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Revisiting the Effect of Conditional and Unconditional Incentives on Mail Survey Response Rates
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Revisiting the Effect of Conditional and Unconditional Incentives on Mail Survey Response
Rates

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Abstract

A randomized experiment ($N = 3{,}037$) examines the impact of conditional and unconditional
monetary incentives on response rates to a mail survey in a contemporary context. This is the
first large sample study in 10 years to examine the effect of monetary incentives on survey
response. Providing monetary incentives of any kind significantly increases response rates by
5pp to 18pp compared to a no-incentive control group. Unlike in past research, when payment
amounts are equivalent, unconditional and conditional incentives yield similar response rates,
suggesting that conditional incentives may be substantially more cost effective than
unconditional incentives. We also find that greater payment amounts may elicit higher response
rates, even when the incentive is conditional upon survey response.

Introduction

Response rates to surveys have been declining in recent years, both because contacting potential respondents has become more difficult and because of high refusal rates (Porter, 2004). Monetary incentives are a commonly used tool for increasing response rates, especially to mail-based surveys, and a large literature suggests that both unconditional (prepaid) and conditional (promised) incentives can be effective. However, with dramatic changes in modes and patterns of communication there is reason to believe that the efficacy of previously tested methods has changed.

This paper presents results from a randomized experiment ($N = 3,037$) in which we replicate previously tested methods of using monetary incentives to increase survey response rates in a contemporary context. We find that monetary incentives of any form and amount increase response rates compared to a no-incentive control group. Yet, in contrast to previous experimental findings, we find that unconditional monetary incentives do not yield higher response rates than conditional incentives of the same amount. We also show a marginal increase in response rates with higher conditional compensation amounts. These results demonstrate that, at least in some contexts, it may be substantially more cost-effective to offer conditional incentives than unconditional incentives to increase mail survey response rates.

Theoretical Background

A wide body of research, nearly all of which was conducted more than 15 years ago, has shown that providing monetary incentives consistently increases response rates to mail surveys and, in particular, unconditional incentives are more effective than conditional incentives, gifts, and lotteries (Singer and Ye, 2013; James & Bolstein, 1992; Yammarino et al., 1991; Yu & Cooper, 1983; Edwards et al., 2002). Meta-analyses suggest that unconditional incentives as small as $0.25 effectively increase response rates over a control group that receives no incentive (Fox, Crask, & Kim, 1988; Hopkins & Gullickson, 1992). More recent studies have found that providing unconditional incentives is still an effective method of increasing response rates (Petrolia & Bhattacharjee, 2009).

At the same time, conditional incentives have previously been found to be far less effective than unconditional incentives at increasing response rates (Armstrong, 1975; Petrolia & Bhattacharjee, 2009; Becker & Mehlkop, 2011). In fact, some studies found lower response rates with conditional incentives than in a no-incentive control group (Church, 1993; Gneezy & Rey-Biel, 2014).

Traditional explanations for survey response center on the way in which conditional and unconditional incentives are viewed. Unconditional incentives initiate a social exchange between the researcher and respondent, invoking norms of reciprocity and feelings of social commitment (Porter, 2004; James & Bolstein, 1992). Because respondents view the unconditional payment as a gift, they in turn feel more obligated to "return the favor" by completing the survey (Groves, Cialdini & Couper, 1992). Leveraging reciprocity norms has been shown to similarly increase

charitable donations (Falk, 2007) and promote cooperation (Rabin, 1993). Meanwhile, conditional incentives are viewed as compensation for the respondent's time and effort. This transactional exchange does not invoke reciprocity norms. Not only do respondents have no perceived duty to respond to the survey, but they also cannot ensure that researchers follow through on the promised payment (James & Bolstein, 1992). Thus, the success of conditional incentives requires that respondents both perceive the promised payment to be sufficient compensation for time spent completing the survey, and trust that the survey sponsor will issue the payment as promised.

Within this theoretical framework, greater conditional incentives should elicit higher response rates as prospective participants weigh the costs and benefits of responding. Yet, research on the relationship between payment amount and response rates has yielded mixed results (Gneezy & Rey-Biel, 2014, Godwin, 1979, James & Bolstein, 1992; Kanuk & Berenson, 1975). While meta-analyses find that response rates are generally higher with larger incentives, the marginal increase in response rate to greater incentive amounts suggests that diminishing returns exist (Singer, 2013; Fox, Crask & Kim, 1988; Armstrong, 1975). It seems likely that the optimal incentive amount is a function of survey factors, such as length, difficulty, and salience, as well as participant characteristics and motivations.

