

Blaise 5 at Statistics Netherlands

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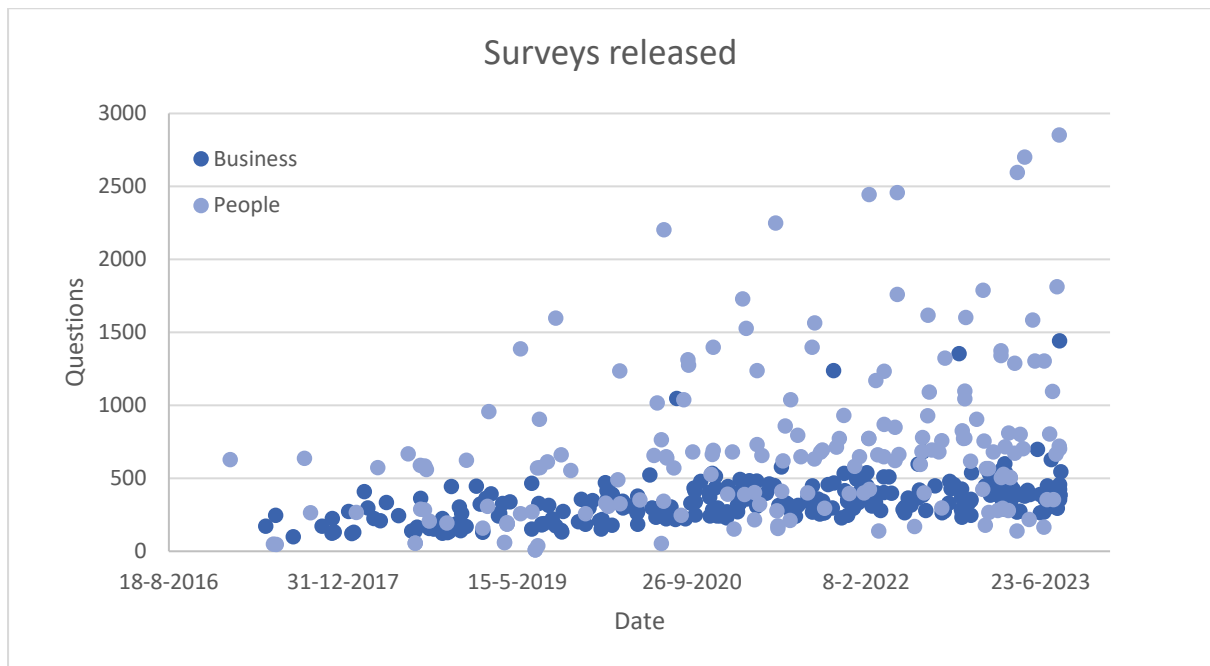
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1. Overview Data Collection with Blaise 5

In 2014, Statistics Netherlands started a project (Phoenix) to renew the data collection process and upgrade the data collection systems in place. Blaise 5 is a massive part of this upgrade. As of 2023, all data collection is performed through the Phoenix system. In total, there are more than 130 surveys in use at Statistics Netherlands. Half of these statistics are targeting people and half are targeting businesses. Most of these surveys are repeated yearly, apart from some pilot surveys with no follow-up and some surveys which are repeated monthly, quarterly, or over a number of years. Most of the business surveys are based on Eurostat regulations and are therefore repeated yearly. One objective of the Phoenix project was replacing all Blaise 4 surveys with Blaise 5 surveys. Blaise 4 is no longer used for any surveys at Statistics Netherlands. This process went gradually. First, the CAWI surveys with the lowest complexity were migrated. These were “CAWI-only” surveys with standard question types. The surveys’ lower complexity and smaller size, and the fact that they only made use of the CAWI mode, made them suitable candidates to start the migration process.

Starting in 2020, the master-detail surveys were migrated to Blaise 5. To replace the master-detail, system parallels were used instead of the detail surveys. In 2021, a start was made on moving CATI surveys into the Phoenix system. In 2022, the last surveys were implemented in the Phoenix system using the CMA app for CAPI surveys.

Figure 1: Number of Surveys Released per Year



2. Team Setup and Roles

At Statistics Netherlands, there is a department for social statistics, a department for business statistics, and a department for data collection. When a new survey is needed or an existing survey needs to be updated, the statistical department contacts data collection and a project is started to get the new survey up and running. A project team is formed with every member of the team having a specific specialized task regarding the different parts of the survey, such as sampling, communication, and building. The building of the survey is done by a survey designer and a survey builder.

