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Effects of different Incentives on Attrition and Fieldwork Effort in Telephone Household Panel Surveys

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Little is known about sample behavior and fieldwork effects of different incentives introduced in a household panel survey. This is especially true for telephone surveys. In a randomized experiment, the Swiss Household Panel implemented one prepaid and two promised non-monetary incentives in the range of 10 to 15 Swiss Francs (7-10 €), plus a no incentive control group. The aim of the paper is to compare effects of these incentives especially on cooperation, but also on sample selection and fieldwork effort, separated by the household and the subsequent individual level. We find small positive cooperation effects of the prepaid incentive on both the household and the individual level especially in larger households. Sample composition is affected to a very minor extent. Finally, incentives tend to save fieldwork time and partially the number of contacts needed on the individual level.
Keywords: attrition, bias, incentive effects, fieldwork effort, nonresponse

Introduction

In many household panel surveys, there is a two-stage sequential response procedure (e.g. Frick et al., 2007): First the household reference person is asked to provide information on the household in the household grid questionnaire. Only after all interview eligible individuals are known, they can be asked to complete the survey. In addition to the household grid (and consequently all individual questionnaires), individual questionnaires are at risk to be refused especially by individuals other than the household reference person. This holds especially true in telephone surveys (Lipps, 2009): unlike in face-to-face surveys, usually not all eligible household members can be interviewed at once. To reduce attrition, measures must be effective on all sample members. First, it is crucial to convince the household reference person, who can be considered as a gatekeeper, to cooperate. Next, all household members must be motivated to answer the survey. Using different incentives can possibly accommodate this sequential survey design. Up to now, often the same incentives are used for all sample members. An examination of different incentives that are designed to reduce attrition on the household and the individual level separately is however still lacking in the literature. This research tries to tackle this problem. In addition, we consider effects of different incentives on sample selection and fieldwork effort on both levels.

The article is organized as follows: first we review the literature on effects of incentives in both cross-sectional and longitudinal surveys. Next, we set up the hypotheses on the effects which we expect from an incentive experiment, which is described together with the data used. We analyze attrition and sample selection effects, and effects on fieldwork effort, distinguished by grid and individual level. We summarize and conclude in the last chapter.

Theoretic Considerations

Incentives are used to encourage and motivate survey sample members to see their participation as being valued and help the interviewer through the process of reciprocity and social interaction. Several theories have been proposed and tested to explain how incentives affect the respondent's decision to participate in surveys (see for an overview e.g. Ryu, Couper, and Marans, 2006). For example, the *economic* exchange theory considers incentives as a compensation for the respondent's time and efforts invested to complete the survey. The *social* exchange theory (Dillman, 2000) explains that small prepaid incentives work in many cases by demonstrating trust that the potential respondent will answer the survey. Closely related is the principle of *reciprocity*, i.e. the norm that people should help those who helped them. An explanation why different individuals react differently on incentives is provided by the *leverage-salience* theory (Groves, Singer, and Corning, 2000). Individuals perceive and value the same survey attribute (e.g. topic, sponsor, or incentive) in different ways. This thus has different effects on the decision to participate (Groves and Couper, 1998).

Evidence in Cross-sectional Surveys

Generally, monetary incentives are more effective than gifts, and prepaid incentives result in significantly higher response rates compared to incentives that are conditional on participation (Singer et al., 1999; Singer, 2002). In a series of experiments on the monthly conducted random digit dial (RDD) telephone U.S. Survey of Consumer Attitudes (SCA), Singer, van Hoewyk and Maher (2000) find that prepaid incentives enclosed with advance letters have positive effects

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on response in telephone surveys, especially among those who had initially refused to participate. Such positive effects need not be true with promised incentives, which Becker, Imhof and Mehlkop (2007) test in mail surveys. Also, prepaid incentives may be able to reduce the number of calls on sample members after having established contact. James (1997) and Curtin, Singer and Presser (2007) show that while incentives reduce the number of calls needed in face-to-face and RDD surveys, the amount paid may have different effects on response. Brick et al. (2006) also report positive response effects from prepaid cash incentives in an RDD survey, but also diminishing effects per amount of incentive. Finally, prepaid incentives do not seem to affect the sample composition.

