Experiments to increase web response rates

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Introduction

Statistics Netherlands' social surveys typically have a consecutive web – interviewer mode design, where nonrespondents of the initial web round are followed up in either CATI or CAPI. It is therefore of considerable financial interest to have high web response rates. Statistics Netherlands has started a series of experiments to research various aspects of the process of securing web response. In this paper I would like to touch on three of those: advance letters, incentives, and call backs to understand the reasons why sample persons did not participate in web.

1. Advance letter in web surveys

Statistics Netherlands does not have a registry of email addresses of the general population, so the only way to alert sample persons to our request of participation, is with a letter, followed up by two reminder letters. Typically, we send an advance letter with the survey request. In this letter we include the web address, a login code, a password and a short instruction how to log on to the web. This additional content makes the letter long (one and a halve page long) and complicated. An initial attempt to simplify and shorten the letter lead to a disastrously low response rate, however. As we did not understand the reason for this, we decided to systematically vary aspects of the letter in a series of experiments. For the experiments we make use of 10% of sample for the Labour Force and we vary on the LFS advance letter and reminder letters. The LFS uses an address sample. Letters to sample units are addressed as 'to the inhabitants of *address*'.

We are not only interested in overall response rate changes, but also in changes in relevant subgroups in the population. To that end, the LFS sample will be linked to registry information to obtain relevant auxiliary variables. Of all sample addresses, the age, gender, household composition, and ethnic background of the persons living there is known. Also, on fine grid of postal codes, income, urban density and the percentage of ethnic minorities of the neighbourhood will be known. At the time of writing of this paper however, this information is not yet available, and I make do with the information that is used in drawing the sample. To this end, five strata are distinguished:

1. Households with at least one person of 65 years of age or older. The persons can be of western or non-western background.
2. Households where at least one person is unemployed and registered at the unemployment office. These persons can be of all ages up to 65, and of all ethnic backgrounds.
3. Households where the household core is at most 25 years of age. The persons can be of all ethnic backgrounds.
4. Households of non-western ethnic background, not belonging to one of the other strata.
5. All other households.

The strata have a different inclusion probability, where the first stratum is under sampled, and strata two, three and four are oversampled.

Shortening the letter

In the first experiment, we endeavoured to fit the advance letter (and reminder letters) on one page, while maintaining the contents of the original letter. This could be done by removing all information pertaining to logging on to the web from the body of the text, and putting it in a cadre on the right underside of the letter, next to the signature. See appendix 1 for the Dutch version of this letter.
Table 1 shows that the mere visual shortening of the letter, without altering the contents of the letter did nothing for the response rates. In none of the strata, nor in the overall response is the difference between the control and experimental group significant.

Table 1. Response rates, 95% confidence intervals and number of sample units in the control and experimental groups

	control		experiment	
	%	N	%	N
Elderly	24,2 (21,1 - 27,8)	556	27,8 (16,6 - 39,1)	61
Unemployed	20,2 (18,5 - 21,9)	2.239	17,7 (12,9 - 22,4)	249
Young	19,7 (18,3 - 21,2)	3.059	20,6 (16,3 - 24,9)	340
Non-western	15,4 (12,8 - 18,0)	742	10,8 (4,2 - 17,5)	83
Rest	27,5 (26,1 - 28,9)	4.067	24,8 (20,8 - 28,8)	452
Total	22,7 (21,9 - 23,5)	10.663	21,3 (18,9 - 23,6)	1.185

In retrospect, and in view of the results of the inventory of reasons not to participate in web (see later in this paper), we found that we need to be very careful with the instructions to log on to the web survey. A large part of the public is not as computer savvy as we think. In this letter, this instruction was omitted, and replaced with a visual example in the cadre. In one of the future experiments we will try adding instructions, for example in the leaflet that we routinely include.

Strengthening the persuasion arguments

The standard LFS letter hardly uses arguments why people should participate. The arguments that are used may not be very attractive to a lot of people (to secure the quality of the data, it is very important that you participate…. You represent a lot of other people). In the experimental letter we tried to strengthen the arguments. We introduced both 'selfish' arguments ('what's in it for me) and altruistic arguments (you help CBS / me / society). The altruistic arguments are easy to find, and we used a number in the letter: '*we need your help…'You help us….*'. Selfish arguments are harder to find for the LFS. We came up with *´The results help us understand the situation of the labour market, education and social security'.* Table 2 shows results.

