



8 Development

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Development

This chapter provides a brief overview of various methodological aspects of the second wave of the Survey of Health, Ageing and Retirement in Europe. It includes an overview of both the substantive and technical issues involved in turning the cross-sectional instrument used in the first wave of SHARE into a longitudinal survey instrument. We briefly describe the sample design and weighting strategy in the participating countries, our train-the-trainer program that aimed at implementing common practices in each country, and the field work and survey management. The chapter further presents basic information about unit and item non-response rates. Finally, we include in this chapter a methodological note on anchoring vignettes, which SHARE collected in the course of the EU financed COMPARE project.

8.1 The Development Process: Going Longitudinal and Including New Countries

Axel Börsch-Supan, Hendrik Jürges

Ageing is a dynamic process that can only be observed longitudinally. The environment in which people age also changes over time, e.g. by way of pension and health care reforms. Without adding the time dimension, the SHARE data would have remained incomplete because the process of ageing cannot be observed, reactions to the ongoing changes in the institutional environment cannot be traced, and related behavioural hypotheses cannot be tested. Collecting a second wave of data and linking these data with the first wave was a first crucial step to understand the changes over time. Of course, further waves are necessary to follow the ageing process as it unfolds over the coming years.

A second and important new piece in the development process was the inclusion of four new countries: in addition to the original 11 SHARE countries, the Czech Republic, Poland, Ireland and Israel were included in the second wave.

The SHARE Wave 2 development process iterated in several stages between questionnaire design and data collection. In the first stage, starting in January 2006, several thematic working groups produced English-language draft questionnaires, departing from the original cross-sectional SHARE questionnaire. Adjustments to the survey instrument had to be made to account for the fact that most individuals to be interviewed had already participated in the first wave. For instance, questions had to be rephrased to cover the incidence of chronic disease rather than the prevalence, or to monitor changes in labour market states, e.g. transitions into retirement. Moreover, pre-loads of already collected information was integrated in the survey instrument to ease respondent burden. At the same time, the original SHARE questionnaire was thoroughly evaluated in the light of the first wave experiences and if necessary carefully revised. Further, some limited country specific adaptations had to be considered to make the questionnaire suitable for data collection in the new SHARE countries.

Pilot data collections with quota samples of 50 respondents in each of the new SHARE countries were scheduled very early in the process (February 2006) in order to synchronise the following joint development process. Building on the existing SHARE technology, e.g. the language management utility (LMU), translated survey instruments for the new countries could be finalized in time for this crucial development step. The main objective was to test the translated version of the SHARE 2004 questions in the two accession countries.

Specifically, we checked for linguistic incompatibilities, translation errors in particular regarding technical terms (e.g., pension schemes, health care services, asset categories, etc.) and the internal consistency of the survey instrument.

The second stage of the development process was an all-country pre-test in May/June 2006. At this stage, the newly designed longitudinal questionnaire was tested for the first time in all SHARE countries. About 100 longitudinal respondents per country were recruited from the participants of the Wave 1 pre-test. The main objective was to test the survey instrument in its entirety in the 11 SHARE Wave 1 countries. Hence, the focus was on testing the internal consistency of the updated survey instrument (especially the skip patterns which tend to be particularly error prone) under realistic conditions. This step was essential to create a state-of-the-art survey instrument, including additional applications such as an electronic sample management system (SMS), which was reliable for large-scale application. The pre-test results were thoroughly analysed to maximise the validity of the questions as well as the reliability of the procedures. The results suggested some final improvements to questions and assisted in the design of the final source questionnaire.

The fieldwork period for the main Wave 2 data collection was from October 2006 to November 2007. In this time, we applied the longitudinal questionnaire to all participants in SHARE Wave 1 who were still alive and agreed to be re-interviewed. Additional samples were drawn in the Wave 1 countries to make up for sample size reductions due to panel mortality. These samples were given baseline questionnaires – identical to those that were administered in the new SHARE countries. Overall, we conducted interviews with some 30,000 respondents in 15 countries, of which about 20,000 were re-interviews.

The articles in this book are based on an early release of the SHARE Wave 2 data, created in December 2007 (“Release 0”). While we have done a host of crosschecks, extensive consistency and plausibility checks of all data with subsequent imputation of missing data are still to be done. All results in this book are therefore preliminary. In late 2008, a more complete and cleaned data set (“Release 1”) will be accessible to the entire research community. This release is eagerly awaited by many researchers, because it will allow them for the first time to conduct longitudinal analyses in ageing research with cross-national data. A final release of the complete and integrated data set – containing about 60,000 individual observations and an extensive set of generated and imputed variables (“Release 2”) – is planned for the first half of 2009.

A third wave collecting retrospective data is currently in the design stage and will be fielded in 2008/09. A fourth wave of data collection – using an enhanced version of the Wave 2 longitudinal instrument – is planned in 2010/11. Future waves are intended to follow biannually.

8.2 Survey Instruments in SHARE Wave 2

Maarten Brouwer, Marcel Das, Maurice Martens

In the SHARE project several software tools were developed for data collection, data transfer and data dissemination. The concept of the logic behind the tools used in the first wave was further developed in the second wave. CentERdata, a survey research institute affiliated with Tilburg University (The Netherlands), provided the technical infrastructure for both waves.

The basic idea behind the Computer Assisted Personal Interviewing (CAPI) instrument was to have exactly the same underlying structure of meta-data and routing. This structure was directly implemented in Blaise, a software package developed by Statistics Netherlands. The country specific questionnaires were conducted in local languages. The generic question texts, interviewer instructions, answer categories, fill texts, and other instrument texts (e.g. error messages) were replaced by their language specific equivalents. Because of the longitudinal character the CAPI instrument was set up in such a way that preloading of previously collected information was possible. The instrument can also be used for new respondents (refreshment sample and new spouses). Both the baseline and longitudinal questionnaire were integrated into one CAPI instrument.

The country specific translations were entered in the Language Management Utility (LMU). The LMU was already developed and used in SHARE Wave 1, but extended to meet new requirements. These requirements included improved user-friendliness and better version control. Seven development cycles, each with a published version of the CAPI instrument, were run through. In total 17 distinct CAPI instruments were released for a total of 14 countries.

In the second wave new countries joined SHARE: Ireland, the Czech Republic, and Poland after Israel had joined one year earlier. Due to the generic set up of the instrument adding new countries was rather straightforward: new countries were added to the LMU, translations were entered, and new country specific CAPI instruments (as well as automatically generated paper versions) were created. New countries could be added because the CAPI instrument has a baseline version (for fresh respondents) included. The specific character sets, though, needed additional efforts, and in case of a specific grammar (like for the Czech Republic and Poland) new fills had to be added. The inclusion of the Arab, Hebrew, and Russian languages in Israel was a particularly large effort and a technical challenge.

To manage the fieldwork in each country, survey agencies usually make use of a Case Management System (CMS). A CMS contains a list of all households in the gross sample and stores information like contact notes and appointments with respondents. When the CMS supports features like merging questionnaire data and contact information for generating progress reports, a more general name is applicable: Sample Management System (SMS). In Wave 1, the general idea was to give the participating agencies the freedom to use their own SMS. The only restriction was that it should be able to communicate with the centrally provided CAPI instrument. This restriction turned out to be problematic for several agencies, so it was then decided to make use of a centrally provided CMS, used in combination with a Combine and Distribute Tool (CDT) to transfer the data to a central location. In that way, not only the CAPI instrument was similar in each country, but also the CMS. Progress reports for monitoring the fieldwork were now based upon the same underlying management system. In the second wave, the CDT and a tool for generating a

report were combined with a new CMS. The combined functions of this new tool turned the SMS into a fully functional system, available in a SMS Server (agency) and SMS Client (interviewers laptop) variant.

The remainder of this chapter is organised as follows. Section 2 describes some specific changes in the CAPI instrument in more detail. The functionality and in particular the changes in the LMU from Wave 1 to Wave 2 are described in Section 3. Section 4 discusses the new SMS, followed by some concluding remarks and suggestions for future developments in Section 5.

CAPI Instrument

As mentioned above Blaise was used as interviewing system tool in SHARE. For detailed information on Blaise we refer to the website of Statistics Netherlands (www.cbs.nl/en-GB). The basics of the SHARE CAPI instrument and questionnaire as used in Wave 1 are described in Das et al. (2005). This section briefly discusses the specific changes made in the CAPI instrument towards the main survey of Wave 2.

Every sample member who was listed as eligible in the first wave was selected to be interviewed again in the second wave. For those individuals some available data from Wave 1 were preloaded, mainly for routing purposes. The only information that was shown in the question texts was month and year of the last interview. Preload data included whether the natural parents still lived, the number of brothers and sisters the respondent reported in Wave 1, some physical conditions, a few job market characteristics, and whether the respondent was still smoking at the time the Wave 1 interview was conducted. For new spouses, respondents from the refreshment sample, and respondents in the new countries this information was not yet available. Because the number of preload variables was rather limited and the routing for the longitudinal sample did not deviate that much from the routing for new respondents, it was decided to create one instrument that could be used for both the existing and new panel members.

In Wave 1 there were only a few ways to bypass the generic blueprint of the questionnaire. In a few (exceptional) cases the generic routing tested for a condition based on a country specific identifier. This turned out to be very inefficient, in particular when new countries were added. Some questions were removed, and a few remaining country specific questions were incorporated but without a country specific routing. Countries for which these questions were irrelevant, translated the questions with a translation such as “Does not apply in country X – please type CTRL-R (Refusal)”.

Funded by the U.S. National Institute on Aging, two new modules for physical measurements were added to the CAPI instrument: the peak flow test and the chair stand test. Some modules such as the EP and AS module were substantially restructured. The so-called pre-Euro currency option was removed from the instrument for almost all questions. Only a question about a received gift or inheritance worth more than 5000 still had the pre-Euro currency option. For all other amount questions the respondent had to report in the local currency (so Euro only in Euro-countries) in Wave 2.

As in the first wave the SHARE CAPI instrument used in Wave 2 consisted of two separate components: the cover screen and the main instrument. The cover screen is used to provide a complete household listing and to determine and select individuals in the household who are eligible for participation in the main questionnaire. In Wave 2 a third component was added: the exit interview. This end-of-life interview is conducted when a SHARE panel member died. The interview is held with a proxy; in most cases a partner or

close relative. The aim of the exit interview is to bring closure to the information collected in the SHARE study. One can link the answers given by the deceased respondent in a previous wave to those given in their exit interview, to find out how life may have changed in the period preceding their death.

Language Management Utility

An online Language Management Utility (LMU) was used to keep track of all the language specific texts. This tool enabled CentERdata to conduct short-cycle development runs for producing the country specific instruments, i.e. opening the LMU to translators for entering the translations, creating the country specific CAPI instruments using the generic blueprint of the questionnaire and the translations, conducting tests and performing the same actions multiple times in a very short period of time. Using the LMU database, a paper version of the language specific questionnaire could also be created easily.

The LMU web interface was extended with new features to help translators keep track of their work and thus the user friendliness was improved. CentERdata introduced a “flag system” which identified the changed or questions added and enabled the translators to indicate the progress of their work. New or changed questions (compared to a previous version, starting with the final version of Wave 1) were indicated with a red flag. The translator could replace this flag by a yellow (adapted, but not finished; may need advice) or green one (translation finished). A webpage with pie charts showing the fractions red, yellow, and green per country, made it easy for the central management team to monitor the progress of the translation process for all countries. The set up is such that new states (colors) with a different meaning can be added easily. All flags can be included in the (country specific) paper versions as well. Comments were added to adapted questions to further explain the changes made. Minor textual changes were visualized by a different font color in the generic version. Besides these new functionalities, a lot of new validations and input checks were added to the LMU, so errors caused by incorrect use were limited to a minimum. The underlying database was upgraded to use UTF-8 to encode text-fields in Unicode.

The LMU also helped in the difficult part of the translation process where dynamic texts were involved, the so-called fills. These fills would get their value from answers given earlier. A simple example is a fill for ‘he’/‘she’ depending on the gender. In the LMU, each question had its own fills, using question-specific fill names. The fill architecture created flexibility towards the countries by making it possible to create country specific fills. Fills were optional; a translator did not need to use the available fills. Countries with complicated grammar could ask for additional fills, even during the translation process. A new fill did not affect other questions nor did they bother other countries in their translation. Poland made use of this possibility. For their language not only ‘you’ is gender specific (and thus required a fill) but also the verb that follows ‘you’. For Poland more than 300 fills were added. In Wave 2 the fill architecture was also adapted to allow for fills in fills (e.g. a fill for the current year in a fill text).