Also forms the incentive takes, plays a role: For example, Lengacher et al. (1995) find in a face-to-face panel survey among older individuals that compared with a cash payment or a gift, charitable giving tends to increase subsequent wave response rates among those who were already cooperative respondents. The conclusion is that charitable giving can be viewed as a proxy for altruistic activities more generally, including seeing participating in social surveys as a civic duty (Laurie and Lynn, 2009). Lottery incentives are not uncommon in household surveys, probably because they allow for easy administration (e.g. Hansen, 2006). According to Singer (2002), "lotteries function as promised cash incentives" (p. 6) that can be "coded as a monetary incentive with a value equivalent to the prize divided by the number of subjects in that experimental condition" (Singer et al., 1999:221). Simmons and Wilmot (2004) and Hansen (2006) however, consider lotteries as a nonmonetary incentive. Research suggests that lotteries are less effective than prepaid incentives in stimulating survey response (Singer and Kulka, 2000) but might be more attractive to individuals who are less risk averse (Holt and Laury, 2002). Stamps sent with the advance letter have a monetary value and have properties similar to phone cards, which are often used as incentives (Teisl et al., 2006).

Evidence in Panel Surveys

While there are many studies on incentives effects in cross-sectional surveys, only few studies exist in longitudinal surveys. This is on one hand surprising because to keep respondents in the sample is essential for the survival of panel surveys. On the other, it may be dangerous to experiment with panel sample members, who have participated since many waves. It was only recently that Laurie and Lynn (2009) extensively reviewed the use of incentives in longitudinal surveys. They report that while attrition can be reduced, incentives do not affect sample composition. Jäckle and Lynn (2008) find similar results from an incentive experiment in a UK panel survey of young people. It is shown that positive effects on retention rates are larger for unconditional than conditional incentives.

Several sources suggest positive effects even when small incentives are given (e.g., Laurie and Lynn, 2009). Although attrition may already have left a sample which is essentially fairly cooperative, the British Household Panel Survey had good experiences with a small increase of a prepaid voucher from £7 to £10 per respondent, even after 14 waves of data collection. This was especially the case for those who did not respond in the wave before the incentive increase, being thus an effective strategy for reluctant respondents. Similarly, Martin, Abreu and Winters (2001), introducing incentives in waves 8 and 9 of the US Survey of Income and Program Participation (SIPP), show that these are able to improve refusal conversion rates.

Cost Issues

Incentives do not only incur costs, but might also reduce fieldwork efforts. For example, Singer, van Hoewyk and Maher (2000) find that a $ 5 incentive included with an advance letter significantly reduced both the number of calls in a telephone survey to work a case and the number of interim refusals. For the face-to-face SIPP and the US Health and Retirement Survey (HRS), incentives reduced the number of calls that interviewers needed to make at wave 1 (cited in Laurie and Lynn, 2009). While Brick et al. (2006) do not observe strong differences between the incentive experiment groups in the RDD administered US National Household Education Survey (NHES), Curtin, Singer and Presser (2007) find moderately negative incentive effects on the number of calls in the RDD SCA, and Rodgers (2002) considerable cost savings from the reduced number of calls in the face-to-face administered HRS. Haggerty et al. (2000) finds an even "dramatically reduced" (p. 1272) number of calls per completed case in small business surveys.

Hypotheses

We expect the following effects:

1. Providing an unconditional incentive to the household is effective as a "door-opener" also for the skeptical households. Compared to the situation without incentive, we expect:
   a.) higher household grid completion rates[1], especially in samples that are introduced later.
   b.) no difference with respect to the household sample composition.[2]

Because of the announcement in the advance letter, we expect smaller but also positive effects from incentives that are conditional on individual participation. This is because the

[1] Throughout this paper we use the AAPOR (2008) definitions COOP1 for the cooperation rate, REF1 for the refusal rate, and RR1 for the response rate.

[2] Although the longitudinal unit in household panel surveys is the single individual, in order to analyze household level attrition, it is necessary to follow the household. We let the household in which the last year's household reference person lives represent the household. In case a household splits, we follow the household where the reference person from the previous wave resides. Note that the in the SHP, the household reference person remains the same after a wave with a probability of almost 90%. In face-to-face household panel surveys a change of the household reference person is even less probable between waves (Lipps 2009).

reference person might not want to exclude other household members (and him/herself) from benefitting from the conditional incentive by not completing the household grid.

