

---

## SHARE WORKING PAPER SERIES

---

# Survey participation in the Survey of Health, Ageing and Retirement in Europe (SHARE), Wave 1-6

Michael Bergmann, Thorsten Kneip,  
Giuseppe De Luca, Annette Scherpenzeel

*Working Paper Series 31-2017*

---

SHARE-ERIC | Amalienstr. 33 | 80799 Munich | Germany | [share-eric.eu](http://share-eric.eu)

**Survey Participation in the Survey of Health, Ageing and Retirement in Europe  
(SHARE), Wave 1-6**

Based on Release 6.0.0 (March 2017)

*Michael Bergmann<sup>a,b</sup>, Thorsten Kneip<sup>b</sup>, Giuseppe De Luca<sup>c</sup>, Annette Scherpenzeel<sup>a,b</sup>*

<sup>a</sup> Technical University of Munich (Chair for the Economics of Aging)

<sup>b</sup> Munich Center for the Economics of Aging (MEA),  
Max Planck Institute for Social Law and Social Policy

<sup>c</sup> Università degli Studi di Palermo

Please cite as: Bergmann, Michael; Kneip, Thorsten; De Luca, Giuseppe; Scherpenzeel, Annette (2017). Survey Participation in the Survey of Health, Ageing and Retirement in Europe (SHARE), Wave 1-6. Based on Release 6.0.0 (March 2017). SHARE Working Paper Series 31-2017. Munich: Munich Center for the Economics of Aging (MEA).

**Contents**

Contents ..... 2

List of Figures ..... 3

List of Tables ..... 4

1. Introduction ..... 6

2. Sampling designs in SHARE ..... 7

3. Target population and eligibility criteria..... 12

4. Survey participation in the SHARE baseline and refreshment samples ..... 17

    4.1 Household participation ..... 18

    4.2 Individual participation ..... 21

5. Survey participation in the SHARE longitudinal samples ..... 28

    5.1 Wave-to-wave retention excluding recovery ..... 32

    5.2 Wave-to-wave retention including recovery of former respondents..... 34

    5.3 Wave-to-wave retention including recovery of former respondents and new/missing partners ..... 36

    5.4 End-of-life interviews by the respondents’ partner or a close relative ..... 38

References ..... 41

Appendix ..... 42

## List of Figures

Figure 1: Baseline/refreshment samples in Wave 1 by classification of sample units.....	14
Figure 2: Baseline/refreshment samples in Wave 2 by classification of sample units.....	15
Figure 3: Baseline/refreshment samples in Wave 4 by classification of sample units.....	15
Figure 4: Baseline/refreshment samples in Wave 5 by classification of sample units.....	16
Figure 5: Baseline/refreshment samples in Wave 6 by classification of sample units.....	16
Figure 6: Sample development in SHARE.....	31

## List of Tables

Table 1: The use of sampling frames in SHARE .....	9
Table 2: Breakdown of all baseline/refreshment samples in Wave 1 by country .....	19
Table 3: Breakdown of all baseline/refreshment samples in Wave 2 by country .....	20
Table 4: Breakdown of all baseline/refreshment samples in Wave 4 by country .....	20
Table 5: Breakdown of all baseline/refreshment samples in Wave 5 by country .....	21
Table 6: Breakdown of all baseline/refreshment samples in Wave 6 by country .....	21
Table 7: Breakdown of all baseline/refreshment samples in Wave 1 by country, sex, and age.....	23
Table 8: Breakdown of all baseline/refreshment samples in Wave 2 by country, sex, and age.....	24
Table 9: Breakdown of all baseline/refreshment samples in Wave 4 by country, sex, and age.....	25
Table 10: Breakdown of all baseline/refreshment samples in Wave 5 by country, sex, and age.....	26
Table 11: Breakdown of all baseline/refreshment samples in Wave 6 by country, sex, and age.....	27
Table 12: Wave-to-wave retention rates of all Wave 1 (2004) samples by country .....	33
Table 13: Wave-to-wave retention rates of all Wave 2 (2006) samples by country .....	33
Table 14: Wave-to-wave retention rates of all Wave 4 (2010) samples by country .....	34
Table 15: Wave-to-wave retention rates of all Wave 5 (2012) samples by country .....	34
Table 16: Wave-to-wave retention rates incl. recovery of all Wave 1 (2004) samples by country .....	35
Table 17: Wave-to-wave retention rates incl. recovery of all Wave 2 (2006) samples by country .....	35
Table 18: Wave-to-wave retention rates incl. recovery of all Wave 4 (2010) samples by country .....	36
Table 19: Wave-to-wave retention rates incl. recovery of all Wave 5 (2012) samples by country .....	36
Table 20: Wave-to-wave retention rates incl. recovery and new/missing partners of all Wave 1 (2004) samples by country .....	37
Table 21: Wave-to-wave retention rates incl. recovery and new/missing partners of all Wave 2 (2006) samples by country .....	37
Table 22: Wave-to-wave retention rates incl. recovery and new/missing partners of all Wave 4 (2010) samples by country .....	38
Table 23: Wave-to-wave retention rates incl. recovery and new/missing partners of all Wave 5 (2012) samples by country .....	38
Table 24: End-of-life interviews by country and sample .....	39
Table 25: Baseline/refreshment samples in Wave 1 (2004) by classification of sample units (absolute numbers).....	42
Table 26: Baseline/refreshment samples in Wave 2 (2006) by classification of sample units (absolute numbers).....	42
Table 27: Baseline/refreshment samples in Wave 4 (2010) by classification of sample units (absolute numbers).....	43
Table 28: Baseline/refreshment samples in Wave 5 (2012) by classification of sample units (absolute numbers).....	43
Table 29: Baseline/refreshment samples in Wave 6 (2014) by classification of sample units (absolute numbers).....	44
Table 30: Sample size development in SHARE.....	45

# Survey Participation in the Survey of Health, Ageing and Retirement in Europe (SHARE), Wave 1-6

Based on Release 6.0.0 (March 2017)

Michael Bergmann<sup>a,b</sup>, Thorsten Kneip<sup>b</sup>, Giuseppe De Luca<sup>c</sup>, Annette Scherpenzeel<sup>a,b</sup>

<sup>a</sup> Technical University of Munich (Chair for the Economics of Aging)

<sup>b</sup> Munich Center for the Economics of Aging (MEA),  
Max Planck Institute for Social Law and Social Policy

<sup>c</sup> Università degli Studi di Palermo

*Abstract:* This data documentation is meant to provide users of the Survey of Health, Ageing and Retirement in Europe (SHARE) with a general overview about both the participation of respondents in their first (baseline/refreshment) interview as well as the longitudinal development of the survey so far. All numbers and figures reported in this documentation are based on information from the SHARE sample management system (SMS) and additional national gross sample information using Release 6.0.0 from March 2017. After a brief summary of the different sampling designs that have been used in SHARE, the target population as well as eligibility criteria are described. Against this background, we first report household and individual participation in the baseline or refreshment interview by wave, country, and certain subgroups. The second focus is on sample development over time, i.e. the wave-to-wave participatory behavior of initial samples, entrance patterns of new sample members, and success of achieving so called end of live (EOL) interviews, usually with the partner or a close relative when the respondent has died.

*Keywords:* survey participation, response rates, panel retention, sample design, SHARE

*Acknowledgment:* This paper uses data from SHARE Waves 1, 2, 3 (SHARELIFE), 4, 5 and 6 (DOIs: [10.6103/SHARE.w1.600](https://doi.org/10.6103/SHARE.w1.600), [10.6103/SHARE.w2.600](https://doi.org/10.6103/SHARE.w2.600), [10.6103/SHARE.w3.600](https://doi.org/10.6103/SHARE.w3.600), [10.6103/SHARE.w4.600](https://doi.org/10.6103/SHARE.w4.600), [10.6103/SHARE.w5.600](https://doi.org/10.6103/SHARE.w5.600), [10.6103/SHARE.w6.600](https://doi.org/10.6103/SHARE.w6.600)), see Börsch-Supan et al. (2013) for methodological details.

The SHARE data collection has been primarily funded by the European Commission through FP5 (QLK6-CT-2001-00360), FP6 (SHARE-I3: RII-CT-2006-062193, COMPARE: CIT5-CT-2005-028857, SHARELIFE: CIT4-CT-2006-028812) and FP7 (SHARE-PREP: N°211909, SHARE-LEAP: N°227822, SHARE M4: N°261982). Additional funding from the German Ministry of Education and Research, the Max Planck Society for the Advancement of Science, the U.S. National Institute on Aging (U01\_AG09740-13S2, P01\_AG005842, P01\_AG08291, P30\_AG12815, R21\_AG025169, Y1-AG-4553-01, IAG\_BSR06-11, OGHA\_04-064, HHSN271201300071C) and from various national funding sources is gratefully acknowledged (see [www.share-project.org](http://www.share-project.org)).

The authors would like to thank Tim Birkenbach, Stefan Gruber, and Axel Börsch-Supan for their valuable comments and suggestions to improve the quality of the paper.

## 1. Introduction

This data documentation is meant to provide users of the Survey of Health, Ageing and Retirement in Europe (SHARE; Börsch-Supan, et al., 2013) with a general overview about both the participation of respondents in their first (baseline/refreshment) interview as well as the longitudinal development of the survey so far. It thus complements the previous reports on survey participation in SHARE that are mainly based on data during and at the end of fieldwork (Blom & Schröder, 2011; Giuseppe De Luca & Peracchi, 2005; Kneip, 2013; Kneip, Malter, & Sand, 2015; Malter, 2013; Malter & Sand, 2017). SHARE is a multidisciplinary and cross-national panel study, which is conducted biannually since 2004. By collecting data on health, socioeconomic status, and social and family networks from individuals aged 50 and older and their partners, it strongly contributes to the understanding of the ageing process in Europe. In the waves conducted so far, data from 20 European countries (Austria, Belgium, Croatia, Czech Republic, Denmark, Estonia, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Poland, Portugal, Slovenia, Spain (including the region of Girona), Sweden, and Switzerland) plus Israel have been collected.<sup>1</sup> With the public release of Wave 6 in March 2017, the data available to the scientific community are currently based on nearly 300,000 interviews administered on more than 120,000 respondents who participated in the survey so far.

The term survey participation is used here to describe how many households and individuals of the initial gross sample delivered completed interviews, how many were found to be ineligible, and how many did not respond. In the following, survey participation patterns are presented separately for baseline and refreshment samples as well as longitudinal samples for countries that have already participated in SHARE before.<sup>2</sup> Whereas in the context of

---

<sup>1</sup> In Wave 7, eight new countries joined SHARE: Bulgaria, Cyprus, Finland, Latvia, Lithuania, Malta, Romania, and Slovakia. Furthermore, SHARE is harmonized with similar panel surveys in the British Isles, the United States, Japan, Korea, China, India, Mexico, Brazil, and South Africa.

<sup>2</sup> In Wave 3, no new baseline or refreshment samples have been conducted.

baseline and refreshment samples the focus is on response behavior to the initial survey request, for the longitudinal samples the focus is on response behavior at subsequent waves, i.e. on panel retention.