SMS Client and SMS Server

To manage the interviewers’ subsample and start the appropriate CAPI instrument, CentERdata developed the Case Management System in Wave 1. Additional tools for data transfer and monitoring of the fieldwork were developed as well. In the second wave the CMS and separate tools were improved and integrated into a Sample Management System

(SMS), with one part installed on the interviewers' laptops (SMS Client) and one part on the agency's server (SMS Server). Figure 1 shows the SMS/CAPI action flows.

The SMS Client registered all contact notes, appointments with respondents, and some basic information on the households and individuals. The client's main screen outlined the sample information regarding id number, name, telephone number, status (complete/incomplete), the number of contact attempts so far, whether the respondent was reluctant to be interviewed, and whether an appointment was made, with date and time of the appointment. Stable addresses could be entered by the interviewer too. These are addresses of persons that might be helpful in next waves in case the interviewer is not successful in contacting the household or respondent. Interviewers were supposed to ask the respondents for such stable addresses.

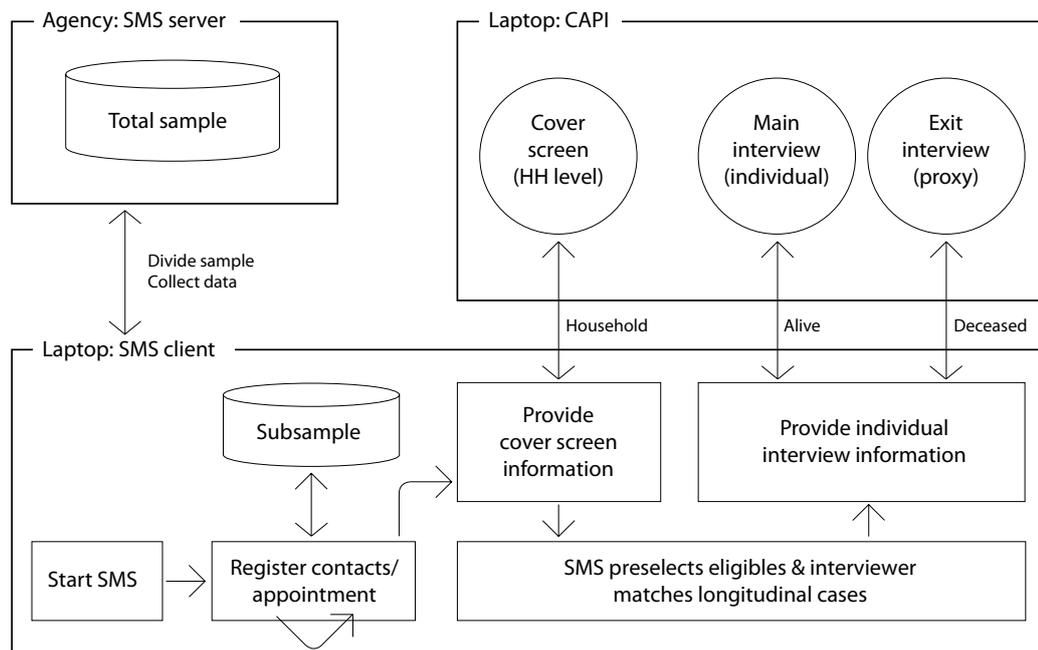


Figure 1 The SMS/CAPI action flows

In the second wave two types of households were included in the SMS listing: baseline (refresher) and longitudinal. The SMS main screen indicates the type of household. For baseline households the main interview was conducted with the primary respondent (age-eligible) plus his/her spouse/partner (independent of age). In some countries age-eligible individuals have been randomly selected from local or national registers. In that case, the sampled respondent was the primary respondent in his or her household. In countries with no register of age-eligible individuals, a sample of households, dwellings or telephone numbers was used. For those countries, the SMS Client was equipped with a simple pre-screening process (Screening mode) to first screen potential respondents for eligibility.

The cover screen for a longitudinal household contained additional questions on who moved in, moved out, or died since Wave 1. Persons who moved out and deceased persons were indicated on the SMS main screen, since additional efforts were needed for these cases (finding new addresses or proxies for the exit interviews). There was also some preloading of information for the longitudinal households, but due to legal restrictions the

respondent was not confronted with this information. The interviewer could check in the SMS Client who was listed as eligible in last wave (name, gender, and year of birth), who participated in last wave, and who gave consent to be re-interviewed.

Due to legal restrictions the interviewer could not ask for a confirmation of names that were mentioned last wave. Instead, a cover screen appeared and the interviewer had to match respondents from the first wave to the second wave based on limited preload variables (first name and year of birth), combined with new answers provided in the cover screen of the second wave, see Figure 2. In case a perfect match was found, a suggestion was made by pre-selecting a name. The final choice was made by the interviewer.



Figure 2 Linking respondents from the first wave to second wave respondents

In the second wave, all previously available tools (combining datasets, setting up electronic communication with CentERdata, generating reports) were combined in a fully functional SMS Server. The first main function of the SMS server was dividing the sample into subsamples and distribute these over the different laptops. The second main function was to collect all the survey results, combine them and transfer the data to CentERdata. The server offered a lot of flexibility towards the agencies. They were to some extent free in using the communication options in order to send/retrieve sample information from laptop to central server at the agency, they could easily manipulate the SMS client databases by altering SQL-statements, and they were equipped with the possibility to more actively control the actions from the interviewers (e.g. setting final contact codes).

Concluding Remarks

SHARE – being a research project with genuine innovations that advance cross-national comparability and electronic survey technology – has proven to be a project in dynamic development. New requirements came up in the process at unexpected times necessitat-

ing a flexible software development approach. At the same time, an important goal in the second wave was to further improve software stability to ensure a solid base for data collection. Being flexible as well as stable was a real challenge in the project so far. We think that the quality of the data show that the development process has achieved a successful compromise between the two counteracting requirements.

References

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8.3 Training for SHARE Wave 2

Kirsten H. Alcser, Grant D. Benson, Heidi M. Guyer

SHARE – using funding from the U.S. National Institute on Aging – contracted with the Survey Research Center (SRC) at the University of Michigan to provide training to survey agency trainers in a centralized location. The SHARE Train-The-Trainer (TTT) training model has been established with the explicit goal of standardizing interviewer training, study procedures, and data collection as much as feasible across participating survey agencies in member countries in an effort to increase quality and comparability of the data that is collected for the entire SHARE project. (Please see Alcser et al. (2005) for a detailed description of the implementation of the TTT at Wave 1.)

SHARE Two-Phased Training Approach

With the plan to expand the SHARE either to additional countries or with sample supplements within participating countries in future years, there will be a need to provide training for agencies or interviewers collecting panel data and for agencies or interviewers collecting baseline data in each new round of data collection. This is important not only because the survey instruments differ, but also because training costs and requirements can be tailored based on previous experience. Thus, already in 2006 training was provided for the SHARE member countries collecting panel data as well as for new countries joining SHARE and collecting baseline data. This chapter describes the challenges and solutions to carrying out the two-phased SHARE TTT.

The Trainees

In 2006, the SRC trainers provided training for eleven countries that would be conducting the second wave of data collection as well as for three new countries joining the SHARE project and scheduled to conduct baseline data collection. As was the case in the earlier wave of data collection, each country sent 2-3 trainers from the participating survey agency to the training prior to each data collection effort. Similarly, the Country Team Leader (CTL) and his or her Operator participated as much as possible. Training was scripted and conducted in English, and the translation of all training materials was carried out by each survey agency in consultation with the CTL or Operator and other professionals (e.g. translators) as needed, prior to local interviewer training.

TTT Development

TTT training was tailored to the needs of each group of countries (i.e. those collecting panel data and those collecting baseline data).

The three new countries received baseline training in January 2006 prior to conducting the Pilot data collection in their respective countries. The Pilot baseline training lasted a total of 19.5 hours spread across three days and was very similar to the training conducted for all eleven countries at Wave 1. The baseline pilot study training included general interviewing techniques and field procedures, case sample management, Computer Assisted Interviewing (CAI) with walk through of each section of the SHARE baseline instrument, baseline physical measurements, response rate and bias, and techniques for gaining respondent cooperation.

Pretest training was conducted together for panel and baseline data collection in April 2006. The focus for both groups was on changes made to the baseline instrument used

in the previous wave of data collection as well as in the baseline data collection for the new countries in the current wave of data collection. The major changes were made to the panel instrument which in several modules phrased questions in terms of “since the last time we spoke with you”, obtaining measures of change. Similarly, the case sample management system was reviewed, highlighting several changes made to accommodate the panel data collection. Training also covered the use of proxy interviews and rules for selecting a proxy reporter, administration of the Drop-Off questionnaire, as well as review of physical measurements and the requirement that all interviewers be carefully observed and documented to do these measurements. Interviewer checklists and project certification documents were covered. The panel study countries also received training in techniques for tracking movers, contacting respondents in nursing homes and conducting the end-of-life interview. Finally, TTT participants were provided with a phase-specific model training agenda and an Interviewer Project Manual for use in country level pretest training.

Both participants and trainers found that combining the training for two different data collection efforts was suboptimal. As a result, this approach was abandoned in future SHARE training.

Fine-tuning the Two-Phased Training Model for the Future

Training for main data collection took place in September 2006. Consecutive training for panel and baseline data collection was carried out across a total of 5 days – 2.5 days (total of 18 hours) each – with a two-hour overlap to share lunch and presentation by the Project Coordinator. Countries collecting panel data were trained first. As was the case for SHARE Wave 1 main data collection training, the TTT model assumed progression of training of the same trainees across one or more data collection points. Thus, each main data collection training focused on changes since the pretest data collection as well as on how to put together a full training at the country level which should be approximately 18 hours long, not counting agency specific administrative procedures and basic training offered for newly hired interviewers. At the end of the training session, the TTT participants were provided with an updated Interviewer Project Manual and a model agenda for use in country level training for main data collection.

Content of Training

A prototype of training for study specific baseline data collection overall was presented earlier (ibid). However, it has become apparent that it did not allow for sufficient hands-on practice. Thus, even for baseline training of experienced interviewers, SHARE now requires 3 days of training or a total of approximately 18 hours, not including breaks.

A prototype of study specific training for panel data collection and baseline data collection, endorsed by SHARE, now covers a total 18 hours usefully distributed across 3 or more days. Table 1 below lists each topic that was to be covered in country level training of interviewers in 2006, a brief note about the topic, and estimated time devoted to the topic. Depending on the topic, more time has been assigned to baseline training, since this is interviewers’ first contact with the project. Variations of this model may be anticipated in future waves of data collection, depending on whether new protocols are added, e.g. bio-measures.

Summary

The SHARE 2006 data collection encompassed two phases – the panel or longitudinal data collection with sample initially interviewed in 2004-2005 and new baseline data collection for new countries joining SHARE.

Initially a combined training for all countries, regardless of phase, was attempted. However, based on trainer observation and trainee feedback SHARE decided to provide separate training for each. This decision reinforced the general belief that the most successful training is one that makes training relevant to the trainees, i.e. is tailored directly to what the trainees need, thereby using their time more optimally.

Based on experience during the first wave of data collection, SHARE acknowledged the need to require more extensive training of interviewers in 2006 and for future waves, including more practice and hands-on opportunities during the sessions. With a survey of the current level of complexity, SHARE requires three days of study-specific training (approximately 18 hours total). Adjustments will be made as warranted in training requirements for future waves of data collection if additional specialized study protocols are added, such as bio-measures, for example.