2. Once the household grid is completed, incentives conditional on individual participation are expected to motivate all eligible household members to answer the individual questionnaires. Relative to the situation without individual incentives, we expect
   a.) higher individual completion rates, especially in samples that are introduced later.
   b.) different individual sample composition effects depending on the conditional incentive used.

The unconditional incentive is expected to have a positive effect also on individual participation that might however be smaller than that from the conditional incentives.

3. Relative to the situation without incentives, we expect reduced fieldwork efforts from all incentives on both
   a.) the grid and
   b.) the individual level.

Incentive Experiment

In 2006, the Swiss Household Panel (SHP) implemented an experiment which used three incentive groups plus a no incentive group as a control. It was decided not to use cash, because the incentive should not be misunderstood as a monetary compensation for the time and efforts invested by the sample members, but rather as a token of appreciation. Due to the relatively small budget, the incentives were not to exceed a certain value. Furthermore a large experimental sample was planned to be able to analyze effects for subgroups, if necessary. Of course, decision in favor of a higher value of the incentives or a larger sample size was a trade-off. Easy administration was an additional condition. All other communications with panel households already conducted in former waves are maintained, for example a newsletter with survey results, and advance letters (now with different content, according to the incentive delivered) sent to each household. A random quarter of all households that answered in the previous wave were divided into one of the following groups:

- *No incentives* (control group). No incentives were mentioned in the advance letter. Here, the content of the letter was similar to that of the previous years.
- *Stamps*. These households were sent 12 stamps at 1 Swiss Francs (about 8.00 €) unconditionally with the advance letter. The stamps were printed with the SHP logo.
- *Lottery*. These households were told in the advance letter that each respondent to the individual questionnaire will participate in a lottery with three prizes: 1.) 5,000 Swiss Francs 2.) 3,000 Swiss Francs, and 3.) 2,000 Swiss Francs. The monetary value per respondent amounts to 5.55 €.[3]
- *Donation*. Households in this group are told in the advance letter that each respondent to complete the individual questionnaire may donate 10 Swiss Francs (about 6.67 €) to a charity, to be selected from a list at the end of the interview.

Data

The SHP is a centralized CATI panel survey aiming to observe social change, in particular the dynamics of changing living conditions in Switzerland. The SHP survey started in 1999 with slightly more than 5000 randomly selected households. Each year, the household reference person is asked to report the current household composition together with basic socio-demographic characteristics in the household grid. Completion of the grid questionnaire takes two to ten minutes, depending on household size and complexity of relationships. Then, the household questionnaire is to be completed (about 10 minutes), again by the reference person. Finally, each household member from the age of 14 on has to complete his/her own individual questionnaire (about 35 minutes), including the reference person.

To keep the sample size at a reasonable level, a refreshment sample has been added in 2004. Like the original sample from 1999, also the refreshment sample is representative of the Swiss residential population. The original and the refreshment sample each contain about 2,500 successfully interviewed households in 2005. There is no different treatment of the samples. In particular, neither the members of the original sample nor those of the refreshment sample obtained incentives before the experiment, other than the usual SHP newsletter.

Until wave seven (2005), the attrition rate on the grid level amounts to between 11% (in 2000, 2001), 13% (in 2003, 2005), and even slightly more than 15% (2002, 2004) (Lipps, 2009). As for individual attrition conditional on household grid completion, the rates amount to between 4% (2003), 5% (2005), 6% (2001, 2002), to 8% (2000, 2004). Concerning bias, the young[4] and the old, male headed, not working, and smaller households tend to attrite to a higher extent. Selection due to individual attrition is effective towards the middle-aged, thus aggravating bias already from household attrition, and those living with a partner. With respect to socio economic and attitudinal variables, foreigners, the socially and politically excluded, those who are mostly dissatisfied with various aspects in their life, and those who exhibit a worse reporting behaviour in previous waves show higher attrition (Lipps, 2007).

