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The effect of increasing financial incentives in a panel survey: an experiment on the British Household Panel Survey, Wave 14

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**THE EFFECT OF INCREASING FINANCIAL INCENTIVES IN A PANEL SURVEY:
AN EXPERIMENT ON
THE BRITISH HOUSEHOLD PANEL SURVEY, WAVE 14**

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ABSTRACT

This descriptive paper reports the results of an experiment carried out at wave 14 (2004) of the British Household Panel Survey (BHPS). A split-sample design was used to assess the effect on response rates of increasing the monetary incentive given to survey respondents from £7 per interview to £10 per interview. The results suggest that even though the increase was relatively small, response rates were higher for those receiving the increased incentive amount, an effect that varied by the demographic characteristics and previous response history of respondents.

NON-TECHNICAL SUMMARY

The British Household Panel Survey (BHPS) involves interviewing a sample of people repeatedly, at annual intervals, to chart changes in their lives. In 2004, on wave 14 of the BHPS, an experiment was carried out to investigate the effect on response of increasing the value of small payments made to respondents (known as incentives). In the experiment the voucher was increased to £10 from £7 for an individual interview and to £5 from £4 for the youth interview for half the sample. This was a randomised experiment where each interviewer had some of their households receiving £10 per individual and some the standard £7 per interview.

The increased incentive had a greater effect on increasing response with certain types of respondents including younger respondents and the younger middle aged, the separated and divorced, the self-employed and the long term sick and disabled. Household composition was also a factor with those living in single non-elderly households, couples with and without dependent children and lone parent households being more likely to respond in the £10 group. Once a range of individual and household level characteristics are taken into account, it is the amount of the voucher, the sample member's response history across the years of the survey, their gender and age group, household composition and regional effects which are the important elements predicting response at wave 14.

There is some evidence that interviewer effort in contacting households was reduced for the £10 group and that movers were easier to trace and interview in the £10 group. The higher voucher increased response rates for children turning 16 entering the main interviewed panel, suggesting that some form of 'golden handshake' to welcome this group into the main panel may be an effective targeting strategy. The voucher increase also had the effect of increasing whole household co-operation, through reducing both whole household refusals to the interviewer and within household refusals in co-operating households as well as increasing response amongst previously less co-operative respondents such as those who had done a telephone interview the previous year. This suggests that the increased voucher gave the interviewer greater leverage on the doorstep and in encouraging previous non-responders within households to take part.

Introduction

The British Household Panel Survey (BHPS) is an annual survey which began in 1991 with a representative sample of around 5,000 households and individuals in Great Britain. In 1999 extension samples in Scotland and Wales were added to the panel sample and in 2001 a sample in Northern Ireland was included, giving a current total sample size of around 9,000 households. The wave 14 incentive experiment was implemented on the original BHPS sample only so the extension samples are not included in the analysis reported in this paper.

The BHPS is a face-to-face survey using Computer Assisted Personal Interviewing (CAPI) data collection. The questionnaires include a household questionnaire administered to one person only and taking on average 7 minutes, an individual questionnaire of around 40 – 45 minutes for each adult aged 16 and over and each adult also completes a short self-completion questionnaire taking around 5 minutes. A short proxy questionnaire can be used if a household member is unable to be interviewed for some reason and is usually completed by another member of the household. Children aged 11 to 15 complete a self-completion youth interview which takes around 10 minutes. The design of the BHPS is one where all members are followed as they move address and as new members join a sample household, they also become eligible for interview. For details of the design and conduct of the BHPS see www.iser.essex.ac.uk/ulsc/bhps.

The BHPS has a refusal conversion programme which includes collecting a telephone questionnaire if the respondent refuses to have an interviewer call to do a full interview. This has similar content to the proxy questionnaire and is around 10 minutes in length¹. In most cases, those who complete a telephone questionnaire at one year of the survey are issued to field at the following wave to attempt to convert them back to a full interview, a strategy which has proved successful in minimising attrition over the years of the survey (Burton, Laurie and Lynn, 2006). Similarly, refusals at one year of the survey are not necessarily withdrawn from the sample if it is judged from interviewer comments that a further attempt may be successful.

Since wave 3 of the survey, the BHPS has achieved high annual re-interview rates, typically re-interviewing 94% - 96% of eligible respondents who had been interviewed the year previously. The panel is well established and as the majority of respondents have been interviewed since 1991 or for some years, they form a fairly committed group. For respondents interviewed at all waves of the survey

¹ From wave 15 of the BHPS the length of the telephone questionnaire has been extended to 20 minutes and the content mirrors the core content of the individual questionnaire more closely.

the annual re-interview rate is generally slightly higher than for all those interviewed at the previous wave, at around 97%. Nonetheless, no matter how low the level of attrition year on year minimising attrition is of central concern as the effect of non-response builds cumulatively over time. To limit losses to the sample a range of procedures are used each year including use of letters and short reports of findings designed to inform and motivate respondents, procedures for tracing respondents who move address and methods for respondents to let the survey organisation know their new address, providing flexibility and fitting in with the respondent in terms of when and where the interview takes place, the use of telephone interviews where a face to face contact is not possible, and individual personal contacts in response to a bereavement, the birth of a child or a marriage for example. In addition, an incentive in the form of a store gift voucher is offered to respondents as part of the wider package of measures to maintain high response rates and minimise attrition (Laurie et al, 1999).

