

## Survey Experiences and Later Survey Attitudes, Intentions and Behaviour

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Three random samples ( $n = 693$ , participation rate 72%) were studied from a Swedish “survey on surveys,” called ASSETS: (1) A sample of previous respondents in a panel telephone survey (LFS sample), (2) a sample of previous respondents in a comprehensive personal interview survey (SLC sample), and (3) a sample from the general population (comparison group). Broadly speaking, neither positive nor negative “effects” of participating in LFS were demonstrated, except that the LFS sample had a higher response rate in ASSETS than the comparison group, but this might partly be explained by the LFS sample not being a random sample from the general population since they were all respondents in a previous survey. Participating in the SLC appeared, on average, to have changed certain survey attitudes and intentions in a negative way. These effects applied first and foremost to those who reported pressure to take part in the SLC. It is suggested that pressing respondents to participate in an extensive survey might produce negative attitudes to future surveys, and that this might contribute to a deterioration of the survey climate.

*Key words:* Survey climate; nonresponse; refusal; attitude; response burden.

### 1. Introduction

People are asked to take part in surveys of many different kinds. They decide if they should participate or not, and their survey experiences can influence their attitudes towards surveys and their propensity to participate in future surveys. Naturally, all serious survey researchers want to conduct their surveys in ways that promote a good survey climate, and they do not want to “use up” respondents by, for example, pressing them too hard to take part or imposing too heavy a response burden on them.

However, it is sometimes necessary to collect extensive information and ask several hundred questions in a single comprehensive interview that can last for more than an hour, or to perform repeated interviews in a panel survey. This may introduce a response burden that can lead to an increased drop-out rate (Burchell and Marsh 1992; Porter, Whitcomb, and Weitzer 2004) or to satisficing mediated by low motivation (Krosnick, Sowmya, and Smith 1996). On the other hand, some respondents react positively to a well-managed, comprehensive interview, as they may find it agreeable and more important than a short interview (Bradburn 1979). Concerning panel surveys, it has been suggested that they not only induce a survey burden in the sense of requiring too much information

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(Hoogendoorn and Sikkel 1998), and in the sense that after participating a number of times the respondent might get bored and feel that he/she “has done enough” (Laurie, Smith, and Scott 1999, p. 270) but can also induce positive attitudes to the survey if the questions are experienced as relevant (Branden, Gritz, and Pergamit 1995). On the whole, reviews of the literature indicate surprisingly unclear results with regard to how the length of the interview or the number of interviews in a panel study influences the participation rate (Berdie 1973; Bogen 1996; Sharp and Frankel 1983). It is apparent that many factors influence the propensity to participate, some of which interact with the length of the interview (Groves, Cialdini, and Couper 1992). The relationship between the length of the interview and the experienced response burden is also unclear (Bradburn 1979), but some results indicate a positive relationship (Sharp and Frankel 1983).

Do the effects of an extensive interview survey persist and affect survey attitudes, intentions and behaviour in *future* survey situations? This is the topic of the present article and it is a question which has not been given much attention. It was addressed in Phase II of Sharp and Frankel’s (1983) study, where 75 subjects that had previously been interviewed for 25 minutes, and 75 subjects that had previously been interviewed for 75 minutes, were reinterviewed 11 months later. No differential effects on the participation rate or on the perceived response burden were demonstrated. However, due to the small sample size, the statistical power in their comparisons is low. In fact, a study by Stocké and Langfeldt (2004) of 139 Mannheim residents suggested that a previous experience of a survey that was perceived as burdensome (too long or exhausting) led to a negative change in the general evaluation of surveys. Their literature review also gives some support to the notion that this finding might generalize to other settings. The question of a lingering “experience effect” on survey attitudes can be an important issue to consider in relation to claims of “over-surveying” of the population, and suggestions that international response trends may indicate a deterioration of the survey climate (de Heer 1999). A partial explanation of such deterioration could be an increased survey exposure combined with predominantly negative effects of extensive surveys of the types commonly carried out.

Of course, the question of the importance of survey experiences for later survey attitudes, intentions, and behaviour is difficult to resolve in a more general sense since, as pointed out above, the possible effects of an extensive survey will depend not only on the amount of information requested, but also on the type of sample studied, the data-collection method, the topic of the survey, how well-managed it is, the interviewers, and so on. In the present article, we attempted to investigate the effects on later survey attitudes, intentions and behaviour of having recently taken part in an extensive multi-purpose, single-occasion personal interview survey (the SLC survey, described in the next section), and of having recently taken part in a panel telephone survey (the LFS survey, described in the next section).

