

APPENDIX

DATA COLLECTION

**Marjolein Broese van Groenou, Theo van Tilburg, Edith de Leeuw,
and Aart C. Liefbroer**

This appendix gives some general information on the steps taken to collect data for the NESTOR program 'Living arrangements and social networks of older adults' (LSN). It also provides a detailed analysis of the non-response and an assessment of the representativeness of the realized sample.

A.1. Determination of the sample

Stratification by sex and year of birth. The sample was stratified according to sex and year of birth. Stratification according to *sex* was called for because men and women generally differ as regards structural opportunities for interacting with others. More specifically, older men and women differ with respect to their living arrangements and whether or not they have a partner. In order to stratify the sample according to *age*, we selected years of birth ranging from 1903 to 1937, so that on January 1, 1992 the respondents varied in age from 54 to 89. The lower age limit was chosen because people above 54 are increasingly being included in the category of senior citizens. The youngest age cohorts are on the verge of experiencing changes in their work situation and living arrangements (empty nest). The upper age limit of 89 was chosen because people older than 89 are increasingly less able to participate in the lengthy interview as planned.

The total number of respondents to be interviewed was set at 4,000. This figure was chosen because it made it possible for the total of 70 different categories of sex and years of birth to be filled with numbers high enough for complex data analyses. The stratification of the sample means the same number of males and females had to be selected for each year of birth. In

addition, the sample was selected in such a way that after five years, the number of males and females in the oldest age groups would still be large enough to be studied. The reason for this was that the LSN program is linked with the Longitudinal Aging Study Amsterdam (LASA), which is to provide a ten-year follow-up to the LSN sample. Based on NCBS survival rates of the population in the 55 to 84 age group (NCBS, 1990), weights were calculated to determine the number of males and females in each age category. The decision was made not to include persons aged 85 to 89 (year of birth 1903-1907) in the weight measurement, since this would lead to a very large oversampling of this age category. The number of persons aged 84 was calculated for these age categories. This would have resulted in an oversampling of the oldest age groups in the sample, but the samples of most of the smaller municipalities did not contain enough persons (especially males) in the oldest age category. The projected number of respondents in the oldest age category was thus relatively low (columns projected in *Table A.1*).

Selections of regions. For reasons of efficiency and cost control, the selection of respondents was restricted to three regions: the northeast, the southeast, and the west. These regions can be viewed as representing differences in culture, religion, urbanization, and aging. No strict criteria were used to specify these regions. The *northeast* region includes all of the province Overijssel and the northeastern part of Gelderland and Flevoland. In addition to Zwolle as a city, this region contains various smaller cities and many rural

Table A.1. Respondents by year of birth and sex; projected and realized numbers

Year of birth	male		female		total	
	projected	realized	projected	realized	projected	realized
1903-07	284	337	286	352	570	689
1908-12	431	383	390	391	821	774
1913-17	328	378	310	334	638	712
1918-22	274	289	273	300	547	589
1923-27	242	272	253	321	495	593
1928-32	226	267	248	313	474	580
1933-37	215	270	240	287	455	557
Total	2,000	2,196	2,000	2,298	4,000	4,494

villages. This part of the Netherlands is characterized by relatively large numbers of Protestants and a low degree of urbanization. The *western* region includes the Randstad, which is the urban agglomeration of the Netherlands. The Randstad contains the four major cities Amsterdam, The Hague, Rotterdam, and Utrecht. The area is densely populated and the population is mixed with respect to religion. What we call the *southeast* region covers the eastern part of the province North Brabant. The majority of the population in this region is Roman Catholic. The people live in cities and villages with a relatively low level of urbanization. For the elderly in very small villages, access to the 'outside world' is limited by inadequate public transportation. In addition to the choice of regions, a wide range of differences in urbanization was also accomplished by selecting at least two municipalities in each region, a large or medium-sized city (high population density), and one larger rural town or several smaller ones (low population density).

Selection of the municipalities. Every effort was made to select a sample that was representative of the Dutch population aged 55-89 years with respect to region and degree of urbanization. A combination of the two criteria, regional variation and degree of urbanization, provided a guideline for the number of respondents from the various municipalities to be selected in the sample. The decision was made to include only one of the four major Dutch cities (Amsterdam, The Hague, Rotterdam, Utrecht) in the sample, and to focus on medium-sized cities in the other regions. In all three regions, several small towns or villages in rural areas had to be selected. Given the criteria and the sample size of 4,000, the number of persons to be selected from the municipalities in the various regions could be calculated.

