# The Response Process Model as a Tool for Evaluating Business Surveys

Deirdre Giesen
Statistics Netherlands, Department of Methodology and Quality

## Abstract

In the past three years, the Questionnaire Laboratory of Statistics Netherlands has used the response process model  (Sudman, Willimack, Nichols & Mesenbourg, 2000) as a tool in the evaluation of business surveys. We use the model as a framework to locate sources of response burden and data error. By now we have several dozen case studies with detailed descriptions of how establishments respond to the questionnaires we send out. These studies include different kinds of surveys and questionnaires, and data have been collected in businesses from all size classes and different industries.

This paper first describes the methods we use to collect data on the response process. Next, a number of case studies are reviewed to reflect on the use of the response process model for the evaluation of  business surveys. This is done by 1) assessing the kinds of problems found regarding response burden and data quality 2) assessing the kind of recommendations for data collection that followed from these finding and 3) by relating these findings to the different steps of the response process model.

**Keywords:** response process, questionnaire evaluation

## 1. Introduction

One of the goals of Statistics Netherlands (SN) is to improve our business surveys questionnaires in order to decrease response burden, increase data accuracy and gain efficiency (Snijkers, Göttgens & Luppes, 2003). The main strategy to achieve these goals is to develop alternatives for primary data collection by finding new ways to use secondary data sources such as tax data and by developing methods for less burdensome data collection by means of XBRL (Göttgens, Snijkers, Beukenhorst, van Dam & Verbruggen, 2005; Daas & Stroom, 2006). However, questionnaires still remain necessary and it is also considered important to asses and where necessary improve their quality.

The Questionnaire Laboratory at SN specializes in pre-testing and evaluating questionnaires. The choice of the methods used  depends on a number of factors, such as the time available, whether it is a new or an existing survey and  whether there are any known problems in the data collection. If possible we choose a multi-method

approach, in which both qualitative and quantitative methods are used to analyze data from different sources. A multi-method evaluation of an existing survey may involve a review of methodological reports on the survey, focus group interviews with knowledgeable staff such as data editors, analyses of the unit and item non-response and on-site visits where the response process of actual respondents is studied in detail. (See Giesen and Hak (2005) for an example of such a multi-method evaluation.)

If it is not possible to do an extensive evaluation with multiple methods and sources we usually prefer to do at least some field visits in which we collect data on the actual response process. It is our experience that such field visits are essential to detect and understand problems in the questionnaires.

Hak and Van Sebille (2002) conducted a pilot study at Statistics Netherlands in which they used the Sudman et al. (2000) response process model as a framework to evaluate a questionnaire with a respondent in an on-site visit. The response process model describes the various steps that may be relevant in the process of responding to a business survey. The activities in each step may have an impact on the response burden experienced by the respondent and the resulting data quality. The Sudman et al. model is an adaptation from the model proposed by Edwards and Cantor  in 1991.  See Bavdaž (2007a, chap. 4) for an extensive discussion of the development of the model. The model, including the later additions (Willimack & Nichols, 2001) consists of the following steps:

1. Encoding of information  in company records or memory
2. Selection and identification of the respondent(s).
3. Assessment of priority
4. Comprehension of the data request
5. Retrieval of relevant information from records or memory
6. Judgment of the adequacy of the response
7. Communication of the response
8. Release of the data

In their study Hak and Van Sebille (2002) talked with respondents about a completed questionnaire and carefully reconstructed the process that had led to the response received by Statistics Netherlands. This

approach proved to yield informative insights for questionnaire evaluation. Ever since the Question Lab has used and further developed this approach in the evaluation of business surveys with respondents.

The steps of the response process model are used as a framework to describe and discuss how businesses respond to a survey request. By collecting detailed information about each step of the actual response process, we locate sources of response burden and data error. By now we have several dozen case studies of how establishments respond to the SN questionnaires. These studies include different kinds of surveys and questionnaires, and data have been collected in businesses from all size classes and different industries. In this paper, a sample of these case studies will be reviewed to answer the following questions:

- Which kinds of data error and response burden were found?
- Which kinds of recommendations for the data collection followed from these studies?
- How can the above be linked to the different steps of the model?

