

## RESEARCH NOTE

# Efficiency of Different Recruitment Strategies for Web Panels

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The use of CAWI (Computer-Assisted Web Interviews) has increased greatly over the last decade, partly driven by technological development and increased Internet penetration, and partly by falling response rates in the traditional modes of polling (Baker et al., 2010; Curtin, Presser, & Singer, 2005; Couper 2000; Hansen, 2007).

While some studies have found potential disadvantages to CAWI, e.g., higher levels of “*don't know*” answers and high levels of break off (Heerwegh & Loosveldt, 2008; Peytchev, 2009), research also shows many advantages of CAWI compared to traditional modes: They are cost-efficient, allow automatic correction of errors and omissions during the interviews (Alvarez & Beselaere, 2005), and they lessen problems with social desirability bias towards interviewers (Baker et al., 2010; Kreuter, Presser, & Tourangeau, 2008). Furthermore, using web panels to conduct recurring CAWI with the same group of respondents let us build true time-series data which mitigates the problem of endogeneity inherent in so many public opinion studies. Additionally, modest differences are found when comparing results from web panels with traditional modes of surveys (Sanders, Clark, Stewart, & Whiteley, 2007), and web panels even display higher levels of data reliability than telephone surveys in some studies (Braunsberger, Wybenga, & Gates, 2007). One of the key challenges for web panels is recruitment of members. While numerous studies have investigated strategies to increase response rates in web surveys, relatively little research has looked specifically at recruitment strategies for web panels (Rao, Kaminska, & McCutcheon, 2010). Through an experimental design, this article tests the efficiency of various recruitment strategies in a probability sample for a web panel. Efficiency is here mainly measured as response rate. A low response rate does not necessarily induce nonresponse bias (Groves, 2006), but it can nevertheless be a serious problem, if nothing else because it increases the cost of recruitment. Furthermore, in addition to response rate, the article also considers issues of general demographic representativeness, cost effectiveness and speed of recruitment.

## Recruiting for Web Panels

Panel studies are, along with ordinary surveys, facing a serious challenge when it comes to recruiting people (Manfreda, Bosnjak, Berzelak, Haas, & Vehovar, 2008). Panel studies are especially difficult, as they require more commitment from the respondents than ordinary surveys. There is a vast literature on the efficiency of different recruitment strategies in surveys. However, a rather large part of this literature is based on surveys conducted by phone or print mail, and we cannot assume that the established recruitment strategies in print mail or phone surveys are also efficient when it comes to websurveys (Sanchez-Fernandez, Munoz-Leiva, Montoro-Rios, & Ibanez-Zapata, 2010), let alone web panels. Although consumer panels often use strategies known to be effective in traditional surveys—monetary incentives, advance letters and telephone follow-ups—the effectiveness of such methods in web panels is in fact supported by little, if any, empirical evidence (Rao et al., 2010). Clearly, we need more knowledge in this field, and this study investigates four different elements in the recruitment for web panels: Contact strategy, incentives, sponsorship, and the use of social proof in reminders.

### Contact Strategy

Goritz (2004b) used four different contact strategies when recruiting for a web panel: Email, fax, letters (direct postal letter sample drawn from the public telephone directory), and flyers (distributed among passersby on the street and laid out in public places). Email was by far the most successful method: 25.5% of respondents approached by email were recruited, while fax accounted for 7.7%, flyers 7.0% (estimated), and letters only 1.0%. The relatively high success rate for email also meant that it was by far the most cost-effective recruitment method. However, email addresses were drawn from an online “white pages” service where Internet users can leave their email address on a voluntary basis. This adds an element of self-selection to the procedure and is, of course, only a feasible course of action in countries with such a service.

