Covering the Population
Sample Surveys at the Social and Cultural Planning Office

Ineke Stoop[1]

Summary
Survey sampling is a widely studied subject on which a vast body of theoretical and methodological literature is available. The importance of good survey practices is generally acknowledged. The Social and Cultural Planning Office of the Netherlands runs several sample surveys. The market research organizations that collect the data employ a wide range of sampling strategies. These strategies depend on SCP requirements and the ambition to conform to good scientific practices. In addition, data collection history, organizational habits of the data collection agency, population characteristics and topical issues also play an important role. This paper presents an overview of SCP surveys and their sampling strategies and response rates. The purpose is to describe current practice; literature on theoretical and methodological aspects is mentioned only in passing.

1. Introduction

The Social and Cultural Planning Office is a major user of data from household sample surveys. These data come from Statistics Netherlands, the Steinmetz Archive and many other providers. In addition, the SCP commissions a number of surveys to fill its need for empirical data. In these surveys a wide range of sampling strategies are employed.

Section 2 presents a short overview of data services at the SCP. Section 3 explains why official statistics, though very important and frequently used, fail to answer a number of SCP research questions. SCP research requires information on additional topics (section 4) and groups not or insufficiently covered by official statistics (section 5). Section 6 focuses on nonresponse in one SCP survey, bias as a possible consequence of nonresponse, and attempts to raise the response rate and to measure and correct bias. The paper ends with a brief discussion of plans for the future.

2. Data services at the SCP

The Dutch government founded the Social and Cultural Planning Office (SCP) in 1973 to conduct independent research on social and cultural aspects of government policy. Its research findings are mainly intended for the government, the Upper and Lower Houses of Parliament, senior ministry officials, and for professional and academic staff in the public sector and universities. SCP reports cover a wide range of issues: health care, social services, employ-

[1] Ineke Stoop is head of the Department of Data Services and ICT at the SCP
P.O. Box 16164, 2500 BD Den Haag (+31 70 340 7000; stoop@scp.nl, http://www.scp.nl)

ment, social security, justice and criminal procedure, housing, education, leisure, the media, cultural affairs, attitudes towards government policies, distribution of income and wealth, public sector economics, the position of target groups and local policy issues. As of July 2000 all publications have been available on the SCP website (www.scp.nl). The SCP employs about 50 researchers who are well versed in current policy issues in their field and skilled in empirical research and data analysis techniques.

The empirical data required for SCP research come from administrative files and public registers, but mainly from general social surveys. Major data providers are Statistics Netherlands, government ministries, the Steinmetz Archive and international organizations. Other data are collected by means of joint ventures between the SCP and public or private partners, viz. the Time Budget Survey (TBO), a survey of ethnic minorities and a survey of secondary school pupils. Finally, two surveys are mounted solely for SCP purposes: the Amenities and Services Utilization Survey (AVO) and the Cultural Changes in the Netherlands Survey (CV).

3. **Official statistics and more**

Statistics Netherlands (CBS) runs several general population surveys which are of major importance for SCP research. This organization continuously collects data on activities and quality of life of persons and households. Several formerly separate surveys have been pooled in the Permanent Life Situation Survey (abbreviated to POLS in Dutch). POLS provides data on housing, health, environmental behaviour, political preferences, working conditions, voluntary work and so on. Other CBS surveys used by the SCP include the Labour Force Survey and the Expenditure Survey. The data are available for research purposes via the Scientific Statistical Agency which intermediates between Statistics Netherlands and (academic) users of survey microdata.

Despite the wide range of survey data available in the Netherlands some topics and some groups are not covered by official statistics. For this reason the SCP also commissions several surveys itself, generally in collaboration with other organizations. These surveys concern additional topics, special target groups or special questions for special target groups. Statistics Netherlands data fall short in a number of respects:

- some topics are not covered. Since 1979 the SCP has been collecting data on the use of amenities and government services (see table 1), as this is not measured in CBS surveys;
- some topics do not fall within the remit of official statistics (preferences, opinions);
- specific groups are under-represented, unidentifiable or noncovered (non-native speakers, people in residential homes);
- some topics and questions apply to special groups only (transport facilities for the disabled);
- historical reasons (several topics have been covered in existing extended time series not produced by Statistics Netherlands; it would not be advisable to separate them);
- pilot studies, fuzzy populations: specific sub-populations may be hard to cover in official surveys (e.g. mentally disabled persons); finding and interviewing these groups is beyond the scope of official statistics.

4. Additional subjects

4.1 Introduction

The SCP has run three surveys since the seventies: the Amenities and Services Utilization Survey (AVO), the Cultural Changes in the Netherlands Survey (CV) and the Time Budget Survey (TBO), on which the SCP collaborates with other parties. These surveys are at present carried out by three market research organizations (GfK Nederland, NIPO and Intomart). The former two were selected after EU tendering procedures, while Intomart originally set up the TBO and is responsible for recruiting participants. The resulting data files can be accessed through the Steinmetz Archive and the Scientific Statistical Agency.

