

## RESPONSE PROCESS AND BURDEN IN ESTABLISHMENT SURVEYS

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### Introduction

The impact of respondent burden on survey participation and data quality is an important concern in survey design. Strategies aimed at reducing burden are developed because unit and item nonresponse, as well as response error, are believed to increase and decrease with respondent burden. Most of the literature and research on respondent burden has focused on individual respondents in surveys in which the respondents answer questions about themselves or their households. Although a great deal of attention is given to burden in establishment surveys (mainly in terms of time burden for the responding companies), little research has been done about how burden could be reduced in this type of surveys.

In this paper we first discuss the literature on respondent burden, both in household and establishment surveys. Then we present the methodology and findings of exploratory research we conducted at the U. S. Census Bureau. The aims of this research were to explore, within the context of electronic reporting, aspects of surveys experienced as burdensome by business respondents.

### Respondent burden in household surveys

According to Sharp & Frankel (1983), concern with the 'burdensomeness' of surveys became pervasive in the 1970s, when issues of privacy and the protection of human subjects were raised along with concerns about the exploitation of some population groups for the benefit of researchers. Fears about declining response rates, which some researchers felt were at least partially burden-related, were also important considerations. In addition to these factors, the issue of burden was raised in the report of the Commission on Federal Paperwork (1977), which proposed regulations to decrease the *amount of time required of citizens for the completion of forms* (Sharp & Frankel 1983: 37).

In an early paper on respondent burden, Bradburn (1978) discussed four main issues related to burden in a language that suggested the possibility of objective measurement (the *length* of the interview; the *amount* of effort required of the respondent; the *amount* of stress on the respondent; the *frequency* with which the respondent is interviewed), but he also emphasized that "‘burdensomeness’ is not an objective characteristic of the task and the way it is perceived by the respondent" (p.36). He noticed "respondents seem to be willing to accept high levels of burden if they are convinced that the data are important. In general, it seems to me the problem is not: is there a burden level which respondents will not tolerate, but rather how to relate the level of burden to the importance of the data" (p.39). In other words, for a survey to be successful the level of 'burdensomeness' or *experienced* burden needs to be managed and this level is dependent on how the task is communicated to the respondent.

Sharp & Frankel (1983) tested Bradburn's hypotheses in an experiment that manipulated interview length (25 and 75 minutes) and effort. The latter was separated in two treatments: (1) recall, in which respondents were asked to provide estimates of expenditures based exclusively on memory; (2) retrieval, in which respondents were asked to consult records. The outcome variables consisted of objective indicators such as number of break offs and item refusal rates, and subjective indicators such as willingness to be reinterviewed and feelings that the effort was well spent. Although interview length had a small effect on the subjective indicators, two attitudinal factors – belief in the usefulness of surveys and denial of the privacy-invading character of survey questions – appeared to be more strongly associated with low burden perception. The conclusion of this study was that objective burden (apart from length) is not such an important issue, but that a respondent's attitude to surveys is.

Although respondent burden became less prevalent in the survey research literature after these initial papers, this does not imply lack of concern. As Bradburn pointed out, survey research professionals are

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constantly working to improve the completeness and accuracy of survey data, even if burden is not explicitly discussed. Likewise, the growth in attention to questionnaire design and to cognitive pretesting since the 1980s has been a way by which both objective and perceived burden have been reduced.

As an example, Dillman (2000: 77-78) advises survey researchers to avoid asking respondents to make 'unnecessary calculations'. Although this and other advice has obvious implications for burden reduction, Dillman's widely used book does not discuss the concept of respondent burden at all. Burden reduction is an implicit aim of total or tailored design. However, Dillman discusses another concept that is closely related to the concept of burden, namely *cost*, which he defines as "what one gives up or spends to obtain (the) rewards" (Dillman 2000: 14) and which, like burden, needs to be reduced. Dillman (2000: 17-19, 27) discusses a number of ways to reduce costs, such as avoiding embarrassment, inconvenience and subordinating language, and making questionnaires appear short and easy. Dillman's concept of cost overlaps with Bradburn's concept of perceived burden. In Dillman's approach, cost can be offset by reward (and *vice versa*). Examples of rewards, which implicitly offset burden, are showing positive regard, saying thank you, asking for advice and making the questionnaire more interesting (Dillman 2000: 15-17, 27).