Incentives on the BHPS

Respondents on the BHPS have always received an incentive as thanks for taking part in the survey. From 1991 to 1995 this was £5 per interview and was raised to £7 per interview from 1996 (wave 6). In 1994 (wave 4), children aged 11-15 began to be interviewed as part of the survey and in 1994/1995 received £3 for this interview. In 1996 this was raised to £4 per youth interview. Since 1996, the incentive has been sent in advance to all respondents with a full interview at the previous wave. Interviewers have spare vouchers for any new household members or respondents who were not interviewed at the previous wave and hand these to them on conclusion of the interview. The BHPS also offers small gifts to respondents in addition to the gift voucher incentive. In the past these have included pens and diaries embossed with the survey logo and the diary has now become an annual feature which respondents have come to expect to receive. The cost of the diary is around 80 pence (GBP) per respondent and is given to respondents by the interviewer when they call for the interview. A diary is particularly appropriate on BHPS as almost all interviews are carried out in the period from September to December each year.

Evidence on the effect of incentives

There is an extensive literature on the use of incentives in cross-sectional surveys, much of which has come out of the US. Laurie and Lynn (2006) provide a summary of what is known about incentives in both cross-sectional and longitudinal contexts. The cross-sectional evidence shows that cash incentives are effective in increasing response, even though this varies by survey mode and the type of incentive strategy used. The evidence suggests that pre-paid monetary incentives are the most effective in increasing response compared to a gift (Church, 1993; Singer et al, 1999; James and Bolstein, 1992;

Couper et al, 2006). There is also evidence of an interaction between the level of burden of a survey and the effectiveness of incentives in increasing response (Singer et al, 1999; Lynn and Sturgis, 1997). Incentives are also known to be more effective on surveys which typically have lower response rates and where the saliency of the research may not be high for respondents (Groves et al, 2000). There is also some evidence that incentives work primarily by reducing refusals and have little effect on non-contact rates (Singer et al, 2000). The effect on data quality in terms of sample composition and response distributions have been examined by Couper et al (2006) who found no differences in data quality or differential measurement errors where respondents were offered either a cash incentive or a gift. Monetary incentives do not appear to adversely affect data quality as measured by the levels of item non-response or the effort expended in the interview measured by the number of words given to verbatim items (Singer, Van Hoewyk, Maher, 2000) and that the effects of a prepaid non-monetary incentive are positive with no evidence of a reduction in data quality (Willimack et al, 1995).

There is more limited evidence on the effect of changing the amount of the incentive or the value of the incentive during a longitudinal survey even though this is something which is common on many longitudinal surveys (Laurie and Lynn, 2006). In the absence of experimental evidence, it is difficult to disentangle the effect of the incentive from other survey procedures designed to minimise losses to the sample, some of which may have significant impacts on response rates. Some experimental evidence exists but the results are somewhat mixed. Overall, current evidence suggests that incentives can be effective in reducing attrition over multiple waves of a survey, and that making changes through introducing an incentive, offering higher amounts and targeting of various kinds does affect response even though these effects vary depending on the survey context. As with cross-sectional surveys, prepaid monetary incentives are most effective in increasing response, an effect which holds across multiple waves (James, 1997; Mack et al, 1998). However, the incentive needs to be sufficiently high to reduce attrition over time, with some evidence that smaller monetary incentives have no effect over the longer term (Mack et al, 1998). Others have found there is a positive and enduring effect on subsequent wave response for non-monetary incentives, where entry into a lottery was offered during the life of the survey (Scherpenzeel et al 2002). There is also some evidence of lower levels of item non-response where incentives are used on longitudinal surveys and a reduction in interviewer effort in terms of the number of calls required (James, 1997; Mack et al, 1998). Incentives appear to have a differential effect by demographic characteristics, with those on low incomes, with low educational qualifications and from ethnic minority backgrounds responding to the incentive more than other groups (Mack et al, 1998).

Targeting strategies have also been found to be effective, especially where previous refusals have been offered an incentive to take part at a later wave (Kay et al, 2001; Martin et al, 2001; Rodgers, 2002). One off payments or 'end game' payment strategies to increase response from the least co-operative sample members at the first wave of a longitudinal survey have also been used (Juster and Suzman, 1995). Even though we do not know how successful these are in delivering long term commitment to the survey, one study suggests that a large payment at the first wave had no effect on increasing or decreasing later response relative to others who initially refused and were persuaded to take part by other means, nor did the large incentive at wave 1 induce an expectation that large incentives would be offered in later waves of the panel (Lengacher et al, 1995). Targeting raises issues of equity and fairness to respondents, who may react negatively if they know that other sample members are receiving more than themselves, even though the evidence from one study suggests that this is not necessarily problematic (Singer, Groves and Corning, 1999). This is an area that deserves further enquiry as there may be unintended consequences of perceptions of inequity and maintaining the goodwill of survey respondents is paramount.

In summary, the cross-sectional evidence appears to apply to longitudinal surveys even though there are many areas where we have limited knowledge about the longer term effects of incentives. These include the effect of incentives on attrition, sample composition and data quality, the best targeting strategies to use, if any, and the effect of introducing, increasing or changing the way incentives are delivered during the life of a longitudinal survey.

