Targeted Appeals for Participation in Letters to Panel Survey Members

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Targeted appeals for participation in letters to panel survey members

Abstract

Previous research into survey invitation letters and prenotification letters has sought to identify optimal features of a standard letter that can be sent to all sample members. In the spirit of adaptive design, this study seeks to establish whether it can be advantageous to target different versions of a letter to different sample subgroups. Specifically, a paragraph intended to heighten perceptions of relevance of the survey is varied between six subgroups in a panel survey. Random allocation to control and treatment groups is crossed with variants of two other design features, time in sample and data collection mode. This enables analysis of the effects of the targeted letter in different survey contexts. The targeted version of the letter is found to improve response rates for two operationally-important low response propensity groups, but only in certain survey design contexts.

1. INTRODUCTION

In cross-sectional surveys with pre-identified samples, a mailed letter often forms the first contact between researcher and sample member. In mail surveys this letter could either be a prenotification letter, if sent in advance of the questionnaire, or an invitation letter, if included in the same mailing as the questionnaire. In interviewer-administered surveys, the letter provides prenotification of the interviewer's call[1]. The options for web surveys are similar to those for mail surveys. The prime purpose of these letters is to attempt to motivate co-operation. This is thought to be achieved by providing wanted basic information about the survey, providing reassurance about the data collectors' motives and how the data will be used, invoking authority and promoting both altruistic and egotistic reasons for taking part (Czaja and Blair 2005, pp. 204-06; Groves and Couper 1998, pp. 276-81). In longitudinal surveys a similar letter with similar purpose is often mailed at the commencement of each wave of data collection.

Quantitative experiments with prenotification letters have involved comparing the use of a letter *versus* no letter (De Leeuw et al 2007; Goldstein and Jennings 2002; Link and Mokdad 2005; Lynn and Clarke 2000; Pennell 1990; Taylor and Lynn 1998; Traugott et al 1987) or comparing different versions of the letter, with different wordings and/or styles (Brunner and Carroll 1969; Ye 2013; Dillman et al 1976; Lynn et al 1998), between random subsets of the total sample. The focus has been solely on effects of alternative standard letters on overall response rate. This research note is concerned instead with letters that are tailored or targeted, so that different sample members receive different variants, depending on their circumstances, characteristics or interests. The author is not aware of any studies of the effect of targeting the letter in this way, nor indeed of any major surveys that implement such an

[1] The terms "prenotification letters" and "advance letters" are used interchangeably to refer to such letters.

approach[2]. This research note reports an experiment in which several versions of a letter are targeted at different sample subgroups.

Recent years have seen considerable interest in adapting survey procedures to the characteristics of sample members, particularly with a view to improving the trade-off between survey costs and survey errors, notably non-response error (Groves and Heeringa 2006; Wagner 2008; Schouten et al. 2013). The adaptation is usually based on paradata indicators of outcomes of the survey participation process, rather than socio-demographic, behavioural or attitudinal characteristics of sample members. But in the case of longitudinal surveys, substantive characteristics of respondents observed at previous waves can be used to target survey procedures in relevant ways, for example to encourage participation (Lynn 2014). The idea is that a design feature can be adapted to each of a number of sample subgroups in such a way that either the leverage or the salience of the feature (Groves et al. 2000) is increased. This article provides a quantitative evaluation of a targeted design feature intended to improve participation rates[3]. The feature adapted in this study is the wording of a letter that is sent to sample members prior to fieldwork for a wave of a longitudinal survey. The substantive content of the wording is manipulated in a way intended to increase the leverage of the letter. Targeting of this kind is particularly appropriate for longitudinal surveys, where extensive information is held about each sample member before each wave of data collection commences, but it could also be applied to other surveys with particularly informative sampling frames. A unique strength of the study is that it also

[2] Though some surveys send different versions of a letter to different sample members, this is usually because of the need to communicate different information to different sample groups, for example if the response task differs between subgroups, or if different subgroups had been sampled from different sources. We have not found examples of surveys employing different letters in a belief that different messages might better inspire co-operation amongst different sample subgroups.