2.1 Survey Designer

The survey designer, as the name suggests, is responsible for the design of the survey. The design consists of 2 documents. The first is a Word document that clarifies what questions will be asked and how they will be formulated. The formulation of the questions needs to be checked against several things. First, does everyone understand the questions that will be asked? Some words are considered too difficult for the general public, and other times, the formulation needs to be tactically accurate. It's possible the question has too many options. In this case, it might be easier to make it into 2 separate questions. Also, the text should not be ambiguous to avoid misconceptions. The answer options should be clear, and the respondent should not be forced into a statement they do not feel comfortable with. All questions must have a unique variable name so the statistical department can correspond the output to the questions asked.

The document is created in Word because it's a widely used text processor and most people are familiar with it. This allows the statistical department to also read the design document. Special macros were built to make the design easier to implement. This also makes it easier for questions to be standardized, which allows the builder to use tooling and convert the question automatically.

The second document contains the routing of the survey. This is created using Visio because it's more visual. This contains the routing for the survey and any checks that need to be implemented. When there are technical questions, the survey designer is advised by the builder about what is possible and

what possible advantages and disadvantages there are. When the design is finished and approved, it is sent to the survey builder to create the survey. When the development of the survey is completed, the designer conducts the first test to see if everything has been implemented correctly. When this process is concluded, the statistical department is also invited to test the survey.

2.2 Survey Builder

When a design has been checked and approved by the statistical department, it is sent to the builder. Using Blaise 5, the builder creates the survey as specified in the design. This includes creating the questions and implementing the routing and checks, but also testing and making sure everything is built using the latest standard.

When making a survey, as well as making sure the survey works as described, we also make sure that if a different builder must update the survey or make small adjustments, they can do so quickly and easily. By standardizing the process of creating a survey as much as possible, most surveys are easily managed and uniform. By using tooling created at Statistics Netherlands, a base project can be automatically generated. This ensures that when building a survey, the base design is standardized and can be used to build the rest of the survey. This also makes sure you have the latest version of all standard parts of a survey, like the welcome page and the receipt page shown when the survey has been filled in. We also have rules about code formatting to increase code readability. This includes rules for code indentation and IF THEN ELSE statements, but also variable naming of auxiliary fields and locals, etc.

3. Resource File

At Statistics Netherlands, 1 resource database is used for all surveys. Because different surveys have different needs, lots of parameters are used to make sure surveys can be adjusted as needed without altering the resource database. There is a difference in layout between the master pages for business surveys and people surveys. These differences are all mapped to different variables in the resource file, which can be selected as needed. Using the Project Builder, the builder can easily select the type of survey to be built. This automatically adjusts the settings as needed, reducing the amount of settings that have to be set manually, preventing mistakes.

The current resource database has 4 different resource sets. The default layout is the large CAWI layout for laptops and computers. It's set at a screen width of 1024 pixels, regardless of available space. If the survey has an index, the width is 1280 pixels. If the screen is between 1024 and 1280 pixels, the index is not shown.

There is also a CAWI layout for smartphones. The smartphone layout contains all question types that are available to the regular CAWI layout, but to accommodate the smaller screen group, templates are displayed in a different manner. The questions are stacked on top of one another instead of beside each other. This does mean that there are mode differences between the smartphone and large resource set. Research is conducted to lessen the mode effects. For the option list template, different variants were tried out to make sure differences between modes are as small as possible. Special care is taken to make sure straight lining (filling in the questions all the same without reading the question) is less common and that the variant people find most pleasant to use is implemented.

Currently, the smartphone resource set is mainly used for people surveys and not business surveys. Work is underway to implement the smartphone layout for business surveys wherever possible. Research is being done to determine what businesses primarily use smartphones for their day-to-day activities, as opposed to using a computer, and whether surveys aimed at them are suitable for a smartphone layout. The biggest problem is displaying tables on a smartphone. Small tables with only

1 column should be possible, but tables with many rows and columns are difficult to implement on smartphones. Business surveys also tend to have a lot of text to provide additional information to respondents. For instance, in a survey on employment, additional information might be given on what is meant by employees and whether people hired through a temp agency also belong in this category. These texts are shown with help buttons in the large CAWI layout, but those buttons don't work on a smartphone. New solutions have to be found for this problem and others like it.

