

A New Comprehensive and International View on Ageing:

The Survey of Health, Ageing and Retirement in Europe

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Abstract: This paper introduces the ‘Survey of Health, Ageing and Retirement in Europe’ (SHARE). The 2004 baseline study collects data on the individual life circumstances of about 27,000 persons aged 50 and over in 11 European countries, ranging from Scandinavia across Western and Central Europe to the Mediterranean. SHARE has made great efforts to deliver truly comparable data, so we can reliably study how differences in cultures, living conditions and policy approaches shape the life of Europeans just before and after retirement. We present first results from the three main research areas covered by SHARE, namely economics, sociology, and health. SHARE provides an infrastructure to help researchers better understand the individual and population ageing process: where we are, where we are heading to, and how we can influence the quality of life as we age – both as individuals and as societies.

Keywords: ageing; cross-national research; Europe; SHARE

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1. Introduction

Politicians as well as scientist have now recognized that ageing is one of the greatest social and economic challenges of the 21st century, particularly so in Europe. By 2025, about one third of Europe's population will be aged 60 or over, with a particularly rapid increase in the number of oldest-old citizens (cf. WHO 2002). While the demographic mechanisms driving this development – lower fertility rates and longer life-spans (e.g., Hayward & Zhang 2001) – are well-known, our knowledge about the consequences of population ageing is yet incomplete (e.g., Börsch-Supan 2004). Public policy clearly plays a key role here. The typical European combination of an ageing population and widespread early retirement (cf. Kohli et al. 1991), for example, puts severe strains on our social security systems' capacity to maintain today's standard of living for future generations of older people. At present, the Lisbon/Stockholm employment targets, designed to alleviate these strains, are far from being reached, especially among older workers.

To cope with these and other challenges, such as the growing long-term care needs, it is important to achieve a better understanding of the complex linkages between economic, health, and social factors that determine the quality of life of the older population. These interactions take place at the individual level in the first place, they are dynamic as ageing is a process over time, not a state in time, and they must be related to a country's welfare regime, i.e. labour market institutions, social security and health care system, etc. So far, however, cross-nationally comparable micro-data on the economic, social, and health situation of older people in Europe have been missing. They are urgently needed to help tailoring adequate public policy responses to the population ageing process.

Understanding ageing and how it affects individuals in the diverse cultural settings of Europe is the main task of SHARE, the Survey of Health, Ageing and Retirement in Europe. SHARE provides an infrastructure to help researchers better understand the individual and population ageing process: where we are, where we are heading to, and how we can influence the quality of life as we age – both as individuals and as societies.

This paper introduces the SHARE data set (section 2) and presents first results from the three main research areas covered by SHARE, namely economics (section 3), sociology (section 4), and health (section 5). Section 6 concludes with an outlook on the future of SHARE.

2. The SHARE 2004 baseline wave

SHARE is modeled closely after the U.S. Health and Retirement Study (HRS; see Juster & Suzman 1995) and the English Longitudinal Study of Ageing (ELSA; see Marmot et al. 2003). It is the first European data set to combine extensive cross-national information on socio-economics status, health, and family relationships of the elderly population (Börsch-Supan et al. 2005).

At this point, SHARE has collected a first baseline wave of data. A preliminary release of the data contains information on some 22,000 individuals aged 50 and older from 15,000 households in 10 countries (see *Table 1* for a detailed breakdown of the sample). Further data collection is still going on, and the final release in early 2006 will feature some 27,000 households in 11 countries, representing Europe's economic, social, institutional, and cultural diversity from Scandinavia (Denmark, Sweden) across Western and Central Europe (Austria, Germany, France, Belgium, The Netherlands, Switzerland) to the Mediterranean (Greece, Italy, Spain). Additional data will come from Israel in 2006.

The SHARE data include *health variables* (e.g. self-reported health, physical functioning, cognitive functioning, physical measures such as grip strength and walking speed, health behaviour, use of health care facilities), *psychological variables* (e.g. psychological health, well-being, life satisfaction, control beliefs), *economic variables* (e.g. current work activity, job characteristics, job flexibility, opportunities to work past retirement age, employment history, pension rights, sources and composition of current income, wealth and consumption, housing, education), and *social support variables* (e.g. assistance within families, transfers of income and assets, social networks, volunteer activities, time use).