The remainder of this documentation is organized as follows: After an overview about the different sampling designs that have been used in the SHARE countries so far (section 2), we briefly describe the target population as well as the eligibility criteria used in SHARE (section 3). Against this background, we report the household and individual participation in the baseline or refreshment interview by wave and country (section 4). This is done for the whole SHARE sample as well as for certain subgroups. Afterwards, the focus is on the longitudinal development of the sample composition in SHARE (section 5). Here, we first report the development of the number of successful interviews, before we present the wave-to-wave retention of the longitudinal samples. In this respect, we distinguish between retention rates with and without recovery of former respondents, as well as new or missing partners that have not participated in SHARE before (subsections 5.1-5.3). Finally, we report the success of achieving so called end-of-life interviews with the partner or a close relative when the respondent has died (subsection 5.4). All numbers and figures reported in this documentation are based on information from the SHARE sample management system (SMS) and additional national gross sample information using Release 6.0.0.

## **2. Sampling designs in SHARE**

The aim of the SHARE survey design is to be able to draw inferences about the population of people who are 50 years and older across countries by using probability-based sampling. This is a complex process since the samples in each country must do justice to national characteristics but at the same time be internationally comparable. In the ideal case, all countries included in SHARE would have a probability-based sample based on an official



person register covering the population of interest. The availability of population registers that can be used as sampling frames varies a lot across countries, however, as do the regulations about who can or cannot access the registers and what information can be obtained from them. A key feature any frame has to fulfil in SHARE is the availability of reliable information on age. If this information is not available from a given sampling frame – as it is frequently the case when no population register with individual information is available – a screening procedure to identify the age of respondents has to be applied before starting fieldwork. In this case, we require using our software for screening the whole sample for age-eligibility. The necessity to have a screening procedure identifying persons of 50 years and older is a specific feature of SHARE: It can negatively affect the response rates obtained, as it is an additional step for realizing an interview. As a result, SHARE response rates across all countries cannot be directly compared with response rates in other surveys.

Table 1 provides an overview about both the type of sampling frame and the sampling unit. As can be seen, there are no individual addresses (with information on age) available in Austria, Czech Republic, France, Greece, and Portugal. Therefore, a screening procedure is necessary in these countries. In Belgium and Switzerland screening for age-eligibility is no longer needed since Wave 4, as both countries achieved to use a population register with individual information on age from that time on.<sup>3</sup> Based on the available sampling frame, the most frequently used sampling design in the SHARE countries is a multi-stage stratified sampling design. Regional stratification schemes are recommended in order to ensure representativeness of different geographical areas within the country, to improve efficiency of the survey estimates, and to reduce the costs of the interview process. If other relevant characteristics are available from the sampling frame – such as age and gender in the case of population registers – countries are advised to also use those for stratification (for more

---

<sup>3</sup> Actually, SHARE was the first survey that was allowed to use the Swiss population register, which is known to be of excellent quality.

information on the specific characteristics of the used sampling designs, see Bergmann, De Luca, & Scherpenzeel, forthcoming; Guisepe De Luca, Rossetti, & Malter, 2015).

Table 1: The use of sampling frames in SHARE

Country	Wave (time of sampling)	Target population of baseline/refreshment sample	Type of sampling frame	Sampling unit
<b>Austria</b>	1 (2004)	<=1954	Register for specific use	Building address
	2 (2006)			
	3 (2008)			
	4 (2010)	<=1960	Register for specific use	Building address
	5 (2012)			
	6 (2014)			
<b>Belgium</b>	1 (2004)	<=1954	Telephone directory	Households/dwellings
	2 (2006)	<=1956 (only fr. part)	Telephone directory	Households/dwellings
	3 (2008)			
	4 (2010)	<=1960	Population or civil register	Individual address
	5 (2012)	<=1962	Population or civil register	Individual address
	6 (2014)	<=1964	Population or civil register	Individual address
<b>Croatia</b>	6 (2014)	<=1964	Register for specific use	Individual address
<b>Czech Republic</b>	2 (2006)	<=1956	Register for specific use	Households/dwellings
	3 (2008)			
	4 (2010)	<=1960	Register for specific use	Households/dwellings
	5 (2012)	<=1962	Register for specific use	Households/dwellings
	6 (2014)			
<b>Denmark</b>	1 (2004)	<=1954	Population or civil register	Individual address
	2 (2006)	<=1956	Population or civil register	Individual address
	3 (2008)			
	4 (2010)	[1957-1960]	Population or civil register	Individual address
	5 (2012)	<=1962	Population or civil register	Individual address
	6 (2014)	[1963-1964]	Population or civil register	Individual address
<b>Estonia</b>	4 (2010)	<=1960	Population or civil register	Individual address
	5 (2012)			
	6 (2014)	[1961-1964]	Population or civil register	Individual address
<b>France</b>	1 (2004)	<=1954	Population or civil register	Households/dwellings
	2 (2006)	<=1956	Population or civil register	Households/dwellings
	3 (2008)			
	4 (2010)	<=1960	Population or civil register	Households/dwellings
	5 (2012)			
	6 (2014)	<=1964	Population or civil register	Households/dwellings
<b>Germany</b>	1 (2004)	<=1954	Population or civil register	Individual address
	2 (2006)	<=1956	Population or civil register	Individual address
	3 (2008)			
	4 (2010)			
	5 (2012)	<=1962	Population or civil register	Individual address
	6 (2014)			
<b>Greece</b>	1 (2004)	<=1954	Register for specific use	Households/dwellings
	2 (2006)	<=1956	Register for specific use	Households/dwellings
	3 (2008)			

	6 (2014)	<=1964	Geographical listing/database	Building address
<b>Hungary</b>	4 (2010)	<=1960	Population or civil register	Individual address
<b>Ireland</b>	2 (2006)	<=1956	Population or civil register	Individual address
	3 (2008)			
<b>Israel</b>	1 (2004)	<=1954	Population or civil register	Individual address
	2 (2006)	<=1956	Population or civil register	Individual address
	5 (2012)	[1953-1962]	Population or civil register	Individual address
	6 (2014)			
<b>Italy</b>	1 (2004)	<=1954	Register for specific use	Individual address
	2 (2006)	<=1956	Register for specific use	Individual address
	3 (2008)			
	4 (2010)	<=1960	Register for specific use	Individual address
	5 (2012)	<=1962	Register for specific use	Individual address
	6 (2014)	<=1964	Register for specific use	Individual address
<b>Luxembourg</b>	5 (2012)	<=1962	Register for specific use	Individual address
	6 (2014)	<=1964	Register for specific use	Individual address
<b>Netherlands</b>	1 (2004)	<=1954	Population or civil register	Individual address
	2 (2006)	<=1956	Population or civil register	Individual address
	3 (2008)			
	4 (2010)	<=1960	Population or civil register	Individual address
	5 (2012)	<=1962	Population or civil register	Individual address
	6 (2014)			
<b>Poland</b>	2 (2006)	<=1956	Population or civil register	Individual address
	3 (2008)			
	4 (2010)			
	6 (2014)	[1957-1964]	Population or civil register	Individual address
<b>Portugal</b>	4 (2010)	<=1960	Register for specific use	Households/dwellings
	6 (2014)			
<b>Slovenia</b>	4 (2010)	<=1960	Population or civil register	Individual address
	5 (2012)	<=1962	Population or civil register	Individual address
	6 (2014)	<=1964	Population or civil register	Individual address
<b>Spain</b>	1 (2004)	<=1954	Population or civil register	Individual address
	2 (2006)	<=1956	Population or civil register	Individual address
	3 (2008)			
	4 (2010)	<=1960	Population or civil register	Individual address
	5 (2012)	<=1962 (only Girona)	Population or civil register	Individual address
	6 (2014)			
<b>Sweden</b>	1 (2004)	<=1954	Population or civil register	Individual address
	2 (2006)	<=1956	Population or civil register	Individual address
	3 (2008)			
	4 (2010)			
	5 (2012)	<=1962	Population or civil register	Individual address
	6 (2014)			
<b>Switzerland</b>	1 (2004)	<=1954	Register for specific use	Households/dwellings
	2 (2006)	<=1956	Register for specific use	Households/dwellings
	3 (2008)			
	4 (2010)	<=1960	Population or civil register	Individual address
	5 (2012)			
	6 (2014)			

All SHARE respondents who were interviewed in any previous wave (including non-responding partners) are part of the longitudinal sample. Additionally, refreshment samples are drawn regularly to i) maintain representation of the younger age-cohorts of the target population that were not age-eligible in previous waves and ii) compensate for the reduction in panel sample size due to attrition. Table 1 shows when refreshment samples were recruited or a new country joined SHARE for the first time with a baseline survey that would ultimately form the “first wave” panel sample for the next waves of the study. The choice of conducting a refreshment sample is up to the countries, because they have to apply for their own funding to their national funding agencies. Because funding and sampling resources vary across participating countries, SHARE does not define a minimum net sample size. Instead, SHARE advises countries to maximize their net sample size with the available budget to reach the target of 6000 individual interviews overall, i.e. panel and refreshment respondents combined.

Each country that draws a baseline or refreshment sample in a SHARE wave is initially required to provide a Sample Design Form (SDF) containing a complete description of both the chosen sampling frame and the associated sampling design. On the basis of this form, the sampling proposal is evaluated and approved by the SHARE Central coordination before the sample is drawn. The SDF is archived as a reference for the sampling information and the weighting design (see Bergmann, et al., forthcoming; Guiseppe De Luca, et al., 2015 for a detailed discussion of the used weighting strategy). In addition, each country that draws a baseline or refreshment sample has to submit a complete gross sample file containing the list of selected households, associated sampling frame information needed for the computation of selection probabilities (e.g. household-level and population-level information about stratification and clustering), household-level information about regional codes (NUTS and LAU), and (if any) additional auxiliary variables that could be used for ex-post compensation of non-sampling errors.

### **3. Target population and eligibility criteria**

The SHARE target population consists of all persons aged 50 years and over at the time of sampling who have their regular domicile in the respective SHARE country. Persons are excluded if they are incarcerated, hospitalized, or out of the country during the entire survey period, unable to speak the country's languages<sup>4</sup>, could not be located due to errors in the sampling frame (e.g. non-existent address, vacant house), or have moved to an unknown address. In Wave 1, all age-eligible persons per sampled household (plus their partners, regardless of age) were selected for an interview. Since Wave 2, only one age-eligible person per household (plus partner, regardless of age) has been selected. All SHARE respondents who were interviewed in any previous wave are part of the longitudinal sample. If they have a new partner living in the household, the new partner is eligible for an interview as well (regardless of age). Age-eligible respondents who participated are traced and re-interviewed if they move within the country and end-of-life interviews are conducted if they decease. Younger partners, new partners, and partners who never participated in SHARE will not be traced if they move and are not eligible for an end-of-life interview. Persons living in nursing homes and other institutions for elderly are considered to be part of the target population investigated by SHARE but may not be equally well represented in all countries depending on the sampling frame coverage. As SHARE countries do not use specific sampling methods for these groups but include them as part of the general population sample, differences in sampling frames used across countries can lead to country-specific under-coverage of the nursing home population (see Schanze, 2017 for an overview about which countries include the institutionalized population).

While these general eligibility criteria are determined through information provided during the individual SHARE interview, age-eligibility of an initially sampled household (i.e.

