LORE methodological note 2015:2

Are incentives more efficient when recruiting to a panel or when inviting to a survey

Johan Martinsson
Karolina Riedel

ABSTRACT

In this note the efficiency of a small lottery incentive is evaluated. Through a two by two experimental design we examine the effects of offering an incentive when they sign up to an online panel and/or when they answer the first panel wave. The results reveal that offering an incentive in the recruitment phase has a long term effect on survey participation and even reaches a significantly higher cumulative response rate than the other groups after two years and eight panel waves. Giving an incentive in the first panel wave increases the survey participation rate in that particular wave but has no significant effect over time. Incentives also seem to somewhat decrease the prevalence of item nonresponse but has no clear effect on the amount of time respondents use to complete surveys.

Background and data

The use of incentives in web panels has been found to increase recruitment and participation rates (e.g. Scherpenzeel & Toepoel 2012). But incentives are costly and these costs must be measured in relation to the benefits of using them.

In 2012 the Laboratory of Opinion Research (LORE) launched a recruitment effort to increase the probability based part of the panel. A large random sample from the Swedish population register received a post card inviting them to sign up to the Citizen Panel at the University of Gothenburg – a non-commercial online panel intended for research on social and political attitudes run by the Department of Political Science. The recruitment used an experimental set-up where some respondents received a small lottery incentive and some received a standard postcard without any incentive provided. To follow up on the results from this recruitment the first survey invitation after the recruitment also included an experiment with incentives. Thus, the set-up has a 2 by 2 factorial design with a total of four experimental groups; with some respondents receiving an incentive both in the recruitment and in the first panel wave, some respondents receiving no

Series editor: Johan Martinsson

incentive in the recruitment but an incentive in the first wave, some respondents receiving an incentive in the recruitment but none in their first survey, and some respondents not receiving any incentive at all. The lottery incentive is of small, symbolic, monetary value. The cost of each lottery ticket was in fact only worth approximately 0.33 euro. However the small cost of the lottery number was not explicitly revealed to respondents, and the lotto ticket number they were awarded if signing up to the panel and answering the recruitment survey prior to a specific date was printed on the postcard they received.

This methodological note aims to evaluate the efficiency of incentives through an experimental set-up. This report thus primarily analyzes whether the use of incentives is efficient at all, and if so how the effects differs when the incentive is introduced already in the recruitment phase or introduced in the first wave of a panel study. In addition, the long run effects after two years and eight panel waves are also investigated. For an overview of the complete experimental design and basic results, see previous reports from the Laboratory of Opinion Research such as LORE methodological note 2014:8.

Results

This note first examines treatment effects in terms of recruitment rates and participation rates in different panel waves, and then continues the analysis by studying survey behavior indicators such as item missing and survey duration. In this study we follow up the initial sample that was invited to sign up for the Citizen Panel during two years. During this period those signing up for the panel received eight survey invitations. We examine the effect of the lottery incentives in the beginning and in the end of this two year period.

The recruitment effort used in this study yielded on average a recruitment rate of 11 percent of the invited sample. For those who did not receive any incentive in their recruitment the average recruitment rate was 8.4 percent, while those who did receive a lottery incentive the recruitment rate was 12.2 percent. So in this basic sense the lottery incentive was successful. In the following we will examine the effects of using incentives in later panel waves.

Panel participation

We start out by examining the long run cumulative response rates (CRR) as outlined by Callegaro and Disogra (2015). In table 1 we evaluate the cumulative response rates by multiplying the participation rate for a specific survey wave with the recruitment rate for that group. By doing this we observe that having an initially higher recruitment rate seems to last over time. The cumulative response rates of the groups receiving incentives in their recruitment are significantly higher than the cumulative response rates for the groups not receiving incentives in their recruitment after eight panel waves. Although the difference in percentage points has decreased from four to one.

In table 1 we can also see that after two years and eight panel waves, the cumulative response rates have decreased to approximately half the initial recruitment rate, although somewhat more for those who initially received an incentive. We can also see that the CRR temporarily remains somewhat higher in wave 1 for those who receive an incentive in their first survey after recruitment compared to those who do not. However, this effect

disappears over time and by the end of the two year period the pattern is actually reversed. These differences are, however, not statistically significant.

Table 1: Cumulative response rates, percent

	N	Recruitment rate	CRR wave 1	CRR wave 2	CRR wave 8
No incentive in recruitment + No incentive in wave 1	6,500	8.4	6.5 (77.2)	5.5 (66.0)	4.1 (48.4)
No incentive in recruitment + Incentive in wave 1	6,500	8.4	6.7 (80.6)	5.6 (66.7)	3.9 (46.4)
Incentive in recruitment + No incentive in wave 1	8,000	12.2	8.4 (69.2)	6.7 (55.3)	5.0 (41.4)
Incentive in recruitment + Incentive in wave 1	8,000	12.2	9.0 (73.9)	6.9 (57.0)	4.7 (38.9)
Total	29,000	11.0	8.2 (74.7)	6.6 (60.5)	4.8 (43.3)

***Comment*: The survey participation rate for respondents included in the first panel wave are printed in parentheses, in percent.**

In table 2 below we present a simplified overview where the four experimental groups are not kept separate. Instead we examine each factor separately: whether they received an incentive in their recruitment or not and whether they received an incentive in their first survey from the panel or not. This analysis demonstrates that the respondents who receive a lottery incentive in the recruitment phase yield statistically significantly lower participation rates in all waves of the panel study (upper part of table 2). This difference seems to consistently be approximately ten percentage points in participation rates. The explanation for the CRR still being higher among those who were recruited with incentives is that more people still sign up for the panel, but tend to participate less further on.

