

Labour Force Survey: Handling Multiple-Household Dwellings in Blaise

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1. Introduction

Israel's Labour Force Survey (LFS) introduced the use of Blaise to our Central Bureau of Statistics in 1999. The survey tracks fluctuations in Israel's labour force, its size and characteristics, the extent of unemployment and other trends. It also provides demographic information on Israeli households.

The LFS is a continuous panel survey, returning to a sample of approximately 12,000 households four times over the course of a year and a half. Households are interviewed face-to-face in Panels A and D, and by phone in panels B and C. Data collection thus far has been achieved using CADI and CATI respectively, but as of next year we hope to begin using CAPI instead of CADI.

The survey is sampled from a framework of dwellings. One of the problems we encountered during development of the CAPI questionnaire was related to Multiple-Household Dwellings (MHDs). A household is defined as a group of persons living in one dwelling who have a common expense budget for food. A household usually consists of a family, but may also consist only of one person or include persons who have no family relationships. Approximately 3% of all dwellings have multiple households sharing their space. This configuration is most often found among immigrants, students and foreign workers. Surveyors are expected to interview a representative of each household in a dwelling. A separate questionnaire must therefore be used for each household.

This paper outlines the complexity of the issue and the solution provided for conducting MHD interviews. Using Blaise and Maniplus, we have developed a user-friendly questionnaire, able to identify multiple households and to generate a separate questionnaire for each such household.

2. Description of the Labour Force Survey

2.1. General

Since 1954, the Central Bureau of Statistics (CBS) has been conducting annual continuous Labour Force Surveys, interviewing a sample of 12000 households each quarter. The survey population includes the entire permanent population of Israel, aged 15 and over.

The survey's primary aim is to gather information on changes in population composition and on the state of employment and unemployment in Israel.

2.2. Sampling

The Sample units are dwellings, which are sampled in a two-stage method. First, localities are sampled from a list of localities, and second, dwellings within these localities are sampled from municipal tax files.

2.3. The Mode of Investigation

Each of the survey's dwellings is investigated four times, twice in the first two quarters of their panel, and twice in the two quarters following a two-quarter break. If a participant dwelling's residents change between investigations, the new residents are investigated according to the investigation stages. This means that some residents are investigated throughout the survey (stages 1, 2, 3, 4), and some enter the investigation in stages 2, 3, or 4.

The investigation week is determined for all four investigations and remains fixed over the entire period of investigation.

2.4. Interviewing

The interviews are conducted by about 60 trained surveyors from the CBS, under the guidance and direction of regional coordinators and headquarter supervisors.

Stages 1 and 4 of the investigation are face-to-face surveys, while stages 2 and 3 are conducted by telephone. About 10% of the interviews during the field interview stages are also conducted by telephone, mainly due to difficulties in visiting the dwelling, absence of residents, or refusals. Similarly, about 10% of the phone interviews are conducted face-to-face, mainly because of communication problems, or lack of telephones.

In residential dwellings, the surveyors interview one of the household members from whom they receive information about all members of the household.

2.5. The Questionnaire

Each household is allotted a questionnaire containing information pertaining to the entire household, and a questionnaire for each member over 15. The household questionnaire gathers information on the number of persons in the household, the number of rooms in the dwelling, etc. The individual questionnaire inquires about the state of employment, employment seeking methods, and more.

3. Transition to Computer-assisted Data Capture in the LFS

3.1. The Transition to CATI

Prior to 1999, the interviews in all stages were based on paper questionnaires. The Labour Force Survey was the first household survey in the CBS to introduce the use of computer-assisted interviewing (CAI).

In 1999 the CBS established its telephone-based Data Collection Centre, marking the changeover to computer based data collection. Stages 2 and 3 of the LFS are now conducted by telephone using Blaise's CATI management. The field interviews of stages 1 and 4 are still conducted using paper questionnaires. The data is afterwards typed into the computer using Blaise.

3.2. CAPI Development

The next stage of development in our transition to CAI will include data collection in field interviews using CAPI. The project of the transition to CAPI is currently in development. By 2007 we expect all data collection in the LFS to be computerized.

4. Household Investigation

The LFS investigates the behaviour of households as organizational and economic units.

A household is defined by the following three components:

1. Persons who belong to the population survey.
2. Permanent residents of the dwelling.
3. Manage a common expense budget for food.

