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Varying the front page of a reminder postcard: Impact on panel subscription in a probability sampled recruitment

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ABSTRACT

This note presents the results of a probability-based recruitment effort where postcards were mailed to a random sample of people living in Sweden, on which we asked them to join our online panel. The recruitment efforts followed a 2 x 2 x 2 experimental design where the respondents were randomly assigned to get one of two different front page designs on the initial postcard sent, to either receive a text message as a reminder or not, and to either get a reminder postcard with the same front page design as the initial invitation or with a differently looking front page. The results revealed that changing the front page between the first and the reminder invitation did not statistically significantly increase response rates. However, sending a text message between the first invitation and the reminder statistically significantly increased response rates. Surprisingly, the results showed that one of the front page versions statistically significantly increased response rates compared to the other. The results indicated that none of the recruitment efforts statistically significantly outperformed the others in terms of the demographic discrepancies between the recruited respondents and the target population.

Introduction

Probability-based recruitment for online panels is becoming increasingly popular. Several survey companies use an array of methods that attempt to recruit panels that closely resemble the targeted population. Encouraging the efforts to recruit probability-based panels, research has found that probability-based recruitment typically yields smaller demographic discrepancies than self-selected panels when comparing the methods to the target population (MacInnis et al., 2018; Yeager et al., 2011).

This note presents results of a recruitment effort mailed to a probability-based sample of the Swedish population, and where the sample was randomly assigned to receive one of two different postcard versions. All postcards included a link to a recruitment questionnaire and a unique login printed on the back of each postcard. On the front of the postcard, each respondent was randomly assigned to see one of two different designs. Furthermore, each respondent was randomly assigned to receive either the same or a different front on the reminder postcard. Lastly, respondents were also randomly assigned to receive a text

message reminding them of the recruitment postcard, the link to the questionnaire, and their unique login.

Randomly assigning respondents to either get identical postcards or two different front page designs, enabled us to investigate whether receiving different designs of the postcard front page on the initial recruitment effort and the reminder postcard improved the recruitment rates. Furthermore, randomly assigning respondents to get or not to get a text reminder enabled us to investigate what impact sending text message reminders may have had on the postcard recruitment.

Hypotheses

Two hypotheses will be investigated:

Varying the front page

H1: Respondents may be more likely to subscribe to a panel when the reminder postcard has a different front page than the initial invitation postcard compared to when the reminder and the first invitation look identical.

Text reminder

H2: Respondents who are sent a text reminding them to subscribe to the panel may be more likely to subscribe to a panel than respondents who are not sent a text.

Figure 1. The front pages of the two postcard versions.

Postcard version 1 **Postcard version 2**

Experimental manipulations

2 x (postcard version 1 vs. postcard version 2): Respondents were randomly assigned to receive postcard version 1 or postcard version 2 in the initial invitation to subscribe to the panel (see Figure 1).

2 x (text reminder vs. no text reminder): Respondents were randomly assigned to be sent a text to their publicly available cellphone number four weeks after the first postcard had been sent or to not be sent a text.

2 x (identical reminder vs. different reminder): Respondents were randomly assigned to receive a postcard with the same front page as they got in the first invitation or to receive a postcard with a different front page compared to what they got in the first invitation.

Field period

The first postcard was mailed to respondents on May 16, and the first delivery was made on May 21. A text reminding respondents about the invitation was sent to a random half of the respondents on June 5. Respondents who had already subscribed or had opted out were not sent a text. A second postcard was mailed out on June 14 to all respondents who had yet to subscribe or who had not opted out of participating.

Sample

Statistics Sweden drew a sample of 35,000 individuals using unequal probabilities of selection of individuals aged 16 to 80 years old and registered as living in Sweden in April 2019. After *Statistics Sweden* excluded individuals who had died, had no physical address, or lived under a secret identity, the final sample was 34,893 individuals. Unequal probabilities of selection were used in an attempt to offset that certain groups had previously shown lower propensity to subscribe to the Swedish Citizen Panel. The propensities to subscribe were estimated using previous probability recruitments that the Swedish Citizen Panel has conducted.

Individuals younger than 65 years old and individuals with less than a university education were selected with a higher probability than individuals who were 65 years or older or had some university education or more. The exact probabilities of selection can be found in Table 1. *Statistics Sweden* provided the addresses to the individuals that were selected.

Procedure

Respondents were mailed a postcard that invited them to enter a URL in their browser, logging into the questionnaire with a pre-printed username and password, and to sign-up to participate in the *Swedish Citizen Panel*.

Half of the sample was randomly assigned to be sent a text message three weeks after the initial postcard was mailed and one week before the reminder postcard was mailed.

Out of the 34,893 mailed postcards, 136 initial postcards were undeliverable, 199 reminder postcards were undeliverable, out of which 77 postcards were undeliverable for both the initial and the reminder postcards.