This study builds on prior research by examining the effect of unconditional and conditional monetary incentives on response rates to a present-day mail survey. The majority of experimental evidence on the effect of monetary incentives on mail survey response rates is from over 15 years ago; fewer than 10 new studies have been published since 2005. However, driven by extraordinary growth in cell phone use and internet access, the last 15 years have seen dramatic changes in the frequency, channels, and norms of communication. In turn, these changes in communication patterns have likely affected people's willingness to partake in survey research, as well as their response to incentives for doing so. Against this backdrop, it is unclear how prior evidence on the effectiveness of monetary incentives translates to a contemporary context. This paper aims to fill that gap. In a large field experiment, we first test whether monetary incentives of any kind increase response rates in a 2018 mail survey. We then examine whether unconditional monetary incentives increase response rates compared to conditional incentives of the same amount, and whether larger conditional incentives increase response rates relative to smaller conditional payments.

Methods

1. Setting

This survey response rate experiment was embedded as one element within a year-long randomized field experiment that ran from November 2017 to June 2018 and examined the effect of engaging social support networks on student achievement.[1] The social support experiment

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[1] For more detail on the social support field experiment, see "My Student's Team, 2016-2018" pre-registered analysis plan at https://osf.io/62cyb/.

was implemented in three public school districts in two states. Parents were asked to nominate one or two "supporters" who would be permitted to receive information about their child's education. Supporters could be grandparents, mentors, coaches, or any caring adult in the child's life. In total, 2,964 students and 2,195 supporters enrolled in the social support experiment. Of these, 50% of participants were assigned to a treatment group in which each supporter received weekly communications about the student's education via mail and text message. In June and July 2018, a post-implementation survey was conducted of all enrolled parents and supporters, which provides the sample frame for the present study.

2. Experimental Design and Sample Frame

The experimental universe was drawn from 5,665 parents and supporters who were enrolled in the social support experiment at the end of the school year (June 2018).[2] Students in the same household and students who shared a supporter were clustered ($N = 2,033$). Of the initial 5,665 parents and supporters, we excluded: four participants (<1%) associated with students whose consenting guardians no longer had custody; 1,517 participants (26%) in clusters where neither the parent nor the supporter had any contact information; and 344 (6%) participants who did not have a mailing address (Table 1). Parent address data was provided by each partner district at the end of the year. Supporter address data came from consent forms that parents completed between August and November 2017 in order to enroll in the primary study. Due to the nature of the intervention, throughout the year we made an effort to acquire, validate, and update addresses for supporters in the social support experiment treatment group. Thus, in order to prevent differential contact rates for the end-of-year survey, we only used supporter addresses that were provided on original consent forms—prior to any validation attempts. However, for privacy and liability reasons, we excluded supporters in the primary treatment group whose addresses we knew had changed since the beginning of the year.

After initial exclusions, our randomized universe included 1,896 parents and 1,904 supporters for a total of 3,800 participants. As in the social support experiment, students in the same household and students who shared a supporter were clustered ($N = 2,022$), and one focal student was chosen per cluster. In a stratified randomization, each cluster was randomly assigned to one of five conditions, each corresponding to a different incentive structure. Seven-hundred sixty participants were randomly assigned to a condition that is discussed in a related paper but excluded from the results presented here (Zlatev & Rogers, in progress). As such, the final experimental universe was comprised of 3,040 participants, including 1,510 parents and 1,530 supporters in 1,615 clusters centered around a single student, each cluster randomized to one of the following conditions: (1) control; (2) unconditional incentive; (3) conditional low salience incentive; or (4) conditional high salience incentive. All clusters assigned to the *conditional high salience* condition were subsequently randomized into one of three sub-conditions corresponding with the conditional compensation amount: $5, $10, or $20. See Table 2 for a full description of each condition.

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[2] This excludes parents and supporters from the social support experiment who opted-out, transferred out of the district, or transferred to a non-participating school before the end of the school year.

