

Experiments with Methods to Reduce Attrition in Longitudinal Surveys

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Why should we study efficient forms of reducing panel attrition?

- ▶ **sample size**
- ▶ **non response bias**: Those dropping out from the panel are different from the stayers.
 - ▶ bias on parameter estimates
 - ▶ bias on estimates of change measures
- ▶ **possibility of tailoring**: longitudinal detailed information on sample members can make it possible to set up a tailored strategy to reduce non response bias (Couper and Ofstedal, 2006; Laurie and Lynn, 2008; Groves and Couper 1998; Couper et al. 2000)
- ▶ **costs reduction**: minimizing the costs of tracking

Panel attrition at a glance.

Two major sources of panel attrition (Laurie et al. 1999)

- ▶ geographical mobility of sample members
- ▶ panel fatigue

A non unitary model of panel attrition (Lepkowski and Couper, 2002)

- ▶ locating and tracking (Couper and Ofstedal, 2006)
 - ▶ likelihood of moving (non manipulable by the data collectors)
 - ▶ likelihood of contact given move (manipulable by the data collectors)
- ▶ contact
- ▶ cooperation

Previous literature

- ▶ comparisons of **alternative tracking methods**: Coen et al 1996, Ribisl et al 1996, Scott, 2004, Couper and Ofstedal, 2006
- ▶ **role of incentives** on response rate (for a review see Laurie and Lynn 2008)
- ▶ relationship between **topic salience**, non response and non response bias (see Groves et al. 2006)

- ▶ There is very little availability of studies carrying out a systematic experimental analysis on different between-wave contact strategies, perhaps combined with alternative incentive schemes. Moreover, very few attempts have been done in order to assess the effectiveness of strategies tailored to specific categories of non respondents.

Previous literature: McGonagle et al (2009)

- ▶ Uses PSID
- ▶ treatment groups constructed on the basis of four conditions:
 - ▶ incentives for updating the address (unconditional versus conditional \$10 incentive)
 - ▶ mailing design (traditional black and white design versus contemporary colour design)
 - ▶ receiving or not receiving a study newsletter
 - ▶ timing of the mailing (June, October, or both)
- ▶ the study finds that
 - ▶ both incentives and the study newsletter have little effect in inducing response to the mailing
 - ▶ the traditional mail design seems to be more effective than the updated one
 - ▶ two mailings are more likely to respond to the mailing request than those receiving just one mailing

Our contribution

- ▶ We compare experimentally three fundamentally different ways of asking sample members to supply address updates
- ▶ We test the role of conditional versus unconditional incentives and the effect of different amounts of monetary incentives in encouraging people to confirm or update their address details.
- ▶ We analyze both the efficacy and the cost of each between wave strategy
- ▶ We use longitudinal information to set up strategies explicitly tailored for respondents with a lower propensity to respond

Strategies to reduce non response in BHPS

BHPS uses various strategies to reduce non response, including (see also Laurie et al. 1999):

- ▶ At each interview, providing respondents with a freepost change of address card pre-printed with their address details as we currently hold them.
- ▶ Sending a £5 gift voucher incentive to any person returning a change of address card with their new address details.
- ▶ An annual between fieldwork mailing of a short respondent report of research findings with a confirmation of address card and a reminder that if they inform us of a new address, they will receive a £5 gift voucher.
- ▶ Unconditional gift voucher incentive (£10 per person) sent with the advance letter prior to the interview (since wave 6).

Our experiment

- ▶ part of the **SMDI** project
- ▶ **Interpenetrated design** involving two innovative data collection experiments
 - ▶ The **between-wave contact experiment** inspired by Couper and Ofstedal (2006).
 - ▶ The **tailored materials experiment** aimed to test the tailoring of content for the between-wave respondent report mailing in order to stimulate interest, loyalty and cooperation.
- ▶ The **sample** for both experiments are the BHPS respondents at wave 17 and the response rates are computed on outcomes at wave 18.
- ▶ The **experimental units** can be either a single individual or a couple (where individuals are in couple and both those in the couple belong to the BHPS sample). Two people belonging to the same units get the same treatment by construction.