Out of the 17,388 participants who were randomly selected to get a text message, we could find a cell phone number for 8,163 (47%) of them. These 8,163 were all sent a text.

Of the 34,893 respondents, 2,638 signed up to join the panel (AAPOR RR2 = 7.6%).[1]

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[1] AAPOR Response Rate 2 (RR2) estimates the response rates by dividing the number of completed and partial interviews by the completed and partial interviews plus the number of non-interviews (refusal and break-off plus non-contacts plus others) (AAPOR, 2016). Partials were identified as respondents who completed some but less than 80% of the eligible questions.

Table 1. Demographic distribution of the Swedish population in 2017, probabilities of selection, and demographic distribution of subscribed respondents.

Age	Education	Population (2017)	Probability of selection	Distribution of responses	Difference from population
Age 16-64	Elementary school (9 years or less)	14.03%	16.00%	5.32%	-8.71%
	Upper secondary (10-12 years)	37.80%	55.00%	33.55%	-4.25%
	University or higher education (less than 3 years)	12.41%	8.00%	15.84%	3.43%
	University or higher education (3 years or more)	20.19%	10.00%	26.13%	5.94%
Age 65-80	Elementary school (9 years or less)	3.96%	4.00%	3.67%	-0.29%
	Upper secondary (10-12 years)	6.85%	5.00%	5.62%	-1.23%
	University or higher education (less than 3 years)	1.98%	1.00%	3.63%	1.65%
	University or higher education (3 years or more)	2.79%	1.00%	6.24%	3.45%

Results

Varying the front page

Unexpectedly, the respondents who got a reminder postcard with another front page than the initial postcard were not statistically significantly more likely to subscribe to the panel (RR2 = 7.6%) than the respondents who got a reminder postcard that looked identical to the initial postcard (RR2 = 7.5%, $t(34{,}893) = -0.28$, $p = .78$).

Text message reminder

However, as expected, the respondents who were randomly selected to be sent a text message that reminded them to subscribe to the panel were statistically significantly more likely to subscribe (RR2 = 8.0%) than the respondents who were not selected to be sent a text message (RR2 = 7.2%, $t(34{,}893) = -2.77$, $p < .01$).

Given that a cellphone number could only be identified for 47% of the respondents selected to be sent a text message reminder, the impact of sending the text-reminder on the response rate is likely greater than what is reported here (as compared to if a cellphone number could be identified for every respondent).

Interactions

The data did not indicate a statistically significant two-way interaction between receiving a differently looking reminder and being sent a text message reminder ($b = 0.78$, $SE = 0.57$, $p = .17$) (see Table 2, Model 4).

Table 2. Predicting subscription to the panel.

	Experimental manipulation				
	Postcard version	Different reminder postcard	Text reminder	Varying postcard * text reminder	Three-way interaction
	Model 1	Model 2	Model 3	Model 4	Model 5
First invitation (reference: postcard version 1)					
Postcard version 2	0.41 (0.28)				1.27* (0.56)
Reminder (reference: identical to first invitation)					
Different reminder		0.08 (0.28)		-0.31 (0.40)	0.13 (0.56)
Text reminder (reference: no text reminder)					
Text reminder			0.78** (0.28)	0.40 (0.40)	1.33* (0.56)
Two-way interactions					
Different reminder * Text reminder				0.78 (0.57)	-0.27 (0.80)
Postcard version 2 * Different reminder					-0.90 (0.80)
Postcard version 2 * Text reminder					-1.88* (0.80)
Three-way interaction					
Postcard version 2 * Different reminder * Text reminder					2.10+ (1.13)
Constant	7.36*** (0.20)	7.52*** (0.20)	7.17*** (0.20)	7.32*** (0.28)	6.70*** (0.40)
Adjusted $R2$	0.00	-0.00	0.00	0.00	0.00
Observations	34,893	34,893	34,893	34,893	34,893

Notes. Unstandardized regression coefficients from five OLS equations, standard errors in parentheses.
$+ p < 0.1$ $*p < 0.05$ $**p < 0.01$ $***p < 0.001$.