---

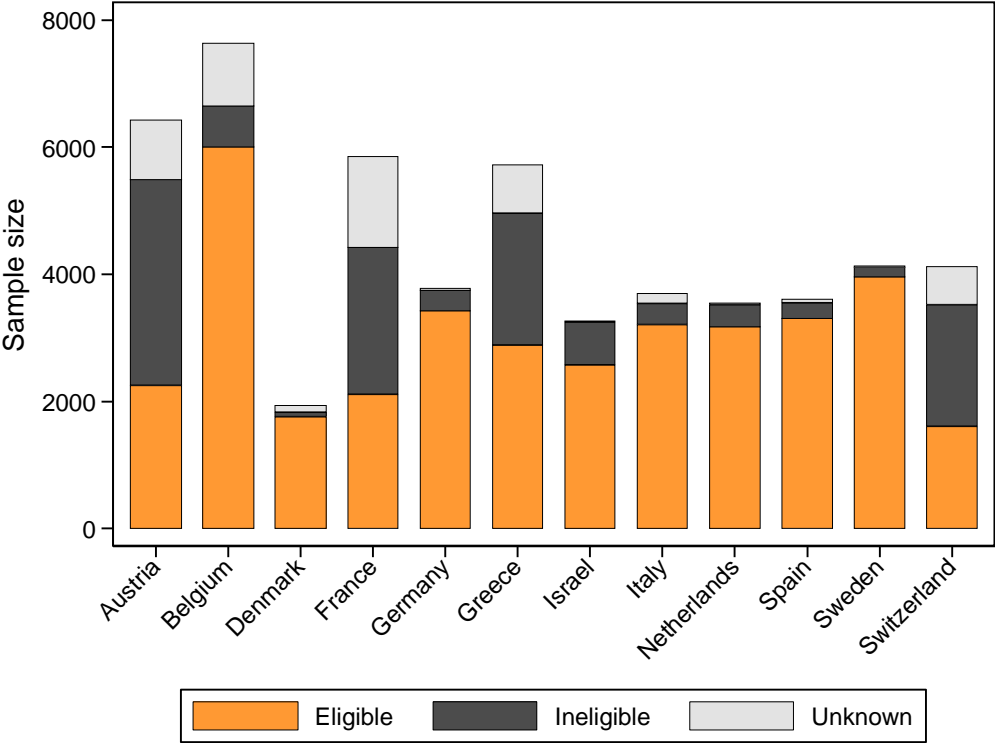
<sup>4</sup> If a language is spoken by more than ten percent of the population in a certain country, the questionnaire is translated also into that language to include the language group in SHARE and to avoid under-coverage of important migrant groups (e.g. Russian in Estonia).

at least one person aged 50 or older lives in the household) is determined through the very first part of the interview, the so-called coverscreen (CV). The CV is a brief interview on household composition before the actual interview starts. In practice, the CV is incomplete for non-responding households (i.e. households that were not contacted or refused to complete the CV) and thus does not allow assessing the age-eligibility of all sampled households. This problem, which is common to all countries, has different origins and consequences depending on the nature of the sampling frame adopted. In one group of countries (Belgium since Wave 4, Croatia, Denmark, Estonia, Germany, Hungary, Ireland, Israel, Italy, Luxembourg, the Netherlands, Poland, Slovenia, Spain, Sweden, and Switzerland since Wave 4), the sampling frame already contains information on the age of the sampled household member. For this first group of countries using a population or civil register, age-eligibility is determined directly from the information provided by the sampling frame. In another group of countries (Austria, Czech Republic, France, Greece, and Portugal, as well as Belgium and Switzerland before Wave 4) the sampling frame does not contain information on age. For this second group of countries a screening phase before the actual interview is required to assess the age-eligibility of sampled households.

The American Association for Public Opinion Research provides guidelines for a final classification of sample units (AAPOR, 2016). On this basis, a variety of indicators on respondents' participation behavior (e.g. response rates) can be calculated, which are the main focus of section 4 and section 5. Following these guidelines, the SHARE SMS that contains event history information for each contact event is used to classify the baseline/refreshment samples as well as the longitudinal samples of each country into three exhaustive and mutually exclusive main categories: (1) eligible households, (2) ineligible households, and (3) households of unknown eligibility (see Kneip, et al., 2015 for further information on the hierarchical classification of contact events into household states).

The following figures show the size of the baseline/refreshment samples in each country<sup>5</sup> in all previous waves and how they were composed regarding household eligibility status (i.e. at least one age-eligible respondent lives in the household). Absolute numbers can be found in the Appendix. In the mentioned countries with a sampling frame not containing any information on age, ineligibility can also be an outcome of the screening procedure. In addition, any form of screening non-response (non-contact, refusal, other non-response) led to classifying a household as having unknown eligibility<sup>6</sup>. Due to the unavailability of information on age from the sampling frame, the fraction of unknown eligibility is also highest in these countries. In countries where information on age is available from the sampling frame, households without any contact attempt are considered to be of unknown eligibility.

Figure 1: Baseline/refreshment samples in Wave 1 by classification of sample units



<sup>5</sup> Ireland is missing in Figure 2, because we have not received all necessary gross sample information yet. Consequently, we have not calculated response rates in the next section.

<sup>6</sup> In Austria, screening non-response leading to unknown eligibility and post-screening ineligibility could not be unambiguously separated from each other in Wave 4 (see Figure 3).

Figure 2: Baseline/refreshment samples in Wave 2 by classification of sample units

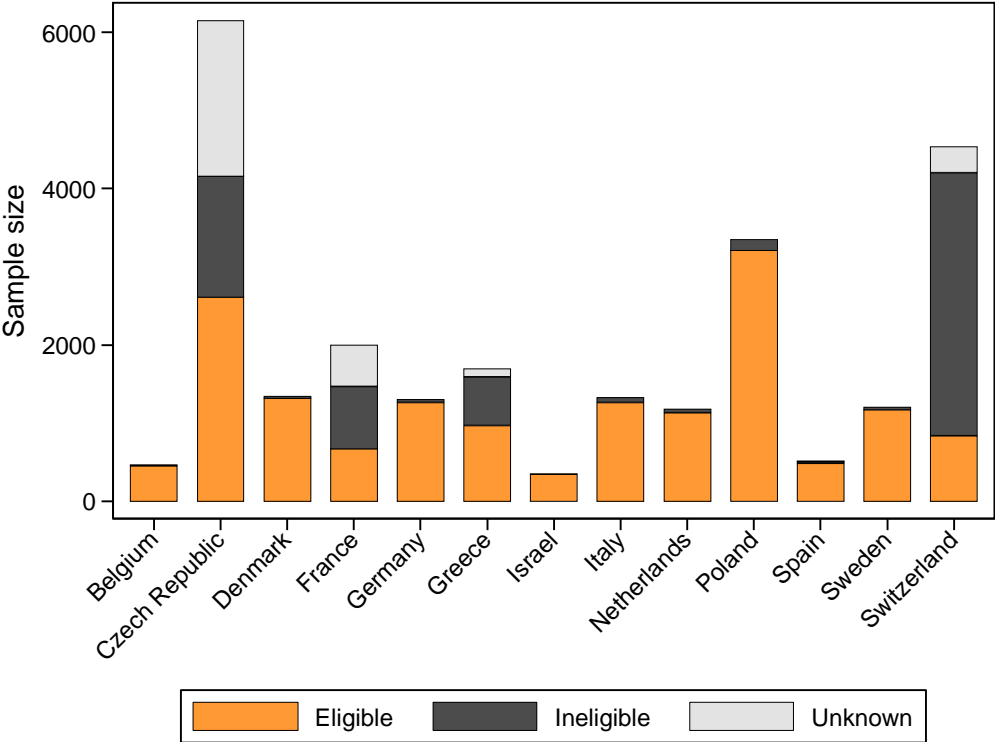


Figure 3: Baseline/refreshment samples in Wave 4 by classification of sample units

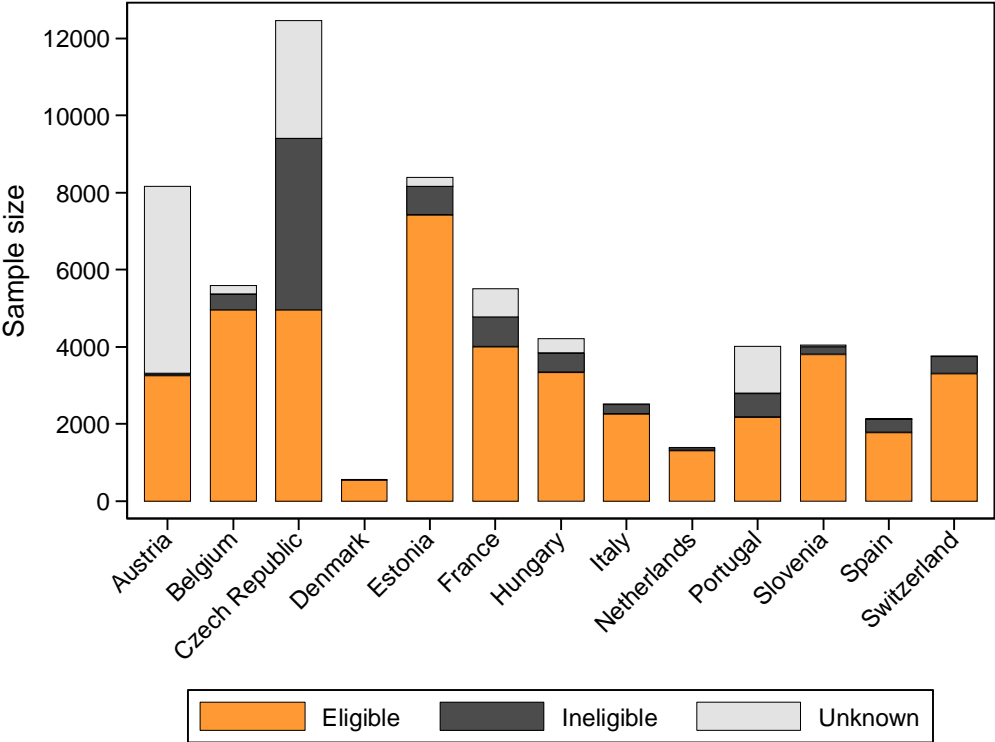




Figure 4: Baseline/refreshment samples in Wave 5 by classification of sample units