SHARE has made great efforts to deliver truly comparable data, so we can reliably study how differences in cultures, living conditions and policy approaches shape the life of Europeans just before and after retirement. Hence, probability samples have been carefully drawn in each participating country and interview procedures have been harmonized with the help of a joint case management system. The questionnaire has been translated according to a protocol ensuring functional equivalence and was administered by a Computer Assisted Personal Interview (CAPI) plus a drop off self completion part. The overall response rate in the face-to-face part of the survey is 57.4 percent, lowest in Switzerland and highest in France, see table 1 below. Further methodological details of the study are contained in Börsch-Supan and Jürges (2005).

[Table 1 about here]

The data is freely available for all researchers, see the application procedure on the project's website <http://www.share-project.org>.

A large number of mainly descriptive analyses have been conducted since the end of the main data collection period of SHARE in October 2004. They are collected in Börsch-Supan et al. (2005) and can be downloaded from the project's website <http://www.share-project.org>. In order to provide the reader of this journal with an impression of the opportunities for new research on ageing provided by SHARE, we summarize three exemplary analyses in the sequel of this paper. Further details can be found in Börsch-Supan et al. (2005).

3. The economics of institutions: Work disability insurance enrolment

Disability insurance – the insurance against the loss of the ability to work – is a substantial part of social security expenditures in almost all European countries. Disability insurance faces a trade-off like many elements of modern social security systems: On the one hand, disability insurance is a welcome and necessary part of the social safety net as it prevents income losses for those who lose their ability to work before the normal retirement age. On the other hand, disability insurance may be misused to serve as an early retirement route even if workers are still fully able to pursue gainful employment.

Understanding the trade-off between social safety provision and its misuse is important for the design of a modern social security system which maximizes social safety provision under increasingly tight financial budget constraints (Aarts et al. 1996).

A striking finding confirmed by SHARE is the great variation across European countries in the number of persons who receive disability insurance benefits in the 50-64 age range (*Figure 1*). In Denmark, Sweden and the Netherlands, enrolment rates are very between 14 and 16 percent. Lower, but still above average enrolment rates between 7 to 9 percent prevail in Spain and Switzerland. France, Germany and Italy feature below average enrolment rates between 4 and 5 percent. Finally, in Austria and Greece less than 3 percent of individuals aged between 50 and 65 receive disability insurance benefits.

[Figure 1 about here]

How did these strikingly different enrolment rates emerge? There are three popular explanations: demographics, health and institutions. According to the first explanation, a higher share of older persons causes a higher prevalence of disability insurance uptake. A second potential cause for the cross-national variation is differences in health status: countries with a higher prevalence of physical and mental health problems have higher disability insurance uptake rates. The third explanation parallels a lesson derived from public old age pension systems which exert large incentive effects and have significantly increased the uptake of early retirement provisions, see Gruber and Wise (1999). Similar incentive effects arise also from disability insurance and may explain the different disability insurance take-up rates across countries.

The SHARE data permit a new look at this question because they include demographic data, an extensive and comparable inventory of physical and mental health measures, and a detailed description of which kind of public transfer payments each individual receives. Our aim is to look which weight each of the three potential causes – demographics, health and institutions – has in explaining disability enrolment in Europe. Our strategy is straightforward. We exploit the richness of the SHARE data to first relate

individual disability insurance enrolment probabilities to demographic characteristics and a broad set of health measures ranging from self-reported health to more objective measurements of the functional physical and mental health status. We then predict how enrolment rates would look like if demographics were equal across countries. If demographic differences were the main cause, enrolment rates should be very similar after taking demographic differences out. We then go through the same procedure for differences in health status. If enrolment rates are still very different after accounting for demographic and health differences, the third explanation – differences in the institutional regulations – is a likely cause.

Our *first* step is to normalize disability insurance enrolment with respect to demographic differences across countries. We first estimate the influence of age and gender on disability insurance take up. We then predict which share of our sample individuals would take up disability insurance if all countries had the same age and gender distribution as the average of the SHARE countries. The results clearly show that taking account of demographic differences does not make a substantive difference. Italy and Spain, featuring the highest average age of individuals aged between 50 and 65 years among the SHARE countries, would have a slightly lower disability insurance enrolment if they had the age distribution of the average SHARE country. In Denmark, which is a younger country than the average, the opposite would happen. The effects, however, are very small. Demographic differences cannot explain why the enrolment rates in disability insurance are so different in Europe.