Of relevance in this context are theories of attitude formation and attitude change. First, the theory of reasoned action (TRA) suggests that there should be a causal link between attitude, intentions, and behaviour (Ajzen and Fishbein 1977). So if a prospective survey participant’s attitude towards surveys is changed by a previous survey experience, this is expected to change his/her attitude towards participating in a future survey and, to a lesser extent, the intentions to take part in it and the resulting survey-related behaviour. However, there are several theories of the attitude-intentions-behaviour relationship and

although most of them are consistent with the above causal structure there is also a different type of theory with explanatory power that stresses the importance of priming in this process (Trafimow and Borrie 1999). According to this theory, previous behaviour, if made salient in the new context, will also affect later behaviour more directly than assumed by the TRA model. Cognitive dissonance theory (Festinger 1957) also predicts that a person who has voluntarily performed a behaviour (like participating in a survey) will want to be consistent with that in future behaviour.

From the literature review, it is difficult to make precise predictions of what more lasting effects survey experiences of the type studied here will have. Groves, Singer, and Corning's (2000, p.299) admonition is relevant here: "The literature on survey participation contains scores of alternative hypotheses about influences on cooperation with survey requests. Unfortunately, there is an embarrassing lack of replication of experimental findings." Nevertheless, on balance it seems reasonable to expect that a recent experience of an extensive and presumably to many people burdensome interview like SLC might rather often lead to a more negative attitude to future surveys in general – at least if the participation in SLC was not completely voluntary but experienced as resulting from coercion, since this would reduce the cognitive dissonance introduced by changing ones' survey attitudes and behaviour in a negative direction. The effect on subsequent survey intentions and behaviour can tentatively be expected to go in the same direction but to be weaker. With regard to Rogelberg et al.'s (2001) two main dimensions of survey attitudes, the negative effects, if any, should be stronger for factors related to experienced survey enjoyment and burden than for factors related to experienced survey value, since one can easily envisage mechanisms relating extensive survey participation to feelings of having done one's civic duty and having earned the right to be spared from surveys for a time. In Groves, Singer, and Corning's (2000) terminology: for some time after the survey, the saliency of perceived obligation of civic duty is diminished, and the saliency of considerations about protecting one's time is increased.

With regard to the effect of the LFS experience it is difficult to form any hypothesis since the last LFS experience was a very short interview and the effect of having previously been in the panel is not clear. Considering the often surprisingly good fieldwork results that are obtained in well-managed panel studies, we tentatively expect that, in most cases, the possible negative effects will be smaller for such a survey than for a comprehensive single interview survey, which does not offer the often positive experience of "project membership" that a longitudinal study does.

## **2. Study Design**

Our data were collected in a "survey on surveys" with the general purpose of studying survey behaviour, intentions and attitudes in Swedish samples. The study was given the acronym ASSETS (Attitudes towards Surveys and Survey Experiences in The Swedish population) and it was a collaborative study between Statistics Sweden and researchers at the Department of Psychology, Stockholm University (Brage and Bergman 2004).

ASSETS was introduced in the advance letter as Statistics Sweden wanting to learn about people's experiences of and attitudes to surveys for the purpose of improving its surveys. No financial incentives or other gifts were offered in the spring phase of the data

collection but in the limited follow-up in the autumn a lottery ticket (value SEK 20) was given unconditionally.

Five samples were studied, namely a general population sample (GP sample,  $n = 394$ ), a sample of previous participants in the Swedish Labour Force Survey (LFS sample,  $n = 150$ ), a sample of previous participants in the Swedish Survey of Living Conditions (SLC sample,  $n = 149$ ), a sample of previous nonparticipants in the LFS ( $n = 149$ ), and a sample of previous nonparticipants in the SLC ( $n = 147$ ). Unfortunately, the response rate was very low in the last two samples (28% and 26%, respectively) and this led to the decision not to include them in this article and to only use data from the first three samples.

The data in ASSETS were collected using CATI, and the interview length was 15-20 minutes. The fieldwork took place between April 2003 and November 2003, the extended fieldwork period being necessitated by a high percentage of noncontacts during the spring phase of the field work period (31.3%). The three samples were of the following nature:

*GP sample:* This was a random sample from the Swedish general population, aged 18 to 74 years. It was drawn from a register of the population.