[3] The only prior evaluation of a targeted design feature of which we are aware is Fumagalli et al (2013), in which the feature manipulated was the design and content of a short report of survey findings from previous waves.

incorporates randomisation of two other important design features, time in sample and data collection mode. This enables assessment of effects in different contexts.

2. RESEARCH QUESTIONS

This article focusses on whether, and in what circumstances, a targeted letter can perform better, in terms of response rates, than a standard letter sent to all sample members. A letter can affect response rates by influencing the sample member's attitude towards participation. The influence can come through various channels, including recognition of a properly-constituted authority (Groves and Couper 1998), appeal to altruism (Singer 2003), self-interest (Kropf and Blair 2005, Singer and Ye 2013), allaying concerns regarding data usage (Couper et al. 2008, 2010), social validation (Groves, Cialdini and Couper 1992), and invoking feelings of relevance and saliency (Goyder 1987; Groves and Couper 1998). It is this last channel of influence that is of interest here. Targeted versions of the letter could emphasise different aspects of the survey content or objectives to different subgroups in the hope of increasing the perceived relevance and salience of the survey[4].

The research question, then, is whether letters with targeted content can perform better than a standard letter. The proposition is that such letters should increase the willingness of some sample members to participate and that this will be reflected in higher response rates.

If targeted letters are to increase the survey response rate, there must be some sample members who would not respond with a standard letter but who would respond with a targeted letter. Given that the majority of sample members participate, these sample members who are swayed by the targeted letter must have relatively low response propensities (with the standard letter). Thus, we hypothesise that targeted letters should particularly improve

[4] Previous research has also found that survey respondents show a preference for letters that are short and use simple language (Dillman et al. 2009; White and Freeth, 1996). This article is not, however, concerned with the length or style of the letter, but rather with the substantive content.

response rates in low response propensity subgroups. By this means the treatment should improve the sample composition. A secondary research question is therefore whether any effect of targeted letters on response rate is greater amongst sample subgroups with low response propensities.

Finally, because the letter to respondents plays a different role in self-completion surveys and interview surveys, a third research question is whether any effects found with respect to the first two research questions differ between data collection modes.

3. STUDY DESIGN

A randomised experiment was carried out on wave 6 of the *Understanding Society* Innovation Panel (UKHLS-IP), for which field work was conducted between 21 February and 29 July 2013. The UKHLS-IP (Uhrig, 2011) is based on a stratified random equal-probability sample of households resident in Great Britain. Address-based sampling was used, with an initial sample of 2,760 addresses included from wave 1 of the survey in 2008 and an additional 960 addresses added at wave 4 in 2011[5]. The analysis presented here is based on the 2,733 sample persons aged 16 or over who were issued to the field at wave 6. This analysis base represents an estimated 40.9% of all potentially-eligible sample members (AAPOR RR1)[6].

[5] Addresses were selected with equal probabilities from the Postcode Address File (Lynn and Taylor, 1995). The sample design is described in detail in Lynn (2009).

[6] As mentioned, the sample issued at wave 6 had two components: the original sample, participating for the sixth time, and the refreshment sample, participating for the third time. Estimated response rate to the wave 1 enumeration was 60.9% (AAPOR RR1). Of all persons aged 16 or over enumerated at wave 1 and not known to have become ineligible prior to wave 6, 57.7% were issued to the field for wave 6, the rest having been lost due to a failure to trace following a move, persistent non-contact, or refusal. Estimated response rate to the wave 4 enumeration of the refreshment sample was 61.4% (AAPOR RR1), of whom 93.7% of those aged 16 or over were issued at wave 6. The present study is therefore based on around 35.1% of original sample members and 57.6% of refreshment sample members. This corresponds to 40.9% of all sample members.

All sample persons eligible to be issued to field for wave 6 were randomly allocated, with equal probabilities, to one of two treatment groups. One group would receive a targeted letter while the other group would receive a standard letter, designed to have broad appeal. At previous waves, all sample members had received a standard letter. Sample members in the targeted treatment group received one of six versions of the letter, depending on their characteristics, as reported at previous waves.