The next section describes the method we use to collect data on the response process in business surveys. The following section gives a brief description of the different cases studies reviewed. Then, the results of the review are presented and in the final section some conclusions are drawn from this review with respect to the response process model.

### 2. Methods Used for the On-site Evaluation of Business Survey Data Collection

### 2.1 Overall description of data collection method

The general aim of our on-site evaluation of business survey questionnaires is to explore causes of response burden and data error. The visits are usually conducted by methodologists of the Question Lab and a field officer who is knowledgeable about the questionnaire content. The field officers have the expertise to determine where the respondents make reporting errors and to help and instruct them where necessary. As the usual work of field officers is to collect survey data, they are not trained to unobtrusively observe respondents and to collect qualitative data on the response process. The role of the methodologist is to make sure that this kind of test data is collected as well as possible.
We use a standard topic list for the visits to businesses (see section 2.2), to which specific items are added for the instrument tested. These items are developed by methodologists of the Question Lab in consultation with statistical experts and field officers. The general idea

behind the topic lists is that - after some introductory questions - we first try to asses as well as possible how the respondent actually fills out the questionnaire and then we discuss this process and its results. This approach is comparable to the Three-Step Test-Interview method as described by Hak, van der Veer and Jansen (2004). See Hak, Willimack and Anderson (2003) for a description of similar on-site research on the response process in the US.

Sometimes subject matter specialists or designers may participate in a few company visits. They are only allowed to participate under the strict agreement that they do not interfere with the data collection and can only ask additional questions or explain their instrument *after* we have assessed the response process.

The topic lists are a guideline of what to discuss or observe during the visit and in which order. As visitors of the respondents in their work space we are not as free to determine the course of events as we are in a lab situation. Respondents can be interrupted or even called away during the visits or may have less time available for the visit than we might wish. These drawbacks however are more than compensated for by the fact that we can assess the response process in surroundings where the respondent uses his actual records, informants, computer et cetera. In a lab this is not possible.

The visits usually last about two hours. Usually, in a test round we will have some visits in which respondents are observed while filling out the questionnaire and some visits in which we reconstruct the response process while talking about a questionnaire that the respondent has filled out before the visit. These different ways of data collecting complement each other very well. The observations provide essential details about what actually happens when filling out the questionnaire, whereas the retrospective interview gives insight in the overall response process as it has occurred, without any disturbance by the researchers.

Sometimes it is not possible to reconstruct or observe the response process on the item level. In these cases we will discuss the response process for the instrument evaluated as detailed as possible, but not go into the answers provided for specific items.

For each field visit detailed reports are written, using a standard format based on the topic lists. In the more extensive evaluations these reports include a detailed description of all items of the questionnaire with the value provided by the respondent, the assessment of the field officer of the quality of this item, if possible explanations for any quality problems and, if necessary, the correct value as judged by the field officer. This information allows us to evaluate the sources and the size of data error

in individual reports. Also, for each item it is noted if it yields a very high response burden and if so, why.

If possible, some visits are videotaped. These tapes are used for the training of interviewers and for demonstration purposes. It is our experience that a few minutes of video tape of how respondents actually work with the questionnaires can be more effective to explain questionnaire problems to statistical experts than a well-wrought report.

For the analyses a spreadsheet is made in which for all visits the results of all items on the topic list are summarized. This allows for a quick comparison between the different visits for a given topic. The preliminary conclusions and recommendations drawn from the data are usually discussed with the team of data collectors.

The results are reported in a written report and usually also presented to the subject matter specialists. If available, we use samples from our videotapes of the visits to illustrate our findings and recommendations.

**2.2 Standard Topic List for Field Visits**

The standard topic list we use has been developed with the Sudman et al. (2000) response process model in mind.

*1. Introduction of the visit*

In the introduction respondents must get a clear picture of what is expected of them and what they can expect from the visitors of Statistics Netherlands. It is especially important that respondents understand that we first want to assess as well as possible how they go about filling out the questionnaire *without any help or comments from us*. After we have assessed the response process we can discuss any errors made or answer questions respondents have.