A group of persons is considered one household *only* if all three of the above components exist. A household usually comprises a family, but may also comprise a single person or include persons who have no family relationship.

MHDs are most often found among students, immigrants, or foreign workers. In MHDs each household is investigated with a separate questionnaire. One adult household member is designated as proxy and interviewed about all members of his/her household. While the sample unit is a dwelling, each household has its own questionnaire, managed separately.

Investigation results may differ between households in one MHD. Hence, one household may complete the questionnaire, while another in the same dwelling may refuse and be catalogued as a 'non-response'.

5. Work Process Flowchart – Paper Questionnaires – Stage 1

a) Who are the permanent residents of the dwelling?

| First Name | Last Name | Relationship to first member |
|------------|-----------|------------------------------|
| Roger | Simpson | First member |
| Margaret | Simpson | Spouse |
| Bart | Simpson | Son |
| Wilma | Smith | Daughter |
| Fred | Smith | Son-in-law |

b) Do they share an expense budget for food?

NO

YES

How many households are there in this dwelling?

New tables according to Number of households in the dwelling

Continuation of Household 1 Table

| First Name | Last Name | Relationship to first member | Sex | Date of Birth |
|------------|-----------|------------------------------|--------|---------------|
| Roger | Simpson | First member | male | 1.1.50 |
| Margaret | Simpson | spouse | female | 1.5.46 |
| Bart | Simpson | Son | male | 24.6.75 |
| Wilma | Smith | daughter | female | 4.8.78 |
| Fred | Smith | Son-in-law | male | 6.9.80 |

Household 1

| First Name | Last Name | Relationship to first member |
|------------|-----------|------------------------------|
| Roger | Simpson | First member |
| Margaret | Simpson | Spouse |
| Bart | Simpson | Son |

Household 2

| First Name | Last Name | Relationship to first member |
|------------|-----------|------------------------------|
| Wilma | Smith | First member |
| Fred | Smith | Spouse |

6. Investigating Multiple Households with a Paper Questionnaire (Stages 2, 3, 4)

Stages 2 and 3 of the LFS interview by phone using a Blaise CATI management system.

6.1. Multiple Household Dwellings

Since we do not yet have a computerized system enabling the investigation of MHDs, the dwellings found in stage 1 to comprise more than one household, are investigated with paper questionnaires in the following stages, rather than by CATI. The interviewer must first inquire whether anyone has joined the dwelling or left it, and then complete the information on each household on paper questionnaires. These are later typed into Blaise. After typing first the number of households in a dwelling, a corresponding number of questionnaires will be generated by Blaise for each household.

7. Problems with the Current System

- 7.1 The interviewer does not follow a constant set of automatic questions.
- 7.2 The question: “How many households are there in this dwelling?” is vague and confusing for interviewees.
- 7.3 Interviewers must type information from paper questionnaires into computerized ones, increasing the possibility of error.
- 7.4 The use of paper questionnaires, lacks the obvious advantages of computerized data collection such as logical error checks and automatic workflow processes.
- 7.5 There is no methodological unity regarding the survey population and stages.

8. Developing Stage 1 Questionnaires in CAPI

The transition of stage 1 of the LFS to CAPI has not changed the survey’s definitions, sample units or household investigations. The interviewers work with a computer but do not change their workflow and must still inquire about the number of households, opening separate questionnaires for each household and interviewing a representative from each.

Planning the transition to CAPI, the following rules have been established:

1. There is no change to the current definitions of a household.
2. The work process and flow must correspond to the existing LFS process.
3. The system will be user-friendly.
4. The questions and their order must be clear and intelligible for the interviewee.
5. The interview will be constant, brief, and include no long pauses.
6. Since the majority of dwellings consist of only one household, it is important to keep the interview as simple as possible.

8.1. CAPI Development

The following principles served us in the selection of development platform and languages:

- The product must be simple to use
- The product must be stable
- The product must maintain the desired level of information security.

