THE HOUSING CENSUS: A BLAISE APPLICATION IN AN EXTERNAL CONTEXT

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Abstract

One has come to consider electronic support for filling in questionnaires as a necessary form of help to informants. They stimulate the informant's willingness to collaborate and they increase the reliability of their responses. Nowadays more and more informants come to use computers; in such a context it is an interesting option for the CBS to provide them with data entry software with which to enter the required data. The Blaise system has proved to be a valuable tool for easy and accurate development of such programs.

1. The census

The Housing Census of the CBS has been held since the beginning of the century and its purpose is to evaluate the stock of housing buildings in the Netherlands. In combination with population statistics, these statistics have always played an important part in the housing policy of the Government. The housing stock is also the most important criterion for the allocation of funds to the local authorities. The latest reassessment of the housing stock took place in 1971, in combination with the population census. Today's housing stock figures are based on the 1971 stand, corrected by the mutations that have taken place in the last years. A new reassessment of the housing stock has been started this year and will be completed in 1995. It will take into account houses and housing units, but also recreation dwellings and specialized residences such as monasteries and homes for elderly people. The information will no longer be confined to housing stock sizes: the aim

is now to build an address register, which will be a reliable starting-point to maintain housing stock information of a high quality level (Amse, 1992).

2. The processing

To simplify the burden of filling in the questionnaires for the Housing Survey (about 6 million addresses in all), the local authorities were sent a Blaise questionnaire containing the addresses from the Geographical Base Register. This is a file based on PTT information, containing all existing addresses in the Netherlands. The local authorities are requested to fill in, for each address, a code that identifies it as a house, a housing unit, a recreation dwelling or a specialized residence. In the case of specialized residences the capacity also has to be filled in. It is also possible to add missing addresses. On receiving the filled in forms the CBS performs a check of the information provided by the local authorities, executes the necessary corrections and stores the addresses in an ORACLE database.

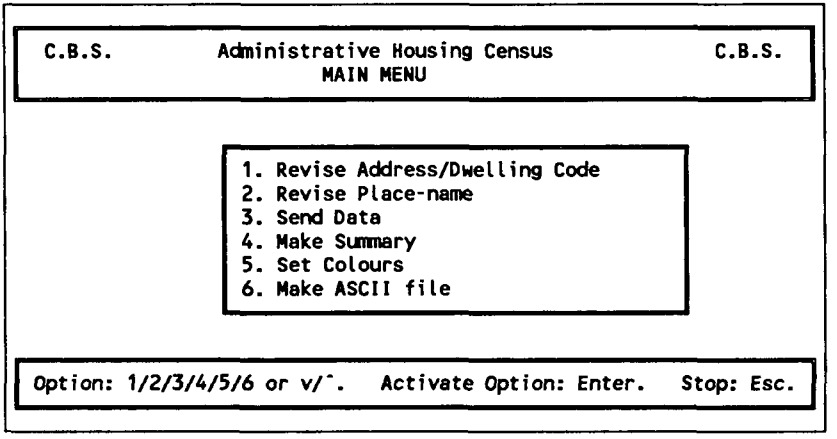
3. The application

As the program has to run in an external context it was not compiled as CADI (Computer Assisted Data Input), but as CAPI (Computer Assisted Personal Interviewing). CAPI gives more information on screen for 'strangers', and the CBS is certain to receive 'clean' Blaise data files. Fields can be protected against erroneous values. Another advantage is that the Blaise menu is smaller than in a CADI application: it offers only the options to add, to do a key search and to select. A number of texts have been redefined in the Blaise file CAPITEXT.xxx to make the program more housing-survey specific. For instance the option texts of the Blaise menu have been adapted:

Standard text	Adapted text
Interview	New Street
Examine form	Search on Postcode
Select forms	Select Streets

The program was complemented with a few Pascal programs: one of them is the main menu, a shell around all the others, see figure 1. The other programs take care of diverse output functions, such as making summaries and converting to ASCII. These programs read directly from the Blaise database, which was made possible by a Pascal read routine designed by the Blaise team specifically for this project.

Figure 1. The main menu



The alternative approach, sending the Blaise Conversion Module as part of the package and make tailored programs read their data from the ASCII file, would have met the following objections:

- Disk space wastage on the informant's computer;
- Specifically for large municipalities: long processing times due to the extra conversion.

The CBS department responsible for the Housing Census organized a help desk for help and support of the project. The user manual was written with particular care. As the CBS has little experience with designing and implementing software for external users, the system was carefully tested on a number of test sites.

For check purposes the CBS uses a CADI application developed from the same Blaise definition. This is used to submit the incoming data files to an integral check. This program is also used to enter the data filled in on a paper form or on tape.

3.1. The Blaise program

The key of every address is the postcode and the house-number. In the Dutch postcode system the postcode nearly always identifies a street or part of a street. There are only a few cases where one postcode corresponds to two different streets. These exceptions are taken care of with a sequence number added to the key. The screen layout is primarily determined by the file structure. The main screen (figure 2) presents information concerning the street or part of street (pertaining to one postcode).

Figure 2. The Blaise main screen, street (postcode) information

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BLAISE 2.32  CAPI   DWELLING    Main          street coding
Street name according to PTT conventions

 Use CAPITALS.