Section 4 pays attention to sampling procedures and response rates in these three surveys. The basic sampling frame is the file of postal addresses, in some cases with phone numbers, whenever available. Population registers are not easy to obtain for sampling purposes outside Statistics Netherlands.

4.2 Amenities and Services Utilization Survey (AVO)

In the Amenities and Services Utilization Survey one member of each participating household is interviewed face-to-face. The survey allows comparisons over time as it repeats a large set of questions in every wave. In addition, the questionnaire has room for extra questions arising from the SCP work programme. The topics covered in the survey are listed in table 1. The survey was first carried out in 1979 and is repeated every four years. The data are used by the SCP, Statistics Netherlands and a wide range of academic, policy and commercial researchers.

The sampling strategy used in the AVO is relatively straightforward. A gross sample of postal addresses is drawn. If available, the names and telephone numbers of residents are added. Shortly before the interview an advance letter and a brochure are sent to the residents. The interviewer visits the participating family at home, interviews one person (or makes an appoint-

Table 1. **Amenities and Services Utilization Survey topics**

The AVO measures the use of a great number of social and cultural amenities and social services in connection with household and individual characteristics:

- sporting activities, use of sports facilities, club membership
- visiting community centres
- use of recreational facilities
- visits to theatre, concert hall, cinema, exhibition, museum, gallery
- art library membership
- reading, buying books, library membership
- listening to radio, watching tv, owning a VCR, renting videos
- leisure activities
- hobbies
- use of educational facilities
- use of social assistance organizations
- use of legal assistance organizations
- use of medical facilities
- union membership, organizations, clubs
- social security benefit received
- income and income sources
- pension scheme
- use of rent subsidy scheme
- use of patient-care services
- use of day-nursery facilities
- use of health-care facilities for children
- type of grant received for children in higher education
- extent of infirmity, use of social services centre for elderly people (respondents over 55)
- social networks

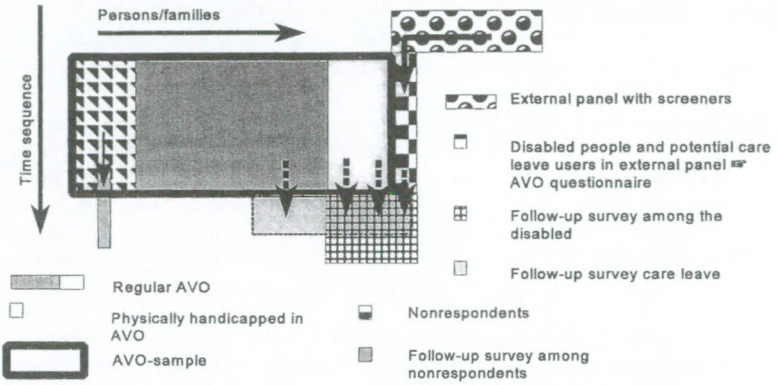

Figure 3. Design of Amenities and Services Utilization Survey (AVO) 1999 and related data collections

ment) and leaves extensive written drop-off questionnaires for each member of the household aged six years or over. Children aged 6-15 are given an adapted questionnaire which may be filled in by their parents. Then the interviewer comes back to collect the questionnaires. In the case of multiple household addresses up to three families are interviewed. The net sample consists of 6,500 families, or 15,000 individuals (the number of individuals decreases each time as family size in the Netherlands decreases).

The AVO is also used as a screening instrument to identify special groups. For this purpose the sample has been expanded to include respondents with physical disabilities, recruited from a separate panel. All disabled respondents in the AVO are visited on a further occasion with a questionnaire on their specific problems. Potential care leave takers are also selected from the same panel. They are approached with an additional questionnaire on paid care leave. These follow-up surveys contain special questions for specific groups of people, a subject discussed in section 5.5. Nonresponse in the AVO will be discussed as a separate topic in section 6.

4.3 Cultural Changes in the Netherlands (CV)

The Cultural Changes in the Netherlands Survey (in Dutch: Culturele Veranderingen (CV)) dates from the seventies. The first questionnaire was composed of variables and scales from several earlier surveys. The survey has been repeated every year or two years since then. The fieldwork for the 2000 wave started in September 2000. The resulting data are used by a wide range of academic researchers. Questions cover preferences, values, opinions and so on (see table 2).

The sampling strategy of the CV has varied through the years. Response rates used to be fairly high for the Netherlands, though new addresses have sometimes been substituted for unsuccessful addresses without proper registration. In the nineties there was a sharp decrease in response rates, possibly due in part to the length of the questionnaire (involving a face-to-face interview lasting almost two hours). As a result the questionnaire was abridged, a new sampling strategy was adopted and the response process was meticulously registered.