### Respondent burden in establishment surveys

Regarding establishment surveys, the term response burden usually refers to the *number of survey requests* received by a given company. Thus, the burden literature tends to discuss sampling methods (such as unequal probability sampling) by which an agency can decrease the frequency a given company is sampled (see, for instance, Tortora & Crank 1978, and Kott & Fetter 1997). The concept is less often used to denote the (objective) work or effort that is required from a respondent and the (subjective) burdensomeness of the request.

When the statistical agencies that conduct establishment surveys express an interest in electronic reporting as a means to reduce burden, they refer to the concept of burden as work or effort. Following the principles of Dillman's Tailored Design Method (Dillman 2000), Clayton & Werking (1998) discussed how electronic reporting could be designed to reduce cost (mainly in terms of time and effort) and to enhance reward. Like Dillman, they see the latter as "largely intangible, yet respondents want to be regarded positively and feel that their time, efforts, and comments are valued" (Clayton & Werking 1998: 550).

Thus, as in surveys of individuals, there is a tendency in establishment surveys to not discuss the

work that is required from a respondent as a separate aspect of respondent burden. Instead, burden reduction is addressed by way of continuous efforts to improve questionnaire and survey design, such that time and other costs for respondents are minimized and (often 'intangible') rewards are provided. As a consequence, the concept of respondent burden is usually only used in relation to the requirement of the U.S. Office of Management and Budget (OMB) to provide estimates of the '*hour burden*' for every collection of information (including surveys) by a government agency.

In a study of respondent burden in Internet business surveys, Haraldsen (2002) observes that "even though it took more time to respond with the help of the computer, all of our test persons expressed that the web version was less burdensome than the paper version." Discussing the implications of this observation, he concludes that respondent burden must be considered a subjective experience. Echoing Dillman's model of cost and reward, he states that "the issue is not whether the total burden is high or low, but if the burdens are heavier than the advantages and other positive aspects of the survey".

Sudman et al. (2000) suggest that burden in establishment surveys may be reduced if we have a better understanding of the processes used by business respondents to report data on surveys. Based on qualitative interviews with data providers from 30 large multi-unit companies, they suggest the following hybrid response process model for establishment surveys (later refined in Willimack & Nichols 2001):

1. Encoding of information in company records.
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.
6. Judgment of the adequacy of the response.
7. Communication of the response.
8. Release of the data.

Business respondents' activities at each step of this model, and the interplay amongst them, may contribute positively or negatively to burden (as well as unit and item response, and data quality).

Two main aspects of burden emerged in this study: (1) number of survey requests; and (2) the work or effort required to comply with these requests. Regarding the number of survey requests, data providers in these large businesses complained about duplication of effort and the burden of having to provide the same information to multiple government agencies. The perception of duplicate data requests was common, especially among public companies with many outside data requests placed on them.

Response burden in terms of required work or effort appeared to be more dependent on the availability of data and the ease with which these could be retrieved than with the length of the survey form. Difficulty with the data retrieval seemed, by and large, to be the main source of response burden.

Unit and item nonresponse in business surveys appear also to be burden-related. Willimack et al. (2001) report that not only are policies against reporting on voluntary surveys primarily driven by burden and resource issues, businesses typically weigh response burden against business goals when making survey participation decisions. However, "survey participation is considered a non-productive activity, resulting in a cost to the business that does not generate profit," which is the primary goal of a business. Willimack et al. advise survey organizations to reduce response burden by "designing procedures that reduce the costs of response through facilitating efficiencies in business reporting, such as by providing multiple alternative response modes, offering concessions in timing, relaxing data needs, and varying follow-up procedures."