It was decided that the interviewers laptop computers must contain a minimal number of systems. The LFS CATI version in Blaise provided the basis for

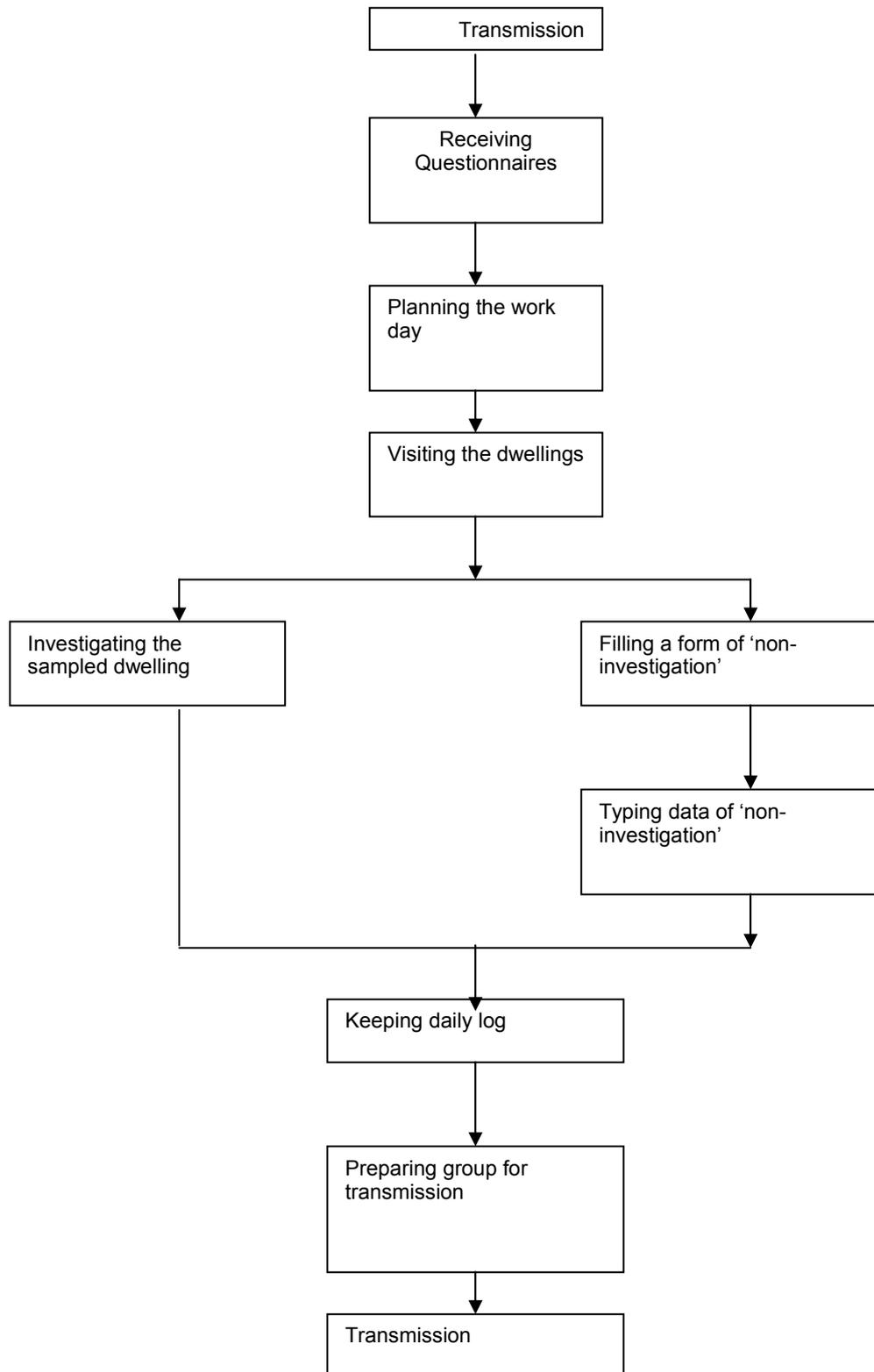
development of the CAPI version, which is why we have chosen to develop the survey management system using MANIPLUS.

8.2. Development the Interviewer Working Environment

The Interviewers' work consists of several actions:

1. Collecting data during the interview of a sampled dwelling.
2. Collecting further data in cases of 'non-investigation'.
3. Transmitting and receiving data.
4. Planning the work day.
5. Keeping a computerized log of activities and expenses.