Despite a higher response rate of eight percentage points in the experimental group elderly, this difference fails to reach significance. On the other hand, the response rate in the group unemployed households is four percentage points *lower* ($p < .10$). It is perhaps understandable that this group is not triggered by altruistic arguments in a survey of the Labour market. In none of the other groups, nor in the overall rates is the difference between the experimental group and the control group significant.

Table 2. Response rates, 95% confidence intervals and number of sample units in the control and experimental groups

	control		experiment		
	%	N	%	N	p
Elderly	25,7	565	33,9	62	
	(22,1 - 29,3)		(22,1 - 45,7)		
Unemployed	18,6	2.209	14,6	246	°
	(16,9 - 20,2)		(10,2 - 19,1)		
Young	19,2	3.029	17,5	337	
	(17,8 - 20,6)		(13,4 - 21,6)		
Non-western	12,4	800	13,5	89	
	(10,1 - 14,7)		(6,4 - 20,6)		
Rest	26,8	4.062	23,9	451	
	(25,4 - 28,1)		(20,0 - 27,9)		
Total	21,8	10.665	19,9	1.185	
	(21,0 - 22,6)		(17,6 - 22,2)		

*** p < .01, * p < .05, ° p < .10*

Diminishing the linguistic complexity of the letters

Not only in the Netherlands, but in the European context, it is recommended that the language level of communication with the general public should not exceed level B1. This is the level that is understood by 60% of the population. In order to attain this kind of clear language only highly frequent words should be used, and sentences should be no longer than 15 words. The standard advance letter for the LFS has a higher complexity (B2), with a large number of words that are too difficult. The letter was redesigned according to these criteria, while maintaining the original contents. Table 3 describes results.

Table 3. Simple letter: response rates, 95% confidence intervals and number of sample units in the control and experimental groups

	control		experiment		
	%	N	%	N	p
Elderly	24,1	576	28,6	63	
	(20,6 - 27,7)		(17,4 - 39,7)		
Unemployed	17,8	2142	15,1	239	
	(16,1 - 19,4)		(10,5 - 19,6)		
Young	16,1	3050	22,7	339	**
	(14,8 - 17,6)		(18,3 - 27,2)		
Non-western	11,6	742	13,3	83	
	(9,3 - 13,9)		(6,0 - 20,5)		
Rest	24,1	4155	25,6	461	
	(22,8 - 25,4)		(21,6 - 29,6)		
Total	19,7	10.665	21,9	1.185	°
	(19,0 - 20,5)		(19,6 - 24,3)		

*** p < .01, * p < .05, ° p < .10*

At the time of writing, the fieldwork period was not entirely finished, but the results are positive in most groups, resulting in a higher overall rate on the brink of significance (+2,2 percentage points, $p < .10$). The most encouraging result was the significantly higher response rate in the group with young persons (6,6 percentage points higher than in the control group, $p < .01$). Further analysis must reveal if this letter is appealing for highly educated persons as well.

2. Incentives in web surveys among the general population

The potential effect of incentives in mail surveys has long been established. The literature sites some experience with incentives for web surveys in selected populations, but the effect in the general population is less well researched. CBS has performed several experiments with both conditional and unconditional incentives.

Unconditional €5,= gift certificates

Generally, an unconditional incentive in the form of a gift certificate with a €5,= value is included in the advance letter. In three experiments this lead to an increase in web response of 12 percentage points for the survey of Living Conditions, of 17 percentage points for the survey of Travel Behaviour, and of 19 percentage points for the survey of Social Cohesion. These increases in response are in line with the increase found in meta analyses of the impact of unconditional monetary incentives in mail surveys (Fox et al., 1988, Hopkins et al., 1992; Church, 1993; Jobber et al., 2004).

The unconditional incentives not only increase the web response, but also the response in the subsequent CATI and CAPI round. Table 4 gives an example of findings in the survey of Travel Behaviour.

Table 4. Effect of un unconditional incentive on the response of the survey of Travel Behaviour.

	no incentive	incentive
CAWI %	20.7	37.4
CATI %	45.7	49.0
CAPI %	49.2	57.0
N	314	374
Response %	57.0	67.9

Because of the higher web response, and the higher general response that enables a smaller sample size, including an unconditional incentive in the advance letter results in a substantial decrease of fieldwork costs.