Five population subgroups were chosen for targeting, following the principles set out in Lynn (2014), which state that subgroups should be, a) groups for which distinctive and effective treatments can be identified, and b) relatively homogeneous in terms of both survey response propensity and key survey estimates. Sample members could belong to more than one of the groups but were allocated uniquely to one group for the purpose of the experiment, groups being assigned in a priority order. A sixth group consisted of sample members who did not belong to any of the five target groups or could not be classified due to missing data. This group received the same standard letter as the control group. The definitions of the groups, and the sample size in each group, are shown in Table 1. The groups are listed in ranked priority order[7].

Much of the content of the initial letter was the same in each version. The intention was to hold constant features designed to demonstrate the credibility of the survey, to allay fears about confidentiality, to appeal to self-interest, and to provide basic information about the task of participation. Consequently, paragraphs about how to take part, incentives, preparing information in advance, and the voluntary nature of participation were the same in all versions, as was overall layout and design. The opening paragraph, however, was designed to emphasise the relevance of the survey. The wording of this paragraph was varied between the

[7] For example, a sample member aged under 30 and living in London would be assigned to the "young" target group rather than the "London" target group, as "young" is the 3rd-ranked characteristic and "London" is 4th-ranked.

six versions of the letter, and was the only way in which the letters differed between the treatment and control groups. For each group, the wording mentioned a number of policy areas that were expected to be particularly relevant to most members of the group. In this way, the intention was to increase the leverage of the paragraph in persuading the sample member to participate. For example, for sample members responsible for children aged under 15, the letter mentioned "the provision of childcare, schooling and education". The six versions of the opening paragraph are presented in Table 2[8]. During face-to-face fieldwork, interviewers knew which version of the letter had been sent to each sample member, so that they could present the sample member with another copy if necessary (this is common practice during survey fieldwork, as many people report that they do not remember receiving the letter or do not remember the content).

Table 1. Target groups: definitions and sample distribution

Table 2. Wording variations in the initial letter

4. DATA AND METHODS

The independent variable is a dichotomous indicator of treatment group: targeted or standard letter. Mediator variables indicate membership of each of two operationally-important low response propensity groups and survey mode (as this determines the purpose of the letter, as described above).

[8] Copies of the full letter are reproduced as supplementary online material.

The first operationally-important low response propensity group consists of sample members who did not provide a full personal interview at the previous wave. Previous wave non-respondents are known to have a relatively low current wave response propensity, both on the UKHLS-IP (Jäckle et al, 2015, tables 5 and 6) and on panel surveys more generally (Watson and Wooden 2014). The second low response propensity group consists of persons who had joined the panel relatively recently. Wave-on-wave attrition rates in panel surveys are highest at wave 2 and then decline over successive waves (Lugtig 2014; Schoeni et al. 2013; Uhrig 2008), so it is of interest to test time-in-sample effects. As described earlier, the sample for UKHLS-IP wave 6 consisted of two components, the "original" sample, for whom this was the sixth wave of participation, and a "refreshment" sample, added to the survey at wave 4, and for whom this was therefore the third wave. The two samples were selected independently within the same set of primary sampling units. Time in sample is therefore measured by a dichotomous indicator of whether this is the third wave or sixth wave for each sample member.

The mode variable indicates to which of two mode treatments the sample member was randomly allocated. For waves 5 and 6, one third were allocated to a single-mode CAPI design while the other two thirds were allocated to a sequential mixed-mode design in which sample members were first invited to complete the survey online, with non-respondents followed up by CAPI[9] (Jäckle et al, 2015). Consequently, for one third of sample persons the letter was a prenotification letter sent in advance of a visit by a CAPI interviewer, while for the other two thirds the letter was an invitation letter to a web survey (which may subsequently have been followed by a visit from a CAPI interviewer).

[9] A minor change at wave 6 involved changing the protocols for the final stage of field work, amongst sample members who had not responded following the standard web and standard CAPI field work stages. In this final stage, telephone (CATI) interviews were offered as an option, and online (web survey) response was offered as an option for the first time to members of the single-mode CAPI treatment group.