Table 1. Sample frame

	Social support experiment N*	No custody	No survey contact info	No address/ address change	Final randomized N
Parents	2,798	2	748	152	1,896
Supporters	2,867	2	769	192	1,904
Total	5,665	4	1,517	344	3,800**

*Total universe for the social support experiment, excluding students whose parents or supporters opted out during the course of the experiment, as well as students who left the district or transferred to a non-participating school during the experiment.

**Total randomized sample (N = 3,800) includes 760 participants who were randomly assigned to a condition that is discussed in a related paper (see Rogers & Zlatev, forthcoming), but is excluded from the analyses presented in this manuscript. The final experimental universe for this paper is 3,040 participants.

Table 2. Treatment conditions

Condition	Incentive amount	Description	N	Response rate
(1) Control		Participants receive a survey, a prepaid return envelope, and a cover letter thanking them for their time and effort.	760	19.1%
(2) Unconditional	$5	Participants receive a survey, a prepaid return envelope, a $5 bill, and a cover letter stating, in part: "To thank you for your time and effort, please find $5 enclosed from the Spencer Foundation, one of the funders supporting this project."	767	26.0%
(3) Conditional low salience*	$5	Participants receive a survey, a prepaid return envelope, and a cover letter stating, in part: "To encourage your response, the researchers will send you $5 for completing this survey."	748	27.2%
(4) Conditional high salience	(a) $5	Participants receive a survey, a prepaid return envelope, and a cover letter stating, in part: "To encourage your response, the researchers will send you [$5/$10/$20] for completing this survey." In addition, we enclosed a small fake bill with a bright yellow post-it note attached explaining the compensation and restating the deadline.	247	30.3%
	(b) $10		257	31.7%
	(c) $20		258	36.5%

Notes: Response rates are marginal effects from logistic regression of response on treatment assignment. Controls include social support experiment treatment cluster, school district, respondent type (parent or supporter), a binary indicator for non-English speaking respondent, and student grade level. Robust standard errors clustered by student-supporter clusters (*N* = 1,615).

*Condition 3 was included to test whether the salience of the incentive affects response rates when payment amounts are equivalent. We found no significant difference in response rates between Condition 3 and Condition 4a (27.4% vs. 30.3%, $\chi^2(1) = 0.71, p = .40$). We include Condition 3 in the analysis corresponding with RQ #2 below, but otherwise do not discuss this condition again.

Parent surveys were mailed on June 22, 2018 and supporter surveys were mailed July 2, 2018. The respective deadlines for response were July 3, 2018 and July 12, 2018—approximately one week after the anticipated date on which surveys would arrive in homes. All respondents, regardless of treatment assignment, were given the same deadlines in bold font (Appendix A).

All surveys were printed on district letterheads, and were accompanied by the corresponding treatment condition cover letter, an IRB-approved consent form, and a prepaid return envelope. Parent surveys were 26 questions (4 pages). Supporters who were assigned to the social support experiment treatment group received a 32-question survey (6 pages), while supporters who were part of the social support experiment control group received a 25-question survey (5 pages). An anonymous unique identifier was assigned to each participant and printed on each survey to track responses.

3. Analysis

Our primary outcome of interest is survey response. Any response postmarked by the stated deadline is counted as a positive response, regardless of whether all questions were answered. Surveys were still collected after the deadlines, but are not counted as responses for the purposes of the present experiment, nor were participants in the conditional incentive conditions compensated for returned surveys that were postmarked after the stated deadline.

We answer three primary research questions:

RQ 1: Do monetary incentives increase response rates relative to a no-incentive control? (Conditions 2 + 3 + 4 vs. Condition 1, Table 2)

RQ 2: Does an unconditional monetary incentive of $5 increase response rates compared to a conditional incentive of $5? (Condition 2 vs. Conditions 3 + 4a, Table 2)

RQ 3: Do larger conditional incentives increase response rates relative to smaller conditional payments? (Condition 4a vs. 4b vs. 4c, Table 2)

We use a logistic model to analyze the effect of treatment assignment on response rate by regressing a binary indicator for survey response (where 1 indicates a positive response) on treatment assignment and a vector of student- and respondent-level covariates including school district, whether the respondent is a parent or supporter, social support experiment treatment assignment, whether the respondent's reported language (from consent form or district roster) is not English, and student grade level. Robust standard errors are clustered by student-supporter clusters.

