Published in final edited form as:

Sociol Methods Res. 2014 May 1; 43(2): 338–355. doi:10.1177/0049124113506406.

Prepaid monetary incentives—Predictors of taking the money and completing the survey: Results from the International Tobacco Control (ITC) Four Country Survey

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Abstract

Prepaid monetary incentives are used to address declining response rates in random-digit-dial surveys. There is concern among researchers that some respondents will accept the prepayment but not complete the survey. There is little research to understand check cashing and survey completing behaviors among respondents who receive pre-payment. Data from the International Tobacco Control Four Country Study—a longitudinal survey of smokers in Canada, the US, the UK, and Australia, were used to examine the impact of prepayment (in the form of checks, approximately \$10USD) on sample profile. Approximately 14% of respondents cashed their check, but did not complete the survey, while about 14% did not cash their checks, but completed the survey. Younger adults (Canada, US), those of minority status (US), and those who had been in the survey for only two waves or less (Canada, US) were more likely to cash their checks and not complete the survey.

Keywords

random-digit-dial (RDD); prepaid monetary incentives; public health; survey research; smokers; tobacco

INTRODUCTION

Random digit dialled (RDD) telephone surveys are an established method to collect population-based data, making them an important tool for survey practitioners. In the past several decades however, survey response rates have been declining, (Hansen 2006; Curtin, Presser, and Singer 2005; De Leeuw and De Heer 2002), and a variety of response facilitation techniques have been implemented, including prepaid and postpaid monetary incentives, and gifts. In general, survey respondents tend to be female, non-minority status members (Curtin, Presser, and Singer 2000; Moore and Tarnai 2002), and have higher levels of education, compared to non-respondents (Curtin et al. 2000; Goyder, Warriner, and Miller 2002). However, the literature suggests that respondent characteristics differ depending on the type of incentive used (Singer 2002).

Prepaid incentives have been found to increase response rates among the general population, students, and other professionals (Schewe and Cournoyer 1976; Church 1993; Hopkins and Gullickson 1992; Hawley, Cook, and Jensen-Doss 2009), and in the case of telephone surveys, have been reported to result in a 10% increase in response rates (Singer, Hoewyk, and Maher 2000). Other literature suggests that the higher the value of the monetary incentive, the higher the response rate will be (Church 1993; Asch, Christakes, and Ubel 1998; Halpern et al. 2002). However, larger prepaid incentives may come at a greater financial cost to survey practitioners. For example, James and Bolstein (1990) found that a prepayment of \$1 resulted in the same percentage increase in response rates, as larger incentives, but for about one quarter of the cost. While Warriner et al. (1996) found that when compared to a \$2 incentive, a \$5 prepayment was most effective as it resulted in a rate that was 10 percentage points higher, at only \$1 more per case.

Prepaid incentives can be sent to potential survey respondents in various forms, including as a gift, coupon, voucher, or as a check. The current study examined the use of checks as a form of a prepaid monetary incentive. There are four possible recruitment outcomes when checks are used as an incentive: (1) the respondent cashes the check, and completes the survey ('cashed, complete'); (2) the respondent does not cash the check and does not complete the survey ('did not cash, incomplete'); (3) the respondent cashes the check, but does not complete the survey; and (4) the respondent does not cash the check, but does complete the survey. Outcomes (1) and (2) can be referred to as expected recruitment outcomes, whereas (3) and (4) can be referred to as 'opportunistic' and 'altruistic' recruitment outcomes, respectively. It is important to note that the terms 'opportunistic' and 'altruistic' are intended to describe not the study respondents, but the recruitment outcomes.

While the literature suggests that prepaid incentives may work generally to increase response rates, it fails to examine check cashing and survey completion behaviors among survey respondents, and characteristics of those who receive prepayment. Further, it is unclear whether the use of prepaid incentives aids in obtaining better representation among hard to reach population subgroups, such as lower SES groups and younger individuals, and whether these effects differ by country. Of particular concern to researchers using prepaid incentives are those who cash their incentive, but do not complete the survey ('opportunistic' recruitment outcome), resulting in increased costs without an increased sample size.

However, the costs of respondents with ‘opportunistic’ recruitment outcomes may be offset by respondents with ‘altruistic’ recruitment outcomes.