### Aims and methods of our research

Based on the literature and previous research, we wanted to explore the *effort* of completing and submitting a questionnaire (in terms of cognitive effort and other work) and the *subjective evaluation* of this effort (as more or less burdensome) by the respondent. We wanted to *observe in situ* the actual response behavior of respondents and collect data on respondents' immediate experience of burdensomeness of each separate step of their response.

We developed, applied and evaluated three protocols for collecting these data:

1. On-site observation of the actual response and reporting process.
2. On-site retrospective focused interviewing soon after the actual response and reporting process.
3. Retrospective focused interviewing by telephone soon after the actual response and reporting process.

We studied the response process in the context of electronic reporting for two very different Census Bureau programs – the Manufacturers' Shipments, Inventories, and Orders survey (M3; a monthly indicator) and the 2002 Economic Census – which we discuss separately.

### Burden in the M3 survey

The M3 is a voluntary monthly survey. Each month, a completed questionnaire (seven items) is received from about 3,000+ companies. The official burden statement for this survey states that it is "estimated to vary from 10 to 40 minutes per report form, with an average of 20

minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information."

The three main reporting modes are fax and mail (2,300+), touchtone/voice recognition (TDE) (500+) and Web (100+). Data received by mail are faxed by M3 staff and then processed by fax recognition software. In a way, M3 reporting is already completely 'electronic' in the sense that nearly all reported data are received in an electronic form, either through TDE or the Web or fax recognition. However, because fax recognition is not 100% accurate, this process requires a 'manual' phase in which staff check the data. For this reason, M3 staff initiated a project in which companies were asked to 'convert' from mail or fax to Web reporting. Our study on the M3 consisted of two parts, a pilot study of the M3 response process used by five non-electronic reporters and a 'conversion' study in which we studied the results of a request by M3 staff to 77 mail/fax reporters to switch to Web reporting.

In October 2002, we conducted a pilot study of the response process for the M3 in which data were collected from five companies that had reported every month for the previous six months within two weeks after their reporting period (usually a calendar month). By attempting to arrange on-site observation, we collected our first data on perceived burden. In a telephone call we explained to companies that we would like to visit them in order to discuss their experiences with the M3. It appeared to be very difficult to arrange company visits. Whatever the reasons might have been for companies to refuse to take part in our study, a frequently used argument was that it did not make sense to travel to them because, they said, the M3 is such a small and easy survey that they did not see a point in being interviewed about it. We did not push our wish to visit them and used the opportunity to ask them more about their experiences. In this way, some recruitment calls for company visits were converted into short telephone interviews. When companies agreed to be visited by us, we could not observe retrieval of data for the M3 survey directly because, at the time of our visit, these data had already been retrieved or were not yet retrievable (e.g., because the monthly accounts had not been completed at the time of our visit). In these visits we conducted 'focused' interviews about the most recent reporting for the M3.

In this pilot study, data on burden were available in two forms. First, reporters would give us an estimate of the time spent on M3 reporting. They used phrases ranging from '5 seconds' to 'ten minutes'. These were not precise measurements or estimates. By mentioning a tiny number of seconds or minutes, they just wanted to convey that the whole process did not take much time at

all. Second, reporters spontaneously characterized M3 reporting as 'easy' and 'unproblematic' or said "I would not know how this could be improved". Reporting through mail, fax and TDE were all considered unproblematic. When asked whether they would like to report over the Web, there were different responses. Some said they did not see a reason for changing their present mode, because it was unproblematic. These reporters would, for instance, say: "What can one win if it takes only three minutes by fax?" Others reacted positively, assuming that Web reporting would imply even less burden. For instance, one reporter said: "Just keying in your numbers looks like a step less".