4. Results

Of the 3,040 participants in the experimental universe, three supporters were excluded post-hoc because their surveys were never mailed, yielding a final analytic sample of 3,037 participants. Treatment assignment in the analytic sample is balanced evenly across student demographic characteristics, social support experiment treatment assignment, and respondent language (Table 3). About 92% of our sample comes from our largest district partner, 10% are non-English speakers, and 55% are parents or supporters of a student in elementary school (grades K-6).

Table 3. Balance of final analytic sample

	(1) Control	(2) Unconditional	(3) Conditional low salience	(4a) Conditional high salience $5	(4b) Conditional high salience $10	(4c) Conditional high salience $20	p-value
N	760	767	748	247	257	258	
Parent	380 (50.0%)	380 (49.5%)	375 (50.1%)	126 (51.0%)	123 (47.9%)	126 (48.8%)	0.98
Non-English respondent	85 (11.2%)	64 (8.3%)	61 (8.2%)	27 (10.9%)	30 (11.7%)	26 (10.1%)	0.21
Social support experiment treatment group	367 (48.3%)	377 (49.2%)	363 (48.5%)	113 (45.7%)	128 (49.8%)	126 (48.8%)	0.96
District							
1	23 (3.0%)	20 (2.6%)	23 (3.1%)	8 (3.2%)	10 (3.9%)	8 (3.1%)	0.99
2	36 (4.7%)	38 (5.0%)	31 (4.1%)	13 (5.3%)	10 (3.9%)	13 (5.0%)	
3	701 (92.2%)	709 (92.4%)	694 (92.8%)	226 (91.5%)	237 (92.2%)	237 (91.9%)	
Female student	361 (47.5%)	366 (47.7%)	373 (49.9%)	131 (53.0%)	139 (54.1%)	129 (50.0%)	0.34
Student race							
Asian	63 (8.3%)	58 (7.6%)	48 (6.4%)	15 (6.1%)	22 (8.6%)	11 (4.3%)	0.31
Black	236 (31.1%)	201 (26.2%)	195 (26.1%)	69 (27.9%)	67 (26.1%)	73 (28.3%)	
Hispanic	87 (11.4%)	96 (12.5%)	97 (13.0%)	32 (13.0%)	36 (14.0%)	37 (14.3%)	
Other	41 (5.4%)	33 (4.3%)	32 (4.3%)	18 (7.3%)	15 (5.8%)	16 (6.2%)	
White	333 (43.8%)	379 (49.4%)	376 (50.3%)	113 (45.7%)	117 (45.5%)	121 (46.9%)	
Elementary student	416 (54.7%)	418 (54.5%)	401 (53.6%)	135 (54.7%)	153 (59.5%)	139 (53.9%)	0.72

Notes: Excludes 760 participants assigned to a fifth condition, which is discussed in a separate paper (Zlatev & Rogers, in progress). All *p*-values calculated using Pearson's chi-squared tests.

Overall, 26% of participants returned the survey by the deadline. Response rates were similar across the three districts and across student grade level (Table 4). Parents were significantly less likely to respond than supporters (21.7% vs. 30.9%; $\chi^2(1) = 37.9, p < .001$). Supporters who were assigned to the social support experiment treatment group were less likely to respond than those who were assigned to the social support experiment control group (23.5% vs. 37.7%; $\chi^2(1) = 34.9, p < .001$). The differential response rates for parents and for supporters who were assigned to the social support experiment treatment group were expected given that supporters in the primary treatment group had been receiving communications from the study team for seven months prior to the survey, and parents receive relatively regular communications from the district. Prior research has shown that regular and prolonged education communication can reduce post-communication survey response rates via the same modality (Bergman, Lasky-Fink, & Rogers, 2019).

The main analyses presented here pools all respondents (parents and supporters) from both social support experimental conditions. To account for the differential response rates, we control for social support experiment treatment assignment and respondent type (parent or supporter) in all models. We also evaluate the effect of treatment separately for parents and supporters, and by social support experiment treatment assignment (Appendix B). Patterns are similar across both sub-groups.

Table 4. Response by respondent and student characteristics

Variable	Response rate	p-value
Social support experiment control group	30.1%	<.001
Social support experiment treatment group	22.3%	
District		
1	21.7%	
2	22.0%	.34
3	26.7%	
Respondent language		
English	27.3%	<.001
Non-English	17.4%	
Respondent type		
Supporter	30.9%	<.001
Parent	21.7%	
Student grade level		
Elementary (grades K-5)	27.3%	
Middle (grades 6-8)	24.1%	0.32
High (grades 9-12)	26.2%	

Notes: All p-values from Wald chi-squared tests.