Wave 14 split sample experiment

In 2004, wave 14 of the BHPS, a split-sample experiment on increasing the incentive to £10 for a full individual interview and £5 for the youth interview was carried out. The experiment was designed to assess the impact on response of a relatively small increase in the voucher. In the experiment the voucher was increased to £10 for an individual interview and £5 for the youth interview for half the sample. This was a randomised experiment where each interviewer had some of their households receiving £10 per individual and the rest the standard £7 per interview. Each interviewer had a sample allocation of between 15 and 30 households depending on the size of their sample point. The amount of voucher received was assigned randomly across respondents even though all individuals within a household received the same voucher amount (see below). As a result, there was clustering within households, something which was unavoidable as giving differing amounts within households would have created problems for interviewers and respondents. Any new entrants to the household at wave 14 were given the amount received by other members of the household.

One of the issues of concern was how family members or friends who had been co-resident at an earlier wave of the survey but now lived in separate households, would react if other family members or friends in the survey received a higher voucher amount as a result of the random assignment. In order to ensure this did not happen in a large number of cases, and that all those who had been co-resident at an earlier wave of the survey received the same voucher amount, the wave 1 household identifier and all descendent household identifiers of that 'parent' household were used to assign those households to the same voucher group. To make the allocation, each sample member was assigned the wave 1 household identifier with which they were associated, even if they had moved from the wave 1 household at a subsequent wave of the survey. The voucher amount was then assigned to every other household ID so all those coming from the same 'parent' wave 1 household received the same amount. This system worked well as there were only 16 individuals in 8 households who did not receive the voucher amount assigned to them in the experiment. These cases have been excluded from the analysis which follows.

To ensure the experiment was implemented with as little error as possible, each household coversheet had a pre-printed 'Voucher Type' code telling the interviewer how much respondents in that household should receive. Interviewers were also briefed about how to implement the experiment. Some interviewers expressed concerns that not all sample members were getting the higher voucher amount. Many interviewers had been asking for an increase in the voucher for some years and so may have seen it as unfair that only some of their households had the increase at wave 14 so it may be the case that interviewer attitudes to the experiment played a role in determining response ².

The procedures for mailing out incentives in advance remained unchanged. The advance letters used on the BHPS are tailored according to the response outcome at the previous wave of the survey and are addressed to each individual within the household. All those who had done a full interview the previous year had their voucher in their advance letter as well as new 16 year olds eligible for a full interview for the first time at wave 14. All respondents who received the higher voucher amount were told it had increased in their advance letter (see Appendix A). For those who did not receive their voucher in advance, the advance letter told them the voucher had increased to £10 and that the voucher would be given to them by the interviewer at the point of interview if they took part.

² To assess the attitude of the interviewers to the experiment, a short debriefing questionnaire was completed by the interviewers and will be reported in a separate paper.

An additional change implemented at wave 14 was a change in the type of gift voucher used. In previous years the gift voucher was for use in one of the major store chains in Great Britain, which also enabled use in any other stores belonging to that chain. At wave 14, the gift voucher was one which can be redeemed at a much wider range of stores and is not tied to one chain in particular. This was done so that respondents would find it easier to redeem their vouchers and have a wider choice of stores where they could use them. The new type of voucher was given to all respondents in both the £7 and £10 groups. While interviewers reported that respondents preferred the new type of voucher, we judged that if there was any effect from the change in the type of voucher, this should be common across both experimental groups, so should not bias the results of the experiment in any way.

Results of the experiment

In this section we examine the results of the experiment. We expected to see little or no real effect on response rates for an increase which was in monetary terms small at £3 per person interviewed. As noted, response rates are already high on the BHPS sample leaving a relatively small margin for any increase. Despite this, the individual level response outcomes suggest that even this small increase in the voucher amount did have some effect on response rates. Table 1 gives the wave 14 individual response outcomes conditional on the wave 13 response. The annual re-interview rate (i.e. all those who did a full interview at wave 13 and were re-interviewed at wave 14) for those receiving £7 was 94% compared to 96% for those receiving £10, a difference of 2%.

The increased incentive also appears to have a greater effect on response for those who were eligible but not interviewed at wave 13, suggesting that an increased incentive may be an effective strategy for reluctant respondents. The proportion of sample individuals who refuse to co-operate but are in a partially co-operating household at wave 14 for those who had refused at wave 13 was 4% lower in the £10 group (68%) than in the £7 group (72%). The percentage of previous wave within household

Table 1: Wave 14 individual response outcomes by wave 13 response, eligible respondents aged 16 and over at wave 14

	Wave 13 individual interview outcome (col %)							
W14 interview outcome	Full int	Proxy	Tel int	Within hhold refusal/ Non-int	Youth int	Youth refusal/ non-int	In whole hhold refusal	In whole hhold non-contact
All								
Full interview	95	20	16	9	93	36	9	6
Proxy interview	<1	53	1	2	2	--	<1	<1
Telephone interview	2	3	44	4	1	7	12	3
Within hhold refusal	1	19	6	70	1	43	6	3
Whole household refusal	1	3	25	11	2	14	63	5
Whole household non-con	<1	2	8	4	1	--	10	83
N	7972	193	215	565	147	14	372	385
£7 voucher								
Full interview	94	20	13	6	91	37	10	6
Proxy interview	1	51	1	2	3	--	<1	--
Telephone interview	2	3	43	5	2	13	8	3
Within hhold refusal	1	21	10	72	2	25	7	2
Whole household refusal	1	4	23	10	2	25	66	5
Whole household non-con	1	1	10	5	2	--	9	84
N	4026	100	105	296	64	8	199	225
£10 voucher								
Full interview	96	20	19	13	95	33	9	6
Proxy interview	<1	56	2	3	1	--	--	1
Telephone interview	2	2	44	4	--	--	17	5
Within hhold refusal	<1	18	3	68	--	67	5	3
Whole household refusal	<1	1	27	11	3	--	59	4
Whole household non-con	<1	3	5	1	1	--	10	81
N	3946	93	110	269	83	6	173	160

The difference between the voucher groups was sig at <.001
New entrants at wave 14 not included

refusals doing a full interview at wave 14 amongst the £10 group was twice that of the £7 group, 13% and 6% with a full interview respectively. Similarly, for those who had done a telephone interview at wave 13 as part of the BHPS refusal conversion programme, the within household refusal rate at wave 14 was 7% lower for the £10 group (3%) compared to the £7 group (10%). In addition, for those who had done a telephone interview at wave 13, the conversion to a full interview at wave 14 was 6% higher for the £10 group (19%) than for the £7 group (13%).