This is the first study to categorize and examine these four distinct recruitment outcomes: 1) cashed, complete, 2) did not cash, incomplete, 3) cashed, incomplete (‘opportunistic’ recruitment outcome), 4) did not cash, complete (‘altruistic’ recruitment outcome), among a sample of smokers, across three different countries. Specifically, the current study sought to determine for a longitudinal survey on smoking: 1) the proportions of individuals within each recruitment outcome; 2) whether length of participation in a longitudinal survey may influence recruitment outcomes at subsequent survey waves; 3) whether recruitment outcomes differ by individual level factors such as age, gender, education, income, and country. This study used population-based cross-sectional data from Wave 5 of the International Tobacco Control (ITC) Four Country survey (data from Canada, the US, and Australia will be presented in this paper).

METHODS

Procedure

The ITC Four Country Survey is a longitudinal RDD survey using probability sampling methods and is conducted with computer assisted telephone interviewing (CATI) (Fong et al. 2006; Thompson et al. 2006; ITC Wave 1 Technical report). The sample was stratified by geographical region—each region was then assigned a quota to ensure a representative, unbiased sample relative to the regional population. At the time of recruitment, survey respondents were adult (18 years of age and older) smokers (smoked at least 100 cigarettes in their lifetime and at least one cigarette in the last month), and were from Canada, the United States (US), the United Kingdom (UK), or Australia. The ITC Four Country survey began in 2002, and is conducted annually.

Data for the current study were taken from Wave 5 of the ITC Four Country survey, conducted between September 2006 and January 2007. Wave 5 of the ITC Four Country survey was the first collection period when all possible survey respondents received a check as prepayment. In Waves 1–4, potential survey respondents from the UK received 7£ vouchers to a pharmacy/drug store (*Boots*) as prepayment. Preliminary analyses revealed that the UK sample had a significantly higher proportion of ‘altruistic’ recruitment outcomes (those who did not cash their check, but did complete the survey) than the other countries, which could be a result of the UK respondents being accustomed to receiving vouchers at the time the Wave 5 survey was conducted. Their recruitment outcome might not necessarily be ‘altruistic’, but habituated. Thus, in the current study, analyses included data from Canada, the US, and Australia, given that these three countries did not experience a change in incentive granting.

Respondents in the current study were from one of two samples. The ‘re-contact sample’ included possible Wave 5 survey respondents who were recruited in a previous wave, and completed the ITC Four Country Wave 4 survey. The ‘replenishment sample’ included possible Wave 5 respondents who were recently recruited from the general population through a 10 minute screener survey. All respondents received prepayment (approximately

\$10USD) about a week before being called to complete the 40-minute main ITC Four Country survey.

Sample

The total sample included 8,580 potential respondents from Canada (n=2,632), the US (n=3,055), and Australia (n=2,893). Approximately 70% (n=5,997) of the respondents were from the re-contact sample, and 30% (n=2,583) were from the replenishment sample. The response rate for the Wave 5 replenishment sample was 27.3% in Canada, 20.7% in the US, and 45.3% in Australia. Among the re-contact sample, the retention rate (from Wave 4) was 70.4% in Canada, 64.3% in the US, and 73.0% in Australia. The American Association of Public Opinion Research (AAPOR) Response Rate #4 was used to calculate all response rates. Detailed sample characteristics are presented in Table 1.

Measures

Socio-demographic variables—Age was reported in the following categories: 18–24 years, 25–39 years, 40–54 years, and 55+. Level of education was reported as: low (high school diploma or lower), and moderate/high (technical, trade school, community college, some or completed university degree). Level of income was categorized into low (under \$30,000), or moderate/high (\$30,000 and over). Ethnicity was categorized to be consistent with each country's census and coded as 0=majority (Canada and the US defined majority as “white”; in Australia, majority were defined as speaking primarily English at home) and 1=minority (Canada and the US defined minority as “non-white and mixed race”; in Australia, minority were defined as non-English speaking at home).

Number of times surveyed—“Number of times surveyed” corresponds to the number of times a respondent completed the main survey, and only applies to the re-contact sample.

Check status—Checks were coded as either ‘cashed’ or ‘not cashed’ based on bank records.

Recruitment outcomes—The recruitment outcomes were coded based on check cashing status and survey completion. Recruitment outcomes were coded as follows: 1) cashed, complete; 2) did not cash, incomplete; 3) cashed, incomplete (‘opportunistic’); and 4) did not cash, complete (‘altruistic’).