*2. General questions about respondent and response process*

Before addressing the specific questionnaire we discuss the following topics:

- What kind of company is this?
- What is the position of the respondent(s)?
- What is their history with the questionnaire?
- Which other questionnaires of Statistics Netherlands does this company / respondent fill out?
- How has the questionnaire become part of the work package of the respondent?

- Who is responsible for this specific questionnaire? Which parties are involved? If more than one person: how are the tasks divided?
- How does the company generally decide if the questionnaire is filled out and by whom and when?
- Does the company keep records specifically for this questionnaire? If yes, what kinds of records and how much time does this take?

*3. Observation or reconstruction of response process*

For each item of the questionnaire (or as many as the respondent has time for) we observe or reconstruct the response process. When we are observing respondents we encourage them to think aloud and explain what they are doing. When discussing a filled-out questionnaire we ask them to describe as detailed as possible what they did to arrive at an answer. In this part of the visit we will try to ask as little questions as possible and only interfere if we need to know what the respondent is or has been doing while working on the questionnaire.

For each item we try to assess:

- Which sources does the respondent use: e.g. memory, colleagues, records.
- How does the respondent arrive at the answer: calculation, estimation (how?), other strategies.
- Is the item correct? If not: what caused the error and what is the correct value?
- Does the item cause a high response burden, if yes, why?
- Did the respondent encounter such problems that assistance from SN or others was needed? If yes: why?
- Has the respondent filled out the questionnaire in one sitting or several sittings? (For an observation visit: what would the respondent 'normally' do?).
- How long did the completion of the questionnaire take (or would it take 'normally' if the complete response process could not be observed)?
- What happened after completion of the questionnaire? Does someone check the data before they are sent out?

*4. Evaluation questions*

In this part of the visit we will actively interview the respondent about parts of the response process that we need additional information about. Especially for assessing the quality of the answers, additional questions about records and calculation methods may be necessary. In this part of the visit we also ask the respondents' opinion about the questionnaire and the response task.

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Standard questions in this part are:

- What is the respondent's general impression of the questionnaire?
- If something can be changed to the questionnaire, what would the respondent like differently?
- Does the respondent use statistical information of Statistics Netherlands? Does the respondent know if someone else in the company uses data of Statistics Netherlands?

*5. Correcting data and answering questions of the respondent*

An important characteristic of official business surveys is that there is often a long term relationship between the statistical office and the business and/or respondent. A field visit evaluating a questionnaire has to take this relationship into account. Substantial errors in the reporting discovered during the visit must be corrected and explained to the respondent. Also, if the respondent has any questions about the questionnaire or Statistics Netherlands we must, as representatives of our organization, be able to address these questions. This is one of the important differences between testing questionnaires for household surveys and business surveys.

### 3. Case studies used

**3.1 Evaluation projects**

For this study a selection of case studies was analyzed. Each case study consists of a detailed report of a field visit. Cases from the following evaluation projects were reviewed:

*SBS questionnaires 2003 and 2006*

The SBS (Structural Business Survey) questionnaires are sent out yearly to assess all costs and revenues of a business. Response is obligatory. The 2003 questionnaires were paper questionnaires and had been in the field for several years. For the data collection on 2006 a thoroughly redesigned questionnaire was introduced in 2007. One of the changes is that an electronic version of the questionnaire has been developed (see for more information on the revision process Giesen en Hak, 2002 and Snijkers, Onat & Vis-Visschers, 2007). Both evaluation studies concerned questionnaires that were implemented in the regular data collection.

*Transportation of Goods by Road Survey 2003*

The Transportation of Goods by Road Survey measures the amount and type of transport by Dutch registered

goods vehicles. Businesses are asked to provide detailed traffic information about a sample of vehicles in a sampled week. Information includes the distance traveled, characteristics of the goods transported and the points of pick-up and delivery. Response is obligatory. The questionnaire under evaluation concerned an electronic redesign of a paper questionnaire that has already been implemented.