Our *second* step is to account for differences in the health status of the population. Health varies along many dimensions across countries and should therefore be a good candidate to explain the variation in disability insurance enrolment. Our analysis considers self-assessed health, physical performance in daily activities (such as walking or bathing), physical strength (measured by hand grip strength), and mental health (using the EURO-D depression scale; see Dewey & Prince 2005). We use the same methodology to correct for the influence of the multidimensional health differences as we did with demographics. We

first establish the influence of health on disability insurance take up, and then predict which share of our sample individuals would take up disability insurance if the health status measured along the above four dimensions would be identical to the average of the SHARE countries.

The results show that disability insurance enrolment would be less varying across countries if their health status were equal. For instance, if the Italians and Spaniards had the same health status as the average SHARE European person, their disability insurance enrolment would be considerably lower, less than half of the actual enrolment. In Switzerland, in turn, it would be slightly higher. However, controlling for health does not equalize enrolment across countries. Pronounced differences remain. Differences in health across Europe cannot be the dominant explanation for the cross-national variation in the European disability insurance enrolment.

We also correct for differences in demographics and health simultaneously, using the same methodology as before. We find that the striking variation in the uptake of disability insurance across the SHARE countries does not vanish. Especially the high enrolment rates in Sweden, Denmark and the Netherlands remain relatively stable after correcting for health and demographic differences.

Which reasons could it be? By exclusion of the first two of the three popular explanations – demographic and health-related differences – the third popular explanation remains, namely institutional differences, specifically enrolment and eligibility rules that make disability insurance benefits easier to receive and more generous in some countries than in others. Such rules may create incentive effects similar to those exerted by old-age pensions which often provide a financial incentive to retire early. In many countries, health requirements for disability insurance eligibility are weak. Under such circumstances, disability insurance may work as a labour market exit route to early retirement (cf. Börsch-Supan 2001). Many countries have established very lenient work disability eligibility rules under the conditions of high unemployment.

Future work will therefore construct measures of the institutional and country-specific incentives to take up disability insurance even if in relatively good health. The SHARE data are an ideal starting point for such an analysis that will shed light on the working of our European social institutions.

4. Social productivity of the older population: The case of volunteering

Working for money is by no means the only way to contribute to society. Today's discussion about the growing 'burden of ageing' must not neglect that many older people are willing and able to stay involved in other productive ways, such as volunteering (e.g., O'Reilly & Caro 1994). Many studies suggest that older men and women actually spend more hours volunteering than do their younger counterparts. This higher commitment is often attributed to the fact that the productive nature of volunteering is particularly beneficial for older people's life-satisfaction or health. Volunteerism, though, should not be seen in isolation of the broader societal context in which it takes place: "as a cultural and economic phenomenon, volunteering is part of the way societies are organized, how they allocate social responsibilities, and how much engagement and participation they expect from citizens." (Anheier and Salamon 1999: 43). So far, however, cross-nationally comparable data on active participation in volunteer work have been scarce. SHARE provides information on whether the respondent has been actively engaged in voluntary or charity work during the month before the interview, which can be related to a broad set of socio-demographic variables.

With regard to levels of volunteering, the SHARE countries may be divided into three groups (*Figure 2*). The Mediterranean countries feature low participation in volunteer work during the preceding month (7 percent of the Italian and 2-3 percent of the Greek and Spanish). Germany, France, Switzerland, and Austria exhibit medium activity levels between 9 and 14 percent. Sweden and Denmark (17 percent) and the Netherlands (more than 20 percent) feature high participation in volunteering, see *Figure 2*.

[Figure 2 about here]

Among those who report to have volunteered in the last month, almost one fifth has done so almost daily, nearly half of the volunteers have been engaged almost every week, and slightly more than one third has worked less often. The two most frequently mentioned motivations to volunteer are the desire to contribute something useful (70 percent), followed by the joy derived from volunteering (61 percent).

Gender differences and variations in volunteering by partnership status are generally small (in the order of 2 percentage points). The age gradient of volunteer activity among older adults, however, is quite clear. When respondents age 75 or older are compared to younger age groups, activity rates drop by at least one third everywhere (in the Netherlands even by two thirds), to an average level of 5 percent. Still, in the Nordic countries as much as 12 to 13 percent of the population 75+ continue to be engaged in voluntary work – which is more than the SHARE average across all age groups.