*LFS sample:* This was a random sample from those who had previously taken part, for the eighth and last time, in LFS in February 2003. LFS is a panel study using CATI, and each respondent took part in a short telephone interview eight times, with a three-month interval between each interview. The average length of the interview was 12 minutes. The sample design of LFS is fairly complex, but for the purposes of this study, persons selected to participate in LFS can be regarded as an approximately random sample from the Swedish population, aged 16 to 74 years. The response rate in LFS on the last measurement occasion (Wave 8) was 87.3 percent (6.6% refusal and 5.5% noncontact in relation to the original sample, drawn before Wave 1).

*SLC sample:* This was a random sample from those who had previously taken part in the SLC in February-March 2003. SLC is a comprehensive paper-and-pencil personal interview that takes approximately 70 minutes and covers a number of different areas – such as family, work, and health. The sample design of SLC is also fairly complex, but for the purposes of this study, persons selected to participate in the SLC can be regarded as an approximately random sample from the Swedish population, aged 16 or older. The response rate in SLC 2003 was 75.8 percent (15.5% refusal and 6.7% noncontact). That this response rate is considerably lower than that of LFS can probably be attributed not only to differences in the general design features but also to the different topics. It has been reported that in Sweden employment and unemployment statistics are considered by most people as the most important area for providing statistics about (Wärnerud 1976).

An overview of the survey characteristics of ASSETS, LFS, and SLC is given in Table 1.

### 3. Variables

*Result codes* were given in accordance with the guidelines of the American Association for Public Opinion Research (AAPOR 2004). The different categories were Interviewed, Partially interviewed, Noncontacts, Refusal/break-off, and Other nonrespondents.

In the logistic regression analyses, dummy variables coding for membership in the LFS sample and the SLC sample were used.

Table 1. Overview of survey characteristics of ASSETS, LFS, and SLC

Survey characteristics	ASSETS	LFS	SLC
Mode	Telephone interview using CATI	Telephone interview using CATI	Personal interview using PAPI
Interview length	15-20 minutes	12 minutes	70 minutes
Panel design	No	Yes, 8 waves three months apart	No
Incentives <sup>1</sup>	None <sup>2</sup>	None	None
Type of sample	Probability sample from 1. the Swedish population; 2. recent participants in Wave 8 in LFS; 3. recent SLC participants	Probability sample from the Swedish population	Probability sample from the Swedish population
Response rate	72%	87%	76%

The LFS sample had recently participated in Wave 8 of LFS, the SLC sample had recently participated in SLC, and 32% of the GP sample reported they had been asked to participate in some kind of general survey during the last six months.

<sup>1</sup>By incentives is meant that money or some other gift was given to the sampled person.

<sup>2</sup>No incentives were given for the majority of the sampled persons, but for those included in the autumn follow-up an incentive worth SEK 20 was given.

The remainder of the variables were taken from the ASSETS questionnaire. Only a selection of the ASSETS items was included and two principles guided this selection: (1) The items had to be theoretically meaningful and (2) for some attitudes many similar items were available and only those items were to be chosen that loaded the highest in the relevant attitude factor, according to a factor analysis carried out by Brage and Bergman (2004) on the same data set that was used in the present study. Originally we planned to also use Rogelberg et al.'s (2001) six items measuring the two attitude dimensions they identified: Survey enjoyment and Survey value. Rogelberg et al.'s dimensions were developed in the context of a mail questionnaire. However, when we tested their items in a pilot study using telephone interviews they did not all function well in our Swedish context. For instance, some respondents and the interviewers reacted to the two items "Surveys are fun to fill out" and "I enjoy filling out surveys" as being too similar, suggesting to them that the questionnaire construction was flawed. Therefore only Rogelberg et al.'s core items were used in ASSETS, rephrased to fit into the Swedish CATI context.

First the six variables relating to survey intentions and behaviour are described and last the twelve variables relating to survey attitudes are described.

*Do you think you will participate in other similar surveys in the future?* (i.e., similar to LFS or SLC; this question was only given to former LFS or SLC participants). 3-graded response scale. Dichotomized form of the variable: 1 = "yes" or "yes, maybe," otherwise coded 0. This variable was labelled "Intentions to participate in future survey similar to LFS/SLC."

*The researchers behind this study are planning a new, similar telephone survey in a year. Would you consider participating in it?* (The question referred to a replication of ASSETS.) 4-graded response scale. Dichotomized form of the variable 1 = “yes, absolutely” or “yes, maybe,” otherwise coded 0. This variable was labelled “Intentions to participate in ASSETS replication.”

*The researchers also plan a more extensive study with personal interviews with about 40 persons. The participants will be paid SEK 200–300. May we then contact you so you have a chance to participate?* 3-graded response scale. Dichotomized form of the variable 1 = “yes,” otherwise coded 0. This variable was labelled “Intentions to participate in new ASSETS personal interview.”