As central municipalities, Amsterdam in the west, Zwolle in the northeast, and Oss in the southeast of the Netherlands were chosen. A few criteria were set to select the rural municipalities. They had to have a low population density and be oriented towards the main city in the region. To balance the large numbers of Roman Catholics in the southeast, municipalities that were largely Protestant were selected in the northeast. In the west, two municipalities north of Amsterdam were chosen: Wormerland and Waterland. Both of them were composed of several large and small villages in a relatively large rural area. In the northeast, Zwartsluis, Genemuiden, and Hasselt were chosen as the three largely Protestant municipalities. Since all three of them were small and densely populated communities, Ommen was chosen as a fourth municipality with a more rural character and a lower population density. In the southeast, we chose Uden as an urbanized rural municipality.

Boekel was chosen because it was a small farming village. *Figure A.1* shows the location of the selected municipalities in the Netherlands.

Results from the selected municipalities. Most of the eleven municipalities provided the sample addresses without any problems. In Amsterdam and Boekel, however, the municipality only agreed to cooperate if a refusal procedure was used, with the municipality directly addressing the selected group. The sample members had to make clear by returning a card that they were not willing to be approached by the researchers from the Vrije Universiteit. If they did not return the cards within three weeks, their addresses were given to the researchers. Despite the fact that this procedure involves a selection bias of the sample, we agreed to the procedure because we did not want to lose Amsterdam for the study. In the case of Boekel, we agreed because the alternative rural municipalities used the same refusal procedure.

A.2. The interviewers

The aim was to conduct 4,000 interviews in six months, starting in January 1992. Rather than work with the same interviewers for the entire period, the decision was made to recruit and train three teams of interviewers, each of which would work for a period of two months. Concerning the recruitment of the interviewers, two major decisions were made. Firstly, local interviewers were recruited, who lived in or near the municipalities in the study. One of the reasons was to save on travelling costs and travelling time. An additional advantage was that local interviewers could understand or speak the dialect spoken in the region. Particularly in the northeast and the southeast of the Netherlands, this was expected to increase participation. Another reason was that the respondents were to be approached by the interviewers in person. This was expected to increase the response of the elderly. Since it was expected that several attempts to contact the respondent would be necessary before making an appointment, interviewers who lived in or near the municipalities were preferred. In addition to living in the region, a few other criteria were used in selecting the interviewers, like availability and flexibility in spare time during the day, a general educational level, and being between 22 and 55 years old. A total of 88 interviewers were hired during the process of data collection.



Figure A.1. Location of the 11 municipalities in the Netherlands

Training the interviewers. The goal of the four-day interview training was fourfold:

1. to practice difficult parts of the questionnaire and hypothetically difficult interview situations,
2. to become acquainted with the respondents and practice how to contact and interview them,
3. to become acquainted with the administrative procedures concerning obtaining new addresses, contacting the supervisor, and returning the completed interviews, and
4. to become acquainted with the use of the computer and the contents of the face-to-face interview.

After two days of training, the third day was reserved for practising the interview with an elderly person in the surrounding of the interviewers. These pilot interviews were discussed on the fourth and final day of the training. Each training was given by two persons, the regional supervisor and a co-trainer. Use was made of a videotape on interview training, in which several

rules of interviewing were demonstrated. Role playing enabled the trainees to practice difficult interview situations.

Supervising the interviewers. Members of the research staff served as supervisors and phoned the interviewers every week. They discussed the progress they were making and the contents of the interviews. All interviews were taped, provided the respondent did not object. Interviewers sent taped interviews to their supervisors weekly. The supervisor listened to selected parts of the tapes and discussed interview style, suggestive questioning, handling difficult situations, and so forth with the interviewers. Three to four weeks after the start of each interview period, a meeting was held to discuss interview problems with the total group of interviewers in each region. The supervisors were informed every week by the computer output as to how many interviews had been conducted and how many prospective respondents had refused to cooperate.