At each year of the survey young people turning 16 become eligible for a full adult interview and are effectively recruited into the main panel, making them an important group for the long term health of the panel survey. Of new 16 year olds who had done a youth interview the previous wave and were eligible for a full adult interview at wave 14 for the first time, the higher incentive increased the response rate

for this group. Amongst the £7 group, 91% did a full individual interview compared to 95% of those in the £10 group, a difference of 4%. For the £10 group of new 16 year olds it should be noted that the increase was twice as large in monetary terms than for the £7 group. The £7 group received just £3 more than their previous £4 for doing the youth interview while the £10 group experienced an increase of £6 compared to the £4 they received for the youth interview the previous year. This may suggest that for long running panels where children of original sample members are recruited into the sample at a given age, some form of 'golden handshake' to welcome and encourage them into the main panel at that point may be an effective targeting strategy to ensure as many as possible are recruited into the sample over the longer term. Whether this effect will hold over time for this group can only be assessed as future waves of data are collected.

Household level response outcomes

Given the lower within household refusal rates and higher full interview rates amongst the £10 group we might also expect to see some change in the household response rates at wave 14. For the BHPS, where key items such as total household income are computed from the reports of individual household members, full co-operation of all household members is an important factor in maintaining data quality, reducing the level of missing data and the need to impute missing values. Table 2 shows the household response rates for eligible households at wave 14. We see that the percentage for all interviewed households is 2% higher amongst the £10 households (94.4%) compared to the £7 households (92.2%). The majority of this difference is accounted for by an increase in the proportion of fully co-operating households amongst the £10 group (77.7%) compared to the £7 group (74.4%). This difference of over 3% partly reflects the lower within household refusal rates at the individual level we have seen in Table 1.

Looking at non-responding households we see a corresponding difference in the levels of overall household non-response, with households in the £7 group having a 2% higher non-response rate than those in the £10 group. We also see some differences between the types of household non-response. Although the differences and numbers are small, households in the £10 group were slightly less likely to be untraced or to be non-contacts than those in the £7 group as well as being less likely to refuse to the interviewer. There is no such difference for those who refuse directly to the research centre at the University of Essex before the interviewer calls. In this case it seems that having made their mind up to refuse, the amount of the incentive made little difference to this decision. This suggests that refusals made directly to the research centre may be somewhat firmer or of a different character than potential

refusals on the doorstep, where the interviewer has a chance to engage the respondent and encourage participation.

Table 2 BHPS Wave 14 household response outcomes (eligible households only).

W14 household outcome	Voucher amount	
	£7	£10
All eligible interviewed	74.4	77.7
Full interview(s) plus proxies	3.2	3.0
Full interview(s) plus refusals/proxies	9.9	9.2
Proxy, telephone or youth interview only	4.7	4.5
All interviewed households	92.2	94.4
Address untraced	1.3	0.8
Household non-contact	0.9	0.7
Household refusal to Research Centre	2.8	2.5
Household refusal to interviewer	2.2	1.0
No interview due to age/ill health	0.4	0.6
All non-interviewed households	7.8	5.6
<i>N</i>	<i>2576</i>	<i>2511</i>

The difference between the voucher groups was sig at < .01

Household mobility and response outcomes

One of the features of non-response for any longitudinal survey is geographical mobility and losses to the sample through being unable to trace respondents when they move to a new address. Table 3 gives the wave 14 household response outcome by voucher amount and whether or not the household was at the same address as the previous wave, the whole household had moved, or was a partial household move, that is one or more household members had split from the issued household.

We can see that geographical mobility is clearly associated with non-response as non-mover households in both experimental groups have significantly higher response rates than whole household moves. While the number of partial household moves is small it is worth noting that these households had the highest response rates in both experimental groups. The table also suggests that the survey is successful at gaining the co-operation of the sample member who has moved, but may be less successful at recruiting new household members who have joined their household. While caution is needed due to the small numbers in this group, the whole household co-operation rate amongst the £10 group of partial movers was higher than for the £7 group. This suggests that the increased incentive may have had an effect not only on the sample member who had moved but also on other members of their new household who would not have been interviewed previously on the survey.

