Some Techniques for Internet Interviewing

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Abstract

Internet interviewing poses questionnaire designers for new challenges. This paper discusses a few techniques that we used in the design of a questionnaire on 'assets and liabilities' of the CentER Savings Survey. These techniques are evaluated by analyzing log files and respondents' feed back.

1. Introduction

Data collection over the internet takes place without interviewers. This is one major difference between internet interviewing and the traditional forms of computer assisted interviewing by telephone (CATI) and with personal interviewing where a lap top computer is used (CAPI). The absence of an interviewer places internet interviewing in the field of computer assisted self interviewing (CASI). In internet interviewing the respondent is respondent and interviewer at the same time. The self-interviewer, however, does not get the instructions that CAPI and CATI interviewers usually get. There is no training with respect to the topic of the survey or to the interviewing program. Survey designers have to lay down their efforts in the internet interview program. Technical solutions may compensate for the absence of an interviewer. The absence of an interviewer makes that extra care has to be taken to make sure that questions are clear, and that the respondents are motivated to give valid answers. We will describe and evaluate some techniques that we used in the design of the questionnaire 'assets and liabilities' of the CentER Savings Survey in order to achieve these goals.

The CentER Savings Survey (CSS) is a panel survey that started in 1993. Each year, data are collected about income, assets, liabilities, work, pensions, accommodation, mortgages, health, perception of the personal financial situation, income expectations, time preference, interest in financial matters, risk-attitudes, and many other topics. The data of the CSS are collected from over 2000 households in the Netherlands that participate in the *telepanel* of *CentERdata*. The members of the households in the telepanel answer a questionnaire at their personal computers every week. These computers may either be their own computer or a computer provided by CentERdata. The households of the telepanel are recruited by a telephone survey where household sampling is done using the random digit dialing technique, making the panel representative for the Dutch population (see Hoogendoorn, Sikkel and Weerman, 2000). Because the total questionnaire of the CSS is too large to complete in one session the questionnaire is split up into five modules. One of these modules is the questionnaire on 'assets and liabilities'.

2. Some techniques for questionnaire design for internet interviewing

In our opinion it is important to be restrictive in the information that we use in question texts. In the first place there is a limit to the amount of information that can be put on a computer screen. In the second place we want to reduce the respondents task of reading the question texts by avoiding unnecessary information in question texts. By giving the respondent unneeded information we may encourage him or

her to skip parts of the text, which can result into bad reading of question texts and consequently in giving invalid answers. We want the question texts to be as brief as possible under the condition that the question is clear. This is not an easy task, because respondents are sometimes very different. The questionnaire 'assets and liabilities' contains financial terminology where these differences play a part. For some respondents the question 'Is your mortgage an endowment mortgage?' is a clear question and their answer is a simple 'yes' or 'no'. Other respondents need to know the characteristics of an 'endowment mortgage' before they can give a right answer. We want to keep this extra information hidden as *optional help*, because we do not want to bother those respondents who thought this question was straightforward.

We think it is important that respondents can always *go back* to a previous question in the interview. While a respondent is doing an internet interview he or she may wonder 'did I understand the previous question well?', or 'did I give a correct answer to the previous question?'. Respondents must be allowed to go back to previous questions, either to check the question text and the answer they gave, or to correct a previous answer. Most internet survey software allows the respondent to go back at least one question. We used the Blaise software that allows respondents to go back as far as the beginning of the questionnaire.

In our opinion there are benefits from providing *reviews* during the interview. A review summarizes the answers of a respondent to a part of the questionnaire. It is a form of feedback to the respondent during the interview, and brings a part of the questionnaire to an end. We feel that there is a stimulating effect from such feed back. In addition, a review allows the respondent to check the answers, and can give the respondent the opportunity to change (one of) the answers. Figure 1 shows a computer screen that provides a review of the answers of a respondent with respect to the checking accounts.