References

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Topic	Purpose	Panel: Time (minutes)	Baseline: Time (minutes)
Introductions, Welcome, and Logistics	Setting the stage for this intense training	15	30
SHARE Project and Questionnaire Overview	Explain the goals of the project; Importance of baseline and longitudinal sample	45	45
Sample Overview	Understanding how the sample was selected, sample eligibility, and response rate requirements	30	60
GIT Requirements	Covering minimal GIT requirements, including when and how to contact sample, probes, feedback, etc.	60	60
Overview of the Sample Management System	How to operate the SHARE electronic sample management system, assigning result codes, entering call notes. Introduce non-contact mock scenarios and test results	60	90
Longitudinal Sample Management System	Splitters, deceased, new eligible respondents, additional result codes	30	na
Proxy Interviews	Explain how to identify proxy respondents; Interview proxy respondents	30	45
Nursing Homes	Contacting respondents in nursing homes; Working with gatekeepers / potential proxy respondents	30	na
Overview of the Blaise Program	Blaise component must be explained, including different types of questions, question text, data entry, interviewer instructions, etc.	45	45
SHARE Questionnaire Walk-Through	Description of SHARE modules. Scripted review of the questionnaire, including spawning of additional line. Should address main questions and issues that arise with different sections	330	240
	Longitudinal: Description of longitudinal differences. Explanation of preloads. Must address different questions arising from re-interviews		
End-of-Life Interviews	Must cover both concept of the EOL interview, approaching respondents, and administration of the interview (CAPI/CATI)	30	na
Drop Off	Describe drop-off; Describe procedure for identifying and labeling drop-off appropriately; Explain procedure for administering drop-off. Record these in SMS	45	45
Physical Measurements; "Certification"	Have each interviewer demonstrate the ability to conduct physical measures. Must eventually include all four physical measures	30	60
Response Rates and Contact Efforts	The importance of response rates and reiteration of required contact effort per line. (Longitudinal: review only)	45	90
	Longitudinal: Panel care and effort requirements; Tracking effort		

Topic	Purpose	Panel: Time (minutes)	Baseline: Time (minutes)
Gaining Respondent Cooperation	Review eight concerns that interviewers are likely to encounter. Practice quick answers to several concerns. Note that longitudinal sample is more likely to encounter different types of resistance	90	90
Practicing Household Introductions	Interviewers should team up in groups of 10 or so and each take a turn introducing the study	optional	60
Pair-wise Questionnaire Walk-through	This is an opportunity for interviewers to go through the questionnaire with a fellow interviewer. Use an abbreviated script; Switch at half-point mark and complete the interview	90	130
Pair-wise Exit Interview	Practice administering the exit interview	45	na
Administrative Wrap-Up	Answer open questions	30	30

Table 1 SHARE Training Requirements for Panel and Baseline Data Collection – Model Agenda

Note: Total Time Training for the Panel Model: 1080 minutes (18 hours, 0 minutes); Total Time Training for the Baseline Model: 1120 minutes (18 hours, 40 minutes)

8.4 Attrition

Mathis Schröder

One of the main aspects of a longitudinal study is the stability of the panel, i.e. the continuing participation of respondents which allows observing changes within persons over time. All panels experience a decline in initial respondents due to moves out of the country, death, or refusals to be interviewed again. While moves and deaths are beyond the influence of interviewers, survey agencies or researchers, a refusal to be interviewed a second time may be viewed differently. In this regard a detailed analysis of a respondent's propensity to remain in a survey like SHARE is of importance, since, on the one hand, the present data can be corrected for the attrition by constructing weights accordingly and, on the other hand, detailed strategies to cope with likely refusals in the future can be developed.

Lepkowski and Couper (2002) identify three areas that could affect the continuing participation in a panel study: the survey design, household (or individual) characteristics and the interaction between the household and the interviewer. Survey design factors include length of the interview in the first wave, topic of the survey, incentives, number of interviewer contacts, and follow-up procedures. Respondent characteristics encompass demographics like age, gender, employment status and health as well as household location and composition. Some studies have shown, for example, that married respondents in households located in rural areas are more likely to remain in a panel (Fitzgerald et al., 1998). How interviewers and respondents get along is also likely to be important, especially in a face-to-face interview like SHARE. Interviewer experience, education, age and gender are all factors that could influence the response behaviour as well (see Grouves and Couper, 1998). As the space is limited here, we will only focus on a few selected correlations and cross-tabulations.

This article will first present the attrition rates across countries. These rates vary considerably across countries, and thus the attrition analysis in the following is conducted separated by countries. The effects of survey design, demographics and respondent-interviewer interaction will each be addressed in turn.

Attrition Rates

The attrition rate is based on SHARE respondents with a completed interview in 2004-2005. This reduces the sample to eleven countries: Austria, Belgium, Denmark, France, Germany, Greece, Italy, the Netherlands, Spain, Sweden, and Switzerland. In Wave 1 (release 2.0.1), 28,296 respondents contributed an interview in these countries. In the preliminary release of Wave 2¹, 68.23% (19,309) of these participants remain in the panel. However, following Rendtel (2002), some adjustments need to be made to this number to account for those individuals that could not participate in Wave 2 from the outset: First, 757 (2.7%) of all Wave 1 respondents deceased between Wave 1 and 2. Another 480 (1.7%) individuals moved out of the respective country or did not leave any contact information behind and thus could not be contacted at all. Finally, strict data protection rules

¹Since the identification of people's whereabouts is particularly important for this paper, the data is based on the most recent data developments available to the author, and thus observations may slightly differ from other articles in this book.

apply in Italy: individuals had to be asked in the first wave whether their address could be kept for a contact trial in the second wave. In case they declined, they could not be contacted at all, unless there was another individual in the same household who had agreed to participate. 274 Italian respondents belonged to households that completely withdrew their address. Overall 1508 cases are dropped in these three steps (the categories overlap and so the numbers do not add up).

Figure 1 shows the participation rates for each country. After removing the above mentioned 1508 observations, the file now consists of 26,788 individuals from the first wave, leading to an attrition rate of 27.93%. The lowest attrition rate exists in Greece with 13%, the highest is in Germany with 41%. Due to the special data protection law mentioned above, Italy's attrition rate is decreased by 9 percent.

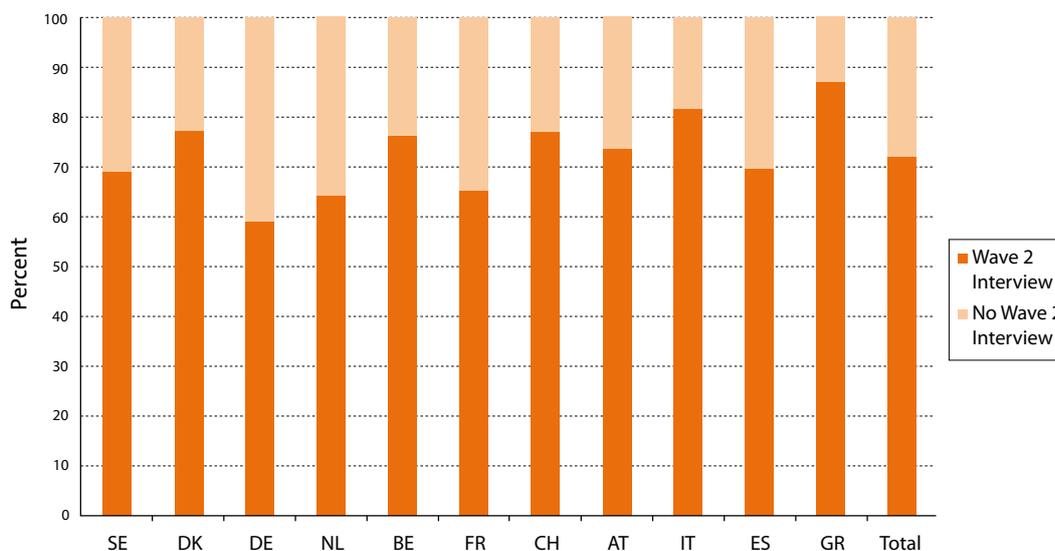


Figure 1 Attrition rates for Wave 1 respondents

We now take a look at the specific reasons that are related to declining the participation in Wave 2 of SHARE. Note that all of the following is based on the adjusted file, i.e. under condition that an interviewer-household contact was established in the second wave.

Determinants of Attrition

Survey Design

One of the major concerns of survey agencies and interviewers after the first wave has been the length of the interview. Figure 2 shows how the interview length from Wave 1 is related to survey participation in Wave 2. To take into account the large differences in interview length across countries (see Jürges, 2005), we consider country specific quartiles of Wave 1 interview length.

It becomes clear from Figure 2 that large differences in attrition exist between the shortest interviews and the rest, that is, respondents with a short interview in Wave 1 are less likely to be interviewed in the second wave. This result – significant overall and in five of the eleven countries – is similar to what Hill and Willis (2001) find in the U.S. Health and

Retirement Study. At the other end, there are mixed findings: an interview duration in the highest quartile is associated with a significantly higher attrition rate compared to the third quartile in Greece and the Netherlands, whereas the relationship is reverse in Switzerland and Spain.

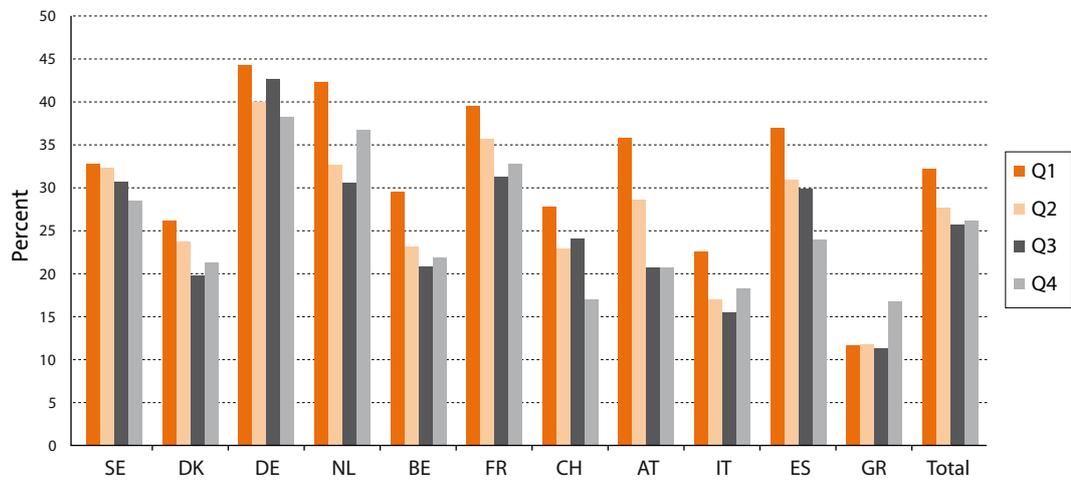


Figure 2 Attrition Rates by Quartiles of Interview Duration

Respondent Characteristics

There is a multitude of characteristics that could be considered in this section, but we will now take a look at only a few important ones: gender, age, employment status, health status, and type of house. There is no consistent pattern across the countries regarding gender and attrition and neither is this relationship significant in any country. This also holds when taking all individuals together: being male or female does not have a significant influence with survey participation in Wave 2, at least not in this bivariate setting.

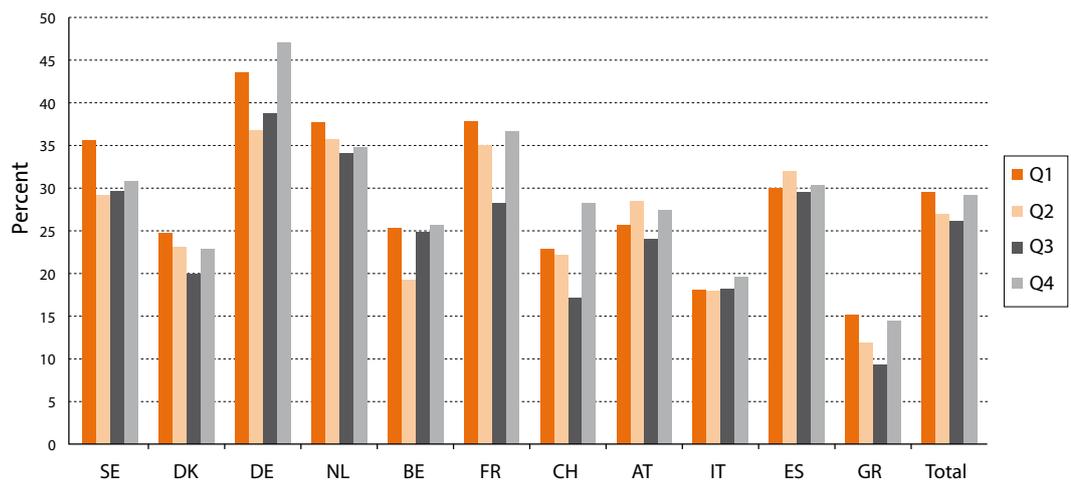


Figure 3 Attrition Rates by Age Quartiles

Figure 3 shows the attrition rates by age quartiles, where age is calculated from the point of contact for the second wave interview. The lowest age quartile covers respondents up to 58 years of age, the second age quartile includes age 65, and the third is up to 74. In almost all countries we can see a U-shaped pattern: in the youngest group, the attrition is the highest, in the second or third quartile it is the lowest. In all countries, the probability to not participate increases from the third quartile to the oldest group (remember that deceased people are already taken out of the calculations here).

There is virtually no relationship between the employment status at Wave 1 and the attrition behaviour. Only in Greece (lower participation) and in Switzerland (higher participation) we find a significant effect of working in Wave 1 on response in Wave 2. The pattern is somewhat clearer for health. Here only Italy and Spain have a counterintuitive effect: those reporting fair or poor health in Wave 1 are more likely to be interviewed in Wave 2, although this difference is not significant. All other countries have the opposite relationship, and an overall significant effect of good or better health and a higher propensity to participate in Wave 2 is present. Finally, we find for all countries that individuals living in free standing homes are more likely to have an interview in Wave 2. This effect is likely to be correlated with wealth and income, which have been shown to positively influence response behaviour (e.g. Hill and Willis, 2001).