A different resource set is used for the printed version. Previously, the printed version was primarily used by the respondent to make a copy of their filled-out survey for their own documentation. Back then, the printed version was a part of the CAWI mode. The current resource set has moved the print to its own mode, which creates new possibilities for the printed version. An example of this would be that it's now possible to create a summary of the filled-out summary, as opposed to only being able to print out the full survey.

Finally, there is a CATI/CAPI resource set. The main difference between this resource set and the others is that in this resource set, more information on the respondent is available to the interviewer on screen. It is also possible to fill out this survey with minimal use of the mouse so an interviewer can fill out the survey quickly and accurately. One of the ways in which this is accomplished is by including a field in which the interviewer can enter a number corresponding to an answer for enumeration and set questions.

Currently, work is underway on redesigning the resource file. One of the goals of this new resource file is to modernize the look and feel of the surveys and to make the smartphone the focus of the design, rather than an afterthought. By making the smartphone the main focus of the design, problems like the different look for option lists between the smartphone and computer layout can be minimized. This, in turn, eliminates as many mode differences as possible. Research is underway to find the best way to ask matrix questions as conveniently as possible while eliminating mode differences.

Figure 2: Matrix Question in Carousel

The screenshot shows a user interface for a matrix question. At the top left is a logo consisting of a grid of squares. To its right are the links 'Opstaan & afsluiten' and '? Help'. Below this is the question text: 'Als u het nieuws volgt, in hoeverre bent u dan geïnteresseerd in:'. The question is followed by the label 'Binnenlands nieuws?'. Below this label are six horizontal buttons with the following text from top to bottom: 'Heel erg geïnteresseerd', 'Erg geïnteresseerd', 'Redelijk geïnteresseerd', 'Een beetje geïnteresseerd', 'Niet geïnteresseerd', and 'Geen antwoord'. Below the buttons is a navigation bar with four items: a dark blue square with the number '1', a white square with '2', a white square with '3', and a white square with a right-pointing arrow '>'. At the bottom left is a button labeled 'Vorige' and at the bottom right is a dark blue button labeled 'Volgende'.

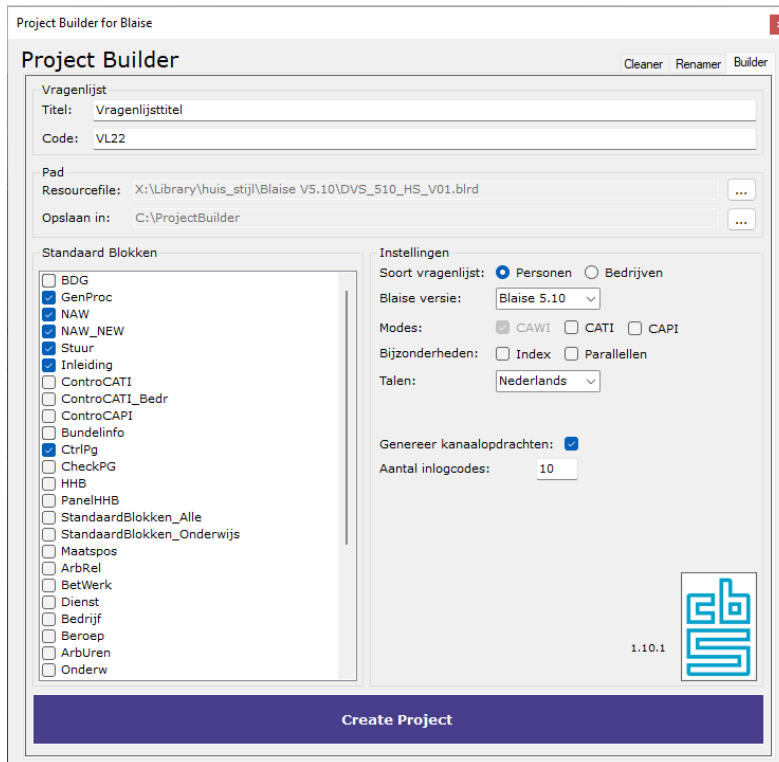
Figure 3: Matrix Question in Accordion Style

