

BLAISE IN A DANISH CONTEXT

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1. Introduction

Danmarks Statistik has based most of its data collection on the use of administrative registers. This means that the collection of data on demographic and social topics through interviews is limited to a few surveys which supplement register-based statistics. The following surveys are carried out:

1. *Labour force surveys*

So far this survey is based on a sample of 15 000 households where all persons between the age of 15-74 years are interviewed. Telephone interviews are supplemented with mailed questionnaires to households not accessible by telephone. The survey is conducted every year. In 1992 and earlier years interviewing was done during the first half of the year, but in the future interviewing may be extended to cover the whole year, in connection with an enlargement of the sample to 60 000 persons.

2. *Omnibus or multi-purpose surveys*

These surveys are carried out every month with a sample of 1 800 - 2 300 persons aged 16-74 years. As the name suggests these surveys cover a wide variety of topics. Users of the survey are typically government institutions, but the core of the survey is the Consumer Survey for the EEC. Starting in the fall of 1992 the Omnibus surveys will also contain questions about transportation patterns. All interviews are done by telephone.

3. *Family budget surveys*

So far these surveys with a sample of 5 000 households have been conducted every 5-6 years. The latest family budget survey for 1987 was based on personal interviews supplemented with diary data on expenses. In the future, however, family budget surveys may be carried out more frequently, and in such a way that each year about 1500 households will be interviewed. The cumulated results are then published every 3 years.

4. *Ad-hoc surveys*

Government institutions and other organizations may want to conduct a survey of special populations based on samples from the administrative registers. The surveys may be conducted by mail or by telephone interviewing.

The following considerations led to the adoption of computer assisted telephone interviewing (CATI) using a centralized team of interviewers.

CATI could reduce the total cost of data collection and data processing. Earlier we still used face-to-face interviews in part of the omnibus surveys as a supplement to telephone interviews. It was decided to drop this supplement which so far had made it necessary to have a decentralised interview organisation. We realised that the sole use of telephone interviewing would reduce the total response by 7-8%. This reduction would have to be compensated by weighting the results. The main cost reduction would, however, come from the integration of interviewing and data-editing in one process, leaving only a limited amount of subsequent data-processing such as coding of answers to open-ended questions.

CATI's integration of several processes in one would make it possible to make the results of the surveys faster available to users. In particular outside users made increasing demands for fast delivery of the results.

Finally, the establishment of a centralized interview organization would make it easier to control the quality of the data collection by increased monitoring of the interview process.

A review of some of the existing CATI-systems on the market indicated that we would be best served by a system used by a central statistical office. It would have to be a system which could handle relatively complex surveys in regard to the contents of the interview, as well as the administration or management of interviews with households and single persons. We finally settled for Blaise, even though it did not, at that time, have an efficient call management system. On the other hand, Blaise was relatively well documented and had also developed a program which could be used for entry of data from mail surveys.

After some experiments in 1990, we started using Blaise-CATI for telephone interviewing during the second half of 1991. For this purpose, we established a small interview organization with 16 interviewers, which number was later extended to 28.

The interviewers are working in 3 rooms with 8 PC's in each room under the supervision of a supervisor, who can assist with problems arising during the interview, and who also has facilities to monitor the interviews. All 24 PC's are connected to a LAN-Manager network.

Since the start we have completed about 10 000 Omnibus interviews and about 20 000 Labour force interviews. We have also used Blaise-CADI to enter data from a large mail survey with 2 500 completed questionnaires and data from a smaller business survey. Despite some technical difficulties, we have, in general, been quite satisfied using Blaise-CATI as well as Blaise-CADI. The technical difficulties were in part due to the fact that the introduction of Blaise coincided with the installation of a new network. This resulted occasionally in breakdowns and/or long response times. An upgrading of the LAN-Manager network in spring 1992 led to some 'locking' problems. This manifested itself in such a way that if more than 4 interviewers were working on the same batch of addresses, it would lead to long response times and finally breakdown the system. We have temporarily solved the problem by letting

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a maximum of 4 interviewers work on the same day batch. In the meantime, we are working on a more permanent solution with the co-operation of CBS.

As previously mentioned, our experiences with Blaise have been satisfactory. However, we do have some suggestions for improvements, which would make life easier for the staff worker who designs the questionnaire for the interviewers and for the end-users of the results.

Designing the questionnaire could be more user friendly. It would be convenient if the system could produce a flow-chart showing all the skip-patterns. Blaise does not use a record-based approach but treats the whole program as a closed system which is then compiled. This makes it more difficult or at least time consuming if a small detail in a question has to be changed. This is particularly important when interviewing has already started and minor but important changes are necessary. From the viewpoint of the interviewer it should be easier to avoid punching the wrong answer code. At present the interviewer is not alerted if a wrong answer code is within the valid range.

If the whole answer text were highlighted after selection and then entered by punching 'ENTER', it would focus the interviewers attention on the screen and therefore avoid punching the wrong answer code. In particular for questions where multiple answers are possible this would be a great improvement.

For the end-user of the data it would be convenient if a code book were produced which would clearly describe the questions, the values and descriptions of the answer categories as well as the routing to and from the question.

2. Experiences with the Call Management System in Blaise

At Danmarks Statistik we have used CATI with its Call Management System for the following two tasks.

1. Omnibus surveys, which are monthly surveys based on samples of 1 800 - 2 300 persons.
2. The Labour force survey, which is a household survey for which the data are collected over 13 weeks in the first half of the year. The sample is a random sample drawn from the central population register. After the sample is drawn, telephone numbers are found by a semi-automatic process which searches through the databases of the telephone companies. The sample consists of about 25 000 persons in about 15 000 households and telephone numbers are found for approximately 85% of the households.

