

Catalogue no. 11-522-XIE

**Statistics Canada International
Symposium Series - Proceedings**

**Symposium 2006 :
Methodological Issues in
Measuring Population Health**



2006



**Statistics
Canada**

**Statistique
Canada**

Canada

The Impact of Unconditional Incentives upon a Multi-stage Survey: The Health Survey for England

Heather Wardle, Claire Deverill¹

Abstract

Household response rates have steadily declined across many large scale social surveys. The Health Survey for England has observed a 9 percentage points decline in response across an eleven year period. Evidence from other studies has suggested that unconditional gifts or incentives, with small monetary value, can improve rates of co-operation. An incentive experiment conducted on the Health Survey for England aimed to replicate findings of a previous experiment carried out on the Family Resources Study, which showed significant increases in household response among those who had received a book of first class stamps with the advance letter. The HSE incentive experiment, however, did not show any significant differences in household response rates, response to other stages of the survey or in respondent profile between two experimental conditions (stamps included with the advance letter, bookmark sent with the advance letter) and the control group (the advance letter alone).

KEY WORDS: Unconditional incentives, response rates, non-response

1. Introduction

A recurrent feature of survey research in the United Kingdom has been the steady decline of willingness to co-operate in face to face surveys by selected respondents. Response rates across many key national government surveys have fallen dramatically over the last decade. The General Household Survey has seen household level response fall from 82% in 1993 to 70% in 2003. Likewise, response rates for the Health Survey for England (HSE) have fallen from 81% in 1993 to 72% in 2004 (Sproston, Mindell, 2006). In the case of the Health Survey for England, analysis has shown that the major component of increased non-response is the refusal to co-operate in the survey of selected individuals, whilst the proportion of households where no contact has been made by interviewers has remained relatively constant.

Developing strategies to counter this growing trend is a major challenge to researchers in the field of social surveys. Recent initiatives have focussed on the use of incentives as a bargaining tool to help persuade reluctant respondents to co-operate. Conditional monetary incentives have been tested in experiments within national surveys and have shown to have an impact in improving co-operation rates (NatCen, 2003). However, for large scale surveys such as the HSE, which interviews up to 20,000 people in most years, a substantial monetary incentive, paid on condition of completion of the survey, represents a considerable demand upon limited funding and resources, and was therefore not considered for introduction within HSE.

Evidence from other studies has suggested that there is a positive impact upon household level response by giving a small unconditional incentive or gift to respondents, which is retained by them regardless of whether they agree to co-operate or not (Singer, 2002). An experiment conducted as part of the Family Resources Study (FRS) showed a significant increase in household response rates when a book of first class postage stamps (a small wallet containing six postage stamps with a monetary value of £1.86) was included with the advance letter (McConaghy and Beerten, 2002). The incentive was unconditional as it was sent to every address selected as part of the survey sample and informants kept the stamps regardless of whether they went on to co-operate in the study or not. Explanations for the observed increase in response rates included the fact that informants tended to remember receiving the advance letter

¹Heather Wardle, National Centre for Social Research, 35 Northampton Square, London, EC1V 0AX, England;
Claire Deverill, National Centre for Social Research, 35 Northampton Square, London, EC1V 0AX, England

and that receiving an unconditional token of appreciation prompted some informants to feel the need to reciprocate the gesture. Drawing on this evidence, an incentive experiment was designed to assess whether a similar impact would be observed if this unconditional incentive was introduced to the Health Survey for England.

The Health Survey for England is a multi-stage household survey comprising an interview and a nurse visit. The stage one interviewer visit lasts approximately one hour. Questions are administered by computer assisted personal interviewing and anthropometric measures, such as height and weight, are obtained. The second stage is a visit by a qualified nurse to collect objective measurements. Eligibility for the second stage of the survey is dependent on completion of the first stage and the agreement of the informant to participate further at the close of the first stage. An area of particular interest was to test whether any increase in household response rates observed through the introduction of the postage stamps with the advance letter would translate into increased co-operation to subsequent stages of the survey. Furthermore, it was of interest to see whether increasing recognition of the advance letter alone could have an impact on response rates. To test this, an experimental condition was created that included enclosing a gift of a specially designed, survey branded bookmark along with the advance letter. Therefore, a three way unconditional incentives experiment was designed and implemented.

2. Methods

The incentive experiment devised for the Health Survey for England consisted of three conditions:

- Condition one: The standard advance letter with a book of first class postage stamps enclosed within the envelope
- Condition two: The standard advance letter with a specially designed survey branded bookmark enclosed within the envelope.
- Condition three: The standard advance letter alone.