Our main conclusion from the pilot study was that, from the perspective of these timely non-Web reporters, the M3 was fine as it was. Switching to Web reporting was not a solution to any existing reporting problem, because there was no current problem. Nevertheless, some reporters appeared to be willing to adopt Web reporting anyway, even if it would imply more (objective) burden, for other reasons such as a wish to be 'consistent' or to be technologically advanced. Others seemed to be willing to report electronically because they assumed that Web reporting would not increase their burden. We concluded that it would be interesting to see what happened when such respondents discovered that Web reporting actually involved more steps (for authentication, key entering of data, and submission) than reporting through fax or mail.

In our conversion study, M3 staff approached 77 mail/fax reporters by telephone with a request to switch to Web reporting. A minority of 11 respondents replied that they did not want to give electronic reporting a try ('refusers'). Furthermore, a considerable number (22) of the 66 respondents that expressed their willingness to give Web reporting a try never did so. Refusal was mainly based on the assumption that fax reporting cannot be beaten in terms of objective burden. These respondents saw no good reason for changing a routine that was convenient to them and for substituting it with another system that takes more of their time, not taking into account the additional burden related to the effort of switching modes itself. In contrast, some converters assumed that Web reporting would reduce their objective burden. Other converters did not find burden an issue and did not mind that Web reporting added to objective burden. In other words, refusers and converters differed mainly in terms of their *expectations* regarding the burden of Web reporting. Now, what happened when the latter group actually did it?

Among the converters, we found no difference between respondents who had expected that Web reporting would take less time than fax and/or mail and those who had no such expectations. All agreed that Web reporting is preferred, even though it takes more

time. The main reasons for this preference that respondents gave us are:

- Respondents do not need to move from their desk to file the report.
- Web reporting fits with how they see their work developing in the future from paper-based to paperless.
- Some feel more confident that data have actually and safely been submitted.

Our main finding, thus, was that once M3 respondents had agreed to give Web reporting a try, they discovered that they *liked* it and that it gave them *rewards* (such as seeing their work as technologically advanced, and being confident that their data had been submitted safely) that compensated for the higher costs (in terms of time and actions to be taken).

### Burden in the 2002 Economic Census

Our second study was of the economic census, which profiles the U.S. economy from the national to the local level. It provides the foundation for most of the United States' economic statistics, and the benchmark for the U.S. Gross Domestic Product and other leading indicators of economic performance. The economic census is an establishment-level collection conducted every 5 years, for years ending in "2" and "7", and it includes most industries and geographic areas. Questionnaires are tailored for trade areas, resulting in more than 550 different forms. For the first time, all U.S. businesses in the 2002 Economic Census were offered the opportunity to report electronically.

The electronic reporting option for the 2002 Economic Census was developed with the aim to decrease costs for the Census Bureau and to increase the quality and timeliness of reporting. It was hoped that reporting would also be easier for respondents (e.g., by increasing the possibilities for overview and coordination of the response process in the company) and that it would not result in a higher respondent burden. It was the objective of our study to explore how respondents experienced the electronic reporting process and to explore how the instrument could be made more attractive to them. The more specific aims of our research project were to explore *burden* (in terms of time as well as effort) related to the process of electronic reporting for the economic census and *respondents' evaluations* of their experiences.

As with our study of burden in the M3 survey, we aimed at collecting data on *the details of the actual response and reporting process*, i.e., we wanted to collect detailed information about the many separate and sometimes disparate, but always interconnected, steps that are involved with responding and reporting (electronically) to the 2002 Economic Census. For this



reason, we conducted *real-time observation* in nine very large multi-unit companies with complex and time-consuming reporting tasks. Additionally, we also conducted *retrospective on-site focused interviews* with fifteen small and medium sized companies.