3. The household interview system for the Labour force survey

Our job was to develop an interview system to collect data from household members in a quick way, meeting our requirements. We based our work on the following conditions.

1. We should use the Blaise Call Management System in order to be able to use the routines for appointments (including automatic allocation of telephone numbers), supervisor utilities to identify and treat forms by number and telephone number, and the reporting facilities about responses, etc.
2. Each interviewer should be able to use the available knowledge about the composition of the household to collect data from all eligible members of the family.
3. It should be possible to use data from the system to calculate interviewer remuneration. Each interviewer is paid a fixed price for each completed interview.
4. It should be possible to use the system in an easy and fast way for all interviewers and it should not lead to loss of data or other problems in its application.

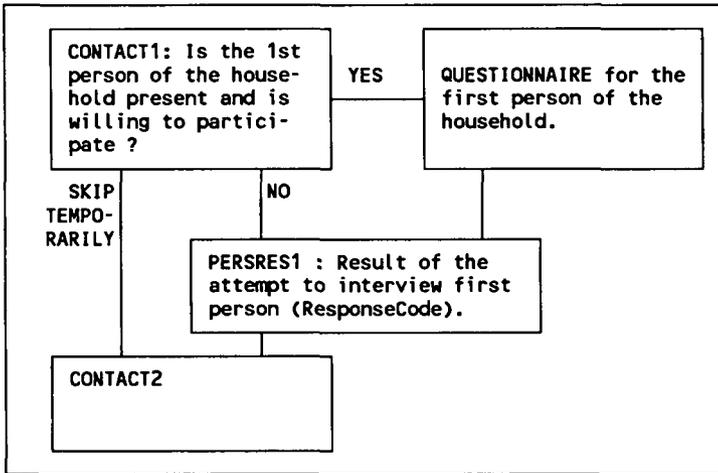
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According to these conditions we constructed the interview system as one logical questionnaire for each household. In this questionnaire the main questionnaire acts as a kind of household administration system and the actual questionnaires are entered as subquestionnaires for 1-8 household members using Blaise's subfile concept.

Telephone numbers and general household information was entered - according to the Blaise file structure - in the APPOINTMENT block and other information about household composition as well as background information was entered in an external reference file, which could guide the interviewer and check whether all relevant members of the household were interviewed.

When interviewers call a household, the most convenient procedure is to interview the person who answers the telephone first. In other words, it should be possible to shift quickly to the relevant person, complete the interview and then ask for one of the other family members. Since each member of the family has certain background information and should be able to be identified subsequently, we considered it best to maintain a structure where each family member has a fixed place in a rank order. This means that the first subquestionnaire refers to the first person in the family, the second subquestionnaire to the second member, etc. We chose to implement the household administration as a series of questions about each person's participation and response categories. Thus, with a single key press the interviewer could pass the first person in the family and interview the second person and then skip back to the first person (see figure 1).

Figure 1. Structure for the Labour Force Household Survey



Question CONTACT1 - whether the first person is present and wants to participate - can be answered with either YES, followed by the person, or NO, followed directly by the question on the relevant answer code or by the Skip Temporarily question, which can be used, if the interviewer first contacts person 2 or 3, etc. The text to the question CONTACT1 (and to CONTACT2, etc.) consists of a list of the household members, including response codes entered during an earlier contact with the family. We also supplied questions CONTACT1, CONTACT2, etc. with appropriate labels (IP1, IP2, IP3, etc.) which made it possible for the interviewer to skip from one respondent in the household to the next. This facility is especially useful for interviewers who contact a large family, that has been contacted before and where some interviews have already been done. In that case it is necessary to skip some of the questionnaires.

Before completing the household interview a check is made whether or not the response code 'Skip Temporarily' was removed. The last entered code is checked as well as whether an appointment for a later call has been made. This response gave some problems, because it was not possible to store the response to the first contact with the family. Therefore some

interviewers used this facility to skip some family members when calling again, instead of skipping to a label. Since it is possible to make appointments during an interview, it was not possible to ensure that a check was made for this response code when calling again. Because of this a small number of interviews were lost this way.

As previously mentioned, it is not always possible to make contact with all members of a household during one call. Since several interviewers may share the interviews in a single household, it was necessary for the calculation of interviewer remuneration to tie information on each interviewer to every single subquestionnaire. It was also important that this item of information could not be changed by an interviewer who was assigned to the remaining interviews.

We solved this problem by defining a question called INTWRID in the subquestionnaire. This question contains an interviewer identification and has the attributes `HIDDEN` and `PROTECT`. The value is automatically imputed with the help of a reference to an external file, which in our case is created during the log on procedure and placed in the interviewers private directory.

Since there may be more than one interview in every household the built-in reporting facilities in CATI-Management cannot be used to get an updated review of the number of completed interviews. It was, however, an easy job to produce the relevant tables using Abacus.

4. Concluding remarks

At Danmarks Statistik we have very positive experiences using Blaise to build Data Entry and Validation Systems as well as Interview Systems.

Also the CATI Call Management System has been quite useful when used for person-oriented interview systems like the above mentioned Omnibus Survey.

However, if used for household surveys where the eligible persons of the household are known or selected in advance, we had to make a compromise between our wishes and the restrictions imposed by the system. These restrictions were imposed by the Call Management System (for example the fixed format of the dial screen which considerably limited the information about the household available to the interviewer when dialing), and by the fact that a questionnaire description language (i.e. Blaise) is not intended for building administrative systems.

For the interviewers it is important that a Call Management System appears and reacts in the same way, regardless of whether it is used for person - or household interviews. Therefore, our needs would be better met by a more flexible administrative system, where a dial screen should lead directly to one or more interviews and thus separating the questionnaire and the administrative system.