The share of volunteers also varies substantially between educational groups. Participation rates generally increase by almost 5 percentage points when respondents with a low degree are compared to those with a medium degree, and by another 7 to 8 percentage points when the highest educational group is considered. The gradient between the two latter groups is somewhat less pronounced in Sweden, Switzerland, and Austria. In most countries, the share of volunteers differs only moderately between working, retired, and other non-working respondents (in the order of 2 percentage points). In Austria, Switzerland, and Italy, though, rates of volunteering are up to 5 percentage points (i.e. about one third) lower among retirees than among those who are engaged in market work.

Turning to volunteer work and health, we find much lower activity rates among those who perceive their current health status as fair or worse (about 6 percent), compared to those who report a good or better health condition (13 percent). This negative association is corroborated by our Euro-D mental health indicator. In almost all countries, the share of volunteers among respondents who showed symptoms of depression in the last month is 4 to 5 percentage points lower than among those who were not bothered by such problems. A

similar, though weaker, relationship seems to exist between volunteering and chronic physical health problems.

In sum, our analysis of the SHARE data reveals a cross-national pattern of volunteering with higher participation rates in Northern Europe and substantially lower ones in the Mediterranean countries. This underlines the relevance of the broader social, institutional, and cultural background for private voluntary engagement. Even when controlling for socio-demographic characteristics in a multivariate logistic regression (details not shown here), we find strong indication for contextual effects on the probability to participate in voluntary work. These are suggested to be due to various cultural, institutional, and economic factors, which clearly need more detailed investigation in future analyses. Across different national contexts, however, we find a remarkable consistency in the association of individual characteristics (health, etc.) with volunteering. Longitudinal data will help to investigate this relationship in-depth and to understand the limits as well as opportunities of volunteer work.

5. Cross-country differences in self-assessed health: The role of reporting styles

A particular strength of the SHARE data is the broad set of health measures. Most socio-economic surveys have only a self-reported health indicator. This section shows how important it is to measure health broadly if one wants to avoid serious misinterpretations.

Figure 3a shows the proportion of SHARE respondents who report to be in very good or excellent health by country.¹ According to their subjective assessment, the healthiest elders live in Denmark, Sweden, and Switzerland. Nearly 50% of the Danish respondents and more than 40% of the Swedish and Swiss respondents report to be in very good or excellent health. The least healthy are French, German, Italian, and Spanish older

¹ To ensure comparability with a large number of other surveys, SHARE contains two different versions of the self-reported health question. Both are 5-point scales. One ranges from "excellent" to "poor" (used e.g. in the U.S. Health and Retirement Survey), the other ranges from "very good" to "very poor" (used e.g. by WHO in numerous studies). To ease the exposition, we concentrate on the former version.

adults. The proportion of respondents in very good or excellent health is at around 20% and thus only about half as large as in the “healthy countries”.

In the light of these large cross-country differences, it is natural to ask if they can be taken at face value. If we find that Danes are much more likely to report excellent health than Germans, does that mean that Danes are really that much more healthy than Germans? Or are they simply more likely to report excellent health, even if they have about the same true level of health? Because much of the added value of SHARE comes from multi-disciplinary, cross-country comparisons, many of our future analyses depend on the existence of a good comparable summary measure of the respondents' overall health.

One major concern with the self-assessed health ratings displayed in Figure 3a is that respondents do not perceive the health self-assessment scale given to them as absolute. Individuals with the same true health status may have different reference levels against which they judge their health. This sheds doubt on the comparability of such measures across groups of individuals (e.g., Groot 2000; Sen 2002). In cross-cultural studies like SHARE, but also the Eurobarometer or the European Social Survey, these concerns are particularly strong. Respondents from different countries and cultures may not only have different reference levels of health, but response categories may also have different connotations. Self-reported health categories are verbal representations of different health states, which may not mean the same thing to all respondents. For instance, "*excellent*" is a term that is used in everyday parlance in the Anglo-Saxon world, but Germans would often consider "*ausgezeichnet*" as an ironic exaggeration, in particular if used in the context of health. A comparison of self-reported general health across countries has to take such differences in habitual language use into account.

