

Do monetary incentives affect response rates?

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Abstract

Why is it difficult to motivate people to answer a survey? Would they be more willing to do it if they were compensated monetarily for time and energy spent in the activity? In this paper, we assess the effects of monetary incentives on survey response rates, through the design and application of a field experiment in a sample of students in Tilburg University. While our results are explanatory, and as such they must be interpreted with caution, they suggest that there is little correlation between money and motivation.

1. Introduction

In a field such as Behavioral Economics, where classic models are put at stake in contrast to what the data reveals, it is crucial to have good and quality data. This is why researchers need to learn how to collect complete datasets that represent the situation of a group in a reliable way. One main concern with data collection and surveys in nowadays is how to convince people to participate in surveys.

This paper evaluates the effects of monetary incentives on survey response rates through the application of a randomized controlled trial, which invites students of a university dorm to complete a survey and assigns them to different compensation schemes.

While the literature suggests that it is important whether the incentive is conditional on response or unconditional, and that the amount of the prize is also important, our findings suggest that different monetary rewards have no effect on response rates.

The rest of the document is structured as follows. Section 2 presents the main findings in this field and the results from previous researchers. Section 3 gives a detailed description of the methodology of our experiment and the design of the survey and incentives. Section 4 illustrates the main findings, while section 5 discusses these results from a critique point of view and proposes a series of considerations for further research. Finally, section 5 states our main conclusions.

2. Literature Review

Effectiveness of incentives has become a relevant issue for several researchers. Yu and Cooper (1983) evaluate different techniques used to increase response rates, concluding that surveys' results are sometimes inaccurate due to low response rates. They prove that telephone and personal surveys generate more responses than mail surveys. Furthermore, monetary incentives increase the number of responses. In that sense, there is a linear relationship between the amount offered and the number of responses.

Simmons and Wilmot (2004) study the main findings of the literature, finding that unconditional pre-paid incentives increase the responses more than those promised as a compensation for participation. Furthermore, they prove that a higher monetary incentive does not mean necessarily a higher responses rate. Finally, they are concerned about people getting used to receiving monetary incentives when they fill in surveys, and how this may alter the surveys' outcomes.

Gneezy and Rey-Biel (2014) compare contingent and non-contingent incentives to find which type is more effective in eliciting costly effort. They find that lower payoffs increase the responses with non-contingent incentives, and higher payoffs increase the responses with contingent incentives. Finally, they prove that non-contingent incentives are a good way of eliciting costly effort for individuals. Furthermore, they argue that researchers have to be aware about the different types of people. In case that they do not take this into account, they may fail in selection problems affecting the representativeness of the sample.

Finally, Bowles and Polania-Reyes (2012) analyze how explicit economic incentives affect the contributions to public goods, and how the incentives promote pro-social behavior. After running fifty surveys, they find evidence supporting the theory that explicit economics incentives are sometimes counterproductive, because they have a negative effect on social preferences. They believe that incentives have a negative effect because they depend on the social relationships among people, the information the incentives provide, and the pre-existing frameworks of people.

3. Methodology

a. Approach

In this section, we will describe diligently the procedure and the methodology followed for the specific experiment.

Purpose of the survey

The major purpose of the survey is to examine how the participants will react to different monetary incentives. The general findings of the literature suggest that even small monetary incentives could be effective in increasing response rates, so we are willing to test these results in a field experiment.

Sample description

Our sample is a random one, consisting of residents of Talent Square dormitory in Tilburg (the Netherlands). Our participants are, on average, 21 years old, students of Tilburg University and from various countries (e.g. China, Indonesia, Uruguay, Italy, Nigeria, Poland, United Kingdom).

Place Selection

The specific place to conduct our survey was chosen because it was the only place where it was feasible to allocate the envelopes (by letter survey) and receive the responses back to our mailbox (Room 504, as the instructions in the envelopes suggested). In other words, it was the only place where we were able to monitor the procedure, and where the participants were at their natural environment (field experiment).

b. Experiment design

Method of contact

Letter (or surface mail) survey, conducted door-to-door. In each apartment where someone opened the door, we would give all the residents of that apartment a closed envelope with a monetary incentive (except for the control group). Randomization was at the level of apartments, in order to avoid members of an apartment comparing each other payments. We could not control for communication between members of different apartments, but given the duration of the experiment we expect this risk will not be high.