As shown in Table 5, all incentive conditions significantly increased response rates compared to the control condition for both supporters and parents. Nineteen percent of all participants assigned to the *control* condition (Condition 1) returned the survey by the deadline compared to 29% of participants who received any incentive (Conditions 2, 3, 4; $\chi^2(1) = 24.3$, $p < .001$). The *unconditional* incentive (Condition 2) increased the response rate by 7 percentage points (pp) to 26% ($p < .001$). The greatest increase in response rate came from the *conditional high salience $20* incentive (Condition 4c), which nearly doubled the response rate from 19% to 37% ($p < .001$).

Table 5. Logistic estimates of response by condition

VARIABLES	Response
(2) Unconditional	0.409***
	(0.134)
(3) Conditional low salience	0.470***
	(0.134)
(4a) Conditional high salience $5	0.624***
	(0.178)
(4b) Conditional high salience $10	0.692***
	(0.172)
(4c) Conditional high salience $20	0.914***
	(0.169)
Social support experiment treatment group	-0.412***
	(0.091)
Parent	-0.428***
	(0.083)
Non-English respondent	-0.374**
	(0.176)
Observations	3,037
Mean for Control	0.191

Notes: Logistic regression estimates of survey response on treatment assignment. Controls include social support experiment treatment cluster, school district, respondent type (parent or supporter), a binary indicator for non-English speaking respondent, and student grade level. Robust standard errors clustered by student-supporter clusters (N = 1,615). *** implies statistical significance at 1% level, ** at 5% level, * at 10% level.

In contrast to prior experimental findings, we find no significant difference in response rate between conditional and unconditional incentives of the same amount ($5). The response rates in the *unconditional* incentive condition, the *conditional low salience* condition, and the *conditional high salience $5* condition were all statistically similar: 26%, 27%, and 30%, respectively ($\chi^2(2)$ = 1.7, p = .44). Pooling the *conditional low salience* and *conditional high salience $5* incentive conditions (Conditions 3 and 4a) and evaluating them against the *unconditional* condition (Condition 2) shows no significant difference in response rate (Table 6).

Table 6. Unconditional versus pooled conditional incentive ($5)

VARIABLES	Response
(3 + 4a) Conditional low salience + conditional high salience $5	0.097
	(0.119)
Social support experiment treatment group	-0.466***
	(0.119)
Parent	-0.364***
	(0.107)
Non-English respondent	-0.485**
	(0.239)
Observations	1,762
Mean for Unconditional incentive	0.261

Notes: Logistic estimates of response on treatment assignment. Sample limited to Conditions 2, 3, and 4a. Reference group is unconditional $5 condition. Controls include social support experiment treatment cluster, school district, respondent type (parent or supporter), a binary indicator for non-English speaking respondent, and student grade level. Robust standard errors clustered by student-supporter clusters (N = 944). *** implies statistical significance at 1% level, ** at 5% level, * at 10% level.

Finally, we find small differences in responsiveness at higher conditional compensation points (Table 7). A *conditional high salience $20* incentive (Condition 4c) increased the response rate by 6pp compared to the *conditional high salience $5* incentive condition ($p$ = .17) and by 4pp relative to the *conditional high salience $10* incentive (Condition 4b; p = .38). Although these differences are not statistically significant, with a total sample of 762 respondents assigned to the *conditional high salience* conditions, our minimum detectable effect is nearly 10pp. In this context, these directional effects should be viewed as potentially suggestive of underlying trends, warranting further research with larger samples.

Table 7. Response rates by conditional compensation amount

VARIABLES	returned
(4b) Conditional high salience $10	0.101
	(0.203)
(4c) Conditional high salience $20	0.275
	(0.199)
Social support experiment treatment group	-0.166
	(0.164)
Parent	-0.244
	(0.154)
Non-English respondent	-0.753**
	(0.318)
Observations	762
Mean for Conditional high salience $5	0.302

Notes: Logistic estimates of response on treatment assignment. Sample limited to only conditional conditions. Reference group is *conditional high salience $5* condition. Controls include social support experiment treatment cluster, school district, respondent type (parent or supporter), a binary indicator for non-English speaking respondent, and student grade level. Robust standard errors clustered by student-supporter clusters (N = 404). *** implies statistical significance at 1% level, ** at 5% level, * at 10% level.

