

Section D. Case-studies of Blaise surveys

Redesign Labour Force Survey: Statistics Netherlands 1998

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Introduction

The Enquête Beroeps-Bevolking (EBB) is the Dutch labour force survey (LFS) of households living at private addresses in the Netherlands. It is carried out by Statistics Netherlands on behalf of Dutch governmental institutions (Centraal Planbureau, Ministerie van Sociale Zaken en Welzijn, Ministerie van Economische Zaken, Ministerie Onderwijs Cultuur en Wetenschappen). Statistics Netherlands is also responsible for delivering statistical data about labour force and unemployment to Eurostat.

Until 1985, the Dutch labour force survey was called the Arbeids Krachten Telling (AKT). It was a paper and pencil survey which was carried out every two years in about 160.000 households. While Statistics Netherlands organised the AKT, the field work was carried out (or delegated) by Dutch municipalities. With the introduction of the EBB, Statistics Netherlands took over the field work. In 1987 the first computer assisted version of the EBB (using the Quest package) replaced AKT. In 1992 the Blaise version of the EBB replaced the Quest-version.

The Enquete Beroeps Bevolking is the first computer assisted survey at Statistics Netherlands. Since its introduction, each year Statistics Netherlands addresses 140.000 private households to participate in the labour force survey. They are visited by one of the (approximately 650) field interviewers of Statistics Netherlands. A part of the responding households are requested to participate in the subsequent waves. If they agree they will be addressed by phone three times for a short Cati interview.

After this short history about the EBB and the AKT, below the term labour force survey will be used to refer to the Enquete Beroeps Bevolking.

Technical reasons for a conversion.

There were two main reasons to adapt the labour force survey thoroughly. Firstly, technical developments (the development of Blaise III) asks for more than a one-to-one conversion. Blaise III offers more sophisticated development options, enabling a larger and more complex survey design. Secondly, the need for more information asked to combine the conversion with a complete redesign.

This second reason explains why Statistics Netherlands has waited some time to convert the labour force survey from Blaise 2.5 to Blaise III. The labour force survey-version in Blaise 2.5 is still active for data collection. Currently, the revised field edition in Blaise III has been converted successfully. At this moment this version is tested in a field experiment.

However, there may have been some resistance to switch to Blaise III. Interviewers are used to the old version. To a large extent, the Blaise 2.5 version of the labour force survey does what it is supposed to do, and to some extent it was feared that the creation of a new measurement instrument could have caused bias in the unemployment figures. These and other problems still cause a delay in the implementation of the new version of the labour force survey as soon as possible. However, the technical reasons for the conversion have become more and more urgent. Blaise 2.5 does not meet the requirements of the current network under Windows NT at Statistics Netherlands.

The conversion means a complete system change. The CAPI-interview had to be made suitable for Blaise III. A first one-to-one conversion proved to result in an unworkable version. To face this problem, a technical redesign was necessary. As Blaise III enables to call a block (or field) on different places in the route, similar blocks in the Blaise 2.5 version could be reduced to one block (or field). The old version contained much of these similar blocks. Using a modular approach the model of the revised labour force survey became much more transparent.

The purpose of such a conversion is not restricted to take advantage of the technical features of Blaise III. The policy of Statistics Netherlands is directed towards a situation in which all surveys are integrated in one system. This policy asks for the conversion of the labour force survey. As the extensive POLS (Life Situation Survey) interview is readily available as a Blaise III interview, the same is desirable for the labour force survey. Using the same Blaise version for all surveys at Statistics Netherlands facilitates the organisation of the statistical production process.

The wish to integrate the surveys is not restricted to the Blaise version for the Capi and Cati interview application. All surrounding systems are part of the statistical process. When it comes to data communication procedures, panel management, mixed-mode management, Capi- and Cati-administrations, payment administration for interviewers and coding procedures, the mentioned policy asks identical systems for all surveys at Statistics Netherlands. Also, hardware and system requirements for laptops in the field should be uniform for all surveys.