In order to shed light on these cultural differences, we compare the self-assessed health ratings to a more objective health index constructed from the SHARE data.² This is possible, because SHARE contains a wide array of information on health problems: self

² The final release of the SHARE data will offer a second, complementary way to purge our data from cross-country reporting bias, so-called anchoring vignettes.

reported diagnosed chronic conditions, mental problems, physical symptoms (especially pain), or functional limitations. SHARE also reports measurements and tests like grip strength, gait speed, and various cognitive tests. We use all available information in SHARE to compute a continuous health index for each individual. The idea of this index is to combine in a single number not only the prevalence of a large variety of conditions and limitations but also the effect of these conditions and limitations on the respondents' health. The health index is scaled such that it has a value of 0 for the respondent with the worst observed health and a value of 1 for respondents without any conditions, symptoms, or limitations ("perfect health"). The presence of a condition or limitation reduces the value of the index by a specific amount. This amount (called disability weight) differs between conditions and symptoms and reflects their effect on health. For instance, Parkinson's disease has a larger weight than diabetes. The weights are assumed to be the same for each respondent (and hence the same across countries).

Figure 3b shows the distribution of the health index by country. The countries are sorted by the median value, shown as a circle, with the most healthy country (Switzerland) on the left and the least healthy country (Spain) on the right of the graph. The upper and lower bars indicate the 90th and the 10th percentile of the health distribution, respectively. Health inequality (measured by the ratio of the 90th to 10th percentile) is largest in Spain (1.77) and smallest in Switzerland (1.38). It is interesting to compare *Figures 3a* and *3b*. First, there are some changes in the countries' ranks. For instance, Sweden drops from 2nd to the 7th, while the Netherlands rise from 6th to 3rd rank. Both countries are now in a larger group with very similar median health.

The next step of the analysis is to relate the health index values to the respondents' self-reported health levels. The idea is that each individual reports very good or excellent health only if his or her health index value passes a specific threshold value. In other words, these thresholds indicate how healthy respondents must be in order to state that they are, say in very good rather than in good health. We are specifically interested in cross-country variations in these thresholds. We compute country-specific reporting thresholds

as the exact quantiles of the country-specific health index distribution that correspond to the proportion of respondents that report up to a specific health level. For example, 48.5% of all Danish respondents reported to be in very good or excellent health. The Danish reporting threshold between "good" and "very good" is thus computed as the 48.5th percentile of the Danish health index distribution, which is .77. Consider Germans as another example. Only 21.1 percent of them reported to be in very good or excellent health. The 21.1th percentile of the German health index distribution is .84. Germans need to be much healthier than Danes to claim that they are in very good health. In terms of disability weights, the difference is about one half heart attack.

The results for all countries, ranked according to their computed good-to-very good threshold, are shown in *Figure 3c*. It reflects differences in reporting styles across SHARE countries and can be used to predict the self-reported health level of a respondent of a specific health index in each SHARE country. For example, someone with a health index value of .79 would be predicted to report very good or better health in Denmark or Sweden but good or worse health in all other SHARE countries.

Given the health index and the reporting thresholds, we can purge the self-reported health ratings from cross-national differences in habitual language use, simply by using the same thresholds for each respondent, say, the SHARE average. *Figure 3d* compares self-reported health levels with adjusted health levels. The x-axis shows the proportion of respondents in very good or better health given their country-specific reporting style. The y-axis shows the proportion of respondents in very good or better health if everyone showed the same reporting behaviour. Respondents in countries to the left of the 45°-line systematically undervalue their health compared to the SHARE average, respondents in countries to the right systematically overvalue their health. Considering what we have already seen above in *Figure 3c*, the results are not surprising. Scandinavians have a more positive attitude towards their health. Germans, Dutch, and the Swiss are less positive. In the remaining countries (Mediterranean and Austria), differences between reported and adjusted health levels are unsystematic.

To illustrate what our adjustment of self-reported values achieves, consider again Denmark and Germany. Although there are huge differences in the distributions of self-reported health between Danes and Germans (nearly 27.4 percentage points), the difference in adjusted health levels are negligible (1.2 percentage points), and probably much more realistic. However, accounting for different response styles does not equalise all health differences. For instance, Spain remains at the bottom of the health distribution. Cross-country differences in self-assessed health thus partly reflect variations in reporting thresholds, but the data do also suggest some real between-country differences in physical health.