Analysis—Logistic regression analyses used weighted data, so as to adjust the sample to be more representative of smokers in the populations of the three countries (unweighted analyses produced similar results). Statistical analyses were conducted using SPSS version 20.0. Logistic regression models were conducted to examine predictors of the four recruitment outcomes: 1) cashed, complete, 2) did not cash, incomplete, 3) cashed, incomplete (‘opportunistic’), and 4) did not cash, complete (‘altruistic’).

Separate models were estimated for each of the four recruitment outcomes; the dependent variable in each case was dichotomized, and the recruitment outcome of interest was compared to all others (i.e. ‘opportunistic’ vs. all others). Two separate models were

conducted for each of the re-contact and replenishment samples. Additional logistic regression models were conducted to examine the influence of covariates only among respondents that either displayed ‘opportunistic’ or ‘altruistic’ (reference category) recruitment outcomes.

A standard set of covariates, age, sex, and ethnicity, were included in all models, for both the re-contact and replenishment samples. The re-contact sample data also included education and income. To examine the influence of length of membership in the ITC Four Country Survey, “number of times surveyed”, was also included for the re-contact sample.

RESULTS

Cashing and participation outcomes across countries

Table 2 shows the proportion of each recruitment outcome across Canada, the US, and Australia, for the re-contact and replenishment samples.

Among the re-contact sample, nearly three-quarters (72%, $n=4,310$) of respondents displayed the following expected recruitment outcomes: 1) cashed, complete or 2) did not cash, incomplete. Approximately 15% ($n=894$) were ‘opportunistic’ recruitment outcomes, with potential respondents cashing their checks, but not completing the survey, and about 13% ($n=793$) were ‘altruistic’ recruitment outcomes, with survey respondents not cashing their checks, but still completing the survey. The greatest proportion of ‘opportunistic’ recruitment outcomes were in the US and Canada.

Similar to the re-contact sample, about 73% ($n=1,876$) of replenishment respondents displayed the following expected recruitment outcomes: 1) cashed, complete or 2) did not cash, incomplete. ‘Opportunistic’ recruitment outcomes amounted to about 13% ($n=346$), while 14% ($n=361$) were ‘altruistic’ recruitment outcomes. The greatest proportion of ‘opportunistic’ recruitment outcomes were in the US (17.6%, $n=191$).

Predictors of recruitment outcomes across countries

Table 3 presents the results of weighted logistic regression models conducted separately by country, to examine the influence of age, sex, and ethnicity on recruitment outcomes, for both the re-contact and replenishment samples. The re-contact sample data also included the following covariates: education, income, and number of times surveyed.

Cashed, complete

Among the re-contact sample in the US, males were less likely than females to cash and complete. Older respondents (vs. 18 to 24 years) were more likely to cash and complete, across all countries. Compared to non-minority individuals, those of minority status were less likely to cash and complete, in both Canada and the US. Respondents surveyed more than twice were more likely to cash and complete in Canada and the US.

Findings were similar among the replenishment sample, whereby sex, age (in Canada and Australia), and ethnicity (in Australia) emerged as predictors. No significant predictors emerged among the US replenishment sample.

‘Did not cash, incomplete’

Among the re-contact sample, older individuals (vs. 18 to 24 years) were less likely to neither cash their check, nor complete the survey, across all countries. Individuals surveyed four or more times (vs. twice) were also less likely to neither cash their check, nor complete the survey, in both Canada and the US.

Similar to the re-contact sample, age was found to be a significant predictor of not cashing, nor completing the survey, among the replenishment sample. Unlike in the re-contact sample however, sex emerged as a predictor. Males in the US were more likely to neither cash, nor complete the survey.

Cashed, incomplete (‘opportunist’)

In the re-contact sample, it was found that older individuals (vs. 18 to 24 year olds), as well as those reporting higher levels of income (vs. lower levels of income), were less likely to display an ‘opportunist’ recruitment outcome, in both Canada and the US. In the US, minority status members (vs. non-minority status members) were more likely to engage in ‘opportunist’ survey behavior. Respondents who remained in the survey for longer than two waves were less likely to display ‘opportunist’ survey behavior, compared to those surveyed only twice, in Canada and the US.

Findings were similar in the replenishment sample, age (in Canada) and ethnicity (in the US and Australia) also emerged as predictors.