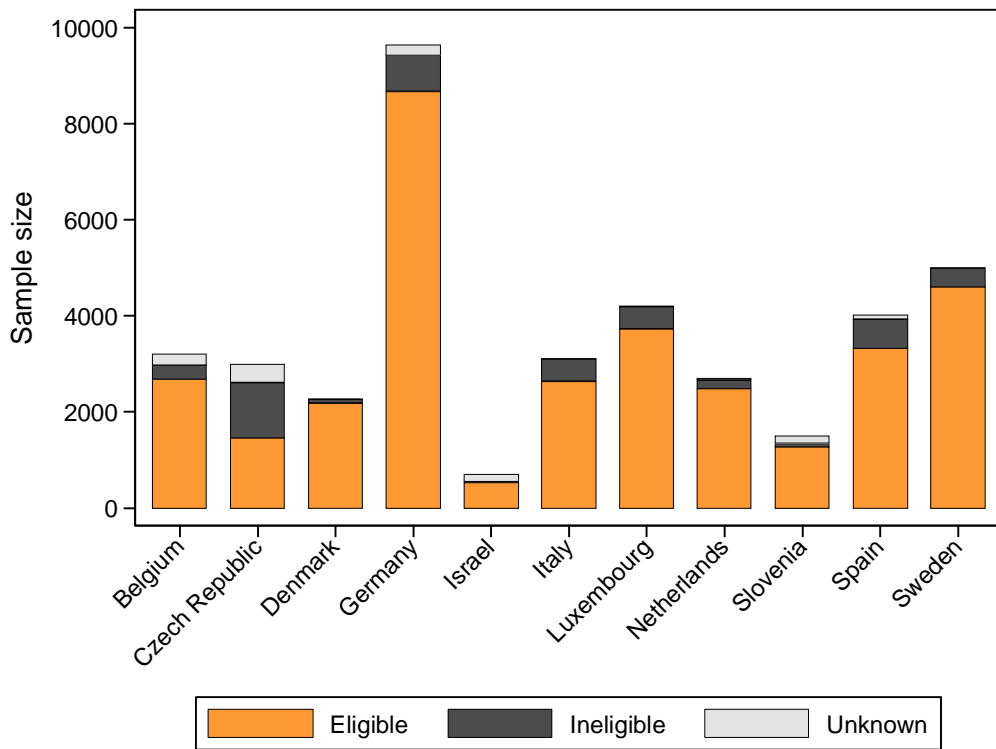
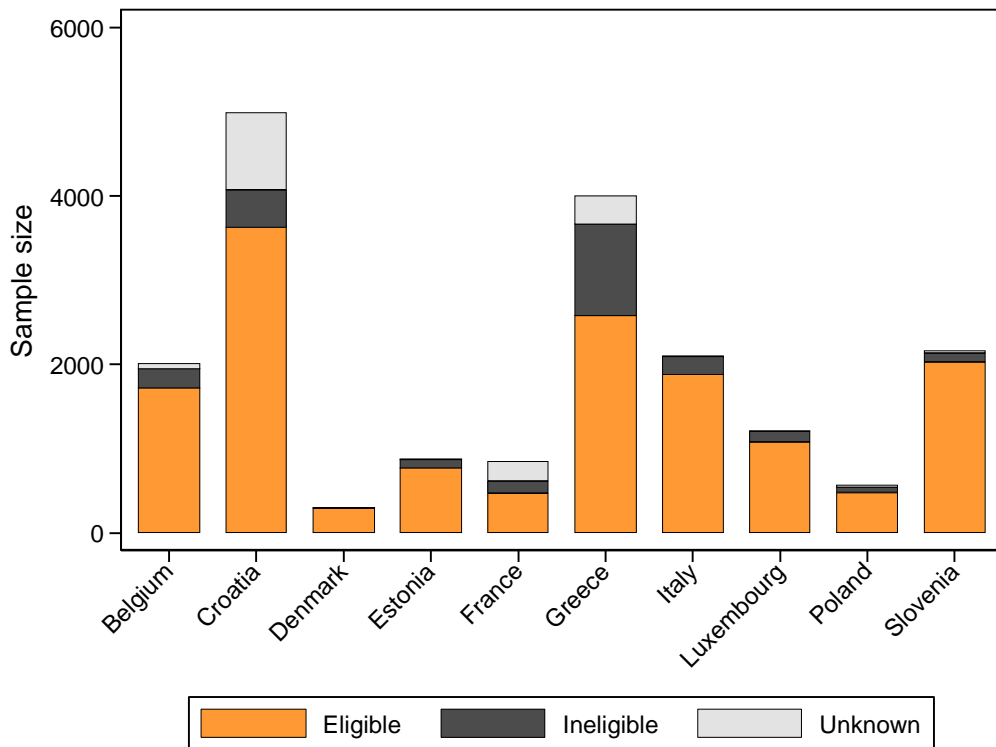


Figure 5: Baseline/refreshment samples in Wave 6 by classification of sample units



#### 4. Survey participation in the SHARE baseline and refreshment samples

With respect to the participatory behavior of respondents in their first (baseline/refreshment) interview, the following tables based on Release 6.0.0 provide an overview about the number of successful interviews – both at the household level (subsection 4.1) and the individual level (subsection 4.2). There are several ways in which response rates can be calculated, depending on how cases of unknown eligibility are handled. They can be considered as entirely eligible, partially eligible, or entirely ineligible. Following the AAPOR guidelines<sup>7</sup>, these differences correspond to a number of slightly different response rates whose definitions are given below and which are presented in the next subsections.

$$RR1 = \frac{I}{(I+P) + (R+NC+O) + (UH+UO)}$$

Response Rate 1 (RR1), or the minimum response rate, is the number of complete interviews (I) divided by the number of interviews (complete (I) plus partial (P)<sup>8</sup>) plus the number of non-interviews (refusal and break-off (R) plus non-contacts (NC) plus others (O)) plus all cases of unknown eligibility (unknown if housing unit exists (UH) plus unknown, other (UO)).

$$RR3 = \frac{I}{(I+P) + (R+NC+O) + e(UH+UO)}$$

Response Rate 3 (RR3) discounts the number of households with unknown eligibility by weighting it with the proportion of cases actually eligible. In SHARE, *e* is estimated as the fraction of eligible units among the cases with known eligibility, which assumes that the fraction of eligible units does not depend on whether the eligibility status is known or not.

---

<sup>7</sup> Response rate definitions of this document pertain to AAPOR Standard Response Rates Reference: The American Association for Public Opinion Research. 2016. *Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys*. 9<sup>th</sup> edition. URL (4 December 2017):

[http://www.aapor.org/AAPOR\\_Main/media/publications/Standard-Definitions20169theditionfinal.pdf](http://www.aapor.org/AAPOR_Main/media/publications/Standard-Definitions20169theditionfinal.pdf).

<sup>8</sup> In SHARE, partial interviews are considered complete if all applicable modules including the interviewer observations (IV module) at the very end of the CAPI are conducted.

$$RR5 = \frac{I}{(I+P) + (R+NC+O)}$$

Response Rate 5 (RR5) is either a special case of RR3 in that it assumes that  $e=0$  (i.e. that there are no eligible cases among the cases of unknown eligibility) or the rare case in which there are no cases of unknown eligibility. In this respect, RR5 represents the upper bound of the presented response rates.

The idea behind presenting not only one but several response rates is that countries with different sampling frames can be better compared as some need a screening procedure to determine the eligibility status while others need no initial screening. Generally, countries that need to screen for age-eligibility show lower response rates when cases of unknown eligibility are counted as eligible (RR1), because this constitutes an additional step for realizing an interview. The opposite is true with respect to RR5. In this scenario, response rates might be overestimated as the assumption of counting cases of unknown eligibility as entirely ineligible is not very plausible in countries that need to screen for age-eligibility. Therefore, for these countries RR1 as well as RR5 are inadequate – especially when response rates are compared between countries with different sampling frames. In this respect, counting cases of unknown eligibility as partially eligible (RR3) might be more suitable for comparisons of response rates between countries that need to screen for age-eligibility and those that have a priori information on age.

#### **4.1 Household participation**

The following tables show the number of households with at least one interview as well as the different household response rates of the baseline/refreshment samples by country. As can be seen, the variation across countries is considerable. It is mainly caused by differences in

sampling frames and the need to screen for age-eligibility as mentioned above, but also changes of survey agencies collecting the sample, their fieldwork procedures as well as legal restrictions with regard to refusal conversion, and the general survey climate (e.g. Kneip, et al., 2015; Loosveldt & Joye, 2016). In addition, the sampling structure with respondents aged 50 years and older as well as frequently rather strict requirements regarding incentives and interviewer payment schemes that are not under the control of SHARE makes it very difficult to compare the presented rates with other, non-European surveys. Overall, most of the rates are in line with or even above the numbers of comparable surveys in the same time frame.

Table 2: Breakdown of all baseline/refreshment samples in Wave 1 by country

Country	Households with $\geq 1$ interview	Household response rate (RR1)	Household response rate (RR3)	Household response rate (RR5)
Austria <sup>a</sup>	1173	36,7%	44,5%	52,1%
Belgium <sup>a</sup>	2519	34,3%	35,0%	40,3%
Denmark	1175	63,2%	63,3%	67,1%
France <sup>a</sup>	2053	58,2%	73,8%	97,6%
Germany	1993	57,7%	57,7%	58,2%
Greece <sup>a</sup>	1981	54,3%	59,5%	68,8%
Israel	1668	64,4%	64,5%	64,9%
Italy	1772	52,6%	52,8%	55,2%
Netherlands	1946	60,9%	60,9%	61,3%
Spain	1686	50,2%	50,2%	51,1%
Sweden	2137	53,7%	53,8%	53,9%
Switzerland <sup>a</sup>	706	32,0%	37,6%	44,0%

Note: <sup>a</sup> Screening country.

Table 3: Breakdown of all baseline/refreshment samples in Wave 2 by country

Country	Households with >=1 interview	Household response rate (RR1)	Household response rate (RR3)	Household response rate (RR5)
Belgium <sup>a</sup>	190	42,1%	42,1%	42,1%
Czech Republic <sup>a</sup>	1888	41,0%	48,8%	72,3%
Denmark	861	65,2%	65,2%	65,2%
France <sup>a</sup>	635	53,0%	69,9%	95,3%
Germany	614	48,8%	48,8%	48,8%
Greece <sup>a</sup>	560	52,2%	54,4%	58,3%
Israel	271	77,9%	77,9%	78,6%
Italy	640	51,0%	51,0%	51,0%
Netherlands	536	47,5%	47,5%	47,5%
Poland	1770	55,2%	55,2%	55,2%
Spain	282	58,4%	58,4%	58,7%
Sweden <sup>b</sup>	416	35,7%	35,7%	35,7%
Switzerland <sup>a</sup>	547	47,0%	61,0%	65,8%

Note: <sup>a</sup> Screening country.

<sup>b</sup> Gross sample was partly drawn in Wave 1 (2004).

Table 4: Breakdown of all baseline/refreshment samples in Wave 4 by country

Country	Households with >=1 interview	Household response rate (RR1)	Household response rate (RR3)	Household response rate (RR5)
Austria <sup>a</sup>	3159	39,0%	39,3%	97,1%
Belgium	2142	40,8%	40,9%	42,7%
Czech Republic <sup>a</sup>	2855	35,6%	43,4%	57,5%
Denmark	278	51,6%	51,6%	51,6%
Estonia	4655	61,0%	61,1%	62,8%
France <sup>a</sup>	2593	54,9%	56,3%	64,8%
Hungary	2020	54,5%	55,2%	60,6%
Italy	940	41,6%	41,6%	41,6%
Netherlands	535	40,0%	40,0%	41,1%
Portugal <sup>a</sup>	1341	39,4%	42,8%	61,9%
Slovenia	2113	55,0%	55,0%	55,6%
Spain	1120	63,1%	63,1%	63,3%
Switzerland	1816	54,9%	55,0%	55,0%

Note: <sup>a</sup> Screening country.