[Figure 3 about here]

6. Outlook: Future research on ageing – and the future of SHARE

So far, the SHARE data are a cross-national snapshot of eleven countries in the Fall of 2004. From its beginning, however, SHARE was designed as the baseline of a longitudinal survey. The time dimension is essential because it allows new insights in several respects. *First*, ageing is a process, and not a state. Processes need to be observed over time. Observing two individuals of different age at the same time is no substitute for observation the same person at two ages, since the two persons have been born in different years and thus have experienced other times. *Second*, the time dimension provides a crucial handle to detect causality which is not possible in a single wave of data. Causality is easiest detected if one can establish that an event happened after the cause. In a single wave, however, a sequence of events is impossible to detect. *Third*, the European Union is undergoing rapid institutional change. Some countries have enacted dramatic pension reforms. All countries are working on health care reform. A host of incremental labour market reforms is going on. Data with time dimension lets researchers observe the reaction to those changes, e.g. the choice of a later retirement age or higher old-age savings in response to pension reform, different health service utilisation and corresponding health status changes in response to health care reform, and possibly higher labour force participation in response

to labour market reforms. Europe with its huge policy diversity represents a ‘natural laboratory’ from which we can learn about the effects of public policy on the behaviour and the well-being of its citizens.

Although SHARE already represents much of Europe, it does not yet include new EU members and the United Kingdom. SHARE plans to collect data from new accession countries in a next wave. Moreover, we will remain in close co-operation with the English Longitudinal Study on Ageing (ELSA). We are planning to create a joint set of SHARE and ELSA data in order to extend the geographic scope of data that is based on internally consistent and strictly comparable definitions across Europe. Finally, we will also remain in close co-operation with the U.S. Health and Retirement Study (HRS) and close the triangle of SHARE, ELSA and HRS by adding the large subset of comparable HRS data to the joint SHARE-ELSA data set, enabling comparisons between Continental European and Anglo-Saxon countries.

Both steps together are the beginning of a European Longitudinal Ageing Survey that the European Commission has been asking for in a Communication to the Council and the European Parliament “*to examine the possibility of establishing, in co-operation with Member States, a European Longitudinal Ageing Survey*” in response to the insight stressed at the Lisbon Special European Council in March 2000 “*that population ageing and its social and economic challenges to growth and prosperity are among the most pressing challenges of the 21st century in Europe.*”

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Table 1: SHARE 2004 – achieved sample by sex and age (release 0)

<i>Country</i>	<i>All</i>	<i>Male</i>	<i>Female</i>	<i>Under 50</i>	<i>50 to 64</i>	<i>65 to 74</i>	<i>75 +</i>	<i>Household response rate</i>	<i>Individual response rate</i>
Austria	1,987	820	1,167	61	1,025	560	341	57.3 %	87.4 %
Denmark	1,671	755	916	110	885	352	324	61.1 %	93.0 %
France	1,578	686	892	85	774	385	334	69.4 %	91.7 %
Germany	3,029	1,389	1,640	83	1,620	867	459	60.2 %	86.5 %
Greece	2,142	901	1,241	179	1,040	553	370	60.2 %	91.8 %
Netherlands	2,828	1,296	1,532	129	1,599	658	442	61.6 %	87.9 %
Italy	2,416	1,071	1,345	71	1,287	716	342	54.1 %	79.7 %
Spain	1,853	765	1,088	42	824	541	446	50.2 %	73.8 %
Sweden	2,066	953	1,113	58	1,060	548	400	42.1 %	83.8 %
Switzerland	1,010	468	542	59	513	237	201	37.6 %	86.9 %
<i>Total</i>	<i>20,580</i>	<i>9,104</i>	<i>11,474</i>	<i>877</i>	<i>10,627</i>	<i>5,417</i>	<i>3,659</i>	<i>57.4 %</i>	<i>86.0 %</i>