Table 2. **Cultural Changes in the Netherlands topics**

The CV measures values, opinions, preferences and judgements regarding a wide range of cultural, social and economic aspects of Dutch society:

- general attitudes to things that matter most in life
- level of satisfaction, concerns about certain aspects of life
- views on society, political goals, post-materialism
- economic expectations with respect to society and own family
- preferred level of government expenditure and social security benefits
- public support for social and cultural policies and services
- political interest and activity
- values, opinions and beliefs with respect to church, religion, and pillarization
- values and opinions on marriage, family matters, sexuality, raising children, equality between the sexes
- opinions and attitudes with respect to ethnic minorities, the elderly, the unemployed
- environmental problems

The current sampling strategy is fairly complicated (NIPO, 1999). It starts with a gross subsample of postal addresses that NIPO uses for all its surveys. Each province represents a separate stratum (proportionate stratification, according to size). Subsequently, with a probability proportionate to the number of inhabitants of cities or large neighbourhoods, approximately 800 starting addresses are chosen (probability proportional to size sampling). Each starting address generates three clusters of addresses: five addresses on the left side, five on the right and five across the street. All these addresses are registered. Figure 2 depicts the first stage of the sample strategy in a simplified form. The bottom bar represents cities and towns, ordered according to size. Starting with a random number and a fixed step size, related to the population and the final sample size, two addresses are selected within a city or large neighbourhood at each step. Each address represents three clusters of five addresses.

Within each group of five addresses one interview has to be conducted. The interviewer calls at every address until a respondent agrees to cooperate immediately or to set a date and time for the interview (quota sampling). If necessary the interviewer comes back a second or third time, if no interview has been achieved the first time, to call at addresses where nobody was at home on a previous occasion. In the final stage one person is selected at random from each household. In a small number of cases, according to a specific selection scheme, a second person is interviewed (cluster sampling).

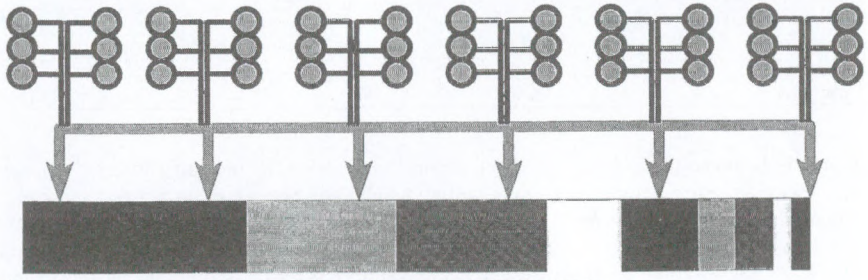

Figure 2. Sampling procedure for Cultural Changes in the Netherlands

The resulting nonresponse is hard to compute. The optimistic view renders the response rate per cluster (77%, see table 3). The pessimistic view reflects the response at each address that has been approached at least once (24%, see table 4). Note that a lot of these nonresponse cases consist of addresses where nobody was at home and only one attempt was made, because the neighbours agreed to cooperate and therefore no second or third visit was required. An intermediate view gives a response rate of 32% and 68% refusals (table 4, bottom).

Table 3. CV response at cluster level (1998)

	Results (N)	Response rate (%)
One interview (from 1)	1649	65
One interview (from 2)	124	5
Two interviews	165	7
No interview	592	23
Total response	1938	77
Total results	2530	100

Table 4. CV response rates per call (1998)

	call 1	call 2	call 3	total
a) Interview	906	768	252	1926
b) Refusal	3155	773	260	4188
Total contacts (a+b)	4061	1541	512	6114
c) Never at home	1223	197	376	1796
Total attempts (a+b+c)	5284	1738	888	7910
d) Unused addresses				5110
e) Total addresses (a+b+c+d)				13020
Response rates per call (%)				
f) interview	17	44	28	24
g) refusal	60	44	29	53
total contacts (f+g)	77	88	57	77
h) not at home	23	12	43	23
total (f+g+h = 100%)	5284	1738	888	7910
Response rates after contact (%)				
Interview	22	50	49	32
Refusal	78	50	51	68
Total (= 100%)	4061	1541	512	6114

It should be noted that a lot of these nonresponses may be 'soft' refusals ('today is my birthday, can't you come back later'), while willing neighbours present an attractive alternative to coming back at a more convenient moment. Thus, the sampling procedure inevitably leads to low response rates at address level and high response rates at cluster level. Groves and Couper (1998, p. 38-39) compare two different optimization targets in developing an introductory strategy. In the AVO probability sample interviewing is used in which the probability of each

sample unit accepting is optimized: "The odds of success are increased with the continuation of the conversation. Thus the interviewer does *not* maximize the likelihood of obtaining a 'yes' answer in any given contact, but minimizes the likelihood of a 'no' answer over repeated turntaking in the contact." In the final phase of the CV sampling procedure a different optimization target is used which is common to some quota sampling interviewing: "An acceptance of the survey request is preferred to a denial, but a lengthy, multicontact preliminary to an acceptance can be as damaging to productivity as a denial."

4.4 Time Budget Survey (TBO)

The TBO is conducted once every five years by a number of media organizations, universities and government research organizations. The SCP has participated since the first survey in 1975. Respondents face a burdensome task as they have to answer a lengthy initial questionnaire, keep a diary in a fixed week in October and register what they are doing every 15 minutes, and finally answer another shorter questionnaire. Response rates have been declining since the first wave. In 1995 a sample was drawn from postal addresses. Phone numbers, if available, were added to the addresses. Potential respondents were approached by telephone or by mail. One person was selected at random from the family members aged 12 and over and asked whether he or she might be willing to participate. To prevent drop-out in the diary phase the researchers emphasised the cumbersome nature of the task and the large amount of time required. This led to a response rate of 20% among all individuals initially approached.