Monetary incentives

In our method we formulated one control group¹ and five different treatment groups. The first two treatment groups were offered conditionally and unconditionally €0.50². Similarly, two other groups received the amount of the €1.5 conditionally and unconditionally. The participants of the final treatment group were assigned to a lottery to win €20.

Assignment into different groups and randomization

Taking into consideration both our available budget and the goal to maintain a balanced and large enough sample (large enough to conduct non-parametric tests), we

¹ This group did not receive any money.

²Conditionally means that the participant had initially to take part in to receive their reward while the unconditional reward provided regardless of the participation.

decided to assign 14 residents to control group, 13 to each group of €0.50 offer and 10 to each group of €1.5 offer respectively. Finally, 10 residents were assigned for the lottery³. In addition, it has to be mentioned that the envelopes were assigned residents into groups randomly.

c. Conduction of the field experiment

The envelope handed to each respondent contained a letter inviting to answer the survey⁴, instructions, a questionnaire and a return envelope. The envelopes were handled in on November 14th, and the deadline for returning the answered survey was set on the November 17th. Given the length of the questionnaire, which was concise (eight questions), it can be presumed this deadline could not affect the decision of the residents whether to participate or not.

In total 70 envelopes were distributed to residents of Talent Square. Particularly, those participants who were included to the unconditional prizes' groups received envelopes with their reward inside.

Data Collection

On November 18th, all the available responses were collected from our mailbox and subsequently, all the answers were entered in a data base without any further difficulties (since there were no filling errors).

On the exact same day, the conditional (promised) rewards were paid to those who participated in the relevant treatment groups.

Calculation of response rates

Given the data collection methodology, the calculation of response rates was straightforward, and cross-comparisons can be made between the different groups. While the total response rate was 18.6%, the group with a highest response rate was the conditional €0.50, and the ones with lower response rates were the control, lottery and unconditional €1.50 groups (the relevant data are presented in Table 1 of the Appendix). These values show a low degree of participation, and will be analyzed in the following section. Unfortunately, no data could be gathered about non-respondents. Hence, those missing responses could possibly affect our conclusions about the effectiveness of the different incentives/ treatments (non-response bias).

Statistical tests

Statistical tests (Fisher's exact test) will be conducted, as they are useful to certify and interpret our findings with additional precision.

4. Main Results

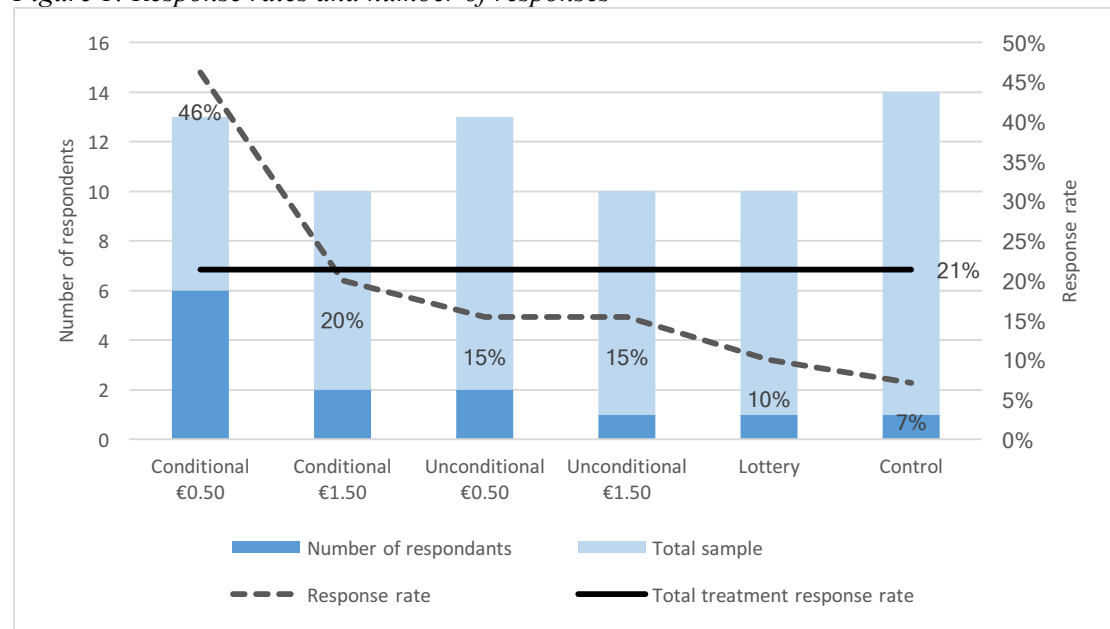
In this section we discuss our most important findings. Our results focus on response rates and how response rates vary in different treatments.