*Intrastat software 2004*

With the Intrastat software, businesses can report their trade from and to EC-member states. Monthly reports are obligatory for businesses whose trade volume passes a certain threshold. The evaluation concerned a software package that had been in the field for several years.

*Producers Price Index Survey 2005*

The PPI Survey measures the changes in prices received by producers of goods and services. Response is obligatory. Sample goods for which prices must be reported are selected in consultation with the respondent. Respondents can either report in euros or in indexes. The frequency of the report varies. For this test we have visited respondents who report annually, biannually, quarterly, and monthly. The instrument pre-tested concerned a first electronic version of a paper questionnaire that had been in the field for several years. This electronic instrument had not been implemented yet.

*Pre-test Sourcing Survey 2007*

The Sourcing Survey is currently being developed and aims to tap several aspects of the outsourcing of activities. Variables in the questionnaire include the actual amount of production that has been outsourced, the reasons for outsourcing and expectations for the future. The questionnaire tested was a new, first, paper draft that preceded a field pilot.

The table below provides a summary of the evaluation projects used for this review.

Table 1: Evaluation studies and number of cases reviewed

| Name of survey | Mode of instrument evaluated | Number of cases reviewed |
|---|---|---|
| SBS 2003 | Paper | 10 |
| SBS 2007 | Electronic | 5 |
| Transportation Survey | Electronic | 3 |
| Producer Price Index Survey | Electronic | 5 |
| Intrastat Survey | Electronic | 7 |
| Sourcing Survey | Paper | 5 |
| Total | | 35 |

**3.2 Respondents**

Due to time constraints not all site visit reports could be reviewed. For this study a selection was made to include at least all questionnaires tested and businesses from different size classes and industries.

Table 2 gives an overview of some characteristics of the cases studies used. In two cases the visits concerned a more general interview about a questionnaire with an external accounting firm. In these cases it was not meaningful to mention the size class of these businesses. As we did talk about a questionnaire that was tailored for a certain branch of industry, it was possible to assign an industry to these cases.

Table 2: Characteristics of cases reviewed

| | Characteristics | Number of cases reviewed |
|---|---|---|
| Size class | Small (< 10 employees) | 8 |
| | Medium (10-99 employees) | 12 |
| | Large ( $\geq$ 100 employees) | 13 |
| | Not applicable (external accountant) | 2 |
| | | |
| Industry | Manufacturing | 12 |
| | Retail | 5 |
| | Wholesale | 5 |
| | Service | 4 |
| | Building | 7 |
| | Transport | 2 |
| | | |
| Visit type | Retrospective | 9 |
| | Observation | 17 |
| | General interview about response process | 9 |

## 4. Results of the Analyses

In this section for each step of the response process model the following findings are summarized:

- problems found with data quality
- problems found with response burden
- the kind of recommendations for the instrument design that followed from these findings

### 4.1 Encoding of Information in Company records / Memory

Lack of encoding of information is an important source of data error and response burden. For example in the transportation survey many of the details asked for are not documented anywhere in the organization. To provide correct data a respondent must read every question (in a complex electronic instrument) *before* the sample week, determine which additional data must be collected and than organize this data collection with the drivers of the vehicles. This created a high response burden. Even one of the highly motivated respondents we spoke to missed some items in his preparations. The consequence was that these had to be estimated afterwards and that the quality of the items was doubtful.

In the interviews with respondents it proved important to carefully distinguish between lack of information and the ease of accessibility of information. Respondents may start by saying that a certain figure is not available, but after some probing it often appears that this figure is documented somewhere, but can only be retrieved at a high cost. This was often the case with variables in the SBS survey. For example, respondents often said that they could not specify their heating costs in gas and electricity, although often in fact a bill with this information was available somewhere in the organization.

Typical recommendations for the instrument design that follow from this step of the response process are to change specific data request to a less detailed question or even not ask for specific information at all. Also, recommendations are made to assist the respondent with the documentation of the requested data. For the transportation survey it was recommended to develop a form that respondents can hand out to drivers.