In contrast, Rao et al. (2010) achieved an overall recruitment rate of 12.2% for a web panel when using postal letters, while recruitment by phone resulted in an overall recruitment rate of 9.9. When controlling for differences in the use of advance postal letters, incentives, and reminders, a multivariate analysis showed postal letters increased recruitment by 118% when compared to phone recruitment. As a result, postal mail recruitment was also much more cost-effective than phone recruitment. However, this outcome was partly a result of the fact that all respondents, regardless of whether they were recruited by phone or mail, had to return a welcome questionnaire by mail. Hence, respondents recruited by phone had to agree to join twice, first on the phone and secondly by returning the postal questionnaire. In contrast, respondents recruited by postal mail only had to return the unsolicited welcome packet in order to become a panel member.

In this present study, we test the phone recruitment method and compare it with postal letter recruitment for web panels. Building on the fact that interviewers using CATI are able to engage in persuasion, we would, contrary to Rao et al. (2010),

expect to find that phone recruitment yields a higher recruitment rate than recruitment by postal letter.

*H<sub>1</sub> (contact phone)*: Recruitment by phone increases the response rate compared to recruitment by postal letter.

Using text messages (SMS) is a relatively new, but potentially very useful, way of reaching respondents in surveys (Steeh, Buskirk, & Callegaro, 2007). However, SMS yields lower response rates than email invitations when used in a panel survey, probably to a large degree because an email invitation with a link to the questionnaire provides easier access than an SMS (Bosnjak, Neubarth, Couper, Bandilla, & Kaczmirek, 2008). However, we also expect to find that recruitment contact SMS yields a lower response rate than letter or phone, simply because the message is one-way and very short, and thus less persuasive than other modes. Nevertheless, as the marginal cost of recruiting a respondent with SMS-recruitment approach zero it might still be a cost-effective method for recruitment.

*H<sub>2</sub> (contact SMS)*: Recruitment by SMS decreases the response rate compared to recruitment by postal letter and phone.

### Incentives

Incentives have been widely used in traditional surveys to increase response rates. Furthermore, it has previously been argued that incentives could be necessary when collecting data online in order to counteract a bias towards respondents with a free or flat-rate internet connection (Goritz, 2004a). While decreasing cost of internet connection and widespread use of flat-rate internet connections in Denmark most likely curtail any flat-rate bias, it is still reasonable to investigate whether the use of incentives increases the general response rate in web panels.

Lottery incentives boosted recruitment with flyers for web panels from 3.5 % to 10.5%, but had no significant effect with letter, fax, and email in Goritz (2004b). Other studies have shown insignificant effects of lotteries (Goritz, 2006), that effects of lotteries on recruitment do not increase with higher prices (Goritz, 2004a), and that any effects of lotteries decrease over successive waves in the panel (Goritz, 2008; Goritz & Wolff, 2007). Redeemable bonus points (*loyalty points*) are generally more effective than lotteries, but are at the same time also more costly and administratively cumbersome (Goritz, 2004a, 2008).

On the other hand, the use of a prepaid 2-dollar incentive increased recruitment by 39% in the study by Rao et al. (2010). Generally speaking, prepaid incentives are more effective than promised incentives, and monetary incentives are more effective than lotteries, charities, vouchers or in-kind incentives (Hansen, 2007). The effects of incentives are sometimes explained by referring to *homo economicus*—an understanding where human actions are defined in relation to a rational and self-interested behavior in order to achieve their goal (Moskowitz & Martin, 2008). However, this reasoning seems to be at odds with the fact that prepaid incentives are generally more effective than postpaid. Prepaid incentives do not offer *homo economicus* any incentive to participate, as they can be kept regardless of whether or not the potential respondent

participates. Instead, the use of incentives should probably rather be seen through the general norm of reciprocation (Cialdini, 2009), where respondents receiving the pre-paid incentive feel a stronger obligation to participate. Adding to this, respondents who are promised a post-paid incentive might experience some doubt as to whether or not they will actually receive it.

In this present study, we test a symbolic incentive in the form of a small piece of quality chocolate with the University logo. Chocolate bars have previously been shown to be an effective way of improving response rates (Brennan & Charbonneau, 2009), and we want to investigate whether the norm of reciprocation means that even a symbolic incentive is effective.