*It would be very valuable for us if, for purposes of the present study, you would allow us to collect information about your education and income from registers. May we do this?* 2-graded response scale with 1 = “yes” and 0 = “no.” This variable was labelled “Allows collection of register data.”

*No item nonresponse* to 34 items. Dichotomous variable with 1 = no item nonresponse and 0 = item nonresponse.

*No don't know answers* to 34 items. Dichotomous variable with 1 = no don't know answers and 0 = don't know answers.

*One can have a good or a bad opinion about general surveys. How positive or negative are you towards general surveys?* 5-graded scale. In the instructions the respondent was informed that general surveys are studies most often undertaken by Statistics Sweden and other government agencies or by researchers at a university but some are undertaken by private agencies. They can deal with many issues of relevance for society and the local authority. Dichotomized form of the variable: 1 = “rather positive” or “very positive,” otherwise coded 0. This variable was labelled “General attitude to general surveys.”

*One can have a good or a bad opinion about market surveys. How positive or negative are you towards market surveys?* 5-graded scale. In the instructions the respondent was informed that market surveys deal with, for instance, what you buy, how often you shop, or if you recognize certain brands or logotypes. Dichotomized form of the variable: 1 = “rather positive” or “very positive,” otherwise coded 0. This variable was labelled “General attitude to market surveys.”

*I like participating in surveys.* 5-graded scale. Dichotomized form of the variable: 1 = “agree” or “strongly agree,” otherwise coded 0.

*Surveys give valuable knowledge.* 5-graded scale. Dichotomized form of the variable: 1 = “agree” or “strongly agree,” otherwise coded 0.

*It is burdensome to participate in surveys.* 5-graded scale. Dichotomized form of the variable: 1 = “agree” or “strongly agree,” otherwise coded 0.

*How willingly or reluctantly do you participate in general surveys – that is, surveys conducted by researchers, the local authority, Statistics Sweden, or other authorities?* 5-graded scale. Dichotomized form of the variable: 1 = “rather willingly” or “very willingly,” otherwise coded 0. This variable was labelled “Willingness to participate in general surveys.”

*How willingly or reluctantly do you participate in market surveys – that is, surveys that are about consumer habits, products, or trademarks?* 5-graded scale. Dichotomized form

of the variable: 1 = “rather willingly” or “very willingly,” otherwise coded 0. This variable was labelled “Willingness to participate in market surveys.”

*How willingly or reluctantly did you participate in the study?* (i.e., in LFS or SLC; this question was only given to former LFS or SLC participants) 5-graded scale. Dichotomized form of the variable: 1 = “rather willingly” or “very willingly,” otherwise coded 0. This variable was labelled “Willingness to participate in LFS/SLC.”

*How willingly or reluctantly did you participate in the present study?* (i.e., ASSETS) 5-graded scale. Dichotomized form of the variable: 1 = “rather willingly” or “very willingly,” otherwise coded 0. This variable was labelled “Willingness to participate in ASSETS.”

*Are you worried or not that information you give in some general survey could be used in a way that is harmful to you?* 5-graded scale. Dichotomized form of the variable: 1 = “rather worried” or “very worried,” otherwise coded 0. This variable was labelled “Worry about data protection in general surveys.”

*Are you worried or not that information you give in some market survey could be used in a way that is harmful to you?* 5-graded scale. Dichotomized form of the variable: 1 = “rather worried” or “very worried,” otherwise coded 0. This variable was labelled “Worry about data protection in market surveys.”

*How important do you think statistics are as a basis in society for decision-making, research, and debate?* 4-graded scale. Dichotomized form of the variable: 1 = “rather important” or “very important,” otherwise coded 0. This variable was labelled “Importance of statistics.”

*Survey pressure.* This variable was based on the answers to the question “Why did you take part in LFS/SLC?” To this question open-ended answers were given and they were coded according to a coding scheme reported in Brage and Bergman (2004). Only one category of special interest for the present study was used here, namely “felt pressed to participate” (coded “1”, otherwise coded “0” for LFS and SLC, respectively). The answers were independently recoded by another coder (Peter Zettergren) with respect to this category and the inter-rater agreement was 99.0 percent ( $\kappa = 0.96$ ).

#### 4. Results

In Table 2, the results of the fieldwork are reported using a standard adapted from AAPOR result codes (AAPOR 2004).