Table 3: BHPS wave 14 household outcomes by whether household moved at wave 14 (eligible households)

	Non-mover	Whole	Part household
--	-----------	-------	----------------

W14 household outcome		household move	move
£7 voucher			
All eligible interviewed	78.2	58.9	56.1
Full interview(s) plus proxies	3.1	2.7	9.8
Full interview(s) plus refusals/proxies	9.5	11.3	29.3
Proxy, telephone or youth interview only	4.8	5.2	2.4
All interviewed households	95.6	78.1	97.6
Address untraced	--	8.5	--
Household non-contact	0.7	0.8	--
Household refusal to Research Centre	1.6	8.8	--
Household refusal to interviewer	1.9	3.3	2.4
No interview due to age/ill health	0.2	0.3	--
All non-interviewed households	4.4	21.7	2.4
<i>N</i>	<i>2142</i>	<i>363</i>	<i>41</i>
£10 voucher			
All eligible interviewed	79.7	68.7	67.6
Full interview(s) plus proxies	3.3	1.3	8.8
Full interview(s) plus refusals/proxies	8.9	9.5	23.5
Proxy, telephone or youth interview only	4.4	5.7	--
All interviewed households	96.4	85.7	100.0
Address untraced	--	4.4	--
Household non-contact	0.6	0.9	--
Household refusal to Research Centre	1.7	6.3	--
Household refusal to interviewer	0.9	2.2	--
No interview due to age/ill health	0.4	0.9	--
All non-interviewed households	3.6	14.7	--
<i>N</i>	<i>2145</i>	<i>316</i>	<i>34</i>

The difference between the voucher groups was sig at <.001
Households with an unknown mover status excluded

For non-mover households the response rate for all interviewed households was just 1% higher for the £10 group (96.4%) compared with the £7 group (95.6%). For whole household moves, the fully co-operating response rate was almost 10% higher in the £10 group (68.7%) than in the £7 group (58.9%) and for all interviewed mover households the £10 group had a response rate which was 7.6% higher than for the £7 group. In addition, the household refusal rates were lower amongst the £10 group than the £7 group and the untraced address category was also reduced by half in the £10 group.

At first sight, these results seem somewhat surprising as there would appear to be no real reason why mover households should respond to the incentive in a different way to non-mover households. It may be that mover households have specific types of characteristics in terms of their age structure or composition. Indeed we know that younger people are more likely to move than older people, and the effect we observe may actually be an age or other individual level effect which has produced a response to the raised incentive. Nonetheless, as losing sample members through geographical mobility is a significant source of avoidable attrition over time, an incentive strategy which encourages

mover households to remain in the survey could have a positive effect on longitudinal response rates, reduce the levels of differential attrition and lessen the potential for bias in the data.

Interviewer effort

The number of calls interviewers make to complete a household can be used as an indicator of the amount of effort needed to be made in order to achieve an interview. The number of calls interviewers have to make also has a direct effect on fieldwork costs as more calls translate into higher costs in terms of interviewer time and travel. On the BHPS, interviewers are required to make a minimum of six calls at an address before they can send it back as a non-contact. In reality, more than six calls are often made, particularly where one or more household members have been interviewed and the interviewer is calling to try and catch the final household members, or in the case of non-contacts which continue to be tried until the end of the fieldwork period. If the increased incentive reduced the number of calls the interviewer made, this would in turn increase the efficiency of the fieldwork. At wave 14 there was a small but statistically significant difference in the mean number of calls made by interviewers to complete a household. Including all responding and non-responding households, the mean number of calls for the £7 group was 2.39 and 2.27 calls for the £10 group. There is therefore some evidence of increased efficiency through a reduction in the number of calls interviewers needed to make in the £10 group.

Individual level response outcomes

This section examines individual level response outcomes and the demographic characteristics of those who were or were not interviewed by the amount of voucher they were offered. We would expect that respondents who had been interviewed at all waves of the survey since 1991 would be the most loyal panel members and therefore most likely to be interviewed again at wave 14.

Table 4 gives the response rates for individuals by the main types of response history which include:

- those interviewed at all previous waves (1-13)
- those who were interviewed at wave 1 of the survey but not at all waves of the survey so have an intermittent response pattern or stopped taking part at some point in the panel, including those who were only interviewed at wave 1 but remain in a sample household (n=111)
- those who were not interviewed at wave 1 either because they refused, or were not eligible for interview (e.g. sample children aged under 16), or are a new entrant who has joined a sample household since wave 1.

As expected, we see that those who have been interviewed at every year of the survey are significantly more likely to be interviewed at wave 14 for both voucher groups. Even so, response for a full interview amongst the £10 group is almost 2% higher than in the £7 group. For the second group, those interviewed at wave 1 but not at all waves, the response rates for a full interview are much lower at 59% with no difference between the £7 and £10 groups. This suggests that many of these respondents are long-term within household refusers, who having decided that they don't want to take part further, are not easily persuaded to be interviewed. The main difference for this category is the higher proportion doing any type of interview in the £10 group, including telephone and proxy interviews and the lower proportion of refusals. In consequence, 77.4 % of the £10 group had interview data of some kind compared to 70.4% of the £7 group.

Table 4: Wave 14 individual interview outcome by response history and voucher amount (all eligible respondents at wave 14 including new entrants)

	Response history					
	Interviewed all waves 1-13*		Interviewed at w1/ intermittent response*		Not interviewed at w1/ new entrants*	
	%		%		%	
<i>W14 interview outcome</i>	£7	£10	£7	£10	£7	£10
Full interview	95.6	97.3	59.0	59.3	70.9	75.7
Proxy	0.2	0.3	3.1	4.0	3.5	3.0
Telephone interview	2.5	1.2	8.3	14.1	3.4	2.7
In hhold ref/non-contact	0.6	0.1	11.6	10.7	13.7	12.6
Household refusal	0.8	0.7	12.4	9.3	5.4	4.2
Household non-contact	0.3	0.4	5.6	2.6	3.1	1.8
N=100%	2290	2286	701	646	1991	1923

* Sig <.01

Looking at those who were not interviewed at wave 1 but have joined the panel or become eligible for interview at a later wave, we see a marked difference in the response rates for a full interview between the voucher groups. In the £7 group, 70.9% did a full interview compared to 75.7% in the £10 group. So the effect of the increased voucher clearly varies depending on the response history of the respondent and cannot be assumed to have a uniform effect across all respondents.