*H<sub>3</sub> (incentives)*: A prepaid symbolic incentive increases the response rate compared to no incentives

### Sponsorship

In general, surveys sponsored by academic institutions have higher response rates than those sponsored by market research companies in offline and online surveys (Fan & Yan, 2010; Fox, Crask, & Kim, 1988; Porter & Whitcomb, 2003). Whether this also holds true for recruitment to web panels has yet to be investigated. The general argument is that academic institutions signal more legitimacy and seriousness than the average market research company (Groves, Cialdini, & Couper, 1992). In this study, we compare postal letter recruitment from a market research company (Gallup) with a recruitment letter from the University.

*H<sub>4</sub> (Sponsorship)*: University sponsorship increases the response rate compared to a market research company

### Reminders with Social Proof

Humans are social beings and tend to follow the herd. According to the principle of social proof, individuals often determine appropriate behavior for themselves in a situation by observing the behavior of others (Cialdini, 2009; Cialdini, Wosinska, Barrett, Butner, & Gornik-Durose, 1999). Therefore, we would expect people to be more likely to participate in a survey that seems to be going well. Groves et al. (1992) did indeed argue that social proof might increase survey participation, but to the best of our knowledge, this has not been tested empirically, just as no one have tested the effects of social proof on recruitment rates in panels. We test the effectiveness of social proof with the following hypothesis:

*H<sub>5</sub> (Social proof)*: A reminder with a built-in social proof increases the response rate compared to a reminder which does not include one.

### Method

In order to test our five hypotheses, we conducted a recruitment experiment for a web panel. Five samples each consisting of 500 individuals were drawn from a random

sample of 50,000 individuals on the Danish Civil Registration System. The Danish Civil Registration System includes data on every person with residence in Denmark. However, 13% of the population has chosen to register as not wanting to be contacted for research purposes, an option made possible in 2000. This is especially prevailing among the 20- to 39-year olds who have often been presented with this option when moving and reporting their new address to the Civil Registration System. As the option allowing one to opt out of being contacted for research purposes is more used in some age groups of the population, a stratifying sample is needed in order to have a representative starting point for the gross sample. The five samples were pre-stratified in age groups (14 groups), gender (2 groups), and geographical region (5 groups) to resemble the Danish electorate. Furthermore, we only chose individuals old enough to vote (18 years) at the latest possible date for the next Danish parliamentary election (November 13, 2011) and not currently >69 years. Sample 1 also required that the individuals had a listed cell phone number, while Sample 2 required that the individual had a listed landline or cell phone. Naturally, the requirement for phone numbers had a substantial impact on the size of the original sample, as shown in Table 1.

### Design of Recruitment Experiment: Description of Treatment and Sample

Five different recruitment techniques were employed in the experiment:

1. Invitation by short messaging service (SMS) and a SMS as a reminder to individuals with incomplete answers (i.e., individuals who started the survey but did not finish it). Embedded link in both messages. (Gallup).
2. Invitation by phone and reminder by emails (embedded link) to individuals with incomplete answers (Gallup).
3. Invitation by letter and reminder by phone to everyone not completing or declining the original invitation (Gallup).
4. Invitation by letter and reminder by letter to all respondents not completing or declining the original invitation (University of Copenhagen).
5. Invitation by letter, including a small piece of quality chocolate and reminder by letter to all respondents not completing or declining the original invitation (University of Copenhagen).

Some differences in phrasing of phone script and letters are unavoidable. For example, letters included the name and address of the recipient at the top. This might be considered a form of personalized salutation, which has been shown to increase response rates (Heerwegh, 2005).<sup>1</sup> Members of the five samples all had to answer an identical questionnaire online before being considered as fully recruited for the web panel. Hence, survey length and question wording were held constant. The questionnaire contained 24 questions focusing on political attitudes, media consumption and demographic characteristics. Potential panelists were told that completion time for the

<sup>1</sup>Copies of letters and scripts are available from the authors upon request.