Figure 1. A screen shot that shows a review of a respondents' checking accounts
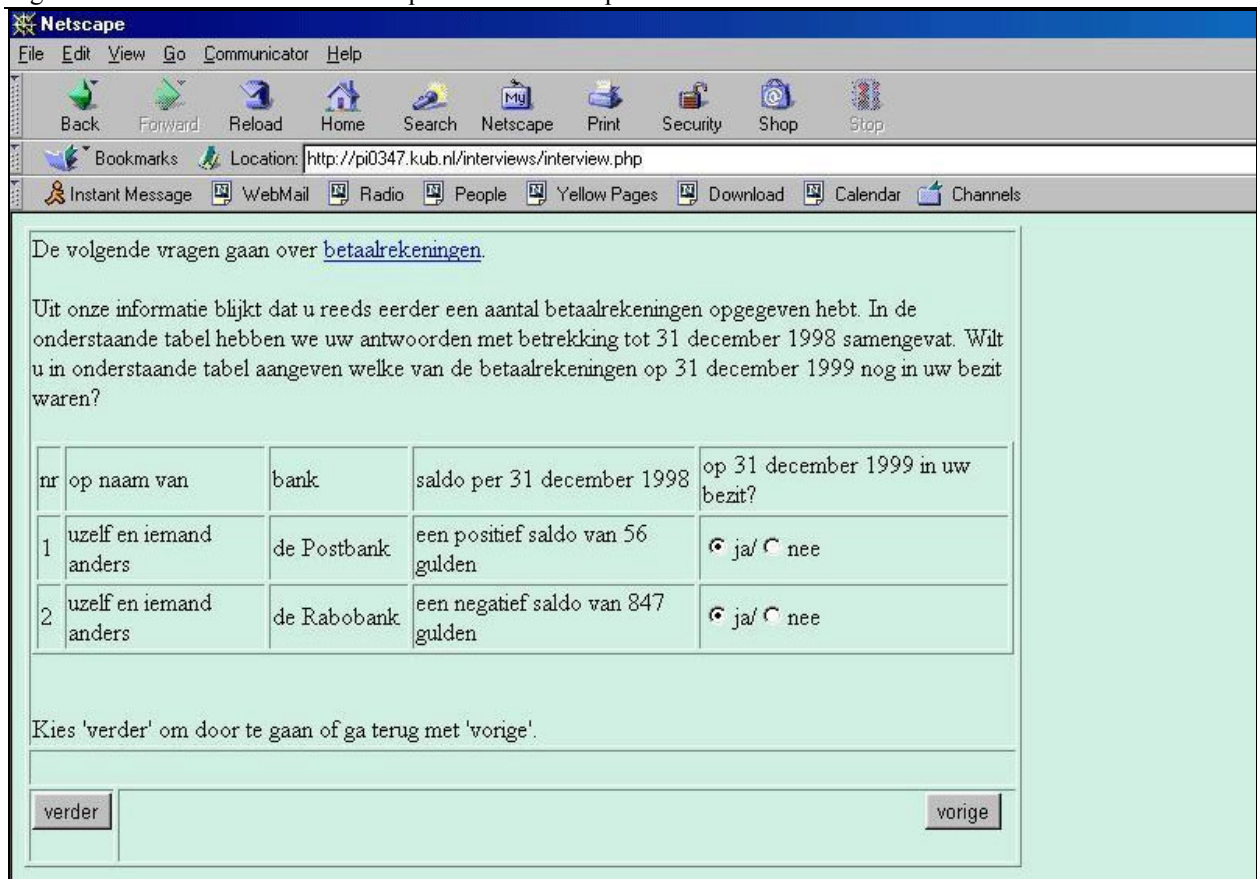

Translation: "You stated that you had 2 checking accounts on 31st December 1999. [table with information about the holder, the bank and the balance of the checking account] Is the information in the table correct? Choose 'next' to go on or 'previous' to go back. 1. yes, 2. no"

The CSS is a panel survey where we ask respondents to report on many facts of their financial situation. This is especially true in the questionnaire 'assets and liabilities'. In such a survey it seems efficient to use

preloading. Preloading means that for those respondents that responded in an earlier wave, we present previous answers and ask for changes. In the questionnaire 'assets and liabilities' respondents are asked to report on many financial products ('checking accounts', 'saving accounts', 'stocks and shares'). Although the balance of checking and saving accounts is likely to change from year to year, most other characteristics ('Who is the holder of the account?', 'With which bank is the account registered?') are static. Thus, the motivation for preloading is two-fold. First, it is hoped that preloading will make the task of respondents easier, because in many cases the respondent merely indicates if something has changed with respect to last year, rather than to reconstruct complete answers. Second, preloading may make the response more reliable, since last year's answers form a frame work for this year's response. Figure 2 shows a screen shot of questions where a respondent is asked whether he or she still owns checking accounts that were reported last year. The appendix contains some information of how this question was programmed to do the data collection on the internet.