As shown in the table below, the groups that receive conditional prizes have the higher response rates, while the lower response rates are from the group that plays the lottery and from the control group, showing that in this case the offer of a lottery prize of €20 was not enough to motivate people to participate.

³ As it can be observed at Table 1: Response Rates, Appendix

⁴ Which included a reference about the assurance of confidentiality (for educational-research purpose).

Figure 1: Response rates and number of responses



Source: Elaborated with field data

According to our data, all types of incentives yield an increase in response rate compared to the control group. However, the difference in response rates is not statistically significant except for conditional treatment of €0.5 (Table 2 on Appendix for calculation of differences).

In addition, in our data we found that the conditional incentives yield higher response rates than unconditional incentives which is not what we expected for according to the literature (Gneezy & Rey-Biel, 2014). However, the differences in the response rates between prepaid and promised rewards are not statistically significant (Table 3 on Appendix for calculation of differences).

Interestingly, larger incentives do not lead to higher response rates. More specifically, for both conditional and unconditional treatments, the higher the amount of money the lower the response rate (although this difference is much higher in the unconditional case). Our results are in contrast to Gneezy and Rey-Biel's (2014), which supports that the larger the conditional reward, the larger the percentage of the population who reciprocate to the incentive. Again, the differences in response rates in the above examined cases are not statistically significant (Table 4 on Appendix for calculation of differences).

5. Recommendations

In general, our results suggest that the amount or the characteristics of the prizes have little or no significant effects on the response rates of individuals. Being contrary to most of the literature in this field, these findings yield some relevant questions and possible explanations:

- Was the sample adequate to answer our policy question? In this case, the small number of respondents affects our results, making them more volatile and less powerful. As we had to stick to a specific budget, we believe this aspect of the experiment could be improved in future executions.
- Were the prizes too similar among themselves? What if the difference between €0.50 and €1.50 is not high enough to motivate participation? Again, our budget constraints along with our need to avoid small samples were an obstacle to set a higher difference.

- Could these results be reflecting a very low intrinsic motivation of the sample, decreased even more by the imposed economic incentives presented in this experiment, as proposed by the Self-Determination Theory? A loss in intrinsic motivation means a less motivated individual and a potential decrease in performance in achieving a task, aggravated once the external incentive disappears⁵.

Certainly, the original design of the experiment leaves a couple of lessons that should be taken into account when deriving conclusions and in the application of future field experiments:

- The different prizes could be more separated from each other, as a prize of €0.50 is not very different from a prize of €1.50 (they are both relatively low prizes). Moreover, the experiment could yield more interesting results if a broader and higher offer of prizes was considered, for example, prizes of €0.50, €3, €5, €7, and €10.
- The number of cases in each group should be increased, in order to have a more powerful comparison and to conduct better statistical tests. Furthermore, the sample should be representative of a larger universe, so that the conductors of the experiment can later on draw conclusions that are linked to a specific population.
- Nevertheless, this experiment could be replicated with the same prize characteristics (€0.50 and €1) but to a larger sample, to test the findings of this experiment.

6. Conclusions

In this field experiment, we found no evidence that monetary incentives affect the response rate in surveys. Moreover, considering the monetary incentive given to the sample, we can conclude this experiment was not cost effective, as the money spent did not provided additional data as expected.

Even though this can be considered as an exploratory analysis, these rather contra intuitive results cast a series of concerns about motivation and incentives. More research and empirical work needs to be done, in order to validate and shape a general motivation theory in survey participation.

7. References

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⁵ Ezzine-de-Blas et. Al. (2015)

8. Appendix

a. Response rates

Table 1: Response Rates

	Initial treatment*		Response		Non-response	
	number	%	number	%	number	%
Control	14	100%	1	7.1%	13	92.9%
Unconditional €0.5	13	100%	2	15.4%	11	84.6%
Unconditional €1.5	10	100%	1	10.0%	9	90.0%
Conditional €0.5	13	100%	6	46.2%	7	53.8%
Conditional €1.5	10	100%	2	20.0%	8	80.0%
Lottery	10	100%	1	10.0%	9	90.0%
Total	70	100%	13	18.6%	57	81.4%