Table 8 shows the cost per returned survey under each condition. In the *control* condition, 19% of participants returned the survey at a cost of $9 per returned survey. With an *unconditional* incentive of $5, the response rate increased almost 7 percentage points, while the cost nearly tripled to $26 per returned survey. The conditional incentives were far more cost-effective. The *conditional low salience* (Condition 3) and *conditional high salience $5* (Condition 4a) yielded an average response rate of 28% at a cost of about $11 per returned survey. In the *conditional high salience $10* (Condition 4b) and *conditional high salience $20* (Condition 4c) conditions, the cost per returned survey was about $15.

Table 8. Cost per returned survey, by condition

	(1) Control	(2) Unconditional	(3) Conditional low salience	(4a) Conditional high salience $5	(4b) Conditional high salience $10	(4c) Conditional high salience $20
N	760	767	750	247	258	258
# surveys returned	145	198	205	75	81	95
Printing & materials						
Surveys	$136.80	$138.06	$135.00	$44.46	$46.44	$46.44
Cover letters	$45.60	$46.02	$45.00	$14.82	$15.48	$15.48
Return envelopes	$76.00	$76.70	$75.00	$24.70	$25.80	$25.80
Mailing envelopes	$144.40	$145.73	$142.50	$46.93	$49.02	$49.02
Postage						
Outgoing	$744.80	$751.66	$735.00	$242.06	$252.84	$252.84
Return	$159.50	$217.80	$225.50	$82.50	$89.10	$104.50
Incentive paid	$0.00	$3,835.00	$1,025.00	$375.00	$810.00	$950.00
Total cost	$1,307.01	$5,210.97	$2,383.00	$830.47	$1,288.68	$1,444.08
Cost per returned survey	$9.01	$26.32	$11.62	$11.07	$15.91	$15.20

Discussion

In a randomized experiment, we examined the effect of monetary incentives on response rates to a mail survey in a contemporary context. While all monetary incentives increased response rates compared to a no-incentive control group, offering conditional and unconditional incentives of the same amount ($5) yielded similar response rates, challenging prior findings on the relative superiority of unconditional incentives. In the last 15 years, there have been dramatic changes in patterns and modes of communication, yet most existing experimental evidence on the effect of conditional and unconditional incentives was published prior to 2005. As the largest study conducted in the last decade, our findings suggest that unconditional incentives no longer singularly dominate conditional incentives for mail-based surveys. In our experiment, the cost per returned survey of providing an unconditional $5 incentive was more than twice that of a conditional $5 incentive. Contrary to years past, conditional incentives may now be a more cost-effective method of increasing mail survey response rates.

We also examined the effect of different conditional compensation amounts. Compared to a $5 conditional incentive, $10 and $20 promised payments increased response rates. This suggests that greater incentive amounts may yield higher response rates, even when the incentives are contingent upon survey response. Previous evidence on the differential effects of greater compensation amounts has been mixed, and this study lacks the power needed to offer a definitive answer to this question. But at a cost of $15-$16 per returned survey, offering a $10 or $20 conditional payment was still more cost-effective than a $5 unconditional incentive.

While the no-incentive control group was the most cost-effective at $9 per returned survey, just 19% of respondents returned the survey. Although there is a clear trade-off between cost-effectiveness and response rate, this study shows that offering higher conditional incentives may be a more cost-effective method for increasing survey response than lower unconditional payments. However, additional research is needed to determine the threshold at which higher promised payments begin to yield negative marginal returns.

It is important to note two unique factors about the context of this study that may have impacted our findings. First, our sample was not randomly selected. Respondents were participants in a year-long field experiment conducted in partnership with three public school districts. Participation in the social support experiment was voluntary and required parents to actively opt-in to the program. We might expect this population to have a higher propensity to respond at baseline relative to the population of parents who did not opt-in to the social support experiment, thus upwardly biasing our overall response rates. Even if this is the case, we find similar patterns of results for parents and supporters, and across both social support experimental conditions (Appendix B). As such, any selection bias that exists is unlikely to introduce bias into our treatment effect estimates for this population. Although the selection process for the social support experiment limits our ability to make inferences about broader populations, it is not unusual for survey research to target specific sub-populations such as ours, and our findings have important implications for such purposeful samples.