‘Did not cash, complete’ (‘altruist’)

Among the re-contact sample, older individuals (vs. 18–24 year olds) were less likely than younger individuals to display ‘altruist’ recruitment outcomes, across all countries. Males in the US were more likely than females to report ‘altruist’ recruitment outcomes. Income also emerged as a significant predictor across all three countries. Those who reported higher income levels (vs. lower income levels) were more likely to display ‘altruist’ outcomes, with the greatest likelihood among Australian respondents. In Canada, those who reported higher education levels (vs. lower education levels) were more likely to display this behaviour. Length of time in the survey emerged as a predictor only for US respondents—those who had participated in three or more waves (vs. two) were more likely to display ‘altruist’ outcomes.

Findings were similar among the replenishment sample, sex (in Canada) and age (in Canada and Australia) emerged as significant predictors. No significant predictors emerged among the US replenishment sample.

Additional logistic regression models were conducted to examine under which circumstances ‘opportunist’ recruitment outcomes could be offset by ‘altruist’ (reference group) recruitment outcomes. Among the re-contact sample, in Canada, the US, and Australia, with other factors held fixed, the higher income group resulted in less of a loss on average than the lower income group (OR=0.55, 95%CI 0.36–0.84; OR=0.46, 95%CI 0.30–0.70; OR=0.38, 95%CI 0.23–0.60, respectively). In Canada and Australia, age group taken as a whole was significant. It appears that with other factors held fixed, 25 to 39 year olds

(vs. 18 to 24 year olds) resulted in the least loss on average, and those aged 55 years and over (vs. 18 to 24 year olds), in the greatest loss on average; however, these results were not significant. Similar patterns appeared in the other two countries. In Canada, with other factors held fixed, the higher education group resulted in less of a loss on average than the lower education group (OR=0.58, 95% CI 0.41–0.84). In the US, cohort taken as a whole was significant. With other factors held fixed, respondents who had been surveyed five times (vs. twice), resulted in the least amount of loss on average (OR=0.32, 95% CI 0.17–0.63), while those surveyed three times (vs. twice) resulted in the greatest amount of loss on average (OR=1.73, 95% CI 1.07–2.79).

DISCUSSION

Understanding the rate of various recruitment outcomes when checks are used as a method of prepayment is of critical importance when estimating sample sizes and budgets. Among the re-contact and replenishment samples, approximately 15% and 13%, respectively, of potential survey respondents in this international study displayed ‘opportunistic’ behaviour, that is they cashed their prepaid incentive but did not complete the survey. This is not an insignificant impact on the cost of conducting a survey. Of equal importance however, is the percentage of respondents who displayed ‘altruistic’ survey behaviour—about 13% in the re-contact sample and 14% in the replenishment sample—suggesting the financial cost of prepayment may be offset in this kind of survey. Further, given that the cost of recruiting new respondents is greater than the cost of keeping cohort respondents in the survey (in the ITC Survey, this ratio is about 4 to 1), points to the beneficial effects of prepaid incentives in reducing overall costs of cohort surveys. The fact that the percentage of respondents who “took the money and ran”, that is, those who cashed the check but who did not complete the survey was about the same as the percentage of respondents who “took the survey, but not the money”, points to the beneficial effects of prepaid incentives in reducing overall costs of cohort surveys.

There are a number of reasons that could explain why possible respondents failed to cash their checks, including not receiving them, or not recognizing the mail and discarding the check, or otherwise losing or forgetting about the check. There are also a number of possibilities that could explain why someone would cash the check and then not participate in the study. For example, the individual may have intended to respond to the main ITC survey but could not be contacted or there were no opportunities to schedule the session. There is also the possibility that the individual did not intend to respond, but felt entitled to the money anyway.

The findings from this study suggest that the greatest proportion of respondents displaying ‘opportunistic’ recruitment outcomes were from Canada and the US. Also of note is the fact that those from Australia reported the greatest proportion of ‘altruistic’ outcomes—those who did not cash their check, but participated nonetheless.

The current study also suggests that in Canada and the US, that the highest proportion of ‘opportunistic’ recruitment outcomes were seen among younger age groups, those with lower levels of income, and those who had been surveyed two times or less, whereas in the US (as

well as the Australian replenishment sample), the highest rates of ‘opportunistic’ recruitment outcomes were seen among minority status members. Overall, the findings suggest that in Canada and the US, post-paid incentives may be more advantageous, for a fixed response rate.

Apart from the financial implications related to prepaid monetary incentives, there is also concern about sample bias. There is a possibility that the prepaid incentive method may make representation of younger people and lower SES worse than it could be. As it currently stands, is unclear whether post-paid incentives would also be more likely to attract and retain younger people and lower SES people to participate. Thus a need is indicated for continuing research into whether prepaid or post-paid incentives are more effective in recruiting or retaining these types of respondents.