Figure 2. A screen shot that shows a question related to preloaded information

Translation: The next questions are about checking accounts. According to our information you reported a number of checking accounts before. In the table below we summarized your answers with respect to December 31, 1998. We like you to indicate in the table below which of the checking accounts were still in your possession at December 31, 1999. [table with information about the holder, the bank, the balance of the checking account and a question whether the checking account is still in possession at December 31, 1999]. Choose 'next' to go on or 'previous' to go back.

3. Ways to evaluate the interviewing process

The main question in evaluating the techniques mentioned in section 2 (optional help, back options, reviews and preloading) would be: 'do these techniques improve the quality of the data?'. This is,

however, not an easy question, and a topic for future research. In this paper we will make a first step by answering some basic questions on the use of these techniques. Is optional help used at all? Do respondent use the back option? Do reviews trigger respondents to change an answer? Does preloading reduce the average time in which the questionnaire is completed? Do respondents that received preloaded data evaluate the questionnaire more positive than respondents that started from scratch? We will give some insight in these questions on the basis of two sources of information. First, we will use *log files* that are automatically administered by the computer that manages the internet interview. Second, we will use a set of evaluation questions where respondents give their opinion of the questionnaire.

Due to the automated nature of internet interviewing, we can reconstruct parts of the response process on the basis of the log files. This information, sometimes called 'para' or 'meta-data' (see Bosnjak, Tuten and Bandilla, 2000) gives us some insight into the process of self interviewing. For instance, in the log file we observe the time at which a respondent received a certain question. From this we know how much time a respondent spent reading and answering a question. Further we can see the navigation button (next question, previous question) that were used. And we can see if a respondent went back to previous answers to make adjustments.

Table 1. An illustation of the information in the log file of the questionnaire assets and liabilities*

	time	dt**	question name	button	answer
1	18:55:21	21	IntroductionLastYearsResponse	Next	
2	18:57:02	101	CheckAllAssetComponents	Next	1-1-1-0-0-0-1-0-0-0-1-0-0-0-0-0-1-0-0-0-0-0
3	18:57:25	23	CheckLastYearsCheckingAccounts	Next	yourself - Rabobank - positive balance of 4795 euro - 1 - yourself - Postbank - positive balance of 506 - 1
4	18:57:54	29	TotalNumberOfCheckingAccounts	Next	2
5	18:58:29	35	CheckingAccount[1].AskChanges	Prev	yourself - 0 - Rabobank - 0 - positive balance of 4795 euro - 1
6	18:58:48	19	TotalNumberOfCheckingAccounts	Next	2
7	18:59:48	60	CheckingAccount[1].AskChanges	Next	yourself - 0 - Rabobank - 0 - positive balance of 4795 euro - 1
8	19:00:02	14	CheckingAccount[1].PosNeg	Next	1
9	19:00:09	7	CheckingAccount[1].Balance	Next	Don't know
10	19:05:20	311	CheckingAccount[1].BalanceCategory	Prev	
11	19:05:48	28	CheckingAccount[1].Balance	Next	4633
12	19:05:57	9	CheckingAccount[2].AskChanges	Next	yourself - 0 - Postbank - 0 - positive balance of 506 euro - 1
13	19:06:30	33	CheckingAccount[2].PosNeg	Next	1
14	19:06:38	8	CheckingAccount[2].Balance	Next	112
15	19:06:46	8	AgreeOnReview	Next	1

* The information in this table is modified for privacy purposes
** dt is the difference in time between answering the current and the previous question

Table 1 provides an interesting illustration of the information in the *log files*. The 15 records correspond to the beginning of an interview on the questionnaire 'assets and liabilities' of a certain respondent. Together with the knowledge of how the questionnaire is programmed, we can reconstruct the interviewing process. The first record (the first line in table 1) reveals that the first question to the respondent was named *IntroductionLastYearsResponse*. This suggests that the respondent participated last year. We know that in such a case preloading will be used. From the information in record 1 we learn that the respondent answered the question at 18:55:21, that it took 21 seconds, that the answer field is left empty and that the respondent requests the 'next' question. In fact *IntroductionLastYearsResponse* is not a real question but provides an introduction to the interview. From the way the questionnaire is programmed, we know that the second question *CheckAllAssetComponents* is preloaded with a series of zeroes and ones that indicate