Interviewer-Respondent Interaction

The question of how interviewers influence the response behaviour is of interest to survey agencies and researchers alike. It has been shown that having the same interviewer for both Wave 1 and Wave 2 interviews increases the response rate in the second wave by about six percent (see for example, Hill and Willis, 2001). This information about the interviewer identity has not yet been provided by the survey agencies in SHARE. Still, other interviewer characteristics might have an influence. We concentrate here on the interviewer's gender, education and "evaluation" of response behaviour, all from the first wave.

Over all countries, interviews of Wave 1 were mainly conducted by female interviewers, with a ratio of about 2:1, but this varies across countries: Sweden, for example, has only very few interviews conducted by male interviewers, whereas in Switzerland, the majority are done by male interviewers. Overall, there is a significantly positive effect of about 1.2% on participation in Wave 2 if the interviewer in Wave 1 was female. However, this varies across countries: in Sweden, Denmark, Germany, Belgium and Austria, the effect is actually negative (significant in Denmark), whereas in the remaining countries it is positive (significant in France, Switzerland, Spain and Greece).

Educational differences between interviewer and respondent might influence the attrition behaviour as well. Figure 4 shows for each country the effects of interviewers being more educated, having the same education, or being less educated than the respondent (considering three education categories low, middle, high).

Figure 4 shows an interesting pattern: for all countries except the three Mediterranean and Austria, attrition rates are lower when the respondent is more educated than the interviewer compared to when they have the same education or when the respondent is less educated than the Wave 1 interviewer. For Austria, Italy, Spain and Greece, this relationship is just the reverse.

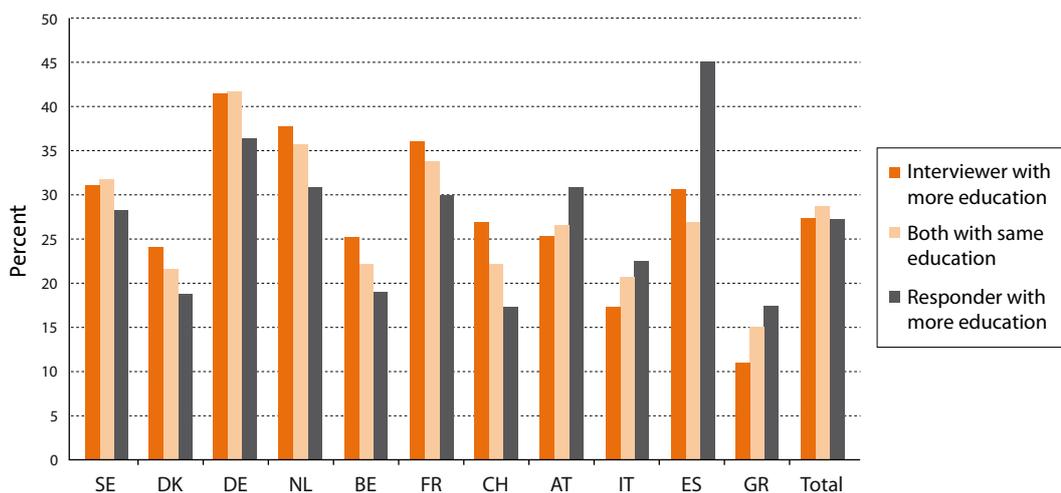


Figure 4 Attrition Rates by Educational Differences

Finally, we take a look at the evaluation of the interviewer after the Wave 1 interview to see if there is a relationship with respect to the participation in Wave 2. Specifically, we are interested if the willingness to answer (as perceived by the interviewer) is predictive of the participation in Wave 2. Figure 5 shows a clear relationship here: In all countries except Greece, we find that a Wave 1 willingness to answer that was perceived as “very good” by the interviewer is associated with significantly higher participation rates in Wave 2. The overall difference is almost 10 percentage points. This finding related to Wave 1 respondent behaviour is also present when looking at the respondents refusing to answer financial questions. In all countries we find a positive relationship with attrition, which is significant when looking at all countries together.

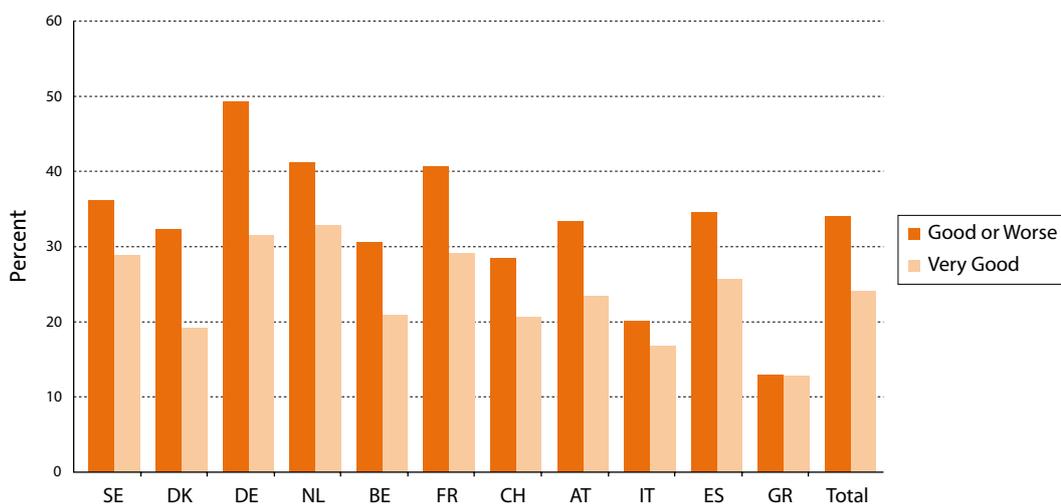


Figure 5 Attrition Rates by Willingness to Answer in Wave 1

Conclusions

This article provided a brief overview of how survey continuation in Wave 2 in SHARE is related to various variables in Wave 1 such as survey design, respondent demographics and interviewer-respondent interactions and how these differ across the participating countries. Contrary to the general notion that long survey time in Wave 1 negatively influences participation in Wave 2 we do not find such a relationship. There are no clear cut results for the demographic variables, but it seems likely that considering a more elaborate model with multiple influencing variables, this will change. As for the interactions of interviewers and respondents, we find several interesting results, which sometimes vary considerably over the countries. It seems reassuring that the interviewers' perception of the willingness to answer transfers directly into the participation in the next wave, as this can help when addressing potentially reluctant respondents in the future.

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8.5 Sampling Design and Weighting Strategies in the Second wave of SHARE

Giuseppe De Luca, Claudio Rossetti

Sample surveys are usually affected by two types of errors: sampling and nonsampling errors. Sampling errors derive from the choice of studying a probability sample instead of the whole population. Nonsampling errors encompass all other sources of errors like coverage errors of the sampling frame and nonresponse errors. In this chapter, we provide a description of sampling design procedures and nonresponse weighting strategies adopted in the second wave of SHARE to deal with both types of errors.

First, we will define the target population of the second wave. Then we discuss sampling design procedures and computation of sampling design weights, with focus on the main sampling design differences between the first and the second wave. Detailed information on the sampling design adopted in each SHARE country will be provided in a separate technical report. We continue by focusing on the problem of unit nonresponse in the second wave and describing the computation of calibrated cross-sectional weights. The last section focuses on the problem of sample attrition between the first and the second wave and describes computation of calibrated longitudinal weights.

Target Population

The target population of the second wave of SHARE can be defined in terms of both individuals and households. The target population of individuals consists of all people born in 1956 or earlier, speaking the official language of the country, not living abroad or in an institution such as a prison during the entire fieldwork period, plus their spouses/partners independent of age. The target population of households is implicitly defined as all households with at least one member in the target population of individuals.

Sampling Design Weights

The second wave of the SHARE was carried out in fifteen European countries. Of these, eleven countries (Austria, Belgium, Denmark, France, Germany, Greece, Italy, Netherlands, Spain, Sweden and Switzerland) also participated in the first wave conducted in 2004, while four countries (Czech Republic, Ireland, Israel, Poland) only participated in the second wave conducted in 2006. (Israel 2005)

As already pointed out by Klevmarcken et al. (2005), institutional conditions and regulations regarding sampling are so different across countries involved in this project that using a common sampling frame and sampling design for all countries was infeasible. In most of them, suitable sampling frames for the target population investigated by SHARE either did not exist, or could not be used. Thus, national sampling frames were selected depending on what was already available in each country. All national samples were drawn through probability sampling, but sampling procedures are not standardized across countries. In particular, they vary from simple random sampling to rather complicated multi-stage designs. The most common sampling design is two-stage sampling, with geographical areas (usually municipalities) as primary sampling units, and households or individuals as secondary sampling units. Simple random sampling was used in Denmark, Poland, and Sweden, whereas three-stage sampling was used in Austria, Czech Republic, Greece and Italy (In Austria, Czech Republic and Greece the third stage consists of screening of telephone numbers to assess age-eligibility of sampled units). The main sampling design differences with respect to the first wave occurred in Belgium and Denmark. In Belgium, the sampling

design changed from three-stage sampling of telephone numbers in Wave 1 to two-stage sampling of households in Wave 2. In Denmark, the sampling design changed from simple random sampling of households in Wave 1 to simple random sampling of individuals in Wave 2.

For most countries which participated in both waves of the panel, the sample for the second wave consists of two parts, a longitudinal sample and a refreshment sample. The former includes the subset of individuals and households already interviewed in the first wave, while the latter includes a new sample drawn to compensate for the loss of observations due to sample attrition. The only countries with no refreshment sample are Austria and the Dutch part of Belgium. Oversampling of individuals born in 1955 or 1956 was carried out in the refreshment sample. The aim of oversampling is to maintain an adequate representation of these cohorts because the longitudinal sample includes only individuals born in 1954 or earlier. In addition to the main sample, a sample with anchoring vignette questions in the drop-off questionnaire was drawn in most countries (the so called vignette sample). The only countries where no vignette samples were drawn, neither in Wave 1 nor in Wave 2, are Austria and Switzerland.

After taking into account the peculiar features of the sampling design adopted in each country, the probability of being selected in the sample of the second wave was generally computed as the joint probability of being selected in four sub-samples: main longitudinal, main refreshment, vignette longitudinal and vignette refreshment. (Since the first wave, the data also include a supplementary sample that was drawn in Sweden to increase the low number of achieved interview. This sample can be usually considered as a part of the main longitudinal sample). Sampling design weights were then computed as the inverse of the selection probability for the main sample alone, the vignette sample alone, and the two samples combined. Notice that, these weights only account for sampling errors by compensating for unequal selection probabilities of individuals and households. Furthermore, by the design of SHARE, the probability of including any eligible household member is the same as the probability of including the household. Thus, the selection probability and the design weight is the same for the household as for any eligible household member. A list of the sampling design weights included in the release 0 of the SHARE data is provided in the first panel of Table 1.

Variable	Description
wgtADH	Design weight, household & individual, overall sample
wgtMDH	Design weight, household & individual, main sample
wgtVDH	Design weight, household & individual, vignette sample
wgtACH	Calibrated cross-sectional household weight, overall sample
wgtMCH	Calibrated cross-sectional household weight, main sample
wgtVCH	Calibrated cross-sectional household weight, vignette sample
wgtACI	Calibrated cross-sectional individual weight, overall sample
wgtMCI	Calibrated cross-sectional individual weight, main sample
wgtVCI	Calibrated cross-sectional individual weight, vignette sample
lwgtACH	Calibrated longitudinal household weight, overall sample
lwgtMCH	Calibrated longitudinal household weight, main sample
lwgtVCH	Calibrated longitudinal household weight, vignette sample
lwgtACI	Calibrated longitudinal individual weight, overall sample
lwgtMCI	Calibrated longitudinal individual weight, main sample
lwgtVCI	Calibrated longitudinal individual weight, vignette sample

Table 1 Weighting variables in the second wave of SHARE

Calibrated Cross-Sectional Weights

As discussed in the previous section, sampling design weights allow obtaining unbiased estimators of the population parameters under the ideal situation of complete response. Unfortunately, survey data are usually affected by problems of nonresponse. Hence, estimators constructed on the basis of sampling design weights may lead to biased estimators of the population parameters of interest.