Essential for successful real-time data collection is prior knowledge of the timing and location of specific activities. This presupposes that respondents are willing to share details of their 2002 Economic Census work plans, which only can be achieved if they support the aims of the research. Because we assumed that companies would welcome research visits if these visits were also aimed at helping companies in overcoming problems that might occur when they downloaded and used the electronic reporting software, we presented our real-time research to companies as aimed at supporting them in dealing with the electronic reporting system. This approach not only helped us to gain access to companies but also to utilize our research as an instrument for customer relations, while helping companies report good quality data in a timely manner.

Compared to the M3, the hour burden of the economic census is large. Much time and effort are needed to perform steps 5 and 6 of the response process model, i.e. to *retrieve* information and to *manipulate* that information (by splitting out information by location and revenue type and by consolidating information per form) regardless of the reporting mode (mail or electronic).

As for the communication step (step 7 of the response process model), the Census Bureau believed that small and medium sized companies would find little benefit to electronic reporting features designed to facilitate reporting from very large companies, and thus would be less likely to use it, although they could choose between the two reporting options.

Regarding large and very large companies (with 100+ establishments), it was assumed that respondents in these companies would first retrieve all requested data and would load and manipulate these data in spreadsheets. Then respondents would use an importing function provided by the software to load data from spreadsheets onto the electronic forms. Although this process would cost time and effort, particularly because respondents needed to create an import map for each form type requested from the company, it was expected that the effort would be perceived as worthwhile because no time needed to be spent on copying data from the spreadsheets onto hundreds of paper or electronic forms, one for each establishment operated by the company. Developers believed that this system was respondent-centered because it allowed respondents to create their own import maps tailored to the characteristics of their spreadsheets.

**Small and medium sized companies.** The pattern we had expected for the large companies actually occurred with the small and medium sized ones. They usually described in detail the work they had needed to perform in order to retrieve and compute the required data, and explained to us to what degree the electronic reporting option had supported them in communicating the information to the Census Bureau.

The following is a fairly typical case: “[*Retrieving the data*] is tedious. The information is available but it is time consuming to pull it all together.” This respondent had done some access queries in his accounts and had made printouts of the results. He had keyed the data onto the electronic form straight from those printouts, without completing the paper forms first. “If I had first filled out the forms I had received [by mail], I would have put them into an envelope and mailed them. But I used those physical forms to read them through and to identify what [I needed to fill out], because... you have it all in front of you, whereas the computerized form is section by section by section by section. So, with the paper form at least, you can flip through them and you know exactly what type of data do I need. Then I went back and gather all that information and then I went back into the computer systems to write it in. [The easy thing is] if you want to change, you just type it over. That is probably the main reason that I used [electronic reporting], because it is just easy, if you make a mistake you can change it.”

This respondent found the whole process ‘time consuming’ and ‘tedious’. He had needed the paper form to get an overview of what information was required (whereas the computerized form is “section by section by section by section”) but had liked using the electronic option for communicating his information because one can easily correct mistakes. He estimated his total time burden for responding for nine locations as “altogether from start to finish, twelve hours maybe, including gathering the data and stuff, somewhat in that range”.

Other respondents provided much more elaborate descriptions of their retrieval tasks, without any hint of complaint. An example:

“I needed to go to my Human Resource manager to come up with payroll numbers. We were lucky ... we had only a hundred employees to deal with ... we had a go and split. Part of the problem was that our principal lawyers are paid on a different payroll and different timetable than the associate lawyers of the firm. So I had to add numbers from one report that was on the principal attorneys to the associate attorneys in order to come up with a total number for lawyers ... that was one thing. Another thing was that your instructions say ‘wages as reported on the IRS form 941 excluding taxable Medicare

wages'. I did not have a breakout ... so I had to set up a query to sort out taxable deductions and stuff that is different from Medicare. We had to take everyone's wage and see what each person's Medicare wages are, but our system would not break that apart by location. So that's why we had to do that manually, because the system will not cumulate that by location for us. We had the numbers by location but there were no totals. So that was a thing that took a little time but luckily we had only a hundred employees to deal with [...] I probably spent maybe twelve hours and the Human Resource manager sat down with me for a couple of hours in order to try to do this thing, probably it may be 14 to 15 hours in total between the time of getting the instructions, understanding them, getting the numbers pulled out, inputting them. We just sat down a couple of hours to get this thing done. It is an exercise once in five years. We sit down and get it done."