In addition to the nonrespondents from the 2005 wave, households whose address was not known or who sent back the newsletter between the 2005 and the 2006 wave are excluded from the experiment. This is predominantly because of the risk that in such households the advance letters notifying them of the incentive are not read. By using this procedure, there are only very few (2.2%) refusing individuals from the previous wave in the sample. We exclude previous refusers for the analyses. In addition, because the reasons driving noncontacts and refusals are different (Groves and

[3] Each group contains about 1,000 households with each around 1.5 eligible respondents. Assuming a response rate of 80% (1,200 respondents), the monetary value for each participant amounts to 8.3 Swiss Francs (5,55 €).

[4] Household socio-demographic characteristics are represented by the household reference person (Lipps, 2009).

Couper, 1998), and incentives are more effective to reduce refusals rather than not contacted sample members (Singer and Kulka, 2000), we do not take into account sample members that could not be contacted in 2006.

In Table 1, the sample randomization results, distinguished by original and refreshment sample, are depicted.

Results

Household Level

Table 2, Table 3, and Table 4 contain the 2006 grid response rates, separated by incentive group and household size, for the total, the original, and the refreshment sample, respectively.[5]

Using Fisher's exact test, we find that in both the total and the refreshment sample, the response rate of the stamps group in all and in 3+ person households is significantly higher than in the donation group. In addition the stamps group outperforms the control group in case of 2-person households in the original sample.[6]

Hypothesis 1a (higher grid response rates with conditional incentive) cannot be rejected. Higher cooperation does however not hold for the conditional incentives.

Next, we test for different sample composition effects, using the sample with a completed reference person individual questionnaire in 2005. The dependent variable equals 1 if the grid questionnaire in 2006 is completed, 0 else. We first include (the few) independent variables that were shown to be affected by incentives in the literature, like sample maturity, social inclusion (employment status, married, education, health, satisfaction with life, political interest, participation) and respondent behavior assessment during the interview by the interviewer. Age and sex are added because some selection effects have been shown in surveys that observe special age groups only. All independent variables included affect attrition in the SHP (Lipps, 2007; Voorpostel, 2010 or in other panel surveys (Laurie and Lynn, 2009; Ryu, Couper, and Marans, 2006; Voogt and Saris, 2003).

Individual level variables are taken from the 2005 reference person questionnaires:

- original sample (first asked in 1999) vs. refreshment sample (first asked in 2004)
- number of children under the age of 18 in the household
- full time employment of reference person (2005)
- reference person male (2005)
- reference person married
- reference person age
- reference person age squared
- education level of reference person (8 ordinal degrees in 2005)
- health status (1 (very bad) -5 (very good))
- satisfaction with life (0 (very bad) -10 (very good))
- political interest (0 (absolutely not) -10 (a great deal))
- participation in clubs or groups
- Interviewer assessment: respondent behaves friendly (1 (hostile) - 4 (friendly)
- Interviewer assessment: respondent understands questions (1 (poor) - 3 (good))
- Interviewer assessment: respondent difficult to get (1 (vey difficult) - 4 (easy))
- Interviewer assessment: respondent repeats in next wave (1 (no) - 4 (absolutely))

Using multinomial logit models with the incentive as dependent variable, the coefficients of each incentive group with the control group as base are listed in Table 5.

Two coefficients are significant in the donation-control comparison model: households from the original sample and those who are more difficult to be convinced to participate show a slightly (5% level) higher grid participation. The first group of households tend to attrite to a lesser, the latter to a higher extent in the SHP (Lipps, 2007). Based on the high number of variables (16) entered in the models, it could be expected that a small number of variables are significant. Therefore we do not consider the sample composition of the incentive and the control group to be different.

Hypothesis 1b (no different sample composition effects) cannot be rejected.

Finally, we check if the incentive has an influence on the effort necessary to work a case until the final response status is determined. We compare the number of calls that result in a noncontact, the number of actual contacts, and the total number of days it takes from the first until the last call. To control the effect from unobserved household effects, we calculate the difference between the 2006 (experiment) and the 2005 values (Δ) for each household. Similar to the analysis of selection effects, we use multinomial logit models with the incentive as dependent, and the 2006-2005 fieldwork effort differences as independent variable. For comparison reasons, we exclude households that do not cooperate in 2006.[7] For completeness, we depict the fieldwork effort measures from 2005 in Table 6 in addition. For example, it took on average 2.8 contacts to work a household grid in the control group.