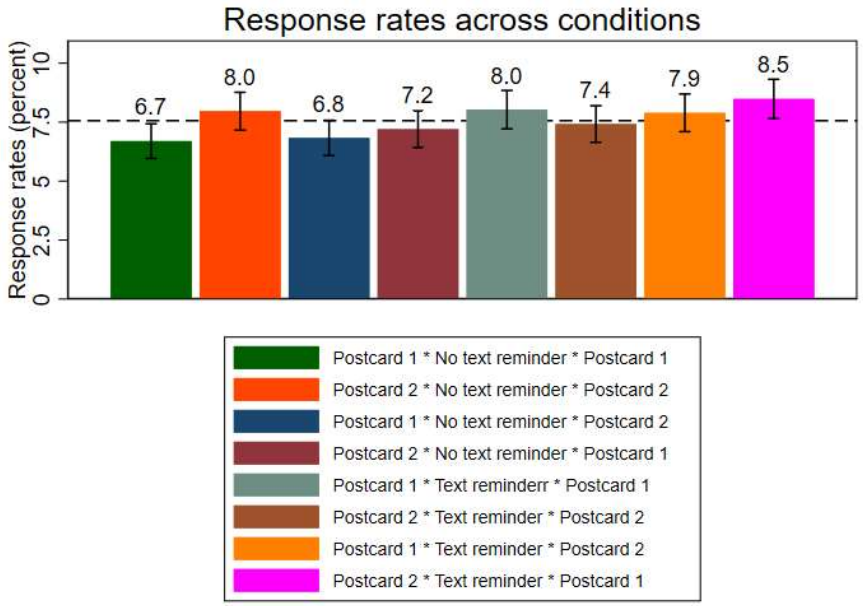
However, the results indicated a marginally significant positive three-way interaction between whether the respondent got postcard version 2 on the initial postcard, got sent a differently looking postcard as a reminder, and got sent a text message reminding them to subscribe to the panel ($b = 2.10$, $SE = 1.13$, $p < .1$). In other words, compared to the respondents who got postcard version 1 for both the initial invitation and the reminder and were not sent a text, the experimental manipulations increased response rates by 2.10 percentage points.

Furthermore, the postcard version 2 had statistically significant positive main effect on response rates ($b = 1.27$, $SE = 0.56$, $p < .05$). That is, the respondents who were not sent a

text reminder but got the postcard version 2 both times had a 1.27 percentage points higher response rates than the respondents who got postcard version 1 both times and were not sent a text reminder.

In figure 2, the response rates for each of the experimental groups are presented. The figure helps illustrate the impact that postcard version 2 and the text reminder had on the response rates. The smallest response rates, in absolute numbers, was achieved by not sending a text and sending postcard version 1 both times (RR2 = 6.7%, bar 1), and the greatest response rates were achieved by sending a text and sending postcard version 2 as the initial postcard and postcard version 1 as the reminder (RR2 = 8.5%, bar 8).

Figure 2. Response rates over the experimental conditions.



Comment: *N* (from leftmost bar to rightmost bar) = 4466, 4395, 4379, 4265, 4297, 4381, 4396, 4314. Response rates estimated using AAPOR RR2. The dashed line represents the overall mean response rate.

Unequal probabilities of selection.

Despite that the sample was drawn to counter the fact that some demographic groups have been generally less likely to subscribe to our panel, the respondents recruited this time did not resemble the target population (see Table 2). Overall, the respondents who subscribe were more educated and older than the target population. However, compared to previous recruitment efforts, the respondents recruited here were more similar to the population than before. Hence, recruiting a sample using unequal probabilities of selection seemed to increase the cost efficiency of the recruitment (that is, if the goal is to decrease demographic discrepancies compared to the target population).

Lastly, none of the recruitment interventions statistically significantly outperformed the others in terms of resembling the target population demographics (*postcard version 1 vs. postcard version 2*: χ^2 (7, 2,614) = 5.15, p = .64; *text reminder vs. no text reminder*: χ^2 (7,

2,614) = 6.33, p = .50; *identical reminder vs. different reminder*: χ^2 (7, 2,614) = 4.62, p = .71)).

Conclusion

This note has presented indications that varying the front page of the initial postcard sent and the reminder postcard does not positively increase response rates, compared to sending identically looking postcards for the initial invitation and the reminder.

However, sending a text message between the initial postcard and the reminder postcard statistically significantly increased response rates. The results indicated that the text message increased response rates from about 7.2% to 8.0%. This means that response rates increased by about 11%. If these results would generalize to other surveys with higher response rates, a survey with a 50% response rate may see an increase to around 55% response rate when introducing a text reminder. Furthermore, the response rate may increase even more if the number of cell phone numbers acquired increased from the somewhat low 47% that we achieved in this present study.

Furthermore, the results of the experiment indicated that postcard version 2 statistically significantly improved response rates. That is, when investigating the impact of the two postcard versions only when the invitation and the reminder had the same look and when not sending a text message as a reminder. We can offer no clear theoretical explanation for why postcard version 2 performed better, but when speculating, it might be due to one version being more appealing or perhaps stood out more compared to other mail the respondents got.

References

The American Association for Public Opinion Research. 2016. “Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys.” 9th edition. *AAPOR*.

Bo MacInnis, Jon A Krosnick, Annabell S Ho, Mu-Jung Cho. 2018. “The Accuracy of Measurements with Probability and Nonprobability Survey Samples: Replication and Extension.” *Public Opinion Quarterly* 82: 707–744.

Yeager, David, Jon Krosnick, Linchiat Chang, Harold Javitz, Matthew Levendusky, Alberto Simpser, and Rui Wang. 2011. “Comparing the Accuracy of RDD Telephone Surveys and Internet Surveys Conducted with Probability and Nonprobability Samples.” *Public Opinion Quarterly* 75:709–47.

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