the different asset components that the respondent reported last year. It took the respondent 101 seconds to check and maybe correct the answer – this is not clear from the information that we have. The third question, named *CheckLastYearsCheckingAccounts* that we saw in figure 2, is preloaded with the two checking accounts that were reported last year. For each checking account the preloaded information consists of the holder of the account, the name of the bank, the balance of the account and a '1' indicating that the checking account still exists. If the respondent would have answered that at December 31, 1999 the checking account was not in his possession, then the '1' would have been replaced by a '0'. Record 4 shows that *TotalNumberOfCheckingAccounts* took the respondent 28 seconds. For the question *CheckingAccount[1].AskChanges* in record 5, we know from the way the questionnaire is programmed that the answer is preloaded with the information of the holder of the account, the bank and the balance of the first checking account, each followed by an indicator that allows the respondent to change these values. The information is presented in such a way that by default it is assumed that only the balance will be changed. In record 5, we see that the respondent did not answer *CheckingAccount[1].AskChanges,* but made a request for the previous question *TotalNumberOfCheckingAccounts* instead. In record 6 we see that the respondent moved on again to *CheckingAccount[1].AskChanges* without changing the answer for *TotalNumberOfCheckingAccounts*. Record 7 shows that the respondent accepted the suggested default where he or she only needs to change the balance of the checking account. Records 8 to 11 deal with the balance of the first checking account. In record 8 we see that the respondent reported that the balance of the first checking account is positive. We see in record 9 that the respondent initially claimed not to know the balance of the first checking account, but that the question *CheckingAccount[1].BalanceCategory*, where the respondent is supposed to specify a category (bracket) for the balance, stimulated the respondent to go back, and after more than five minutes, the balance of the first checking account is set to 4633 euro.

The example in table 1 illustrates the richness of the information in the *log files*. This information poses many questions. Why did the respondent go back when he or she was confronted with the question *CheckingAccount[1].AskChanges*? Did the order in which the questions were asked confuse the respondent? It also seemed that the question where the respondent was asked to specify a category for the balance of the checking account stimulated the respondent to go back and give an exact answer to the previous question. This is an effect of the bracket question we had not expected. It seems as if the bracket question stimulated the respondent to spend 5 minutes on finding the right information. Is this a one time occurrence, or is this a general effect of bracket questions? In this paper, however, we will not answer the questions mentioned here. They are topics for future research. We will use the information in the log files to evaluate the four techniques that we presented in section 2.

A second source of information that we will use to evaluate the use of preloading is a set of five evaluation questions. Every questionnaire of the CentER Savings Survey ends with a brief evaluation by the respondent of a number of salient characteristics of the questionnaire[2]. Respondents are asked to grade (on a scale between 0 and 10) the following five characteristics:

- how *interesting* did you find the topic?
- how *easy* was it for you to do the interview?
- how *clear* were the questions for you?
- how did you like the *layout* of the questions?
- what do you think of the *length* of the interview?

This set of evaluation questions allows us to include the respondents' subjective evaluation of the questionnaires to the four techniques we presented earlier.

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[2] In fact, since 1995, every questionnaire that is presented to the panel CentERdata ends with these five evaluation questions.

4. Results

We computed some elementary statistics on the basis of the *log files* in order to get some insight into the interviewing process. Our focus will be to evaluate the techniques that we presented in section 2. We analyzed those records in the log files that correspond with the 1583 completed interviews of the questionnaire 'assets and liabilities' of the CSS. Those 1583 interviews generated 125,151 records in the log files. Each record in the log file corresponds to a 'click', i.e. a request for a next or previous question or for help on a certain topic (see table 2). The 125,151 records correspond to an average of 79 of such requests per interview.

Table 2. Types of requests ('clicks') in 1583 completed interviews of the questionnaire 'assets and liabilities'

type of request	n	%
Next question	119799	95.7
Help topic	1026	0.8
Previous question	4326	3.5
total	125151	100.0

4.1 Optional help on certain topics

Of the 125,151 clicks that respondents made, there were 1026 requests for help on a certain topic. Roughly a quarter of the respondents seemed to use the help option. From the information in the log files, we can investigate for which topics help was requested. The help topics in the questionnaire 'assets and liabilities' usually are a description of the asset or liability component. Table 3 shows the number of requests for help on the topic, the percentage of respondents that requested help on the topic and the percentage of respondents that own the asset component.