The findings from this study reveal that respondents involved in this longitudinal survey for three waves or more were less likely to display an ‘opportunistic’ recruitment outcome, relative to a respondent who has completed only two surveys. How the prepayment may influence retention in a survey is still poorly understood. Future research could include the examination of the proportions of refusals, non-contacts, and failure to keep appointments among these individuals displaying ‘opportunistic’ recruitment outcomes. Future research to understand how prepaid incentives may help retain respondents in longitudinal studies will also be important as retaining respondents is typically less costly relative to recruiting a new respondent.

Due to differences in value and purpose, it is difficult to generalize the current findings to other forms of prepayment such as vouchers, gift certificates, or lottery incentives. We do suspect however, that if the prepaid incentive were given in the form of cash (as opposed to a check), there is the possibility that proportions of ‘opportunistic’ recruitment outcomes might be even more pronounced, as the intermediate step of cashing the check at a bank is eliminated.

Limitations

The findings of this study involve smokers and therefore are not representative of the general populations in the three countries. Further, since the objective of the ITC surveys is to inform tobacco control policy, it may benefit from some good-will among respondents. That is, there may be more individuals displaying an ‘altruistic’ recruitment outcome (not cashing the incentive, but completing the survey nonetheless) whose goals align well with those of the study.

The survey is longitudinal and limits the generalizability of the findings to cold call cross-sectional surveys. Further, it is possible that potential respondents from the re-contact sample were more cooperative since they had completed at least the preceding wave of the survey. The fact that percentages of recruitment outcomes were similar among the re-contact and replenishment sample is reassuring; however, the latter had participated in a screening interview and may also be more cooperative than the general population.

Given the nature of the dataset, we were unable to assess the impact that prepayment had on response rates. In order to do this, we would need data which compares groups of respondents who had received the prepayment versus those who had not. Lastly, it is also important to note that since this study was conducted (between 2006 and 2007), a recession has intervened, and it is possible this may influence current check-cashing behavior.

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Table 1

Sample characteristics

	RE-CONTACT				REPLENISHMENT																											
	CA (N=2,017)				US (N=1,969)				AU (N=2,011)				Total (N=5,997)				CA (N=615)				US (N=1,086)				AU (N=882)				Total (N=2,583)			
	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n				
Sex																																
Male	42.5	858	40.8	803	45.5	916	43.0	2,577	44.9	276	45.5	494	46.1	407	45.6	1,177																
Female	57.5	1,159	59.2	1,166	54.5	1,095	57.0	3,420	55.1	339	54.5	592	53.9	475	54.4	1,406																
Age group (years)																																
18–24	9.6	193	8.5	167	11.3	227	9.8	587	14.3	88	11.7	127	11.7	103	12.3	318																
25–39	29.0	584	23.4	461	32.5	653	28.3	1,698	29.1	179	23.2	252	34.9	308	28.6	739																
40–54	40.6	819	38.2	752	38.9	783	39.3	2,354	36.1	222	39.5	429	33.8	298	36.7	949																
55 +	20.9	421	29.9	589	17.3	348	22.6	1,358	20.5	126	25.6	278	19.6	173	22.3	577																
Education [†]																																
Low	43.8	884	41.8	824	61.6	1,239	49.2	2,947	57.6	289	52.6	388	61.4	414	57.0	1,091																
Moderate/High	56.0	1,129	57.9	1,141	38.2	768	50.8	3,038	42.4	213	47.4	350	38.6	260	43.0	823																
Income [†]																																
Low	24.6	497	35.2	694	26.7	536	30.5	1,727	31.0	143	41.7	288	29.8	184	34.8	615																
Moderate/High	68.9	1,390	59.8	1,177	68.2	1,372	69.5	3,939	69.0	319	58.3	402	70.2	433	65.2	1,154																
Ethnicity																																
White, English only	91.0	1,835	82.8	1,631	88.9	1,788	87.7	5,254	86.7	533	76.4	830	86.1	759	82.2	2,122																
Non-white, non-English	9.0	181	16.9	333	11.0	222	12.3	736	13.3	82	23.6	256	13.9	123	17.8	461																
# of times surveyed																																
2 times	25.3	511	36.5	719	17.7	355	26.4	1,585																								
3 times	18.4	372	24.5	483	19.5	393	20.8	1,248																								
4 times	12.3	249	11.9	235	7.8	157	10.7	641																								
5 times	43.9	885	27.0	532	55.0	1,106	42.1	2,523																								

[†] 'Education' and 'Income' data were not available for newly recruited potential 'replenishment' respondents who did not complete the surveys.