This respondent had only four locations, yet spent at least as much time reporting as the previous respondent. Although this respondent's hour burden per location (of more than three hours on average) is rather high and his work might be seen as fairly tedious, he describes his situation as 'lucky' and the response task as something for which you "sit down and get it done". This respondent mentioned also that he had needed the paper forms for getting an idea of what was required. He liked electronic reporting ("Very positive. I had no problem working with it"), particularly also because it had been easy to add new forms for recently opened locations.

Our debriefings indicate that the economic census requires data from companies that (at least partly) are not readily available from the general ledger and for which they must perform electronic or manual queries in their accounts. This takes more hours than the official hour burden. This burden, however, is *subjectively* interpreted in rather different ways, ranging from 'tedious' to just something for which you "sit down and get it done". The electronic form did not support the retrieval process. On the contrary, these respondents needed the paper forms in order to get and maintain an overview of the information that was requested.

Although respondents reported various examples of usability problems with the electronic software, they liked electronic reporting for various reasons such as the ease of adding new forms, the ease of making corrections, (occasionally) the fact that the software runs edits, and the fast and secure way of submitting. These respondents' overall positive evaluation of the electronic reporting system, despite time loss caused by problems and need for help, is an example of how perceived rewards can compensate actual costs.

**Large companies:** The response task for the economic census in large companies is very different from that in small companies. Respondents must handle large sets of information relating to groups of locations, personnel, revenue types, etc. Most of this information will be stored in (interim and final) spreadsheets in which different kinds of information, each in a designated column, are mapped onto different entities (such as stores or locations), each in a row. From the perspective of the Census Bureau, retrieval and manipulation of data cannot be made easier – each company must devise its own system of electronic queries, dependent on the type of activity (retail, banking, manufacturing, etc.) and the way records and accounts are organized in the company. But it was thought that communicating the resulting data to the Census Bureau could be made much less burdensome by providing the companies with an electronic reporting system into which data could be imported from spreadsheets.

Results of our real-time observations of electronic reporting provide substantial evidence to the contrary. It appeared that retrieval and manipulation of data, however costly in terms of time and effort, was seen – like in most small companies – as something that you just do. In contrast, aspects of the electronic reporting system were experienced as burdensome. Because of the sheer volume of their data and forms, these large companies were urged to report electronically, rather than via paper, using the system provided (unless they had received permission from the Census Bureau to report in a specific spreadsheet format, an option that was not provided to small companies).

The clearest indication that the burden of retrieval, despite the time and effort it required, was usually not perceived as something particularly mentionable was that no respondents in our sample recorded their activities on time sheets. According to their own accounts, respondents were not able to give even rough estimates of how much time they had spent on their (mainly retrieval) work for the economic census, nor for specific activities. When they dared to give an estimate, they would indicate that this was a gross estimate. It can be inferred, therefore, that time and effort spent on retrieval was not salient to them. In contrast, however, they could be very precise and detailed in describing what parts of the electronic reporting process had been in any way difficult, irritating or problematic.

For instance, a respondent in a large retail company (that was very cooperative both in terms of its contribution to the census and of its participation in our research), who described retrieval as "a major effort, because your reports and ours are different" described her task as "collecting the data and then putting it into *your* format to get it back to you". Accordingly, in describing her experiences with electronic reporting,

she used much more negative expressions than she had used when discussing retrieval.

Apart from the fact that burden associated with the communication step of the response process is seen as unwarranted, there was one other characteristic of the electronic reporting system that created burden, namely the fact that the system needed as many as several hours of execution time for several functions, such as loading the inbox, exporting the loaded information onto spreadsheets, importing data from spreadsheets, and verifying data during the submission procedure. This waiting time was noticeable, mainly because respondents could not do other work on their PC without jeopardizing the process.