The design of the TBO is very inflexible. The response rate could be increased by offering a choice of weeks as a diary period. In the preparation of the 2000 wave an extension of the interview period was planned but finally abandoned. Respondents could not be compared if some of them participated in a normal week, some during the Olympic Games and some in the Autumn vacation. Pilot experiments in the spring of 2000, however, indicated that response rates can be increased by paying more personal attention to respondents, telling them about the purpose of the survey and how the data will be used and by providing written information.

The sampling procedure for the TBO 2000 (Intomart, 2000) is based on the sample frame of 6.8 million residential postal addresses: single-family dwellings, flats, farmhouses and houseboats. Businesses, shops, institutions, retirement homes, caravan sites and recreational parks are excluded. The final net sample is 3,000 respondents. For economic reasons a clustered sample of approximately 15 respondents per city has to be achieved. Following a similar procedure to that used in the CV (see figure 2) 200 clusters (3,000/15) are drawn. The selection process is adjusted to compensate for size, urbanization and regional distribution. In large cities more than one cluster might be drawn, whereas some towns might not be included in the sample at all. Assuming a large nonresponse rate, each city represents 60 randomly chosen addresses (in large cities a multiple of 60 addresses, depending on the number of clusters within the city). Thus, the gross sample comprises 12,000 addresses of potential respondents. On the first approach the interviewer selects at random one person per address who is asked to keep a diary for one week and answer an initial and a final questionnaire. Like the CV, the TBO is based on a combination of proportionate stratification according to size and probability proportional to size sampling. Unlike in the CV each address selected in the TBO procedure represents a potential respondent and not the first step in a quota sampling procedure.

5. Target groups and noncovered populations

5.1 *Introduction*

As indicated above, several groups are not covered by official statistics. This section looks at three surveys among target groups in which the SCP is involved, viz. the surveys of secondary school pupils, elderly people in residential and nursing homes and the mentally disabled. The SCP also conducts a survey among ethnic minorities and a survey of the division of tasks between spouses.

5.2 *Survey among youngsters (NSO)*

The biannual survey among secondary school pupils was set up in 1988 by the National Institute for Family Finance Information (NIBUD, 1993) to measure the financial situation of young people in the Netherlands. The scope of the survey has expanded over the years. In recent years the SCP and the Ministry of Health, Welfare and Sport have been the main sponsors. The survey begins with a letter to schools. They can apply to participate in the survey, and must pay to do so. In return they receive a report (a *blueprint* or *atlas*) comparing their pupils with the rest of the young Dutch population. Subsequently, a selection is made from all schools. Paying schools get priority, though nonpaying schools can also be drawn to obtain a representative sample. The sample is a two-phase cluster sample: the first clusters are schools, the second classes. The questionnaires are administered in class. A recent trial of questioning by Internet failed, due to a lack of modern ICT facilities in schools. As a result of the recruitment procedure the strict probability character could be called into question, and a lack of cooperation from schools in big cities leads to the under-representation of ethnic minority groups. Some of these shortcomings were dealt with in the 1999 wave. The size of the sample and the wide range of questions still make this a unique source of information on young people.

5.3 *Survey among elderly people in residential care*

In 1991, 1996 and 2000 the SCP ran surveys among the elderly. In the first wave inhabitants of residential homes for the elderly were interviewed. In 1996 the sample also included elderly people in nursing homes and psychiatric hospitals. The 2000 population comprised inhabitants of residential homes, nursing homes and sheltered housing. The sample process in 1991 is described below by way of example.

The procedure (see figure 3) started with a list of residential homes, specifying region and size. Each region represented a separate stratum (proportionate stratification, according to size). The sample fraction was approximately 0.5% of the population. The total size (T) in 1400 homes was computed. A seed number (s = 1....T/1000) was drawn and every home (h) for s + i*T/100 beds, i=0,1,..,99 was drawn from the list with cumulative sizes. This sampling procedure led to 100 homes (probability proportional to size sampling). Six people were selected from each residential home in the following way: select a gross sample of 15 people, exclude sick and demented people, start with # 1, 3, 5 ... and proceed if necessary 2, 4, 6... (cluster and quota sampling).

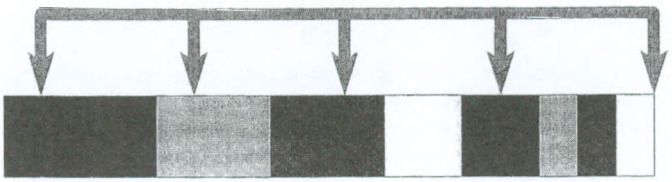

Figure 3. Proportional probability sample of residential homes for the elderly

The sample of persons was drawn on location by the interviewer in consultation with the management. Interviewers had to resist the temptation to interview only healthy, outspoken and active residents. In some cases it was necessary to interview a member of the residents' council to ensure cooperation. In general response rates were high. In 1995 and 2000 elderly people who were ill or suffering from dementia were interviewed by proxy (carers, relatives). The survey requires specially trained interviewers, a multi-method approach and customized interviewing techniques.