Figure 1: Disability insurance take-up in the SHARE countries

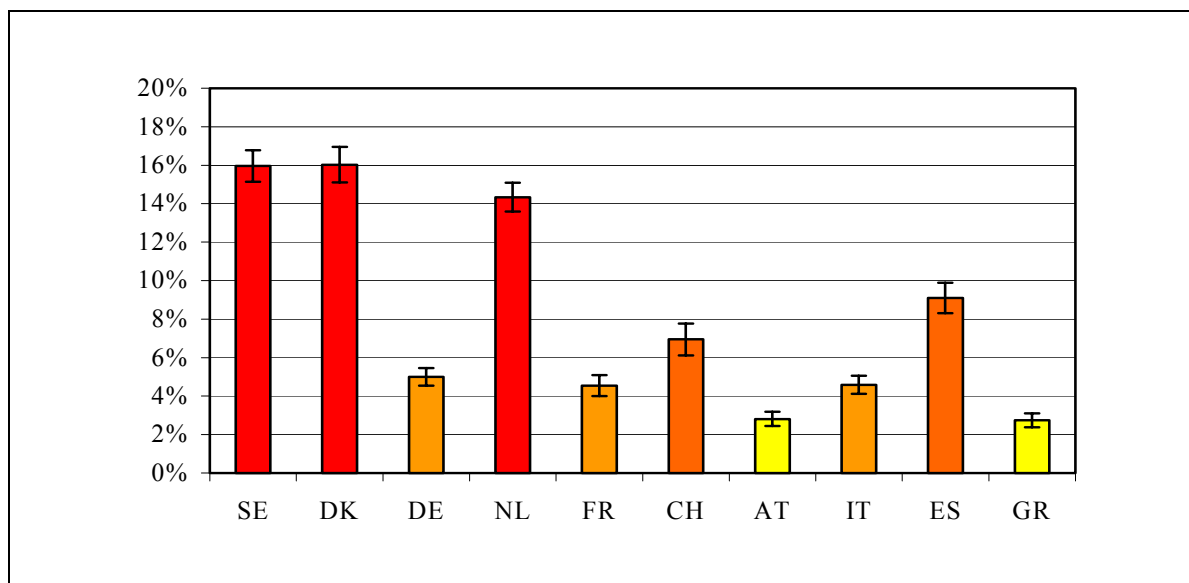


Figure 2: Spatial pattern of volunteer work in the SHARE countries