A.3. Planning and course of the data collection

Selecting and approaching the respondents. From the samples drawn from the registers of the municipalities, addresses were selected to be approached by a specific interviewer. The respondents were selected randomly within strata of year of birth, sex, and municipality. The selected respondents received a letter introducing the study and asking them to participate in it. It announced the arrival of an interviewer within the next few days to make an appointment for an interview. A flyer was also enclosed with more information about the objectives of the study and the background of the researchers.

The interviewer approached the prospective respondents (preferably on the doorstep and not by phone) and asked them to participate in the study. If the respondent was not at home, approach attempts were carried out until the closing date of the period of data collection (December 1992). If a prospective respondent refused to cooperate, the interviewer was asked to state the reason as well as whether the respondent refused right away or after some discussion. If the respondents agreed to participate, an appointment was made for the interview. At the time of appointment, the interviewer went to the home of the respondent with a laptop computer and conducted the interview. After returning home, the interviewer answered a number of questions related to the course of the interview and the respondent's behaviour.

If physical or mental deficiencies prevented the respondent from being able to participate in a lengthy, one-and-a-half-hour interview, the interviewer had the option to choose the short version of the interview. If, as a result of physical and mental deficiencies, the interviewer was not even able to conduct a short version, he or she tried to obtain the name and address of a proxy. This was to be a person close to the respondent, who could answer a few questions about the living and health situation of the respondent. At a later stage in the data collection, these proxies were contacted by phone to answer a few questions about the respondent.

Completing the data collection. The period when prospective respondents were approached was from January 3 to July 12, 1992. After this date, no new prospective respondents were approached to participate in the study, although efforts were made to increase the response. The first step was to re-approach people who had not been reached. The second step was to re-approach people who had initially refused to participate in the study. Only the respondents who had used 'soft' reasons for not participating the first time were selected. For example, they had been ill or lacked the time or interest to take part in an interview. Since the interviewer recorded the reason for refusal at the first approach, it was possible to select only those respondents who had given some leeway for arguments.

A.4. Realized sample

By the end of December 1992, a total of 4,494 respondents had participated in the study. Proxy interviews had been conducted with another 217 respondents. This section gives a short description of the realized sample. First, it is compared with the projected numbers of males and females and per birth cohort (Table A.1), and the total numbers in each municipality (Table A.2). Table A.1 shows that the projected number of interviews was realized in each stratum, with the exception of the males born in 1908-1912. The intention was to overrepresent the oldest old, based on the requirements for the longitudinal follow-up by LASA. Our efforts resulted in a mean age of 72.8 years, whereas a mean of about 71.8 years would have been expected if the strata had been sampled equally. However, the over-representation of the oldest old was less than had been projected (mean projected age: 73.2 years). Table A.2 shows that the distribution of the respondents by municipality corresponded fairly well to the projected distribution.

Table A.2. Projected and realized sample by municipality and region

municipality	region	population (x 1,000)	projected		realized	
			abs.	%	abs.	%
Amsterdam	west	714	1,080	27.0	1,296	28.8
Waterland	west	18	360	9.0	380	8.5
Wormerland	west	14	360	9.0	365	8.1
Zwolle	northeast	97	540	13.5	549	12.2
Genemuiden	northeast	8	100	2.5	158	3.5
Ommen	northeast	18	300	7.5	363	8.1
Zwartsluis	northeast	4	200	5.0	211	4.7
Hasselt	northeast	7	100	2.5	132	2.9
Oss	southeast	52	540	13.5	533	11.9
Uden	southeast	36	240	6.0	311	6.9
Boekel	southeast	9	180	4.5	196	4.4
			4,000	100.0	4,494	100.0

Not all 4,494 respondents completed a full interview. Various versions are possible: a full interview was completed (4,053, 90.2%) or terminated at some point before the end (94, 2.1%); a short interview was completed (342, 7.6%) or terminated at some point before the end (5, 0.1%).

A.5. Non-response

Non-participation in surveys is increasing in societies that have traditionally used the survey method extensively. In most West European countries and in the United States, response rates to social science surveys have declined in the last two decades and this trend toward non-participation is especially strong in the Netherlands (De Heer, 1992).