When it became clear that the Blaise III conversion implied more than a simple conversion this made statisticians start to think of a complete new survey design.

Why a new survey design

The reasons for a new survey design are not surprising. The information requests on developments in employment and unemployment are rapidly increasing. The main users of statistics in this field in the Netherlands (Centraal Planbureau and Ministerie van Sociale Zaken en Welzijn) and the European Statistical office Eurostat require labour and unemployment figures each quarter of the year. This does not only imply the addition of new topics and questions in the interview, but also an increase in the number of desired responses.

Changing the number of CAPI and CATI interviews within the acceptable level of expenses made it possible to increase reliability and precision of data by changing the population size and the number of waves.

While on the one hand there is a wish to extend the survey with relevant new sources of information, on the other hand the economical principle asks to avoid gathering redundant and unused data. In practice, over the years, a survey tends to grow larger and larger. Each small revision may lead to an increase of gathered information. It is seldom heard that the statistical department asks to stop gathering certain information. In the redesign project, an evaluation has been organised to check whether it may be better to stop asking certain redundant questions and to put an end to gathering useless and unused information.

The conclusion is the conversion and redesign served more than one purpose. Technical reasons, uniformity of applications, the need for more information and the need to keep it simple and avoid useless data gathering are some of the ingredients for the discussions about the revision at Statistics Netherlands.

The project team consists of engineers from various departments and different disciplines. Different objectives between disciplines and departments means a risk. While running the project, the main objective was to keep the overall aim of the project in mind.

Wishing a larger population

The redesign did not only affect the content of the questionnaire. Also the sampling method has been reconsidered. As well Eurostat as Dutch user's of labour statistics asked for higher levels of reliability.

The sample population of the Labour Force Survey in the Netherlands is a random part of its inhabitants aged 16 years or older. For sub-populations consisting of about 5% of the entire sample, Eurostat wishes to keep the relative standard error of the estimator of the mean value in a year on Nuts-II level below 8%. The precision still has to be better for statistical figures on the national level. The relative standard error of the estimator of the difference of two successive quarterly figures on national level may not be more than 3% (1.5% for countries with a population larger than 20 million).

The *Centraal Planbureau* and the *Ministerie van Sociale Zaken en Welzijn* ask for a certain degree of precision and reliability. Firstly, this concerns the part of the population that belong to the employed or unemployed labour force. At a given level of reliability, yearly figures in the new version may not be less precise than they are in the Blaise 2.5 version of the survey. Continuation of the current levels of reliability and precision are desired. Secondly, The difference in two successive quarterly figures must have the same level of reliability and precision as the current difference in two successive yearly figures.

As well for Eurostat as for the Dutch users of data from the labour force survey, higher levels of precision and reliability are desirable. To reach these higher levels, a larger number of observations is required. To reach this not the sample size will be enlarged, but the number of subsequent waves will increase in the new version.

The old panel system

Using the method of the labour force survey in the Blaise 2.5 version, the sample size should be increased 400%. Multiplying the number of field interviewers by four would be the simple solution, however this can not be realised within the available budget. The solution is a new approach, using rotating panels. The following table shows the way a survey panel in the Blaise 2.5 version is addressed for the labour force survey in four subsequent waves.

In the current approach, the time between two subsequent waves is 3, 3 and 6 months.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan'
Wave 1	A	B	C	D	E	F	G	H	I	J	K	L	A'
Wave 2				A	B	C	D	E	F	G	H	I	J
Wave 3							A	B	C	D	E	F	G
Wave 4													A

There are approximately 140.000 households involved in the first wave. They are visited on private addresses by an interviewer with a laptop. The basic Capi-interview is carried out and the persons are asked if they are willing to participate in the subsequent Cati-waves. Three months later, a limited part of the households are involved in the second wave. The responding households in the second wave will also be contacted in the third wave. This procedure is repeated until the fourth wave.

Sample and Rotating panel

The idea was to use a rotation scheme to enlarge the mass of the sampled population, enlarging the number of addressed households in the subsequent Cati-waves. The sample size of the first wave should not be increased. For the new design, various wave schemes have been considered, among which the English and the Italian system.