Table 3. Topics that requested help in 1583 interviews

topic	n	respondent help requests %	respondent assets %
checking accounts	163	9.3	90.9
savings or deposit accounts	85	4.5	66.2
deposit books	81	4.7	12.6
endowment insurance policies	76	4.2	10.3
growth funds	71	4.4	5.4
employer-sponsored savings plan	60	3.6	58.1
savings certificates	57	3.1	2.7
premium savings arrangements	55	3.2	13.2
put options	50	2.8	1.1
real estate	47	2.7	6.9
mutual funds	44	2.3	18.6
private loans	43	2.4	6.0
single-premium insurance policies or annuities	34	2.1	17.5
call options	26	1.6	2.0
extended lines of credit	25	1.6	16.9
shares	24	1.4	11.8
outstanding debts from a hire-purchase contract	16	0.9	2.3
mortgage bonds	12	0.7	2.1
annuity insurance policies	11	0.6	2.2
other	60		
total	1026	24.7	

n: number of times that help topic was requested, respondent request %: percentage of respondents that requested the help topic at least once, respondent possession: percentage of respondents that posses item (asset component).

We see in table 3 that help information is requested for many different (almost all) asset components. We find that help information is most requested for the asset components that are common (checking accounts and savings or deposit accounts). Comparing the last two columns in table 3 seems to suggest that there is some correlation between the requests for help and the possession of assets. In this table we also see some topics for which help is required relatively often. For 'growth funds' there are more respondents that request help on this topic, than there are respondent that report to have them in their possession. This suggests that the help information on this topic was very useful. Maybe there would have been more respondents that reported to have 'growth funds' if it would not have been made clear what 'growth funds' exactly are. From this table we can not tell anything about the respondents that did not use the help topics. It is not clear whether this is due to the fact that all financial terminology was clear to them, or that they did not feel comfortable in using the optional help.

4.2 Go back option

In the 1583 completed interviews, there were 4326 requests for previous questions. This is about three requests per interview. Almost sixty percent of the respondents used the back option at least once. We are interested to know if the back option was used to actually change a given answer or if the back option was just used to check a previous answer. In this respect we have to take into account that respondents can use the back options a few times in a row to go back more than one question. We will call a sequence of successive requests for the previous question a 'back session'. Table 4 shows the number of times the previous option was used successively. It turns out that there are 2303 such 'back sessions'. In almost 80% of the cases where the back option was used, it was just used to go back one question. In one case a respondent used the back option 58 times in a row!

Table 4. A count of blocks of successive requests to previous questions

number of times	count	%
1 time	1827	79.3
2 times	195	8.5
3 times	84	3.6
4 times	50	2.2
5 to 9 times	94	4.1
10 times or more	53	2.3
total	2303	100.0

Table 5. A count of independent blocks of successive requests to previous questions

number of times	only check	check and change	total	change rel. %
1 time	607	974	1581	62%
2 times	27	141	168	84%
3 times	4	57	61	93%
4 times or more	4	136	140	97%
total	642	1308	1950	67%

To find out how many 'back sessions' were used to actually change a previous answer, we restricted ourselves to those 'back sessions' that do not overlap with other 'back sessions'. Of the 2303 'back

sessions' there are 1950 so called 'independent back sessions'[3]. The results are presented in table 5. We find that in two third of the back sessions an actual change was made. The fraction of changes is larger if the number of successive requests to a previous answer is higher. Although at this stage we have not done any research on what the impact of these changes were, we can conclude that the 'go back option' prevented at least 1308 errors (in a total of 1583 interviews).

4.3 Reviews

The internet interview on 'assets and liabilities' contains many reviews. At the end of the series of questions about each asset or liability component, the respondent receives a review of the answers that he or she gave (see figure 1). The respondent is asked to check if the data in the review are correct. If he claims that the data are not correct, then the program will guide him through the related questions and the answers that he gave earlier, so that he may change one or more of the answers that he gave before. From the information in the log files, we can derive how many reviews were given, and in how many cases such a review led to a change in answers. Table 6 shows the results.