It can be seen in Table 2 that the total sample comprised 693 persons, of whom 498 or 71.6% participated in ASSETS. The LFS sample had a significantly higher rate of persons interviewed in ASSETS than the other two samples (83.3%, as compared to 69.8% and 64.4% for the GP sample and SLC sample, respectively). The SLC sample had a lower response rate than the GP sample, but this difference is not significant.

In Table 3, survey intentions and behaviour are reported for the different samples.

It can be seen in Table 3 that for the GP sample and the LFS sample, the intentions and behaviours reported indicate that the majority of the sample persons can be regarded as positive. For the three intentions variables, the SLC sample indicated less positive intentions than the other samples (55.1% intended to take part in a survey similar to the SLC, 69.5% intended to take part in a replication study of ASSETS, and only 46.6%

Table 2. Participation in ASSETS according to previous survey experiences. Percentages

Result code according to AAPOR (2004)	GP sample	LFS sample	SLC sample	All
Interviewed	69.8	83.3	64.4	71.6
Partially interviewed	0.3	0.0	0.7	0.3
Noncontacts	8.6	2.0	6.0	6.6
Refusal/break-off	18.8	12.7	24.8	18.8
Other nonrespondents	2.5	2.0	4.0	2.7
All	100.0	100.0	100.0	100.0
	<i>n</i> = 394	<i>n</i> = 150	<i>n</i> = 149	<i>n</i> = 693

Note. The number of ineligible subjects was 6, 0, and 1 in the GP sample, the LFS sample, and the SLC sample, respectively. They are not counted in the table. The cooperation rates were 78.6%, 86.8%, and 71.6% in the GP sample, the LFS sample, and the SLC sample, respectively. Pair-wise *z*-tests of the difference in proportions interviewed between the three samples using a procedure indicated by Fleiss (1981) showed that the LFS sample differed significantly from the other two samples in the proportion of persons interviewed ( $p < .01$ ).

intended to take part in an interview study about ASSETS topics). The last figure is surprisingly low, since they were promised a monetary incentive of SEK 200–300 (\$29–\$43) if they participated, suggesting that the material incentive was not important in this case. You can also see a tendency for the SLC sample to have a higher percentage of respondents with item nonresponse and don't know answers.

In Table 4, survey attitudes are reported for the different samples.

It can be seen in Table 4 that, in most cases, the differences in survey attitudes were small between the GP sample and the LFS sample, but that often the attitudes were less positive for the SLC sample. Compared to the GP sample, the respondents in the SLC

Table 3. Survey intentions and behaviour according to previous survey experiences. Percentages

Survey intention or behaviour (questions abbreviated, see Variable section for full text)	GP sample	LFS sample	SLC sample
Intentions to participate in future survey similar to LFS/SLC. Percent "yes"	–	77.5	55.1**
Intentions to participate in ASSETS replication. Percent "yes"	86.9	86.2	69.5**
Intentions to participate in new ASSETS personal interview. Percent "yes"	62.1	65.0	46.6**
Allows collection of register data. Percent "yes"	73.6	80.0	77.3
Percent with no item nonresponse	68.8	66.4	63.9
Percent with no "don't know" answers	67.0	65.6	56.7

Note. For the first variable, the difference between the percentages for the LFS sample and SLC sample was significance tested using a two-tailed *z*-test for two independent samples, following a procedure indicated by Fleiss (1981). For the other variables, the differences between the LFS sample or the SLC sample and the GP sample were tested using the same procedure.

\*\* $p < .01$ .



Table 4. Survey attitudes according to previous survey experiences. Percentages

Survey attitude (questions abbreviated, see Variable section for full text)	GP sample	LFS sample	SLC sample
General attitude to general surveys. Percent positive	63.2	61.7	50.0*
General attitude to market surveys. Percent positive.	48.1	40.4	37.4
I like participating in surveys. Percent that agreed	49.8	50.4	39.6
Surveys give valuable knowledge. Percent that agreed	76.4	76.2	68.5
It is burdensome to participate in general surveys. Percent that agreed	26.2	18.4	26.0
Willingness to participate in general surveys. Percent that participate willingly	68.5	67.2	54.0*
Willingness to participate in market surveys. Percent that participate willingly	38.3	31.5	30.9
Willingness to participate in LFS/SLC. Percent that participated willingly	–	79.3	57.1**
Willingness to participate in ASSETS. Percent that participated willingly	75.6	73.4	60.8**
Worried about data protection in general surveys. Percent worried	8.3	3.3	3.2
Worried about data protection in market surveys. Percent worried	12.6	12.3	8.8
Importance of statistics. Percent answering statistics is important	87.6	90.2	89.1

Note: For “Willingness to participate in LFS/SLC” the difference between the percentages for the LFS sample and SLC sample was significance-tested using a two-tailed z-test for two independent samples, following a procedure indicated by Fleiss (1981). For the other variables, the differences between the LFS sample or the SLC sample and the GP sample were tested using the same procedure.