Table 1.  
Number of Response in the Recruitment Experiment

First contact/Reminder	Sample 1 Gallup SMS/ Gallup SMS	Sample 2 Gallup phone/ Gallup E-mail	Sample 3 Gallup letter/ Gallup phone	Sample 4 University letter/ University letter	Sample 5 University letter with Chocolates/ University letter
Simple random sample		...50,000...			
Sample with landline or cell phone	17,393	40,998			
Sample with cell phones	500	500	500	500	500
Gross sample					
Letter returned due to problems with address			10	13	19
Removed due to technical problems with web-link	2	5	5	3	9
Net sample	498	495	485	484	472
Noncontacts		149			
Refusal on phone		100			
Refusal due to no e-mail		99			
No response to e-mail		38			
Fully completed survey before reminder	39	77	44	61	59
Response rate before reminders (%)	7.8	15.6	9.1	12.6	12.5
Final no. of fully completed survey	40	89	76	91	98
Final response rate (%)	8.0	18.0	15.7	18.8	20.8
Reminders distributed	12 <sup>a</sup>	29 <sup>a</sup>	441	405	393
Final no. of incomplete interviews	10	4	4	7	6
Final no. of explicit refusal online	19	22	78	103	97
Online refusal rate <sup>b</sup> (%)	3.8	4.4	16.1	21.3	20.6
Marginal cost of recruited members (euro) <sup>c</sup>	0.82	10.71	19.54	10.69	11.56

Note: <sup>a</sup>Only distributed to incomplete surveys from the initial contact. <sup>b</sup>Online refusal rate covers respondent who logged on only to answer, that they did not want to become members of the panel. <sup>c</sup>The cost includes materials (letters, envelopes, postages, incentives), cost of phone service, and labor cost. It does not include the approximate cost of administration, developing the questionnaire, scripting the questionnaire for online access (€6,000) or fee for the sample to Civil Registration System (€1,000). The response rates correspond to AAPOR RR1.

survey was approximately 10 minutes and that they would receive five–eight invitations for surveys per year and five surveys during the next national election campaign, should they choose to participate. Median completion time turned out to be 11 minutes, 23 seconds.

In order to test the hypothesis regarding the effect of social proof, we randomly divided the individuals receiving reminders in Samples 4 and 5 into two groups, each receiving a slightly different phrasing in the reminder. Hence, this manipulation was orthogonal to the chocolate/no-chocolate manipulation. The standard reminder read:

Two weeks ago, you received a letter [...] We would like to have your opinion on politics. Hence, this friendly reminder.

The reminder with a built-in social proof read:

Two weeks ago, you received a letter [...] We have already received a great number of registrations, but we would also like to have your opinion on politics. Hence, this friendly reminder. (Emphasis added)

Comparing the effect of these two types of phrasing allows us to test the social proof hypothesis.

## Results

Table 1 shows the recruitment process across the five experimental samples. Across these we obtained a final response rate from 8.0% to 20.8%, which is a generally slightly higher response rate than the studies cited above.

We hypothesized that recruitment by phone increases the response rate compared to recruitment by postal letter. In Table 1, the test for this is to compare the response rate before the reminder for the Gallup phone recruitment (15.6%) with the Gallup recruitment postal letter (9.1%). Our expectation turned out to be right, as the response rate is 6.5 percentage points (one-tailed  $t$ -test  $p = .001$ ,  $t$ -value = 3.10,  $df = 978$ ) higher for the phone recruitment than the postal letter. We also hypothesized that recruitment through Gallup SMS would be lower than recruitment by Gallup postal or phone methods. Table 1 shows that the response rate before the reminder is 7.8% for SMS, whereas the response rate is 15.6% for Gallup phone and 9.1% for Gallup postal letter. However, only the Gallup phone has a statistically significant higher response rate compared to the SMS (one-tailed  $t$ -test  $p < .001$ ,  $t$ -value = 3.81,  $df = 991$  and  $p = .7576$ ,  $t$ -value = .70,  $df = 981$ ).