5.4 *Survey among the mentally disabled*

Mentally disabled people cannot be interviewed in general surveys. In official statistics they tend to be overlooked. Still, information on them is needed to get a complete picture of the activities and quality of life of Dutch inhabitants and for policy making and facility planning with respect to this group. For the survey among mentally disabled people a sample frame of residential, educational and day care facilities and sheltered workshops for the mentally disabled has been constructed. Some people use more than one of these services. A sample is drawn from this frame, taking into account region, type of facility and size. Individuals are selected at random within institutions, taking into account size and possible overlap between populations. If possible the selected respondents are interviewed personally. Parents, representatives of the organization, carers and attendants are also interviewed to get a complete picture. The innovative character of this survey and the many uncertain factors make it difficult to pinpoint the sample frame and calculate the response rates. This survey demands even more of the interviewing organization than the aforementioned survey among the elderly.

5.5 *Special questions for special people*

Some groups are excluded from general surveys, or cannot be identified as such, even though their responses might be particularly relevant. Take, for instance, the health of people in hospital (not covered in health surveys) or the quality of life of blind or deaf people (hard to interview). These people can be approached in dedicated surveys which will often contain specific questions relevant to this particular group. It would be insensitive to ask people in hospital whether they had any problems with their health, but advisable to ask them specific questions on their state of health. All the surveys among target groups contain general questions on education, housing and work, and specific questions related to the distinguishing features of the target group. Often customized interview methods have to be used (information cards with large letters, native speakers, simplified questions). The resulting data are particularly relevant for policymaking where the focus is often on deprived groups.

6. Nonresponse: AVO efforts

The Netherlands has no census, and participation in government household surveys is voluntary. Nonresponse rates are high by international standards: a nonresponse rate of 55% in government face-to-face surveys is no exception. De Heer (2000) suggests the following explanations:

- non-obligatory character of surveys;
- a lack of well-defined contact strategies;
- reluctance to use 'refusal conversion';
- lack of professionalism in interviewers and poor supervision of interviewers;;
- interviewing job temporary, low status;
- shortage of labour, making it difficult to recruit and retain interviewers;
- negative survey climate;
- upcoming tele-sellers and address-brokers.

A high nonresponse rate is not necessarily a problem, if the nonresponse group can be considered a random sample of the initial sample. Past research has shown, however, that nonresponse does cause bias in estimates (Voogt and Van Kempen 1999), that the maximum size of the bias increases with the size of the nonresponse and thus that nonresponse cannot be ignored[2]. The increase in rates of nonresponse is especially damaging for longitudinal surveys as differential rates of nonresponse may make comparisons over time difficult.

The current nonresponse rates in the Netherlands have cast doubt on the value of survey data, not only in academic circles, but also among policymakers, politicians and the general public, partly as a result of critical articles in major Dutch newspapers (see table 5). Consequently, *deceptive data collection methods* have even been publicly denounced in Parliament (Lower House 1995-1996, p. 103). A major practical problem is that an increase in response rates can only be brought about by substantially increasing fieldwork efforts and thus incurring high costs (De Heer 1999). Besides, as Groves and Couper (1998) have shown, even at a response rate of 70%, which is considerably higher than most household surveys in the Netherlands achieve, a considerable amount of bias in the estimates remains possible. So besides achieving higher response rates, nonresponse bias must also be examined.

Response rates in the AVO (see table 6) declined steadily from 1979 to 1991. The 1987 wave seems to be an exception. In this year, however, the percentage of complete households was approximately 50% at the end of the regular fieldwork period. To rectify this the fieldwork period was prolonged by an additional month (to five instead of four). The response rates in 1991 were so low that a high response was a major selection criterion in the tendering procedure for the 1995 AVO. The organization that was selected (GfK Nederland) promised a response rate of 70%, at a lower cost than 60% as, according to their calculations, it was less expensive to re-approach initially selected households than to draw a large gross sample and approach new potential respondents to obtain the required net sample.

---

[2] See for a theoretical overview of the relationship between nonresponse rates and response bias Groves and Couper (1998). In a survey with a nonresponse rate of 5%, the highest possible bias is 0.025. For 30% the corresponding figure is 0.15, for 50% nonresponse 0.25.