The pre-selected sampled addresses for HSE, drawn from the Postcode Address File, were randomly allocated to one of the three conditions. Individual interviewers working on the study were given a random mix of conditions within their individual assignments to account for any interviewer mode effects that otherwise might have been evident. The content of the advance letter was the same for all conditions. This incentive experiment was conducted between July 2005 and September 2006. During this period a total of 12,916 addresses were selected to be included in HSE and were included in the experiment. See table 1:

Table 1: Number of issued addresses by condition type

Incentive type	Number of issued addresses
Stamps	4299
Bookmark	4303
Letter only	4314

A variable showing the condition type to which each address had been allocated was created and included on the dataset so that progress could be monitored within the experiment fieldwork schedule. Results were analysed once all fieldwork stages were completed. However, data from HSE 2006 are not yet fully available and therefore analysis presented within this paper is based on a limited set of variables available to the authors at the time of publication.

3. Results

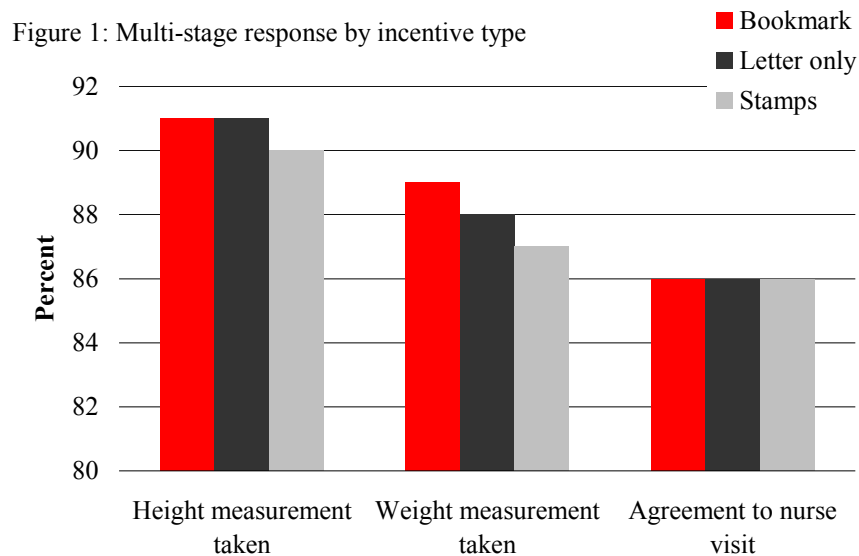
The results of the incentives experiment were analysed using a number of different response indicators. This included overall household response rates, as shown in table 2, response to subsequent stages of the survey, profile of non-response and a brief assessment of the profile of informants interviewed within each condition type.

Table 2: Household level response by incentive type

	Stamps	Bookmark	Letter alone
Issued addresses	4299	4303	4314
Out of scope to survey	559	543	533
Inscope addresses	3740	3760	3781
Unproductive: refusal	920	979	988
Unproductive: no contact	65	56	51
Unproductive: other	153	156	148
Co-operating households	2602	2569	2594
Household Response Rate (%)	69.6	68.3	68.6

There were no significant differences in overall household response rate between each condition type. The household response rate was 70% for those who received the stamps, 69% for those who received the letter only and 68% for those who received the bookmark. However, none of these differences were significant at the 95%CI level ($p=0.193$ between the stamps and bookmark conditions).

Figure 1 shows response to subsequent stages of the survey by individuals within co-operating households. This analysis is based on the total number of adults aged 16 and over interviewed within households allocated to each condition type. A total of 2615 adults aged 16 and over were interviewed in households where the stamps had been received, 2582 adults were interviewed in households which had received the bookmark and 2583 adults were interviewed in households where the letter alone had been sent.



In co-operating households where either the bookmark or the letter only had been received, 91% of adults gave a height measurement. In households where the stamps had been received, 90% of adults gave a height measurement, the difference between the three conditions types was not significant. Likewise, 86% of informants in all three conditions agreed to co-operate at the second stage of the survey, the nurse visit. The only significant finding observed between the three conditions was in relation to the proportion of informants providing a weight

measurement. Significantly more informants from households who had received the bookmark provided a weight measurement (89%) than those from households who had received the stamps (87%) ($p=0.031$). However, given the lack of significant differences observed between the three condition types in relation to household level response, response to the height measurement and response the nurse visit, substantive importance should not be attached to this finding.

The reasons for non-response were also assessed to examine whether any differences could be observed, as shown in table 3.