Age is one of the strongest correlates of non-response. Older people feel a stronger resistance to surveys, and the refusal rate among the elderly is high in general social surveys (Herzog & Rodgers, 1988). But there is also some evidence that they tend to cooperate more readily in surveys which are of direct interest to them (Hoinville, 1983). The literature (see for a review Groves, 1989) on non-response states two potential reasons for the higher refusal rate among the elderly. Firstly, fear of the unknown and of

victimization can make older people reluctant to open their doors to strangers (Herzog & Rodgers, 1989). The same fears can also make people less inclined to interact with strangers and invite them into their homes. Secondly, social disengagement might help explain the reduced cooperation of the elderly in general surveys (Goyder, 1987). Relatively little research has been conducted to test these hypotheses.

In designing and implementing our survey, we did our utmost to overcome the anticipated low response rates. For instance, to help overcome their fear of the unknown, all potential respondents received a letter in advance introducing the survey and the interviewer. The name and address of the sample member was in the heading of the letter, the name and phone number of the interviewer was included in the text, and the letter was signed in blue pen by the program director. Also, all interviewers were issued an identity card with their photograph on it, and were instructed to keep this card ready and show it even before the respondents asked for it. During the interviewer training, special attention was devoted to how to convince and reassure hesitant respondents. Furthermore, to overcome their disinterest, an attractive brochure was sent to all potential respondents explaining the study and emphasizing its importance and its direct significance for the respondent. An extended field period was planned to accommodate respondents who were temporarily indisposed, and a small gift was offered to all respondents as a token of appreciation for their help. Beside these activities directed at the individual sample member, information was sent to local institutions (e.g. homes for the elderly), general practitioners, and local papers, which resulted in some publicity.

Overall non-response. The response rate is defined as the number of interviews that were actually completed, divided by the number of all sampled cases in which an interview could have been completed (Groves, 1989). This rate most clearly estimates the number of all eligible persons measured by the survey procedure. This results in an overall response rate of 61.7% (the comparable figure for the birth cohorts 1908-1937, the LASA sample, is 62.3%), which is comparable to response rates for the general population of the Netherlands (De Heer, 1992). Considering the non-response problems when interviewing an elderly population, the results are satisfactory.

Specific non-response with respect to region. Response rates in the Netherlands differ according to region. For instance, on average, response rates in the province of Brabant in the south are higher, while response rates

in the city of Amsterdam are lower (Louwen, 1992). In presenting response rates by region, we divided the region west in Amsterdam, which is viewed as a difficult region, and Wormerland-Waterland, which is a rural area with a higher expected response rate. The Amsterdam response rate was 54.2%, and in Wormerland-Waterland it was 66.6%, in Zwolle and surroundings 61.8%, and in Oss and surroundings 70.1%. These response rates form a well-known pattern: fewer responses in Amsterdam than in the rural areas. Furthermore, it should be noted that the high refusal rate in Amsterdam was partly caused by the obligatory two-step procedure in this city. The southeast of the Netherlands exhibited the high response expected for this region, despite the two-step procedure used in Boekel.

Specific non-response with respect to sex and age. Although the influence of sex on non-response has frequently been studied, there is no clear evidence for a sex difference in refusal behaviour. However, age of the sampled persons has been found to correlate with non-response in many studies, and there is overwhelming evidence that the elderly are more likely to refuse cooperation (Bethlehem & Kersten, 1986; Goyder, 1987; Groves, 1989; Herzog & Rodgers, 1988).

In this study, no clear differences in response behaviour were detected between males and females. There is a clear correlation between age and response and non-response due to refusal and illness (*Figure A.2*). Significantly more interviews were agreed to by the younger elderly (55-69) and, among the very oldest (80-89), significantly fewer interviews were completed. This same very old group was also overrepresented in the non-response due to illness. If we look at the age differences among those who refused, it is clear that the very young elderly (55-60) and people in their early seventies were overrepresented among the refusers. Thus, in the category of the youngest sample members, we found a relatively high rate of participation and of refusal, and a relatively low rate of non-participation due to illness. Therefore, there was no linear age-related refusal rate.