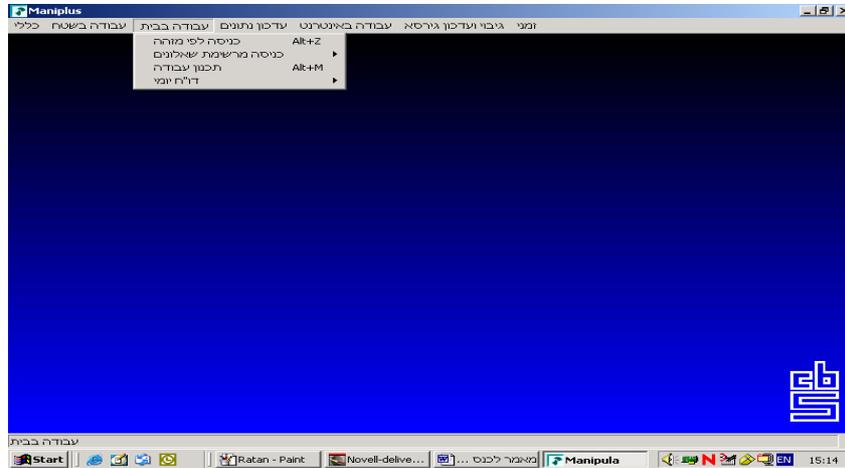
8.2.1. Interviewer Working Environment



8.3. Survey Management Menu

In order to enable the interviewer to conduct the necessary activities from home, we have developed a program including all possible activities in one menu.

Figure 1 – Survey Management Menu



8.4. The List of Dwellings and Households

The interviewers receive weekly Blaise questionnaires of sample units. The questionnaires are generated at headquarters according to their investigation stage, either in CATI or in CAPI. The interviewer receives the questionnaires either with an empty block for dwelling constitution (including no details), or with the same block including details from the previous stage. The list of households includes the questionnaires received from headquarters, as well as those generated by the interviewer during the investigation of multiple households in the same dwelling.