Our sample includes 8,877 experimental units: of those 58% are singletons while the reminders are couples

Between-wave contact experiment

Seven treatments:

- ▶ Asked to return an address-confirmation card:
 - ▶ with unconditional £5 incentive
 - ▶ with unconditional £2 incentive
 - ▶ with £5 incentive conditional on returning card
 - ▶ with £2 incentive conditional on returning card
- ▶ Asked to return a COA card if moved/moving (standard procedure used on BHPS all waves):
 - ▶ with £5 incentive conditional on returning card
 - ▶ with £2 incentive conditional on returning card
- ▶ Neither AC nor COA card; no incentive

The groups were assigned randomly to units after stratifying the sample by region at wave 17 and then by interviewer area.

Tailored materials experiment

Two treatments with half of sample (5,942 individuals) in each treatment group:

- ▶ **Standard** 'Report to Respondents'
- ▶ **Tailored** report based on respondent characteristics
 - ▶ Report 1 ('**Young**') if aged < 25
 - ▶ Report 2 ('**Busy**') if self-employed, long work hours (longer than 40 hours a week) or long commute (longer than 10 hours a week)
 - ▶ Report 3 ('Standard') otherwise

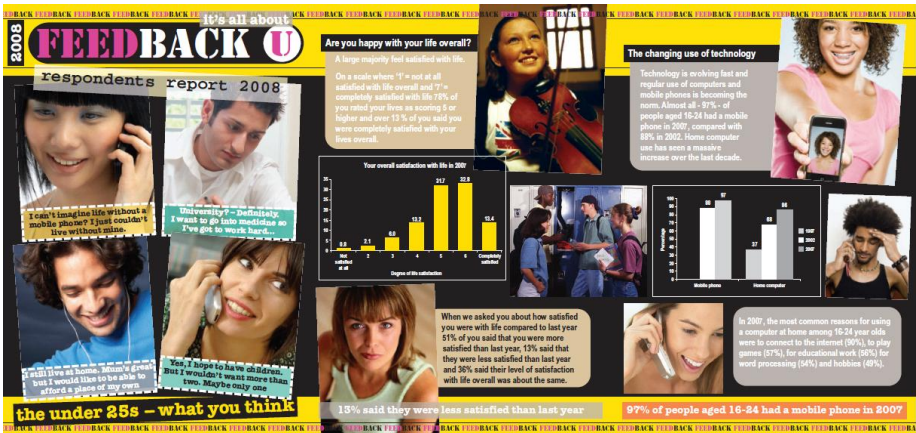
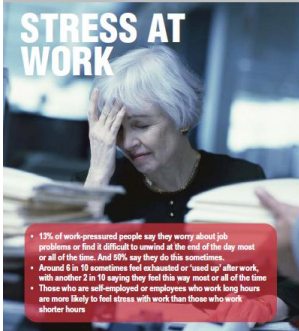


Figure: respondents report for young people

BURNING THE CANDLE

STRESS AT WORK



- 13% of work-pressured people say they worry about job problems or find it difficult to unwind at the end of the day most or all of the time. And 90% say they do this sometimes.
- Around 6 in 10 sometimes feel exhausted or 'used up' after work, with another 2 in 10 saying they feel this way most or all of the time
- Those who are self-employed or employees who work long hours are more likely to feel stress with work than those who work shorter hours

Work is draining: 60% are 'used-up' after work

Financially optimistic...

Busy people tend to be optimistic when it comes to their own future prospects. More than three-quarters said that they were living comfortably or doing alright. Over 1 in 3 (35%) said that in one year's time they expected to be doing better than now. Busy people were also more likely to own shares, ISAs and other investments.



... but over-stretched?

Busy people were more likely to have debts, other than mortgages. Almost half had some sort of debt, compared to just 4 in 10 of other adults. People who work longer hours were more likely than others to have personal loans, credit card debts, hire purchase agreements and an overdraft, but were less likely to owe money to catalogues or other mail order companies. The average amount of money owed by the job-busy who had debts was around £10,200, compared to £8,000 for other adults. However, job-busy people are likely to be able to afford to service their debts. If we split monthly earnings into five equal groups, the job-busy are over 2 times as likely to be in the highest earning group than other workers.

Thank-you for taking part

Many thanks for giving up some of your time to help us with the survey. Your help is vital to ensure that all types of people and experiences are represented in the survey – including those who live busy lives and have a work and family commitments to juggle. Remember, if you need to contact us for any reason please call our Freephone number 0800 252853

The Job-busy earn 40% more than average workers

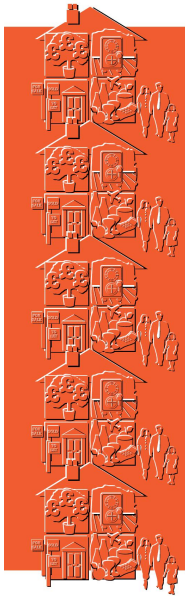
BURNING THE CANDLE THE JOB BUSY



ARE YOU WORK-PRESSED?