Considered Wave Schemes for the Labour Force Survey.

Country	N of Waves							
		Quarters						
		K	K+1	K+2	K+3	K+4	K+5	K+6
English (GB)	5	?	?	?	?	?		
Italian (I)	4	?	?	-	-	?	?	
Dutch (NL)	4	?	?	?	-	?		
English-plus (GB+)	6	?	?	?	?	?	?	
Italian-plus (I+)	6	?	?	?	-	?	?	?
Dutch-plus (NL+)	5	?	?	?	-	?	?	

Most of the wave schemes show one or more periods in which no field work is carried out. At first sight, the English system in which over a period of one year the panel is addressed every quarter of a year appears to be the simplest and most practical scheme, not only for the analysis, but also for the organisation of panel management.

Sample and Rotating panel

The revised labour force survey in the Netherlands will use the first scheme: 5 quarterly waves for the entire sample population. Each month the current situation of an approximately constant proportion of the Dutch population can be compared with the situation of the same proportion three months before.

In global terms this results in a situation where:

- ? There is a minimum number of waves that meets reliability demands
- ? There is a maximum number of cases in first wave
- ? It is an elegant and user-friendly method

A note about two sources for trend figures

In 1998 and 1999 the second, third and fourth wave will not be carried out. The wave-system enables to follow the factual situation of persons over some time. Within the labour force survey, also a retrospective part (the Retro) is present which asks about previous jobs. In fact these are two methods with the same objective: to measure individual changes.

Despite the fact that a measurement on a certain moment (during the follow-up waves) would be more precise, this retrospective supplies information of the job situation of a longer period. Organisational problems made it necessary to skip the Cati-waves for 1998 and 1999.

In the Blaise III design of the labour force survey, the intention was to discard the retro. However, the intended wave schemes have not yet been implemented. Before the wave scheme is implemented, the Retro will stay active in the labour force survey. The current idea is to omit the Retro as soon as the panel system has been proven to be successful.

The organisation of the changed Capi interview

The basic interview (the first wave) is a Capi interface during a household visit. For the field interviewers and the organisation of the field work the procedures will not change radically. Yearly, changes and preparations of the questionnaire are followed by interviewer instructions and training. For the new survey, another type of datacom will be used by the interviewer. The interviewers already know this kind of datacom-interface from the POLS-survey.

Like the old labour force survey, each month a sample will be installed on the field-laptops by datacom and the administration of the year-sample will be up-dated. The interviewers receive announcement letters by mail. They forward them to the addresses printed in these letters. After announcing the interview in this way, the interviewer visits these addresses. All the organisational aspects for the field interviewers are the same as in the Blaise 2.5 version.

One household interview takes usually about 28 minutes. Also here there is no change in comparison with the previous version, which lasted about 25 minutes. If the Retro will be discarded in the future, the amount of time may be decreased to less than 20 minutes. The mean household size is about 2 persons. Within each household up to 8 individuals may be interviewed. In the previous version the maximum number of persons to be interviewed was 4. Known that the percentage of households larger than 4 persons is quite low, this will not drastically modify the mean interview time. At the end of the interview the respondent will be asked to participate in subsequent waves (CATI). If nobody answered the doorbell, or for any other reason a non-response is scored, the interviewer fills out an electronic visit report. After returning home the interviewer mails the data from the laptop to Statistics Netherlands by standard datacom-procedures.

If the interview period of one month is expired the received data, after adding codes for example for educations and economic activities, the Division Data Collection transfers data to the Statistical analysts. Non-response figures and field reports are prepared. After that the Cati-system for subsequent waves can be prepared.

An important condition

When producing statistics, the most horrible nightmare is an unexpected disturbance in statistical trends. This is what may happen when a new measurement instrument is developed. This formalised the basic condition for the new version of labour force survey version: The main routing of the questions and the contents of the literal questions should not be changed unnecessarily. This principle has been used as starting point in the discussions of all sub-projects in which separate blocks from the old version were analysed before designing the new modules.