In the analysis, the dependent variable indicates whether or not a full personal interview was completed at wave 6[10]. The analysis is based on logistic regression modelling of the 2,733 persons issued to the field for wave 6. The approach is to first test for a main effect of the independent variable and mediating effects of time-in-sample and previous wave response outcome. A second step will then seek to identify whether any significant effects hold equally in both modes.

Descriptive statistics for the dependent, independent and mediator variables are presented in Table 3.

Table 3. Descriptive Statistics

5. RESULTS

A model in which the letter treatment was the sole independent variable indicated no significant ($P<0.05$) main effect. Significant interactions ($P<0.05$) were observed both with time in sample (indicating an effect only amongst the third-wave sample) and with previous wave outcome (indicating an effect only amongst previous wave non-respondents). When further interactions with mode were tested, the effect for the third-wave sample was observed to be restricted to the CAPI design, while the effect for previous wave non-respondents was restricted to the mixed-mode sample. For each effect thus identified as significant through the

[10] 72.9% of cases issued to the field resulted in a completed full personal interview. Though data were obtained for a further 4.3% sample members via a proxy interview, the focus is restricted to the in-person interview as the initial letter was mailed only to the named sample member and is therefore unlikely to have affected the propensity for another person to be willing to provide a proxy interview, and because the in-person interview is the preferred outcome (as the proxy interview contains only a subset of items).

modelling, Table 4 presents the observed response rate for the treatment and control groups and the results of the associated independent chi-square tests.

Table 4. Response Rates by Treatment for Sample Subgroups; Chi-Square Tests

6. DISCUSSION

The findings show that a targeted initial letter can increase response rates, but that effects are uneven across survey design contexts and sample subgroups. Response rates are improved both for both of the operationally-important low response propensity groups, namely previous wave non-respondents and relatively recent panel entrants. The positive impact on response rates for previous wave non-respondents appears to be restricted to the mixed mode (web-CAPI) context, while the positive effect for recent panel entrants is restricted to the single-mode CAPI context.

Targeted letters appear to hold promise as a tool to improve response rates. At least in some circumstances, positive effects are observed. The heterogeneity of effects over randomised design features (mode of data collection, time in panel) suggests that the survey design context matters. Targeting may not be equally effective in all contexts. In particular, an important difference between the mixed-mode and single-mode CAPI protocols in this study is that the letter acts only as a prenotification letter in the single-mode CAPI design, but as an invitation letter in the mixed-mode design. In the single-mode CAPI design there is no immediate action that the sample member can take upon reading the letter (other than phoning the survey organisation to refuse to participate), whereas in the mixed mode design the sample member can immediately go online and fill out the survey. It is plausible that for

this reason targeting is more effective in invitation letters than in prenotification letters, though this general conclusion should not be drawn from this single study.

The observation that positive effects on response rate are found only amongst relatively low response propensity subgroups suggests that targeting should be able to improve sample composition. Notably, with the standard letter treatment wave 6 response rate was 32.4% amongst previous wave non-respondents and 87.4% amongst previous wave respondents. The targeted letter significantly improved response rate amongst the former group (to 41.4%), but not amongst the latter group. Similarly, the targeted letter improved response rate amongst panel members being asked to participate for the third time, but not amongst those being asked for the sixth time. Further research focussed on this issue may help researchers to identify the best ways to use targeted designs to improve sample representativeness by increasing the representation of under-represented groups. One avenue worth exploring might be to explicitly incorporate (predicted) response propensity into the definition of the groups to be targeted.

Any effect of targeted letters will depend on successful application of the targeting method (Lynn 2014), notably the choice of groups to target and the design of the letter for each group. Differences in effects between the groups could be caused either by differences in the characteristics of group members (some groups may simply contain more people whose response propensity is sensitive to the wording of the letter) or by differences in the effectiveness of the targeting (the choice of wording could have been better in some versions of the letter than others). The impact of any targeting will always depend on the specific nature of the targeting adopted. Effective targeting may be easier for some groups than others, either because they are inherently more susceptible to the effects of targeted messaging, or because it is easier to devise appropriate wording.