### 4.2 Selection and Identification of the Respondent or Respondents

The case studies show that respondents within organizations are selected in different ways. Sometimes there is one accountant or director who receives all questionnaires of SN and will distribute them within the organization. Sometimes different questionnaires for one organization may go directly to different respondents.

When it comes to the actual completion of the questionnaire the most common strategy we see is that one respondent fills out the questionnaire. For this he or she often has to collect information from others in the organization.

The case studies showed several problems with both data error and response burden that were related to the selection of the respondent. Problems found were:

- Real or perceived errors in the classification of the business, so that the respondents felt that the questionnaire was not applicable to them.
- Unclear addressing of the cover letter -resulting in additional response burden (more people than

necessary had to look at the material to assess were it should go).

- Distributing the questionnaire or parts of it to the right persons: both from SN to the business as well as within the business. Electronic questionnaires complicate this step and need special attention. We found for example that a questionnaire was not returned because we send out the invitation by e-mail to a respondent who was on sick leave. His colleagues could not access his e-mail. Another problem with electronic questionnaires is the distribution of parts of the questionnaire to other respondents in the organization. For example, in the Producer Price Index Survey one respondent did not have access to the data but had to distribute parts of the questionnaire to different parts in the organization. He forwarded his interpretation of the question in an e-mail or by telephone in a way that the actual respondents probably did not receive the correct data request.
- The characteristics of the respondent: a company's low priority for the completion of questionnaires may result in selecting a respondent who has not the required knowledge to fill out the questionnaire correctly.
- Change of respondents proved to be an important cause of both response burden and quality problems. A new respondent may not understand how the previous respondent has provided the data. We saw for example a respondent who wrongly used an automated system of her predecessor and thus provided wrong data. An example of response burden was found with a respondent who did not agree with the way former reports were made, but also felt that he needed to be consistent with these data and who did not really know what was the best way to report.

The types of recommendations for the study design that followed from this step were:

- Suggestions on which type of department to contact in an organization for a specific survey.
- Redesigning the instrument to allow for easy forwarding of (parts of) the exact question text, for example by developing the possibility to print both the questions and the instruction texts.
- Redesigning the instruction material to allow for different kinds of information (e.g. information on installing the software and information on completing the questionnaire) to go to different persons and locations.
- Data requests and specific arrangements with respondents should be documented by SN in a way that this information is also available for new respondents.

## 4.3 Assessment of Priorities

Timely and correct completion of questionnaires for SN is not a high priority for most of the respondents we talked to. Attitudes vary, from downright refusal to seeing it as a professional duty to provide good figures to the state. It was often mentioned by respondents that they do not see any reward or benefits for their effort. Similar results are found by Snijkers, Berkenbosch & Luppes (2007) in their study into respondents' motivation to participate in a business survey.

Many respondents we talked to, especially administrative staff in larger organizations, saw completing the questionnaires as part of their job. Some of them took professional pride in providing the right figures and making sure that their reports to SN are correct and consistent with other reports. However, other respondents made no secret of the fact that their only motivation for filling out the questionnaires is to prevent reminders or penalty. They keep their effort as low as possible and do not care about the quality of the data they provide. One respondent explained "I know that I should only provide figures for the Dutch part of the enterprise, but that would take me days, therefore I include the data of our Belgium daughter". Also, in the transportation study it was suggested by respondents that they would wrongfully state that a vehicle had not been used in the sample week, so they would prevent response burden.

Priorities may vary also within organizations. Several respondents mentioned that they had to convince their boss that it was indeed necessary for them to spend time on the questionnaire. For these respondents the fact that participation is mandatory was a helpful argument in claiming the time they needed to respond to the questionnaire.

The most important recommendation following these findings is that in the overall design of the survey we should bear in mind that many respondents are not motivated.

- The visual design should be made for quick readers and clickers - essential information should be given in the form of items on the questionnaire and not in detailed additional information that is presented far from the items.
- The data collection strategy should allow for quick reminders, incentives as well as penalties and quality checks that are communicated to the respondents.
- The communication towards respondents should explain that both our statistics and the data provided by the respondent are important.

