088		-0.0090
self reported health		0.5470***		0.5528***		0.3595***		0.3625***
pension			0.0000**	-0.0000			0.0000	0.0000
no volunteering/charity × pension			0.0000	0.0000			0.0000	0.0000
volunteering/charity × pension			0.0000	0.0000			0.0000	0.0000+
no volunteering/charity × employed					0.0000	0.0000		
volunteering/charity × employed					-0.2543***	-0.1320***		
country dummies	yes	yes	yes	yes	yes	yes	yes	yes
constant	8.0711***	3.8225***	8.1191***	3.8005***	0.1479***	-1.4125***	0.2886***	-1.3963***
N	62967	62967	62967	62967	61492	61492	61492	61492

+p<0.10 *p<0.05 **p<0.01 ***p<0.001, robust std err

8 appendix: explanation of volunteering questions by SHARE expert

In SHARE, there are also instructions for the pollster that appear on the computer along with the question. For questions about volunteering (AC002 in w1 and w2 and AC035 in w4, w5, w6, w7) see column "I" "iwer_instruction" in the attached file (that is the same table you got as an expert). For both questions the instructions are scanty: "CODE ALL THAT APPLY." Only in round 2 and round 4 is still the explanation of "TAKING PART IN THE ACTIVITIES OF A RELIGIOUS ORGANIZATION INCLUDES CHURCH ATTENDANCE." Because in these rounds in the answers option was "taking part in activities of a religious organization." There is nothing about what we mean by volunteering. Interviewers are trained to write what the respondent says and do not ask. In exceptional situations, as the respondent asks what the term means, they may explain, but I have never heard anyone ask what volunteering is. Plus if they have doubts whether the respondent is actually what they ask, they can write a note (what they do often, but just for volunteering I do not remember to write something before).

On the other hand, my personal opinion is this: the question of activity in this volunteering is at the end of the survey. Ask for help for family members or other people, ask for financial gifts / gifts and take care of your grandchildren beforehand. I think if someone helps in these categories it takes into account this before and not as volunteering. In addition, the question of volunteering is quite concrete and formal "Done voluntary or charity work", which in Polish version is "Participation in charitable activities or volunteering". I doubt anyone would understand this as helping grandpa. I think the wording is good and captures only the involvement in external "volunteering". But of course it will also depend on the language version. Let me know if I helped,