\* $p < .05$ , \*\*  $p < .01$ .

sample had significantly more negative opinions about general surveys (50.0% reported they were positive), differed significantly with regard to how willingly they took part in general surveys (54.0% took part willingly), and differed significantly with regard to how willingly they took part in ASSETS (60.8% took part willingly). The largest difference is found in how willingly the respondents in the SLC sample participated in the SLC, as compared to how willingly the respondents in the LFS sample participated in the LFS (79.3% participated willingly, compared to 57.1% for the SLC sample). It should be noted that this large difference cannot be explained by assuming that the respondents in the LFS sample were a more positive selection than the respondents in the SLC sample since the drop-out rate (mostly due to refusal) was *lower* in the LFS sample than in the SLC sample – both in the original LFS survey and in the ASSETS survey. There is also a tendency for those in the LFS sample or SLC sample to report less worry about data protection issues than those in the GP sample.

We saw in Table 3 that the intentions to take part in a replication study of ASSETS was less for the participants in the SLC-sample than for those in the other samples, suggesting that the participation in SLC in some way had a negative effect on these intentions.

An interesting question then is in what ways this presumed negative effect operated. A possible mechanism is that participating in the SLC made the attitudes to surveys more negative, which in turn influenced the intentions. We know from Table 4 that the SLC participants were more negative in their general attitudes to surveys than the other samples, and there is also a strong relationship between this general attitude and the intentions to participate in a replication of ASSETS (Brage and Bergman 2004). Hence, the suggested mechanism seems so far compatible with the empirical findings.

To shed further light on this issue, we carried out logistic regression analyses with the intentions to take part in a replication of ASSETS as the dependent variable (dichotomized), and with selected attitude variables (dichotomized) and dummy-coded sample membership as the independent variables. We wanted to see if the odds coefficient for the dummy variable coding for SLC sample membership became nonsignificant when the attitude variables were added to the regression equation. Its doing so would suggest that the effect of SLC participation on intentions was completely mediated by attitude changes. We excluded from the analysis attitudes measuring the willingness to take part in a survey, since these attitudes are somewhat similar to the intentions to take part in a replication of ASSETS and including them could have confounded the analysis. To avoid overloading the regression equations, we included mainly attitude variables that were correlated with the intentions to participate in a replication of ASSETS and this selection was made without reference to the results of the logistic regression analyses. The results of these analyses are presented in Table 5.

It can be seen in Table 5 (left column, labelled Model 1) that the odds coefficient for the dummy variable coding for SLC sample membership is significant and thereby indicates that the odds of participating in a replication of ASSETS are lower (multiplied by 0.38) if a person belonged to the SLC sample. This negative relationship remains after the attitude variables have been included in the regression equation (Model 2). As expected, several of the attitude variables were strongly related to the intentions to take part in a replication, first and foremost believing that surveys give valuable knowledge (positively related) and experienced burden of participating in surveys (negatively related). The analyses were rerun using multiple regression analysis with the intentions variable and the attitude variables measured on four- or five-point scales, respectively, and treated as continuous variables, and very similar results were obtained. It thus appears that the “effect” of SLC participation is not solely explained by the fact that it changes the general attitudes we studied.

To investigate in depth the mechanism through which the negative effect of SLC participation operated would require detailed information about the process of SLC participation at the individual level; information that is not available in this study. However, we have information from two open-ended questions relevant to the respondent’s survey experience of SLC and of LFS, namely “Why did you participate in the survey?” and “Can you indicate something good about the survey?” The answers to these two questions have been coded by Brage and Bergman (2004). We then looked for differences between the SLC sample and the LFS sample in the frequency of each reported category for the categories that were reported by at least 9% of the sample (11 categories). We found a large difference in the proportion of sample persons who reported that they took part in the survey because they were pressed to do so (23.6% in the SLC sample, as compared to 5.5% in the LFS sample,  $p < .001$  using a two-tailed  $z$ -test of the differences

Table 5. Results from logistic regression analyses when intentions to take part in a replication study of ASSETS is the dependent variable. The results for three different regression models are reported: Model 1 with two dummy variables coding for membership in the SLC sample and the LFS sample, respectively, as the independent variables, Model 2 with dichotomous variables coding for survey experiences and attitude variables added to Model 1 as independent variables, and Model 3 with two dummy variables coding for pressure to take part in LFS and SLC, respectively, added to Model 2 as independent variables