### Conclusions

Our findings corroborate Haraldsen's (2002) observation that even though some tasks take more time than others, respondents might perceive less burden, which underlines that respondent burden is a *subjective experience*. In our research on the M3, it appeared that respondents who spent more time on electronic reporting (which required them to perform more separate steps) found it equally or less burdensome than reporting through fax. This was a self-selected group who reported electronically precisely because they had decided beforehand that they were going to like electronic reporting, despite all 'objective' advantages of reporting through fax.

In our research on electronic reporting for the 2002 Economic Census, the same phenomenon could be observed in respondents for small and medium sized companies who had self-selected themselves for reporting electronically rather than via paper. Concerning respondents for large companies, the same phenomenon is observable in the distinction that they make between retrieval burden (which is considerable but is seen as warranted and therefore endurable) and the burden associated with communicating the response (which, however small, is an *additional* burden imposed on them and therefore not warranted).

Our findings point to the relevance of Dillman's notion of tailored design, in which respondent compliance is seen as the outcome of a perceived positive balance of rewards and costs. In this approach, the relevance of objective burden in terms of hour burden is debatable, because a survey organization that manages to communicate the reasonableness of its data request (reward) can ask for a considerable effort (cost) from the respondent and get it. It seems, therefore, that reduction of perceived burden can be achieved by a consistently *respondent-centered* approach focused not only on a reduction of perceived costs but on an increase of perceived rewards as well.

### References

- Bradburn, Norman M. (1978), "Respondent burden", *Proceedings of the Survey Research Methods Section of the American Statistical Association*, 1978: 35-40.
- Clayton, Richard L., & George S. Werking (1998), "Business surveys of the future: The World Wide Web as a data collection methodology". Chapter 27 (Pp. 543-562) in Couper, Mick, et al. (Eds.), *Computer assisted survey information collection*, New York, NY: John Wiley & Sons.
- Dillman, Don A. (2000). *Mail and Internet surveys: The tailored design method*. 2nd ed., New York, NY: John Wiley & Sons.
- Haraldsen, Gustav (2002), "Identifying and reducing the response burden in Internet business surveys". Paper presented at the International Conference on Questionnaire Development, Evaluation and Testing Methods, Charleston, SC, November 14-17, 2002.
- Kott, Phillip S., & Matt Fetter (1997), "A multi-phase sample design to co-ordinate surveys and limit response burden", *Proceedings of the Survey Research Methods Section, American Statistical Association*, pp.772-777.
- Sharp, Laure M., & Joanne Frankel (1983), "Respondent burden: a test of some common assumptions", *Public Opinion Quarterly*, 47: 36-53.
- Sudman, Seymour, Diane K. Willimack, Elizabeth Nichols & Thomas Mesenbourg (2000), "Exploratory Research at the U.S. Census Bureau on the Survey Response Process in Large Companies". In *ICES II, Proceedings of the Second International Conference on Establishment Surveys*, Alexandria, VA: American Statistical Association, pp.327-337.
- Tortora, Robert, & Keith Crank (1978), "The use of unequal probability sampling to reduce response burden", *Proceedings of the Survey Research Methods Section, American Statistical Association*, pp.337-340.
- Willimack, Diane K., & Elizabeth Nichols (2001), "Building an Alternative Response Process Model for Business Surveys". Paper presented at the AAPOR annual meeting, May 2001, Montreal.
- Willimack, Diane K., Elizabeth Nichols & Seymour Sudman (2001), "Understanding Unit and Item Nonresponse in Business Surveys". Chapter 14 in Robert M. Groves, Donald A. Dillman, John L. Eltinge, Roderick J. A. Little (Eds.), *Survey Nonresponse*, New York: John Wiley & Sons.