(enter text of no more than 17 characters)
──────────────────────────────────────────────────────────
     PlName      APPINGEDAM
     Street      EPPENSSTR
     From           1
     To            29
     PcNum       9902
     PcLet       HA
     Eod         0     Odd
     SeqNum       1
     WbCode      0002

     WRCode      ▒
     AdrCount    7

 BROWSE    F1:Help  F2:Change  Escape:Stop
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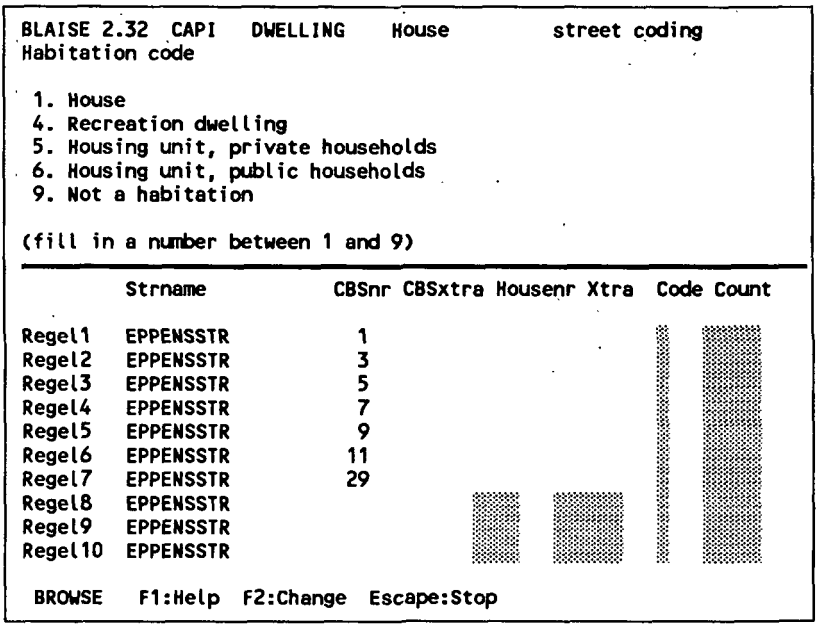
The second screen (figure 3) is a list of the different addresses (house-numbers). For the addresses supplied by the CBS the uses can only fill in the fields Code and Number. CBS addresses cannot be deleted by the local authorities. They can, however, use code 9 to specify that a given address is not a habitation. There are empty lines at the end of the form, allowing new addresses to be added. The house-numbers have to fall within the range defined for the postcode - otherwise they are refused.

There is a code field in the main screen, which can be used to simplify the process of entering codes. If a value is entered in this field, it will be supplied as a default in every code field left blank in the second screen. Another field in the main screen displays a count of the addresses in the second screen.

Figure 3. The second Blaise screen: the specific addresses



4. Practical aspects

At the end of 1991 the Dutch local authorities were asked whether they would prefer to receive the address lists for the housing survey on paper forms or on a diskette. In many cases we explained what advantages an electronic file has - also for the authorities themselves - on a paper file. We particularly draw their attention to the possibility of reusing the file for local purposes.

The result was quite encouraging: out of the 647 Dutch municipalities 583, about 90% chose for electronic information interchange. Preference for paper forms was in general only expressed in very small places.

In the spring of 1992 the municipalities that had chosen for a diskette received a program disk complete with installation procedure and one or more data disks with a compressed file containing addresses of buildings susceptible of being used for habitation.

The program is accompanied by a manual with a complete description of all the functions of the program and of the installation procedure.

4.1. Users' findings

The program has probably not yet been installed everywhere, so it is not yet possible to give a complete picture of the problems at hand. In fact few problems have been signaled yet. Some problems have occurred during program installation. This sometimes had to do with a shell program running on the computer. The program turned out to hang when running under some shell programs. This problem could be solved by temporarily deactivating the shell program. Once the program did not work after being copied to another PC. This was caused by the fact that some program files are made hidden and thus cannot be copied in an easy way with DOS commands. Sometimes it was the user who did not precisely understand what was supposed to happen. In all cases the problems could be solved with phone support.

The program meets general enthusiasm of the users. It is user-friendly en does not give rise to substantial problems. Questions we are asked by the users are usually of the conceptual kind. Questions about the program itself are generally simple to answer and typically have to do with the choice of a key combination or with the structure of the menu.

4.2. Incoming data files

As for now (August 1992) we have received files from 35 municipalities, and they have been integrally checked with the CADI program. We are pleased to find that, as of course we had expected, that there are very few errors to be found. Time saving is of course one of the great

benefits of this way of collecting information: the data are input by the informants themselves, the technical checks are simple and errors are hardly ever there to be detected.

5. Conclusions and recommendations

We may conclude that this technique of information collection functions properly and that Blaise is an excellent tool for developing data entry programs. The reliability of the software is a great advantage. The fact that the software has to run in an unknown context is decisive in the choice between standard software and tailored programs. Development time of tailored programs can grow significantly if one has to take external factors into account.

The combination of Blaise and some additional Pascal tailored programming came out to work very well. The condition, of course, is the availability of a Pascal read routine to access the Blaise database directly. Maybe the option to generate it could be added to the Setup Generator.

For this census we chose for the CAPI option, although it is meant for interviewing, because this type of application makes it easier to control data entry and to give more information on screen. CAPI, however, is not free of drawbacks. One of these drawbacks is that it is not possible to browse the file backwards. Another disadvantage is that one cannot close a Street (=Interview) and go over to the next street without performing 'many' operations. The user sees this as useless delay. Supposing more such applications will be designed in the future, it may be desirable to offer a fourth Blaise application type besides CADI, CAPI and CATI (T=Telephone).

The user manual must, of course, be designed with particular care. This can avoid quite a few telephone calls! Our strategy was to supply the test sites with a summary manual, giving only the most important information. This enabled us to get quite a picture of the information an external user wants to have at his disposal.

Literature

Amse, A.K., 1992, 'Woningtelling', CBS Signaal, June 1992, pp. 5.