Independent variables (questions abbreviated, see Variable section for full text)	Model 1 Exp. of reg. coeff. (odds coefficient) <i>n</i> = 414	Model 2 Exp. of reg. coeff. (odds coefficient) <i>n</i> = 414	Model 3 Exp. of reg. coeff. (odds coefficient) <i>n</i> = 397
LFS membership	0.91	0.73	0.88
SLC membership	0.38**	0.35**	0.66
General attitude to general surveys	–	1.56	1.56
I like participating in surveys	–	2.79*	2.22
Surveys give valuable knowledge	–	4.95***	4.89***
It is burdensome to participate in surveys	–	0.38**	0.39*
Worry about data protection in general surveys	–	0.84	0.84
Importance of statistics	–	1.46	1.43
LFS experienced pressure to participate	–	–	1.70
SLC experienced pressure to participate	–	–	0.22*
Nagelkerke $R^2$	0.04*	0.37***	0.37***

– means the variable is not included in the regression equation.

\* $p < .05$ , \*\* $p < .01$ , and \*\*\* $p < .001$ .

between the proportions). When the SLC sample was split into those that reported they were pressed to participate and those who did not, we also found very large differences between these two groups in all the attitudes and intentions variables we studied. For instance, with regard to having a good or a bad opinion about general surveys, we found that, among those who had been pressed to take part in the SLC, only 11.1% reported a positive attitude, as compared to 62.3% among those who did not report they were pressed to participate. Furthermore, the percentages in these two groups that reported they intended to take part in a replication of ASSETS were 35.0 and 81.8, respectively. The logistic regression analysis was then repeated when dichotomized variables measuring the presence/absence of experienced pressure to participate in LFS and SLC were included as two dummy variables (the right column in Table 5, labelled Model 3). It can be seen that, with regard to the coefficients for the attitude variables, similar results to those reported in Table 5, Model 2, were obtained but the regression coefficient for the dummy variable coding for SLC membership had lost its significance and the regression coefficient for experienced pressure to take part in SLC was significant. The odds coefficient for

the variable coding for SLC-sample membership then became 0.66, indicating that this variable had lost its explanatory power, but the odds coefficient for the dichotomous variable coding for survey pressure in the SLC was 0.22, indicating that, according to the regression model, the odds for the intentions to participate in a replication were strongly reduced if a person reported having experienced pressure to participate in the SLC. It appears consistent with the empirical results to draw the conclusion that the effects of survey experience on the future intentions to participate can partly be explained by the experience of pressure to participate.

## 5. Discussion

If we first look at the results when the LFS sample (i.e., those who had previously participated in a telephone panel survey) is compared to the GP sample (i.e., the comparison group), we find that the participation rate in ASSETS for the LFS sample is higher (83%, as compared to 70%), which could be explained by the fact that survey experiences relating to LFS had increased the inclination to take part in a new survey, but it could also partly be explained by the fact that, from the very beginning, the LFS sample was a slightly more positive selection with regard to the propensity to participate in surveys than the GP sample was (since the LFS sample consisted only of persons who had agreed to take part in the LFS). With regard to survey intentions, attitudes, and survey behaviour in ASSETS, the differences between these two samples are small. Broadly speaking, we could not demonstrate any clear positive or negative effect of participating in the LFS. The conclusion about the absence of a positive effect is strengthened by the fact that the LFS sample, as mentioned above, must be regarded as a slightly positive selection from the general population with regard to many survey-related factors.

When the SLC sample (i.e., those who had previously participated in an extensive personal interview survey) was compared with the GP sample, we found that the SLC sample had a somewhat lower participation rate in ASSETS than the GP sample, but this difference is not significant. Considering that the SLC sample can be regarded as a positive selection from the general population with regard to many factors related to survey participation (since its sample persons had chosen to take part in the SLC), the results tentatively suggest that the experience of taking part in the SLC might have lowered the inclination to take part in ASSETS.

We also found that the SLC sample was characterized by a less positive general survey attitude, by being less willing to take part in surveys, and by having less intention to take part in a new ASSETS study, as compared to the GP sample. This suggests that participation in the SLC had, on average, negatively affected some future survey attitudes and intentions. These results cannot be explained by the fact that the SLC sample is a positive selection from the general population, since this should operate in the opposite direction to the results we found. Interestingly, a negative effect of participating in the SLC was *not* found for the rated burden to participate in surveys, in spite of the fact that the SLC is a time-consuming personal interview.