Lottery of iPads

Not in all CBS social surveys is the web round followed up with CATI or CAPI. In those cases, an unconditional incentive to all sample units may be very costly. For that reason, we have searched for an alternative in the form of a raffle of a substantial value. Literature findings on the effect of raffles are mixed, but if they are to work at all, the value should be substantial (Singer et al., 2013). For that reason, we raffled a number of iPad minis. We used this approach in the Survey of Self-reported Youth Criminality, that is exclusively in web. This 45 minute long survey is held among children and young persons of 10 to 22 year old. All sample persons are asked to fill in the questionnaire themselves, although parents are to give consent for children under 16 years of age.

The children were promised that they would learn right after filling in the questionnaire if they had won an iPad. Tuten, Galesic en Bosnjak (2004) have shown that the timing of this announcement has a significant impact on the effect of the incentive[1]. An attractive feature of using iPads over gift certificates, is that they could feature prominently in the advance letter, see appendix 2.

The lottery incentive had a significant impact (+12%) on the response of this web survey. The effect was uniform across age groups, see tables 5 and across groups with different ethnic background, see table 6.

[1] Of course we were aware that this feature may impact data quality, a risk we were willing to take in this experiment. Preliminary analyses showed that data quality in the incentive condition (in terms of rushing and missing data) is no less than in the non-incentive condition, and may actually be somewhat better.

Table 5. Response rates by incentive by age group

	no incentive		incentive		
Age	%	N	%	N	p
10-11	21,4	1011	31,6	1013	***
12-13	26,8	669	40,0	662	***
14-15	25,6	540	39,0	543	***
16-17	17,9	553	34,6	549	***
18-22	19,3	1334	29,8	1342	***
Total	21,7	4107	33,8	4109	***

*** p < .001

Table 6. Response rates by incentive by ethnic background group

	no incentive		incentive		
background	%	N	%	N	p
Native Dutch	26,4	1423	38,8	1426	***
Marocco	12,3	585	23,1	584	***
Dutch Antilles	19,4	470	33,9	472	***
Surinam	19,2	496	33,3	496	***
Turkey	17,8	552	27,2	551	***
Other	27,4	581	38,4	580	***
Total	21,7	4107	33,8	4109	***

*** p < .001

Especially this latter finding is encouraging. In other experiments we have found that members of some ethnic groups in the Netherlands either do not react, or even react negatively to incentives. Further experiments need to establish if this finding is linked to the specific population, or to the form of the incentive.

The incentive proved, at least in this population, almost as effective as an unconditional incentive, but at a fraction of the costs. Instead of the more than €20.000,= that would have been spent on an unconditional incentive, we spent €1000,= on three iPad-minis.

Conditional gift certificates

In the household budget survey, also a survey that is web only, we experimented with unconditional incentives crossed with conditional incentives of either €20 or €30. Because of the burden of the HBS, an unconditional incentive is always given. The research question in this experiment was how large the amount should be, and whether an unconditional incentive on top of the conditional incentive would have a positive impact on response results. Table 7 shows results.

In line with findings in literature, the unconditional incentives had a larger impact than the conditional incentives. The larger conditional incentive proved to be significantly more effective than the €20 incentive. It was decided to use the design with an unconditional incentive combined with a €30 postpaid gift certificate for the HBS.

Table 7. Response rates by incentive

HBS 2013	postpaid €20,=	postpaid €30,=
unconditional €5,=	18.3	20.1
no incentive	11.3	14.0

These experiments are part of an on-going research project in which we try to determine the most effective incentives. That may perhaps not always be the incentive with the highest response rates, but rather the one that give us highest value for money.

3. Asking people why they did not participate in the web round

In two surveys, nonrespondents of the web round were approached in CATI or CAPI. At the end of the interview, respondents were asked why they did not participate in web. Respondents were asked whether they had tried to log on, and, if yes, what went wrong, and whether they ever envisaged doing the web survey. If yes, they were asked why they did not go through with the plan, if no, why not. Both interviewers and respondents welcomed the opportunity to be able to elaborate on this subject. CBS has decided to ask these questions as a matter of course in future, in these and other surveys.