None of the within household differences in any of the incentive groups turn out to be significant when compared with the control group.

Hypothesis 3a (reduced fieldwork efforts on the grid level) must be rejected.

Individual Level

Because grid questionnaire completion is necessary before individuals can be contacted, individual response behavior is analyzed conditional on grid completion. Tables 8 through

[5] Throughout the paper we will use the .05 (=5%) significance level.

[6] Note that there are also significant differences between cells from the original sample (table not shown). Due to a too small cell size, however, we do not comment on them here.

[7] Ultimately non-cooperating households need much more calls and fieldwork time. Because the sample is limited to the 2005 respondents, we must therefore drop the 2006 nonrespondents.

Table 1: Randomization of Sample for Incentive Experiment (Households with 2005 completed Grid).

	SHP original Sample (started 1999)		SHP Refreshment Sample (started 2004)	
	n	%	n	%
Control	622	25.2	468	25.2
Stamps	613	24.8	475	25.5
Lottery	597	24.2	475	25.5
Donations	637	25.8	442	23.8
All Households	2,469	100.0	1,860	100.0

Table 2: Response Rates Grid 2006 in all Incentive and Control Groups, all Households

	1 Pers.Household			2 Pers.Household			3+Pers.Household			All Households		
	%	SE	n	%	SE	n	%	SE	n	%	SE	n
Control	88.1	1.9	294	87.7	1.7	367	91.1	1.4	429	89.2	0.9	1090
Stamps	87.8	1.9	303	91.4	1.6	339	92.4	1.3	446	90.8	0.9	1088
Lottery	89.3	1.9	272	87.6	1.7	372	90.4	1.4	428	89.2	0.9	1072
Donations	84.7	2.2	281	87.1	1.8	363	88.0	1.6	435	86.8	1.0	1079

Note: Cooperation is higher (5%) in the stamps than in the donation group in all and in 3+ Person households.

10 show the individual response rates in 2006, distinguished by incentive group, as well as for the maturity of the sample:[8]

In the combined sample, the stamps group outperforms (5%) all other groups for the larger households and for all households. In the original sample, cooperation of the stamps group in all and in 3+ person households is significantly (5%) higher than that of the control group. In addition, the control group outperforms both conditional incentive groups if all households are combined. Finally, in the refreshment sample, cooperation of the stamps group in all and in 3+ person households is significantly higher than that of the lottery group only. Similar to the situation in the original sample, the control group outperforms the lottery group if all households are combined.

Hypothesis 2a (higher individual completion rates) again holds for the prepaid incentive only, and must be rejected for the individual conditional incentives.

Also for individuals, we analyze sample composition effects, using the same independent variables as in the case of households, plus the binary variable reference person status. Like in the analysis of household selection effects, we compare the coefficients of each incentive group with those of the control group, using multinomial logit models with the incentive as dependent variable (see Table 11).

In the stamps group, we find that the number of children in the household, dissatisfaction with life, and participation in clubs or groups is associate with a slightly (5%) higher attrition relative to the control group. In the lottery group, there are no selection effects compared to the control group. Members of the donations group exhibit smaller (1%) attrition among the original sample, and slightly higher among the middle aged.[9] The effects are not consistent, as for example in the stamps group, we expected a reduction of the attrition among those who usually tend to attrite to a higher extent, like the childless or those who do not participate in clubs. The same interpretation holds for the selection effects in the donations group. We therefore do not consider the (few and mostly on the 5% level only) significant selection effects as causal effects due to the incentives.

Hypothesis 2b (different composition effects) must be rejected.

Also on the individual level, we analyze fieldwork effort effects, using the same methods than for households (see Tables 12 and 13).

Compared to the control group, there is a significantly (1%) smaller number of fieldwork days necessary in all incentive groups to work an individual, compared with the control group. In the lottery group, the number of contacts is also significantly smaller.

Hypothesis 3b (reduced fieldwork efforts on the individual level) cannot be rejected.