Note (*): all participants

Source: Elaborated with field data

b. Statistical tests

Table 2: Response rates among treatment and control groups

	Responders	Non-responders	Total	Two tailed p-value*	One tailed p-value**
Control group	1	13	14	-	-
Unconditional €0,5	2	11	13	0.59	0.47
Unconditional €1,5	1	9	10	1.00	0.63
Conditional €0,5	6	7	13	0.03	0.03
conditional €1,5	2	8	10	0.55	0.37
Lottery	1	9	10	1.00	0.67
All monetary incentives	12	44	56	0.44	0.20

Note: H_0 : Offering monetary incentives does not affect response rate; H_1 : Offering monetary incentives affect response rate.

Note (*): Two tailed p-value comparing to control group.

Note (**): One tailed p-value comparing to control group.

Source: Elaborated with field data

Table 3: Response rates among conditional and unconditional treatments

	Unconditional €0.5	Conditional €0.5	Total
Responders	2	6	8
Non-responders	11	7	18
Total	13	13	26
Two-tailed p-value: 0.2016			
	Unconditional €1.5	Conditional €1.5	Total
Responders	1	2	3
Non-responders	9	8	17
Total	10	10	20
Two-tailed p-value: 1.000			

Note: H_0 : Response rates of unconditional and conditional incentives are equal, H_1 : Response rates of unconditional and conditional incentives are different

Source: Elaborated with field data

Table 4: Response rates among different amount of money groups

I. Conditional incentives			
	Responders	Non-responders	
conditional €0,5	6	7	13
conditional €1,5	2	8	10
Two-tailed p-value: 0.378			
II. Unconditional incentives			
	Responders	Non-responders	
conditional €0,5	2	11	13
conditional €1,5	1	9	10
Two-tailed p-value: 1.00			

Note: H_0 : Larger incentives do not affect response rates.; H_1 : Larger incentives do affect response rates.

Source: Elaborated with field data

c. Questionnaires



Dear Sir/Madam,

We are students of the Tilburg University and we are conducting this survey for educational purpose.

By completing this questionnaire, we give you the amount of 50 cents which you can find in the envelope. Please fill the survey and hand it back **until Thursday, 17 November, 2016** in the mailbox of the **APARTMENT 504**.

Thank you for your cooperation!



Dear Sir/Madam,

We are students of the Tilburg University and we are conducting this survey for educational purpose.

By completing this questionnaire, we give you the amount of 1.5 euros which you can find in the envelope. Please fill the survey and hand it back **until Thursday, 17 November, 2016** in the mailbox of the **APARTMENT 504**.

Thank you for your cooperation!



Dear Sir/Madam,

We are students of the Tilburg University and we are conducting this survey for educational purpose.

By completing this questionnaire, we give you the amount of 1.5 euros which can be delivered to you in the following three days to your room. For this purpose please fill your apartment and room number correctly.

Please fill the survey and hand it back **until Thursday, 17 November, 2016** in the mailbox of the **APARTMENT 504**.

Thank you for your cooperation!



Dear Sir/Madam,

We are students of the Tilburg University and we are conducting this survey for educational purpose.

By completing this questionnaire, you will automatically take part in a lottery which gives you the chance to win 20 euros. For this case, fill your apartment and room number correctly in order to transfer you the money during the following three days.

Please fill the survey and hand it back **until Thursday, 17 November, 2016** in the mailbox of the **APARTMENT 504**.

Thank you for your cooperation!



Dear Sir/Madam,

We are students of the Tilburg University and we are conducting this survey for educational purpose.

Please fill the survey and hand it back **until Thursday, 17 November, 2016** in the mailbox of the **APARTMENT 504**.

Thank you for your cooperation!

Please answer the following questions. Responses will only be used for education research purposes. Clearly write your answers below.

1. Apartment number:
2. Room number:.....
3. What is your gender?
 - A. Male
 - B. Female
4. What is your age?
5. What is your nationality?
6. How more motivated would you feel to answer a ten-minutes-survey if there was a prize of €5 for filling the survey?
 - A. Much less motivated
 - B. Less motivated
 - C. I wouldn't mind
 - D. More motivated
 - E. Much more motivated
7. What is the minimum amount of money you would request for filling a ten-minutes-survey?
.....
8. What would you prefer? A small secure prize (say, 1 euro to everyone who fills the survey) or a big uncertain prize (100 euro to one person, chosen by lottery)
.....