Table 5. **Headlines in major Dutch newspapers questioning the value of survey research:**

- Hard figures easy to massage (Harde cijfers zijn uiterst kneedbaar)
- So many surveys, so many opinions (Meten is niet altijd weten)
- The worst superstition is the belief in survey sampling (Ergste bijgeloof is geloof in steekproeven)
- Refusers make life hard for researchers (Weigeraars maken het onderzoekers lastig)
- Statistics Netherlands' picture of education level too rosy (CBS schildert te rooskleurig beeld van opleidingspeil Nederlander)
- Non-response worst culprit (Grootste boosdoener is de non-respons)
- Every new research report threatens to cause more confusion (Elk volgend onderzoeksrapport dreigt de verwarring te vergroten)
- Dutch suffering interview fatigue (Nederlander enquête-moe)
- I'd rather not! SCP identifies refusers (Liever niet! SCP brengt enquête-weigeraars in kaart)

For the 1995 AVO fieldwork GfK employed an integrated system of response supervision including a wide range of measures to guarantee a high response. In 1999 procedures remained unchanged, although the intended response rate of 70% could not be achieved within the data collection period (September 1999 - February 2000). The 1999/2000 fieldwork description is not yet available. The AVO approach involves:

- a personalized approach, whenever possible;
- use of phone numbers to arrange meetings after face-to-face contact;
- advance letters, a brochure describing the survey and an incentive for both the interviewee and the interviewer;
- monitoring of the timing of calls (time of day, day of the week) and the type of interviewer (gender, age, success rate);
- repeated calls on potential respondents (up to 15 times!) at different times of day;
- monitoring of the reason for refusal and a further approach if possible at another time or by another interviewer.

Table 6. Response rates AVO 1979-1999

year	gross sample (households)	net sample (households)	net sample (individuals)	% response (complete households)
1979	9, 915	6, 431	17, 232	65
1983	9, 908	5, 774	14, 869	58
1987	10, 302	6, 496	16, 151	63
1991	12, 797	5, 458	13, 105	43
1995	9, 305	6, 421	14, 489	70
1999	9, 300	6, 125	13, 490	66

In 1991 12.4% of households did not cooperate because the interviewer did not find them at home on one of the three calls allotted to each household. In 1995 this percentage was negligible (see table 7). The percentage of refusals, however, stayed more or less the same, at 25.6% in 1991 as compared to 23.6% in 1995. The latter percentage would have been higher without active efforts to achieve refusal conversion.

The AVO 1995 has been analysed to measure the differences between easy-to-reach respondents, hard-to-reach respondents and nonrespondents who refuse to cooperate. In this analysis

response data have been related to neighbourhood data (from general postcode data bases and from observation and registration of neighbourhood and residential characteristics by the interviewers) and population data from the CBS and the GfK MiniCensus (GfK, 1999). City dwellers, people living in apartments, people aged 18-34, single people and people with no children, the highly educated and people in work were especially difficult to reach (many contact attempts). The additional contact attempts (4-14, whereas three attempts are common) substantially increased the presence of these groups in the sample, with the exception of inhabitants of large cities. City dwellers, people living in apartments and elderly households refused to cooperate relatively often. Results on the accessibility and cooperation of potential respondents largely conform to the international literature as summarized by Aarts & Van der Kolk (1999) who state that refusals are relatively likely to come from elderly people, the less well-educated and city dwellers, whereas non-contacted nonrespondents are younger, better educated, more often single and also live in urban areas.

Table 7. Response realization per call

	successful households		
number of calls	absolute	percentage	cumulative percentage
1	1556	24.2	24.2
2	1749	27.2	51.5
3	1236	19.2	70.7
4	795	12.4	83.1
5	440	6.9	90.0
6	283	4.4	94.4
7	168	2.6	97.0
8	101	1.6	98.6
9	49	0.8	99.3
10	17	0.3	99.6
11	10	0.2	99.7
12	9	0.1	99.9
13	3	0.0	99.9
14	4	0.1	100.0
15	1	0.0	100.0
total response	6421	100.0	= 69.6% of gross sample
total gross sample	9232		

Source: Spit (1996)

Comparisons between early respondents (1-3 attempts in 1995), late respondents (4-15 attempts in 1995) and the 1991 wave showed major differences in net sample composition. The increased number of contact attempts makes the net sample more similar to the population. With respect to core variables (use of services), however, the majority of the differences disappeared after weighting with socio-demographic variables. The nonresponse analysis of the AVO thus indicated that striving for a further increase in response rates hardly seems worth the considerable efforts that will be required. Increasing the number of contact attempts is pointless, as almost all respondents have been reached after 15 attempts. Putting in great effort to achieve refusal conversion remains worthwhile, but instead of trying to increase response rates from 70 to 75% at very high costs, it seems advisable to investigate the bias caused by the final 25 or 30% who refuse to cooperate in the regular survey and, subsequently, to find out how this bias can be rectified.

In 1995 the much cheaper 'basic question' method of Bethlehem and Kersten (1984) was also used. It yielded a response rate too low and too biased to draw any conclusions. Furthermore, the survey does not have one basic question, as it combines the demands of a wide range of research projects.

The 1995 nonresponse research has been resumed in 2000 with the AVO 1999 material. The current objective is to collect generally unavailable data on different types of nonresponse and to answer the following questions:

- What measures are effective in persuading the majority of a group of adamant nonrespondents to cooperate in a follow-up survey?
- How do these converted nonrespondents differ in terms of socio-demographic variables from respondents and possibly from nonrespondents who refuse to cooperate in the follow-up survey?
- Do differences in core variables (use of services) between respondents and converted nonrespondents disappear after adjustment by classic weighting procedures?
- What is the amount of bias in the estimates of population characteristics and core variables caused by nonresponse?
- What is the relationship between nonresponse behaviour and other survey variables?
- How effective are current weighting adjustment procedures?
- Are different weighting adjustment procedures, e.g. linear weighting, multiplicative weighting and calibration, more effective than current ones?
- Is it possible to build models for the probability of response, i.e. can one predict the probability of response given the value of certain variables?