Summary and Conclusion

The Experiment

Based on an incentive experiment, this study analyzes attrition in the CATI Swiss Household Panel (SHP) survey both on the household (1^{st} response stage) and the subsequent individual (2^{nd} response stage) level, using three incentive groups and one control group. The prepaid household incentives (stamps) amount to a monetary value of 12 Swiss Francs (about 8 €), the individual expected value of the conditional lottery incentive to 8.33 Swiss Francs, and the conditional charity donation incentive to 10 Swiss Francs, for

[8] The strong differences by household size are due to the fact that reference persons generally cooperate once they completed the grid and the likelihood to be reference person decreases with household size.

[9] Note from Table 11 that the age relation to higher completion is u-shaped.

Table 3: Response Rates Grid 2006 in all Incentive and Control Groups, Original Sample

	1 Pers.Household			2 Pers.Household			3+Pers.Household			All Households		
	%	SE	n	%	SE	n	%	SE	n	%	SE	n
Control	92.1	2.1	1646	90.6	2.0	203	94.9	1.4	255	92.8	1.0	622
Stamps	91.7	2.2	157	96.4	1.3	197	94.6	1.4	259	94.5	0.9	613
Lottery	89.8	2.5	147	94.1	1.6	205	94.3	1.5	245	93.1	1.0	597
Donations	87.3	2.7	157	93.4	1.7	212	93.7	1.5	268	92.0	1.1	637

Note: Cooperation is higher (5%) in the stamps than in the control group in 2 person households.

Table 4: Response Rates Grid 2006 in all Incentive and Control Groups, Refreshment Sample

	1 Pers.Household			2 Pers.Household			3+Pers.Household			All Households		
	%	SE	n	%	SE	n	%	SE	n	%	SE	n
Control	83.1	3.3	130	84.1	2.9	164	85.6	2.7	174	84.4	1.7	468
Stamps	83.6	3.1	146	84.5	3.0	142	89.3	2.3	187	86.1	1.6	475
Lottery	88.8	2.8	125	79.6	3.1	167	85.2	2.6	183	84.2	1.7	475
Donations	81.4	3.5	124	78.1	3.4	151	79.0	3.2	167	79.4	1.9	442

Note: Cooperation is higher (5%) in the stamps than in the donation group in all and in 3+ person households.

Table 5: Multinomial Logit Coefficients by Incentive (n=3,853)

Grid Completion in 2006, relative to Control Group			
	Stamps	Lottery	Donations
Original Sample	.04 (.10)	.04 (.10)	.22 (.10)*
Number of children	-.05 (.06)	.02 (.06)	-.01 (.06)
Full time employment	.15 (.13)	-.02 (.13)	.01 (.13)
Male	-.05 (.12)	.09 (.12)	.01 (.12)
Married	.04 (.11)	-.06 (.11)	.01 (.11)
Age	-.00 (.02)	-.02 (.02)	-.03 (.02)
Age squared	.00 (.00)	.00 (.00)	.00 (.00)
Education	.00 (.02)	-.01 (.01)	.01 (.02)
Health	.01 (.08)	.02 (.08)	.02 (.08)
Satisfaction life	.05 (.03)	.00 (.03)	.02 (.03)
Political interest	-.01 (.02)	-.02 (.02)	.00 (.02)
Participation	-.08 (.10)	-.03 (.10)	-04 (.10)
Is friendly	-.15 (.15)	.20 (.15)	-.18 (.15)
Understands questions	.18 (.14)	-.16 (.13)	.05 (.14)
Is difficult Case	.04 (.19)	.30 (.19)	.44 (.19)*
Will repeat wave	-.06 (.09)	-.02 (.10)	.08 (.10)

Base: Control Group. Data: Households with 2005 responding Reference Persons.
* significant on 5% Level.

Table 6: Fieldwork Effort: 2005, Multinomial Logit Coefficients by Incentive

	n	Mean Number Noncontacts	Mean Number Contacts	Mean Number Days
Control	972	6.2 (0.4)	2.8 (0.1)	18.9 (0.9)
Stamps	988	6.8 (0.5)	2.7 (0.1)	18.1 (0.8)
Lottery	956	6.8 (0.6)	2.7 (0.1)	19.7 (0.9)
Donations	937	7.0 (0.6)	2.9 (0.1)	20.3 (1.0)

Table 7: Δ Fieldwork Effort 2006-2005, relative to Control Group (n=3,853)

	Stamps		Lottery		Donations	
Nr. Noncontacts	-.000	(.002)	-.002	(.002)	-.003	(.002)
Nr. Contacts	.007	(.014)	.002	(.014)	.007	(.014)
Nr. Days	-.001	(.001)	-.001	(.001)	-.000	(.001)

Base: Control Group. Data: Households with 2006 completed Grid.