In this section, we focus on problems of unit nonresponse in the second wave of SHARE and describe the construction of calibrated cross-sectional weights. Under certain conditions, these weights may help reduce the potential selectivity bias generated by this source of nonsampling error. (Notice that, the set of calibrated weights provided in the public release of the SHARE database are designed to compensate for problems of unit nonresponse in the CAPI interview by ignoring for problems of unit nonresponse in the drop-off questionnaire). As for the first wave, nonresponse corrected weights in Wave 2 were constructed through the calibration procedure provided by Deville and Särndal (1992). This is a statistical reweighting procedure that assigns weights to sample respondents in order to match known population totals obtained from external sources. As discussed at length in the survey literature, effectiveness of this reweighting procedure relies crucially on the assumption that the missing data mechanism underlying unit nonresponse is missing at random (MAR). This means that, after conditioning on a set of variables, there is no relation between the probability of unit nonresponse and other key survey variables excluded from the conditioning set. In principle, the MAR assumption could be relaxed by considering alternative approaches where the process for the outcome of interest and the nonresponse process are estimated jointly. An empirical application of this approach can be found in De Luca and Peracchi (2007). In practice, however, the specification of this type of sample selection models tends to be specific to the analysis of interest. Furthermore, they usually require some background information on both responding and nonresponding units

which is not available for all SHARE countries. Depending on the purpose of the analysis, users should decide if the set of calibrated weights provided by SHARE is enough for unit nonresponse compensation.

Consider a finite population $U=\{1,\dots,k,\dots,N\}$ from which a probability sample $S\subseteq U$ is drawn according to a given sampling design. Let w_k be the original sampling design weight of the k th unit, and assume that only a sub-sample of respondents $R\subseteq S$ agree to participate to the survey. Following Deville and Särndal (1992), the calibrated weight w_k^* can be obtained by minimizing the chi-square distance function

$$\sum_{k\in R} (w_k^* - w_k)^2 / w_k$$

subject to a set of J calibration equations

$$t_x = \sum_{k\in R} w_k^* x_k$$

where $x_k=(x_{k1},\dots,x_{kj})$ and $t_k=(t_1,\dots,t_j)$ are J -vectors of calibration variables and known population totals respectively. Note that the use of the chi-square distance function is a convenient choice because it guarantees the existence of a closed form solution. (Alternative distance functions which require iterative solution methods have been investigated by Deville and Särndal (1992).) The solution of the minimization problem gives calibrated weights of the following form

$$w_k^* = w_k \left[1 + \left(t_x - \sum_{k\in R} w_k x_k \right) \left(\sum_{k\in R} w_k x_k x_k' \right)^{-1} x_k \right]$$

Thus, given the chosen distance measure, calibrated weights are as close as possible to the original sampling design weights, while also respecting a set of constraints which reflect the size of the target population across one or more dimensions. Notice that, even if calibrated weights are primarily designed to obtain unbiased estimates of population totals, population means can be easily estimated after rescaling the sum of the weights to one.

Calibrated cross-sectional weights of Wave 2 were separately computed by country using at least 8 calibration margins to control for the size of the target population across gender and age groups (50-59, 60-69, 70-79 and 80+). For most of the SHARE countries, information about the calibration margins comes from sources other than the sampling frame, such as national population census. (As pointed out by Klevmarcken et al. (2005), this may be worrisome because census data may not exactly cover the same target population investigated by SHARE.) For those countries involved in oversampling of individuals born between 1955 and 1956, we have calibrated against 10 population totals by splitting the age class 50-59 into the age classes 50-52 and 53-59. Additional calibration margins were only used in France, Italy and Denmark. In France, we added one calibration margin to control for home ownership, while in Italy and Denmark we added 14 and 15 calibration margins respectively to control for the size of the target population across geographical areas.

Overall, the release 0 of the data includes six types of calibrated cross-sectional weights which are listed in the second panel of Table 1. We can distinguish between cross-sectional weights at the individual and the household level, and cross-sectional weights for three variants of the SHARE sample (main, vignette and overall sample). For the individual level weights, each 50+ respondent receives a calibrated weight which depends on the household design weight and the respondent's calibration variables. For the household level weights, each interviewed household member receives a common calibrated weight which depends on the household design weight and the calibration variables of all 50+ household respondents. These weights are therefore designed for inference on the target population of individuals and households respectively. For each type of weight, we also provide a flag variable which is equal to 1 when the corresponding calibrated weight is missing. In particular, weights at the individual level are missing for respondents younger than 50 and respondents with missing information on either gender or year of birth. Weights at the household level are instead missing whenever sampling design weights can not be computed because of incomplete sampling frame information.

Calibrated Longitudinal Weights

In addition to calibrated cross-sectional weights, SHARE also provides calibrated weights for the longitudinal part of sample. These weights aim of compensating for potential selectivity effects generated by sample attrition between the first and the second wave.

In this preliminary release of the data, calibrated longitudinal weights were constructed by using the same procedure adopted for calibrated cross-sectional weights. There are only two major differences. First, they are only defined for the subset of respondents who agree to participate to both waves of the panel. Second, we have calibrated against 8 population totals to match the size of the target population of Wave 1 by gender and age class (50-59, 60-69, 70-79 and 80+). As for cross-sectional weights, calibrated longitudinal weights were computed at the individual and the household level, and for three variants of the sample (main longitudinal, vignette longitudinal, and overall longitudinal sample). This leads to six types of calibrated longitudinal weights which are listed in the third panel of Table 1. Validity of these weights relies again on the assumption that the missing data mechanism underlying sample attrition is MAR.

A more refined version of longitudinal weights is planned to be provided in the final release of the Wave 2 data. The aim of this revision is twofold. First, we will account for mortality in the target population of Wave 1 by using estimates of mortality rates obtained from life tables. Unlike other sources of attrition, mortality is indeed a phenomenon that affects both the sample and the population. For this reason, the most appropriate population for longitudinal weights should be the target population of Wave 1 that survives across waves. Second, the construction of calibrated longitudinal weights will be based on a larger set of conditioning variables by using the additional information collected in the Wave 1 interview. In principle, this may help reduce the selectivity bias generated by sample attrition and improve the plausibility of the MAR assumption. In practice, however, one cannot ignore the undesirable increase in the variability of the weights arising from a larger conditioning set. To avoid unnecessary delay in the release of the data, these issues will be addressed in future research.

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8.6 Fieldwork and Survey Management in SHARE

Barbara Schaaf

SHARE is designed to be a genuine cross-national survey. In order to ensure high quality data and a strict cross-national comparability, certain design tools have been applied of which the common interview mode, questionnaire design, effort devoted to the translation of the questionnaire, and finally the standardisation of the fieldwork procedures across countries (including a common electronic sample management system) were the most important ones.

This chapter describes the main fieldwork procedures and survey design characteristics adopted by SHARE, which have been designed and implemented in close cooperation between the Mannheim Research Institute for the Economics of Ageing (MEA) and Centerdata at the University of Tilburg, with help of the Survey Research Center (SRC) at the University of Michigan in Ann Arbor. Professional survey agencies have been selected in all participating countries in order to achieve high data quality. Agencies were subject to a common set of requirements designed by the SHARE co-ordinating team in order to minimise the occurrence of nonsampling errors, and to minimize attrition rates. Examples of the common protocols are the use of advance and follow-up letters, brochures which informed the respondents about the results from Wave 1, and the set-up of general rules for the management of the fieldwork. Basic fieldwork procedures were then administrated by the survey agencies according to their own established protocols.

The Fieldwork Period

During its second wave, SHARE was conducted in thirteen European countries. Austria, Belgium, Denmark, France, Germany, Greece, Italy, the Netherlands, Spain, Sweden and Switzerland already participated in the first wave of SHARE, whereas two new countries, the Czech Republic and Poland, debuted to SHARE. In between the waves 1 and 2 Israel joined the SHARE survey with its first wave, and data are currently being collected in Ireland.

In several countries, the sample consisted of two parts: the “core sample” and the “vignette sample”. In the vignette samples, a section with anchoring vignettes replaced a part of the self-completion questionnaire. A vignette sample was added in eleven countries (Belgium, Czech Republic, Denmark, France, Germany, Greece, Italy, the Netherlands, Poland, Spain, and Sweden).

The main fieldwork period of SHARE lasted about twelve months, from October 2006 until September 2007. In some countries the fieldwork period of the second wave was prolonged to November 2007, as the specific sample requirements of SHARE – to follow respondents who moved house, to interview people living in old-age institutions, and to conduct end-of-life interviews – requested more time-consuming (administrative) efforts by survey agencies and their interviewers than originally expected.

For all countries participating for the second time (except for Austria) a refresher sample was drawn. The refresher sample served to boost the overall sample size. In almost all countries with a refresher sample, the newly drawn sample consisted of households belonging to the core as well as of households belonging to the vignette sample. The only exceptions were France and Switzerland where the refresher sample was a core sample only.

Country	Fieldwork duration
Austria	October 2006 – August 2007
Belgium (French-speaking part)	November 2006 – October 2007
Belgium (Flemish-speaking part)	December 2006 – June 2006
Switzerland	November 2006 – September 2007
Czech Republic	October 2006 – May 2007
Germany	October 2006 – July 2007
Denmark	November 2006 – October 2007
Spain	November 2006 – November 2007
France	October 2006 – February 2007
Greece	December 2006 – August 2007
Italy	October 2006 – September 2007
The Netherlands	January 2007 – September 2007
Poland	October 2006 – July 2007
Sweden	September 2006 – November 2007

Table 1 SHARE Wave 2 fieldwork periods

Advance, Follow-up and Thank-you Letters, and Panel Care

SHARE mailed an advance letter to each household in the gross sample before any other contact attempt was made. Informing all respondents of upcoming calls or visits by an interviewer, communicating the nature of, and the motivation for, the study, explaining the importance of participating, and addressing the respondent's potential concerns about data confidentiality were the main purposes of that advance letter.

Together with the advance letter the respondents received a coloured brochure that explained the aims and objectives of SHARE, stressed the importance of participation of each selected household and provided the respondents with interesting results from the first wave of SHARE. This first results brochure was designed centrally and translated into local languages afterwards.

After the initial contact with the household, respondents who showed a general reluctance to participate received a follow-up letter, which was mainly designed to reiterate the importance of cooperating with the survey request and the adherence to the data protection laws.

After the interview, a thank-you letter was mailed out to each respondent in order to increase the propensity to participate in future waves of the survey. In some countries, season greetings cards were sent. The advance letter as well as the season greetings cards was sent out together with a form which respondents who moved since then end of Wave 1 fieldwork could use in order to provide the survey agency with their new contact details.

In cases where the survey agency detected the death of a respondent from Wave 1 the family of the deceased respondent received a condolence letter from the survey agency.

In order to reach respondents who moved into old-age institutions a special letter has been designed to inform old-age home staff about the purpose of the study and the respondents' participation during the first wave.

Incentive Schemes

Three types of incentive schemes were adopted in SHARE. In most of the SHARE countries, incentives for respondents were distributed in order to gain their cooperation. Because of different cultures and experiences of the survey agencies, different types of incentives were used in each country.

Country	Fieldwork duration
Austria	10 € for the first and 10 € for a second interview in the same household (in the later stage of the fieldwork this was raised to 30 € for the first and 20 € for the second interview)
Belgium (French-speaking part)	Each respondent received a small gift (a 5 € voucher or a lottery ticket) after completion of the interview.
Belgium (Flemish-speaking part)	The respondents received a calculator as a present.
Switzerland	Each household received with the announcement letter for Wave 2 a check of SFr. 50.
Czech Republic	Respondents received vitamin supplements (multivitamins for seniors) mainly, the other gifts were CD's or pencil's set
Germany	For each respondent an incentive to the amount of 5 € was available. This incentive should be used variably, i.e. the interviewers were either allowed to pay cash or to bring along a small gift for the respondent (flowers, coffee, candies etc.). Additionally 20 € were offered to respondents who disagreed in 2004 to further participate in the panel.
Denmark	No respondent incentives were given.
Spain	Each respondent was given a lottery tickets or other gifts after the interview.
France	A light folding reusable shopping bag was given to respondents as a token of appreciation of their cooperation.
Greece	A digital thermometer was used as incentive.
Italy	A 15 € petrol voucher was given to the first respondent in the family, a 10 € petrol voucher was given to each other interviewed family member
The Netherlands	The incentive was a gift voucher of 15 €.
Poland	The incentive was a gift voucher of 15 €. Vouchers that could be used for payment in shops were used as incentives.
Sweden	A lottery ticket was used as incentive

Table 2 Respondent incentives used in each country

In order to increase interviewers' motivation most countries also implemented incentives scheme for interviewers. In households with more than one eligible person, interviewers received more money for the first respondent. Such a payment system accounts for the higher effort, which is normally needed to make the first interview. In other countries, special premiums were also paid on the basis of the interviewer level response rate. Each survey agency fixed its own threshold response rate. Once the target response rate was reached, interviewers received higher payments for additional interviews.

Finally, the contract with the survey agencies contained incentives for the survey agency to reach the target response rate. Interviews in excess of the target response rates were paid better, while not reaching the target response rate precipitated a contractual penalty.