Table 2

Proportion of recruitment outcomes within countries

Recruitment outcomes	RE-CONTACT						REPLENISHMENT					
	CA (N=2,017)	US (N=1,969)	AU (N=2,011)	Total (N=5,997)	CA (N=615)	US (N=1,086)	AU (N=882)	Total (N=2,583)				
	%	%	%	%	%	%	%	%	n	%	n	%
Cashed, complete	58.6 ^a	54.6 ^b	55.3 ^b	56.2	74.5 ^a	55.2 ^b	56.3 ^b	60.2	1,555	60.2	497	1,555
Did not cash, incomplete	11.8 ^a	18.3 ^b	17.0 ^b	15.7	6.0 ^a	14.4 ^b	14.5 ^b	12.4	321	12.4	128	321
Cashed, incomplete ('opportunistic')	17.6 ^a	17.2 ^a	10.0 ^b	14.9	12.4 ^a	17.6 ^b	9.0 ^c	13.4	346	13.4	79	346
Did not cash, complete ('altruistic')	11.9 ^a	10.0 ^a	17.7 ^b	13.2	7.2 ^a	12.8 ^b	20.2 ^c	14.0	361	14.0	178	361

Different superscript letters (^a, ^b, ^c) denote significant differences between countries, where $p < 0.05$, adjusting for sex, age, ethnicity, education, income, # of times surveyed (for the re-contact sample) and country of residence.

Table 3

Logistic Regression: Predictors of recruitment outcomes within countries

		Cashied, complete		Did not cash, incomplete		Cashied, incomplete ('opportunistic')		Did not cash, complete ('altruist')	
		<i>Re-contact</i> (<i>n</i> =5,655)	<i>Replenishment</i> (<i>n</i> =2,583)	<i>Re-contact</i> (<i>n</i> =5,655)	<i>Replenishment</i> (<i>n</i> =2,583)	<i>Re-contact</i> (<i>n</i> =5,655)	<i>Replenishment</i> (<i>n</i> =2,583)	<i>Re-contact</i> (<i>n</i> =5,655)	<i>Replenishment</i> (<i>n</i> =2,583)
Predictors		OR(95%CI)	OR(95%CI)	OR(95%CI)	OR(95%CI)	OR(95%CI)	OR(95%CI)	OR(95%CI)	OR(95%CI)
C A	Sex (female ref)	0.95(0.79–1.14)	0.68(0.47–0.99)	1.02(0.78–1.34)	0.78(0.42–1.45)	1.06(0.84–1.35)	1.48(0.90–2.44)	1.02(0.77–1.34)	2.16(1.11–4.22)
	Age (18–24 ref)								
	25–39	1.51(1.12–2.02)	1.37(0.80–2.35)	0.84(0.57–1.25)	0.54(0.23–1.27)	0.87(0.62–1.23)	0.81(0.41–1.58)	0.65(0.43–0.97)	1.21(0.43–3.43)
	40–54	2.06(1.54–2.75)	2.16(1.24–3.75)	0.61(0.41–0.90)	0.51(0.22–1.19)	0.55(0.39–0.79)	0.35(0.16–0.74)	0.82(0.56–1.21)	1.23(0.44–3.47)
	55+	3.03(2.14–4.29)	1.97(1.07–3.62)	0.36(0.21–0.62)	0.34(0.12–0.98)	0.64(0.42–0.97)	0.50(0.22–1.11)	0.42(0.24–0.72)	1.40(0.46–4.23)
U S	Ethnicity	0.71(0.51–0.98)	0.75(0.45–1.25)	1.27(0.82–1.96)	1.13(0.48–2.66)	1.29(0.88–1.89)	1.07(0.54–2.11)	1.10(0.69–1.75)	1.69(0.77–3.70)
	Education [†]	0.99(0.81–1.20)	--	0.76(0.58–1.01)	--	0.88(0.69–1.12)	--	1.62(1.21–2.19)	--
	Income [‡]	1.13(0.91–1.41)	--	0.90(0.65–1.23)	--	0.71(0.54–0.93)	--	1.46(1.02–2.10)	--
	# of times surveyed								
	3 vs. 2	1.36(1.03–1.80)	--	0.74(0.50–1.09)	--	0.90(0.64–1.28)	--	0.86(0.56–1.31)	--
U S	4 vs. 2	1.65(1.19–1.29)	--	0.55(0.33–0.90)	--	0.72(0.47–1.09)	--	1.01(0.63–1.60)	--
	5 vs. 2	1.80(1.43–2.27)	--	0.55(0.40–0.77)	--	0.67(0.50–0.89)	--	0.92(0.66–1.29)	--
	Sex	0.82(0.68–0.99)	0.67(0.53–0.86)	0.91(0.72–1.15)	1.60(1.14–2.26)	1.22(0.96–1.55)	1.30(0.95–1.78)	1.39(1.03–1.88)	0.97(0.69–1.38)
	Age (18–24 ref)								
	25–39	1.56(1.14–2.14)	1.53(1.05–2.23)	0.76(0.54–1.07)	0.54(0.34–0.85)	0.74(0.52–1.05)	0.90(0.58–1.41)	1.05(0.66–1.66)	1.12(0.66–1.88)
U S	40–54	2.67(1.96–3.64)	2.08(1.45–2.98)	0.52(0.36–0.73)	0.43(0.27–0.67)	0.53(0.37–0.76)	0.74(0.48–1.15)	0.84(0.53–1.33)	0.97(0.58–1.61)
	55+	3.20(2.27–4.51)	2.50(1.64–3.81)	0.45(0.30–0.68)	0.45(0.26–0.77)	0.57(0.38–0.85)	0.67(0.39–1.14)	0.54(0.31–0.95)	0.68(0.36–1.29)
	Ethnicity	0.79(0.63–0.99)	0.61(0.46–0.82)	0.88(0.67–1.17)	1.10(0.75–1.62)	1.49(1.14–1.94)	1.70(1.21–2.38)	1.13(0.81–1.60)	1.15(0.77–1.71)
	Education [†]	1.17(0.96–1.42)	--	0.85(0.66–1.08)	--	0.82(0.64–1.05)	--	1.24(0.90–1.70)	--