Table 8: Response Rates for Individuals in 2006 (all Incentive and Control Groups)

	1 Pers.Household			2 Pers.Household			3+Pers.Household			All Households		
	%	SE	n	%	SE	n	%	SE	n	%	SE	n
Control	96.9	1.1	258	83.2	1.6	554	78.1	1.3	991	82.4	0.9	1803
Stamps	97.0	1.1	264	85.3	1.5	538	81.9	1.2	996	85.2	0.8	1798
Lottery	97.1	1.1	242	82.2	1.6	557	77.1	1.4	945	81.5	0.9	1744
Donations	96.2	1.2	237	83.6	1.6	555	78.2	1.3	976	82.3	0.9	1768

Note: Cooperation is higher (5%) in the stamps than in all other incentive groups in all and in 3+ person households.

each participating individual. On both the household and the individual level, we expect motivation to participate to be higher if incentives are offered, with different composition effects due to incentives only on the individual level. Due to increased panel loyalty, we expect these effects to be higher in the sample that was introduced later, then in its 3^{rd} wave, compared to the original sample, then in its 8^{th} wave. Finally we hypothesize some cost saving effects until a final response status is obtained.

Findings and Limitations

With respect to completing the household grid, while the prepaid incentive outperforms the control in 2-person households in the original sample only, members of one of the conditional incentive groups (donations) cooperate worse than those of the prepaid group in all households and in 3+ person households in both the refreshment and the combined sample. Relative to the control group, there are no sample composition effects in any of the incentive groups. Finally, there is no reduction of fieldwork effort needed to work a case.

Given the household grid is filled, as for individual questionnaire completion, there is also a higher participation due to the unconditional incentive, and outperforms all other incentive groups. In the original sample, the unconditional incentive outperforms the control group only, in the refreshment sample, one conditional incentive group (lottery). Also interesting, the control group members show a higher participation than both conditional incentive groups in the case of the original sample, and one conditional incentive group (lottery) in the case of the refreshment sample. Also on the level of the individual, although there are some weak sample composition effects, they are not systematically related to what could be expected from the literature. Finally as for cost saving effects, relative to the control group, all incentive groups appear to significantly shorten the fieldwork duration.

A limitation is the slight difference in monetary equivalents of the incentives per respondent. We however believe that they are nonetheless comparable. Overall, it may be that the size of the incentives was too small to induce stronger and more systematic effects in a panel, where the newest sample is already in its third wave.

A Consequence for the SHP and general Suggestions

In the literature there is evidence that incentives may be effective to increase response especially among sample members with low response propensities, for example during refusal conversion (e.g. Singer, Groves, and Corning, 1999; Lengacher et al., 1995). Rodgers finds that "the greatest cost-benefit ratio would likely have been achieved by offering the higher incentive to households in which there was non-response at the previous wave" (2002, p. 2933). Acknowledging this, and given the results of the incentive experiment described in this paper, the SHP decided to send a 50 Swiss Francs voucher with the advance letter to the households, who refused in the previous wave, in the 2007 wave. A logit model of grid completion results in a significantly higher response, when compared with a roughly similar sample from the previous (2006) wave. Unfortunately, however, it is not possible to make these samples fully comparable in this nonexperimental setting.

To draw a conclusion, it is very likely that while effects from small or mid valued incentives are quickly decreasing with the maturity of the panel, more reluctant sample members probably remain sensitive to higher monetary incentives. Generally, we suggest considering the value and the form of incentives to be introduce in a mature panel very carefully. With respect to the latter, if incentives are conditional on participation, our findings show that they could backfire in reduced cooperation behaviors.