Other Fieldwork Requirements

In order to increase the response rates a set of additional fieldwork requirements was designed. First, the minimum number of contact attempts was set to eight; all of them had to be in person. In person and telephone contact attempts were required to be done at varying times of the day and days of the week. Such fieldwork rules were mainly designed to obtain high contact rates. Second, for all respondents who showed reluctance to participate to the survey, participation-enhancing strategies were required to be attempted. Refusal conversion strategies were additional follow-up letters, switching to more experienced interviewers and switching to other contact modes. Third, survey agencies were required to make sure that an appropriate number of interviewers were available in a sufficient regional spread. Furthermore, interviewers working for SHARE were required to have extensive face-to-face experience. Survey agencies were asked to employ the same interviewers as in Wave 1 if possible, as these interviewers were not only familiar with the survey and its instrument, but were also known to the respondents, which increases respondents' trust and willingness to participate again.

Interview Mode

The mode of the data collection is one of the main survey design characteristics which may affect the quality of the collected data. Among other things, interview mode may impact survey participation, item nonresponse and reporting errors. As in Wave 1, the interview mode adopted in SHARE was Computer Assisted Personal Interview (CAPI), supplemented by a self-administered paper and pencil questionnaire ("drop off"). The CAPI interview, which is known to be one of the most effective interview modes, represents the largest part of the SHARE interview.

The self-administered questionnaire was handed to each eligible respondent only after the CAPI interview was completed. It was interviewee's choice whether to return the questionnaire to the interviewer right away, or send it back to the survey agency by mail using a pre-stamped envelope.

All refresher respondents in the core sample received the same version of the questionnaire. Core sample members, who already participated in the first wave of SHARE were not supposed to fill out a drop-off questionnaire. Respondents in the vignette sample received one of two different versions of the vignette questionnaire, which were randomised by interviewer.

Proxy Interviews

Under particular circumstances, a sample respondent is allowed to be assisted by a proxy respondent to complete the interview. Typically, a proxy respondent is a person who is knowledgeable about the sample respondent's situation regarding the area covered in the questionnaire, such as a spouse, an adult child, or any other family member. When physical or mental health problems affected the propensity to participate to the survey or the reliability of the data collected during the interview, proxy interviews were allowed in SHARE. Conditions under which proxy interviewing was allowed were: hearing loss, speaking problems, Alzheimer's disease and difficulty in concentrating for the interview time period needed for SHARE.

SHARE allowed two types of proxy reporting. The interview is referred to as a "partly proxy" interview if a respondent was merely helped by a proxy. The interview is referred to as a "fully proxy" interview if the proxy answers the entire questionnaire in lieu of the

respondent. Proxy interviews skipped six modules of the CAPI interview: Cognitive Function, Mental Health, Grip Strength, Walking Speed, Activities and Expectations since the information required in these modules is based on personal abilities, cognitive and physical measures, or personal judgment. For all other modules of the questionnaire, interviewers recorded at the end of each module whether it was completed by a respondent only, partly by proxy or fully by proxy.

End-of-Life Interviews

For deceased Wave 1 respondents, SHARE has designed an end-of-life or exit interview, which covers health, social and economic well-being in the last year of life, and which is answered by a proxy respondent, mainly next of kin. In case the respondent died only very recently, interviewers were instructed to postpone the exit interview until at least three months after the initial respondent's death.

Especially in cases where a respondent formerly living alone died, it was a difficult task for interviewers to identify a knowledgeable person who could provide information on the deceased respondent. Exit interviews could also be conducted via telephone. This was a suitable solution as the case did not have to be transferred to another interviewer if the most knowledgeable person lives in far distance from the deceased respondent.

Sample Management

In order to facilitate the management and the coordination of the fieldwork procedures all survey agencies were required to use an electronic sample management system (SMS). The SMS is an electronic tool which automatically stores and links different sources of information that are useful for the organisation of the fieldwork and which allows to better document the fieldwork processes. France was the only country in which the survey agency used their own electronic system. The SHARE SMS started with a list of households to be approached by each interviewer, together with the contact details of the households (like address and/or telephone number). The SHARE SMS interacted with the main SHARE CAPI instrument and determined automatically those household members that were interview-eligible, and whether or not eligible household members had already been interviewed. The screening of the respondents' eligibility was greatly facilitated as well as the management of appointments and interrupted interviews. Interviewers recorded the history of all contact attempts made to a household. These call records data allowed the interviewers to tailor how to approach each household. The SMS also enforced appropriate calling and follow-up strategies to maximise response rates. Call records data were also used to manage refusal conversion strategies, especially when addresses were transferred from one interviewer to another.

Fieldwork Monitoring

The information delivered by the SMS, specifically on the mode, the date, the time and the result code of each contact attempt, allowed the SHARE co-ordinating team to conduct an effective fieldwork monitoring during the entire fieldwork period. In a bi-weekly mode, survey agencies sent their updated CAPI and SMS data electronically to CentER-data, where the data were processed and made available to the country team leaders and the SHARE co-ordinating team. These data were used to produce reports which depicted the discrepancies between actual and projected status of the fieldwork, using some key indicators such as the number of households already contacted, the number of interviewers

actively working on SHARE, the number of achieved interviews, and response rates. Identifying possible problems in the field and their possible reasons early in the process was the main purpose of collecting this information. The coordinating team and the country team leaders then discussed strategies to cope with these problems. Country team leaders then contacted the survey agencies, so that remedies to problems could be implemented without unnecessary delay.

8.7 Item Non-Response in SHARE Wave 2

Dimitris Christelis

As in every household survey, in SHARE we can observe item non-response for a number of variables. The patterns of non-response can be indicative of the quality of the interviewer's training and performance, of the survey instrument and of the reasons why interviewees choose not to respond.

It is reasonable to expect that there are going to be different patterns of non-response for economic and non-economic variables, since the former contain information about the household finances that is deemed to be sensitive by many respondents, thus leading to increased non-response. Furthermore, even if respondents intend to give a complete answer, they might experience genuine difficulties in valuing assets like the house for which the last transaction might have taken place many years in the past or assets whose market value depends on economic factors like the interest rate in a complicated fashion (e.g. bonds, life insurance). Finally, interviewees might have difficulties remembering values due to cognitive limitations, especially at older ages.

In the discussion to follow we include as non-response not only instances of refusal and/or inability to answer, but also, in the case of economic variables, complete answers that result in very implausible values of the item. To the extent that these implausible responses are due to interviewer errors, the prevalence of non-response is overestimated. In addition, we do not include the cases of partners of interviewees who refuse to be interviewed outright, since they represent unit non-response (even if they are eventually included in the publicly released data with imputations).

Prevalence of Item Non-Response

Since we cannot give a comprehensive account of item non-response in such a limited space we will choose three non-economic variables and two economic ones. The three non-economic variables are: i) feeling limited in daily activities (question PH005_); ii) current employment status (question EP005_); iii) expectation about the weather tomorrow (question EX001_). These three variables come from the beginning, the middle and the end of the questionnaire respectively, and thus the differences in the prevalence of missing values should also reflect the effect of the duration of the interview. The two economic variables are the values of the main home and of bank accounts, which are the two principle assets that most households hold.

In Figure 1 one can see the prevalence of missing values for feeling limited in daily activities, and it is clear that item non-response is not a serious issue for this variable since it is below 0.7 percentage points (pp) for all countries in Wave 1, with the exception of France where it is equal to 2.4. Furthermore, there is some evidence that non-response is even smaller in Wave 2, especially for France. The two new countries in Wave 1, the Czech Republic and Poland show patterns of non-response similar to those observed for the other countries in Wave 1. In Figure 2 we show the prevalence of non-response for current employment status, and we observe that it is slightly higher than that for question PH005, although still quite low in Wave 1 with an average of roughly 0.5 pp, with the exception of France where it is equal to 3.3 pp.

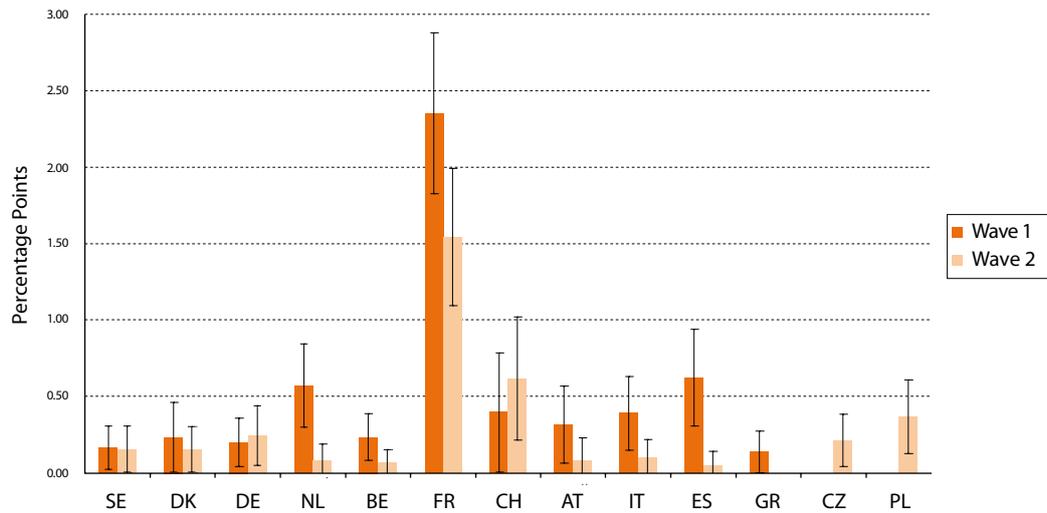


Figure 1 Prevalence of Missing Values – Limited Activities

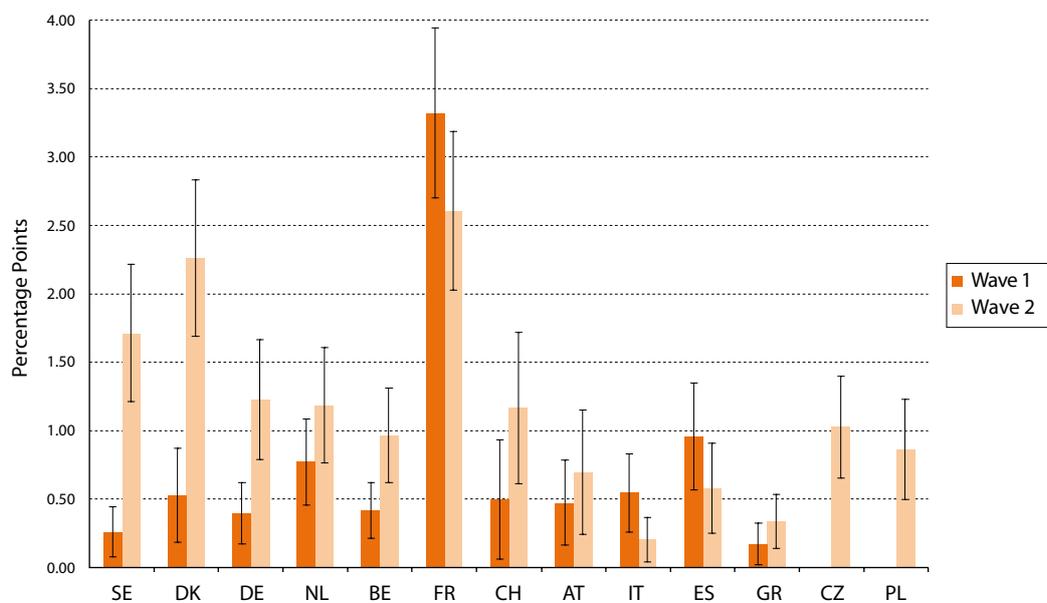


Figure 2 Prevalence of Missing Values – Current Employment Status

In Wave 2 there is a slight deterioration in response rates for this question, with the average of all countries except France now rising to roughly 1 pp, while France exhibits an amelioration in non-response of 0.7 pp. Finally, in Figure 3 we show non-response in the question about weather expectations, weather expectations which was used as a calibration device for all other expectation questions. The Figure shows clearly that non-response is higher for this question, with an average of 3 pp in both waves, again with the exception of France which is an outlier exhibiting non-response of about 10 pp. Poland and the Czech Republic show non-response that is slightly higher than average, close to 4 pp. The increase in non-response for this question could be due to interview fatigue on

the part of respondents (some of which have dropped out of the interview by the time this question is asked) but also due to genuine ignorance as to the weather conditions on the next day. When we move to the two economic variables, item non-response becomes much more pervasive.

