Redesigning the Dutch Holiday Survey into a smartphone friendly version

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Introduction

The Dutch Holiday Survey (DHS) is a complex questionnaire in which a respondent is asked first to list all holidays, trips and travels of the past 3 months. And then to answer some additional questions for a selection of the trips. The DHS is one of the last Statistics Netherlands' surveys not suited for smartphone. So in 2023 a project was executed to develop a smartphone friendly version. This project was a collaboration of several departments and colleagues. In this presentation I will discuss the challenges we faced and the solutions we found.

First I will give some background of the DHS. Then I will explain why a redesign was necessary and which issues we needed to tackle. I will conclude with some recent results. The new version of the DHS is currently in the field, so I can show some preliminary figures.

Background of the Dutch Holiday Survey

The Dutch Holiday Survey is executed by Statistics Netherlands (SN) since 2021. As said, it is a complex survey. Respondents are asked to list all sorts of trips and vacations of the previous quarter: Holidays; Business trips; Family visits and Other trips. Actually, they are asked to report about every time they spend a night away from home, except from frequent family visits. Then for a selection of these trips (max 19) some detail questions have to be answered about: Destination; Duration; Type of holiday; Travel companions; Mode of transport; Accommodation and the Expenses.

SN executes this surveys since 2021. At first the questionnaire was programmed as we programme most other questionnaires: as a sequential list, going from one topic to the next. This approach had some drawbacks: we could not offer an overview; there were many repeating sequences. We used introductions to give the respondent some indication of where they were in the questionnaire, or which trip they were answering about: "These questions are about your second holiday abroad."; "These questions are about your last business trip in the Netherlands."

Still, the advantage of this questionnaire was that it could be filled in on the smartphone. Yet you can question whether the overview the respondent had on the small screen. All in all the quality of the data could be questioned. And in 2022 the questionnaire was redesigned, to help the respondent with this complex response task. Main focus was to give the respondent an overview of the response task: what has to be filled in, where am I in the questionnaire, what have I completed, what do I still have to do?

The redesign

Looking for inspiration in other questionnaires, we found a business survey with the design we were looking for: the Transportation Survey. This survey had a so-called "master-detail design". In the 'Master' all licence plates of all company vehicles are listed and presented in a dashboard. From this dashboard you can select a licence plate for which you want to answer the 'Detail'-questions.

Copying this layout for the DHS resulted in dividing the questionnaire in 2 sections. In section 1 some general information about all trips of the previous quarter could be entered, thus listing all holidays. This was the Master and a dashboard in which you have an overview of all trips:
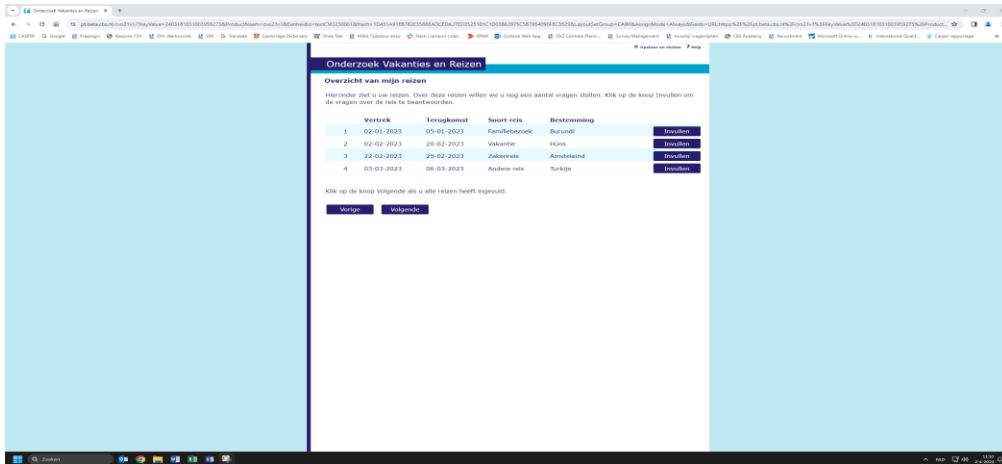
Next some additional questions about a selection of trips could be answered. In a second dashboard presented the selection of the trips, and with buttons you can select the trip for which you want to answer the detail questions.