We hypothesized that the prepaid symbolic incentive would have a positive effect. However, there is no significant difference (one-tailed  $t$ -test  $p = .5192$ ,  $t$ -value = 0.05,  $df = 954$ ) between the two postal university letters (Samples 4 and 5). Therefore, we must reject our hypothesis that a prepaid symbolic incentive has an effect.

When it comes to sponsorship, we compared the Gallup postal letter with the University postal letter before the reminder. The University postal letter had a 3.5 percentage point higher response rate (12.6%) than the Gallup postal letter (9.1%) (one-tailed  $t$ -test  $p = .039$ ,  $t$ -value = 1.77,  $df = 967$ ). The results thereby confirm our expectation that sponsorship significantly affects the response rate. What is also interesting is the fact that the University postal letter also has a significantly higher online

refusal rate (21.1%) than the Gallup postal letter (16.1%) (one tailed  $t$ -test  $p = .0190$ ,  $t$ -value = 2.08,  $df = 967$ ), indicating that the University letter makes more respondents actively take a stand on whether to participate or not.

The final hypothesis focused on the effect of providing respondents with a reminder containing a social proof. The social proof treatment was randomly divided across the 798 respondents who received a reminder from the University. 403 respondents received the standard reminder and 395 received the social proof reminder. A total of 6.9% of the respondents receiving the standard reminder completed the survey, compared to 10.6% of the respondents who received the social proof reminder. Hence, the social proof increased the response rate by 3.7 percentage points (one-tailed  $t$ -test  $p = .0330$ ,  $t$ -value = 1.81,  $df = 796$ ) compared to the reminder without the social proof. The effect of social proof did not differ significantly between the sample which initially received chocolate (effect 3.9 percentage points) and the sample not receiving chocolate (effect 3.5 percentage points).

Finally, when it comes to the marginal cost of recruiting a member for the web panel (last row in Table 1) SMS recruitment is far cheaper than any of the other strategies, whereas phone recruitment is more than twice as expensive. The calculation of marginal cost is based on levels of labor cost, postage etc. in Denmark. Hence, these marginal cost might differ substantially between countries, but we would expect the cost-efficiency of SMS recruitment to hold in the majority of comparable countries.

Examining the completed samples across the five experiments we find no significant difference in political attitudes, political interest, gender and education. However, the individuals recruited by SMS deviate significantly from the other samples when it come to age, as shown in Table 2 below.

The SMS recruitment strategy has 35.0% ( $n = 40$ ) in the age group 17- to 29-years old, whereas the others only have 12.7% ( $n = 354$ ). The 22.3 percentage points difference (one tailed  $t$ -test  $p < .001$ ,  $t$ -value 3.80,  $df = 392$ ) suggest that SMS may be an effective tool in recruiting the younger group of respondents, a group which is usually very difficult to recruit. This result is in line with Balabanis, Mitchell, and Heinonen-Mavrovouniotis (2007), who also found that SMS tend to attract younger respondents. Another fruitful option might be to combine SMS recruitment with some of the other options in order to increase the number of young people participating in the sample.

Another interesting observation from the SMS recruitment is that 32 of the eventual 40 respondents had completed the survey within 24 hours. Hence, SMS recruitment may result in lower response rates but is nevertheless a very fast recruitment method.

## Conclusion and Discussion

Web panels offer a number of advantages and possibilities in studies of public opinion. Recruiting members for such web panels can, however, be a difficult task, and there is a need for more knowledge about the efficiency of different recruitment strategies. The recruitment experiment for our web panel shows that telephone recruitment yields higher recruitment rates than both postal letter and SMS



Table 2.  
*Demographics and Survey Statistics Through the Recruitment Procedure (95% CI in parentheses/n)*