Modular approach CAPI interview

Different topics of the interview have been developed in separate modules. All modules were developed in Blaise III from scratch. In the first wave the following modules have been implemented:

Household box

Ethnical background

Proxi

Labour field

Position at work

Status of labour-contract (structural / temporarily)

Hours per week

Free days per year (holidays / days of)

Illness

Overtime work

Working-hours

Traffic home-work-home

Private enterprise

Occupation / Profession

Labour conditions

Seeking employment

Retro (Previous jobs)

Education

Retirement / pension

Employment bureau

Membership trade union

Free time / leisure activities

Volunteer jobs

Social position

Mobility

Willingness to participate in the next waves

Most of these blocks also appeared in the previous version of the labour force survey. Nevertheless there were some changes.

Changes in the Capi-Interview:

Compared to the Blaise 2.5 version, the main changes in the Capi interview are the following:

- ? Module social position has been changed and now is one of the last blocks in the interview.
- ? Module labour searching has been added
- ? Module about working-hours has been changed
- ? The module about unemployment benefits has been omitted. The future possibility of using secondary data from unemployment registrations made it possible to decide this.
- ? As already mentioned before: the maximum number of individuals in the household that were involved in the Blaise 2.5 version was 4. Now this maximum number is 8.

Changes in the subsequent waves:

Compared to the old version the quality of feed back from the first wave is enhanced. In the new version, information about more than one job will be passed from wave to wave. In the old version only the name of the first job was passed from wave to wave. This kind of information transfer has been increased in the new version.

Another change is that the mean duration of the Cati interview has been reduced to approx. 6 minutes. The number of included modules in the Cati-interview is less than in the old version.

Within the modules of the Cati-interview, alternative routes have been used which are shorter than in the Capi interview. The modules are the same as in the Capi-interview. This route is controlled by import parameters. An overview of the used modules in the Cati version:

Modular approach CAPI interview

Household box

Proxi

Labour / fields of activity
Position at work
Labour-contract (structural / temporarily / other)
Hours per week
Private enterprise
Occupation / Profession
Seeking employment
Education

What not has been changed is the drop out handling. If a household does not respond in one of the waves, it will be discarded from the population in the subsequent waves. Hence, temporary drop out in just one wave is impossible.

Blaise III 'Conversion'

The Blaise III conversion was not a real conversion, but merely the development of a new complex questionnaire. Schemes were developed from scratch. These schemes formed the starting point for the development of the new Blaise interview. Each module has been developed as an independent unit. All information between modules is passed using import and export modules. Each module could be tested independently.

Panel management and integration of interview administrations.

At this moment still a crucial bridge lies ahead: completing the system for panel management and interview administration. In this system, the extensive Pols interview and the labour force survey will be joined with all other surveys that (structurally) take place in the division of data collection at Statistics Netherlands. The impact of this part of the project was underestimated in the planning. This may result in a delay for the moment the new version will be in the field.

Measuring the instrument effects

While the labour force survey has been developed from scratch, still many parts are identical to the previous version. Nevertheless the new version is a new measurement instrument. Despite the aim to measure the same, the structural responses in the new version may unwillingly deviate from the old version. This is why the old and new version will be together in the field for at least half a year. According to the current planning this parallel interviewing will take place from March until December 1999.

Blaise for Windows

At Statistic Netherlands, Windows has been installed on every site. Also the new laptops will run under Windows. MS-DOS-applications appear not to run as they should on the available platforms. This is why it is a general policy at Statistics Netherlands to make DOS-applications disappear.

The Blaise III version has been developed in Blaise III in the MS-Dos environment. Despite the fact that some typical layout differences between MS-DOS and Window layout characteristics ask for some adaptations of the questionnaires, this version runs immediately in Blaise 4W and the Windows version apperas to be stable enough for production.

It may well be possible that no Blaise III version of the labour force survey will ever be in the field for production, and that the switch will be made directly from Blaise 2.5 to Blaise 4W.