Table 6. Total number of reviews and number (and percentage) of reviews that triggered a correction per asset component in 1583 interviews

asset component	total	change	%-change
checking accounts	1621	136	8%
savings and deposit accounts	1188	101	9%
deposit books	227	19	8%
savings certificates	54	7	13%
single-premium annuity insurance policies and annuities	345	63	18%
savings or endowment insurance policies	194	22	11%
growth funds	100	12	12%
mutual funds or mutual fund accounts	352	37	11%
shares	225	36	16%
real estate	125	14	11%
cars	1136	91	8%
motorbikes	67	6	9%
boats	163	10	6%
other assets	75	3	4%
private loans	109	7	6%
extended lines of credit	286	17	6%
equity-based loan	38	1	3%
debts with a mail-order firm	39	4	10%
loans from family or friends	68	1	1%
study loans	102	3	3%
other loans	27	3	11%
total	6541	593	9%

The bottom line of table 6 shows that of the 6541 cases where the respondent received a review of earlier answers, in 593 cases, being 9%, it led to an actual change in a previous answer. The table contains also some information of the number of reviews and corresponding changes for individual asset components. We may conclude that for the more complex products (single-premium annuity insurance policies and

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[3] An independent back session is a series of successive requests for a previous question followed by a series of the same number of requests for the next question, and where the series of requests for previous questions does not interfere with a series of successive requests for the next question that belong to an other back session.

mutual funds), the rate of changes is even higher than 9%. Although, as in section 4.2, we have no idea of the impact of these changes, we may conclude that the 'reviews' prevented 593 errors in 1583 interviews.

4.4 Preloading

In discussing the effects of *preloading*, we will limit ourselves to a few simple questions. One of these questions is: Do respondents that get preloaded data gain time from the fact that they do not have to start from scratch? In fact we expect to gain some efficiency from preloading, since there is a reduction in the number of questions. Respondents that get a questionnaire *without preloading* start with a set of questions to investigate their assets ('Do you have one or more checking accounts?', 'Do you participate in an employer-sponsored savings plan?', 'Do you have one or more saving accounts', etc.) concluded by a review of the asset components the responded claimed to have or not have. Respondents that receive a questionnaire *with preloading* don't receive the set of questions mentioned above, but start directly with a review of the assets preloaded with the answers of the year before (see figure 3).

Figure 3. A screen shot that shows the question reviewing preloaded information on assets
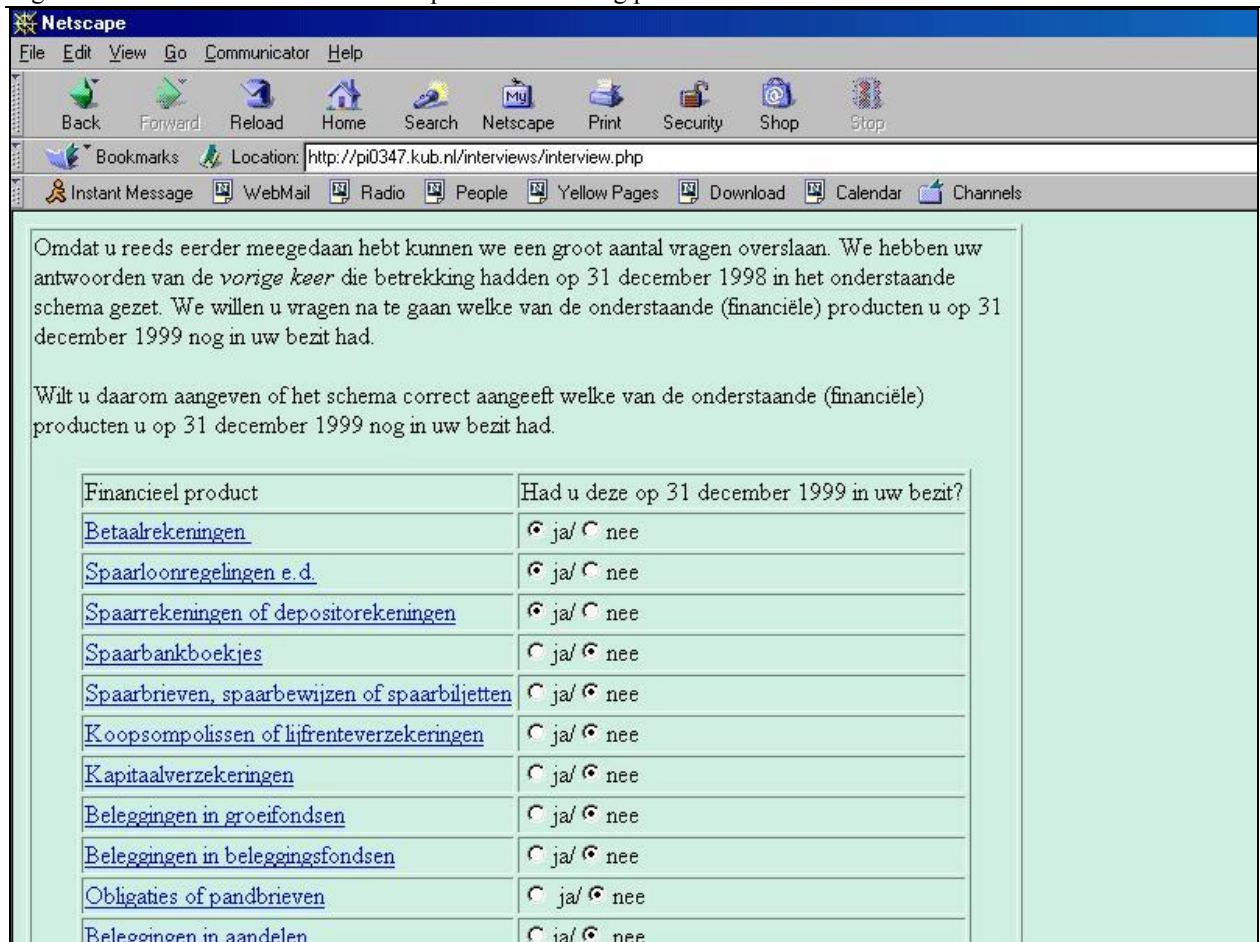
Translation: Because you responded to this questionnaire before we may skip a large number of questions. We placed your previous answers that refer to December 31, 1998 in the review below. We ask you to check which of the (financial) products you still had in your possession on December 31, 1999. We ask you to indicate in the review below which of the (financial) products you still had in your possession on December 31, 1999. [Table showing 'financial product' and the question 'Did you have these on December 31, 1999 in your possession?' , Checking accounts: yes/no, Employer-sponsored savings plans: yes/no, etc.]