	Mean age	Gender, share of women	Political attitude, left/ right self placement (0–10)	Political interest (95% CI) (0–10)	Percentage of final recruitment after 1 day/ 2 days/ 3 days in field
<b>Net sample</b>					
Sample 1 – Gallup SMS	43.6 (42.3–44.9/498)	49.8 (45.4–54.2/498)	n.a.	n.a.	n.a.
Sample 2 – Gallup phone	43.4 (42.1–44.7/495)	49.9 (45.5–54.3/495)	n.a.	n.a.	n.a.
Sample 3 – Gallup letter	43.6 (42.3–45.0/485)	49.1 (44.6–53.5/485)	n.a.	n.a.	n.a.
Sample 4 – University letter	44.1 (42.7–45.4/484)	50.6 (46.2–55.1/484)	n.a.	n.a.	n.a.
Sample 5 – University letter with chocolates	43.7 (42.3–45.0/472)	49.2 (44.6–53.7/472)	n.a.	n.a.	n.a.
<b>All respondents who had completed the entire recruitment questionnaire before or after the reminder</b>					
Sample 1 – Gallup SMS	40.4 (35.3–45.4/39)	61.5 (46.1–77.0/39)	4.3 (3.5–5.2/39)	6.1 (5.5–6.7/39)	n.a.
Sample 2 – Gallup phone	49.2 (46.3–52.1/77)	49.4 (38.1–60.6/77)	4.8 (4.2–5.4/77)	6.8 (6.3–7.3/77)	n.a.
Sample 3 – Gallup letter	51.4 (47.6–55.2/44)	45.5 (30.6–60.3/44)	4.5 (3.7–5.3/43)	7.3 (6.7–8.0/44)	n.a.
Sample 4 – University letter	48.0 (44.4–51.5/61)	54.1 (41.5–66.7/61)	4.8 (4.3–5.4/61)	7.0 (6.4–7.5/61)	n.a.
Sample 5 – University letter with chocolates	46.8 (43.2–50.4/59)	50.8 (38.0–63.7/59)	4.6 (3.9–5.2/57)	6.9 (6.4–7.4/59)	n.a.
<b>All respondents who had completed the entire recruitment questionnaire before or after the reminder</b>					
Sample 1 – Gallup SMS	40.7 (35.7–45.7/40)	62.5 (47.3–77.7/40)	4.3 (3.4–5.1/40)	6.0 (5.4–6.6/40)	80/83/88
Sample 2 – Gallup phone	47.9 (45.2–50.6/89)	51.7 (41.2–62.1/89)	4.7 (4.2–5.3/88)	6.7 (6.2–7.1/89)	15/31/38
Sample 3 – Gallup letter	49.3 (46.3–52.3/76)	46.1 (34.8–57.3/76)	4.8 (4.3–5.4/74)	6.6 (6.1–7.2/76)	13/17/23
Sample 4 – University letter	46.2 (43.2–49.1/91)	49.5 (39.1–59.8/91)	4.6 (4.1–5.1/91)	6.7 (6.3–7.1/91)	13/21/25
Sample 5 – University letter with chocolates	46.1 (43.2–49.0/98)	46.9 (37.0–56.9/98)	4.3 (3.8–4.8/95)	6.7 (6.3–7.1/98)	13/26/33

*Note:* The entries for the net sample are from the Civil Registration System where the samples were drawn.

recruitment. Contrary to our expectations, a prepaid symbolic gift did not significantly improve the recruitment rate. This could be due to the fact that we used a very small (perhaps too small) prepaid gift. Using a social proof in our written reminders (i.e., telling potential panelists that a great number had chosen to participate) turned out to have a significant effect. Although the use of such a social proof may be considered ethically questionable as it is quite subjective as to how many recruited members account for a “great number” (Bednall, Adam, & Plocinski, et al., 2010), it is nevertheless an effective strategy for improving recruitment without charge. Future studies should investigate whether social proof is also effective in other contact modes, e.g., phone. The marginal cost suggests that if you have a very large initial sample to recruit from, SMS will be a cost-effective strategy, although it does have a low response rate and does bias towards young respondents.

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