Table 5: Breakdown of all baseline/refreshment samples in Wave 5 by country

Country	Households with $\geq 1$ interview	Household response rate (RR1)	Household response rate (RR3)	Household response rate (RR5)
Belgium	993	34,0%	34,3%	36,7%
Czech Republic <sup>a</sup>	903	48,9%	54,0%	62,1%
Denmark	1300	59,5%	59,5%	59,6%
Germany	3029	34,1%	34,2%	34,9%
Israel	353	51,5%	51,9%	67,5%
Italy	1143	43,4%	43,4%	43,4%
Luxembourg	1214	32,5%	32,5%	32,7%
Netherlands	1234	48,9%	48,9%	49,7%
Slovenia	582	40,8%	41,0%	45,8%
Spain	2071	60,4%	60,6%	62,2%
Sweden	1813	39,3%	39,3%	39,4%

Note: <sup>a</sup> Screening country.

Table 6: Breakdown of all baseline/refreshment samples in Wave 6 by country

Country	Households with $\geq 1$ interview	Household response rate (RR1)	Household response rate (RR3)	Household response rate (RR5)
Belgium	785	43,9%	44,0%	45,1%
Croatia	1588	34,9%	35,7%	43,7%
Denmark	166	57,2%	57,2%	57,2%
Estonia	435	55,8%	55,9%	56,3%
France <sup>a</sup>	233	33,4%	36,3%	49,8%
Greece <sup>a</sup>	1790	61,3%	63,5%	69,3%
Italy	845	44,9%	44,9%	45,0%
Luxembourg	325	30,3%	30,3%	30,3%
Poland	246	50,0%	50,2%	51,8%
Slovenia	924	45,1%	45,1%	45,6%

Note: <sup>a</sup> Screening country.

## 4.2 Individual participation

While for the above reported numbers households were considered as participating if at least one eligible household member was successfully interviewed, studying the response behavior of eligible individuals requires defining the response rate as the proportion of eligible individuals that actually respond. Again several ways of computing individual response rates are possible, depending on how households with unknown eligibility are treated. In addition, the number of eligible individuals in households with an incomplete CV has to be determined.

These households may or may not contain eligible individuals and different assumptions about their number therefore directly affect the response rate. As before, a fraction  $e$  is calculated, based on the assumption that the average number of eligible persons in a household with or without a complete CV is the same in each country. The estimated average number of eligible individuals per household is shown in each of the following tables together with the total number of individual interviews separated by gender and age groups. Individual response rates (RR1, RR3, and RR5) are then calculated using the formulas above and multiplying the respective denominator by the estimated number of eligible persons per household. Compared to the household response rates presented before, it can be seen that individual response rates are actually only marginally smaller. This indicates that in many cases interviewers managed to actually interview all eligible persons within a household.

Table 7: Breakdown of all baseline/refreshment samples in Wave 1 by country, sex, and age

Country	Total	Male	Female	<50	50 to 64	65 to 74	75+	Estimated number of eligible persons per household	Individual response rate (RR1)	Individual response rate (RR3)	Individual response rate (RR5)	Within household individual response rate
Austria <sup>a</sup>	1569	647	922	41	775	449	304	1,53	32,1%	38,9%	45,5%	87,4%
Belgium <sup>a</sup>	3810	1734	2076	171	1984	984	671	1,65	31,0%	31,6%	36,4%	90,4%
Denmark	1706	772	934	92	917	368	329	1,56	58,8%	58,9%	62,5%	93,1%
France <sup>a</sup>	3122	1356	1766	157	1605	744	616	1,60	55,3%	70,1%	92,7%	95,0%
Germany	2997	1373	1624	68	1562	884	483	1,74	49,8%	49,9%	50,3%	86,4%
Greece <sup>a</sup>	2897	1242	1655	231	1453	715	498	1,58	50,2%	55,1%	63,6%	92,6%
Israel	2450	1073	1377	111	1308	630	401	1,75	54,1%	54,2%	54,5%	83,9%
Italy	2553	1130	1423	47	1341	785	380	1,82	41,6%	41,8%	43,7%	79,2%
Netherlands	2968	1363	1605	96	1702	711	459	1,73	53,7%	53,7%	54,1%	88,2%
Spain	2316	968	1348	40	1045	665	566	1,85	37,2%	37,3%	37,9%	74,3%
Sweden	3049	1411	1638	53	1590	814	592	1,69	45,4%	45,4%	45,5%	84,4%
Switzerland <sup>a</sup>	997	452	545	43	501	249	204	1,62	27,9%	32,8%	38,3%	87,2%

Note: <sup>a</sup> Screening country.



Table 8: Breakdown of all baseline/refreshment samples in Wave 2 by country, sex, and age

Country	Total	Male	Female	<50	50 to 64	65 to 74	75+	Estimated number of eligible persons per household	Individual response rate (RR1)	Individual response rate (RR3)	Individual response rate (RR5)	Within household individual response rate
Belgium <sup>a</sup>	267	118	149	36	169	36	26	1,57	37,7%	37,7%	37,7%	89,5%
Czech Republic <sup>a</sup>	2750	1154	1596	101	1554	664	431	1,59	37,5%	44,7%	66,2%	91,6%
Denmark	1314	587	727	64	776	286	188	1,70	58,6%	58,6%	58,6%	89,8%
France <sup>a</sup>	903	401	502	47	513	185	158	1,65	45,6%	60,2%	82,2%	86,2%
Germany	900	414	486	31	506	222	141	1,70	42,1%	42,1%	42,1%	86,2%
Greece <sup>a</sup>	935	418	517	104	541	191	99	1,73	50,4%	52,5%	56,2%	96,5%
Israel	411	164	247	3	113	136	159	1,60	73,8%	73,8%	74,5%	94,8%
Italy	996	470	526	45	514	302	135	1,77	44,8%	44,8%	44,8%	87,9%
Netherlands	763	352	411	28	532	125	78	1,79	37,8%	37,8%	37,8%	79,5%
Poland	2466	1075	1391	54	1396	594	422	1,73	44,4%	44,4%	44,4%	80,5%
Spain	432	198	234	29	260	79	64	1,77	50,5%	50,5%	50,8%	86,5%
Sweden <sup>b</sup>	534	238	296	9	277	136	112	1,67	27,4%	27,4%	27,4%	76,9%
Switzerland <sup>a</sup>	724	311	413	29	433	151	111	1,63	38,2%	49,5%	53,5%	81,2%

Note: <sup>a</sup> Screening country.

<sup>b</sup> Gross sample was partly drawn in Wave 1 (2004).

Table 9: Breakdown of all baseline/refreshment samples in Wave 4 by country, sex, and age

Country	Total	Male	Female	<50	50 to 64	65 to 74	75+	Estimated number of eligible persons per household	Individual response rate (RR1)	Individual response rate (RR3)	Individual response rate (RR5)	Within household individual response rate
Austria <sup>a</sup>	4447	1886	2561	196	2314	1280	657	1,53	35,9%	36,2%	89,4%	92,0%
Belgium	2950	1324	1626	147	1890	495	418	1,55	35,8%	35,9%	37,5%	87,7%
Czech Republic <sup>a</sup>	4163	1746	2417	167	2206	1108	676	1,57	33,1%	40,3%	53,4%	92,9%
Denmark	437	213	224	50	385	2	0	1,78	45,5%	45,5%	45,5%	88,3%
Estonia	6864	2766	4098	144	3171	2060	1489	1,54	58,4%	58,5%	60,1%	95,7%
France <sup>a</sup>	3587	1549	2038	206	1982	692	707	1,58	48,0%	49,3%	56,8%	87,6%
Hungary	3072	1318	1754	89	1689	820	474	1,58	52,4%	53,1%	58,3%	96,3%
Italy	1442	658	784	57	825	339	221	1,72	37,1%	37,1%	37,1%	89,2%
Netherlands	773	346	427	27	496	160	90	1,67	34,6%	34,6%	35,6%	86,5%
Portugal <sup>a</sup>	2020	866	1154	76	1060	553	331	1,68	35,3%	38,4%	55,5%	89,7%
Slovenia	2749	1193	1556	57	1472	689	531	1,66	43,1%	43,1%	43,6%	78,4%
Spain	1781	800	981	69	917	409	386	1,69	59,4%	59,4%	59,5%	94,1%
Switzerland	2601	1196	1405	114	1433	664	390	1,69	46,6%	46,6%	46,6%	84,7%

Note: <sup>a</sup> Screening country.

Table 10: Breakdown of all baseline/refreshment samples in Wave 5 by country, sex, and age

Country	Total	Male	Female	<50	50 to 64	65 to 74	75+	Estimated number of eligible persons per household	Individual response rate (RR1)	Individual response rate (RR3)	Individual response rate (RR5)	Within household individual response rate
Belgium	1394	651	743	60	842	272	220	1,65	28,7%	29,0%	30,9%	84,2%
Czech Republic <sup>a</sup>	1319	551	768	42	665	407	205	1,57	45,5%	50,2%	57,8%	93,0%
Denmark	1928	887	1041	75	1067	522	264	1,71	51,6%	51,6%	51,6%	86,7%
Germany	4550	2125	2425	178	2610	1088	674	1,69	30,3%	30,4%	31,1%	88,9%
Israel	538	252	286	36	481	11	10	1,77	44,4%	44,7%	58,1%	86,1%
Italy	1712	768	944	65	938	435	273	1,61	40,4%	40,4%	40,4%	93,0%
Luxembourg	1610	755	855	24	939	391	255	1,69	25,5%	25,5%	25,6%	78,5%
Netherlands	1693	773	920	27	967	445	252	1,67	40,2%	40,2%	40,9%	82,2%
Slovenia	748	317	431	19	393	182	154	1,62	32,4%	32,5%	36,3%	79,3%
Spain	3309	1559	1750	104	1558	759	888	1,70	56,7%	57,0%	58,4%	94,0%
Sweden	2591	1240	1351	44	1188	900	458	1,68	33,5%	33,5%	33,5%	85,1%

Note: <sup>a</sup> Screening country.

Table 11: Breakdown of all baseline/refreshment samples in Wave 6 by country, sex, and age

Country	Total	Male	Female	<50	50 to 64	65 to 74	75+	Estimated number of eligible persons per household	Individual response rate (RR1)	Individual response rate (RR3)	Individual response rate (RR5)	Within household individual response rate
Belgium	1064	474	590	80	656	183	144	1,60	36,8%	36,9%	37,8%	83,8%
Croatia	2494	1096	1398	66	1365	681	377	1,64	33,4%	34,1%	41,9%	95,7%
Denmark	248	122	126	39	208	1	0	1,81	47,3%	47,3%	47,3%	82,7%
Estonia	646	294	352	65	578	3	0	1,60	52,0%	52,0%	52,4%	93,1%
France <sup>a</sup>	317	153	164	36	271	6	4	1,60	28,4%	30,9%	42,4%	85,1%
Greece <sup>a</sup>	2678	1160	1518	138	1473	553	512	1,60	57,2%	59,2%	64,6%	93,2%
Italy	1238	565	673	52	756	289	138	1,58	41,7%	41,7%	41,8%	92,9%
Luxembourg	413	181	232	9	247	111	46	1,71	22,5%	22,5%	22,5%	74,3%
Poland	365	173	192	25	338	2	0	1,69	43,9%	44,1%	45,4%	87,8%
Slovenia	1323	588	735	18	649	384	271	1,68	38,5%	38,5%	38,9%	85,4%

Note: <sup>a</sup> Screening country.