Cashed, complete			Did not cash, incomplete			Cashed, incomplete ('opportunistic')			Did not cash, complete ('altruist')		
Re-contact (n=5,655)			Replenishment (n=2,583)			Re-contact (n=5,655)			Replenishment (n=2,583)		
OR(95%CI)			OR(95%CI)			OR(95%CI)			OR(95%CI)		
Income [†]			1.11(0.91–1.36)			0.98(0.76–1.26)			0.67(0.53–0.87)		
# of times surveyed											
3 vs. 2			1.18(0.93–1.51)			0.82(0.61–1.10)			0.66(0.48–0.89)		
4 vs. 2			1.76(1.27–2.43)			0.51(0.33–0.79)			0.36(0.22–0.60)		
5 vs. 2			1.42(1.12–1.80)			0.65(0.48–0.87)			0.75(0.56–1.01)		
Sex			0.87(0.72–1.05)			0.91(0.71–1.16)			1.25(0.92–1.79)		
Age (18–24 ref)			0.75(0.57–0.99)			1.22(0.83–1.79)			1.03(0.64–1.67)		
25–39			1.59(1.18–2.14)			1.74(1.14–2.67)			0.53(0.32–0.88)		
40–54			2.57(1.91–3.46)			2.25(1.46–3.48)			1.18(0.76–1.83)		
55+			3.74(2.60–5.39)			3.96(2.39–6.57)			0.65(0.40–1.04)		
Ethnicity			0.93(0.70–1.23)			0.52(0.34–0.79)			1.48(0.99–2.22)		
Education [†]			1.19(0.98–1.44)			0.80(0.62–1.03)			0.82(0.60–1.13)		
Income [†]			0.72(0.57–0.91)			1.01(0.75–1.36)			0.74(0.52–1.06)		
# of times surveyed											
3 vs. 2			1.13(0.83–1.53)			0.71(0.49–1.04)			1.15(0.71–1.88)		
4 vs. 2			1.05(0.70–1.57)			0.81(0.50–1.33)			1.08(0.56–2.09)		
5 vs. 2			1.29(1.00–1.66)			0.73(0.54–1.00)			1.07(0.71–1.62)		

[†] 'Education' and 'Income' data were not available for newly recruited potential 'replenishment' respondents who did not complete the surveys.