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Of the 1583 completed interviews on the questionnaire 'assets and liabilities', 651 respondents received a questionnaire with preloaded information. From the log files we can compute averages on several quantities for the two groups 'without preloading' and 'with preloading'. For both groups we computed the average time spent on the interview, the average number of 'clicks' (requests for questions or for optional help) and a few other quantities. The results are summarized in table 7. By comparing the two groups, we have to take into account that 'with preloading' and 'without preloading' is not the only difference between the groups. The respondents that did not receive a preloaded questionnaire are respondents that did not respond in the last wave (last year), and are in most cases new to the survey.

To our surprise we found no gain in time from preloading, although the number of 'clicks' – that correspond to the number of screens shown to the respondent – is 40% less for the group that received a preloaded questionnaire. We found a difference with respect to the use of the help function: the group 'without preloading' uses the help options twice as much. This may be explained from the fact that the group 'without preloading' consists of many respondents that are new to the survey. The group 'without preloading' seems to use the 'go back option' more: 3.0 times versus 2.3 times for the group 'with preloading', but this difference disappears if we relate this to the total number of clicks. Another surprise is that we find that respondents in the group 'without preloading' report on average significantly more asset and liability components than respondents in the group 'with preloading'. This may be a panel effect (response burden) but this has to be investigated.

Table 7. Averages on some characteristics of the internet interview on 'assets and liabilities' for the groups 'without preloading' and 'with preloading' based on information in the log files

type of request	without preloading	with preloading	signif.
total time spent on interview in seconds	1149.4	1111.4	
number of clicks (requests for next, previous or help)	94.1	58.4	***
number of requests for help on a topic	0.9	0.4	***
number of requests for previous question	3.0	2.3	**
number of asset or liability components reported	4.5	4.2	***
number of interviews	929	650	

Note: ** and *** denote that the difference is significant at the 5% and 1% significance levels, respectively.

An alternative way to evaluate *preloading* is to look if there is a difference in perception of the interview between the two groups. Do respondents that received a preloaded questionnaire perceive the questionnaire different from respondents that started from scratch? To answer this question we will use the set of questions that evaluate the respondents opinion on how interesting, easy and clear they found the questionnaire, and what they thought of the layout and the length of the questionnaire. The respondents grade these 'dimensions' of the interview on a scale from 0 to 10. The results are shown in table 8. We find very little differences in the way the two groups of respondent evaluate the interviews. The group 'with preloading' found the topic slightly more interesting, but we question if this is a result of selective panel drop out. There appears to be no difference in subjective evaluation of the length of the interview.