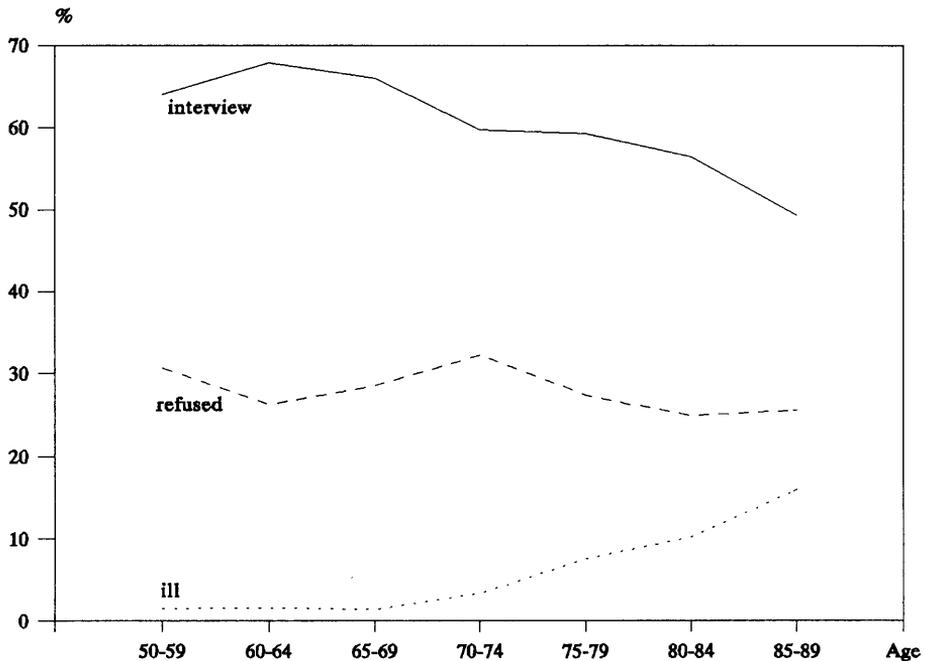


Figure A.2. Response and types of non-response by age ($N = 7574$)

A.6. The representativeness of the realized sample

In this section, we will briefly assess to what extent the realized sample was representative, with particular emphasis on three key aspects,

1. regional distribution,
2. distribution according to level of urbanization, and
3. distribution according to marital status.

Sex and age are not reviewed because the sample stratification already includes these characteristics.

With regard to the regional distribution of the realized sample, elderly people were somewhat underrepresented in the western provinces and overrepresented in the northeast of the country, in particular in the southeast. To assess how representative the realized sample was regarding level of urbanization, we used a recent measure developed by the Netherlands Central Bureau of

Statistics (Den Dulk, Van de Stadt, & Vliegen, 1992), based on the address density of an area. To date, this is the best measure of urbanization level available in the Netherlands. The distribution of the realized sample regarding level of urbanization corresponds very closely to that of the total population above the age of 55 years.

We assessed the representativeness of the realized sample by comparing the distribution of respondents regarding marital status, cross-classified by age and sex, with the marital status distribution of the underlying population. Among males, there is generally a very good fit between the realized sample distribution and the distribution of the population regarding marital status. Divorced elderly people are slightly underrepresented, especially among the youngest and oldest age groups, whereas widowers are slightly overrepresented, especially among respondents between the ages of 80 and 84 years. The realized sample and population distributions of married and never-married males exhibited quite a close correspondence. Among females, the differences between the realized sample and the population were larger than among males. Overall, never-married and divorced females were underrepresented and widowed females overrepresented in the realized sample. The under-representation of never-married females was apparent in all age groups except the youngest. Divorced females were also underrepresented in most age groups, with the exception of 65-69 and 85-89 years. Widowed females were overrepresented in most of the age groups. Married females exhibited a high correspondence between the realized sample and the population.

Based on these figures, we can conclude that the realized sample was fairly representative of the underlying population. To enhance the national representativeness of the realized sample, we decided to weight the sample according to region. Secondly, within each age and sex category, the sample was weighted according to marital status. Furthermore, since the older age groups and the older males were both oversampled, special sample weights were calculated to compare cohort scores, correcting the oversampling of males, and to assess overall scores for all respondents aged 55 and over, correcting the oversampling of older cohorts. In this book, weighted data are presented for the descriptive data that give an indication of the situation of the elderly in the Netherlands. However, unweighted data are used in the explanatory analyses.

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