## 5. Survey participation in the SHARE longitudinal samples

Thus far, we have looked at survey participation of households and individuals in their first interview suppressing the longitudinal dimension of SHARE. This is the focus of the following section that investigates participation patterns of individuals who have been successfully interviewed before. To clearly distinguish this from response rates in baseline or refreshment samples, we now use the term retention when it comes to the participation of individuals from the longitudinal sample. For a panel study like SHARE its value is strongly determined by the long-term participation of panel members over waves. Only if persons can be observed multiple times as time passes by, it is possible to understand their individual ageing processes and to learn how respondents adapt to the changing environment over time. It is therefore of utmost importance to keep former respondents participating in the survey in order to exploit the full potential of SHARE regarding longitudinal analyses and conclusions. As can be seen, this goal is achieved quite well considering the difficulties SHARE is facing with respect to the sample structure of people aged 50 years and over, where natural mortality is a bigger issue than in most other surveys.

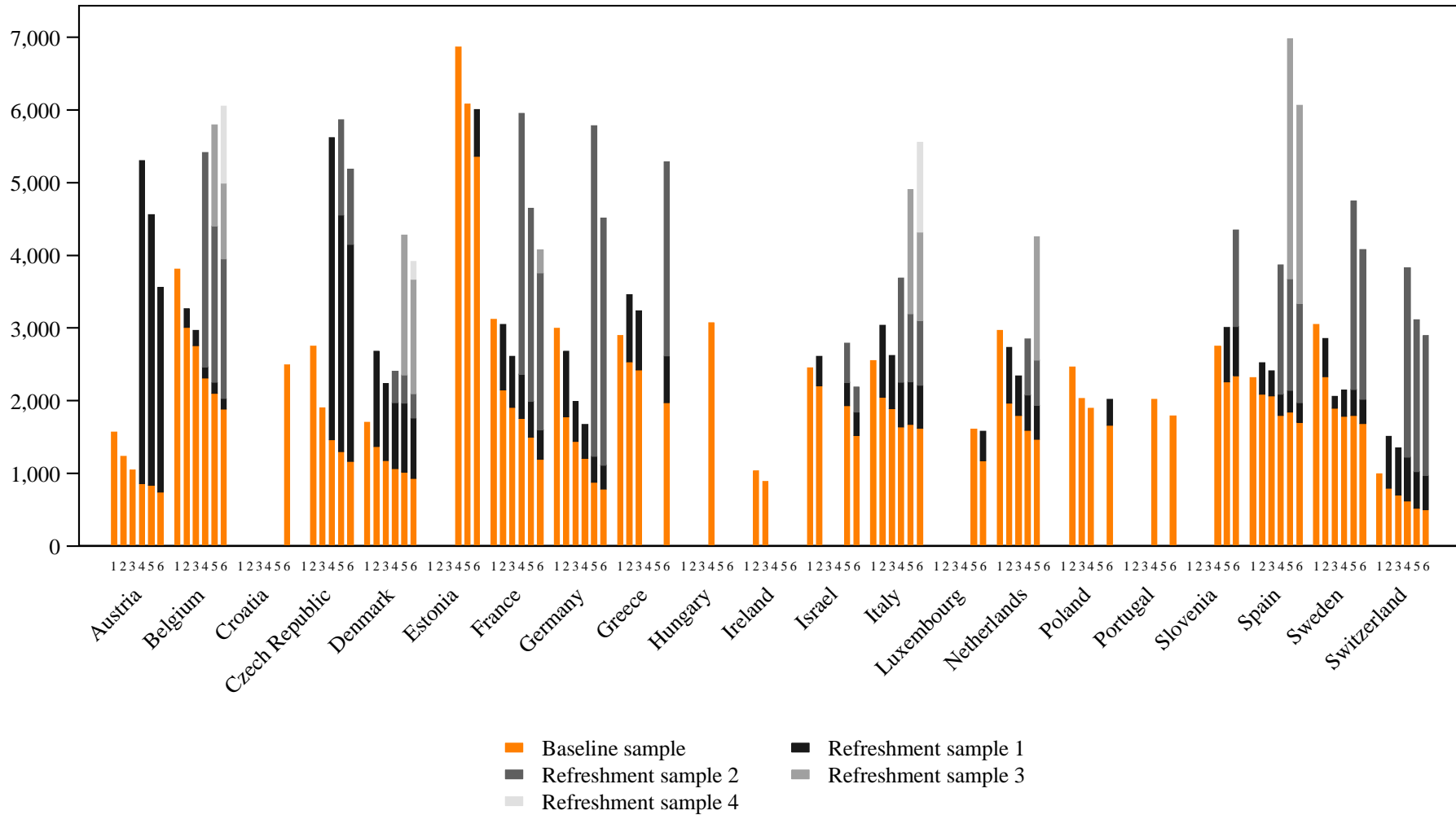
After several waves, various types of retention rates can be calculated conditional on previous participation that might differ between countries due to differences in the sample composition. Therefore, the longitudinal samples at the individual level in SHARE are divided into four subsamples for better comparisons: *Subsample A* includes all respondents who participated in the previous wave of the SHARE survey. *Subsample B* includes those respondents who ever participated in SHARE, but not in the previous wave, and live in a household where at least one household member participated in the previous wave. *Subsample C* includes respondents who ever participated, but not in the previous wave, and do not live in a household where at least one household member participated in the previous wave. Finally, *subsample D* includes missing and new partners who have not participated in SHARE before.

Based on these definitions, individual-level retention in the narrow sense is given by the proportion of respondents in subsample A, excluding any form of recovery (see subsection 5.1). Additionally, retention in subsamples B and C informs about how well SHARE managed to get respondents back in the study who had already dropped out, while retention in subsample D is informative with respect to eligible persons in longitudinal households never interviewed before (i.e. either new sample members or eligible sample members for which reluctance to participate was overcome after refusals in previous waves). We thus present combined retention and recovery rates that include former respondents (subsection 5.2) as well as new or missing partners (subsection 5.3). While the latter focus on the overall sample size development in SHARE, retention including former respondents is the most informative with respect to evaluate the success of maintaining panel respondents in the study.

To start with, Figure 6 provides an overview about the development of the number of successful interviews based on Release 6.0.0 in all SHARE samples over time, hence combining retention and recovery. In addition, Table 30 in the Appendix differentiates between main and end-of-life interviews that are also the focus of subsection 5.4. As others (e.g. Blom & Schröder, 2011; Kneip, et al., 2015) have shown before, attrition tends to be higher when panel members were approached for their first re-interview than in later waves. One consequence of rather high attrition rates is that the number of cases in the panel decreases, effectively reducing the power of longitudinal analyses. Furthermore, attrition from the panel might affect the sample composition, as certain groups of respondents might be more likely to drop out of the panel than others. However, previous analyses (Kneip, et al., 2015) found only little if any evidence for attrition bias in SHARE. Only the oldest-old show a somewhat higher probability to drop out, which actually might rather be a problem of mortality than severe bias. Consequently, SHARE offers calibrated longitudinal weights that

account for mortality of the original target population across waves (see Bergmann, et al., forthcoming for details on the construction of these weights).

Figure 6: Sample development in SHARE





## **5.1 Wave-to-wave retention excluding recovery**

The following tables show the wave-to-wave participatory behavior of panel respondents who participated in the previous wave not distinguishing between main and end-of-life interviews. Recovered respondents who were brought back into the survey after missing one or more wave(s) are thus excluded (see subsection 5.2 and 5.3 for retention rates including recovery). Missing entries are due to the fact that not all countries participated in every wave. Greece, for example, had dropped from SHARE in Wave 4 due to the economic crisis, but could be recovered for participation in Wave 6. Accordingly, the retention rate reported for Greece in Wave 6 (Table 12, last column) refers to respondents last participating in Wave 3. This has to be considered when comparing rates across countries: Since more time has passed between two consecutive participations, the realization of an interview is more difficult in this case compared to others. Gaps with respect to Israel, Poland, and Portugal have to be interpreted analogously. In addition, the interviews from the Netherlands in Wave 6 have been released separately and cannot be compared, because they were done in a different mode. Consequently, these rates are not shown.

Moreover, it can be seen that – similar to section 4 on response rates – there is some variation in individual retention rates across countries. Again, a mixture of differences in sampling frames, sample composition (i.e. the proportion of newly recruited panel members via refreshment samples), fieldwork procedures, as well as legal restrictions between countries to approach respondents refusing in a previous wave, are the main causes for this variation. Especially the last aspect plays a key role as some countries have very strict data security requirements that complicate future participation of interviewed persons. In Germany, for example, all respondents have to be asked at the end of their first SHARE interview whether they agree in writing that their addresses can be stored for future re-contact. This strict legal requirement does not exist in this form in any other SHARE country and

might explain the lower retention compared to other countries (see Table 12 and Table 13). Another reason applies to the Swedish Wave 2 sample (see Table 13). Here, the sample could not be entirely approached in Wave 3, which explains the low retention between Wave 2 and Wave 3. Fortunately, most of these cases could be recovered in Wave 4, which results in a much higher retention between Wave 3 and Wave 4 and its stabilization afterwards (see also Table 17 and Table 21). What is remarkable in this context is the increase in retention of long-term panel members, suggesting a high overall panel stability that is comparable to other studies with even shorter time intervals between interviews.

Table 12: Wave-to-wave retention rates of all Wave 1 (2004) samples by country

Country	Retention (wave 1-2)	Retention (wave 2-3)	Retention (wave 3-4)	Retention (wave 4-5)	Retention (wave 5-6)
Austria	74,4%	71,3%	74,6%	78,3%	81,4%
Belgium	76,3%	83,9%	80,6%	84,4%	85,7%
Denmark	77,0%	80,2%	85,2%	89,6%	88,3%
France	67,0%	76,2%	82,4%	72,5%	71,1%
Germany	55,1%	73,6%	77,6%	68,3%	89,5%
Greece	86,3%	84,1%			76,1%
Israel	75,6%			82,6%	74,8%
Italy	71,4%	87,1%	84,8%	88,0%	89,3%
Netherlands	62,3%	75,1%	78,9%	85,1%	
Spain	68,6%	83,3%	80,1%	89,2%	88,2%
Sweden	70,6%	70,6%	73,4%	79,4%	85,2%
Switzerland	74,6%	83,5%	87,0%	86,3%	89,8%

Table 13: Wave-to-wave retention rates of all Wave 2 (2006) samples by country

Country	Retention (Wave 2-3)	Retention (Wave 3-4)	Retention (Wave 4-5)	Retention (Wave 5-6)
Belgium	76,8%	72,8%	80,8%	82,4%
Czech Republic	66,3%	74,7%	85,3%	86,8%
Denmark	78,5%	81,2%	90,0%	87,1%
France	70,7%	75,8%	66,6%	70,9%
Germany	58,4%	76,3%	71,3%	91,0%
Greece	86,7%			73,1%
Ireland	69,2%			
Israel			78,3%	86,4%
Italy	71,6%	80,4%	81,1%	87,2%
Netherlands	65,3%	76,9%	85,7%	
Poland	73,5%	88,7%		85,8%
Spain	74,5%	76,2%	88,4%	85,9%
Sweden <sup>a</sup>	39,3%	75,3%	76,3%	78,1%
Switzerland	83,7%	88,9%	83,8%	89,4%

<sup>a</sup> Sample could not be entirely approached in Wave 3.