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**4.4 Comprehension of the Data Request**

In most case study reports a substantial part was devoted to comprehension problems. These are a source of many data errors and also of response burden. The comprehension problems can occur at several levels:

- *General design and goal of the study.* For example, in the Producers Price Survey "typical" price items are selected and their development over time is what is measured. The respondents we talked to did not understand that to a certain extent they may "choose" their own price items and that the product information given is only to identify the item in our systems. Respondents did not see how they would provide useful data this way and expressed their concern about this. For the serious respondents it seems important that they understand how the data they provide are actually used. For all questionnaires we evaluated respondents often said they were curious about what happens to their data after they are submitted to SN.

- *Overall design of the instrument*: Especially with electronic instruments we found respondents who had no idea about the general design of the instrument and which questions and topics they could expect. For the transportation study the exact data required only became clear once they were actually filling out the questionnaire, which was after the reporting week had occurred and it was not possible any more to collect the data needed.

- *Comprehension of specific questions, concepts or words.* This happens a lot. A dramatic example in our case studies was the owner of a small nursery. He could hardly understand any of the words we use in the SBS questionnaire. If he had asked his accountant to fill out the form this would have cost him about 80 euros. To save this money he and his son spent hours to try fill out the questionnaire. This did not only created a high response burden for the whole family but also resulted in a questionnaire in which almost every answer was wrong. Also in medium and even large firms the jargon terms may cause confusion or may be wrongly interpreted by respondents. Comprehension problems need not be caused by wording only, they can also be caused by visual design or order/context.

Recommendations that followed from this step of the response process include recommendations about general communication about the data requests such as the introductory letter and recommendations about wording, order, visual design of questions and answer categories. A standard recommendation is to present essential information as a question or very close to the question, as

this will increase the chance that respondents will actually read this information.

**4.5 Retrieval of relevant information from existing company records/memory**

As in the US studies (Willimack and Nichols, 2001) we see that the response burden and resulting quality of retrieval depend to a large extent on respondent characteristics such as knowledge, skills, access and motivation. While reconstructing or observing the retrieval process many sources of errors or response burden were found:

- Using the wrong sources (wrong year, wrong company) which can result in large reporting errors
- Lack of access to or cooperation from sources within the organization.
- Compiling errors
- The response burden of retrieval tasks can be very high: in some extreme examples hours were needed to compile the requested information. Many cases of item non-response or less accurate data in the case studies were caused by the high response burden associated to the reporting task.
- Usability issues in electronic retrieval of records in the questionnaire: the Intrastat software has features that make automated retrieval of records possible. Most respondents in the test unfortunately did not understand the use of these options.

It is important to note that retrieval strategies vary between respondents. Some may search hours for a difficult item, whereas others leave it blank or give a rough estimate. These differences can partly be explained by differences in motivation. However, respondents also vary in their interpretation of what SN considers a good answer and to what extent they are allowed to give estimates.

The recommendations following findings about the retrieval process were:

- Where possible: ask less and less detailed information: the amount of time and motivation respondents have for a completion task is limited; save this for the crucial variables.
- Develop material to make internal and automated data collection easier.
- Make it absolutely clear - in each data request - about which unit and time period respondents should report.
- Explicitly state that estimates are allowed for known difficult items. Possibly add an item in which the respondent can qualify an answer as an estimate.

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**4.6 Judgement of the adequacy of the response**

In our collection of data on the steps of the response process it was often impossible to distinguish between retrieval and judgement. However, sometimes explicit judgement could be observed if respondents carefully checked the consistency between items or with other reports they had. Especially in the Structural Business Surveys many respondents find it important that the final business result matches their own records and they may spend an hour or longer correcting errors.

The observations showed visual and technical design features that either hinder or facilitate the ease of checking and correcting data. In the case studies reviewed no instances were found were confidentiality of reporting the data was an issue that influenced either response burden or data quality. Respondents seemed to trust that SN would treat their responses carefully.