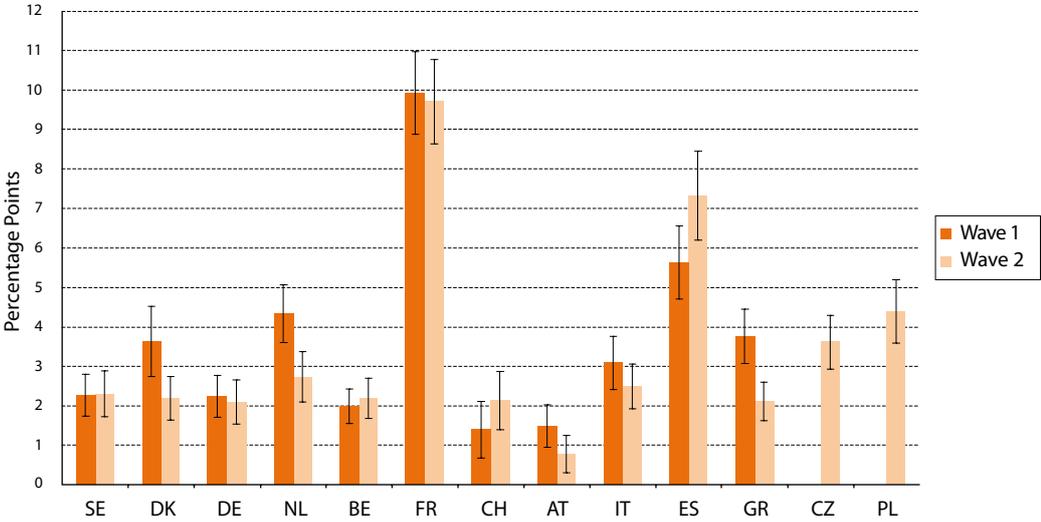


Figure 3 Prevalence of Missing Values – Expectations about Weather

In Figure 4 we show the pattern of non-response for the question on the value of the main home, and we observe that in Wave 1 missing values range from around 6.5 pp for Sweden, Denmark and the Netherlands to 25 pp for Spain, for an overall mean of approximately 15 pp.

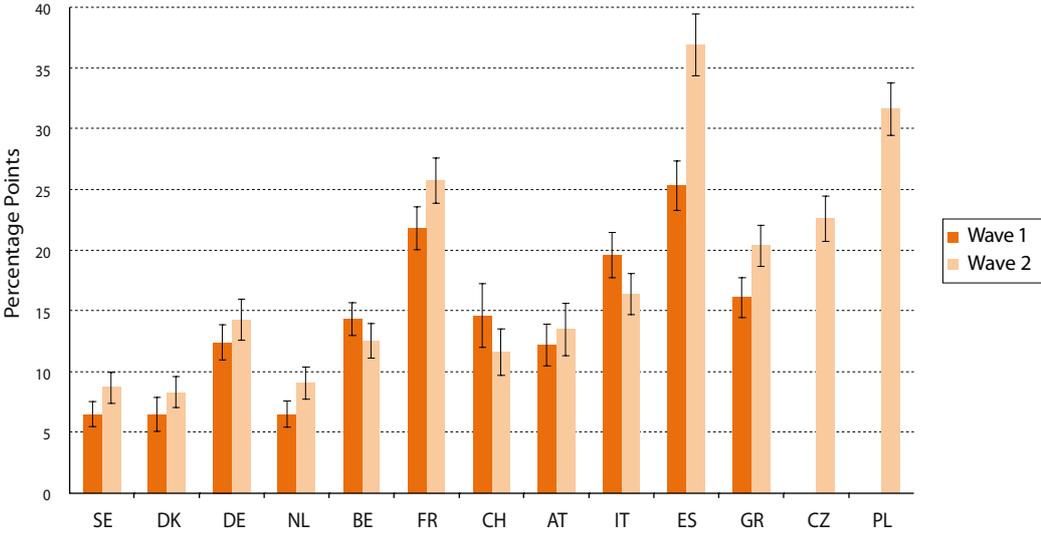


Figure 4 Prevalence of Missing Values – Home Value

In Wave 2 we observe a slightly higher non-response for most countries, for an overall average of 19 pp. The Czech Republic and Poland exhibit higher than average non-response for housing of 23 and 32 pp respectively. Non-response for bank accounts is shown in Figure 5, and we observe that it is roughly constant in both waves for an overall average of approximately 31 pp, ranging from 23 pp for Italy to 44 pp for Belgium.

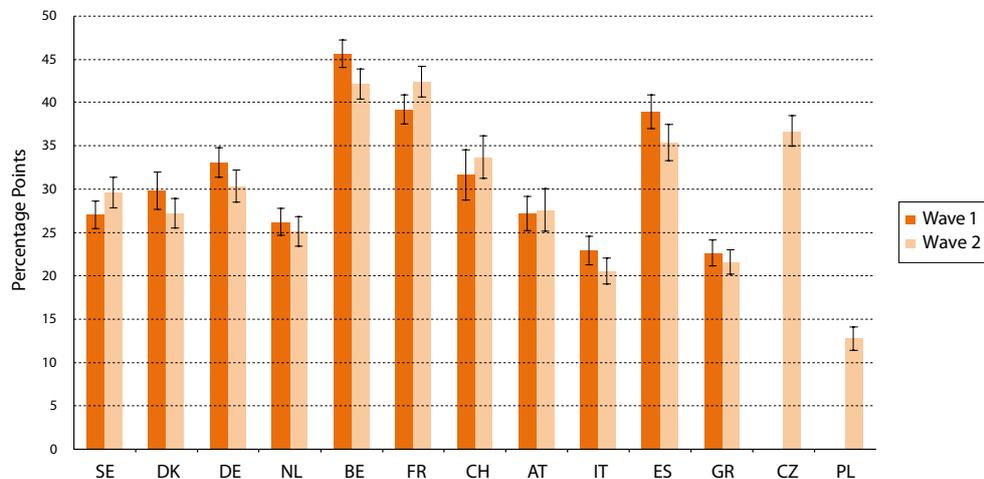


Figure 5 Prevalence of Missing Values –Value of Bank Accounts

In the case of economic variables, non response is mitigated by the possibility that the respondent gives an answer that lies within a range of values, through the use of a sequence of unfolding brackets (for more details see Brugiavini et al., 2005). There are three possible outcomes for the bracket process: i) the respondent goes through the whole process, in which case the answer lies within a relatively narrow range; ii) she starts but does not complete the process, in which case the answer lies in a wider range; iii) she does not enter the process at all, either because of refusal/inability to answer or because she gives a complete answer that is highly implausible. In Figure 6 we show the distribution of outcomes of the bracket sequence for the main home, and we observe that in both waves 43% of respondents who do not give complete answers belong to the first case, 5% to the second case and 52% to the third case.

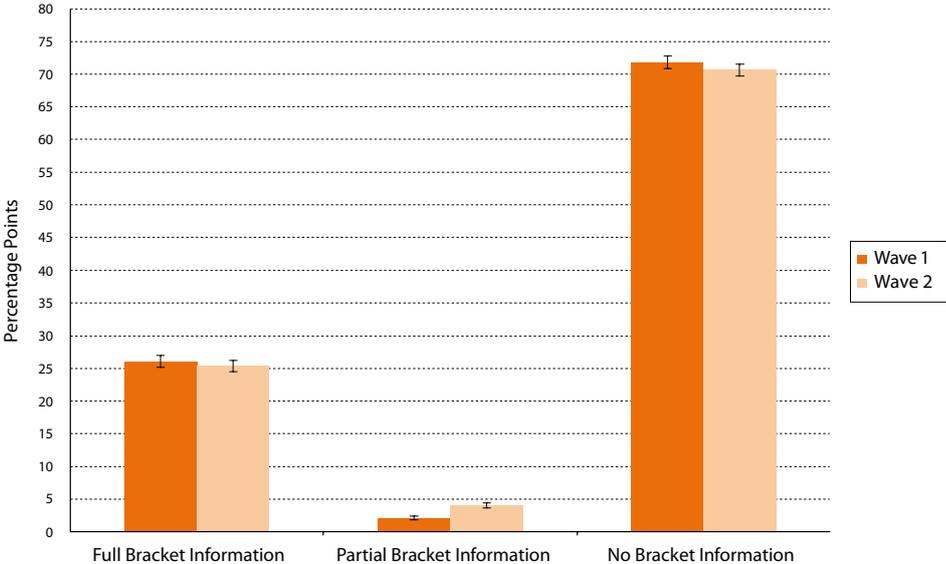


Figure 6 Distribution of Bracket Responses – Value of Bank Accounts

The corresponding percentages for the case of bank accounts are shown in Figure 7, and in that case the proportion of those who do not provide bracket information is much larger (71%), while those who provide full and partial bracket information form 26% and 3% of the sample of non-respondents respectively. Therefore, in Wave 2 the brackets continue to provide useful information that helps to mitigate the problem of item non-response (although their usefulness varies by variable), and this happens more or less at the same rate as in Wave 1.

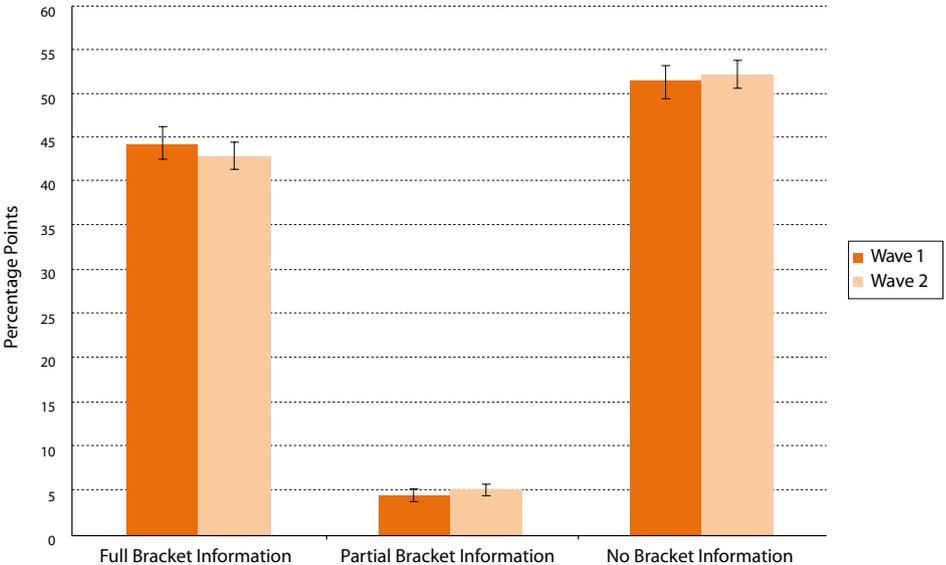


Figure 7 Distribution of Bracket Responses – Home Value

Imputation Methodology

The problem of missing values necessitates the construction of an imputation procedure for the reasons detailed in, e.g., Rubin and Little (2002). The imputation procedure followed for Releases 2.0 and 2.1 of SHARE Wave 1 differ from the procedure described in Kalwij and van Soest (2005), and since we plan to use the same procedure for release 2 of Wave 2 we are now briefly going to describe it.

We implement an imputation procedure for a system of variables Y , along the lines of the procedure proposed by Lepkowski et al. (2001) and van Buuren et al. (2006). The distribution of missing values Y_{mis} given the observed values Y_{obs} and the parameters θ of the joint distribution function of Y is given by

$$P(Y_{\text{mis}}|Y_{\text{obs}}) = \int P(Y_{\text{mis}}|Y_{\text{obs}}, \theta)P(\theta|Y_{\text{obs}})d\theta \quad A.1$$

One would like to impute missing values by drawing from the above distribution, but, with the exception of a few specialized cases, it is impossible to evaluate it directly. Thus we need to approximate this distribution by using Markov chain Monte Carlo methods, specifically Gibbs sampling with data augmentation (see e.g. Little and Rubin, 2002). This method is done iteratively and for each iteration the following two steps are performed:

In each iteration $t+1$ we draw from the predictive distribution of the missing values given the observed ones and the parameters estimated in iteration t , i.e. we draw from

$$Y_{\text{mis}}^{(t+1)} \sim P(Y_{\text{mis}}|Y_{\text{obs}}, \theta^{(t)}) \quad A.2$$

The draw is performed by assuming an appropriate predictive model for each variable Y_j given the remaining variables Y_{-j} in the system, with the ones preceding Y_j in the sequence of variables being evaluated at iteration $t+1$ while the ones following Y_j in the sequence are evaluated at iteration t . That is we draw from the following conditional distribution

$$Y_j^{(t+1)} \sim F(Y_j^{(t+1)}|Y_1^{(t+1)}, \dots, Y_{j-1}^{(t+1)}, Y_{j+1}^{(t)}, \dots, Y_J^{(t)}, \theta^{(t)}) \quad A.3$$

where J is the total number of variables.

Having drawn the missing values for iteration $t+1$ we estimate appropriate linear or nonlinear models at iteration $t+1$ and then draw the parameters θ from their posterior distribution, i.e. we draw from

$$\theta^{(t+1)} \sim P(\theta|Y_{\text{obs}}, Y_{\text{mis}}^{(t+1)}) \quad A.4$$

Thus the imputation procedure generates a Markov chain of $Y^{(t)}, \theta^{(t)}, Y^{(t+1)}, \theta^{(t+1)}, \dots$ that converges under mild conditions to the joint distribution of $P(Y_{\text{mis}}, \theta|Y_{\text{obs}})$ and each draw from this joint distribution represents also a draw from the conditional distribution (A.1).