Table 8. Averages on evaluations of the internet interview on 'assets and liabilities' for the groups 'without preloading' and 'with preloading' based on information of the evaluation questions

evaluation question	without preloading	with preloading	signif.
how *interesting* did you find the topic?	7.4	7.6	**
how *easy* was it for you to do the interview?	7.0	7.0	
how *clear* were the questions for you?	7.8	7.9	
how did you like the *layout* of the questions?	7.7	7.8	*
what do you think of the *length* of the interview?	7.6	7.6	
number of interviews	904	644	

Note: * and ** denote that the difference is significant at the 10% and 5% significance levels, respectively.

5. Conclusion

In designing the questionnaire 'assets and liabilities' we used a few techniques to improve the data quality. These techniques are: provide topics that may be unclear to some respondents with optional help, always give respondents the option to go back, give the respondent reviews of answers they gave earlier and use preloading for those respondents that participated in an earlier wave. In this paper we investigated the use of these techniques by analyzing *log files* that monitor the interviewing process, and by *evaluation questions* where respondent give their opinion on aspects of the interview. On the use of optional help on financial topics we found that about a quarter of the respondents used the optional help to find out what a certain financial topic exactly means. We have some indications that the optional help prevented errors. We can also say a few important things about the use of 'back options' and 'reviews'. We found that the 'go back option' prevented at least 1308 errors and that the 'reviews' prevented 593 errors in a total of 1583 interviews. At this stage we do not know what the exact impact of these changes were to the quality of the data, but the sheer number of errors that can be prevented by these techniques is too impressive to be ignored. On the use of preloading for respondents that responded to an earlier wave in the panel survey we can not say much yet. There appears to be a drastic reduction in number of questions that can be asked, but no reduction in time spent on the interview. With respect to the use of preloading we are eager to continue our research.

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Appendix

The standard Blaise for Internet Software allows one question per page. In the questionnaire 'assets and liabilities', however, we wanted to use tables to ask more than one question at a time. For example, the question *CheckLastYearsCheckingAccounts*, that is shown in the screen shot of figure 2, a table where the respondent is asked to indicate which checking accounts he or she still possesses. In this question we used the 'B2BList' procedure. A call to the B2BList procedure is placed in the question text, and parsed by the B2B-software (nowadays the C2B-software) of Bas Weerman – see Weerman (2001) for details – that scans the question text for such procedure calls. The diagram below shows the question text of *CheckLastYearsCheckingAccounts* that contains a call to the B2Blist procedure.

```
CheckLastYearsCheckingAccounts

  "De volgende vragen gaan over ^TxtCheckingAccountsWithHelp.
   @/@/Uit onze informatie blijkt dat u reeds eerder ^TxtOneOrMoreCheckingAccounts
   opgegeven hebt. In de onderstaande tabel hebben we uw antwoorden met betrekking
   tot ^TxtPreviousYear samengevat.
   Wilt u in onderstaande tabel aangeven welke van de betaalrekeningen op
   ^TxtThisYear nog in uw bezit waren?

   B2BList(
     ^NumberOfAccounts2Show, 4, 1112, 0001,
     '^OldData',
     'nr', 'op naam van', 'bank',
       'saldo per ^TxtPreviousYear', 'op ^TxtThisYear in uw bezit?',
     '1','2','3','4','5')

   ^TxtNextOrBack": STRING;
```

The B2BList procedure must have the following parameters:

- number of rows in the table (r), here the dynamic value of *NumberOfAccounts2Show;*
- number of columns (c), here 4;
- an array of digits (of length c) that denote the type of fields in the column: 1 = a string type, 2 = a yes/no type, here 3 string type followed by a yes/no type;
- an array of digits (of length c) that denote if the fields in the column are asked or shown: 0 = show, 1 = ask, here: 3 show types and an ask type;
- preload string, see below;
- c+1 column headers;
- r row headers.

A question that contains a B2BList procedure is of type string, and can be preloaded using the fifth parameter in the call of the B2BList procedure. The diagram below the value of OldData that is necessary to obtain the situation of figure 2. We wrote procedures that obtain the relevant information from the string type question.

```
OldData:= 'uzelf en iemand anders-de Postbank-een positief saldo van 56 gulden-1-'
  + 'uzelf en iemand anders-de Rabobank-een positief saldo van 847 gulden-1'
```