Figure 2 – List of questionnaires for investigation



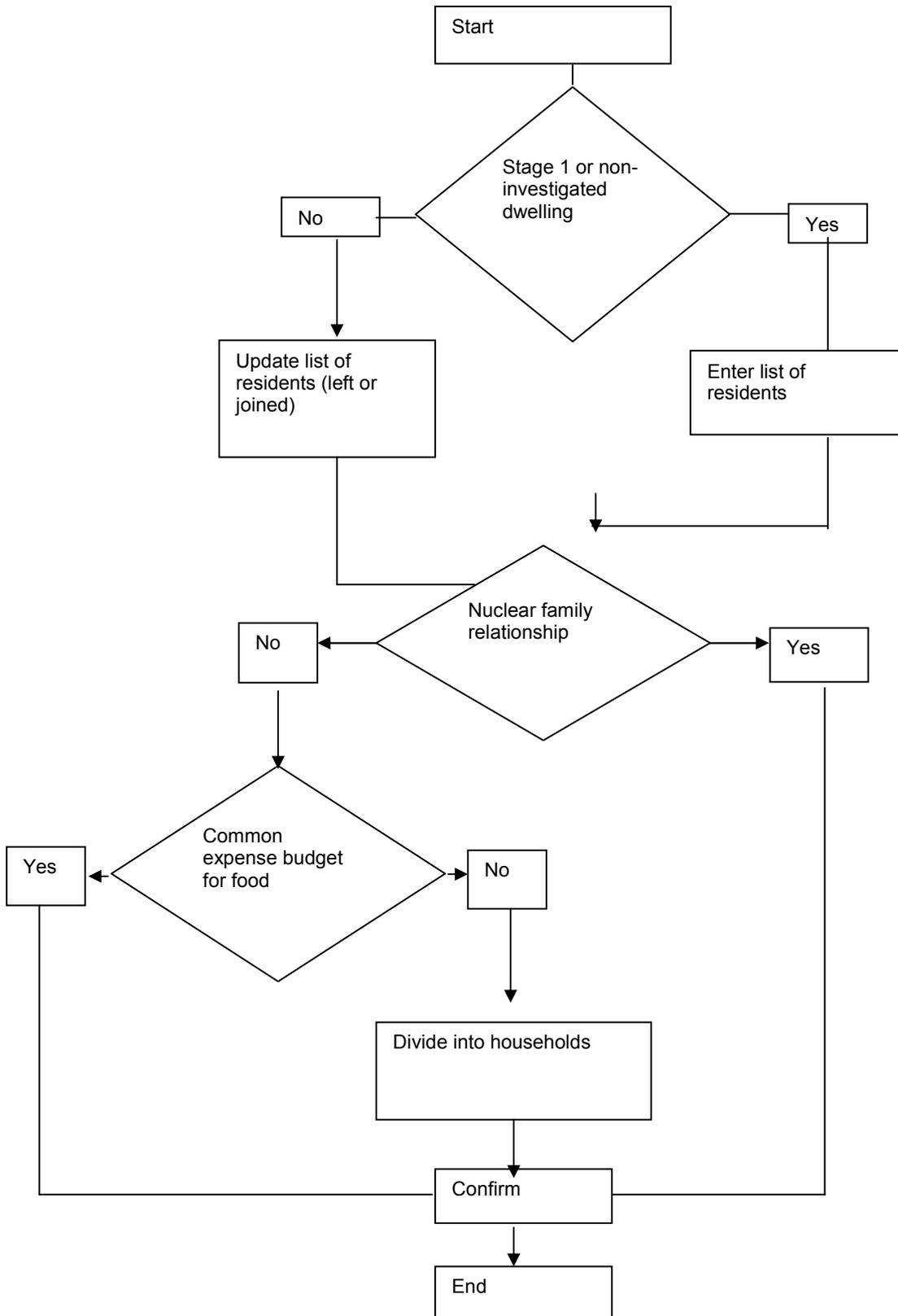
8.5. Field Investigation Process

The interviewer’s investigation process of a sampled dwelling. The following chart details the interviewer’s investigation process, including the development tool of each stage (Blaise or Maniplus).



8.6. Resident Identification Block

The identification block contains the list of residents in a dwelling during the period of investigation and the division into multiple households if necessary. If there is more than one household in a dwelling, the questionnaire for each household x ($x=1,2,\dots,9$), contains a list of residents transferred from the identification block.



8.7. Division of dwelling into multiple households

For the development of multiple household division we used SET fields. The interviewer selects members of a household from a common list of residents which s/he is shown. Those not selected from the list continue to be shown until they are selected for a different household.