As Lepkowski et al. (2001) point out using the linear prediction (A.3) to simulate draws from (A.2) makes it difficult to evaluate whether the draws are consistent with the underlying joint distribution of the variables, but they suggest that the approximation works reasonably well.

The general framework just described has to be adapted to fit the particular features of a large-scale complex survey like SHARE. Some of the most important modifications are the following:

We divide the vector Y into economic variables Z and demographic characteristics X . Z contains roughly 60 variables that are related to income, assets, health expenses, consumption and financial transfers. X contains 15 variables including education, self-reported health, number of children and grandchildren, number of rooms in the house etc.

For the demographic variables X we do hotdeck imputation by age and gender for singles since for them there are relatively few missing values. For couples on the other hand, since we have a non-trivial number of missing values, we run ordered probits or OLS regressions depending on the nature of the variable (e.g. for the 5-level self-reported health variable we use an ordered probit). In both cases demographic variables are then used as covariates for the regressions of economic variables, but in the case of couples economic variables are also used as covariates for the estimation procedure of demographic variables.

For the economic variables Z we first have to determine whether the respondent owns the item in question, and if so, in which range the value of the item lies. The latter information can be taken from the bracket questions that respondents are directed to when they don't answer directly the question on the amount. Having determined ownership and admissible range of values, an OLS regression is run (i.e. specification A.3) among owners. The estimated parameters of this regression are redrawn from their posterior distribution (A.4) and then are used to generate predicted values of the Z variables. We then add to these predicted values random draws from the assumed normal distribution of the error term using the estimated error variance. The draws are performed in such a way as to observe the boundaries of the bracket range the observation falls in.

We use a multiple imputation methodology to generate the missing values, i.e. we generate five different values for each missing one as advocated by Rubin and Little (2002), and thus we run five independent imputation chains that generate five different datasets.

Having drawn the missing values at the end of each iteration one has to decide whether to continue iterating or whether the data can be thought to have approximately converged to the underlying joint distribution. To determine convergence we use the convergence criterion of Gelman-Rubin (1992) that compares the between-implicates variance with the within-implicates one and when the former is sufficiently small compared to the latter convergence is deemed to have occurred.

The second wave of SHARE provides opportunities to use information that helps the imputation in Wave 1 and vice versa. The first case takes place when, e.g. a person has the education information missing in Wave 1 but not missing in Wave 2. The latter case can occur when we know that a person receives a public pension in Wave 1, and thus we can reasonably assume that the same will hold in Wave 2. Amounts in economic variables in Wave 1 can also help in conditioning the imputation of amounts in Wave 2. Our plan is to thus link the imputation in the two waves, since performing it independently could result in excessively large transitions of participation and amounts for the same individuals across waves.

Summary

As observed in Wave 1, item non-response seems to be not a major issue for non-economic variables, like those referring to demographics, physical and mental health, qualitative employment variables, expectations or activities. On the other hand item-non response is more of a problem for economic variables, and its prevalence seems to be roughly constant across waves. While the differences across countries in item-non response are relatively small for non-economic variables, they are substantial for economic ones. In order to impute missing values in for release 2 of Wave 2, we plan to use an iterative multivariate procedure that takes into account the cross-linking of the information across the two SHARE waves.

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8.8 Enhancing International Comparability Using Anchoring Vignettes

Arthur van Soest

In a diverse continent like Europe, much can be learned from cross-national research using surveys among households and individuals. Often, however, such comparisons suffer from differences across countries and socio-economic groups in the way people answer survey questions, particularly self-evaluations of, e.g., health or quality of work. This problem can be solved using anchoring vignettes: short descriptions of, e.g., the health or job characteristics of hypothetical persons. Respondents are asked to evaluate the hypothetical persons on the same scale on which they assess their own health or job. Respondents are thus providing an anchor, which fixes their own health assessment to a predetermined health status or job characteristic. These anchors can then be used to make subjective assessments comparable across countries and socio-economic groups. Such anchors can be used in a broad range of domains, such as health; work disability; quality of life, employment and health care; or satisfaction with political institutions, and can in principle be applied to many cross-national surveys with self-assessed questions, including SHARE.

This section briefly describes the methodology of anchoring vignettes and its application the SHARE data through the separate EU project COMPARE, and additional funding through the U.S. National Institute on Aging with the goal of constructing improved indicators of health, well-being, job satisfaction, etc., helping Europe to create opportunities for more accurate and richer analyses of the consequences of ageing and the effects of socio-economic and health care policies at the national and European level (see www.compare-project.org). The vignette questionnaires were fielded in eleven countries: Belgium, Czech Republic, Denmark, France, Germany, Greece, Italy, Netherlands, Poland, Spain, and Sweden.

Why Anchoring Vignettes?

Comparison of such subjective measurements across countries (or socio-economic groups in one country) raises the issue whether people in different countries (or socio-economic groups) use the same benchmarks or scales on which they evaluate themselves. The literature shows that this is not the case – Different groups of people use systematically different norms for assigning a label like “good” or “very good” to their own self-assessment. In psychometrics this is called differential item functioning (DIF; Holland and Wainer, 1993). DIF substantially impedes the usage of cross-national data to make valid international comparisons in crucial areas such as health care and policy analysis. Additional information is needed to distinguish the effects of language and cultural and social norms from genuine health differences that may result from, for example, the effects of public health care policy. Analogous examples can be provided for other subjective measurements such as well-being or satisfaction with the social and political environment (King et al., 2004).

In anchoring vignettes, respondents are asked to assess the described features of the health, quality of health care, quality of employment, etc., on the same scale as used for the evaluations of their own health, quality of health care, etc. If different respondents evaluate the same hypothetical person (or situation) differently, this is evidence of response scale differences (DIF). The response scale differences can be expressed more precisely using econometric models, making it possible to create indicators of health, quality of work, health care, or life, etc., that are better comparable across countries or socio-economic

groups than the indicators that are currently available, since response scale differences are corrected for.

The following example illustrates a vignette for the domain of mobility:

Margaret feels chest pain and gets breathless after walking distances of up to 200 metres, but is able to do so without assistance. Bending and lifting objects such as groceries also causes chest pain.

Overall in the last 30 days, how much of a problem did Margaret have with moving around? None, Mild, Moderate, Severe, or Extreme?

The crucial point is that these vignette descriptions are the same in all countries, so that the vignette persons represent the same health conditions. Hence, any differences in responses must be due to DIF. Vignette evaluations then identify the differences between the scales in the two countries. Using the scales in one of the two countries as the benchmark, evaluations in the other country can be adjusted by evaluating them on the benchmark scale. The corrected evaluations can then be compared to those in the benchmark country – they are now on the same scale.

The existing applications suggest the vignettes work quite well in a number of different domains in the sense that the vignette corrections go in the direction that is intuitively expected. For example, King et al. (2004) have applied the vignette methodology to political efficacy. They find that without correction the Chinese seem to have more political influence than the Mexicans. The conclusion reverses if the correction is applied. More applications to health are given in Salomon et al. (2004) and Bago d'Uva et al. (2008). Kapteyn et al. (2007) have used anchoring vignettes to analyse cross country differences in self-reported work disability. They find large differences between self-assessed rates of work disability between the U.S. and the Netherlands, with much higher rates in the Netherlands, particularly for respondents of older working age. Objective measures of health do not provide any evidence that U.S. citizens are healthier than Dutch citizens – on the contrary, they suggest that the Dutch are healthier. Correcting for DIF, Kapteyn et al. find that the difference between the U.S. and the Netherlands is less than half of the uncorrected difference. Kristensen and Johansson (2008) find clear evidence of DIF in self-assessed job satisfaction.

Vignettes in SHARE

The chosen domains for which vignettes are fielded in SHARE are the following:

- Several domains of health (mobility, pain, sleep, breathing, emotional health, cognition);
- The extent to which health limits the amount or kind of work people can do;
- The quality and responsiveness of health care;
- Quality of employment; satisfaction with work;
- Satisfaction with income; poverty and social exclusion;
- Well-being and quality of life;
- Political efficacy and satisfaction with the national political system.

Vignettes for physical and mental health were already collected in the form of a pretest added on to SHARE Wave 1 in 2004, for eight countries. This also applies to work disability – SHARE 2004 included vignettes on work-limiting health problems in the domains of pain, depression, and cardio-vascular disease. The same work limitation vignette questions have also been administered to a sub-sample of the U.S. Health and Retirement Study (HRS) 2004 and are included in the English Longitudinal Study on Ageing (ELSA).

The quality of health care services is compared by subjective questions in the spirit of Schoen et al. (2004) and the World Health Survey vignettes on several aspects of health care quality, such as waiting time for a test or an operation, willingness to refer patients to (other) experts, cooperation of the insurance company, and communication with medical professionals (see <http://gking.harvard.edu/vign/eg/>). An example in the domain “choice of providers” is:

Jim had stomach problems for several years. He has visited his doctor many times. His requests for a referral to a particularly well-known stomach specialist have been turned down because his doctor was sure that he was capable of treating the illness and assured Jim of this.

Now, overall, how would you rate Jim’s experience of being able to choose to see the health care provider he went to? Very good, Good, Moderate, Bad, or Very bad?

A major policy challenge consists in increasing the number of regularly employed people at older age by influencing the determinants of early retirement. Poor quality of work and employment is an important determinant of premature departure from working life. This is why we include self-assessments and several vignettes on job satisfaction. Since more than half of the respondents in SHARE do not do any paid work, job satisfaction self-assessments and vignettes are replaced by self-assessments and vignettes on daily activities more in general for the older part of the sample.

A rather general but subjective measure of economic well-being and poverty is obtained by the question:

How satisfied are you with your household’s income? Very satisfied, Satisfied, Neither satisfied nor dissatisfied, Dissatisfied, or Very dissatisfied?

This question may suffer from DIF across socio-economic groups and across countries. To correct for this, we developed vignettes on income satisfaction. An example:

Jim is married and has two children; the total after tax household income of his family is € 1,700 per month.

How satisfied do you think Jim is with the total income of his household? Very satisfied, Satisfied, Neither satisfied nor dissatisfied, Dissatisfied, or Very dissatisfied?

Another dimension of social exclusion is lack of social contacts with family, friends, neighbours, etc. We therefore also included a self-assessment and some vignette questions on satisfaction with social contacts. An example:

Mary has been married for many years. Lately she has spent little time with her

husband and they have been quarrelling more. They seem to prefer spending time with others rather than with each other. Both of them have many friends.

How satisfied do you think Mary is with her social contacts (family, friends, etc.)? Very satisfied, Satisfied, Neither satisfied nor dissatisfied, Dissatisfied, or Very dissatisfied?

The vignettes for overall quality of life give more complete descriptions of people's lives, including the various domains given above. They are used to correct for DIF in the self-assessment question: How satisfied are you with your life in general?

Political efficacy refers to the "feeling that individual political action does have, or can have, an impact upon the political process, that is, that it is worthwhile to perform one's civic duties" (Campbell et al., 1954). The vignettes in King et al. (2004) to correct for DIF in political efficacy self-assessments were placed in the context of a developing country. We adjusted them to the European context. An example:

John is bothered by the air pollution caused by a local firm. It is not dangerous but sometimes leads to a bad smell. The mayor has looked into the problem, but concluded that industrial development is the most important policy right now instead of clean air.

How much say does John have in getting the municipality to address issues that interest him? Unlimited say, A lot of say, Some say, Little say, or No say at all?

Questionnaire Design

The vignette questionnaire comes in the form of a drop off. It is a paper and pencil questionnaire that is given to the respondent by the interviewer at the end of the CAPI interview. Since job satisfaction and work disability are more relevant for respondents younger than 65 while respondents of 65 and older tend to make more use of health care and have other daily activities, we used two different versions for the younger than 65 and 65 and older. The table below shows how many self-assessments and vignettes are included in each version. The questionnaires can be found on the Compare web-site (www.compare-project.org).

Country	Self-assessments		Vignettes	
	< 65	65 +	< 65	65 +
Health (in six domains)	6	6	6	6
Work disability (3 domains)	1	-	3	-
Income satisfaction	1	1	2	2
Satisfaction with social contacts	1	1	2	2
Job satisfaction	1	-	2	-
Satisfaction with daily activities	-	1	-	2
Satisfaction with life in general	1	1	2	2
Health care responsiveness (3 domains)	3	3	3	6
Political efficacy	1	1	2	2
Total	15	14	22	22

Table 1 Number of self-assessments and vignettes in the COMPARE survey for respondents younger than 65 and respondents ages 65 and over

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