28% of workers spend about 43 hours a week at work

Figure: respondents report for busy people



Changing attitudes and behaviours

Report to Respondents - 2008

Figure: standard respondents report

Return behaviour: amount of the incentive

Table: card returned, by treatment type and amount of the incentive

		Freq.	tot	percent
unconditional	5 £	454	1124	40,4
	2 £	440	1.111	39,6
	pooled	894	2.235	40
conditional on return	5 £	394	1.125	35
	2 £	351	1.104	31,8
	pooled	745	2.229	33,4
conditional on moving and return	5 £	144	1.104	13
	2 £	167	1.096	15,2
	pooled	311	2.200	14,1
no incentives	1	70	1.111	6,3
	2	79	1.102	7,17
	pooled	149	2.213	6,73

pairwise mean comparison tests are in general significant at 1% level of significance

Effects on the household response rate

Table: Households' response behaviour, by treatment groups

		all interviewed	some interviewed	telephone interview	untraced movers	resident-non contact	refusals	total
		%	%	%	%	%	%	Freq.
unconditional	5 £	77,84	13,34	5,93	0,19	0,39	2,32	1.552
	2 £	76,52	14,68	5,94	0,2	0,52	2,15	1.533
	pooled	77,18	14	5,93	0,19	0,45	2,24	3.085
conditional on return	5 £	77,99	12,92	5,18	0,58	0,38	2,94	1.563
	2 £	78,8	11,83	5,92	0,2	0,13	3,12	1.538
	pooled	78,39	12,38	5,55	0,39	0,26	3,03	3.101
conditional on moving and return	5 £	78,44	13,51	6,31	0,06	0,39	1,29	1.554
	2 £	75,98	14,84	6,39	0,07	0,6	2,13	1.503
	pooled	77,23	14,16	6,35	0,07	0,49	1,7	3.057
no incentives	1	75,99	14,41	6,45	0,26	0,99	1,91	1.520
	2	77,68	13,5	6,06	0,13	0,59	2,04	1.519
	pooled	76,83	13,95	6,25	0,2	0,79	1,97	3.039

Table: Untraced movers: pairwise mean comparison tests

	incentive	unconditional			conditional on returning			conditional on moving			no incentives		
		5 £	2 £	pool.	5 £	2 £	pool.	5 £	2 £	pool.	none	none	pool.
unconditional	5 £		ns		**	ns		ns	ns		ns	ns	
	2 £	ns			**	ns		ns	ns	*	ns	ns	
	pooled						*			*			ns
conditional on return	5 £	**	**			**		***	***		*	**	
	2 £	ns	ns		**			ns	ns	***	ns	ns	
	pooled			*			***						*
conditional on moving and return	5 £	ns	ns		***	ns			ns		*	ns	
	2 £	ns	ns		***	ns		ns			*	ns	
	pooled			*			***						*
no incentives	none	ns	ns		*	ns		*	*			ns	
	none	ns	ns		**	ns		ns	ns		ns		
	pooled			ns			*			*			

Effects on costs: monetary costs

Table: Expected monetary cost of each treatment

	amount of the incentive (£)	share of those getting the money	expected monetary cost per person
unconditional	5	1	5
	2	1	2
conditional on return	5	0,3502	1,751
	2	0,3179	0,6358
conditional on moving and return	5	0,1304	0,652
	2	0,1524	0,3048
no incentives	0	0	0
	0	0	0

Effects on costs: number of field visits

Table: Number of field visits to achieve contact, by treatment group

		calls at issued address		calls at new address		total number of calls	
		group	average number of calls	group	average number of calls	group	average number of calls
		size		size		size	
unconditional	5 £	1581	1,73	90	1,31	1581	1,81
	2 £	1560	1,90	93	2,12	1560	2,03
	pooled	3141	1,82	183	1,72	3141	1,92
conditional on return	5 £	1586	1,86	55	1,09	1586	1,89
	2 £	1566	1,79	81	1,38	1566	1,87
	pooled	3152	1,83	136	1,26	3152	1,88
conditional on moving and return	5 £	1570	1,78	77	1,62	1570	1,86
	2 £	1548	1,74	87	1,21	1548	1,81
	pooled	3118	1,76	164	1,40	3118	1,83
no incentives	1	1538	1,80	84	1,31	1538	1,87
	2	1540	1,84	59	1,07	1540	1,88
	pooled	3078	1,82	143	1,21	3078	1,88
total sample size		12489		626		12489	