Figure 3 – a list of residents

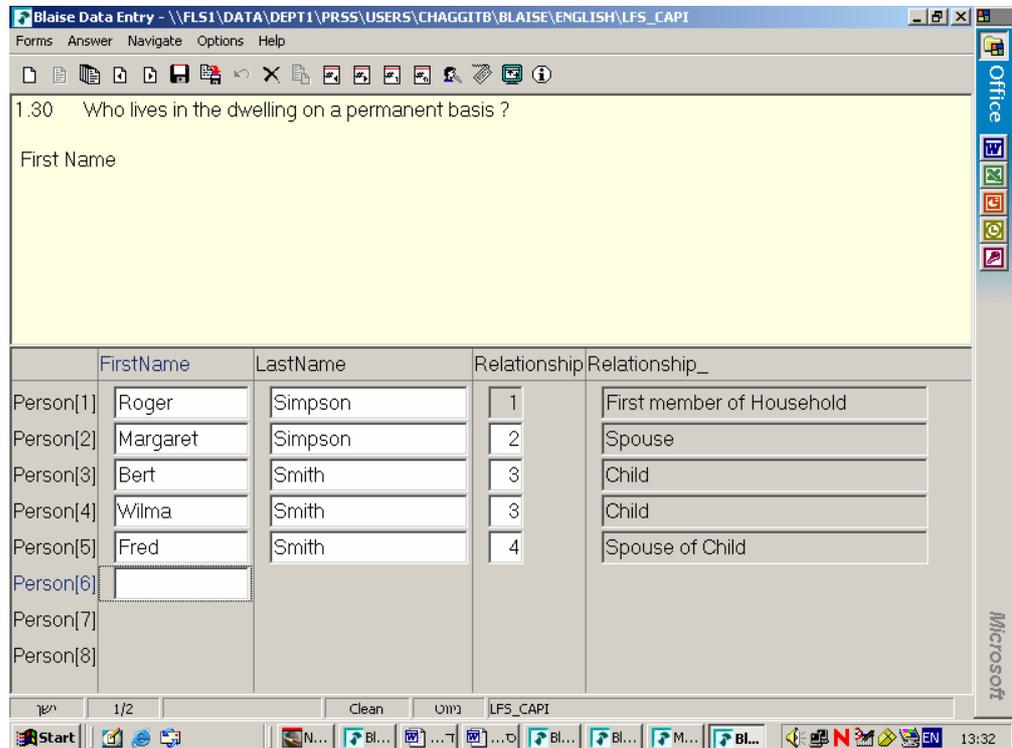


Figure 4 – question about common food budget

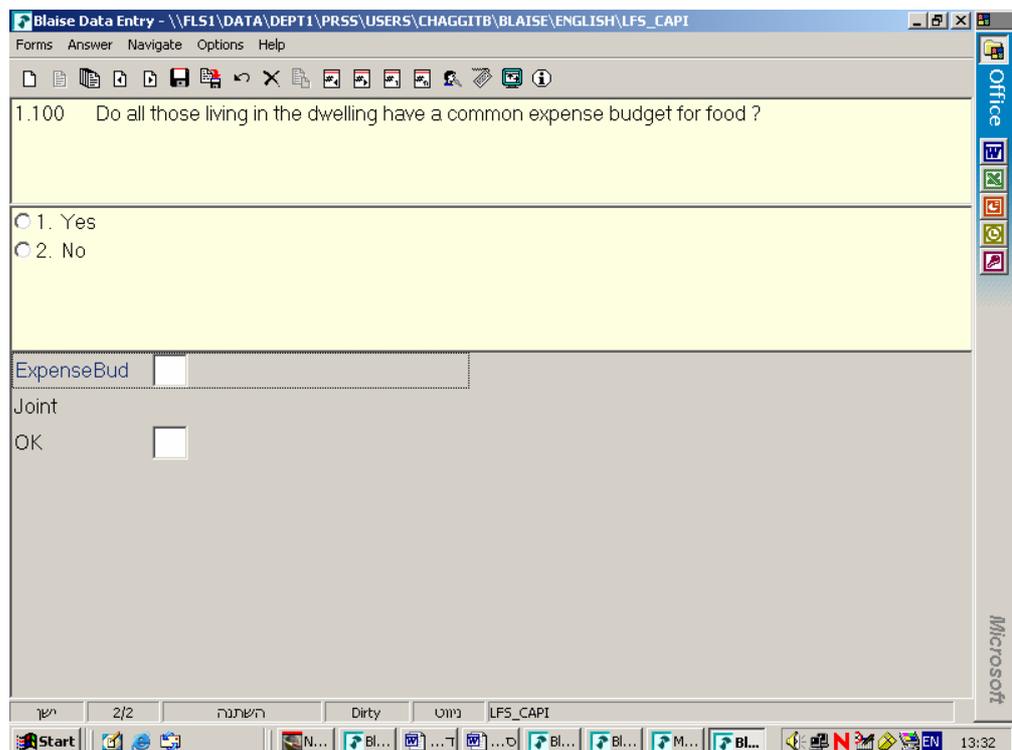


Figure 5 – division into households

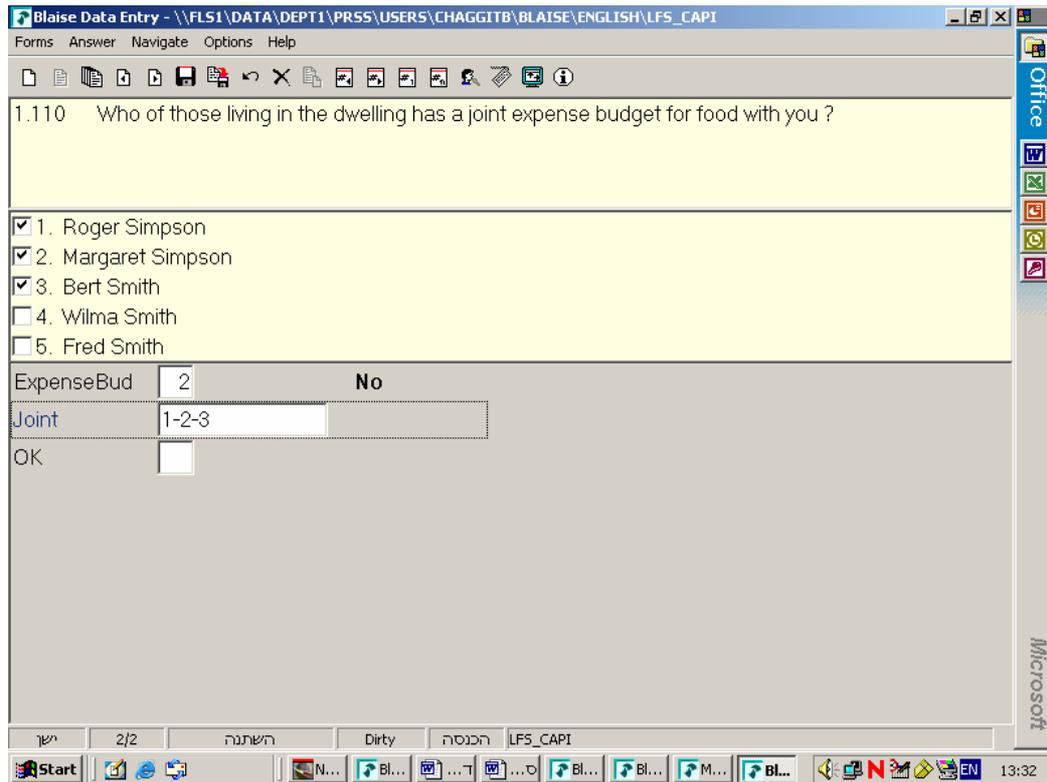
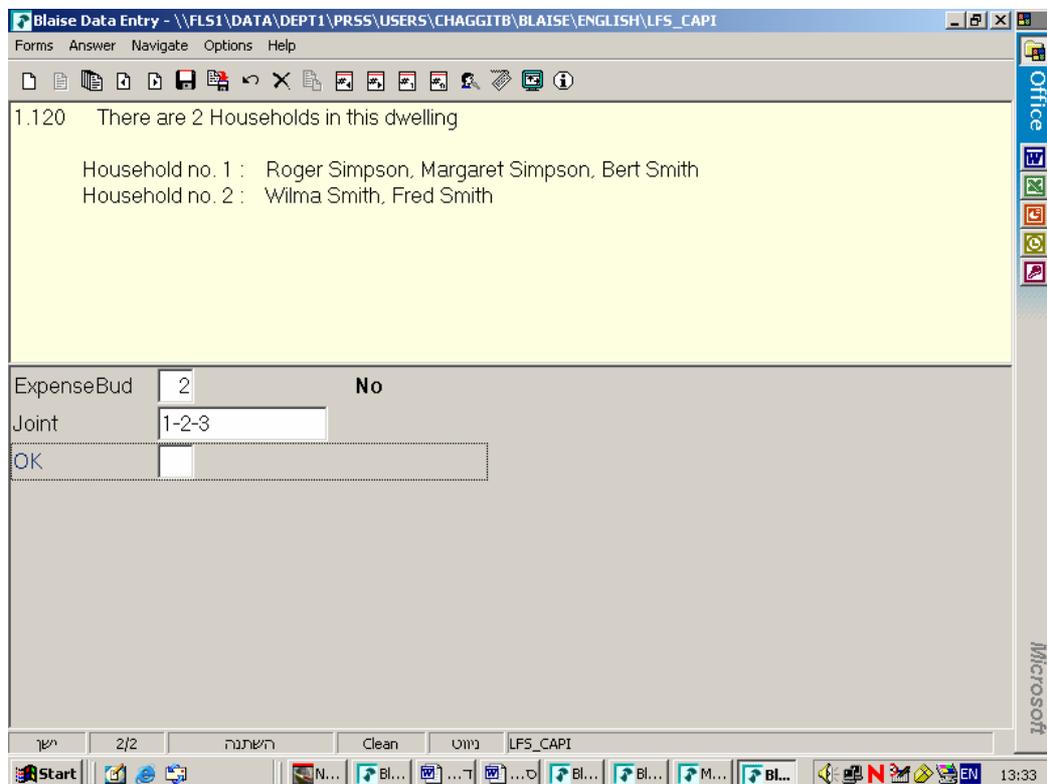


Figure 6 – confirmation of number of households



9. Conclusion

The LFS is the first of CBS's household surveys to use CAPI. Its panel system and varying methods of investigation are unique. The development of a data collection and management system for the entire survey is thus a complex task.

The need for a friendly system, able to identify multiple households in one dwelling, and to generate questionnaires accordingly, complicates the development, as well as the integration of the data collection system and the management system.

The system has been developed after several field experiments. Upon conclusion of development for all stages of the survey, the system should become available for production around October 2006.