The only drawback of this design was that it was not possible to fill in on a small screen. And this caused a decrease of the response. Even though the quality of the data improved, the responses via smartphone were sorely missed. In 2021, 27,% of the response was via smartphone. This is a big portion to miss.
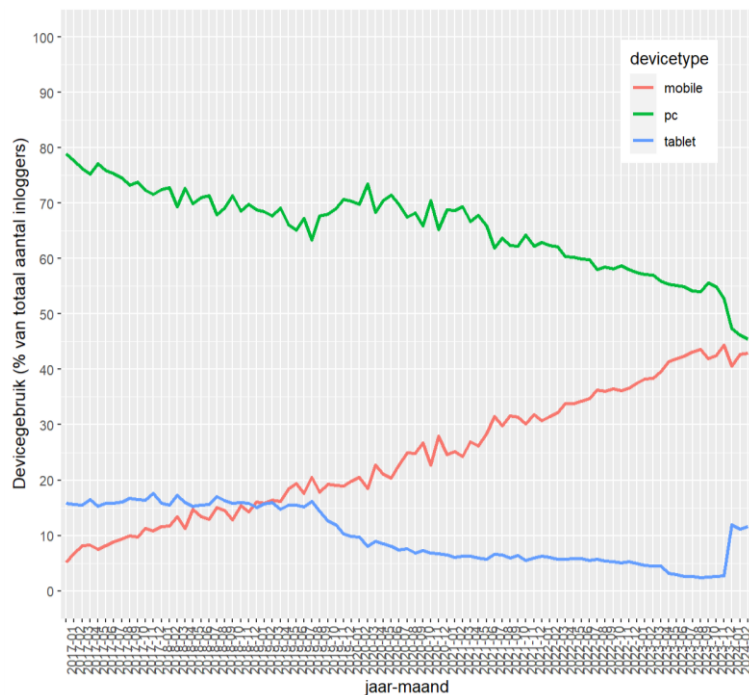
After monitoring the steep increase of respondents using their mobile phone to log in on our questions, it was decided in 2023 to start a project to make the master-detail questionnaire smartphone friendly. Since the survey already had had a thorough redesign a short time ago, it was decided to only focus on getting the questionnaire on a smartphone, and not so much focus on changing question texts etc. The project consisted of the following steps:

1. Remove smartphone block
   Signal functional issues, discuss with Blaise programmers to solve issues
2. Make all screens functional / user friendly
   Discuss each screen with multidisciplinary team to discuss issues and solutions
3. Make a new questionnaire design and programme new questionnaire

4. Test new questionnaire in usability test
5. Adapt questionnaire again
6. *Fieldwork (15 March advance letters were sent)*
7. Monitor and evaluate

For the project a multidisciplinary team was put together. To monitor the progress they met every 2 weeks. They started in the beginning of the year, and everything had to be ready for the 2024 questionnaire, that meant it had to be ready by November 2023. It was an iterative project in which the project team discussed all changes, then these changes were sent to the programmers. Next the new version of the questionnaire was tested by the project team, and new issues were discussed. In September a first final version of the questionnaire was tested in the User-lab at SN. From this test new insights were gathered and some additional changes were suggested.

For this presentation we will discuss the biggest changes that were implemented. There were many smaller textual changes, mostly shortening or simplifying texts. We will not go into those changes. It seems logical to start at the beginning. The first step in making a SF friendly questionnaire was to remove the SF block and trying the questionnaire out on a smartphone. Very quickly we stumbled upon the first issue. Our questionnaires are programmed in Blaise. A Blaise questionnaire consists of a part in which the question texts are defined, a part in which the routing is defined and a part in which the layout (look and feel of the house style / corporate identity) is defined. There is a separate file for our mobile layout. For the Master-Detail there was no mobile layout file yet, this meant that some buttons did not work. And thus you got stuck in the questionnaire.