The screenshot shows a user interface for a matrix question in an accordion style. At the top left is a logo consisting of a grid of squares. To its right are the links 'Opstaan & afsluiten' and '? Help'. Below this is the question text: 'Als u het nieuws volgt, in hoeverre bent u dan geïnteresseerd in:'. The question is followed by three categories, each with a right-pointing arrow: 'Binnenlands nieuws?', 'Buitenlands nieuws?', and 'Nieuws over politiek?'. Under 'Binnenlands nieuws?' is the text 'Redelijk'. Under 'Buitenlands nieuws?' is the text 'Redelijk'. Under 'Nieuws over politiek?' is a dropdown menu with a downward-pointing arrow. Below the dropdown menu are six horizontal buttons with the following text from top to bottom: 'Niet geïnteresseerd', 'Een beetje geïnteresseerd', 'Redelijk geïnteresseerd', 'Erg geïnteresseerd', 'Heel erg geïnteresseerd', and 'Geen antwoord'. At the bottom left is a button labeled 'Vorige' and at the bottom right is a dark blue button labeled 'Volgende'.

4. Project Builder

To ease the development of surveys at Statistics Netherlands, tools are used that are developed in house. One of these tools is the Project Builder.

Figure 4: Project Builder



Because of the number of surveys created at Statistics Netherlands each year, the need arose for an automated way of setting up projects to speed up the building process. This included both the way in which teams were set up, but also the way in which surveys were built.

Before the creation of the Project Builder tool, most projects were set up using a step-by-step guide. As this was quite time consuming, an investment was made to see what parts of the process could be automated. As most projects use similar settings and make use of a number of standard blocks, the Project Builder tool was created to take care of these steps.

The Project Builder presents the user with a number of options for the survey to be created. This includes the project title and project code, what type of survey it will be, and what modes are to be used. It gives the option to show an index for the survey and asks whether the survey makes use of a master-detail type setup. It then gives the user the option to either make it single language or multi-language. And lastly, the user can create test cases.

After these options have been selected, a number of blocks on the left side of the screen are preselected based on those options. These can be edited depending on what's needed for the survey to be created.

By clicking "Create Project," the project will be created based on all of these settings. The user can then use this to further implement the survey-specific questions and settings.

5. Project Renamer, Project Cleaner, and Project Verifier

There are a number of other tools used at Statistics Netherlands to make the process of creating surveys more streamlined. One of these tools is the Project Renamer.

Figure 5: Project Renamer

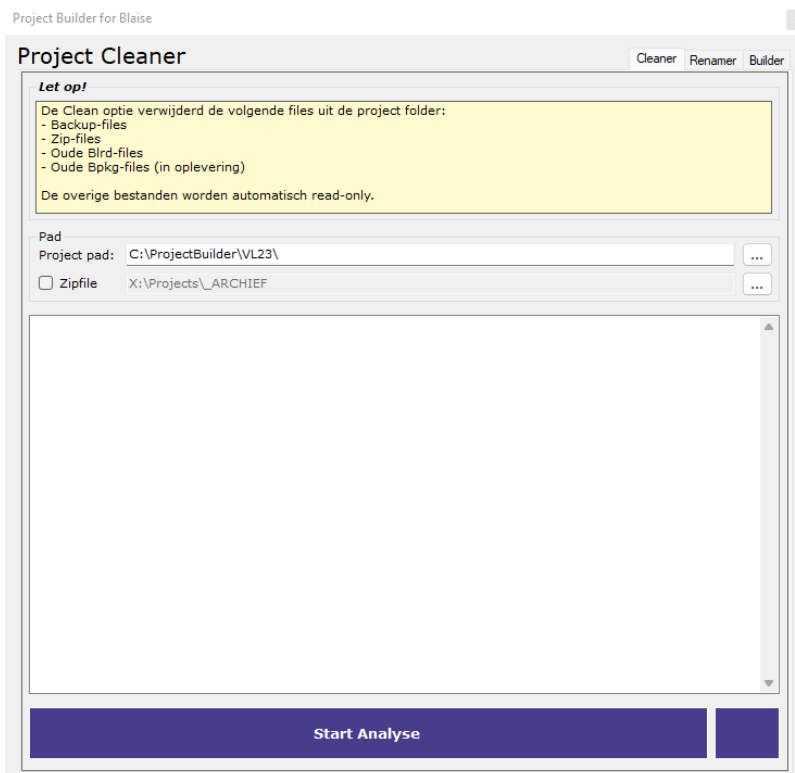


The Project Renamer gives the user the option to make a direct copy of a project with a different project code. This is convenient for surveys that are done yearly with minor edits between versions. It also allows for easy testing and bug fixing.