What, then, is the mechanism through which the previous survey experiences of SLC might have worked on the intentions to take part in a new survey? The first possible explanation that comes to mind is that the “experience effect” was completely channelled

through changed survey attitudes, some of which were demonstrated to be related to the survey experiences and also to the intentions to participate. However, this explanation does not seem likely, since a logistic regression analysis showed that survey experiences retained a significant relationship to intentions even when key attitude variables were controlled for.

To probe further into the mechanism through which the SLC survey experience might have worked, we looked at qualitative information about the previous survey experience and compared it between the SLC sample and the LFS sample. We found that the percentage that reported they were pressed to participate in the survey was much higher in the SLC sample than in the LFS sample. We also found that those who had experienced survey pressure in the SLC sample had a dramatically more negative survey attitude, and much lower intentions to participate in a replication of ASSETS, than those who had not experienced this pressure. When pressure to participate was controlled for, the relationship vanished between survey experience and the intentions to participate in a replication, indicating that experienced pressure is a key variable in explaining how the SLC survey experience influenced the intentions. It should be pointed out that the effect of pressure is not likely to be confounded by the fact that those who experienced survey pressure were more negative than other people to survey participation in general *before* the SLC interview, since a sample of previous nonrespondents in the SLC and LFS – who presumably were even more negative before the SLC interview – exhibited only moderately more negative attitudes and intentions to participate than the GP sample (Brage and Bergman 2004).

Our findings suggest that in an extensive personal interview study – even in a well-managed study such as the SLC, carried out to the professional standards of Statistics Sweden – the legitimate striving to reduce the drop-out rate by persuading reluctant respondents to participate can be problematic, if experienced as coercive. It seems likely that, at least for the six-month period that we studied, experienced pressure to participate has a negative influence on the future intentions to participate in surveys, as well as on survey attitudes. It is possible that the effect we found is caused by one or both of the following two factors: (1) a perceived violation of the “social contract” of survey participation, which can remove the feeling of obligation to participate in a survey out of a sense of civic duty (Groves et al. 2000) and reciprocity (Perugini et al. 2003); and (2) a reduced dissonance in forming negative survey attitudes. Normally, taking part in something voluntarily and then afterwards admitting to a negative attitude to the activity – implying that one should not have participated – can create a cognitive dissonance that tends to be minimized by not changing the attitude (Festinger 1957). But if the participation was not voluntary but rather the result of coercion, there is no cognitive dissonance involved in forming a negative attitude.

The question of the extent to which the reported results generalize can only be answered after additional studies have been made. A new study could employ a “survey on surveys” design similar to the one we used but for a different extensive previous survey, and should include a sufficiently large sample of previous nonrespondents of that study, divided into “refusers” and “not contacted.” Of course, many interacting factors are involved in the mechanism we are interested in, and some key factors in this process were not measured in our study. Groves, Singer, and Corning’s (2000) conclusion appears to be sound – to

understand mechanisms that are decisive for participation, you should apply a complex, preferably experimental, design. It is also intriguing that the attitudes we measured only partly mediated the effect of the survey experience. Are there other attitudes that should have been included? Qualitative studies may help to answer this question.

The importance of studying the effect of survey exposure on future survey behaviour is underlined by the high exposure to surveys reported for samples from many countries. For instance, in a Canadian study 83% reported at least one research survey request during the last year (Canadian Survey Research Council 2001). In ASSETS, 32% of the GP sample said they had been asked to participate in a general survey during the last six months, and 31% said that they had been asked to participate in a market survey (Brage and Bergman 2004). These figures are surprisingly high and they may have been inflated by telescoping, nevertheless they suggest a high survey exposure. Considering the ease with which sample size can be inflated in the increasingly popular web surveys, this points to a possible problem with an increased survey fatigue, and to the importance of carefully investigating the amount and type of survey exposure and its effects on survey behaviour and attitudes. Unfortunately, the information collected in ASSETS is insufficient for this purpose and in a new study previous survey exposure and experiences would need to be covered in greater detail and for a larger sample.

For the purpose of monitoring the survey climate and obtaining information about aspects of survey practices that are likely to have good or harmful proactive effects, the “survey on surveys” approach is possible (Goyder 1986). Less costly approaches can also be useful, such as adding questions about previous and current survey experiences and survey attitudes to an ordinary survey. The questions and attitude dimensions suggested by, for instance, Brage and Bergman (2004), Rogelberg et al. (2001), and Stocké and Langfeldt (2004) might then be considered. This policy has been implemented in some surveys conducted by Statistics Sweden.

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