Table 14: Wave-to-wave retention rates of all Wave 4 (2010) samples by country

<b>Country</b>	<b>Retention (Wave 4-5)</b>	<b>Retention (Wave 5-6)</b>
Austria	80,3%	71,1%
Belgium	70,3%	79,5%
Czech Republic	74,3%	84,0%
Denmark	85,6%	84,8%
Estonia	85,5%	84,6%
France	69,5%	73,0%
Italy	60,4%	82,1%
Netherlands	76,7%	
Portugal		80,3%
Slovenia	73,3%	85,4%
Spain	82,6%	84,7%
Switzerland	77,1%	85,6%

Table 15: Wave-to-wave retention rates of all Wave 5 (2012) samples by country

<b>Country</b>	<b>Retention (Wave 5-6)</b>
Belgium	70,7%
Czech Republic	75,7%
Denmark	79,6%
Germany	73,3%
Israel	62,1%
Italy	68,6%
Luxembourg	69,6%
Slovenia	80,9%
Spain	77,6%
Sweden	76,4%

## **5.2 Wave-to-wave retention including recovery of former respondents**

In addition to the previous subsection, the following tables show the wave-to-wave participatory behavior of respondents irrespectively of their former participation patterns. Respondents who missed one or more wave(s) are hence included here, which explains why some rates are higher than 100 per cent. Again, it can be seen that retention increases remarkable over time in all countries resulting in very high overall panel stability after several waves.

Table 16: Wave-to-wave retention rates incl. recovery of all Wave 1 (2004) samples by country

Country	Retention plus recovery (Wave 1-2)	Retention plus recovery (Wave 2-3)	Retention plus recovery (Wave 3-4)	Retention plus recovery (Wave 4-5)	Retention plus recovery (Wave 5-6)
Austria	74,4%	82,0%	84,0%	102,5%	97,4%
Belgium	76,3%	91,5%	86,1%	94,3%	93,7%
Denmark	77,0%	88,0%	94,8%	103,7%	98,8%
France	67,0%	89,8%	95,4%	89,2%	83,1%
Germany	55,1%	81,3%	86,8%	74,4%	91,1%
Greece	86,3%	95,2%			85,8%
Israel	75,6%			91,1%	85,3%
Italy	71,4%	92,6%	89,0%	104,0%	101,5%
Netherlands	62,3%	90,9%	90,0%	94,4%	
Spain	68,6%	96,8%	90,6%	108,1%	101,1%
Sweden	70,6%	81,5%	96,5%	108,4%	102,0%
Switzerland	74,6%	87,9%	89,5%	86,8%	98,6%

Table 17: Wave-to-wave retention rates incl. recovery of all Wave 2 (2006) samples by country

Country	Retention plus recovery (Wave 2-3)	Retention plus recovery (Wave 3-4)	Retention plus recovery (Wave 4-5)	Retention plus recovery (Wave 5-6)
Belgium	76,8%	75,7%	92,9%	97,9%
Czech Republic	66,3%	77,6%	94,0%	96,1%
Denmark	78,5%	86,4%	107,3%	91,6%
France	70,7%	87,1%	79,8%	84,6%
Germany	58,4%	86,1%	75,1%	92,1%
Greece	86,7%			79,1%
Ireland	69,2%			
Israel			78,3%	104,0%
Italy	71,6%	85,2%	95,3%	103,4%
Netherlands	65,3%	88,5%	94,1%	
Poland	73,5%	95,6%		94,7%
Spain	74,5%	87,3%	105,8%	97,8%
Sweden <sup>a</sup>	39,3%	162,0%	91,8%	94,0%
Switzerland	83,7%	91,2%	84,0%	95,7%

<sup>a</sup> Sample could not be entirely approached in Wave 3.

Table 18: Wave-to-wave retention rates incl. recovery of all Wave 4 (2010) samples by country

Country	Retention plus recovery (Wave 4-5)	Retention plus recovery (Wave 5-6)
Austria	80,3%	76,8%
Belgium	70,3%	90,0%
Czech Republic	74,3%	93,7%
Denmark	85,6%	86,1%
Estonia	85,5%	92,4%
France	69,5%	80,5%
Italy	60,4%	95,5%
Netherlands	76,7%	
Portugal		80,3%
Slovenia	73,3%	98,6%
Spain	82,6%	93,1%
Switzerland	77,1%	92,0%

Table 19: Wave-to-wave retention rates incl. recovery of all Wave 5 (2012) samples by country

Country	Retention plus recovery (Wave 5-6)
Belgium	70,7%
Czech Republic	75,7%
Denmark	79,6%
Germany	73,3%
Israel	62,1%
Italy	68,6%
Luxembourg	69,6%
Slovenia	80,9%
Spain	77,6%
Sweden	76,4%

### 5.3 Wave-to-wave retention including recovery of former respondents and new/missing partners

SHARE explores not only the original samples in each participating country from the first wave on, but also household members that enter the survey at later points in time, for example, when eligible persons move into SHARE households or partners do not participate from the beginning. The following tables hence present the wave-to-wave participatory behavior of respondents including recovery as well as new/missing partners and thus provide

additional information about the sample size development in SHARE. Again, retention stabilizes after few waves at a very high level indicating that the survey succeeds in keeping respondents participating over a remarkable long time despite their, on average, advanced age.

Table 20: Wave-to-wave retention rates incl. recovery and new/missing partners of all Wave 1 (2004) samples by country

Country	Retention plus recovery (Wave 1-2)	Retention plus recovery (Wave 2-3)	Retention plus recovery (Wave 3-4)	Retention plus recovery (Wave 4-5)	Retention plus recovery (Wave 5-6)
Austria	78,8%	87,4%	85,4%	103,7%	98,0%
Belgium	78,7%	93,2%	86,6%	94,8%	94,1%
Denmark	80,1%	88,9%	95,7%	103,9%	99,4%
France	68,7%	91,5%	96,4%	90,0%	83,7%
Germany	59,4%	83,2%	87,2%	75,2%	91,6%
Greece	87,2%	97,7%			86,2%
Israel	89,8%			94,5%	86,5%
Italy	80,0%	94,9%	89,9%	107,2%	103,1%
Netherlands	66,3%	93,7%	92,3%	95,2%	
Spain	90,3%	103,5%	92,6%	109,8%	102,1%
Sweden	76,3%	83,9%	98,9%	110,5%	103,2%
Switzerland	79,0%	89,8%	91,0%	87,5%	99,0%

Table 21: Wave-to-wave retention rates incl. recovery and new/missing partners of all Wave 2 (2006) samples by country

Country	Retention plus recovery (Wave 2-3)	Retention plus recovery (Wave 3-4)	Retention plus recovery (Wave 4-5)	Retention plus recovery (Wave 5-6)
Belgium	79,0%	78,2%	94,2%	97,9%
Czech Republic	69,2%	79,4%	94,5%	96,8%
Denmark	81,1%	88,0%	108,5%	92,4%
France	77,9%	89,9%	81,6%	86,3%
Germany	61,3%	87,2%	78,3%	94,1%
Greece	87,4%			79,3%
Ireland	86,1%			
Israel			80,8%	104,6%
Italy	73,4%	86,0%	99,2%	103,9%
Netherlands	71,0%	91,0%	98,1%	
Poland	82,4%	97,9%		95,6%
Spain	79,9%	88,3%	108,3%	97,8%
Sweden <sup>a</sup>	43,9%	232,9%	104,1%	98,2%
Switzerland	90,5%	94,3%	84,7%	96,5%

<sup>a</sup> Sample could not be entirely approached in Wave 3.

Table 22: Wave-to-wave retention rates incl. recovery and new/missing partners of all Wave 4 (2010) samples by country

Country	Retention plus recovery (Wave 4-5)	Retention plus recovery (Wave 5-6)
Austria	83,7%	77,8%
Belgium	72,8%	91,6%
Czech Republic	78,0%	95,5%
Denmark	89,0%	87,9%
Estonia	88,6%	93,2%
France	74,2%	82,6%
Italy	64,5%	98,4%
Netherlands	81,1%	
Portugal		88,8%
Slovenia	82,3%	105,6%
Spain	86,1%	93,9%
Switzerland	80,5%	93,7%

Table 23: Wave-to-wave retention rates incl. recovery and new/missing partners of all Wave 5 (2012) samples by country

Country	Retention plus recovery (Wave 5-6)
Belgium	74,5%
Czech Republic	78,9%
Denmark	81,4%
Germany	74,7%
Israel	65,4%
Italy	71,3%
Luxembourg	72,6%
Slovenia	92,1%
Spain	82,3%
Sweden	79,9%

#### 5.4 End-of-life interviews by the respondents' partner or a close relative

SHARE requests interviewers to confirm the decease of a respondent by a proxy-respondent. In case of decease, interviewers try to conduct an end-of-life interview, which mainly contains information on the circumstances of death like time and cause of death. The proxy-respondent can be a family member, a household member, a neighbor or any other person of the closer social network of the deceased respondent. Table 24 shows the number of end-of-life interviews that have been conducted in each longitudinal sample so far as well as the

percentage of end-of-life interviews that could be realized from all deceased persons, whose death is validated by the proxy-respondent.

Table 24: End-of-life interviews by country and sample

Country	Sampling wave	Number of End-of-life interviews	Percentage of End-of-life interviews from validated deceased persons
Austria	1	262	71,8%
Austria	4	206	79,2%
Belgium	1	424	71,5%
Belgium	2	19	67,9%
Belgium	4	151	61,4%
Belgium	5	20	66,7%
Czech Republic	2	334	82,9%
Czech Republic	4	314	76,6%
Czech Republic	5	49	79,0%
Denmark	1	373	82,2%
Denmark	2	165	80,5%
Denmark	4	2	50,0%
Denmark	5	36	76,6%
Estonia	4	699	76,4%
France	1	366	60,2%
France	2	61	52,1%
France	4	112	53,6%
Germany	1	196	51,4%
Germany	2	38	45,2%
Germany	5	70	49,0%
Greece	1	465	90,1%
Greece	2	80	71,4%
Israel	1	442	87,0%
Israel	2	68	89,5%
Israel	5	4	66,7%
Italy	1	431	74,6%
Italy	2	97	70,3%
Italy	4	73	76,0%
Italy	5	27	69,2%
Luxembourg	5	18	52,9%
Netherlands	1	233	57,8%
Netherlands	2	32	56,1%
Netherlands	4	13	65,0%
Poland	2	454	68,7%
Portugal	4	117	68,4%
Slovenia	4	152	61,3%
Slovenia	5	22	59,5%
Spain	1	703	76,5%
Spain	2	71	76,3%
Spain	4	160	85,1%
Spain	5	137	82,0%
Sweden	1	594	79,1%
Sweden	2	78	78,0%



Sweden	5	39	60,9%
Switzerland	1	96	72,7%
Switzerland	2	59	72,8%
Switzerland	4	82	62,1%
<i>Total</i>		<i>8644</i>	<i>74,2%</i>