Both surveys, the survey of Travel Behaviour (STB), and the survey of Social Cohesion (SSC) are person samples of the non-institutional population of 0 to 100 years of age. Parents fill in the questionnaire for sample persons of 12 years or younger, and have to give consent for persons of 12 to 16 years. In the survey of Travel Behaviour, all displacements on a given day have to be recorded for or by the sample person. Filling in the questionnaire takes 15 minutes. Questionnaire length of the SSC is 25 minutes. Sample persons in the SSC receive an unconditional incentive of €5,- with the advance letter. In the STB no incentives are given.

A third survey, the survey of Self-reported youth criminality, is a 45 minute survey among children and young persons of 10 to 22 year old. All sample persons are asked to fill in the questionnaire themselves, although parents are to give consent for children under 16 years of age. The survey is web only. A conditional incentive (a raffle of iPad minis among respondents) is promised in this survey. A sample of children was approached by telephone for a short questionnaire on the reasons for non-participation.

Table 8 shows a summary of reasons given for the three surveys. For the SYC, only the results for the 16 to 22 year olds are shown.

The inventory gave us important insights in reasons for non-participation in the web round of the surveys. For example, the finding that almost half of the children in the SYC had not read the letters (of those, half did not even see the letters) came as quite a shock to us. Also, the amount of computer or internet problems was much larger than we had envisaged. Ten per cent of the respondents in the STB mentioned technical problems, as did 13% in the SSC. On the other hand, in the young group of the SYC, neither technical problems nor computer or internet problems played any significant role. The reasons that were mentioned most were of the kind ‘no time’ that are commonly found in research into non-response. However, keep in mind that these were respondents in another mode. Some of the children who answered ‘no time’ stressed that they really really did not have time, as a result of school tests at the time of the survey.

In this table, some of the reasons are coloured red. These are reasons that I think we can do something about. Even though the fairly large portion of people who could not access the web site are probably doing something wrong, it is our task to make the process or instruction so clear as to render that virtually impossible. A large number of people mentioned that they simply forgot to fill in the web questionnaire, even after two reminders. We need to think about circumventing that problem too, for example by using alternative ways of reminding people. We also need to find ways of getting the letter read, and if read, ways to better sell the survey.

The sum total of all the ‘red’ reasons is 44% for the survey of Travel Behaviour, 37% for the survey of Social Cohesion, and 49% for the survey of self-reported Youth Criminality. If we would manage to diminish these reasons, this would contribute substantially to our aim of higher web response rates.

Table 8. Reasons not to participate in the web round of the survey

	STB n = 2333	SSC n = 400	SYC n = 170
	%	%	%
Technical problems	**10**	**13**	**2**
could not acces questionnaire / could not find website	6	8	0
was thrown out of questionnaire	1	0	1
browser problems: questions not readible	1	2	0
answers were gone after pause	0	1	0
log in code not correct	2	1	1
impossible on smartphone	0	1	1
Questionnaire problems	**5**	**3**	**3**
could not continue in questionnaire	2	1	0
term to fill in had expired	1	1	0
fill in date was in future	1	0	0
questions not interesting	1	0	0
took too long	0	0	2
it was too difficult	0	1	1
Computer issues	**18**	**27**	**1**
No computer, no internet, not handy with computer / internet	15	23	1
internet not save	1	3	0
don't want to by the internet	1	0	0
internet questionnaire is too much trouble	1	1	0
Personal circumstances	**43**	**45**	**44**
Don't feel like it / anymore	3	3	6
no time / anymore	13	16	26
was / fell ill / was on holiday	2	1	1
forgot / to continue	15	14	4
personal circumstances	5	10	1
privacy	1	0	1
lazy	3	2	6
Survey specific	**11**	**4**	**6**
no fun	6	2	2
topic is not important	2	1	2
I don't have a car / don't travel by public transport	2	-	-
I am too young / too old / child is too young	0	0	0
proxy - don't know what SU did	0	0	-
not interested	1	0	0
too difficult	0	1	0
not mandatory	0	1	0
Advance letter (and reminders)	**11**	**8**	41
not seen / not read	10	7	41
did not understand the letter	1	0	0
letters unpleasant 'you have to..'	0	0	1
too many letters	0	1	0
Research in general	**2**	**1**	1
too many (online) surveys	2	1	0
I never participate	0	0	1
I don't like surveys	0	0	1

References

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Appendix 1. Shorter letter

Geachte mevrouw/meneer ,

Graag nodig ik u uit om mee te werken aan een belangrijk onderzoek van het Centraal Bureau voor de Statistiek (CBS). Het gaat om de Enquête Beroepsbevolking. Dit onderzoek van het CBS is in Nederland een onmisbare bron voor cijfers over arbeid, opleiding, werkloosheid en arbeidsongeschiktheid.