To use it, the user points the Project Renamer to the folder containing the original project and provides the new project code. The Project Renamer searches the selected folder and all containing folders for files having the old project code in its name. It also searches files to see if there are any references to the old project code inside the file.

There is also a Project Cleaner, which is used when a project is finished. It cleans up the project folder, removing all files which are not required to run the project. It also gives the option to create a backup, which is saved to an archive.

Figure 6: Project Cleaner



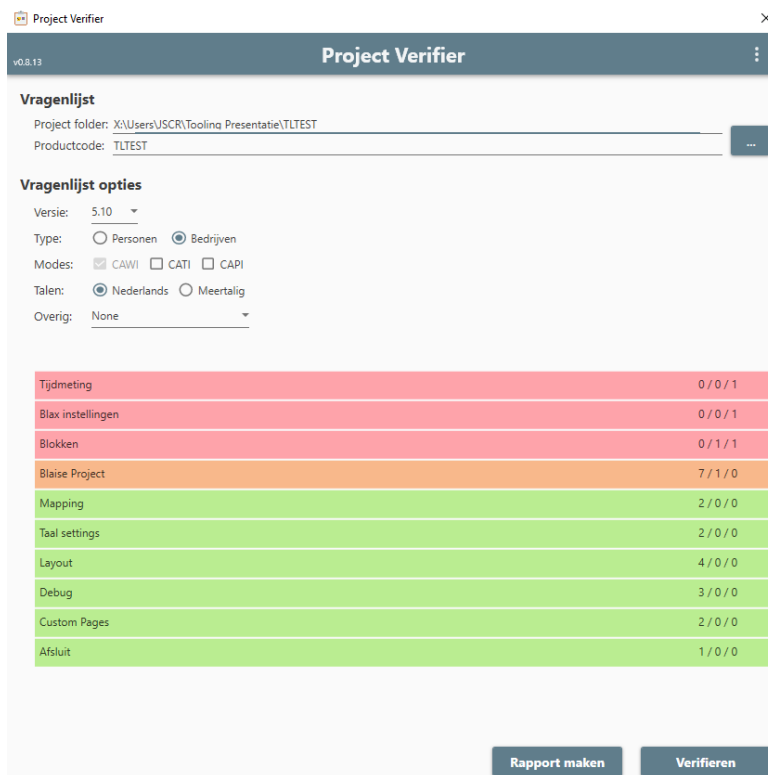
Lastly, there is a Project Verifier. This tool is used when a survey is ready for testing. As a final check, the user can run the Project Verifier to see if there are any settings which were missed before testing. The Project Verifier will let the user know if there are any irregularities in the project.

The Project Verifier has a number of options that let it know what is required of the project. This includes the Blaise version used, the type of project, the modes used, if it's multi-language, and if there is an index.

The Project Verifier uses these options to check the project. It returns a number of categories which can either be red, orange, or green, as seen in the screenshot below. In general, red means there is an error that needs to be resolved, orange is a warning, and green means all is well.

An example of a check that is performed is a debug check, which lets you know if there is any debug commentary left in the project. It also lets you know if there are any standard blocks that are normally added to a project of this type missing in the checked project.

Figure 7: Project Verifier



6. Design Converter

One of the most convenient tools is the Design Converter. The Design Converter allows the user to automatically convert (parts of) a design to Blaise code.

Because the designs used at Statistics Netherlands have been standardized, it is possible to detect different types of questions using this tool. The input side takes a question from the design. The Design Converter interprets the question and converts it to the corresponding Blaise code. There are a number of options to customize the output. This includes the number of tabs to be used when formatting the output, and automatically copying the output so the user can directly paste it to the Blaise project. It's also possible to include the code for imputations.

Currently, this only works for single questions, but work is underway on a tool which will be able to interpret full designs.

Figure 8: Design Converter