In summary, the use of targeted letters to sample members appears promising and warrants further research to better identify the contexts and circumstances in which it can be most effective and to establish how best to develop the targeted materials. The application in this study was a panel survey, where a wealth of information from prior waves is available to define the targeting. However, similar targeting may also be possible in one-time surveys with informative sampling frames, such as administrative databases of various kinds, or where data can be linked to sample records prior to field work. Investigation of the use of targeted messaging in such circumstances could also be useful.

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Table 1

Group	Definition	Frequency	Percentage
Employment-busy	Employed for at least 39 hours per week, or employed for 30 to 38 hours with a commute of least 60 minutes	425	15.6
With children	Responsible for at least one child under 15 living in the same household at the time of most recent interview	339	12.4
Young	Aged 16 to 29 at the time of wave 5	323	11.8
London	Resident in London or south east England at the time of most recent interview	358	13.1
Pensionable	Of pensionable age at the time of wave 5 (60 or over for women; 65 or over for men)	464	17.0
Remainder	None of the above	824	30.1

Table 2

First paragraph of the letter (for previous-wave respondents):	Thank you so much for helping with the Understanding Society survey last year. The survey helps researchers and policy makers understand the changes in the needs of the country across diverse subjects like <*text*> – and because your information was so valuable, we'd like to hear from you again.
Letter version	<*text*>
Employment-busy	your work-life balance, your position in your employment and your retirement
With children	the provision of child care, schooling and education
Young	the impact of the economic climate on employment prospects and the influence of mobile technology on life
London	the cost of living and the provision of schools, housing and public transport
Pensionable	the provision of social care and the cost of energy and fuel

The second sentence of the standard version of the letter read simply, "The survey helps researchers and policy makers understand the changes in the needs of the country – and because your information was so valuable, we'd like to hear from you again."

Table 3

Variable/category	Frequency			Percentage
	Treatment	Control	Total	
Wave 6 outcome (dependent)				
Individual response	1,024	969	1,993	72.9
Proxy response	59	61	120	4.3
Non-response	304	316	620	22.7
Initial letter treatment (independent)				
Targeted letter	1,387	-	1,387	50.8
Standard letter	-	1,346	1,346	49.2
Wave 5 outcome (mediator)				
Individual response	1,010	969	1,979	72.4
Proxy response	64	82	146	5.3
Non-response	313	295	608	22.2
Time in sample (mediator)				
6th wave ("original sample")	957	896	1,853	67.8
3rd wave ("refreshment sample")	430	450	880	32.2
Mode design at wave 6 (mediator)				
CAPI only	474	472	946	34.6
Mixed-mode (web + CAPI)	913	874	1,787	65.4

Note: n=2,733 persons aged 16 or over issued to the field for wave 6 of the UKHLS-IP

Table 4

Sample subgroup	*n*	Response rate		$\chi^2(1)$	*P*
		Standard letter	Targeted letter		
Full sample	2,733	72.0	73.8	1.17	0.28
Previous wave respondents (RESP)	1,979	87.4	85.9	0.92	0.34
Previous wave non-respondents (NRESP)	754	32.4	41.4	6.59	0.01**
Time in sample: 6 waves (TIME6)	1,853	72.5	71.6	0.21	0.64
Time in sample: 3 waves (TIME3)	880	70.9	78.8	7.36	0.007**
Single-mode CAPI (CAPI)	946	71.4	71.1	0.01	0.92
Mixed mode web-CAPI (MMODE)	1,787	72.3	75.3	1.99	0.16
NRESP * CAPI	248	27.5	29.9	0.18	0.67
NRESP * MMODE	506	35.0	46.5	7.01	0.008**
TIME3 * CAPI	325	64.9	78.8	7.74	0.005**
TIME3 * MMODE	555	74.4	78.9	1.57	0.21

Notes: ** indicates P<0.01, * indicates 0.01<P<0.05