Table 3: Non-response profile by condition type

Reason why address unproductive	Stamps		Bookmark		Letter alone	
	n	%	n	%	n	%
Total unproductive addresses	1138		1191		1187	
Personal refusal to interviewer	859	75.4	927	77.8	934	78.7
Refusal to office in advance of field work	61	5.5	52	4.4	54	4.5
<i>Total refusals</i>	<i>920</i>	<i>80.8</i>	<i>979</i>	<i>82.2</i>	<i>988</i>	<i>83.2</i>
No contact with selected address	65	5.7	56	4.7	51	4.3
Other reason why unproductive	153	13.4	156	13.1	148	12.5

Across all conditions, refusals to participate in the survey constituted the main reason for non-response. Although the level of refusals, both personal refusals to the interviewer and those received in office, varied by condition type, there were no significant differences between the three conditions. This indicates that the choice of incentives for inclusion within this experiment did not substantively alter the pattern of non-response for HSE. Further support is added to this through basic analysis of the profile of co-operating informants by condition type. The mean age of respondents in all three conditions was 49. The mean weight of respondents in all three conditions was 76 kilograms and the mean height of respondents in all three conditions was 176cm. The 2005 mid year population estimates for England show that 49% of the adult population is male and 51% is female. To minimise response bias, sample populations should aim to replicated this. Results from the incentive experiment showed there were no significant differences in the gender profile of co-operating respondents within each condition type: around 47% of informants were male and 53% of informants were female within all conditions.

4. Discussion

The impact of the unconditional incentives chosen for the HSE experiment upon response rates was negligible. No significant differences in household response rates were observed by condition type. Likewise, there were no substantive differences in response to later stages of the survey. Results similar to those observed on the Family Resources Study (FRS) were not evident in the results of the HSE experiment. FRS is single stage household survey, in which adults only are interviewed. The Health Survey for England is a multi-stage survey, in which up to two children per household, as well as all adults, are eligible for inclusion. Within the first stage of HSE, respondents are asked to participate in face to face interviews, fill in a self completion questionnaire and give height and weight measurement. It may be that the prospect of this additional burden was not countered by the receipt of the stamps. The absence of any differences between the three conditions, including the bookmark which was incorporated within the experiment to assess whether increased recognition of the letter could improve response, suggests that it is not what is included with the advance letter, but the letter itself, that is memorable.

Anecdotal evidence from interviewers working on the experiment did, however, indicate that the interviewers themselves liked the fact that either the bookmark or stamps were included with the letter as it gave them an extra tool to use on the doorstep when engaging in initial conversation. However, whilst interviewers stated it helped their confidence, any translation of this increased confidence to improvement in response rates was not evident within the results of the experiment.

When conducting experiments of this nature, the impact of the intervention upon response rates should not be considered in isolation. The impact upon non-response and the effect of non-response bias must also be considered. From the limited data available, it appears that the profile of responders was largely consistent across each condition type. Likewise, the reasons for non-response did not significantly alter across conditions, suggesting that the incentive types introduced did not affect response bias. However, only limited analysis regarding respondent profiles was undertaken as the full HSE 2006 data is yet to be made available. Once this is available, more in-depth analysis considering the socio-demographic profiles of informants in each condition can be carried out.

There is some evidence that including postage stamps with the questionnaires sent to respondents on postal surveys does have a positive effect on response rates (Nicolaas, 2006). However, evidence from this experiment suggests that when a multi-stage, household level, face to face survey, such as HSE, attempts to institute methods borrowed from studies of lesser complexity or those with different administrative modes, the results are not translated. As such, unconditional incentives were shown to have no significant impact upon HSE response rates.

References

- McConaghy, M, and Beerten, R. "Influencing response on the Family Resources Survey by using incentives", *Social Survey Methodology Bulletin*, 51, pp. 27-35.
- National Centre for Social Research (2003) "National Travel Survey 2002: Report on incentives experiment", unpublished report, London, England: National Centre for Social Research.
- Nicolaas, G. (2006) "Population coverage and response rates for a postal survey on social capital", *Social Survey Methodology Bulletin*, Special Edition, 58, pp. 47-55.
- Singer, E (2002) "The use of incentives to reduce non-response in household surveys" in Groves, R et al. (eds.) *Survey Nonresponse*, New York: Wiley, pp.163-177.
- Sproston, K and Mindell, J. (2006) (eds.) *Health Survey for England 2004: Volume 2, Methodology and documentation*, London, National Centre for Social Research, p. 44.