Table 9: Response Rates for Individuals in 2006 (all Incentive and Control Groups)

	1 Pers.Household			2 Pers.Household			3+Pers.Household			All Households		
	%	SE	n	%	SE	n	%	SE	n	%	SE	n
Control	96.7	1.5	150	87.1	1.9	302	81.1	1.6	576	85.1	1.1	1028
Stamps	99.3	0.7	142	90.1	1.7	312	86.6	1.4	566	89.4	1.0	1020
Lottery	99.2	0.8	131	88.2	1.8	314	83.5	1.6	546	87.1	1.1	991
Donations	97.1	1.5	136	87.8	1.8	337	82.4	1.5	631	85.9	1.0	1104

Note: Cooperation is higher (5%) in the stamps than in the control group in all and in 3+ person households. In addition, the control group outperforms (5%) the lottery and the donation groups if all households are combined.

Table 10: Response Rates for Individuals in 2006 (all Incentive and Control Groups)

	1 Pers.Household			2 Pers.Household			3+Pers.Household			All Households		
	%	SE	n	%	SE	n	%	SE	n	%	SE	n
Control	97.2	1.6	108	78.6	2.6	252	74.0	2.2	415	78.8	1.5	775
Stamps	94.2	2.1	122	78.8	2.7	226	75.8	2.1	430	79.6	1.4	778
Lottery	94.6	2.2	111	74.5	2.8	243	68.4	2.3	399	74.2	1.6	753
Donations	95.0	2.2	101	77.1	2.9	218	70.4	2.5	345	76.4	1.7	664

Note: Cooperation is higher (5%) in the stamps than in the lottery group in all and in 3+ person households. In addition, the control group outperforms (5%) the lottery group if all households are combined.

Table 11: Multinomial Logit Coefficients of Incentives

	Individual Completion in 2006 (n=5,130)		
	Stamps	Lottery	Donations
Reference Person 06	.01 (.09)	.11 (.09)	.13 (.09)
Original Sample	.02 (.08)	.07 (.08)	.28 (.08)**
Number of children	-.10 (.04)*	.05 (.04)	.00 (.04)
Full time employment	.19 (.10)	.06 (.11)	.08 (.11)
Male	-.13 (.09)	-.06 (.09)	-.14 (.09)
Married	-.01 (.10)	-.07 (.10)	.07 (.10)
Age	-.00 (.01)	.00 (.01)	-.03 (.01)*
Age squared	.00 (.00)	.00 (.00)	.00 (.00)*
Education	.00 (.01)	-.02 (.02)	.00 (.01)
Health	-.04 (.06)	.01 (.07)	.01 (.06)
Satisfaction life	.06 (.03)*	.03 (.03)	.01 (.03)
Political interest	-.01 (.02)	-.01 (.02)	.00 (.02)
Participation	-.19 (.08)*	-.04 (.08)	-.02 (.08)
Is friendly	-.08 (.12)	.00 (.12)	-.09 (.12)
Understands questions	.06 (.11)	-.09 (.11)	.12 (.12)
Is difficult Case	.13 (.16)	-.03 (.16)	.20 (.15)
Will repeat wave	.02 (.06)	-.04 (.08)	.01 (.08)

Base: Control Group. Data: 2005 Individual Completion.* significant on 5%, ** significant on 1% Level.

Table 12: Fieldwork Effort 2005, Multinomial Logit Coefficients by Incentive

	n	Mean Number Noncontacts	Mean Number Contacts	Mean Number Days
Control	1,326	5.2 (.4)	2.7 (.1)	13.8 (.6)
Stamps	1,402	5.4 (.4)	2.7 (.1)	14.6 (.6)
Lottery	1,269	5.4 (.4)	2.9 (.1)	15.0 (.6)
Donations	1,300	4.8 (.3)	2.7 (.1)	14.7 (.6)

Table 13: Δ Fieldwork Effort 2006-2005, relative to Control Group n=5,952

	Stamps		Lottery		Donations	
Nr. Noncontacts	-.002	(.002)	-.003	(.002)	-.002	(.002)
Nr. Contacts	-.015	(.010)	-.028	(.001)**	-.019	(.010)
Nr. Days	-.004	(.001)**	-.006	(.002)**	-.005	(.002)**

Base: Control Group. Data: Individuals with 2006 completed Questionnaire.
** significant on 1% Level (only differences).

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