Response rates are also likely to vary by demographic characteristics. As is well documented in the literature on non-response, there are particular characteristics associated with non-response (see Lynn et al 2005 for a review of the research issues surrounding non-response). One hypothesis is that an increase in the incentive may have a differential impact on response for particular groups, and if those groups are in general less likely to respond, improve the quality of the data by reducing their under-

representation in the interviewed sample. The question is whether or not the increased incentive has decreased bias in the sample in any way or has simply provided more of the same types of respondents, having little or no effect on differential response patterns.

Table 5 gives the individual response outcomes for all eligible respondents at wave 14 by their demographic characteristics and voucher group. Across most characteristics we see a higher response rate in terms of doing a full interview in the £10 group than in the £7 group. Men are less likely than women to do a full interview in both groups but men in the £10 group have a response rate that is almost 3.4% higher than men in the £7 group. For women, response rates were higher by 2.6% in the £10 group, suggesting that the effect of the increased incentive may be more effective for men.

Looking at age groups, younger people are less likely to give a full interview and for 16-24 year olds there was little difference between the voucher groups. For the 25 – 34 year olds, the difference is an increase of 3% in the £10 group while there is no difference for the 35 - 44 year olds. Those aged 45-54 years had an almost 3% higher response in the £10 group while those who were aged 55 or over had no difference in response. This suggests that the increase in the voucher was more effective for certain age groups, with those who are younger middle aged where pressure on family time or income may be greater, and those of pension age being less likely to respond to the increase than other age groups. This may reflect the lower opportunity costs of taking part in the survey for those who have more free time and may not be as pressured by work or other family commitments.

For marital status, we see higher response rates in the £10 group for those who are married but the most marked increases are for those who are separated and the divorced, two groups who can be difficult to contact and interview. The response for the separated was 2.7% higher in the £10 group while the response for the divorced was 3.5% higher than the divorced in the £7 group. The effect of the incentive also varied by employment status, most markedly for the self-employed and the long term sick. In the £10 group the response rate for the self-employed was 5.3% higher in the £10 group and for the long term sick there was a difference of 7.4%. There were no significant differences by level of highest educational qualification even though response in the £10 group was slightly higher across all categories apart from those with 'other' qualifications.

Table 5: Wave 14 response outcomes by demographic characteristics and voucher amount (persons eligible for interview at w14).

	£7 voucher	£10 voucher
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	Full Interview	Proxy/ tel	Not int	N	Full Interview	Proxy/ Tel	Not int	N
	Row %				Row %			
All	80.7	13.7	5.6	4982	83.7	5.4	10.9	4855
Gender **								
Male	76.5	6.5	17.0	2404	79.9	6.3	13.8	2339
Female	84.6	4.7	10.7	2578	87.2	4.5	8.3	2526
Age group*								
16-24	85.6	5.9	8.5	675	86.3	5.2	8.6	677
25-34	84.5	7.1	8.4	806	87.5	5.4	7.1	832
35-44	87.0	5.9	7.1	951	87.3	6.2	6.5	881
45-54	83.6	6.1	10.3	737	86.4	6.7	6.9	765
55-64	85.3	6.0	8.7	687	85.6	5.6	8.8	665
65 and over	91.2	4.9	3.9	789	91.8	4.7	3.5	789
Marital status**								
Married	85.8	6.8	7.4	2477	87.8	5.9	6.3	2411
Cohabiting	83.1	4.7	12.2	665	83.1	6.2	10.7	672
Widowed	94.3	3.6	2.1	279	91.7	4.9	3.4	324
Divorced	87.4	4.4	8.1	271	91.1	5.8	3.1	225
Separated	90.0	8.3	1.7	60	92.7	3.6	3.6	55
Never married	86.5	6.0	7.5	906	87.8	4.5	7.7	952
Employment status**								
Self-employed	84.2	7.3	8.4	342	89.5	5.9	4.6	325
Employee	84.6	6.6	8.8	2475	86.6	5.9	7.5	2540
Unemployed	88.1	6.3	5.6	126	89.4	6.4	4.2	94
Retired	91.2	4.0	4.8	932	90.3	4.5	5.2	890
Family care	85.3	6.8	7.8	307	85.0	6.8	8.1	307
Full-time student	88.6	5.1	6.3	255	86.9	3.7	9.4	298
Long term sick	82.8	6.1	11.1	181	90.2	4.6	5.2	153
Other	90.0	5.0	5.0	40	84.4	15.6	--	32
Highest qualification								
Degree (and higher)	89.0	4.3	6.7	630	91.4	1.6	7.0	617
Teach/nurse	88.7	3.4	7.9	1303	90.9	2.9	6.2	1352
A level or equivalent	89.8	2.5	7.7	522	91.1	3.1	5.8	514
GCSE/O level	89.0	3.4	7.6	766	90.3	1.9	7.7	753
Other	92.2	2.3	5.5	345	91.8	3.0	5.2	329
None	88.9	4.0	7.1	796	90.6	3.5	5.9	764

* sig <.01 for each voucher group

** sig <.001 for each voucher group

'Not int' includes within household and whole household refusals/non-interviewed.

Status is status at w14 or w13 status if non-responder at wave 14.