Second, the survey was sent on behalf of our school district partners, on district letterheads, and signed by a district official (principal or superintendent). On the one hand, this may have made the survey appear more official, authoritative, and salient. This is particularly important for the conditional incentive conditions where we hypothesize that participants' proclivity to respond relies in part on the extent to which they trust that the researcher will follow-through on the promised payment. On the other hand, the fact that the surveys were sent on behalf of the district also may have contributed to nonresponsiveness among parents who already receive relatively frequent mail communication from the district. While the authoritative nature of the surveys may have contributed to high overall response rates and to the differential response rates between parents and supports, this cannot explain the differential response rates across survey experiment conditions.

We demonstrate that conditional incentives can be as effective as unconditional incentives at increasing response rates and, more importantly, are more cost-effective. This is a departure from conventional wisdom on increasing response rates to mail surveys, and suggests that in contemporary contexts, researchers with a limited budget may want to diverge from the status quo of providing unconditional incentives and instead offer prospective respondents greater conditional incentives.

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Acknowledgements

Appendix A. Treatment materials[3]

Condition 1: Control

[DISTRICT LETTERHEAD]

Todd Rogers
123 Main Street
Boston, MA 12345

Dear Todd Rogers,

USA Public Schools is partnering with researchers at Harvard University to learn more about how to best support our students. Please complete the enclosed survey by **7/3/18**. The back of this page has more information.

Thank you in advance for your time and effort.

Sincerely,

USA Public Schools

123-ABC

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[3] Appendix A shows treatment materials that were sent to parents. Materials sent to supporters differed only in the first two sentences of each letter, which read: "In the fall, [parent name] named you as an adult who cares about [student name]. We want to learn more about how best to support the people who support our students." All other language and materials were identical.

Condition 2: Unconditional

[DISTRICT LETTERHEAD]

Todd Rogers
123 Main Street
Boston, MA 12345

Dear Todd Rogers,

USA Public Schools is partnering with researchers at Harvard University to learn more about how to best support our students. Please complete the enclosed survey by **7/3/18**. The back of this page has more information.

To thank you for your time and effort, please find $5 enclosed from the Spencer Foundation, one of the funders supporting this project.

Thank you in advance for your time and effort.

Sincerely,

USA Public Schools

Condition 3: Conditional low salience

[DISTRICT LETTERHEAD]

Todd Rogers
123 Main Street
Boston, MA 12345

Dear Todd Rogers,

USA Public Schools is partnering with researchers at Harvard University to learn more about how to best support our students. Please complete the enclosed survey by **7/3/18**. The back of this page has more information.

To encourage your response, the researchers will send you $5 for completing this survey. This money comes from the Spencer Foundation, one of the funders supporting this project. Please return the completed survey using the enclosed return envelope by **7/3/18**, and you will receive $5 to thank you for your time and effort.

Thank you in advance for your time and effort.

Sincerely,

USA Public Schools

123-ABC

Condition 4: Conditional high salience

[DISTRICT LETTERHEAD]

Todd Rogers
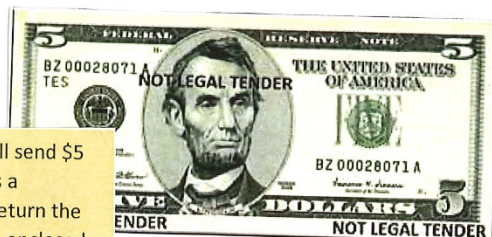123 Main Street
Boston, MA 12345

Dear Todd Rogers,

USA Public Schools is partnering with researchers at Harvard University to learn more about how to best support our students. Please complete the enclosed survey by **7/3/18**. The back of this page has more information.

To encourage your response, the researchers will send you $5 for completing this survey. This money comes from the Spencer Foundation, one of the funders supporting this project. Please return the completed survey using the enclosed return envelope by **7/3/18**, and you will receive $5 to thank you for your time and effort.

Thank you in advance for your time and effort.

Sincerely,

USA Public Schools

The Spencer Foundation will send $5 to each person who returns a completed survey. Simply return the completed survey using the enclosed return envelope by 7/3/18, and $5 will be mailed to you to thank you for your time and effort.