## References

- AAPOR. (2016). *Standard definitions: Final dispositions of case codes and outcome rates for surveys*. 9th ed. AAPOR.
- Bergmann, M., De Luca, G., & Scherpenzeel, A. (forthcoming). Sampling design and weighting strategies in SHARE Wave 6. In A. Börsch-Supan & F. Malter (Eds.), *SHARE Wave 6: Panel innovations and collecting dried blood spots* (pp. 77-93). Munich: MEA, Max Planck Institute for Social Law and Social Policy.
- Blom, A. G., & Schröder, M. (2011). Sample composition 4 years on: Retention in SHARE Wave 3. In M. Schröder (Ed.), *Retrospective data collection in the Survey of Health, Ageing and Retirement in Europe. SHARELIFE Methodology* (pp. 55-61). Mannheim: MEA.
- Börsch-Supan, A., Brandt, M., Hunkler, C., Kneip, T., Korbmacher, J., Malter, F., et al. (2013). Data resource profile: The Survey of Health, Ageing and Retirement in Europe (SHARE). *International Journal of Epidemiology*, 42(4), 992-1001. doi: 10.1093/ije/dyt088.
- De Luca, G., & Peracchi, F. (2005). Survey participation in the first wave of SHARE. In A. Börsch-Supan & H. Jürges (Eds.), *The Survey of Health, Ageing and Retirement in Europe - Methodology* (pp. 88-104). Mannheim: MEA.
- De Luca, G., Rossetti, C., & Malter, F. (2015). Sample design and weighting strategies in SHARE Wave 5. In F. Malter & A. Börsch-Supan (Eds.), *SHARE Wave 5: Innovations & Methodology* (pp. 75-84). Munich: MEA, Max Planck Institute for Social Law and Social Policy.
- Kneip, T. (2013). Survey participation in the fourth wave of SHARE. In F. Malter & A. Börsch-Supan (Eds.), *SHARE Wave 4: Innovations & Methodology* (pp. 140-155). Munich: MEA, Max-Planck-Institute for Social Law and Social Policy.
- Kneip, T., Malter, F., & Sand, G. (2015). Fieldwork monitoring and survey participation in fifth wave of SHARE. In F. Malter & A. Börsch-Supan (Eds.), *SHARE Wave 5: Innovations & Methodology* (pp. 102-159). Munich: MEA, Max Planck Institute for Social Law and Social Policy.
- Loosveldt, G., & Joye, D. (2016). Defining and assessing survey climate. In C. Wolf, D. Joye, T. W. Smith & Y.-c. Fu (Eds.), *The SAGE Handbook of Survey Methodology* (pp. 67-76). London: SAGE Publications.
- Malter, F. (2013). Fieldwork management and monitoring in SHARE wave four. In F. Malter & A. Börsch-Supan (Eds.), *SHARE Wave 4: Innovations & Methodology* (pp. 124-139). Munich: MEA, Max Planck Institute for Social Law and Social Policy.
- Malter, F., & Sand, G. (2017). Fieldwork monitoring and survey participation in sixth wave of SHARE. In F. Malter & A. Börsch-Supan (Eds.), *SHARE Wave 6: Panel innovations and collecting dried blood spots* (pp. 95-125). Munich: MEA, Max-Planck-Institute for Social Law and Social Policy.
- Schanze, J.-L. (2017). *Report on sampling practices for the institutionalized population in social surveys*. Deliverable 2.16 of the SERISS project funded under the European Union's Horizon 2020 research and innovation programme GA No: 654221. Retrieved from [www.seriss.eu/resources/deliverables](http://www.seriss.eu/resources/deliverables).

## Appendix

Table 25: Baseline/refreshment samples in Wave 1 (2004) by classification of sample units (absolute numbers)

Country	Gross Sample	Eligible households	Ineligible households	Households with unknown eligibility
Austria <sup>a</sup>	6426	2253	3234	939
Belgium <sup>a</sup>	7638	6002	645	991
Denmark	1932	1750	72	110
France <sup>a</sup>	5850	2104	2320	1426
Germany	3779	3423	322	34
Greece <sup>a</sup>	5720	2881	2071	768
Israel	3268	2570	679	19
Italy	3700	3209	328	163
Netherlands	3544	3173	348	23
Spain	3605	3302	244	59
Sweden	4126	3964	150	12
Switzerland <sup>a</sup>	4118	1605	1915	598
<i>Total</i>	<i>53706</i>	<i>36236</i>	<i>12328</i>	<i>5142</i>

<sup>a</sup> Screening country.

Table 26: Baseline/refreshment samples in Wave 2 (2006) by classification of sample units (absolute numbers)

Country	Gross Sample	Eligible households	Ineligible households	Households with unknown eligibility
Belgium <sup>a</sup>	463	451	12	0
Czech Republic <sup>a</sup>	6153	2612	1545	1996
Denmark	1344	1320	24	0
France <sup>a</sup>	1996	666	797	533
Germany	1301	1259	42	0
Greece <sup>a</sup>	1696	961	623	112
Israel	348	345	0	3
Italy	1325	1255	70	0
Netherlands	1174	1128	46	0
Poland	3350	3207	143	0
Spain	507	480	24	3
Sweden	1198	1166	32	0
Switzerland <sup>a</sup>	4533	831	3369	333
<i>Total</i>	<i>25388</i>	<i>15681</i>	<i>6727</i>	<i>2980</i>

<sup>a</sup> Screening country.

Table 27: Baseline/refreshment samples in Wave 4 (2010) by classification of sample units (absolute numbers)

Country	Gross Sample	Eligible households	Ineligible households	Households with unknown eligibility
Austria <sup>a</sup>	8157	3252	50	4855
Belgium	5591	4962	393	236
Czech Republic <sup>a</sup>	12466	4965	4446	3055
Denmark	563	539	24	0
Estonia	8388	7416	751	221
France <sup>a</sup>	5500	4000	774	726
Hungary	4203	3334	494	375
Italy	2500	2260	239	1
Netherlands	1395	1302	56	37
Portugal	4014	2168	611	1235
Slovenia	4045	3799	201	45
Spain	2124	1770	349	5
Switzerland	3750	3303	445	2
<i>Total</i>	<i>62696</i>	<i>43070</i>	<i>8833</i>	<i>10793</i>

<sup>a</sup> Screening country.

Table 28: Baseline/refreshment samples in Wave 5 (2012) by classification of sample units (absolute numbers)

Country	Gross Sample	Eligible households	Ineligible households	Households with unknown eligibility
Belgium	3202	2690	291	221
Czech Republic <sup>a</sup>	2994	1454	1147	393
Denmark	2255	2183	71	1
Germany	9636	8667	760	209
Israel	702	523	17	162
Italy	3100	2631	468	1
Luxembourg	4200	3718	468	14
Netherlands	2697	2481	173	43
Slovenia	1500	1272	73	155
Spain	4017	3331	587	99
Sweden	4999	4602	390	7
<i>Total</i>	<i>39302</i>	<i>33552</i>	<i>4445</i>	<i>1305</i>

<sup>a</sup> Screening country.

Table 29: Baseline/refreshment samples in Wave 6 (2014) by classification of sample units (absolute numbers)

Country	Gross Sample	Eligible households	Ineligible households	Households with unknown eligibility
Belgium	2012	1724	225	63
Croatia	4990	3631	437	922
Denmark	302	290	12	0
Estonia	875	772	96	7
France <sup>a</sup>	845	468	148	229
Greece <sup>a</sup>	3998	2583	1080	335
Italy	2100	1878	219	3
Luxembourg	1207	1072	134	1
Poland	563	475	71	17
Slovenia	2160	2026	109	25
<i>Total</i>	<i>19052</i>	<i>14919</i>	<i>2531</i>	<i>1602</i>

<sup>a</sup> Screening country.

Table 30: Sample size development in SHARE

Country	Sampling wave	Released main interviews						Released end-of-life interviews				
		Wave 1	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6	Wave 2	Wave 3	Wave 4	Wave 5	Wave 6
Austria	1	1569	1200	999	808	758	692	36	50	45	80	51
Austria	4				4447	3624	2710				98	108
Belgium	1	3810	2960	2659	2218	2005	1784	40	99	86	97	102
Belgium	2		267	206	156	142	135		5	5	5	4
Belgium	4				2950	2099	1821				50	101
Belgium	5					1394	1019					20
Belgium	6						1064					
Croatia	6						2494					
Czech Republic	2		2750	1835	1376	1201	1075		67	81	99	87
Czech Republic	4				4163	3123	2791				124	190
Czech Republic	5					1319	992					49
Denmark	1	1706	1316	1105	983	934	831	50	65	74	87	97
Denmark	2		1314	1039	867	896	781		26	47	45	47
Denmark	4				437	388	340				1	1
Denmark	5					1928	1533					36
Denmark	6						248					
Estonia	4				6864	5752	4992				331	368
Estonia	6						646					
France	1	3122	2086	1817	1666	1422	1138	59	92	85	78	52
France	2		903	683	598	474	398		20	16	14	11
France	4				3587	2610	2095				52	60
France	6						317					
Germany	1	2997	1728	1382	1164	847	756	52	55	41	28	20
Germany	2		900	539	457	355	325		13	13	3	9
Germany	5					4550	3331					70
Greece	1	2897	2477	2289			1688	50	131			284
Greece	2		935	803			571		14			66
Greece	6						2678					
Hungary	4				3072							
Ireland	2		1035	855					36			
Israel	1	2450	2036			1759	1409	164			165	113

Israel	2		411			302	278				30	38
Israel	5					538	348					4
Italy	1	2553	1990	1814	1561	1573	1487	52	75	70	100	134
Italy	2		996	714	592	562	551		17	22	25	33
Italy	4				1442	903	843				27	46
Italy	5					1712	1194					27
Italy	6						1238					
Luxembourg	5					1610	1151					18
Luxembourg	6						413					
Netherlands	1	2968	1920	1726	1539	1408		49	73	54	57	
Netherlands	2		763	532	477	453			10	7	15	
Netherlands	4				773	614					13	
Netherlands	5					1693						
Poland	2		2466	1939	1733		1461		94	165		195
Poland	6						365					
Portugal	4				2020		1676					117
Slovenia	4				2749	2210	2234				52	100
Slovenia	5					748	667					22
Slovenia	6						1323					
Spain	1	2316	1995	1939	1671	1669	1514	97	125	125	166	190
Spain	2		432	332	276	276	252		13	17	23	18
Spain	4				1781	1454	1284				79	81
Spain	5					3309	2586					137
Sweden	1	3049	2262	1803	1627	1632	1570	63	95	156	166	114
Sweden	2		534	158	342	333	304		6	26	23	23
Sweden	5					2591	2032					39
Switzerland	1	997	774	676	593	501	473	14	19	22	18	23
Switzerland	2		724	648	594	489	451		7	17	14	21
Switzerland	4				2601	2061	1882				33	49
<i>Total</i>		<i>30434</i>	<i>37174</i>	<i>28492</i>	<i>58184</i>	<i>66221</i>	<i>68231</i>	<i>726</i>	<i>1207</i>	<i>1174</i>	<i>2198</i>	<i>3375</i>