To achieve the objective and answer the questions the following actions are being taken:

a) efforts to achieve a high response rate in the regular AVO survey (the final response rate of 66.5% is somewhat lower than the 70% aimed at);
b) extensive, systematic and formalized registration of nonresponse behaviour at each successive call (see table 8);
c) linking information on respondents to data from other sources, when available, including frame data (e.g. characteristics of the neighbourhood and local residents);
d) partial repetition of the 1995 nonresponse analysis, in which the enriched nonresponse data will be analysed to gain information on the exact composition of the group of respondents and nonrespondents;
e) a subsequent follow-up survey among persistent refusers.

In this follow-up survey one person per household will be approached with an adapted questionnaire, containing socio-demographic questions, core questions on use of services and questions related to response behaviour (religious affiliation, networks, voluntary work). Highly motivated interviewers with a history of high response rates have been selected and trained and will receive additional monetary incentives for each successful interview. Multiple interviewing methods can be used (face-to-face, telephone, self-completion, Internet). Interviewers can spend up to € 45 (100 guilders) on each respondent to buy flowers or gifts, pay for their time, invite respondents to answer questions in a public place, etc. GfK has guaranteed a response among this subsample of 80% (n=250). In addition, a fresh sample of respondents will be asked to answer the adapted questionnaire, so the influence of abridging and rephrasing can be traced.

A follow-up survey among initial nonrespondents is nothing new, either in the Netherlands, or in other countries (see for the earliest, and possibly the first, example of re-approaching nonrespondents Hansen and Hurvitz, 1946). Elliot (1991) describes the procedure as a way of boosting an initial response rate of 81% to 96.5%, by drawing a 10% sample of the 19% nonrespondents and achieving a subsequent response of 82% among the initial nonrespondents. Of course Dutch researchers can only dream of achieving an initial survey response of 81%. Elliot warns against including the secondary respondents in the data file, due to an expected reduction in accuracy caused by the small sample fraction of the subsample. The AVO follow-up survey does not aim to give the additional nonrespondents a high weight and include them in the data file. The goal is not to improve a single data set, but to measure bias and improve weighting procedures.

Table 8. Registration of response/nonresponse behaviour and neighbourhood information in the AVO 1999

	each contact	each call	each address
(non)response behaviour			
type of address (private home, shop, office, etc.)			x
number of families per address		x	x
date/time of each individual approach		x	
approach by telephone prior to visit			x
type of contact (face-to-face, intercom)	x		
result of approach (interview, appointment, refusal, not at home, not able, invalid address)	x	x	x
reason unable (re-approach possible?)	if unable		
reason for refusal according to interviewer and nonrespondent	if refusal		
interview broken off (reason, may be resumed)	if interrupted		
gender, age of nonrespondent	x		
neighbourhood characteristics (valid addresses)			
date built			x
low-rise/high-rise buildings			x
physical condition of neighbourhood			x
inner city, suburb			x
type of home			x
physical condition of home			x
other characteristics of home			x

A recent example of a large scale follow-up survey among nonrespondents in the Netherlands was carried out in the Parliamentary Election Survey (Aarts & Van der Kolk, 1999; Voogt & Van Kempen 1999). This follow-up differed in several respects from the current project, because less than 50% of the refusers cooperated in the follow-up survey and nonrespondents were re-approached by telephone only. Besides, nonresponse, voting behavior and interest in politics may have confounding effects in this survey. For instance, respondents may vote because they were interviewed about political issues, or nonrespondents may tell the interviewer they are not interested in politics to explain their non-cooperation. It is unlikely, however, that visiting a museum or a general practitioner, being on social security or sending children to day care will be influenced by being questioned on these subjects, or that respondents in the follow-up will report a lower use of services as a result of initially having refused to cooperate in a survey on the subject.

As stated earlier, it is not unusual to re-approach nonrespondents to obtain information. The AVO follow-up survey is unique as it aims at obtaining information from the majority of the members of what is, by necessity, a small subsample. This information, combined with data from the initial survey, is a necessary prerequisite to reveal the consequences of nonresponse by type and thus to improve data quality. The AVO is, broadly speaking, carried out in the same way as other major surveys in the Netherlands. Response is known to vary according to the subject of the survey. Still, it can be assumed that specific groups of people will be less likely to respond than others, irrespective of the subject. Thus, the results are highly relevant for the AVO, but will also be of use to other household surveys, in the Netherlands and elsewhere.