123-ABC

Appendix B. Sub-group analyses

Table B1. Logistic estimates of response by condition

VARIABLES	(1) Parent Response	(2) Supporter response	(3) Control response	(4) Treatment response
(2) Unconditional	0.611***	0.281	0.351*	0.512**
	(0.197)	(0.171)	(0.180)	(0.201)
(3) Conditional low salience	0.585***	0.421**	0.677***	0.210
	(0.199)	(0.165)	(0.178)	(0.213)
(4a) Conditional high salience $5	0.925***	0.404*	0.520**	0.802***
	(0.250)	(0.234)	(0.237)	(0.273)
(4b) Conditional high salience $10	0.844***	0.612***	0.628***	0.795***
	(0.259)	(0.219)	(0.237)	(0.256)
(4c) Conditional high salience $20	1.153***	0.771***	0.849***	1.018***
	(0.245)	(0.226)	(0.223)	(0.259)
Social support experiment treatment group	-0.064	-0.695***		
	(0.129)	(0.117)		
Parent			-0.721***	-0.067
			(0.114)	(0.123)
Non-English speaker	-0.374**	-0.514	-0.335	-0.484*
	(0.185)	(0.447)	(0.249)	(0.249)
Observations	1,510	1,527	1,563	1,474
Mean for Control	0.135	0.245	0.220	0.159

Notes: Logistic estimates of response on treatment assignment by parents (column 1), supporters (column 2), social support experimental control group (column 3), and social support experimental treatment group (column 4). Controls include social support experiment treatment cluster, school district, respondent type (parent or supporter), a binary indicator for non-English speaking respondent, and student grade level. Robust standard errors clustered by student-supporter clusters. *** implies statistical significance at 1% level, ** at 5% level, * at 10% level.

Table B2. Unconditional versus pooled conditional incentive ($5)

VARIABLES	(1) Parent Response	(2) Supporter Response	(3) Control returned	(4) Treat returned
(3 + 4a) Conditional low salience + conditional high salience $5	0.065	0.128	0.280*	-0.128
	(0.168)	(0.158)	(0.159)	(0.184)
Social support experiment treatment group	-0.151	-0.740***		
	(0.165)	(0.156)		
Parent			-0.626***	-0.025
			(0.147)	(0.159)
Non-English speaker	-0.442*	-0.778	-0.451	-0.586*
	(0.249)	(0.699)	(0.332)	(0.354)
Observations	881	881	909	853
Mean for Unconditional incentive	0.223	0.299	0.283	0.236

Notes: Logistic estimates of response on treatment assignment by parents (column 1), supporters (column 2), social support experimental control group (column 3), and social support experimental treatment group (column 4). Sample limited to Conditions 2, 3, and 4a. Reference group is unconditional $5 condition. Controls include social support experiment treatment cluster, school district, respondent type (parent or supporter), a binary indicator for non-English speaking respondent, and student grade level. Robust standard errors clustered by student-supporter clusters. *** implies statistical significance at 1% level, ** at 5% level, * at 10% level.

Table B3. Response rates by conditional compensation amount

VARIABLES	(1) Parent response	(2) Supporter response	(3) Control response	(4) Treatment response
(4b) Conditional high salience $10	-0.026	0.220	0.094	0.005
	(0.296)	(0.270)	(0.277)	(0.321)
(4c) Conditional high salience $20	0.215	0.341	0.377	0.253
	(0.280)	(0.271)	(0.261)	(0.317)
Social support experiment treatment group	0.181	-0.468**		
	(0.238)	(0.222)		
Parent			-0.570**	0.102
			(0.223)	(0.225)
Non-English respondent	-0.541	-2.135**	-0.793*	-0.882**
	(0.336)	(1.041)	(0.465)	(0.403)
Observations	375	387	395	367
Mean for *conditional high salience $5*	0.278	0.325	0.319	0.287

Notes: Logistic estimates of response on treatment assignment by parents (column 1), supporters (column 2), social support experimental control group (column 3), and social support experimental treatment group (column 4). Sample limited to only conditional conditions. Reference group is *conditional high salience $5* condition. Controls include social support experiment treatment cluster, school district, respondent type (parent or supporter), a binary indicator for non-English speaking respondent, and student grade level. Robust standard errors clustered by student-supporter clusters (*N* = 404). *** implies statistical significance at 1% level, ** at 5% level, * at 10% level.