Table 6 gives the same breakdown of response by household type, housing tenure and region. There are some variations in response rates according to household type, with higher response rates in the £10 group for single non-elderly households, couples with and without dependent children and lone parents with non-dependent children. Those living in Housing Association rented accommodation have the lowest response rates compared to other tenure types and for this group there was a 7.7% higher response in the £10 group.

Table 6: Wave 14 response outcomes by household characteristics and voucher amount

	£7 voucher				£10 voucher			
	Full Interview	Proxy/ tel	Not int	N	Full Interview	Proxy/ Tel	Not int	N
	Row %				Row %			
Household type**								
Single non-elderly	92.5	7.5	--	295	94.4	5.6	--	284
Single elderly	97.2	2.8	--	289	95.6	4.4	--	315
Couple: no children	86.2	6.0	7.8	1458	88.8	4.8	6.4	1429
Couple: dependent children	86.8	6.3	6.9	1398	86.7	6.8	6.5	1429
Couple:non-dependent children	80.7	6.1	13.2	638	83.2	6.1	10.7	607
Lone parent:dependent children	89.7	4.5	5.8	223	90.2	5.4	4.4	204
Lone parent:non-dep children	81.4	7.6	11.0	145	85.2	6.6	8.2	182
Unrelated adults/other	75.5	5.7	18.9	212	75.1	2.1	22.8	189
Tenure***								
Owned outright	89.6	3.8	6.5	1254	90.7	3.1	6.2	1287
Owned with mortgage	88.0	4.6	7.4	2210	90.3	3.4	6.3	2234
Local Authority rented	91.6	3.2	5.2	441	90.5	5.5	4.0	381
Housing Assoc rented	86.2	6.2	7.6	225	93.9	2.0	4.0	198
Other private /rent free	86.2	3.8	10.0	390	84.5	4.0	11.5	399
Region**								
London	83.8	6.8	9.4	383	80.8	9.7	9.5	412
Rest of South East	84.1	7.2	8.7	914	89.3	4.6	6.1	885
South West	90.4	3.8	5.8	426	90.2	4.0	5.8	430
East Anglia/ Midlands	88.5	5.8	5.7	617	90.2	4.3	5.5	580
West Midlands	80.8	8.2	11.0	380	85.4	6.7	7.9	405
Manchester & NW	87.6	6.4	6.0	484	88.3	4.5	7.2	511
Yorkshire/Humberside	88.8	4.6	6.6	439	89.9	4.6	5.5	433
Tyne and Wear/ rest N	88.8	3.4	7.8	296	82.5	10.4	7.1	280
Wales	88.0	4.3	7.7	258	85.7	6.3	8.0	251
Scotland	82.7	6.8	10.5	352	88.1	4.8	7.1	379

* sig <.01for each voucher group

** sig <.001 for each voucher group

*** sig <.001 for £10 group only

While these descriptive tables suggest that the voucher did have differential effects on particular sub-groups within the sample, we also want to know whether or not the increased voucher amount had a positive effect on response after controlling for other characteristics. Table 7 shows the results of a logistic regression predicting doing an individual interview at wave 14.

Table 7: Logistic regression predicting doing a full interview at Wave 14 (eligible respondents at wave 14)

	Model 1		Model 2	
	Odds ratio	S.E.	Odds ratio	S.E.

£10 voucher group	1.23*	.088	1.26*	.112
<i>(£7 voucher group)</i>				
Not interviewed at all waves 1– 13	0.08**	.008	0.09**	.014
<i>(interviewed at all waves)</i>				
Female	1.53**	.077	1.94**	.147
<i>(Male)</i>				
16-24 years			2.60*	.727
25-34 years			1.57	.406
35-44 years			1.23	.309
45-54 years			0.95	.249
55-64 years			0.81	.164
<i>(65 and over)</i>				
Single non-elderly			3.54**	1.15
Single elderly			3.40*	1.37
Couple: no children			0.91	.122
Couple:non-dependent children			0.68	.105
Lone parent:dependent children			1.48	.492
Lone parent:non-dep children			1.11	.322
Unrelated adults/other			0.52*	.117
<i>(Couple: dependent children)</i>				
Rest of South East			1.59	.250
South West			2.02*	.436
East Anglia/ Midlands			1.78*	.373
West Midlands			1.03	.261
Manchester & NW			1.71*	.311
Yorkshire/Humberside			2.12**	.387
Tyne and Wear/ rest N			1.16	.260
Wales			1.20	.238
Scotland			1.25	.200
<i>(London)</i>				

*** sig <.001 ** sig < .01 *sig < .05

Non-significant variables entered in model 2 included marital status, employment status, qualifications, housing tenure, monthly household income.

Reference categories in (italics) N observations=8468. If not interviewed at w14, status is as at w13.

Model adjusted for clustered survey design using svy option in STATA

In both models we see that the effect of the £10 voucher is positive and significant in increasing the odds of responding compared to those receiving the £7 voucher. Those with a complete individual interview history across all thirteen waves were also significantly more likely to respond compared to those who had not been interviewed at all waves suggesting a 'loyalty' effect for long term panel members, something which holds across both models. Women were more likely to respond than men, an effect which also holds in model 2.

In model 2, individual and household level characteristics including age group, marital status, employment status, highest educational qualifications, housing tenure, household composition, monthly household income and region are included. Age group was significant with those in the youngest age group (16-24 years) being more likely to respond compared to those aged 65 and over. Housing tenure

and monthly household income were not significant. Household composition effects were significant with the single non-elderly and the single elderly being more likely to respond and unrelated adults sharing accommodation being less likely to be interviewed when compared with couples with dependent children. There were also regional variations with those living in the South West, East Anglia and the Midlands, Manchester and the rest of the North West, and Yorkshire and Humberside being more likely to respond than those living in London.