A next issue was the dashboard in which all trips we presented. Though we were so proud to give the respondent this overview, it could be potentially 90 rows long: 90 nights in 3 months' time possible in which not to sleep at home. Would it be possible to present such a long list on a small screen? And additionally, in the matrix all information was presented in a row with 5 columns, and buttons. How to make this comprehensible on a small screen?

		Vertrek	Terugkomst	Soort reis	Bestemming		
✔	1	01-01-2021	02-01-2021	Familiebezoek	Schinnen	Wijzigen	Verwijderen

Actually this was not just a single issue. So we tackled it step by step. It seems simple writing it down like this, some steps were, but some took a lot of discussions and brain storm sessions. We came up with spreading the columns in one row over two rows. Then the original buttons appeared too big, so we designed new smaller buttons with symbols instead of text. Because the smaller buttons were unclear when put next to each other, we decided to put on button on the left and the other on the right margin. And eventually we arrived here:

			Vertrek	Terugkomst	
✔	1	✏	01-01-2024 Vakantie	04-01-2024 Nederland	🗑

Finally there were also some changes to questions. For instance by having lengthy discussions with the statistical department about the concepts that had to be measured, we came to the conclusion that we could reduce a set of four questions to a single question.
There was a similar discussion about the information that had to be collected about the travel companions. The user tests helped in persuading the client to see that the original questions were not measuring the intended concept. And the discussion helped to discover that we were asking than we needed to know. We were able to simplify the questions. Though while the original set of questions was spread over two screens, the new questions were spread over three screens.

Some results

After all steps of the redesign were taken, we finished the project in time, and the new questionnaire could be fielded. Around 15 March the first advance letters were sent to potential respondents, and we can now see the first results for 2024.

Some results

		Response	Reminders	% Via smartphone *	% Drop outs smartphone **
End result	2021	36,7%	2	27,3%	9,4%
End result	2022	35,1%	3	10,7%	96,5%
End result	2023	34,7%	3	9,6%	96,0%
Preliminary	2024	29,5%	1	25,7%	15,3%

* Percentage of all persons that logged in on the questionnaire
** Percentage of all persons that logged in via smartphone

First the good news: already now (i.e. before the fieldwork is completed) it can be seen that the response is going very good. As this table shows in 2021 we managed a total response rate of 36,7%, after 2 reminders. This was well above the target of 34%. In 2022 and 2023 we had difficulty reaching that target. And after adding another reminder and extending the response period, we barely managed it. In 2024 we are close to the target already after the first reminder!
This table also shows us the portions of the response that was managed via smartphone. Even though there was a SF block, some respondents still managed to fill in the questionnaire on the small device, still it is just a small portion compared to 2021 and 2024. That is restored in 2024 as well.
There is a small point of concern about the dropouts. This is in 2024 higher that it was in 2021. Though after comparing it with other surveys, is seems a trend. In all surveys we see an increasing number dropout rates in the last years. We will investigate this further, to see what is going on there and if or how we can handle this.

In conclusion

In a relatively short period of time we have redesigned the questionnaire. We did not only make it smartphone friendly, but also improved it as a whole.
It definitely is preferable to do a redesign while starting from scratch. In this case we redesigned an existing questionnaire. While doing this, you are limiting the options you have in the redesign. Still we can be proud of the end result. The response rates support this.

The project team, with colleagues all dedicated to make the questionnaire better, made this possible. Each of them made time for it, while actually doing other things. The cooperation of the statistical department was vital for the success of the project.

For now it was only possible to compare response rates over the years. In the future it is advisable to also measure the quality of the response. If you would also see an improvement in the data quality, then you can definitely say it was an improvement.