Motivation to provide accurate data seems to be the main factor in whether or not respondents check their data. One respondent explained that he knows he does not provide accurate data but he concluded that as he has never heard any complaints about it, it must be no problem to Statistics Netherlands.

Recommendations for instrument design following from this step of the response process included specific recommendations for the visual and technical design of the instrument to facilitate checking and editing of the answers.

Also, we recommended that respondents should be motivated to check their data carefully. This should be done preferably both by instrument design and feed back after the data have been received by SN. Electronic instruments provide possibilities to detect unlikely answers and ask respondents to either correct or explain these. In an evaluation of the pilot of the electronic SBS (not reviewed here) we found that respondents actually expect electronic instruments to provide such checks of the adequacy of the response (Giesen, 2007).

Also, respondents should be informed about what happens to their data. In our production systems the plausibility of the data is checked with several sources and data is often corrected. However, respondents are usually not informed about this. This means that they will not change their response behaviour and it may also result in an incorrect idea about the quality of our statistics.

**4.7 Communication of the response**

We found many usability issues related to the communication of the response. In all tested electronic instruments there were instances where respondents simply did not know how they could provide the requested information in a certain field or how they should send in the questionnaire. Similar but less problems were found in the paper instruments with respect to e.g. the size or place of answer boxes.

The studies also revealed possibilities to reduce response burden in the ways answers could be communicated - e.g. by copying information from a former field.
An important finding was that obligatory fields may result in inaccurate data. For example, in the transportation study the value of the goods transported could not be left empty. This information was often not available for the respondents. As they could not proceed without an answer they just punched in a fictional number. In these cases it might have been better for the data quality to allow to leave a field empty and maybe only ask for an explanation for this missing data.

The recommendations concerning the communication of the response typically involved visual and technical design issues.

**4.8 Release of the data**

In a few firms the release of the data had to be checked with someone else in the organisation. In our field visits so far we did not find any material in this step that caused response burden or influenced data quality. It is likely however that respondents who know that their data are checked by a senior person will be more motivated to report accurately.

**4.9 Missing steps in the response process**

Our data show that for many respondents the response process does not end with the release of the data to Statistics Netherlands. In the studies reviewed two aspects of the "post release" stage seemed important: the filing of the response and the reaction of SN after the receipt of the data.

Many respondents talked about the importance of being able to save a copy of their questionnaire. Filed questionnaire served as a proof of work for their boss, a copy in case questions would be asked by SN and as a document to refer to in the next reporting period. If an electronic instrument does not have printing and filing options, it might not be used by respondents.

In the case studies respondents also mentioned the response or the lack of that from SN after they had sent in the data. At SN we usually do not send an acknowledgement of receipt for paper questionnaires. Respondents often said that they liked this feature very

much in the electronic instruments. More important however seems to be the lack of any feedback about the quality of the data. By usually not providing feed back of the data quality we seem to miss a good opportunity to increase the future data quality as well the image respondents have of SN.

## 5. Conclusions

An important conclusion after reviewing these case studies is that almost all steps of the response process model yield useful information on questionnaire problems. Only releasing the data is in most of our studies no explicit step and retrieval and judgement may be hard to distinguish empirically.

The response process model might be extended to take into account the fact that for many recurring business surveys the response process does not end with the release of the data. Especially to detect and explain data collection problems it seems advisable to also look into the history of the relationship between the Statistical Bureau and the respondent and look at any contacts after submission of the data. An interesting alternative model is provided by the Bavdaž' (2007b) three dimensional model of business survey response, that incorporates the recurrence of the response process.

For the Questionnaire Laboratory at Statistics Netherlands the response process model has proved a helpful tool to guide the data collection for the evaluation of questionnaires. It is important to note that specific questionnaire problems and possible solutions can only be found if the response process is studied in detail. In the course of discussing the quality of individual answers important shortcomings in the questionnaire, such as layout and wording, come to light that will not show in a general discussion of the questionnaire or the response process in general.

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The views expressed in this paper are those of the author and do not necessarily reflect the policies of Statistics Netherlands.

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