Elke maand trekt het CBS ongeveer 11 000 adressen uit alle adressen die er in Nederland zijn. Deze keer zit uw adres in onze selectie. Voor de kwaliteit van de statistieken van het CBS is het van groot belang dat zo veel mogelijk benaderde mensen meedoen. Het is voor ons dus belangrijk dat juist u meedoet. U vertegenwoordigt als het ware veel andere inwoners van Nederland.

Ik zou het zeer op prijs stellen als u bereid bent om de vragenlijst op het internet in te vullen.
De inloggegevens vindt u in het kader. Wij zijn ons ervan bewust dat niet iedereen internet heeft. Daarom zal een medewerker van het CBS u over een aantal weken bezoeken of bellen, mocht u de vragenlijst dan nog niet ingevuld hebben.

Bij al onze onderzoeken is uw privacy volledig gewaarborgd. Op de achterzijde van deze brief leest u daar meer over.

Heeft u vragen, bel ons gerust op (045) 570 64 00. Wij zijn bereikbaar van maandag tot en met vrijdag tussen 9.00 en 17.00 uur. U kunt ook naar contactcenter@cbs.nl mailen.

U doet ons een groot plezier als u een van de komende dagen de internetvragenlijst invult.

Wij danken u alvast hartelijk voor uw tijd en medewerking.

Vriendelijke groet,

Harry J.A. Wijnhoven
Hoofddirecteur Dataverzameling (a.i.)

Gelijk aan de slag

https://vragenlijst.cbs.nl/ebb15a

Gebruikersnummer: 6470 - 264 - 012
Toegangscode: 527283

Appendix 2. Advance letter with promised incentive

Beste <Voorletters > <ACHTERNAAM>,

Je ontvangt deze brief, omdat je een jongere bent tussen de 16 en 22 jaar. Jongeren gaan naar school, werken, hebben contact met hun ouders en vrienden, doen dingen in hun vrije tijd en sommige jongeren zijn wel eens betrokken bij criminaliteit. Jij bent een jongere tussen de 16 en 22 jaar en daarom hebben we voor jou een korte vraag.

Het Centraal Bureau voor de Statistiek (CBS), in samenwerking met het ministerie van Veiligheid en Justitie, wil graag weten hoe de leefsituatie van jongeren is. Door goede informatie kan de leefsituatie verbeterd worden. Dit betekent dat scholen, steden en buurten veiliger gemaakt kunnen worden voor jongeren.

Het CBS heeft hulp nodig van jongeren die over dit onderwerp een vragenlijst op internet willen invullen. Daarom **verloten we iPad-mini's**. Natuurlijk kunnen niet alle jongeren tussen de 16 en 22 meedoen. Voor dit onderzoek selecteert het CBS willekeurige namen en adressen van jongeren uit gemeenten in Nederland. Jij bent daar één van. Jouw antwoorden zijn onmisbaar om scholen, steden en buurten veiliger te kunnen maken voor jongeren. Als je de vragenlijst hebt ingevuld, zie je meteen of er een iPad-mini naar je opgestuurd wordt. Wil je geen iPad winnen? Dan kan je dat in de vragenlijst aangeven.

De vragenlijst staat op internet. **Wil je hem invullen? Kijk in de folder hoe je dat moet doen.**

Al je antwoorden worden vertrouwelijk behandeld. Wij geven geen informatie door aan andere partijen. Alleen de onderzoekers kunnen de antwoorden zien en zij hebben een geheimhoudingsplicht. Op de achterkant van deze brief kun je hier meer over lezen. Heb je nog vragen? Bel ons gerust: telefoon (045) 570 64 00, we zijn bereikbaar van maandag tot en met vrijdag tussen 9 en 17 uur. Je kunt ons ook mailen: contactcenter@cbs.nl

Ik zou het fijn vinden als je ons helpt met het onderzoek.

Vriendelijke groet,

Harry, J.A. Wijnhoven
Hoofddirecteur Dataverzameling (a.i.)

Website:	**https://vragenlijst.cbs.nl/jong**
Gebruikersnummer:	**1234 567 891**
Inlogcode:	**12345**