Table 2: Survey participation rates, percent

	N	Wave 1	wave 2	wave 8
No incentive in recruitment	1,163	79.8[a]	67.1[b]	48.2[c]
Incentive in recruitment	1,530	70.9[a]	55.6[b]	39.4[c]
No incentive in wave 1	1,346	72.7[d]	60.0	44.4
Incentive in wave 1	1,347	76.8[d]	61.1	42.1
Total	2,693	74.7	60.5	43.3

***Comment:* Variables with the same letter are significantly different at 95%. N is number of respondents receiving an invitation to participate in wave 1. Participation rates include drop-outs and show the share of respondents answering the respective wave out of respondents invited to participate in wave 1.**

Using an incentive in the first wave of the panel study on the other hand seems only to impact participation in that particular survey significantly with an, on average, four percentage points higher participation rate in wave 1. Already by wave 2, though, this difference has disappeared (lower part of table 2).

Response quality

To evaluate whether incentives influence response behavior this note also studies item nonresponse and survey duration, the time respondents use to answer the survey, as indicators of data quality. For this purpose we use a simple regression model where two dichotomous variables are used: whether the respondent received incentives in the recruitment or not and whether the respondent received incentives in wave 1 or not. This model is estimates separately for the recruitment survey, their first survey after the recruitment and the last survey during the two year period we study. However, since logically speaking, an incentive provided in wave 1 (or not) cannot have a causal effect on respondent behavior in their recruitment survey this variable is excluded in the first model.

Table 3: Item nonresponse, in percent (OLS)

	Recruitment	p	Wave 1	p	Wave 8	p
Incentive in recruitment	-0.38*	(0.08)	-0.41*	(0.08)	-0.22	(0.54)
Incentive in wave 1	-	-	-0.35	(0.14)	-0.34	(0.34)
Constant	1.38***	(0.00)	2.09***	(0.00)	3.12***	(0.00)
N	2,591		2,012		1,196	
R2	0.0014		0.0026		0.001	
Mean % item missing	1.16		1.69		2.84	
Min	0		0		0	
Max	100		59.7		81.8	

Comment: *****, **, * variable significantly different at 99%, 95% and 90% respectively. The numbers are unstandardized OLS regression coefficients. The dependent variable is the percent of questions respondents did not answer.**

Both in the recruitment and in the first wave of the panel study respondents who received an incentive in the recruitment skip fewer questions than the others. This effect has however disappeared in wave 8 and is no longer significant. There is also a slightly lower prevalence of item missing in the group receiving the incentive in wave 1, but this difference is not statistically significant. The incentive thus seems to have a positive effect on response quality in terms of less item nonresponse in the short term.

When it comes to how much time respondents spend on the surveys there are no significant differences between those who have received incentives and those who have not. It is sometimes suspected that people who sign up to online panels because of the incentives are speeding to a larger extent and provide data of lower quality. On the other hand it is also sometimes believed that incentives help attract respondents with lower cognitive capacity and who thus take more time to fill out surveys. We found no evidence of either suggestion in this study.

Table 4: Survey duration, in minutes (OLS)

	Recruitment	p	Wave 1	p	Wave 6	p
Incentive in recruitment	0.00	(1.00)	-0.25	(0.24)	-0.36	(0.20)
Incentive in wave 1			0.10	(0.64)	-0.18	(0.52)
Constant	14.25***	(0.00)	10.10***	(0.00)	10.61***	(0.00)
N	2,536		1,957		1,117	
R2	0.0000		0.0008		0.0019	
Mean duration	14.32		10.02		10.34	

Comment: *****, **, * variable significantly different at 99%, 95% and 90% respectively. The numbers are unstandardized OLS regression coefficients. The dependent variable is the time in minutes respondents spent on answering the survey.**

Conclusion

Incentives in web panels seem to be most efficiently introduced already in the recruitment to the panel. Offering even a minor lottery incentive of small monetary value increases the recruitment rate and results in a significantly higher cumulative response rate even after eight panel waves two years later. Giving the incentive in the first wave of the panel study does on the other hand only influence survey participation in that particular wave, and not to a large extent.

However, despite the higher cumulative response rates for incentivized recruitments the participation rates to each specific survey are consistently lower for those recruited through the use of incentives. The analyses of potential effects on response quality of the lottery incentive yielded weaker results, though incentives seem to lower the prevalence of item missing in the short run. No clear effects are found when it comes to survey duration. At least, we see no evidence that those who sign up because of the incentives speed through the surveys and yield more missing data.

To sum up, incentives do yield higher cumulative response rates, even in the long run, but decreases participation rates to specific surveys, and they do not seem to influence data quality of survey behavior.

Whether high response rates in relation to the original population sample or high participation rates in relation to the sample invited to a specific survey is more important depends on which aspects you consider. From a panel management perspective high participation rates are likely more important, but from a response bias perspective high cumulative response rates are likely to be more important. However, given the low cumulative response rates prevalent in probability based online panels the theoretical basis for this advantage seems uncertain at present.

References

Callegaro, M. & Disogra, C. (2015) "Metrics and design tool for building and evaluating probability-based online panels" *Social Science Computer Review,* 0894439315573925, first published on March 5, 2015 doi:10.1177/0894439315573925.

Scherpenzeel, A. & Toepoel, V. (2012). Recruiting a probability sample for an online panel: Effects of contact mode, incentives and information. *Public Opinion Quarterly,* 76(3), 470-490.

The Laboratory of Opinion Research (LORE) is an academic web survey center located at the Department of Political Science at the University of Gothenburg. LORE was established in 2010 as part of an initiative to strengthen multidisciplinary research on opinion and democracy. The objective of the Laboratory of Opinion Research is to facilitate for social scientists to conduct web survey experiments, collect panel data, and to contribute to methodological development. For more information, please contact us at:

info@lore.gu.se