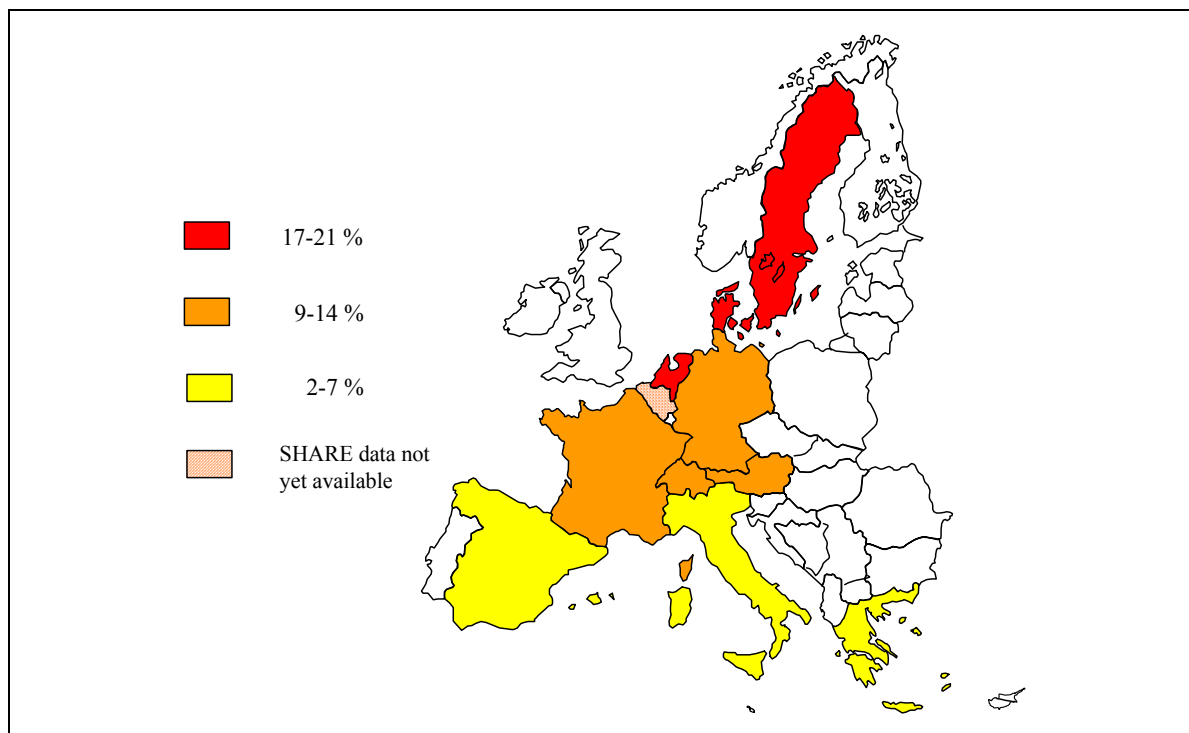
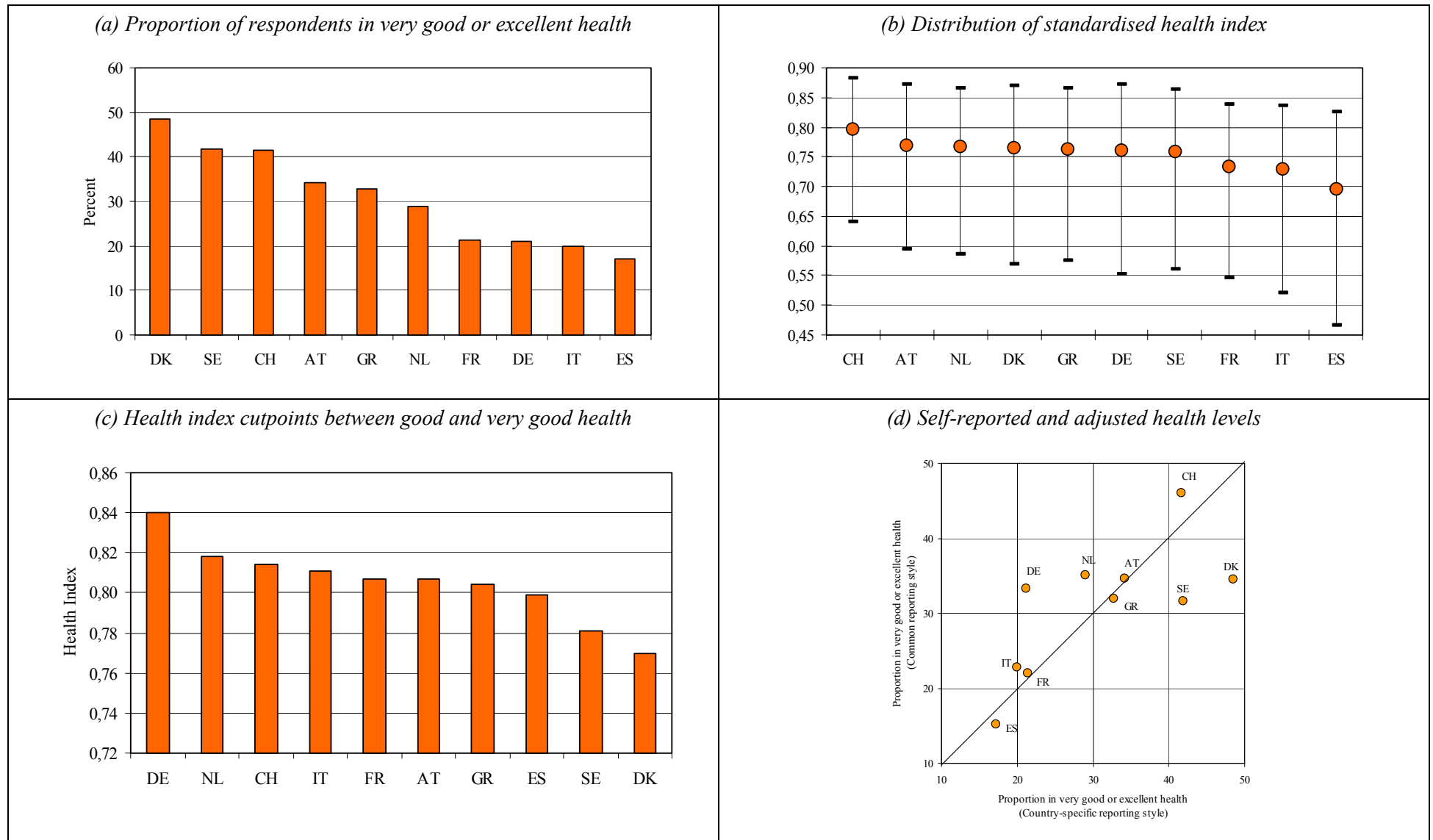


Figure 3: Distribution of health indicators, by SHARE country



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