Table: Number of field visits to issued address: significance of pair-wise mean comparison tests between pairs of treatments

	incentive	unconditional			conditional on returning			conditional on moving			no incentives		
		5 £	2 £	pool.	5 £	2 £	pool.	5 £	2 £	pool.	none	none	pool.
unconditional	5 £		***		**	ns		ns	ns		*	**	
	2 £	***			ns	**		**	***		**	ns	
	pooled						ns			*			ns
conditional on return	5 £	**	ns			ns		*	**		ns	ns	
	2 £	ns	**		ns			ns	ns	**	ns	ns	
	pooled			ns						**			ns
conditional on moving and return	5 £	ns	**		*	ns				ns	ns	ns	
	2 £	ns	***		**			ns			ns	**	
	pooled			*			**						*
no incentives	none	*	**		ns	ns		ns	ns			ns	
	none	**	ns		ns	ns		ns	**		ns		
	pooled			ns			ns			*			

Table: Total number of field visits: significance of pair-wise mean comparison tests between pairs of treatments (any returning behaviour)

	incentive	unconditional			conditional on returning			conditional on moving			no incentives		
		5 £	2 £	pool.	5 £	2 £	pool.	5 £	2 £	pool.	none	none	pool.
unconditional	5 £		***		ns	ns		ns	ns		ns	***	
	2 £	***			**	***		***	***		***	***	
	pooled						ns			**			ns
conditional on return	5 £	ns	**			ns		ns	*		ns	ns	
	2 £	ns	***		ns			ns	ns		ns	ns	
	pooled			ns						ns			ns
conditional on moving and return	5 £	ns	***		ns	ns				ns	ns	ns	
	2 £	ns	***		*	ns		ns			ns	*	
	pooled			**			ns						ns
no incentives	none	ns	***		ns	ns		ns	ns			ns	
	none	***	***		ns	ns		ns			ns		
	pooled			ns			ns			ns			

Effects on costs: number of tracing calls from the office

Table: Number of tracing calls from the office, by treatment group.

		people contacted	group size	people contacted (%)	average number of calls for the contacted	average number of calls for the full sample
unconditional	5 £	17	1582	1,075	3,412	0,037
	2 £	5	1566	0,319	4,800	0,015
	pooled	22	3148	0,699	3,727	0,026
conditional on return	5 £	6	1587	0,378	3,333	0,013
	2 £	12	1567	0,766	3,333	0,026
	pooled	18	3154	0,571	3,333	0,019
conditional on moving	5 £	15	1573	0,954	2,533	0,024
	2 £	12	1550	0,774	4,583	0,035
	pooled	27	3123	0,865	3,444	0,030
no incentives	pooled	14	3097	0,452	2,071	0,009

Tailored materials experiment

Table: Effects on tailoring on the response rate of eligible units

	% in the sample	just face-to-face interviews			face-to-face and telephone interviews added			
		tailored	n	%	estimated impact on the overall response rate (%)	n	%	estimated impact on the overall response rate (%)
young	14,96	tailored	843	93,20		843	94,10	
		standard	856	91,60		856	94,20	
		diff		1,60	0,24		-0,10	-0,01
		two tails ttest		*		ns		
busy	19,68	tailored	1205	90,30		1205	97,50	
		standard	1157	90,10		1157	96,50	
		diff		0,20	0,04		1,00	0,20
		two tails ttest		ns		*		
full sample	100	tailored	5942	91,35		5942	96,82	
		standard	5857	91,12		5857	96,82	
		diff		0,23	0,23		-0,01	-0,01
		two tails ttest		ns		ns		

Conclusions

- ▶ although change-of-address cards with an incentive conditional on return seems to be less effective in inducing the return of the card than the simple unconditional and conditional-on-return treatments, they seems to perform much better in reducing the number of untraced sample members due to geographical mobility.
- ▶ change-of-address cards with an incentive conditional on return seem to be one of the cheapest methods when direct and indirect costs are analyzed.
- ▶ even in a mature sample, tailored materials significantly increased the share of full face-to-face interviews among young people, and increased the overall response rate amongst busy people when telephone interviews are included.