Conclusion

The higher incentive had a clear effect on increasing response rates at wave 14 of the BHPS. The higher response rates for the £10 group are somewhat surprising given the relatively small increase of just £3 and the fact that the panel is well-established with a fairly loyal respondent base. Given already high annual re-interview rates, the margin for any increase in response was also limited. We can only speculate about the mechanism involved within the £10 group. One hypothesis would be it was the actual amount that was most important and that £10 was seen by respondents as being a significant monetary increase for the time they spend doing the survey. Alternatively, it could be that it was not the amount of the increase but its symbolic value in terms of demonstrating to respondents that they were appreciated and valued that was most important. There is some evidence from comments interviewers received from respondents that the latter is the case for some sample members. Respondents made comments such as *'....it was a nice surprise after all these years'* and that *'....it was nice to have an increase, it shows we have been appreciated'*. Other comments saw the increase as a recognition of the number of years they had been taking part with comments such as *'....is about time we had an increase'* or *'....after all the years it is nice to get a little bit extra'*.

The increased incentive had a greater effect on increasing response with certain types of respondents including younger respondents and the younger middle aged, the separated and divorced, the self-employed and the long term sick and disabled. Household composition was also a factor with the single non-elderly, couples with and without dependent children and lone parent households being more likely to respond in the £10 group. Once a range of individual and household level characteristics are controlled, the voucher effect continues to be significant. In this model it is the voucher amount, the sample member's response history, gender, age group, household composition and regional effects which are significant.

There is some evidence that interviewer effort in contacting households was reduced for the £10 group and that movers were easier to trace and interview in the £10 group. The higher voucher increased

response rates for children turning 16 entering the main interviewed panel, suggesting that some form of 'golden handshake' to welcome this group into the main panel may be an effective targeting strategy. The voucher increase also had the effect of increasing whole household co-operation, through reducing both whole household refusals to the interviewer and within household refusals in co-operating households, as well as increasing response amongst previously less co-operative respondents such as those who had done a telephone interview the previous year. This suggests that the increased voucher gave the interviewer greater leverage on the doorstep and in encouraging previous non-responders within households to take part. Whether this effect will hold at the following wave of the panel for these respondents can only be assessed once the data become available.

APPENDIX A

Advance letters - £10 and £7 groups for those with a full interview at the previous wave

£10 group

Dear

Thank-you for taking part in the **Living in Britain** survey last year. An interviewer will be calling soon to ask you for an interview and will be happy to make an appointment if they call at an inconvenient time.

As a token of our thanks, we are pleased to be able to increase your gift voucher for this year's survey to £10 and this is enclosed. This year the voucher is from High Street Gift Vouchers to give you a wider range of stores to use them in, including Boots and many others.

The survey continues to go from strength to strength and is a key source for policy and academic researchers to get the facts and figures they need to understand how our society is changing over time. I do hope you will continue to help us. The interview will take approximately 45 minutes of your time. The data are strictly confidential and we guarantee you or members of your family cannot be identified in any way.

If you have children aged between 11 and 15, I hope you will allow them to answer our 'Youth Questionnaire'. The questionnaire asks for their opinions and hopes for the future. All those taking part will be given a £5 gift voucher by the interviewer.

A freepost change of address card is enclosed. If you happen to move during the year please let us know your new address details by sending back the card. You can also notify us of any address changes on our new website for people who are in the survey at LiBSurvey.essex.ac.uk Whether you return the card or use the website to tell us about your new address we will send you a £5 gift voucher for doing so. The website also has information about the survey and some of the research being carried out. So if you have access to the internet, please take a look. If you have any queries you can call Sandra Jones on Freephone 0800 000000. You can also email us at libsurvey@essex.ac.uk or write to the Freepost address above.

Many thanks for your help which is much appreciated.

£7 group

Dear

Thank-you for taking part in the **Living in Britain** survey last year. An interviewer will be calling soon to ask you for an interview and will be happy to make an appointment if they call at an inconvenient time.

As a token of our thanks please find enclosed your £7 gift voucher for this year's survey. This year the voucher is from High Street Gift Vouchers to give you a wider range of stores to use them in, including Boots and many others.

The survey continues to go from strength to strength and is a key source for policy and academic researchers to get the facts and figures they need to understand how our society is changing over time. I do hope you will continue to help us. The interview will take approximately 45 minutes of your time. The data are strictly confidential and we guarantee you or members of your family cannot be identified in any way.

If you have children aged between 11 and 15, I hope you will allow them to answer our 'Youth Questionnaire'. The questionnaire asks for their opinions and hopes for the future. All those taking part will be given a £4 gift voucher by the interviewer.

A freepost change of address card is enclosed. If you happen to move during the year please let us know your new address details by sending back the card. You can also notify us of any address changes on our new website for people who are in the survey at LiBSurvey.essex.ac.uk Whether you return the card or use the website to tell us about your new address we will send you a £5 gift voucher for doing so. The website also has information about the survey and some of the research being carried out. So if you have access to the internet, please take a look. If you have any queries you can call Sandra Jones on Freephone 0800 00000. You can also email us at libsurvey@essex.ac.uk or write to the Freepost address above.

Many thanks for your help which is much appreciated.

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