7. **The future**

Sample surveys are widely used for policy purposes in the Netherlands. The resulting data, however, have a number of shortcomings that may reduce their value. Three major failings are the fact that probability sampling is not always used, that a certain section of the population is excluded from a number of surveys (noncoverage) and that another section of the population is unable or unwilling to participate (nonresponse). Noncoverage is a major problem, because problem groups in Dutch society are more likely to be excluded from the sample frame. These groups may require customized interview methods and questionnaires adapted to their situation. Just leaving out difficult groups and mentioning their exclusion in a footnote (if at all) is a rather poor solution. Statistics Netherlands' Social Statistical Database, in which data from a large number of registrations are linked, may offer one solution (Van Bochove, 1999). The SCP and other organizations are engaged in another attempt to provide data on these groups (see section 5). Surveys among target groups are bound to be costly, however.

Nonresponse is often seen as a problem of the nonrespondents, who do not seem to realize that participating is in their own interest (as reflected in the 'Your opinion counts' campaign). Recently researchers have become aware that nonresponse is also a problem of interviewers and interviewing organizations. Increased efforts could substantially reduce nonresponse rates. One major problem, however, is that it is in the interest of both market research organizations and survey sponsors to gloss over the importance of nonresponse. Market research organizations do not use a mutually agreed definition of nonresponse, tend to ignore respondents who have not been reached and point to the representativeness and the size of the sample as an indicator of quality and absence of bias. And why not? Sponsors want their data quickly, do not like to spend more money than necessary and pay for an agreed number of cases. Attention to response levels takes time and money and might cast doubt on their expensive data.

Sometimes new technology is presented as a solution to such problems. The Internet is said to provide an inexpensive way of interviewing all kinds of people at a convenient moment. The Internet may be a useful data collection tool, but cannot be used as a selection tool. As the population is not known, coverage and response rates cannot be computed, despite what might be large samples. It therefore in fact offers no solution to the problems mentioned above. Noncoverage and nonresponse cannot be eradicated. Tackling these defects of survey research will require time, money and a change of culture. This last factor might just be the most important one.

References

Aarts, Kees & Van der Kolk, Henk (1999), Tegen de stroom in? Non-respons en Hawthorne effecten in het Nationaal Kiezersonderzoek. (*Against the current? Nonresponse and Hawthorne effects in the Dutch Parliamentary Election Survey*). Paper presented at the NVMC-Spring Conference 'De waan van de Dag', Utrecht, 23 April 1999.

Bethlehem, J.P.G. and H.M.P. Kersten, H.M.P. (1984). Werken met non-respons. (*Working on nonresponse*) Voorburg: CBS

De Heer, Wim (1999), International Response Trends, Results of an International Survey. Journal of Official Statistics, Vol. 15, No. 2, pp. 129-142 .

De Heer, Wim (2000). Survey Practices in European Countries. In: Siobhán Carey (ed.). Measuring Adult Literacy. The International Adult Literacy Survey (IALS) in the European context. (pp 43-64). London: Office for National Statistics.

Elliot, Dave (1991), Weighting for nonresponse. A survey researchers's guide. London, OPCS

GfK (1999), GfK MiniCensus. http://www.gfk.nl/data/consscop/text/minicens.htm

Groves, Robert M. and Couper, Mick P. (1998). Nonresponse in Household Interview Surveys. New York: Wiley.

Hansen and Hurvitz (1946): The problem of nonresponse in sample surveys. Journal of the American Statistical Association 41, pp. 517-529.

Intomart (2000). Steekproeftrekking TBO 2000, voorstel *(TBO 2000 sampling proposal*). (internal paper). Hilversum: Intomart.

Kadrouch, S. & Moritz, G. (1997). Redesign Onderzoek Verplaatsingsgedrag, Verschillen tussen OVG en Neu KONTIV Design (*Redesign of Mobility Survey, Differences between Mobility Survey and Neu Kontiv Design*). Statistics Netherlands.

NIBUD (1993), Scholierenonderzoek 1992. Landelijke uitkomsten. Den Haag: Nationaal Instituut voor Budgetvoorlichting.

NIPO (1999), Onderzoeksverantwoording Culturele Veranderingen in Nederland 1998 . *(Description of CV'98 Fieldwork*) (A3644/3645 | 2 June 1999). Amsterdam: NIPO.

Spit, Jan (1996), Onderzoeksverantwoording AVO'95. *(Description of AVO'95 Fieldwork*) Rijswijk: Social and Cultural Planning Office

Tweede Kamer der Staten Generaal, Vergaderjaar 1995-1996, Aanhangsel van de handelingen, (*Proceedings of Lower House 1995-1996*).

Van Leest, Joel, and Burhenne, Wim (1997). Response and nonresponse in the Amenities and Services Utilization Survey (AVO). Working Document 42, Rijswijk: Social and Cultural Planning Office.

Van Bochove, C.A. (1999). In de sociale statistieken worden alle Nederlanders geteld (*In Social Statistics all Dutchmen count*). In J.G.S.J. van Maarseveen en R. Schreijnders (eds.): Welgeteld een eeuw *(A century all told*). Voorburg: CBS.

Voogt, Robert & Van Kempen, Hetty (1999). Nonrespons en Hawthorne-effecten: een bom onder het Nationaal Kiezersonderzoek (*Nonresponse and Hawthorne effects: Dropping the bombshell on the Dutch Parliamentary Election Survey*). Paper voor het Politicologenetmaal, 11 June 1999.